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Promoting inclusion and representation: the role of cultural diversity in sports

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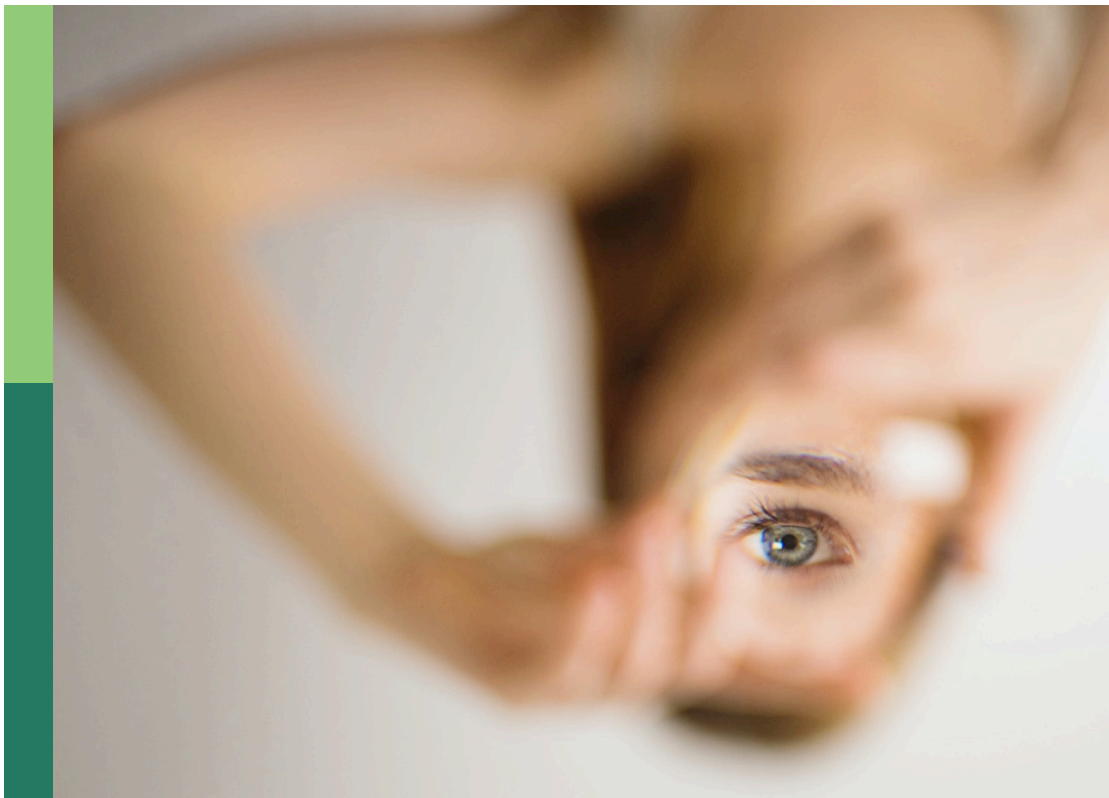

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Promoting inclusion and representation: the role of cultural diversity in sports

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Editorial: Promoting inclusion and representation: the role of cultural diversity in sports

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Editorial on the Research Topic
Promoting inclusion and representation: the role of cultural diversity in sports

As global mobility increases and sport becomes an ever more international arena (Borges et al., 2015), the need to understand and promote inclusion in sports has grown in significance (Corvino et al., 2023). This Research Topic, *Promoting Inclusion and Representation: The Role of Cultural Diversity in Sport*, brings together diverse scholarly perspectives that interrogate the intersections of cultural diversity within the sporting context.

The articles in this Research Topic explore the complex interplay between inclusion, identity, social perceptions, and performance across a range of sporting settings. A central concern is the persistent underrepresentation of ethnic and cultural minorities in sport, particularly in coaching roles (Cunningham, 2020; Cunningham et al., 2021). Drawing on insights from psychology, sociology, education, policy, and media studies, these nineteen articles address both the evolving challenges and the potential benefits of cultural diversity in sport. The Research Topic advances previous recommendations for embedding inclusion across all levels of sport (Cooper et al., 2020; Spaaij et al., 2023). Authored by seventy-six researchers, from fifteen countries, it includes two systematic reviews, two brief reports and fifteen original research articles, offering a diverse array of academic contributions.

Persistent underrepresentation of minoritised groups in coaching and leadership roles is explored in several studies. Marcelino et al. examine the barriers faced by Black coaches in Brazilian basketball, identifying racism, lack of visibility, and accumulated prejudice. Complementing this, Malcomb and Zitek critique Major League Baseball's diversity metrics which may obscure the stagnation and exclusion faced by international Latino coaches and players. Malcomb et al. further explore intercultural challenges in Minor League Baseball, emphasizing language barriers and institutional neglect. Dias et al. highlight gender disparities in youth coaching across 24 countries, particularly the neglect of female biology in coach education. Extending this focus on leadership, Guzmán-Rodríguez et al. show that cohesion and adaptability drive performance more than diversity alone, underscoring the need for leaders to actively nurture these qualities. Building on this gap Urgun et al.'s review cross-cultural training interventions, concluding they are effective and should be developed specifically for sports coaches. Taken together, these studies advocate for tailored, culturally responsive training and policy reform to promote inclusion in sport.

Cultural practices serve as powerful tools for inclusion and identity affirmation. Pasqua and Toledo trace Capoeira's journey using a documentary approach to show how this Afro-Brazilian polysemic practice promotes interpersonal relationships and cultural awareness. Similarly, Yang and Huang explore the preservation of Ma's Tongbei martial arts, showing how master-disciple relationships foster group cohesion that both sustains traditional techniques and enables adaptability. These findings suggest that sport education can embrace heritage-based pedagogies to promote intercultural dialogue and community engagement.

Public attitudes toward diversity in sport are shaped by complex socio-cultural dynamics. Wicker and Cunningham analyse the attitudes of 19,396 Europeans toward gender equality in sport, revealing greater support for female leadership than for media visibility of women's sports. In China, He et al. investigate how traditional gender awareness and stereotypes inhibit female participation in contact leisure sports. Chen and Ni and Wang et al. further investigate stigma in Chinese sport, focussing, respectively, on student-athletes and on specific sports, and identifying stereotype threat and social identity as key factors. Turning to issues of nationality and identity, Lu et al. examine Chinese perceptions of naturalized athletes, showing that perceived threats and benefits influence acceptance. At the global level, El-Dabt et al. critically examine sport's role in nation branding through Qatar's strategic use of mega-events, while Crossan et al. analyse the internationalization of Czech football and ice hockey sports clubs. Together, these studies reveal tensions between globalization and local identity, suggesting that soft power strategies must balance cultural authenticity with global contexts. These studies highlight the need for inclusive media representation, transparent communication, and stigma-reduction strategies.

The intersection of sport participation and culture is explored through multiple lenses. Mainra et al. highlight the role of family and friend support in promoting physical activity among Indigenous adults in Canada emphasizing the importance of community ties. Extending this theme, Xia et al. finds that social support also mediates the relationship between exercise participation and reductions in feelings of self-deficiency among Chinese university students. In a different cultural context, Collins et al. suggest that intrinsically motivated values in American student-athletes transcend demographic boundaries pointing, to a shared foundation of athletic commitment. Du and Ning compare Eastern and Western mindfulness interventions, and show that culturally adapted approaches generate stronger psychological benefits. These findings provide support for culture-sensitive strategies and community-driven interventions.

While each article presents distinct findings, collectively they uncover sources of exclusion while highlighting cultural contexts, national policies, and social support systems as key mechanisms of inclusion (cf. Wang et al., 2025). They explain the multifaceted nature of cultural diversity in sport, revealing how representation, identity, and inclusion are shaped by structural, psychological, and cultural contexts. They also demonstrate that sport is a powerful arena for negotiating belonging, heritage, and equity. Future research must continue to embrace interdisciplinary methods and participatory frameworks, ensuring that sport evolves as an inclusive domain, where diversity is recognized and embedded in practice.

Author contributions

MB: Writing – original draft, Writing – review & editing. AR: Writing – review & editing. RO: Writing – review & editing.

Conflict of interest

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Individual characteristics on multicultural team performance: does the role played by leaders and team members matter?

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The main purpose of this study was to analyze the impact of individual characteristics of cultural sensitivity, adaptability, cohesion, and cultural diversity on the multicultural team performance. Also, we analyzed the moderating effect of being a team member or a team leader on the relationships mentioned above. To test out hipotheses, data were collected from 415 members of multicultural teams specifically, from 304 team members and 111 leaders. The findings provided evidence to support a positive relationship between cultural sensitivity, adaptability, cohesion, and team performance. Cultural diversity did not show a significant impact on team performance. The study also showed that the leaders and members had different perceptions about the factors that influence team performance. For instance, team members consider that cohesion influences team performance, while leaders consider adaptability as the key factor to achieve performance. Main implications from findings are discussed.

KEYWORDS

leader role, multicultural team, team performance, cultural sensitivity, adaptability, cohesion, cultural diversity

1 Introduction

With today's highly heterogeneous workplaces, the growing need for companies to include cultural diversity as a characteristic in their workforce (Gonçalves et al., 2020) have made multicultural teams increasingly being used by companies as one of the key ways of collaboration in order to increase productivity (Choi et al., 2018; Ratasuk and Charoensukmongkol, 2020) and achieve organizational goals (Hoever et al., 2012).

Literature shows a large list of benefits that multicultural teams bring to companies, in terms of creativity (Ali et al., 2019), innovation (Jones et al., 2020), competitiveness (Neukam, 2017), organizational commitment (Stahl and Maznevski, 2021), problem solving (Yasmeen et al., 2020), and improved decision making (Han and Beyerlein, 2016; Neukam, 2017).

Culturally diverse teams (multicultural teams) are considered a key source of organizational success and to achieve organizational performance (Ho et al., 2017). The mostly studies were focused on single variables such a demographic diversity, informational diversity, language, or management, among others, and specifically, demographic diversity has been one of the most popular factor. However, studies showed conflicting results, for instance, Thomas (1999) found a negative relationship between cultural diversity and team

performance, while Cox and Blake (1991) and Gibson (1999) found a positive relationship. Earley and Mosakowski (2000) found a curvilinear relationship and Williams and O'Reilly (1998) found no relationship between both variables. Socio-cultural background and identity differences frequently result in disagreements and mistrust in culturally team dynamics (Van Knippenberg and Mell, 2016). Research regarding the diverse factors that influence team functioning and performance (Boone et al., 2019; Salzberg et al., 2019) has never been more necessary (Stahl and Maznevski, 2021). Explicitly, at the top management team level, Boone et al. (2019, p.278) stated that "*TMT nationality diversity received only limited attention in prior research and we still know little about why and when it affects innovation performance of MNCs*." Therefore, there is still lack of knowledge about how many factors influence the team performance, specifically in multicultural contexts, and the way in which they do it. Therefore, we attempt to contribute to this branch of study by examining characteristics of multicultural team members and leaders, namely cultural sensitivity, adaptability, cohesiveness and cultural diversity as key factors in determining team performance.

Additionally, previous literature has pointed out that sometimes there exists disparity in perceptions of important organizational issues between leaders and the team members they lead (Gibson et al., 2009; Tafvelin et al., 2017). Differences in the views have implications for team performance (Kline, 2001). We also contribute to the limited research on study of differences in perceptions among team members and team leaders regarding what is relevant for team performance (Tafvelin et al., 2017; Tuncdogan et al., 2017). As noted by Ratasuk and Charoensukmongkol (2020), dissimilarity in perceptions may negatively impact team performance.

McLeod et al. (1996) established that a successful team performance takes place when the team achieves the established objectives. In general terms, a high performing team will exhibit positive engagement in taskwork and teamwork behaviors, involving shared integration, synthesis and sharing of information (Salas et al., 2008). In a context of diversity and multiculturality, compared to teams composed of members from one culture, multicultural teams can achieve better and more effective performance due to the set of values, characteristics, capabilities, and emotions of each team member (Salas et al., 2008) achieving high results.

Specifically, for this study, multicultural team performance will be defined as the result achieved by the team that meet the required productivity (Tabassi et al., 2017, 2019), quality, and time standards (Kirkman and Shapiro, 2001; West and Markiewicz, 2004; Lawler and Worley, 2006).

2 Cultural sensitivity and multicultural team performance

The importance of cultural sensitivity in interacting with individuals from different cultures (Horverak et al., 2013; Lefringhausen et al., 2020) is a relevant variable in any multicultural team. There are studies stating that individuals who possess cultural intelligence establish open and tolerant attitudes by improving performance levels in a multicultural team (Ang et al., 2006).

Terrell and Rosenbusch (2013) define cultural sensitivity as a set of skills that involves understanding and managing cultural differences and having the willingness and an open and inclusive attitude to analyze members' relationships from different perspectives. Cheng et al. (2012) and Lee et al. (2021) believe that all team members should receive adequate training in cultural sensitivity to solve problems arising from cultural differences that may affect team performance positively. Handin and Steinwedel (2006) add that the perception and appreciation of cultural differences by the leader and team members allows for meaningful relationships with people from other cultures. Therefore, a high level of cultural sensitivity in both the leader and the members of a team facilitates the effective performance of the team (Van der Zee and van Oudenhoven, 2000).

Terrell and Rosenbusch (2013) and Cumberland et al. (2016) state that global leaders must have skills in relating to people from different cultures, as it is a determining role for team performance. Likewise, Puck et al. (2008) and Aretoulis (2018) argue that cultural sensitivity allows individuals in a team to recognize and identify cultural differences among members, which allows them to improve their work together and achieve the objectives set. Kappagomtula (2017) states that if team members and leaders are aware of the cultural differences of their teammates, they can establish a closer relationship with them, generating greater trust and facilitating creative collaboration.

Therefore, according to the literature review established on cultural sensitivity, it is observed that this variable positively affects the team's performance. Based on the above, the following hypothesis is proposed:

> *H1:* Cultural sensitivity is positively related to multicultural team performance.

3 Adaptability and multicultural team performance

According to the literature, the term of "team adaptation" is defined as the result of one or several changes that leads to effective team performance (Beal et al., 2003).

To achieve successful performance, teams must adapt. Such adaptation involves, on the one hand, team-level skills such as cohesion, interaction norms, goal clarity (Kozlowski et al., 1999), and group learning (Ramos-Villagrasa et al., 2019) and, on the other hand, individual skills of team members such as knowledge sharing (Bedwell, 2019; Park and Park, 2019), learning orientation, self-regulation (Ramos-Villagrasa et al., 2019), personal bonds, social interactions with local colleagues, national colleagues and family members (Kang and Shen, 2018; Bayraktar, 2019), and similarity of cultures (Varma et al., 2020).

At the individual level, adaptability is defined as work behavior that helps employees adapt to change by demonstrating excellence in problem-solving, uncertainty management, stress, crisis, new learning, and adaptability related to people, culture, and environment (Pulakos et al., 2000; Park and Park, 2019). This ability to adapt is considered one of the strategic global talent development skills required to do business effectively (Bayraktar, 2019). Meanwhile, Beus et al. (2014) refer to adaptation as "the ability to perform tasks satisfactorily and in a short time after joining the team" (p.490), overcoming difficulties experienced in daily work (Konanahalli et al., 2014). Organizations

that foster the ability to adapt, their employees present better levels of individual performance and successful change management and promote organizational learning (Park and Park, 2019).

Taking into account the cultural component of the multivultural teams, the cultural adaptability of teams is a phenomenon that has been studied in the literature on expatriate management (Puck et al., 2008; Chen et al., 2010; Harari et al., 2018). McNulty and Brewster (2017) define cultural adaptation as the degree of comfort or absence of stress experienced by the expatriate when participating in an international team. House et al. (2004) provide another definition of cultural adaptability, considering it as the ability to understand other cultures and behave accordingly in order to achieve established goals and establish a positive relationship with peers and team leaders. The process cultural adaptation occurs in two stages: an exchange of knowledge and management of cultural differences where the ability of individuals to adapt their behavior to a specific cultural context plays an essential role (Javidan et al., 2006).

One of the best known models of cultural adaptation is the model by Black et al. (1991) which states that cultural adaptation is a process composed of three elements: the cultural adaptation of living in the host country, the interaction with people from the host culture and the job responsibilities of the new job. Puck et al. (2008) and Takeuchi et al. (2019) consider expatriate adaptation as a relevant benchmark for measuring a member's adaptation to a multicultural team.

There are several studies (Lawson et al., 2009; Lu and Tjosvold, 2013; Low et al., 2020) on the adaptation of new members to a team; socialization practices between the new member and team members are vital for establishing positive links that lead to a rapid adaptation in the team and, to a greater extent, in a multicultural team. Beus et al. (2014) argue that bringing a new team member on to the team creates uncertainty for both the member and the team, which can affect performance. Bouncken et al. (2016) argue that the experience in cultural adaptability of both the team and the new member are elements that favor the rapid and positive integration of the team member. Following the above mentioned arguments, team member adaptability can make grow the degree of comfort when working together leader, members coming from different cultures, increasing the problem-solving capability, reducing uncertainty and stress, enhancing new learning, and as a concequence, and improving team performance. Therefore, the following hypothesis is proposed:

> *H2:* Adaptability is positively related to multicultural team performance.

4 Cohesion and multicultural team performance

Cohesion is a relevant variable that represents a shared perception and experience among team members (Carron et al., 2002; Kozlowski and Chao, 2012). The term *team cohesion* is often defined as the mutual bond of attraction that forms between the members of a group, resulting from working for a common purpose and backed by the intention to remain united (Keyton and Springston, 1990; Casey-Campbell and Martens, 2009). Therefore, cohesion is a relevant variable to measure team performance (Salas et al., 2015) since individuals are critical drivers when working in teams (Judge and LePine, 2007).

Weiss et al. (2017) explain the importance of the study of cohesion for the team performance, describing how the process of selection of individuals should be. Acton et al. (2020) study the impact that team composition has on cohesion, indicating that a bad team composition generates a negative cohesion and therefore, harms the team performance level.

Mach et al. (2010) explain that trust and team cohesion play a mediating role, explaining that trust among teammates mediates the relationship between trust in the leader and team cohesion affecting team performance. Rodríguez-Sánchez et al. (2017) analyze the relationship between cohesion and performance (creative and perceived) in a reciprocal way through the mediating effect of collective commitment. The results show that creative teams tend to develop a strong cohesion that leads to better performance.

Previous studies point out the importance of analyzing cohesion in work teams because it decreases the level of conflict, anxiety among members and participation (Yoo and Alavi, 2001; Salas et al., 2015; Black et al., 2019) and increase satisfaction with the team (Tekleab et al., 2009). Most studies show that cohesion also favors productivity (Carless and De Paola, 2000; Carron and Brawley, 2000; Beal et al., 2003; Yang and Tang, 2004; Salas et al., 2015). In this sense, we can begin by indicating that Zaccaro et al. (2001), advocate that highly cohesive teams tend to show better performance in situations of adversity than those with low cohesion. This is because teams with high cohesion tend to be more united and develop better communication, are more committed to strive to achieve the established objectives and are therefore more decisive in the face of obstacles. On the contrary, when there is low cohesion, the members feel little motivation to participate and achieve the goals.

The positive relationship between cohesion and performance has also been defended in subsequent research; for example, Abrantes et al. (2020), in which they argue that cohesion serves as a mechanism to improve the performance of tenured teams. They point out that members develop cohesion when they feel connected and committed to each other to achieve objectives. In other words, each member fully identifies with the group and feels good being part of it; this generates trust, commitment and willingness to collaborate with their peers (Milliken and Martins, 1996; Taggar, 2002; Stahl et al., 2010). Into the context of multicultural teams, we understand that they need of knowledge sharing, personal bonds, social interactions with people from different cultures, and as a consequence, cohesion is even more relevant to achieve a successful team performance. Therefore, the following hypothesis is proposed:

> *H3:* Cohesion is positively related to multicultural team performance.

5 Cultural diversity and multicultural team performance

Cultural diversity can be defined as the set of ways of thinking, attitudes, and values that characterize the team and the product of the mixture of national cultures of its members (Hofstede, 1980; Kim, 2017; Guzmán-Rodríguez et al., 2021; Stahl and Maznevski, 2021).

A frequently used model in cultural studies is the model of cultural dimensions of Hofstede (1980). This study defines "culture"

as the system of values and beliefs of a society and establishes four cultural dimensions: Individualism vs. collectivism (i.e., degree to which society rewards individual vs. collective action); power distance (i.e., The extent to which people expect and agree that power should be shared unequally.); masculinity vs. femininity (i.e., societal preference for achievement, heroism, assertiveness, and material rewards for success); uncertainty avoidance (i.e., the degree to which society rewards individual vs. collective action.). Later on, three more dimensions are added to model of Hofstede (2001): long-term vs. short-term Orientation (i.e., a societies' connection of the past with the current and future actions/challenges) and indulgence vs. restraint (i.e., Degree of freedom societal norms afford to citizens in fulfilling their human desires; Hofstede, 2001).

Although a high amount of literature on cultural diversity in teams has been performed (Matveev, 2017; Tabassi et al., 2019; Jones et al., 2020; Varma et al., 2020), it has produced mixed results (Tshetshema and Chan, 2020), because it not only contributes to providing new ideas and perspectives but can also produce adverse effects on group's processes and performance (Dayan et al., 2017). The double-edged sword, the" nature of cultural diversity in teams, is supported by Stahl and Maznevski (2021). In this regard, they point out that cultural diversity would positively or negatively impact team outcome, depending on whether a team is composed of members from different countries or members from a single country.

Many studies focused on the benefits that cultural diversity brings to organizations. For instance, it has been widely studied that culturally heterogeneous teams can achieve higher levels of innovativeness and performance than culturally homogeneous teams (Feitosa et al., 2018; Stahl and Maznevski, 2021). Teams with members from various cultures can provide a broader range of perspectives, task-related knowledge, abilities, and skills (Gabelica and Popov, 2020).

Employees with diverse backgrounds having specific cultural knowledge and deployment of team member's cross-cultural competence, diversity provides a creative advantage for teams to enhances successful outcomes (Jones et al., 2020) solve problems in different ways, and they may also have a higher tolerance for taking risks (Bertelsmann, 2018).

Previous literature based on Hofstede's cultural model confirms the positive relationship between cultural diversity and creativity and innovation in economic terms (Williams and McGuire, 2010). When individuals have a clear collectivist orientation, there is low power distance and low uncertainty avoidance, all of which influence innovation. In other words, when human resources practices promote collectivism, it becomes easier for employees to feel identified with the organization, employees feel motivated to work as a team, because individual and collective interests coincide, and as a consequence, performance improves (Dahms and Kingkaew, 2019). On the contrary, when there is a clear individualistic orientation, this hinders trust among team members and as a consequence, causes a negative effect on team performance (Bouncken et al., 2016). Similarly, Vrânceanu and Iorgulescu (2016) conducted a comparative study according to Hofstede's dimensions applied to Romanian service companies.

The results are opposite to expected in terms of the masculinity vs. femininity dimension, and similar in terms of power distance and tolerance for uncertainty.

Beyene et al. (2016) analyze firms in the textile manufacturing industry and find that high levels in all dimensions of cultural diversity negatively affect activities involved in innovative product development.

On the other hand, researchers conducted studies about cultural diversity and its adverse effects on team performance. In this regard, pessimistic perspectives are based on similarity-attraction theory (Byrne, 1997), suggesting that people prefer to interact with similar rather than dissimilar people. At the same time, social-identity theory (Tajfel and Turner, 2004) suggests that individuals prefer to classify themselves and others into certain social identity groups and that this identification has implications for advancing the interests of group members (Tajfel and Turner, 2004). In this case, team members would prefer peers from their own culture, which can make uneffective communication within teams, and as a consequence, be detrimental to team performance (Lisak et al., 2016). According to these theories, individual behaviors bring detrimental performance whene people display reluctant and uncomfortable reactions when interacting with colleagues who have different values and opposing personalities (Kim et al., 2017).

Therefore, the following hypotheses are proposed:

Cultural orientation is related to multicultural team performance, in such a way that:

> *H4.1:* Collectivism is positively related to multicultural team performance.
> *H4.2:* Power distance is negatively related to multicultural team performance.
> *H4.3:* Uncertainty avoidance is positively related to multicultural team performance.
> *H4.4:* Masculinity is negatively related to multicultural team performance.

6 Exploring differences between leader and team members and team performance

Differences in the views of stakeholders have implications for team performance (Kline, 2001). For instance, when work teams and their managers differ in their perceptions of variables such as group communication, organizational support (Tafvelin et al., 2017), or diversity climates (Mckay et al., 2009), there results a negative impact on team productivity. However, researchers have often treated these discrepancies in perceptions as "errors" (Bliese, 2000; Toegel and Conger, 2003) and have not studied them.

Gibson et al. (2009) develop in their research the concept of leader-team perceptual distance, considering the differences between a leader and a team in perceptions of the same social stimulus. They argued that the leader-team perceptual differences were related with a decrease in team performance. This relationship was explained on the basis of collective cognition of the team. Every team possesses cognitive properties (collective cognition) that are different from the sum of the cognitions of individual team members (Gobis et al., 2015). The lowered team performance due to leader-team perceptual differences is because these differences prevent the team from maximizing collective cognition and thus from reaching its full potential (Gibson et al., 2009).

Studies have used various terms such as "perceptual congruence" (Benlian, 2014), "perceptual fit" (Ostroff et al., 2005), and "perceptual similarity" (Gibson et al., 2009) in place of perceptual distance.

Few studies have analyzed the relation between different managerial and employee perspectives and organizational performance. When comparing leader-team perceptions with respect to communication, work performance, goal accomplishment, and organizational support, studies have found disagreement between leaders and their teams (Hatfield and Huseman, 1982; White et al., 1985; Engle and Lord, 1997; Heald et al., 1998; Hsiung and Tsai, 2009; Li and Thatcher, 2015). Further, when the disagreement between the leader and employees was high, it resulted in lower work performance (Ostroff et al., 2005; Fleenor et al., 2010). Conversely, lower perceptual differences were associated with increases in team performance (Gibson et al., 2009; Bashshur et al., 2011), and this effect is most substantial when a team's perceptions are more favorable than the leader's. Arguably then, team performance decreased when leader and team members disagreed (Bashshur et al., 2011).

It is the case of the study presented by McKay et al. (2009). They found that when both agreed positively in the perception of organizational diversity climate, in this case, related to the degree to which a firm is thought to utilize fair employee policies, the most outstanding performance happened, and when both agreed negatively in the perception about the issue, the lowest performance was shown in the company. It is also the case of Tafvelin et al. (2019), that indicated in their study that whether the leaders and their teams agree or not on perceptions of leadership has been found to impact follower well-being and performance. In their study they also proved that when leaders and followers agreed, leaders'safety leadership behaviors and followers'self-efficacy to give safety-related feedback improved. Cole et al. (2013) investigated the joint effect of leaders' power distance values with their team's power distance values on team performance. They found that incongruence between leaders' and teams' power distance values in either direction has an effect on team effectiveness mediated by justice perceptions.

Studies have also attempted to understand the effect of perceptual distance on team performance when a leader rated higher or lower than the team (Tafvelin et al., 2017). While Gibson et al. (2009) found that better team performance was achieved when the leader's perceptions were slightly higher than that of the team, other studies found contrariwise. For instance, Cole et al. (2013) found that leader-team perceptual distance resulted in strong negative effect on the performance of the team when leader's perception of power distance was higher than the perception of the team members. Similarly, Bashshur et al. (2011) suggested that team performance indicators were lowest when leaders perceived a higher support climate relative to the team. They explained the findings on grounds of passive leadership resulting due to higher leader perception due to which the leader fails to understand the needs of the team.

Several theoretical explanations have been extended to explain the outcomes on team performance resulting from leader-team perceptual differences or perceptual similarity. These include cognitive dissonance theory (Festinger, 1957), similarity-attraction paradigm (Byrne, 1997), consistency-based situational-strength (Meyer and Maltin, 2010), and organizational exchange theory (Blau, 1964, 1968).

A lack of perceptual agreement between the leader and the team is expected to weaken the obligation on the part of team members to reciprocate and perform at higher levels (Rhoades and Eisenberger, 2002; Chen et al., 2005). One explanation of perceptual differences between leader and the team is anchored in the relative difference in the position and power between the manager and the team (Patterson et al., 2004) due to which they have differential access to relevant information, different interpretations of that information and also different referents of comparison (Gibson et al., 2009).

Stahl and Maznevski (2021) reported that though sufficient literature was available on diversity in work teams (for, e.g., Bowers et al., 2000; Horwitz and Horwitz, 2007) as well as on the link between cultural diversity and team outcomes, the findings were at best equivocal. To date, no meta-analyses was found that specifically focused on cultural diversity and its effect on team performance *per se* (Stahl and Maznevski, 2021). Meta-analyses of research on work-group member diversity and team performance has not evidenced a relationship between the two. Hence, relatively little is yet understood regarding the mechanisms and factors that determine the effects of cultural diversity in teams. Researchers postulate that the effects of cultural diversity in teams are likely to be understood only when attention is directed toward contextual moderators and mediating mechanisms in research on multiculturally diverse teams (Mannix and Neale, 2005; Joshi and Roh, 2009). Thus, it was proposed by Stahl and Maznevski (2021) that cultural diversity does not have a direct impact on team performance. Rather, cultural diversity and its dimensions are likely to have an indirect effect on team performance, mediated by various process variables. Hence, it was important to bring together leadership and team dynamics to explain multicultural team performance. Stahl and Maznevski (2021) in their research retrospective sought to explore and identify the moderating factors in the relationship between cultural diversity and team performance. Since few studies have focused on moderating variables in studies of cultural differences and team performance (Stahl and Maznevski, 2021) in our study we focus on differences into the role played by the individuals (leader or team members) to explore a potential role as moderator in the relationship of individual characteristics, *viz.*, cultural sensitivity, adaptability, cohesion, and cultural sensitivity with multicultural team performance. Since our intention is to explore different views from leader and team members, we do not propouse a formal hypothesis about it. We suppouse a moderator role for role played into the teams, since leaders can reinforce some specific variables while team members reinforce another ones.

7 Methods

7.1 Sample

The sample used to test our hypotheses is composed of middle and senior managers working in internationalized Mexican and North American companies with subsidiaries in Mexico, South America, the United States, and the European Union.

Specifically, two criteria were used to select the companies in the sample, on the one hand, companies with international business activities related to exports, imports, mergers, and acquisitions; and on the other hand, companies with at least one subsidiary abroad. The suitability of these criteria is reflected in the work of Sullivan (1994), which indicates that these parameters can be good indicators of a company's degree of internationalization.

Our sample consisted of a total of 180 companies. Human resources managers were contacted by email or telephone in order to know their availability to participate in our research. Additionally, we had the support of the Mexican Chamber of Commerce Industry

in Monterrey, which contacted various organizations (and their human resource managers) linked to internationalized companies to obtain access to their databases for the application of the questionnaire, either electronically or in person.

7.2 Instrument

We collected data from team leaders and team members. To collect data, we used a survey questionnaire. Specifically, an online survey questionnaire. After 2 months collecting data, five hundred seventy questionnaires (570) were collected, but we discard 155 of them, because they did not fit the target profile or were not completed. Finally, we obtained a final sample of 415 participants, coming the 93% via online and 7% were completed fisically.

Demographic characteristics can be summarized it as follows: 111 (27%) responses were from team leaders, and 304 (73%) were team members. The average age was between 26 and 55 years old. In terms of gender, the sample was quite balanced, specifically we obtained response from 211 (51%) of male participants and 204 (49%) from females. Regarding nationalities, the predominant nationality was Mexican (291), representing the 70%, followed by 71 from Europe, representing the 17% of the sample, and the rest were from North American, Asian and Latin American (except Mexican) nationalities.

7.3 Measures

As we have mentioned above, the instrument for collecting information for all of the variables was a questionnaire, and responses were based on a five-point Likert scale, with responses ranging from "strongly disagree" to "strongly agree." With the purpose to test the reliability and validity of our scales, we follow previous literature (Hair et al., 1999) and we performed a confirmatory factor analysis. Specifically, we performed it separately for each construct using SEM software, EQS 6.1. Results confirmed the reliability of our scales. Factor loading was at least 0.7 or close to, and the average extracted variance (AVE) higher than 0.5. Cronbach's alpha score were also appropriate. Indicators of the goodness of fit are within the accepted limits (Muller, 1997).

Aditionally, following criteria of Fornell and Larcker (1981) to test discriminant validity, we found that all AVEs exceed square correlations (Table 1 summarizes AVEs results), supporting the discriminant validity among our variables. Information about items used, factor loadings, R^2, the goodnesses of confirmatory factor analysis (CFA) to each variable is shown in Appendix I.

7.3.1 Multicultural team performance

According to Kinnebrew (2011), measurement of team performance is limited due to they carry it out a certain degree of objectivity, and following her recommendation, we used the measurement scale called "team productivity index" by Kirkman and Rosen (1999) and modified by Kinnebrew (2011) because, it is considered a reliable measure that can be applied to cultural contexts. It consists of six items (see Appendix I).

7.3.2 Cultural sensibility

Cultural sensitivity is the ability to empathize with people's interests, thoughts, values, and ideas from different cultures. To measure cultural sensibility variable, we used the items from the managerial, cultural flexibility scale obtained from previous studies by Puck et al. (2008) and consists of four items (see Appendix I).

7.3.3 Adaptability

Adaptability to the multicultural team measures the degree of comfort a team member or team leader has when working with the rest of the members from cultures other than their own (Black et al., 1991; Bhaskar-Shrinivas et al., 2005). The three items (see Appendix I) to measure this variable comes from the scale of "adaptation to a multicultural context" by Puck et al. (2008).

7.3.4 Cohesion

Team cohesion is the link between the multicultural team members, their commitment and integration with the team's goals (Kozlowski and Ilgen, 2006). To measure this variable, cohesiveness scale of Chidambaram (1996) is used. It is measured through four items (see Appendix I).

7.3.5 Cultural diversity

To measure cultural diversity, we used four dimensions or theoretical constructs distinguished by Hofstede (1980, 2001) and House et al. (2004). They are the collectivist orientation (as opposed to the individualist), the distance of power, the orientation toward masculinity (gender roles) and the avoidance of uncertainty (aversion as opposed to tolerance). For each dimension, a set of items was proposed to the respondents. Specifically, six items have been used for collectivist orientation, for power distance, five in orientation toward masculinity and five for uncertainty avoidance. Items can be checked into the Appendix I.

7.3.6 Leader or team member role

We designed "1" if the position was the team leader, and "2" if the position was the team member.

7.3.7 Control variables

Gender: Gender of participants were identified as 1 = male, 2 = female. Age: Age of participants were ranked using the following categories: (1) from 18 to 25, (2) between 26 and 35, (3) between 36 and 45 years, (4) between 45 and 55 years, and (5) more than 55 years. International experience: We have defined previous international experience as the period of time measured in years that the member has participated in an international work experience, because, following Schneider and De Meyer (1991), the person who has said experience contributes valuable knowledge of global management in addition to a variety of different opinions due to their interaction with international environments (Schneider and De Meyer, 1991). In this regard, participants responded regarding working international experience and answered one of the following options (1) none, (2) less than 2 years, (3) between 2 and 3 years, (4) between 3 and 5 years, and (5) more than 5 years. Previous experience in multicultural teams: Regarding previous experience in multicultural teams, participants responded to the sentence regarding experience working multicultural teams and by choosing one of the following options: (1) none, (2) less than 2 years, (3) between 2 and 3 years, (4) between 3 and 5, and (5) more than 5 years.

TABLE 1 Composite reliability (CR), average variance extracted (AVE), and square correlations between variables.

CR	0.756	0.799	0.920	0.342	0.86	0.870	0.80	0.90
AVE	0.789	0.718	0.692	0.802	0.801	0.779	0.776	0.801
	1.	2.	3.	4.	5.	6.	7.	8.
1. Cultural Sensibility	—							
2. Adaptability (Team adjustment)	0.345	—						
3. Cohesiveness	0.015	0.066	—					
4. Collectivism	0.021	0.028	0.030	—				
5. Masculinity	0.023	0.007	0.010	0.008	—			
6. Power Distance	0.034	0.002	0.017	0.006	0.467	—		
7. Uncertainty	0.034	0.019	0.01	0.012	0.006	0.001	—	
8. Multicultural team performance	0.093	0.133	0.177	0.035	0.002	0.003	0.043	—

8 Results

Table 2 shows the leading statistics and correlations. The majority of the relationships at the correlational level are as expected. Multicultural team performance was significant and positively correlated to cultural sensibility, multicultural team adjustment, cohesiveness, collectivism, and uncertainty avoidance. Correlations between multicultural team performance and power distance and masculinity were negative but not significant.

To test our hypotheses, hierarchical regressions were performed. Specifically, we introduced control variables in a first step (model 1), main variables in a second step (model 2), and finally, interaction terms after centring variables were introduced (model 3). The results are shown in Table 3. Hypothesis 1 establishes the positive relationship between cultural sensitivity and multicultural team performance, and our results support the theoretical prediction ($\beta = 0.100^{*}$). Same regression results for H2 and H3. Specifically, to the relationship between adaptability and multicultural team performance, we obtained a statistically significant coefficient ($\beta = 0.160$); to the relationship between cohesiveness and multicultural team performance, we also obtained a statistically significant coefficient ($\beta = 0.225$), finding support to our hypotheses H2 & H3.

Our theoretical assumptions predicted different positive and negative relationships between cultural orientation and multicultural team performance (H4). Unfortunately, our data showed no statistical significance to any of the relationships between dimensions of cultural orientation and multicultural team performance, at least, not direct relationships.

Finally, with the aim to explore if the role played by individuals could introduce differences into our results, we introduced interactions terms into the regression (model 3, Table 3). We found statistical significance for two of the relations tested. Specifically, we found that the role played by individuals into the team (leader or team member) interacts with main variables so that adaptability to the team and cohesiveness change depending on if the role played is team leader or team member. To interpret the meaning of the statistically significant interactions, we plotted team role about adaptability and team role about "Cohesiveness" (Figures 1, 2; Aiken et al., 1991). High and low levels of adaptability (team adjustment) and cohesiveness were defined as one standard deviation above and below the mean, respectively. In Figure 1 can be observed that when individuals play a team leader role, adaptability (team adjustment) is significatively related to multicultural team performance. Figure 2 shows that cohesiveness is significatively related to multicultural team performance when individuals play team member role.

9 Discussion and conclusion

The main purpose of this empirical study was to analyze the impact of individual characteristics as cultural sensitivity, adaptability, cohesion, and cultural diversity on the multicultural team performance. The findings indicate the existence of a positive relationship between cultural sensitivity, adaptability, cohesion, and team performance. Cultural diversity did not show a significant impact on team performance.

It seems that the ability to understand people's point of view from different cultures, to accept, understand and appreciate cultural differences enhances intercultural communication quality (Peng, 2006; Liu-Farrer, 2014) minimizes cultural differences within team members (Segura-Robles and Parra-González, 2019) and improves performance (Deardorff, 2006; Ramthun and Matkin, 2012). The results show congruence with previous research (Puck et al., 2008; Chua et al., 2012; Segura-Robles and Parra-González, 2019; Moradi, 2020) who pointed out that cultural sensitivity positively influences the performance of multicultural teams. This means that team members and leaders consider that in order to achieve multicultural team performance, it is not only important to be aware of the differences in perspectives and approaches caused by cultural diversity, but also, it is crucial to have the ability to empathize with those values and ideas. This ability to empathize encloses a deep understanding of an individual's feelings from different cultures, their points of view, interests, values, and beliefs.

The foregoing leads to suggesting the importance of designing strategies aimed at, on the one hand, promoting cultural sensitivity that imply an open attitude toward constructive discussion, the absence of prejudices and tolerance regarding other ways of thinking, and on the other hand, to create awareness in the members about the importance of effective communication in the team. All of this implies expressing their opinions clearly and directly with the rest of the team. We also suggest that developing trust, honesty, tolerance, effective communication, and a genuine

TABLE 2 Main statistics and correlations.[a]

	Mean	SD	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. Gender	1.49	0.500	1												
2. Age	2.95	1.07	−0.127**	1											
3. International experience	3.11	1.32	−0.173**	0.386**	1										
4. Previous experience	3.05	1.23	−0.116*	0.337**	0.437**	1									
5. Team role	1.73	0.443	0.232**	−0.179**	−0.196**	−0.141**	1								
6. Cultural sensibility	4.61	0.603	−0.057	−0.003	0.114*	0.077	−0.027	**(0.90)**							
7. Adaptability (Team adjustment)	4.50	0.595	−0.015	0.070	0.163**	0.190**	−0.036	0.588**	**(0.86)**						
8. Cohesiveness	3.79	0.820	−0.056	−0.031	−0.030	0.039	−0.049	0.126*	0.257**	**(0.87)**					
9. Collectivism	3.80	0.855	−0.143**	−0.013	0.014	0.030	−0.047	0.146**	0.168**	0.176**	**(0.82)**				
10. Power distance	2.35	0.892	−0.103*	−0.114*	−0.063	−0.102*	0.071	−0.187**	−0.045	0.131**	0.078	**(0.86)**			
11. Uncertainty avoidance	4.15	0.662	0.002	−0.061	−0.123*	−0.061	−0.075	0.186**	0.139**	0.100*	0.112*	0.040	**(0.85)**		
12. Masculinity	1.92	1.01	−0.138**	−0.148**	−0.054	−0.139**	0.037	−0.152**	−0.084	0.104*	0.094	0.684**	0.078	**(0.91)**	
13. Multicultural team performance	4.09	0.543	−0.074	−0.004	0.001	0.111*	−0.112*	0.306**	0.365**	0.421**	0.189**	−0.059	0.208**	−0.047	**(0.90)**

$n = 415$. *$p < 0.05$; **$p < 0.01$. When appropriate Cronbach's alpha coefficients are reported in parentheses on the diagonal.

interest for collaboration are strategies that may help to foster cultural sensitivity. Additionally, developing trust, honesty, tolerance fosters an effective communication between team leaders and members along with a genuine interest for collaboration may be a good strategy to enhance cultural sensitivity.

Prior literature suggests that adaptability is considered one of the strategic global talent development skills required to do business effectively (Bayraktar, 2019) based on people to adapt successfully to change deploys excellence in problem-solving, uncertainty management, stress, crisis, new learning related to people, culture, and environment (Pulakos et al., 2000; Park and Park, 2019). For instance, our findings showed that, team members consider this adaptability as important due to its impact on team performance, this result finds consistency with previous studies that establish a positive relationship between both variables (Pulakos et al., 2000; Puck et al., 2008; Beus et al., 2014; Park and Park, 2019; Peltokorpi and Zhang, 2020). One possible reason to explain this is that new members go through a kind of adaptation or learning curve when joining the team and, because their peers come from different cultures, if you do not have the ability to adapt, understand a different way of doing things, and be willing to work on it, the culture clash within different values and mental schemes can be detrimental to the group performance.

Regarding team cohesion, our results support previously conducted research that shows that in cohesive teams, members feel connected and committed to each other and collaborate to achieve objectives. In the same way, each member fully identifies with the group and feels good being part of it; this generates trust, commitment, and willingness to collaborate with their peers (Milliken and Martins, 1996; Stahl et al., 2010) to improves performance (Zaccaro et al., 2001; Rico et al., 2012; Salas et al., 2015; Abrantes et al., 2020). This indicates that for team members it is very important to establish links within colleges in the team because this enhances the sense of belonging, team identification feeling and fosters motivation to contribute to a common goal. Taking the above arguments into account, we recommend establishing training programs to encourage leaders to become aware of the importance that cohesion is for team members.

Literature maintains that cultural diversity in teams is a source of benefits based on the mix of knowledge, experience, values and perspectives that enhances the team and therefore, it is considered as a path to improve team performance. In this regard, and contrary to what we expected, the results of both groups did not show significant evidence of this relationship in any of the four Hofstede's dimensions. In other words, both leaders and members agree that an orientation to collaboration and submission of individual interests for the team goals (e.g., collectivism), expectation regarding importance of positions within team hierarchy (e.g., power distance dimension), preference for achievement, competition, confrontation and individual goals and material rewards for success (e.g., masculinity dimension), and the preference to avoid working under unplanned situations or in the absence of formal rules and structures (e.g., Uncertainty avoidance) are factors that do not significantly influence the team performance. Our findings exploring the effects of cultural diversity of multicultural team performace are slight similar than previous work on multicultural team innovation (Guzmán-Rodríguez et al., 2021) although in that case, Guzman-Rodriguez and colleages found than only the power distance orientation affected positively to the team innovation.

One possible argument to explain the above is because the predominant culture is Mexican one, and considering that it is a

TABLE 3 Hierarchical regression results for hypotheses.

	Coefficients model		
	Model β	*Model 2 β*	*Model 3 β*
Control variables			
Gender	−0.079	−0.039	−0.033
Age	−0.019	−0.013	−0.018
International experience	−0.024	−0.026	−0.029
Previous experience	0.062**	0.033	**0.039+**
Main variables			
Cultural sensibility		**0.100***	**0.533***
Adaptability (Team adjustment)		**0.160****	**0.531***
Cohesiveness		**0.225****	−0.157
Collectivism		0.043	0.135
Power distance		−0.044	−0.056
Uncertainty avoidance		0.095	−0.018
Masculinity		−0.009	−0.101
Team role		−0.062	**1.16***
Interaction terms			
Team role × Cultural sensibility			−0.244
Team role × Adaptability			**−0.240***
Team role × Cohesiveness			**0.210****
Team role × Collectivism			−0.053
Team role × Power distance			0.014
Team role × Uncertainty avoidance			0.058
Team role × Masculinity			0.049
R^2	0.012	0.28	0.329
ΔF	2.2	20,13**	5.17**

*$p < 0.05$; **$p < 0.01$. Dependent variable: multicultural team performance.

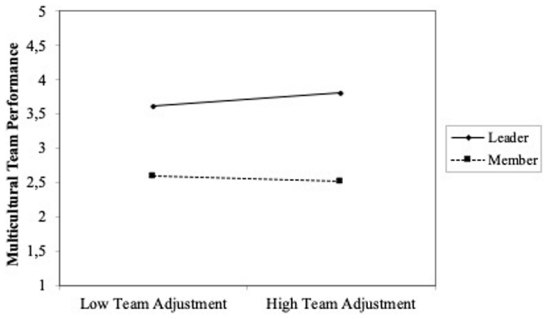

FIGURE 1
Plot interaction team role (Leader/ member) and adapability (Team adjustment) on multicutural team performance.

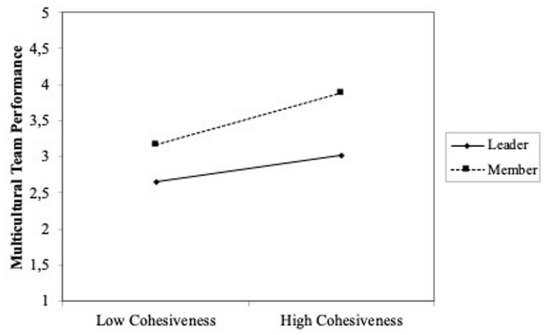

FIGURE 2
Plot interaction team role (Leader/ member) and cohesiveness (Team adjustment) on multicutural team performance.

culture oriented to teamwork and to establish links with each other, the members feel motivated and committed to contribute significantly to the performance, therefore, they hardly express opinions contrary to the majority in order not to cause conflicts and maintain group harmony. This argument finds consistency with studies that consider due to the nature of cultural diversity may has a "double-edged sword" so, it would positively or negatively impact team outcome, depending on level of diversity within the teams.

A second argument to explain this lack of relationship between cultural diversity and the performance of teams for leaders and members may be since the companies chosen for the study have a long way to go in terms of the management of cultural diversity in teams, teams have support mechanisms that help their proper functioning and successful management of diversity.

Finally, based on the exploration and analysis of the moderating role of the role played by individuals (leaders or team members) into the team, significant differences have been found between the perception of the members and the perception of the leaders about the concepts that affect team performance. For instance, according to team members' perception, cohesion is a variable that positively influences performance. Conversely, leaders differ in the above because they do not perceive cohesion as a variable that determines performance. The foregoing suggests that, perhaps, taking into consideration that the Mexican culture is the predominant one into the sample, and, that it is characterized by having a high distance of powers, the differences in status between the leader and the members are clearly defined, therefore, it can be expected that feeling identified with the team and with a common goal is more important for the members since, based, in some way, they are only those who work more closely, considering that the leader at a higher level due to the marked difference in status.

On the other hand, leaders consider that the ability to adapt to the team (e.g., adaptability) is a factor that determines the achievement of performance, this could be because when leaders are assigned to a team or vice versa, perhaps adaptation is one of the main steps as part of the organizational socialization, therefore, it entails a key in successful collaboration. This shows the need, in the first place, to identify the needs, expectations, and motivations of each team leader and members separately, to establish mechanisms for minimizing those differences in such a way that both individual and team's goals can be achieved successfully. This result supports previous investigations that point out that leader-team perceptual differences are detrimental to team performance (Gibson et al., 2009).

This study contributes to the literature because it provides a deeper understanding of the internal mechanism of multicultural

teams and their performance work. This will give companies the tools to face a growing need for internationalization more competitively.

The results indicate that managers must consider cultural sensitivity, adaptability, and cohesion as individual characteristics of the members in the recruitment and training programs in order to achieve a multicultural team's successful performance.

Training programs must include a formal development of adaptation skills to work with people from different cultures, and to strengthen cultural sensitivity in team members and team leaders to prepare them to manage differences originated by the diversity of perspectives, values, and experiences based on team members' culture.

Finally, this study makes it possible to identify a clear difference between the perceptions of leaders and the members about the factors that influence team performance. This is a call to pay more attention to the needs of both groups and to everything in the design and implementation of mechanisms to eliminate those differences in perceptions or to minimize them as much as it could be possible.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent from the participants was not required to participate in this study in accordance with the national legislation and the institutional requirements.

Author contributions

LG-R: Investigation, Writing – original draft, Writing – review & editing. AA-E: Investigation, Writing – original draft, Writing – review & editing. TA: Investigation, Writing – original draft, Writing – review & editing. MB-B: Investigation, Writing – original draft, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Appendix

Appendix I
Items and Results for CFA for each of the measures.

Variables	Items	Factor loadings	R^2	CFA indices
Cultural sensibility	1. I feel comfortable getting in contact with new cultures	0.787	0.620	**Satorra-Bentler** $\chi^2 = 48.77$ ($p = 0.03$; Degree of freedom = 32) **GFI** = 0.97 AGFI = 0.95 **CFI** = 0.97 **RMSEA** = 0.036 (0.012, 0.055)
	2. I try to get a better understanding of people from other cultures.	0.832	0.691	
	3. I try to build good relationships with colleagues from other cultures.	0.878	0.770	
	4. I try to understand the different norms, values and beliefs of different cultures.	0.862	0.743	
Adaptability (Team Adjustment)	1. Working with co-workers from different cultures	0.874	0.765	
	2. The intercultural context in your team	0.759	0.576	
	3. Working with different cultures at once.	0.836	0.699	
Cohesiveness	1. I feel that I am a part of the team	Removed	0.628	
	2. My team works together better than most teams on which I have worked	0.792	0.803	
	3. My teammates and I help each other better than most other teams on which I have worked	0.896	0.807	
	4. My teammates and I get along better than most other teams on which I have worked.	0.807		
Team Performance	1. My team meets or exceeds its goals	0.706	0.503	**Satorra-Bentler** $\chi^2 = 37.25$($p = 0.000$; Df = 9) (**GFI**) = 0.94 AGFI = 0.87 (**CFI**) = 0.92 (**RMSEA**) = 0.087 (0.059, 0.117)
	2. My team completes its tasks on time	0.711	0.506	
	3. My team makes sure that products and services meet or exceed quality standards	0.798	0.636	
	4. My team responds quickly when problems come up	0.811	0.657	
	5. My team is a productive team	0.857	0.735	
	6. My team successfully solves problems that slow down our work	0.779	0.606	
Collectivism	1.Group welfare is more important than individual rewards	0.878	0.770	**Satorra-Bentler** $\chi^2 = 205.42$ (p = 0.000; Df = 129) **GFI** = 0.93 **AGFI** = 0.91 **CFI** = 0.97 **RMSEA** = 0.038 (0.028, 0.047)
	2.Group success is more important than individual success	0.789.		
	3.Being accepted by members of your work group is very important	Removed		
	4.Employees should only pursue their goals after considering the welfare of the group	Removed	0.622	
	5.Managers should encourage group loyalty even if individual goals suffer	Removed		
	6.Individuals may be expected to give up their goals in order to benefit group success	Removed		
Masculinity	1. Meetings are usually run more effectively when they are chaired by a man	0.708	0.501	
	2. It is more important for men to have a professional career than it is for women to have a professional career.	0.853	0.728	
	3. Men usually solve problems with logical analysis; women usually solve problems with intuition	0.772	0.595	
	4. Solving organizational problems usually requires an active forcible approach, which is typical of men	0.920	0.846	
	5. It is preferable to have a man in high level position rather than a woman	0.896	0.803	
Power Distance	1. Managers should make most decisions without consulting subordinates	0.709	0.502	
	2.I t is frequently necessary for a manager to use authority and power when dealing with subordinates	0.578	0.334	
	3. Managers should seldom ask for the opinions of employees	0.668	0.446	
	4. Managers should avoid of-the-job social contacts with employees	0.811	0.658	
	5. Employees should *not* disagree with management decisions	0.756	0.572	
	6. Managers should not delegate important tasks to employees	0.753	0.568	
Uncertainty Avoid	1. It is important to have job requirements and instructions spelled out in detail so that employees always know what they are expected to do	0.583	0.340	
	2. Managers expect employees to closely follow instructions and procedures	0.712	0.507	
	3. Rules and regulations are important because they inform employees what the organization expects of them	0.836	0.699	
	4. Standard operating procedures are helpful to employees on the job	0.802	0.642	
	5. Instructions for operations are important for employees on the job.	0.789	0.622	

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Girls play basketball too? A study of the mechanisms of traditional social gender consciousness on female participation in contact leisure sports

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Background: With the development of women's sports, the mechanism of barriers to women's leisure sports participation has attracted extensive attention from the academic community. Despite its significant impact, there are few empirical studies on intra-personal barriers. Consequently, a structural equation model was established to examine the relationships between traditional social gender awareness, gender bias, gender stereotypes, and barriers to participation in leisure sports.

Methods: In this study, a total of 508 questionnaires were collected and analyzed using AMOS 24.0 software for structural equation modeling. After model testing, the relationships between the variables were examined.

Results: The results of the statistical analyses indicated that traditional gender awareness could serve as an antecedent variable for barriers to participation in leisure sports, and that gender stereotypes mediated the relationship between traditional gender awareness and barriers to participation in leisure sports. The study also concluded that gender bias could not mediate the relationship between traditional gender awareness and participation barriers in leisure sports, but gender bias and gender stereotypes could act as chain mediators in the process of the influence of traditional gender awareness on barriers to contact leisure sports.

Discussion: This study emphasizes the need for women to break down the traditional social gender awareness, gender bias, gender stereotypes, and other intra-personal barriers when engaging in leisure sport participation. According to this study, the promotion of sustained and healthy development of women's sport requires the breaking down of traditional social gender awareness education and the creation of more gender-inclusive sports policies and environments. The significance of the study is that by proposing and confirming the internal participation barriers to women's participation in contact leisure sports, it will lead to the ideological liberation of women's gender perspectives, so that they can break down the participation barriers to contact leisure sports, participate in sports activities, and enjoy the right to play sports on an equal footing.

KEYWORDS

Women's sports, traditional social gender consciousness, contact leisure sports, barriers to participation in leisure sports, gender bias, gender stereotypes

1 Introduction

Since the 21st century, the disparity in sports participation between men and women has gradually decreased, and equality has increased (Grabmüllerová, 2022). However, doubts about women's participation in contact leisure sports persist. Contact leisure sports involve physical contact and collisions between participants, chosen during leisure time (Mlv et al., 2023). When women participate in basketball, they often hear, "Girls play basketball too?" "How can a girl be good at basketball?" and other gender-biased comments, while women who participate in more contact sports such as Taekwondo and Shotokan face even more gender-biased comments. In a survey of primary and secondary school children, 45% reported witnessing gender discrimination in sports. One child said, "Girls cannot tackle in school; they have to play flag football because it's gentler" (Brown et al., 2011). The discourse around "male-dominated sports" significantly impacts women's willingness to participate in contact leisure sports, leading to severe gender inequality. This study aims to theoretically explain the mechanisms behind this social phenomenon by investigating women's participation in contact leisure sports. Enhancing equity in sports participation and creating a more inclusive environment for women will promote social progress and improvement.

Current research into the reasons for women's low participation in contact leisure sport covers the following areas: past experience, knowledge of the sport, and environmental influences, on the basis of which some studies have also suggested barriers from a broader perspective, including insufficient coaching expertise, lack of time and energy, lack of engaging sports activities, and negative sports experiences (Hull et al., 2021). Most of the barriers to sport participation that previous studies have focused on are objective factors, but few studies have considered and argued the causes of barriers to women's participation in sport from the perspectives of traditional gender consciousness, gender bias, and gender stereotypes, of which traditional gender consciousness refers to the fact that people's awareness and evaluation of different genders' social status, rights and responsibilities, and gender relations tend to be in the traditional gender culture (Ridgeway, 2011), gender bias refers to unfair attitudes towards a particular gender and its individual members, with negative, pre-judgmental characteristics (Myers, 1994), and gender stereotyping refers to a fixed, oversimplified, and stereotypical notion of how males and females should act, behave, and what roles they should play in society (Eagly et al., 2012). Most of the above studies are qualitative research on factors influencing participation in contact sports. They have not analyzed the mechanisms between traditional gender consciousness and participation in contact leisure sports. There is a lack of empirical research on the relationships between variables affecting women's participation in such sports. This study aims to provide insights and references for the positive development of women's sports through exploration and empirical research.

This study takes into account the fact that traditional gender consciousness may influence the formation of barriers to women's participation in contact leisure sports, and that gender bias and gender stereotypes may also play a role in the formation of barriers. Based on this, traditional gender consciousness will be selected as the independent variable, barriers to participation in leisure sports as the dependent variable, and gender bias and stereotypes as mediating variables. A structural equation model will be used to examine the path relationships among these four variables. The results of this study aim to provide references for research on the mechanisms influencing women's sports participation. Additionally, it seeks to break gender bias in women's sports participation and promote the equalization of ideas and concepts in sports participation.

2 Theoretical background and research model

2.1 Literature review

2.1.1 Barriers to participation in leisure sports

Barriers to participation in leisure sports refer to factors that limit or prevent participation in leisure sports activities aimed at relaxation, entertainment, fitness, stress relief, and excitement (Castro et al., 2021). The antecedents of barriers to participation in leisure sports are divided into three progressively advancing parts: intra-personal barriers, inter-personal barriers, and structural barriers. Intra-personal barriers refer to limitations formed by individual psychological and cognitive factors; inter-personal barriers refer to factors related to others, such as family attitudes and lack of companions; structural barriers refer to external factors like transportation, time, and money (Crawford et al., 1991). Research on structural barriers is relatively abundant. For example, married women exhibit high levels of structural barriers in indoor sports (Kim et al., 2020), and company employees face time and space limitations leading to barriers to participation in leisure sports (Eberth and Smith, 2010). Both intra-personal and inter-personal barriers have been studied in relation to different groups (Jackson and Scott, 2005; Son et al., 2009). Additionally, studies have shown a significant negative correlation between barriers to participation in leisure sports and active sports participation (Zhou et al., 2021). Empirical research has long confirmed that women face more barriers to participation in leisure sports than men (Jackson and Henderson, 1995), but previous studies have not specifically investigated barriers to participation for women participating in contact sports.

2.1.2 Traditional gender consciousness

Traditional gender consciousness refers to the perception and evaluation of social status, rights, responsibilities, and gender relations that lean towards traditional gender norms. In contrast, modern gender consciousness emphasizes gender equality and respect for individual feelings and rights (Ridgeway, 2011). Research on traditional gender consciousness focuses on social surveys and empirical studies. Some studies have shown that women's traditional gender consciousness significantly affects their ability to acquire and control resources (Parveen, 2007). Quantitative research has also indicated that the level of traditional gender consciousness may be an important factor influencing the work environment and professional distribution (Andersson et al., 2012). Previous studies have demonstrated that traditional gender consciousness significantly influences the participation of different genders in activities, deeply affecting individual behavior choices as a key cognitive factor.

2.1.3 Gender bias

The researcher defines gender bias as an unjust attitude towards a specific gender and its individual members, characterized by

negativity and preconception (Myers, 1994). Gender bias is divided into benign gender bias and hostile gender bias. Benign gender bias refers to restricting women to traditional roles by praising them for being gentle and kind, while hostile gender bias refers to showing hostility, rejection, and devaluation towards non-traditional women who defy traditional gender roles (Glick and Fiske, 1999, 2001, 2018). Previous studies have confirmed that unreasonable cultural backgrounds and values (Hofstede, 2001), educational environments (Pomerantz and Ruble, 1998), information dissemination (Ward, 2003), political systems (Lee et al., 2016), and economic factors (Bank W, 2012) all contribute to the formation of gender bias. The formation of gender bias significantly affects women's workplace and academic environments (Roper, 2019). It is also important to note that gender bias does not exist solely towards women; it also affects men (Helmer et al., 2017).

2.1.4 Gender stereotypes

Gender stereotypes refer to fixed, overly simplified, and generalized beliefs about how men and women should behave, perform, and what roles they should play in society (Eagly et al., 2012). According to social role theory, gender stereotypes stem from the different social role distributions of men and women in the family and workplace (Koenig and Eagly, 2014). Gender stereotypes not only describe typical differences between men and women but also dictate what men and women should be like and how they should behave in different areas of life (Nicholson et al., 2013). Due to differences in the ways society educates the two genders, the emphasis on different social roles and power positions increases with age, further amplifying the impact of gender stereotypes (Eagly and Wood, 2013).

2.2 Theoretical framework

The ABC model of attitudes reveals the relationship between affect, behavior tendencies and cognition in consumers. This model posits that attitudes are composed of three components: cognition, affect, and behavior. "Cognition" refers to the beliefs held about an attitude object; "affect" refers to the feelings and emotions towards the attitude object; and "behavior" refers to the intention or actual behavior towards the attitude object. In this model, "cognition" forms the basis for "affect" and "behavior"; "affect" acts as the core of attitude, serving as a mediator between "cognition" and "behavior," while "behavior" is the result of the interaction between "cognition" and "affect" (Rosenberg, 1960). Building on this model, Solomon and others explained the hierarchical effects, showing different relationships between affect, behavior and cognition in consumer decision-making under standard learning hierarchy, low-involvement hierarchy, and experiential hierarchy (Solomon et al., 2012).

2.3 Hypotheses deduction

The behavior of refusing to participate in contact leisure sports is caused by the individual's evaluation of women participating in contact leisure sports, and this evaluation stems from the individual's cognition of the event (Ellis and Dryden, 2007). From the perspective of gender roles, women who identify with the inherent gender differences between men and women and the traditional division of social roles for women will have a traditional gender consciousness, and according to the ABC Attitude Model, these women are more likely to have the "cognition" of defining contact leisure sports as "men's sports," thus contributing to the formation of the "behavior" of barriers to sports participation. According to the ABC Attitude Model, these women are more likely to develop the "cognition" that defines contact leisure sports as "male sports," thus contributing to the formation of "behaviors" that create barriers to sports participation. In addition to this, when individuals internalize traditional gender consciousness, they are more likely to develop an "affect" disposition to prejudice (Harmon-Jones and Mills, 2019), which can lead to gender bias, so it can be deduced that traditional gender consciousness may have a contributing effect on gender bias in contact leisure sport participation (Morais et al., 2022), as well as traditional societal gender consciousness that recognizes women's tenderness and caring qualities more than women's competence and assertiveness, which contributes to the formation of gender stereotypes of women (Eagly et al., 1992; Heilman, 2001). As a result, the following are our theories:

> *H1a*: Traditional social gender consciousness is positively correlated with barriers to participation in leisure sports.
>
> *H1b*: Traditional social gender consciousness is positively correlated with gender bias.
>
> *H1c*: Traditional social gender consciousness is positively correlated with gender stereotypes.

Studies show that doing sports might be hampered by gender prejudice, especially in youth. As a result, we speculate that gender prejudice in women's sports may also contribute to the establishment of barriers in contact leisure sports (Chalabaev et al., 2013). We also note that individuals are more likely to be influenced by gender stereotypes while making decisions about social learning. Applying this to women's sports, we can hypothesize that barriers on contact leisure sports may also come from the gender stereotypes held by female participants (Cunningham et al., 2023). Additionally, there are certain connections between gender bias and gender stereotypes. Gender bias focuses more on negative perceptions of a particular group, whereas gender stereotypes involve expectations about behaviors or characteristics based on gender roles, which can be either positive or negative. People tend to seek out, remember, and trust information that aligns with their existing beliefs or biases, while ignoring or questioning information that contradicts them (Oswald and Grosjean, 2004). Therefore, when people hold biases against a particular gender, they may be more likely to accept and reinforce information that aligns with these biases, thereby deepening their gender stereotypes. Therefore, we propose the following hypotheses:

> *H2a*: Gender bias is positively correlated with barriers to participation in leisure sports.
>
> *H2b*: Gender stereotypes is positively correlated with barriers to participation in leisure sports.
>
> *H3*: Gender bias is positively correlated with gender stereotypes.

Exploring how traditional social gender consciousness influences the occurrence mechanism of women's barriers to

participation in leisure sports, gender bias may serve as a mediating variable connecting the two. In the ABC attitude model, women, due to their own "cognitive" awareness of traditional social gender consciousness, develop negative "affective" gender biases, and ultimately avoid choosing "masculine" contact leisure sports out of fear of violating traditional gender norms. This phenomenon can easily lead to a decline in women's self-efficacy, thereby resulting in the deprivation of opportunities and hindrances to the development of women's rights to participate in sports (Messner, 2002). Besides gender bias possibly acting as a mediating variable between traditional social gender consciousness and the barriers on contact leisure sports, gender stereotypes may also serve as a mediating variable between the two. Gender differences arise from the internalization of gender identity defined by cultural expectations and ideals. For instance, boys learn from a young age that expressing emotions through crying is not a characteristic they should exhibit (Spence et al., 1975). Such socialization patterns lead men and women to form gender stereotypes after being shaped by their environment, resulting in differences in their preferences. Previous research indicates that gender temperament identification is related to sports participation, and the temperament identification of female participants is mostly hermaphroditic or male (Clément-Guillotin and Fontayne, 2011). Female sports participants, at the standard learning level, when making behavioral decisions about whether to engage in contact leisure sports, go through a decision-making process from the cognition of traditional social gender consciousness to the affective bias of gender stereotypes, ultimately leading to the behavioral choice of refusing to participate in contact leisure sports, forming a "cognition-affection-behavior" relationship chain (Rosenberg, 1960).

Further research into the distinctions and connections between gender bias and gender stereotypes reveals that gender bias is an unstable emotional attitude resulting from cognitive biases about gender roles and relationships, whereas gender stereotypes are more stable emotional attitudes. When people hold biases against a particular gender, they may selectively view and remember information that aligns with these biases to maintain cognitive consistency, which also leads to the reinforcement of gender stereotypes (Cheng et al., 2022). In summary, women with traditional social gender consciousness are more likely to form gender biases, which, when transformed into more stable gender stereotypes, can positively influence the formation of barriers to participation in leisure sports. Therefore, we propose the following hypotheses:

> *H4*: Gender bias mediates the effect of traditional social gender consciousness on barriers to participation in leisure sports.
>
> *H5*: Gender stereotypes mediate the effect of traditional social gender consciousness on barriers to participation in leisure sports.
>
> *H6*: Gender bias and gender stereotypes act as a chain mediation in the effect of traditional social gender consciousness on barriers to participation in leisure sports.

Consistent with the literature review and hypothesis deduction in the previous sections, a diagram illustrating the model of this study is drawn, as shown in Figures 1, 2.

3 Method

3.1 Measurement of variables

The survey participants are women of various age groups. The questionnaire consists of three parts: the introduction, demographics, and the main body. The introduction explains the purpose of the research, includes an informed consent form, and instructs participants to answer based on their actual situations and thoughts. The study assures that all responses will be kept confidential and used solely for research purposes. The demographic section includes measurements of gender, age, occupation, and family monthly income. The main body is divided into two parts. The first part measures three variables: gender stereotypes, traditional social gender consciousness, and gender bias. The second part specifically measures the barriers on engaging in leisure sports.

The main part of the questionnaire uses a 5-point Likert scale ("1 = Strongly Disagree," "2 = Disagree," "3 = Neutral," "4 = Agree," "5 = Strongly Agree"). Some indicators are positively coded, assigning values of 1, 2, 3, 4, and 5 to "Strongly Disagree," "Disagree," "Neutral," "Agree," and "Strongly Agree," respectively, while other indicators are reverse coded. Each variable in the questionnaire is evaluated by scholars participating in this research to assess the comprehensibility of the items. They suggest modifications and improvements to make the items clearer and more effective in measuring the intended variables. Subsequently, an expert panel reviews the items for any missing or redundant parts, conducts a semantic analysis of existing foreign questionnaires, and reduces the impact of different contexts on the content of the questionnaire items to ensure the results are more accurate and relevant (Table 1).

3.2 Data collection

After designing the questionnaire, 100 questionnaires were randomly distributed for a pretest and validation. Based on the feedback and pre-survey results, the questionnaire was adjusted and improved to finalize it.

From January 1 to February 20, 2024, a convenience sampling method was used, using the "Questionnaire Star" platform,[1] which is the most authoritative and widely used online survey platform in China, and has the characteristics of distributing and collecting large sample sizes, and can be used to conveniently distribute questionnaires to various WeChat friends and communities. The entire questionnaire is in Chinese for easy understanding and selection by participants. After collecting the questionnaires, a total of 508 were distributed. Invalid questionnaires, including those with short completion times, more than 70% of identical responses, and male participants, were excluded. Finally, 503 valid questionnaires from 21 provinces in China were obtained, with an effective rate of 99%. Since this study's subjects are limited to women, the questionnaire automatically ended if a participant selected male. The occupational distribution of female participants was: company employees (23.46%), students (18.09%), freelancers (6.96%), retirees (6.56%), government officials (6.36%),

1 https://www.wjx.cn/

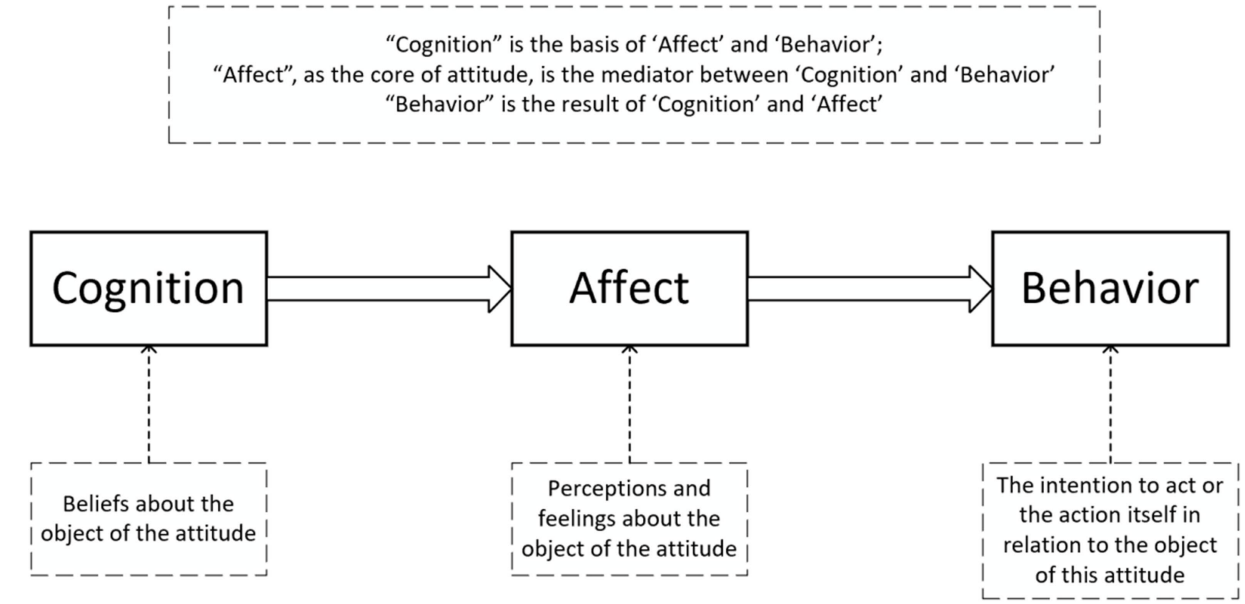

FIGURE 1
The ABC model of attitudes.

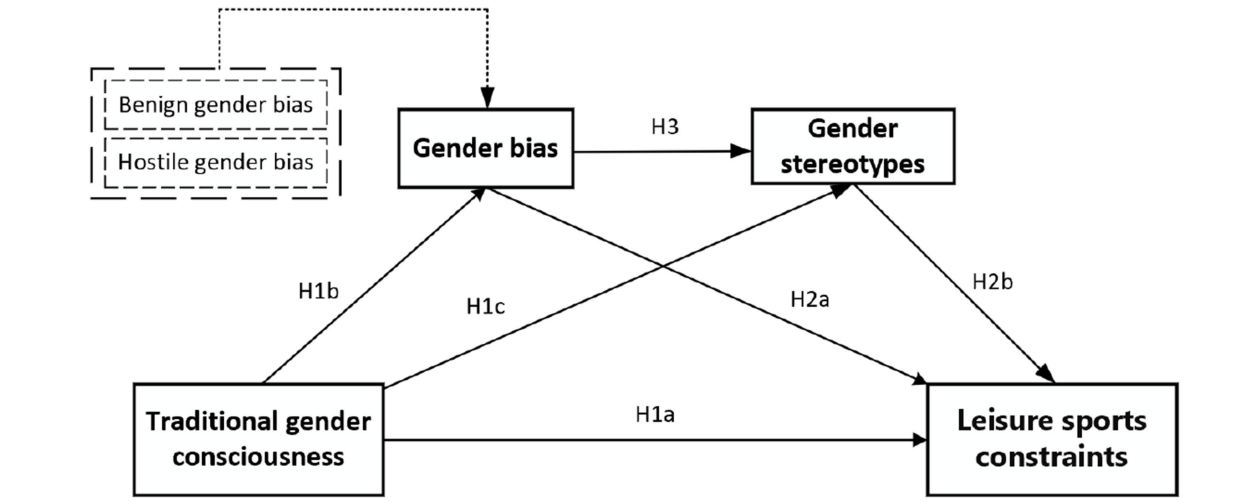

FIGURE 2
Conceptual mediation model and hypotheses.

self-employed (4.97%), corporate managers (4.77%), medical personnel (4.37%), service industry workers (3.98%), laborers (3.78%), researchers (3.78%), agricultural workers (3.38%), legal professionals (3.18%), teachers (2.19%), full-time homemakers (0.2%), and other occupations (3.98%) (Table 2).

3.3 Data results and analysis

3.3.1 Reliability and validity testing

Reliability analysis is used in research to identify the reliability of quantitative data. Internal consistency coefficient (Cronbach's α) is used to assess the consistency of each item in the questionnaire for the research variables. Generally, a value greater than 0.8 indicates ideal data reliability (Chin, 1998). In this study, the α value for the gender bias scale is 0.929, for the traditional social gender consciousness scale is 0.898, for the gender stereotype scale is 0.839, and for the barriers to participation in leisure sports scale is 0.897. All four scales have α values greater than 0.8, indicating high data reliability. In addition, the composite reliability (CR) values for each scale range from 0.839 to 0.93, indicating ideal reliability and demonstrating good reliability of the collected data.

Validity analysis mainly measures the structural validity of the scales, including convergent validity and discriminant validity. Overall structural validity first refers to the KMO value and Bartlett's test of sphericity. The KMO value for the total scale is

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TABLE 1 Variables and measurement items.

Variable names	Scale measurement items	References
Gender stereotypes	GS1 Women's and men's sports performance are equally good (−)	Fennema and Sherman (1976) and Shujuan (2015)
	GS2 I find it hard to believe that a woman could be a sports genius	
	GS3 I believe women are as suitable as men to study sports (−)	
	GS4 Women usually need men's help when encountering difficulties in studying sports	
	GS5 I believe women can solve problems in sports study just as men can (−)	
	GS6 I have more confidence in men's sports performance compared to women's	
	GS7 Women can perform as well as men in sports study (−)	
	GS8 Women who like sports make me feel a bit strange	
	GS9 Women also have good enough physical fitness to excel in sports (−)	
	GS10 Men are not inherently better than women in the field of sports (−)	
	GS11Combative sports belong to men, and sports that emphasize gracefulness belong to women	
Traditional gender consciousness	TGC1Men should prioritize their careers, while women should prioritize their families	Li and Fengping (2021)
	TGC2 Men are naturally more capable than women	
	TGC3 A good marriage is better than a good job	
	TGC4 During economic downturns, women employees should be laid off first	
	TGC5 Husbands and wives should equally share household chores (−)	
Gender bias	GB1Many women are actually seeking privileges under the guise of "equality," hoping for favorable employment policies	Glick and Fiske (1996)
	GB2 Most women always think they are innocent or victims of gender discrimination	
	GB3 Most women are ungrateful for everything men do for them	
	GB4 Women try to control men to gain power	
	GB5 Women often exaggerate their problems at work	
	GB6 Once a woman gets a man's commitment, she wants to keep him under control all the time	
	GB7 When women lose in fair competition with men, they always complain about gender discrimination	
	GB8 No matter how successful a man is, he is incomplete without a woman's love	
	GB9 Women should be cherished and protected by men	
	GB10 Every man should have a woman he admires	
	GB11 A good woman should be cherished by her man	
	GB12 Women often have a higher sense of morality than men	
	GB13 Men should be willing to sacrifice themselves to provide financial security for women	
	GB14 Women often have higher cultural awareness and better taste than men	
Barriers to participation in leisure sports	LSC1 I would not participate in contact sports because I am too shy	Crawford and Godbey (1987)
	LSC2 If my friends do not support me in participating in contact sports, I am less likely to participate	
	LSC3 I am unlikely to participate in contact sports because it makes me feel physically uncomfortable	
	LSC4 The people I know usually cannot participate in contact sports with me because they lack the necessary funds	
	LSC5 The people I know usually cannot participate in contact sports with me because they have too many family obligations	
	LSC6 The people I know usually cannot participate in contact sports with me because they do not know which sports they can join with me	
	LSC7 The people I know usually cannot participate in contact sports with me because they lack the necessary sports skills	
	LSC8 If I have committed to other matters, I am unlikely to participate in contact sports	
	LSC9 If I cannot find suitable contact sports to participate in, I am unlikely to participate	
	LSC10 If the facilities or venues required for contact sports are inconvenient, I am unlikely to participate	
	LSC11 If I do not have time, I am unlikely to participate in contact sports	

(−) Indicates reverse items.

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TABLE 2 Sample characterization statistics ($N = 503$).

Items	Amount	Frequency	Items	Amount	Frequency
Age			Current occupation		
≤18 years old	22	4.37%	Company employees	118	23.46%
18 ~ 25 years old	143	28.43%	Students	91	18.09%
26 ~ 30 years old	139	27.63%	Freelancers	35	6.96%
31 ~ 40 years old	54	10.74%	Retirees	33	6.56%
41 ~ 50 years old	58	11.53%	Government officials	32	6.36%
51 ~ 60 years old	61	12.13%	Self-employed	25	4.97%
Above 61 years old	26	5.17%	Corporate managers	24	4.77%
Gender			Medical personnel	22	4.37%
Female	503	100%	Service industry Workers	20	3.98%
Monthly household income (RMB)			Laborers	19	3.78%
≤5,000	86	17.1%	Researchers	19	3.78%
5,001 ~ 7,000	89	17.69%	Agricultural workers	8	3.38%
7,001 ~ 10,000	73	14.51%	Legal professionals	17	3.18%
10,001 ~ 13,000	137	27.24%	Teachers	16	2.19%
13,001 ~ 15,000	84	16.7%	Full-time homemakers	1	0.2%
≥15,001	34	6.76%	Other occupations	20	3.98%

0.974, and the *p*-value for Bartlett's test of sphericity is 0.000, which is less than 0.05, indicating that the data collected by the scale has basic structural validity and can be subjected to factor analysis. On this basis, confirmatory factor analysis was used to measure the loading values of each item on the factors. The criteria for factor loading greater than or equal to 0.7 and average variance extracted (AVE) greater than 0.5 were used for testing. After optimizing the original scales, the following results were obtained: the gender bias dimension was optimized through two rounds, retaining items GB1 to GB7; the traditional social gender consciousness dimension was optimized through one round, retaining items GC1 to GC4; the gender stereotype dimension was optimized through one round, retaining items GS3, GS5, GS7, and GS9. The factor loadings of the optimized scale items ranged from 0.706 to 0.847, and the AVE values were all greater than 0.5, indicating good convergent validity of the research scales (Anderson and Gerbing, 1988). Discriminant validity was tested mainly by comparing the square root of the AVE value with the correlation coefficients between variables. If the square root of the AVE value is greater than any correlation coefficient between a pair of variables, it is considered to have discriminant validity (Fornell and Larcker, 1981). The measurement results in Table 3 indicate that all correlation coefficients between variables are less than the square root of the AVE, demonstrating good discriminant validity of the scales (Table 4).

3.3.2 Structural model testing

To test the structural dimensions of traditional social gender consciousness, gender bias, social stereotypes, and barriers to participation in leisure sports, further confirmatory factor analysis was conducted on the scales of each dimension using AMOS 24.0 software, based on the results of the confirmatory factor analysis from the previous section.

In the validation model, the four variables of traditional social gender consciousness, gender bias, social stereotypes, and barriers to participation in leisure sports had the following indices: $X^2/df = 1.60$ (<3), RMSEA = 0.035 (<0.05), and GFI, AGFI, NFI, IFI, and CFI values of 0.941, 0.926, 0.985, 0.984, and 0.984, respectively, all of which are greater than 0.9. This indicates a good overall fit between the validation model and the sample data (Hu and Bentler, 1999). Further analysis of the data reveals that the standardized path coefficients of traditional social gender consciousness to gender bias, gender stereotypes, and barriers to participation in leisure sports are 0.956, −0.907, and 0.657, respectively (Table 5). These coefficients are significant at the 0.001 and 0.01 levels. Since the measurement items for gender stereotypes are all reverse-coded, this demonstrates that traditional social gender consciousness has a direct positive impact on gender bias, gender stereotypes, and barriers to participation in leisure sports. The standardized path coefficient from gender bias to gender stereotypes is 1.066 (Table 5), significant at the 0.001 level, indicating that gender bias has a direct positive impact on gender stereotypes. There is no significant positive impact of gender bias on barriers to participation in leisure sports. The standardized path coefficient from gender stereotypes to barriers to participation in leisure sports is 0.258 (Table 5), significant at the 0.001 level, indicating that gender stereotypes also have a direct positive impact on barriers to participation in leisure sports (Figure 3).

3.3.3 Mediation effect testing

To test the mediating effects of gender bias and gender stereotypes in the relationship between traditional social gender consciousness and barriers to participation in leisure sports, the method suggested by scholars was used (Jose, 2013). Bootstrap analysis was conducted with AMOS 24.0 software, setting the bootstrap sample size to 5,000 and the confidence level to 95%. Following the steps for testing specific effects, the total effects, direct effects, and indirect effects coefficients

TABLE 3 Confirmatory factor analysis and reliability and validity indicators.

Constructs	Factors	Mean	Factor loading	Reliability coefficient	CR	AVE	α value
Gender bias (GB)	GB1	3.28	0.794	0.921	0.930	0.655	0.929
	GB2	3.39	0.759	0.923			
	GB3	3.27	0.812	0.919			
	GB4	3.30	0.836	0.916			
	GB5	3.27	0.833	0.916			
	GB6	3.29	0.842	0.915			
	GB7	3.30	0.784	0.921			
Traditional gender consciousness (GC)	TGC1	3.22	0.847	0.86	0.898	0.688	0.898
	TGC2	3.25	0.810	0.876			
	TGC3	3.21	0.815	0.87			
	TGC4	3.06	0.845	0.866			
Gender stereotypes (GS)	GS3	3.94	0.721	0.808	0.839	0.567	0.839
	GS5	3.86	0.759	0.794			
	GS7	3.96	0.762	0.793			
	GS9	3.94	0.768	0.79			
Leisure sports constraints (PR)	LSC1	3.30	0.776	0.881	0.897	0.555	0.897
	LSC2	3.35	0.769	0.881			
	LSC3	3.50	0.732	0.884			
	LSC4	3.36	0.771	0.879			
	LSC5	3.51	0.738	0.883			
	LSC6	3.60	0.721	0.883			
	LSC7	3.58	0.706	0.885			

TABLE 4 Correlation coefficient and the square root of the average variance extraction.

	1	2	3	4
1 Traditional gender consciousness	**0.829**			
2 Gender bias	0.956***	**0.809**		
3 Gender stereotypes	0.112	0.199**	**0.753**	
4 Leisure sports constraints	0.875***	0.877***	0.371***	**0.745**

The bold values on the diagonal of the matrix are the square root of the Average Variance Extracted (AVE); the values below the diagonal are the correlation coefficients between the variables; *** indicates $p < 0.001$, ** indicates $p < 0.01$, * indicates $p < 0.05$.

between the variables were obtained, along with their corresponding confidence intervals and significance *p*-values (Macho and Ledermann, 2011). Combining Tables 5, 6, traditional social gender consciousness has a direct impact on barriers to participation in leisure sports (0.673). Traditional social gender consciousness indirectly affects barriers to participation in leisure sports through gender stereotypes (−0.18). Given the significant direct impact of traditional social gender consciousness on barriers to participation in leisure sports, it can be concluded that gender stereotypes partially mediate the relationship between traditional social gender consciousness and barriers to participation in leisure sports. Additionally, traditional social gender consciousness can indirectly influence barriers to participation in leisure sports through the two variables of gender bias and gender stereotypes (0.202), forming a chain mediating effect. Therefore, hypotheses H1a, H2a, H1b, H1c, H3, H5, and H6 are confirmed, while H2b and H4 are not supported.

4 General discussion

4.1 Theoretical contribution

The results from this study's investigation of women's participation in contact sports while rejecting female norms and being prone to teasing and rejection are consistent with previous research (Slater and Tiggemann, 2010). It is due to this social environment that these smart girls, although academically successful, usually only participate in one sport in a gender-specific manner (Schmalz and Kerstetter, 2006). This study explores the reasons behind such social phenomena, firstly, it proposes the role of traditional gender consciousness as an obstacle to women's participation in contact leisure sports, and then it digs deeper into the content of traditional gender cognition that brings about a sense of alienation from sports, which has been summarized by previous studies (Ennis, 2000; Griffin, 1984), and proves that

traditional gender consciousness of women will form an obstacle when they participate in "masculine" contact leisure sports. The empirical evidence that women's traditional social gender consciousness creates barriers to participation in "masculine" contact leisure sports contributes to a deeper understanding of the impact of social ideology on women's sport participation and provides a scientific basis for changing traditional gender perceptions. Secondly, based on the evidence that traditional gender consciousness positively influences gender bias and stereotypes (Eagly et al., 1992; Heilman, 2001), the study expands the scope of the research and the field of application to include women's participation in contact leisure sports.

Additionally, this study also confirmed that when women internalize traditional social gender awareness, they are prone to forming gender bias and gender stereotypes under the influence of cognitive consistency. The process from "cognition" to "emotion" has been empirically tested (Harmon-Jones and Mills, 2019). Meanwhile, the study examined that gender bias does not have a direct impact on the formation of barriers to participation in leisure sports for female participants, whereas gender stereotypes have a positive impact on the formation of such constraints. This is somewhat similar to previous research which indicated that adolescents' social learning choices are more influenced by gender stereotypes than by their own gender bias (Cunningham et al., 2023). The study also confirmed that the formation of gender bias deepens individuals' gender stereotypes, further clarifying the logical relationships among the variables (Oswald and Grosjean, 2004).

Ultimately, traditional social gender awareness affects individuals' perception of gender stereotypes, which in turn influences their perception of sports constraints (Nicholson et al., 2013). Gender stereotypes induced by traditional social gender awareness play a crucial mediating role in the sports domain, exacerbating individuals' perception of barriers to participation in leisure sports. Interestingly, gender bias does not directly influence the perception of barriers to participation in leisure sports in this process, but rather indirectly affects it through gender stereotypes. This chain mediation effect reveals the subtle and complex relationship between gender bias and gender stereotypes, and how this relationship affects individuals' perception and behavior in the sports environment (Cheng et al., 2022). The findings of this study are significant in explaining the phenomenon of gender differences in sports participation. Traditional social gender awareness, as a product of cultural traditions and socialization processes, has a profound impact on individuals' participation in sports activities. By revealing the mediating role of

TABLE 5 Structural model evaluation index and hypothesis test results.

Relationship hypothesis	Standardized path coefficients	*t* value	Test results
TGC → GB	0.956***	20.722	Support
TGC → GS	−0.907**	−2.811	Support
GB → GS	1.066***	3.22	Support
GB → LSC	0.198n.s.	1.129	Not supported
TGC → LSC	0.657***	3.732	Support
GS → LSC	0.258***	7.128	Support

*** Indicates $p < 0.001$, ** indicates $p < 0.05$, same below; n.s. indicates not significant.

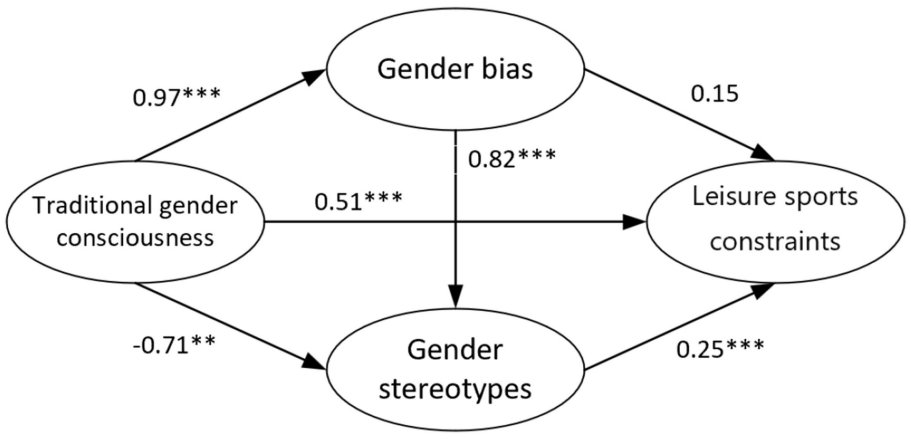

FIGURE 3
Structural model verification results.

TABLE 6 Mediation effect test: bootstrap analysis.

Relationship paths	Total effects	Indirect effect	Confidence interval (95%)	*p*-value
TGC → LSC	0.673	–	0.591 ~ 0.758	0.000
TGC → GB → GS → LSC	–	0.202	0.069 ~ 0.537	0.0001
TGC → GB → LSC	–	0.145	−0.284 ~ 0.455	0.371
TGC → GS → LSC	–	−0.18	−0.506 ~ −0.047	0.005
GB → GS → LSC	–	0.208	0.071 ~ 0.543	0.001

gender stereotypes under the influence of traditional gender awareness, this study enriches the understanding of gender differences in sports participation and provides a new perspective for addressing gender inequality issues.

Compared to existing literature, this study found that the impact path of gender bias on sports barriers differs from previous research. Traditional views suggest that gender bias directly influences individuals' perception of the sports environment (Smith and McCarthy, 2022). However, this study found that gender bias indirectly influences the perception of sports barriers by affecting gender stereotypes, which differs from traditional views. This indicates that the mechanism of gender bias may be more complex than previously thought, requiring further research to uncover its underlying mechanisms.

4.2 Practical implication

It can be seen that gender inequality has significant impacts in various fields. By conducting this study to clarify the formation mechanisms and principles of such phenomena, and then promoting gender equality awareness in the sports field through educational activities and media reports, traditional gender concepts in society can be changed, thereby reducing the barriers women face in participating in contact leisure sports. This study emphasizes the important role of gender stereotypes in influencing individuals' perception of barriers to participation in leisure sports. Therefore, interventions targeting gender stereotypes become crucial. Educational and promotional activities can help break gender stereotypes, enhance individuals' objective understanding of the sports environment, and thereby reduce the perception of barriers to participation in leisure sports. Since gender bias does not directly affect the perception of barriers to participation in leisure sports, merely reducing gender bias may not be sufficient to effectively increase women's willingness to participate in sports. On the contrary, it is necessary to combine interventions on gender stereotypes to better improve women's cognition and perception of the sports environment, thereby promoting their participation in sports.

Additionally, the research results indicate that the impact of traditional social gender awareness on individuals' participation in sports activities is profound and needs to be addressed through institutional and policy reforms. Establishing sports policies and environments that embrace gender diversity, breaking the shackles of traditional gender roles, and providing more opportunities and resources for sports participation will help promote gender-equal sports development. At the same time, advocating for education that breaks traditional social gender awareness, making teachers more aware of the existence of social gender awareness, and reasonably guiding students' traditional social gender awareness will help students make more confident and autonomous choices in accordance with their inner preferences in terms of subjects or careers. This study attempts to explain the mechanisms influencing the barriers to female participation in contact sports, verifying the existence of inter-relationships among the influencing factors, with the expectation of alerting stakeholders to and improving the current situation of female sports participation.

5 Limitations and future research

Although this study provides valuable contributions in revealing the causal relationship between traditional social gender awareness and barriers on women's participation in contact leisure sports, there are still some limitations that offer directions for future research. Firstly, the sample of this study may have geographical and cultural limitations, as different geographical and cultural contexts can have varying impacts on traditional social ideologies and gender concepts. This study was conducted on women in the Chinese region. Future studies may consider expanding the sample to cover different regions and cultural backgrounds in order to obtain more comprehensive and diverse results. Future research can consider expanding the sample to cover different regions and cultural backgrounds to obtain more comprehensive and diverse results. Secondly, the variables included in the study's predictive model are not comprehensive. Future research can consider adding other factors that may influence women's participation in contact sports to more accurately analyze the complexity and interactions of the influencing factors.

Additionally, this study mainly focuses on validating the theoretical model and provides some suggestions for addressing cognitive and social phenomena. However, the effectiveness and feasibility of practical impacts still need further research and validation. Future research can employ experimental design or longitudinal studies to evaluate the effectiveness and practical benefits of promoting gender equality awareness and improving sports environment. Lastly, this study uses a cross-sectional design, which can only establish correlations and not causations. Future research can adopt longitudinal study designs to track changes in women's participation in contact leisure sports and the evolution of influencing factors to better understand causality and dynamic processes.

In summary, future research can address the limitations of this study by expanding the sample, adding more comprehensive variables, evaluating the effectiveness of practical impacts, and adopting longitudinal study designs. These efforts will contribute to a deeper understanding of the barriers of traditional social gender awareness on women's participation in contact sports and provide more reliable bases for formulating more targeted interventions.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving humans were approved by Institutional Review Board of Henan University, Wushu Academy of Henan University. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

YH: Writing – review & editing, Writing – original draft, Validation, Software, Investigation, Formal analysis, Data curation, Conceptualization. GS: Writing – review & editing, Supervision, Methodology, Investigation, Formal analysis, Validation, Software. LW: Writing – review & editing, Investigation, Formal analysis, Conceptualization. HQ: Writing – review & editing, Supervision, Methodology, Data curation.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Understanding internationalization variance within a sport brand: case study of the Sparta Prague ice hockey and football clubs

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This article examines the internationalization of HC Sparta Prague (ice hockey) and AC Sparta Prague (football) by focusing on management decision-making. Using interviews with key personnel, it explores the varying levels of internationalization in these clubs, emphasizing their reliance on foreign players, the utility of foreign ownership, fan responses to foreign coaching, and marketing efforts toward foreigners. Football, being more global, is subject to 'Europeanization,' whereas ice hockey, centered in North America, is influenced by 'Americanization' and 'eventification.' Despite significant fan overlap and efforts at eventification, neither team has had success attracting Prague's tourists and neither currently views it as an important market, instead focusing on the domestic Czech market. Both clubs have undergone various phases of ownership, from foreign investors to a return to Czech owners, reflecting broader social and economic changes in the region following the fall of communism. The article further discusses the influence of historical and cultural contexts on the acceptance and resistance to globalization influences, emphasizing the importance of preserving national identity and selectively integrating global elements within the modernization of sports. The study proposes that, despite the Sparta brand identity being heavily influenced by internationalization, it remains largely a Czech brand, and cultural sporting identity currently plays a more crucial role in resisting globalization than sport brand identity in Eastern Europe.

KEYWORDS

Czech republic, eventification, figurational sociology, foreign ownership, globalization, sport migration

1 Introduction

In the summer of 2017, the AC Sparta Football team hired Italian coach Andrea Stramaccioni, who immediately brought 15 new foreign players into the team. The team's owner, Daniel Křetínský, a global energy magnate who also owns a partial stake in the Premier League's West Ham United, declared the hiring of a foreign coach to the Sparta team as the beginning of the "Internationalization" of the Sparta football team (AC Sparta Praha, 2017). It could be posited that the Sparta football team has long been considered an international team due to the presence of a Scottish coach as far back as 1912 (The Story of Johny Dick, 2014), however, this viewpoint was not shared by the team's fans. Following the announcement of Stramaccioni's hiring the news site idnes.cz conducted a survey of fans to gauge their

opinions on the appointment. The results were overwhelmingly unfavorable, with 5,263 voters expressing opposition and only 1,908 expressing support (iDNES.cz, 2017). Stramaccioni's tenure was short-lived, as he was dismissed after just 10 months due to disappointing results in both the domestic Czech football league and the UEFA Europa League. The internationalization project at Sparta was deemed a failure (Škuba, 2018), but at the same time, the process of globalization in the league appeared to be irreversible (Man, 2019).

2 Literature review

2.1 Cultural position

Football and ice hockey are far and away the primary sports in the Czech nation, with the largest numbers of active players, fan bases and media coverage. Czechoslovakia was playing these two games globally virtually from their inception, joining the governing body of football (FIFA) in 1904, and of ice hockey (IIHF) in 1908. AC Sparta Prague won the inaugural Mitropa Cup, a precursor to the UEFA Champions League, in 1927, and Czechoslovakia was one of the founding members of UEFA in 1954. Meanwhile, ice hockey has served to bolster national pride with 44 IIHF World Championship medals (13 gold), and 10 Olympic medals (1 gold) between Czechoslovakia and the Czech Republic. Ice hockey also served as a source of source of cultural resistance against the Soviet regime during the years of communist rule (Soares, 2007). Not only did the Czechoslovak national team win six IIHF World Championships during the communist regime from 1948 to 1989, several times defeating the USSR team, but the HC Sparta team also experienced international success winning the famed Spengler Cup twice (1962 and 1963) and obtained top three finishes in the Champions Hockey league or its predecessor, the European Hockey League, on six occasions between 1939 and 2017.

Despite Czechoslovakia's history of being an early adaptor to global sports flows, including welcoming foreigners who aided early success in both football and ice hockey (Crossan, 2024), modern Czechs and Czech sport have been more resistant to recent efforts of internationalization than many of their Western European counterparts. This resistance to globalization can also be framed as a slower commodification of globalization when examining Eastern Europe (Molnar, 2011; Szerovay et al., 2017). Western Europe underwent significant economic and political integration earlier than Eastern Europe, especially after World War II, with the formation of entities such as the European Union (EU). This integration has facilitated globalization or the flow of capital, labor, and cultural exchange, including sports. In contrast, Eastern Europe was under communist rule until the late 1980s and the early 1990s, which isolated it from the capitalist West and delayed its economic development and integration into the global market. The Czech Republic joined the EU in 2004, opening borders to trade and the free movement of labor. Several recent works help us understand that globalization indeed occurred in Eastern Europe during the Cold War, but the push and pull were not just going from the traditionally understood West–East and did not simply follow the obvious core, periphery, and semi-periphery flows of World Systems Theory (Mark et al., 2020; Mark and Betts, 2021). Figurational theory (Dunning et al., 2004; Elias, 1978), developed by sociologist Norbert Elias, can help explain why Eastern European sports have been more resistant to globalization than Western European sports. This theory emphasizes the importance of understanding social processes, historical development, and interdependencies among groups to analyze societal changes. In the context of sports globalization, we can examine factors such as foreign sport ownership, sport migration, and the pursuit of global fanbases.

2.2 Foreign sport ownership

The English Premier League (EPL) is a prime example of how Western European sports have embraced globalization. Many EPL clubs are owned by foreign investors, such as Manchester City (owned by the Abu Dhabi United Group) and Chelsea (formerly owned by Russian oligarch Roman Abramovich). These investments have brought substantial capital, enhancing the league's global appeal and competitive standards. However, fans have not always been in favor of foreign ownership (Coombs and Osborne, 2012; Williams and Hopkins, 2011), investment is commonly made for profit motives rather than the good of the club (Marin and Lee, 2020; Millward, 2011), and club history and tradition are frequently ignored (Berning and Maderer, 2020).

Foreign ownership is less prevalent in Eastern European clubs. Regulatory environments, economic instability, and political factors deter foreign investors (Rohde and Breuer, 2017). For instance, well-known Eastern European clubs such as CSKA Moscow or Dinamo Zagreb primarily remain under local or national ownership, limiting their financial capabilities and global reach. This is typical of many clubs in Eastern Europe, including the majority of Czech football and ice hockey teams. However, there are notable exceptions, such as Slavia Prague football, which was owned by the Chinese investment group Sinobo Group from 2015 to 2023. This foreign investment helped elevate the club's financial status and competitive edge within the domestic league and European competitions. Prior to this, Sparta ice hockey was owned by the Anschutz Entertainment Group, an American company that bought six European ice hockey clubs, in addition to already owning the NHL Los Angeles Kings. This ownership brought substantial capital and international exposure before they sold it back to Czech owners in 2012, however these foreign owners remain exceptions rather than the rule in Czech sports.

2.3 Player migration

Football leagues like the EPL, Spain's La Liga, and Italy's Serie A search for and attract top talent from every corner of the world due to their financial power and global visibility. These high-profile players bring not only quality, but also global marketability to these leagues (Darby, 2013). Similarly, the NHL attracts top ice hockey players from the countries of Finland, Russia, Sweden, and the Czech Republic, with stars like Russian Alexander Ovechkin and Czech David Pastrňák again boosting the league's competitive standard and international appeal (Crossan, 2020). The EPL is currently composed of 64% non-English players from 68 nations, while the NHL has 28% foreign players from 18 nations, illustrating that ice hockey has a much smaller global reach.

Eastern European leagues have struggled to attract and retain top talent. Instead, they often serve as feeder leagues, with talented Eastern

European players moving to the West for better opportunities and higher wages (Rohde and Breuer, 2017). For example, Croatian star Luka Modrić was developed by Dinamo Zagreb before being sold to Tottenham Hotspur and eventually to Real Madrid, illustrating what many have termed talent drain (Agergaard, 2017; Marques, 2024).

2.4 Global fandom

European football clubs actively pursue global fanbases through various strategies including international tours, social media engagement, and broadcasting deals (Ekinci et al., 2022; McCarthy et al., 2022; Sullivan et al., 2022). For instance, Manchester United is estimated to have 1.1 billion fans worldwide, while FC Barcelona has over 500 million. Manchester United has even gone so far as to establish a museum in China to attract and engage fans (Yang, 2017). Many clubs regularly play preseason friendly matches on foreign soil, such as in the United States and Asia, to build their global brands. Additionally, they market foreign players back to their home nations to enhance their international appeal (Chiba, 2012; Madichie, 2009). Fans from around the world travel to attend games and take stadium tours, generating significant revenues from merchandise sales and media rights. Similarly, the NHL seeks to build a global fanbase by hosting games in Europe, such as the NHL Global Series, where teams play regular-season games in cities like Stockholm and Prague. They also broadcast their international stars, such as Ovechkin, back to Russia and Pastrňák back to the Czech Republic, significantly boosting their marketability in these countries. In 2018 the NHL began to strategically schedule certain games in the mid-afternoon in North America, ensuring that European viewers could watch them during primetime, thereby increasing the league's international viewership and engagement (Berglund, 2020).

In contrast, Czech football and ice hockey clubs have primarily localized fanbases with limited global outreach (Crossan and Ruda, 2019). Economic constraints, less competitive leagues, and late internationalization efforts hinder their ability to market themselves globally. While Sparta football and Sparta ice hockey have strong local followings, their global presence is minimal compared to the top Western European football clubs or the NHL. This is despite significant numbers of international players, and Prague being a popular tourist destination. These clubs play only a few matches abroad when they can advance into European leagues and do not engage in extensive international marketing campaigns. Efforts to attract foreign fans or revenue through international broadcasting deals are limited, making it challenging to build substantial global fanbases.

2.5 Sparta brand and history

The Sparta Prague Football Club (AC Sparta), founded in 1893, quickly became a powerhouse in both domestic and European football, amassing numerous league titles and continental honors. Simultaneously, the Sparta Prague Ice Hockey Club (HC Sparta), established in 1903, built its own legacy of triumph, securing multiple national championships and international trophies. During the communist era from 1948 to 1989, the Sparta brand operated as a unified entity encompassing football and ice hockey, as well as various other sports, such as athletics and handball. Each sport was managed independently yet under the same Sparta umbrella. With the collapse of communism in Czechoslovakia in 1989, the clubs transitioned to privatized, independently managed entities while retaining their brand identity.

Sparta hockey became a joint-stock company in 1995 and was initially acquired by Czech auto racer Antonín Charouz, who later sold a controlling stake to the American investment group Anschutz Properties in 1999. As previously mentioned, Anschutz also owned stakes in the NHL's Los Angeles Kings as well as the MLS's LA Galaxy. Since 2019, Sparta hockey has been owned by the Kaprain Investment Group, with Czech investor Karel Pražák holding 100% of the stock. Similarly, Sparta football was privatized in 1992 when businessman Petr Mach purchased it from the state. It changed hands several times before coming under the ownership of J&T Private Equity Group in 2004, with Czech billionaire Daniel Křetínský as the primary investor and club president. Křetínský is also a major shareholder and director of the Premier League's West Ham United. J&T is a joint Czech and Slovak investment group.

Despite this historical unity and shared name, Sparta hockey and Sparta football now operate as separate corporate entities. Each club focuses on maximizing fan engagement, cultivating sponsorship relationships, and leveraging broadcasting revenues within a limited yet segmented Czech market. The ACS Sparta football and HCS Sparta ice hockey teams have been central to national pride for many in the Czechoslovak and Czech populations, producing a high percentage of national team players and serving as launching pads for athletes to reach elite international leagues. Additionally, they are consistently ranked at the top of their respective national leagues.

Both Sparta clubs have ventured into international markets through foreign ownership but have since returned to Czech hands. Both teams import foreign players in order to be competitive in both domestic and international competitions. Efforts to build a significant global fanbase are still in progress. Despite having robust local followings, their international presence remains modest compared to that of the top Western European clubs. The fanbase intersection is notable, with one-third of Sparta hockey season ticket holders also holding football season tickets, and one-fifth of football season ticket holders attending hockey games.

3 Research objective

Globalization brings both benefits and challenges to cultures and sports teams. While sports have the unique ability to unite people across cultural divides, they also accentuate and amplify cultural differences. The Czech nation, with its distinct and evolving culture, strives for both preservation and uniqueness, a dynamic also reflected in its primary sports: ice hockey and football. These two sports possess both global and local cultures, and significance. Consequently, cultural diversity has become an increasingly important topic in the world of sports, with globalization—or internationalization—sometimes being commodified and at other times resisted to preserve and advance specific sporting cultures.

Globalization in sports has frequently been framed through the lenses of Europeanization (Brand et al., 2013; Weber, 2021), Americanization (Carlsson et al., 2022; Jackson, 1994), and eventification (Batuev and Robinson, 2018; Richelieu and Webb, 2021). Europeanization manifests in the dominance of European

countries in top-tier football leagues and the governance of global football by organizations such as FIFA, headquartered in Zurich. This phenomenon positions Europe as the central hub for football excellence and administrative control, influencing the management of sports worldwide. Americanization, exemplified by the global proliferation of McDonald's and American sports commodities such as the NHL, signifies the influence of American cultural and business practices worldwide. The NHL exemplifies Americanization by underscoring the prioritization of spectacle over pure sport performance. The NHL, with its predominantly North American teams, illustrates how American sports leagues and their marketing strategies, including early games for European audiences, have shaped global sports consumption. This trend is evident in the NHL's emphasis on entertainment value, such as the extravagant All-Star Games and the outdoor Winter Classic, which transform games into grand spectacles. Furthermore, expansion of the NHL into non-traditional ice hockey markets, like Las Vegas with the Golden Knights and Arizona with the Coyotes, illustrates the league's strategy to embed the sport within broader entertainment cultures, prioritizing market proliferation and audience engagement over traditional ice hockey strongholds (Crossan, 2020). Lidström and Carlsson (2022) outline how the predominance of the NHL lead to the Americanization and eventification of ice hockey in Europe. Eventification describes the transformation of sports into spectacular events to take advantage of larger audiences than those traditionally drawn to a particular sport or team (Richelieu and Webb, 2021). In football, this is seen in the grandeur of tournaments such as the FIFA World Cup and the UEFA Champions League, while in ice hockey, it is evident in the NHL's Winter Classic and the Champions Hockey League. Both sports leverage eventification to enhance their global appeal, drawing fans into highly marketed celebratory experiences. Yet researchers have also found limits to the eventification of football, attributed primarily to preservation of cultural traditions (Carlsson and Backman, 2023; Hognestad, 2013).

This article explores various perspectives on internationalization within Czech culture, focusing on two sports under one brand: Sparta ice hockey and Sparta football. By examining adaptation, resistance, and the sporting context, this study highlights the disparity in the role of globalization between these two Sparta teams. Using secondary data and qualitative interviews, we seek to investigate the similarities and differences within three domains of globalization: migration, ownership, and fandom for Sparta ice hockey and Sparta football.

4 Methods

This study employed a qualitative approach through semi-structured interviews with key personnel from two prominent sports clubs in Prague, Czech Republic: the AC Sparta Prague football club and the HC Sparta Prague ice hockey club. The aim was to explore the variance in internationalization strategies between these two clubs under the shared brand identity of Sparta Prague. The sample consisted of six respondents, three from each club, strategically selected to provide a comprehensive view of the clubs' internationalization processes. The interviewees included top management, marketing directors, and sports managers responsible for strategic direction, communication strategies, and recruitment and integration of foreign players and coaches.

The interviews were structured to address four main areas of internationalization within the clubs: the recruitment, selection, and integration of foreign players; the presence and impact of foreign coaches and support staff; strategies for engaging both local and international fans; and the implications of foreign ownership on club strategies and operations. Each interview lasted approximately one hour and was conducted either in person or via video conferencing. Interviews were recorded with the consent of the participants to ensure accurate transcription and analysis.

The collected data were analyzed using thematic analysis, which involved several stages: transcription of the interviews, coding to identify significant statements and themes, grouping codes into broader themes, and interpreting these themes in the context of the research objectives. Codes were derived through an inductive approach, where patterns and recurring concepts were identified directly from the data rather than being imposed by pre-existing theories. To ensure the consistency and accuracy of the coding process, two independent researchers coded a subset of the data and compared their results. Inter-rater reliability was ensured through regular discussions and consensus meetings between coders to resolve any discrepancies and refine the coding framework. Measures to ensure the reliability and validity of the study included triangulation, member checking, and peer review. Triangulation involved comparing data from different respondents to identify common patterns and discrepancies, member checking entailed sharing preliminary findings with respondents for feedback, and peer review involved independent researchers reviewing the analysis process.

By employing this methodology, this study aims to provide a nuanced understanding of how internationalization is manifested and managed within the AC and HC Sparta Prague clubs. It highlights the unique challenges and strategies associated with each sport under the shared brand identity of Sparta Prague, offering insights into the complexities of balancing local loyalty with globalization pressures and opportunities.

5 Results

> *"Sparta exists in an international environment, not only through our participation in European cups but also through the fact that the player market is free, and Sparta competes with other clubs around the world. We compete for players, for talent to be competitive, for sponsors, for fans, and our competition is global."—ACS*

> *"We approach internationalization only in terms of strengthening our squad so that we can meet the highest goals. We expect to reach the finals every year. We expect to play in the Champions Hockey League every year. We need the Czech nation to watch us play all three series [EHL regular season, EHL playoffs and Champions Hockey League] and we need foreign players to do that."—HCS*

5.1 Player migration strategies

From Figure 1, it is evident that while the Czech Republic is stronger on a global level in the sport of ice hockey, the Sparta football

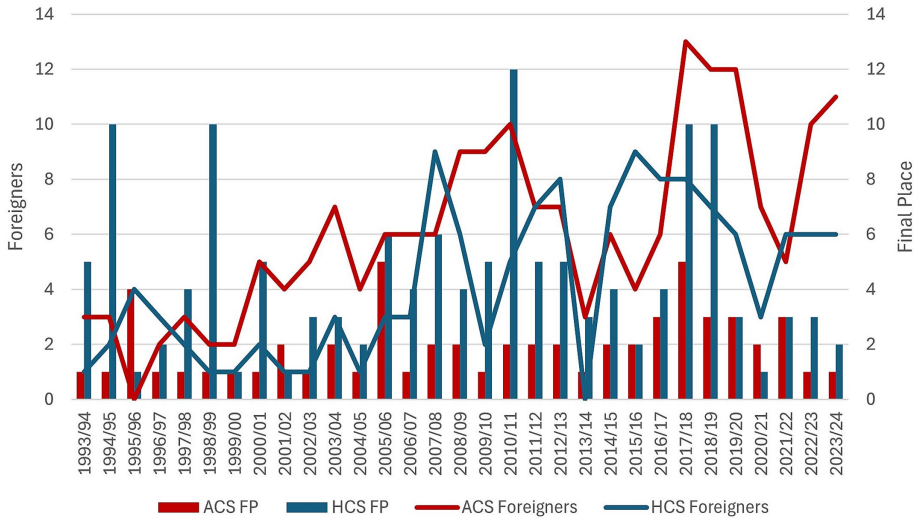

FIGURE 1
Final place and foreigners used. FP = Final Place which is indicated on the right axis.

team has consistently outperformed the Sparta ice hockey team, with only three seasons in which ice hockey finished better. Both teams have steadily increased in their usage of foreigners over the 31 years represented here, but again Sparta football has consistently used more foreigners than Sparta ice hockey. This is also significant in light of the differences in roster sizes. The EHL allows teams to have 22 skaters on their roster for a game, but the average roster size for the 31 years examined was 35 players per team, with 13.5% of all roster spots being taken by foreigners. In contrast, the Fortuna football league allows teams to have 25 players on their roster for the season, of which 18 can be selected per game. For the 31 years examined, 14.5% of football roster spots were occupied by foreigners. Both Sparta football and ice hockey have consistently been at the top of their leagues in performance but also in usage of foreign players.

Both teams repeatedly stated that they bring in foreign players in order to be competitive in both the domestic league and international competitions. Specifically, they choose foreign players, whether in ice hockey or football, because they have a specific role, or post, on the team to fill, and there are currently no Czech players available to fill those roles. Both teams noted that the very best Czech players are playing outside the country, either in the NHL in the case of ice hockey, or in more prestigious leagues such as those in Western Europe in the case of football. Thus, these best Czech players are not currently available to HC or AC Sparta. Both teams stated they are more likely to look to foreign players when they know coming into the season that they will be playing in the UEFA Champions League (football) or the Champions Hockey League. This level of international play demands of them not only higher quality players, but more experienced players. And this level of player experience is a critical dividing point between ice hockey and football. Additionally, HC Sparta emphasized that when the team heads into the playoffs and needs to strengthen their roster foreign players take on increased importance. This is only possible in ice hockey as their transfer window is open longer and the nature of the sport is such that the playoffs essentially re-start every team from zero in terms of points. In football, playoff points are added to the points already earned during the season. That said, team managers emphasized the need at this stage of the season to not disrupt team chemistry, which is riskier in the employment of foreign players.

The average age of HC Sparta's foreign imports over the last five seasons was 30, while AC Sparta had an average import age of 24. This data alone tells us much about both the differing philosophies of foreign player usage and the global positions of these two sports in the Czech nation.

> *"We, as a club, are not a final destination. We are the club which brings in a player, raises his value, develops him, and sends him on. We actually want players who want to move away from us, who want in those 2-3 years to do something for us, they improve, their value goes up and they go to a better club for better money or better competition. This is the mentality that we must have. If we should become a destination for them, for the players, that they do not want to move on from us, that changes the situation completely, but we are not a destination. We never will be."—ACS*

> *"The best Czech players are already playing in the NHL, and we, along with the other extraleague teams are all fighting for the rest of them. We have an established system, based on the table value of players, where basically if a Czech player is not under contract, then he is the property of his club and it is very difficult to negotiate with other clubs. So most of the time it is easier to bring in a foreign player, and most of the players who come to the Czech Republic, or the one we want, have already come through some European leagues, if not the NHL, and have some experience."—HCS*

These two quotes express the differing philosophies of Sparta football and ice hockey, with each philosophy rooted in the global position of the sport for the nation. Czech ice hockey consistently ranks among the top six in the world, thus contributing 30–80 players to the NHL each year over the last 25 years. Consequently, the EHL not only produces excellent young ice hockey players but also serves as a very competitive league as players move past their prime. As ice

hockey is contested at an elite level in far fewer countries than football, the competitive balance of top European ice hockey leagues is very high, with many teams able to win the title in any given year. As each team has potential to produce young players who could reach the lucrative NHL, the league has established a system to reward teams for developing these valuable assets. This means young, talented Czech ice hockey players change hands infrequently inside the nation, and to field a competitive team one must bring in experienced, already developed foreigners. This system is exacerbated by the NHL's draft system and Canada's extensive junior league system (CHL), to which Czech is consistently the biggest contributor and serves as a feeder league to the NHL (Crossan, 2024). Thus, HC Sparta is pushed to internationalize, primarily in terms of player migration, simply to remain competitive within the domestic EHL.

In contrast, AC Sparta, shown in Figure 1, consistently finishes in the top three positions in the domestic Fortuna League (FL). The top three teams in the league have not only been consistently occupied by AC Sparta, SK Slavia, and FC Viktoria Plzen, but very few Czech players have made it out to the Big 5[1] without going through these three teams (Crossan and Riedl, 2023). Thus, AC Sparta seeks to win the domestic FL each year, but does so knowing that their players, both Czech and foreign, are looking to keep developing and moving up the European football pyramid.

Thus, the dynamics of global positioning and player migration not only affect the typology of foreigners coming into each Sparta team but also the destinations where they land after taking off the Sparta jersey. Tables 1, 2 present the foreign imports and exports of both Sparta franchises over the last five seasons.

As shown in Table 1, the transfer to AC Sparta was an improvement for all 14 players in terms of the level of play or playing time at the time of transfer. Some of the sending clubs are at AC Sparta's level (Sassuolo, KRC Genk), while some have a higher level (Fiorentina), but the players who transferred from those clubs to ACS typically did not have stable positions in the team. When we compare Player Value at the time of transfer and current player value, out of 14 foreigners who transferred to ACS, only three have lower values now. Therefore, we can conclude that three out of 14 did not improve as a result of their time representing AC Sparta.

Of the 19 hockey players who transferred into HC Sparta (imports), six players improved their situation, seven transferred from comparable clubs, and six took a step down. For those whose situation worsened, this was due to the end of their engagement in the NHL, AHL, or KHL. In all cases, the players had lost their status in their previous clubs, and in five cases, they were middle-aged or older players, with only Ostap Safin returning from the AHL at age 23. The six players who improved their situation by coming to HCS came from the German, Italian, or Czech leagues. Of particular interest are the two Slovak players Sukeľ and Hudáček who came to HCS from the KHL. In both cases, they transferred after their teams left the KHL, either for financial reasons or as a protest of Russia's invasion of Ukraine. Information on the costs incurred for ice hockey transfers to the club is not publicly accessible; therefore, we did not evaluate increases or decreases in ice hockey player values.

In terms of exports, we do not see quite the difference in average age that we saw in imports, with ACS exporting players on average at age 27 and HCS at 29. However, the differing global positions of these two sports can be specially highlighted here, with football exports going to 17 different nations, including seven to Turkey, while sending only Tomáš Čvančara and Adam Hložek to teams in the Big Five. Conversely, HCS exports are exclusively to the handful of ice hockey power nations or within the Czech league itself.

Players who transferred out of ACS are more difficult to generalize than those imported. The most common departures where players who did not catch on in Sparta. These players were either released for free or for less than they were acquired. However, the transfers of Hancko, Hložek, Čvančara and more recently Krejčí put the overall balance into clear positive numbers. Significantly, the majority of players who have been sold for larger sums are all Czech players rather than foreigners. This was confirmed in the AC Sparta interviews, where the respondent said that foreigners are purchased primarily to fill current competitive needs, while Czechs are purchased for their development potential. Despite AC Sparta's ability to remain at the top of the domestic league, the majority of their foreign transfers from the last five seasons have failed economically or sportingly. The few exceptions, such as the transfer of Slovak player David Hancko to Feyenoord for 8.3 million, after acquiring him for 2.5 million, have proven sufficient to keep ACS overall financial balance positive. Interestingly, currently, Hancko is valued at 35 m, so one can question whether AC Sparta let him go too soon.

Table 2 lists 27 ice hockey players who left the HCS club, which is similar to the 29 football players who went out in the top half of the table. During the five seasons examined, 20 foreign skaters left the club, and only three transferred to a higher-quality league, specifically the KHL. The remaining 17 players mainly transferred within the Czech league to lower-level clubs (4 players), to lower quality leagues in Europe (5 players) or returned to their home leagues (8 players). Characteristically, Sparta tends to bring in older, experienced combative foreigners and thus these players at the end of their careers are unlikely to move up to higher level leagues. In total, seven Czech players left HC Sparta for foreign contracts between the 2019/20 and 2023/24 seasons. Two of these players moved to the NHL, one to the KHL, and Smejkal's move to the Finnish league can also be considered as an improvement for the player due to a highly lucrative contract. This transfer was particularly lucrative for the player himself. The remaining three transferred to clubs of similar quality in prominent ice hockey nations.

5.2 Foreign coaches

Senior executives provide distinctly different responses to the question of hiring foreign coaches. For the executive from AC Sparta, it was *"crucial to bring someone from outside the Czech market to disrupt the established order."* By contrast, the top manager of HCS opposed hiring a foreign coach, citing language barriers and the potential for communication misunderstandings with certain players.

Interestingly, the language barrier, or rather its elimination, is one of the reasons why ACS explicitly prefers hiring foreign coaches for its coaching staff. Not only is there a foreign coach currently leading the A team, replacing another foreign coach, but the B team, playing in the second league, also intentionally includes several

1 England's Premier League, Germany's Bundesliga, Spain's La Liga, Italy's Serie A and France's Ligue 1.

TABLE 1 Sparta foreign player imports 2019/20 to 2023/24.

Player name	Nationality	Age acquired	From team	Season
ACS Sparta Football				
Andreas Vindheim	Norway	23	Malmö FF (SWE)	2019/20
Martin Minchev	Bulgaria	19	Cherno More (BUL)	2020/21
Dominik Holec	Slovakia	26	MŠK Žilina (SVK)	2020/21
Dávid Hancko	Slovakia	23	Fiorentina (ITA)	2021/22
Casper Højer	Denmark	26	Aarhus GF (DEN)	2021/22
Kaan Kairinen	Finland	24	Lillestrøm (NOR)	2022/23
Lukáš Haraslín	Slovakia	26	Sassuolo (ITA)	2022/23
Asger Sörensen	Denmark	26	1.FC Nuremberg (GER)	2022/23
Qazim Laci	Albania	26	AC Ajaccio (FRA)	2022/23
Markus Solbakken	Norway	23	Viking (NOR)	2023/24
Angelo Preciado	Ecuador	25	KRC Genk (BEL)	2023/24
James Gomez	Gambia	21	AC Horsens (DEN)	2023/24
Indrit Tuci	Albania	23	NK Lokomotiva (HRV)	2023/24
Victor Olatunji	Nigeria	23	FC Slovan Liberec	2023/24
HC Sparta Ice Hockey				
Milan Jurčina	Slovakia	36	Nürnberg Ice Tigers (GER)	2019/20
Ville Koistinen	Finland	37	ERC Ingolstadt (GER)	2019/20
Matúš Sukeľ	Slovakia	23	HC Slovan Bratislava (SVK)	2019/20
Maxim Žukov	Russia	22	HC Dukla Jihlava	2021/22
Maxim Matuškin	Sweden/Russia	30	Admiral Vladivostok (KHL)	2021/22
Július Hudáček	Slovakia	33	Dinamo Riga (KHL)	2021/22
Genadij Stoljarov	Russia	35	Meran (ITA)	2021/22
Oleg Pogorišnyj	Russia	27	Jugra Chanty-Mansijsk (RUS)	2021/22
Erik Thorell	Sweden	29	SV Zug (SUI)	2021/22
Dominik Graňák	Slovakia / Czechia	39	HC Plzeň	2022/23
Olavi Vauhkonen	Finland	33	SaiPa (FIN)	2022/23
Stefan Warg	Sweden	32	KooKoo (FIN)	2022/23
Gustaf Thorell	Sweden	33	HC Škoda Plzeň	2022/23
Ostap Safin	Czechia /Russia	23	Bakersfield Condors (AHL)	2022/23
Zack Kassian	Canada	33	Arizona Coyotes (NHL)	2023/24
Nicolas Beaudin	Canada	24	Laval Rockets (AHL)	2023/24
Aaron Irving	Canada	27	HC Davos (CHE)	2023/24
Jani Lajunen	Finland	33	Örebro HK (SWE)	2023/24
Josh Kestner	USA	29	Rukko Rauma (FIN)	2023/24

Teams without a country are Czech. For ice hockey, we chose to list the international league that the team plays in rather than the country.

foreigners in its coaching staff. *"This forces young players to communicate in English, and become accustomed to working in an international environment with players and coaches of various nationalities. It excellently prepares them for their future career steps."—ACS.*

Nevertheless, the AC Sparta executive emphasized that ACS is a Czech club and wants to profile itself as such. *"From the beginning, we wanted a combination of Czechs and foreign coaches in the coaching staff, ideally ensuring that there is always a Czech in every position. This way, the Czech coach remains when the foreign staff leaves. There is some interaction, the Czech coach acquires the foreign coach's know-how, and we retain this knowledge locally."-ACS.*

The statement from ACS's top manager aligns with the club's long-term concept. The club's management is convinced that having a foreign coach contributes to its diversity and cultural enrichment. Players and staff can learn different ways of thinking and working in a multicultural environment, which can be highly valuable in preparing players for their international careers. Thus, the presence of a foreign coach can increase player motivation and the overall professionalism of the club.

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TABLE 2 Sparta player exports 2019/20 to 2023/24.

Player name	Nationality	Age sold	To team	Season
AC Sparta Football				
Eldar Civic	Bosnia	23	Ferencváros (HUN)	2019/20
Bogdan Vătăjelu	Romania	26	CS U Craiova (ROM)	2019/20
Gol-Gol Mebrahtu	Australia	28	Puskás AFC (HUN)	2019/20
Zinedin Mustenaganic	Bosnia	21	FK Sarajevo (BOS)	2020/21
Tal Ben Haim	Israel	30	M. Tel Aviv (ISR)	2020/21
Martin Frýdek	Czechia	28	FC Luzern (CH)	2020/21
Costa Nhamoinesu	Zimbabwe	34	Kerala Blasters (IND)	2020/21
Georges Mandjeck	Cameroon	31	Waasland-Beveren (BEL)	2020/21
Semih Kaya	Turkey	29	Malatyaspor (TUR)	2020/21
Guélor Kanga	Gabon	29	Red Star Belgrade (SRB)	2020/21
Uros Radakovic	Serbia	27	Arsenal Tula (RUS)	2021/22
Benjamin Tetteh	Ghana	24	Malatyaspor (TUR)	2021/22
David Moberg Karlsson	Sweden	27	Urawa Reds (JAP)	2021/22
Libor Kozák	Czechia	32	Puskás AFC (HUN)	2021/22
Srdjan Plavšić	Serbia	25	Slavia Praha	2021/22
Lukáš Štětina	Slovakia	30	Spartak Trnava (SVK)	2022/23
Adam Hložek	Czechia	19	Bayer Leverkusen (GER)	2022/23
Dávid Hancko	Slovakia	24	Feyenord (NED)	2022/23
Michal Sáček	Czechia	26	Jagiellonia (POL)	2022/23
Matěj Pulkrab	Czechia	25	SV Saundhausen (GER)	2022/23
Matěj Hanousek	Czechia	30	Ankaragücü (TUR)	2023/24
Florin Niță	Romania	36	Gaziantep (TUR)	2023/24
Tomáš Čvančara	Czechia	22	Bor. M'Gladbach (GER)	2023/24
James Gomez	Gambia	22	Odense BK (DEN)	2023/24
Casper Højer	Denmark	28	Rizespor (TUR)	2023/24
Adam Gabriel	Czechia	22	Midtjylland (DEN)	2023/24
Ondřej Čelůstka	Czechia	34	BodrumFK (TUR)	2023/24
Milan Heča	Slovakia	32	Slovácko	2023/24
Matin Minchev	Bulgaria	22	Rizespor (TUR)	2023/24
HC Sparta Ice Hockey				
Marek Ďaloga	Slovakia	30	Dinamo Riga (KHL)	2019/20
Erik de la Rose	Sweden	26	VIK Västeras HK (SWE)	2019/20
Steven Delisle	Canada	29	Löwen Frankfurt (GER, 2. liga)	2019/20
Zach Sill	Canada	31	Kölner Haie (GER)	2019/20
Adam Polášek	Czechia	28	Tappara Tampere (FIN)	2019/20
Kevin Klíma	USA/Czechia	23	Mountfield HK	2020/21
Ville Koistinen	Finland	38	HPK Hämeenlinna (FIN)	2020/21
Jeremie Blain	Canada	28	Mountfield HK	2020/21
Roberts Bukarts	Latvia	30	HC Severstal Čerepovec (KHL)	2020/21
Filip Chlapík	Czechia	24	Ottawa Senators (NHL)	2020/21
Matúš Sukeľ	Slovakia	25	HC Verva Litvínov	2021/22
Alexander Salák	Czechia	35	Djurgårdens IF (SWE)	2021/22
Lukáš Rousek	Czechia	23	Buffalo Sabres (NHL) / Rochester Americans (AHL)	2021/22

(Continued)

TABLE 2 (Continued)

Player name	Nationality	Age sold	To team	Season
Matěj Machovský	Czechia	29	Dimano Riga (KHL)	2021/22
Andrej Kudrna	Slovakia	31	HC Verva Litvínov	2021/22
Genadij Stoljarov	Russia	36	Jugra Chanty-Mansijsk (VHL)	2022/23
Július Hudáček	Slovakia	34	Barys Astana (KHL)	2022/23
Nino Tomov	Bulgaria	18	Drummondville Voltigeurs (QMJHL)	2022/23
Maxim Matuškin	Sweden/Russia	31	Tappara Tampere (FIN)	2022/23
Oleg Pogorišnyj	Russia	28	Tambov (VHL)	2022/23
Olavi Vauhkonen	Finland	34	Jokerit (FIN)	2022/23
Gustaf Thorell	Sweden	34	BIK Karlskoga (SWE)	2022/23
Ostap Safin	Czechia/Russia	24	Lada Togliatti (RUS)	2023/24
Erik Thorell	Sweden	32	Frölunda HC (SWE)	2023/24
Stefan Warg	Sweden	34	Vienna Capitals (AUT)	2023/24
Martin Jandus	Czechia	25	Kärpät Oulu (FIN)	2023/24
David Tomášek	Czechia	27	Färjestad BK (SWE)	2023/24

Teams without a country designation in the To team column are Czech teams.

The contrast with HCS, which had foreign coaches in the past, was surprising and was expressed by all three interview respondents. *"The foreign coach has it harder in terms of perception. Players cannot express their feelings in English. Even if they understand the hockey instructions. Even though the language has shifted over the last 20 years, I do not think it's a good idea to have a foreign coach in Czech conditions. It is just terribly difficult."—HCS* These responses are surprising, given that young HCS players have aspirations to reach the NHL, many of whom achieve these dreams. Additionally, the majority of the foreigners HCS imports have already played for multiple international teams, including the NHL.

5.3 Fan responses

The specifics of each player were mentioned frequently when discussing fans' perception of foreign players. The individuality and specificity of each situation apply to both reactions to foreign players and coaches. In addition, both Sparta football and hockey representatives emphasized that performance plays a crucial role in how foreign players or coaches are perceived.

> *"I would say that nowadays we have the most foreign players we ever had. There are quite a lot of them, however, nobody perceives it negatively because the sporting results are great."—ACS.*

The Sparta football representative also pointed out that performance matters, but with a visible shift in recent years, stating: *"When I came to Sparta and there was a player who wasn't necessarily better than the rest of the squad, it might be harder for him to be perceived positively than for the Czech players. From that time, we became a "European" team and club, so this issue is not a thing anymore."—ACS.*

This shift in perception echoed another ACS respondent, who was convinced that if there was a survey today that asked fans their favorite players, there would not be much difference between foreigners and players who grew up in the club's academy.

HCS also believed that a shift in fan perception had occurred, but that shift was more related to the quality of foreigners being brought in and the results: *"Sparta was also perceived for many years to have bought many foreigners. It did not rely enough on its academy players, but rather on retired 2nd and 3rd line foreigners who basically come to Prague because it's attractive as a destination. Now I think that's changed and it's been perceived positively that most of the foreigners have either NHL experience or have some experience coming from good leagues, and we are winning, which always helps."—HCS.*

Both teams emphasized that building an internationalized environment goes hand in hand with treating foreigners as equal to domestic players within the club. This starts with the management and the coach, and both marketing managers understood their own roles in shaping fan perceptions. The HCS representative mentioned that the Americanization of marketing is related to the use of players for marketing and PR purposes on a larger scale; however, there were no differences between use of Czech and foreign players. The ACS respondent mentioned storytelling as one of the main marketing tactics—that means showing the staff and players in different situations and environments, raw footage of training, etc. This approach then helps fans focus on the actual characteristics and personalities of foreigners within the club, where their nationality is just one part of it.

The HCS respondent explained that fans expect every foreigner to be a star, but often the foreign player has not been brought in to be a first line player. *"I can go through the roster and tell you what role we bought every foreigner for." – HCS* Thus, it is the team's job not only to explain to the market the past experience that the foreign player brings, but also to establish clear expectations of the player to the fans.

Multiple respondents expressed that cultural stereotypes and transfer prices or remuneration put pressure on foreign players. In the case of hockey, fans sometimes prefer players from so-called "hockey nations," nonetheless, they also expect great performance from them,

and the reactions might be more negative when the results aren't so good, or it seems like the player just wanted to finish their career in Prague comfortably without much ambition to help the team.

> *"In general, for the Czech fans, it is more interesting when we buy a Canadian, American, Swedish of Finnish player rather than a German."—HCS.*

The Sparta football representative used an example of a Czech football player bought by rival Slavia Prague for a high price, stating, *"I would say that what makes expectations bigger is not the nationality but rather the price. Foreign players tend to be more expensive; however, this is not always the case. Look at Slavia Prague buying Zima for 100 m CZK [4 M €], he's getting a hard time from the fans. A Czech player, who loves the club, and the transfer price made it more difficult for him. So, if there is something important then it is usually the price of remuneration more than the nationality." ACS.*

In terms of internationalization, making the fans more understanding and breaking the barriers of nationality, a football representative also stated: "*We have a huge responsibility toward the whole society because the fans follow us. And when we make some decisions and set some standards, we can get a huge number of people to identify with it and practice the same values" ACS.*

5.4 Foreign ownership and sponsorship

While foreign ownership affected both ACS and HCS in the past, representatives from both teams expressed extreme contentment with their current Czech investors, primarily in terms of market aspirations and performance goals. This is significant, given the investment potential of many foreign investors. Multiple respondents stated that Czech investors will act more responsibly in terms of the brand and tradition of the club based on their connection to the Czech people. The respondents felt that foreign investors were only concerned about the economic aspects of the club. The current Czech investors are willing to invest sufficient capital in both HCS and ACS to allow the teams to pursue their stated goals, and it was said that neither team returns any investment to their owners.

In terms of AC Sparta, while ownership is in the hands of the Slovak J&T portfolio, the club president and responsible person within J&T is Křetínský who aside from his previously mentioned involvement with West Ham United, is influenced by his other global assets: *"Sparta today is already, you could say, global because our owners are actually operating in markets all over Europe and they co-own the Royal Mail in the UK and they own a lot of assets in Italy, in Holland, in Germany, in Belgium and so we have actually been under a lot of influence of globalization as a club today, so our owner or our owners are operating in different global markets and those influences are already there."—ACS.*

As has already been stated, HC Sparta views internationalization primarily through the use of foreign players. Thus, their Czech owner is willing to pay for whatever player they need, whether Czech or foreign, which is the most important aspect.

It is significant to add here that most of AC Sparta's income comes from the international market, generated primarily through its participation in European cups and player sales, while HCS relies primarily on the domestic market with monies invested by the owner and shares of domestic broadcasting revenue. As one of the respondents from HC Sparta stated in comparison, *"Sparta football, even though they play well and they are not a disgrace Europe… But you saw that when they played Liverpool, they are not exactly a European giant. [2024 Europa League round of 16 Sparta lost both games with Liverpool 6:1 and 5:1] We have an advantage in this. It's true European hockey and football are incomparable in terms of financial rewards, but on the other hand, like [HC] Sparta in the Champions Hockey League or the Spengler Cup. I dare say we are one of the top clubs in Europe."—HCS.*

A third type of foreign investment in the Sparta teams comes through sponsorship revenue, where significant differences emerge between football and ice hockey. The most important partners for Sparta football are international companies. The team's general partner is the Greek company Betano, while its main partners include the German companies adidas and T-Mobile. It is only at the third level of sponsorship, known as official partners, that the majority of sponsors are Czech companies. In contrast, most of the sponsorship revenue for Sparta ice hockey comes from domestic sources. The general partner is the Czech bookmaker Fortuna, and all main partners are based in the Czech Republic. While there are a few international companies among Sparta ice hockey's official partners, they remain in the minority.

5.5 Expanding the fan base

The managers of both clubs expressed interest in attracting international fans, displaying logic in line with the potential to increase revenue primarily through eventification. However, neither Sparta club currently considers this a priority. Neither club is willing to invest significant effort in targeting tourists who visit Prague in large numbers every year for its historical landmarks. Yet both clubs have taken steps in this direction and are planning to expand their fan bases internationally in the future. The potential in terms of available stadium capacity, facilities, merchandising, and social media is outlined in Table 3.

> *"Sparta is strong on the international field, it will attract more fans from other regions, because the second club phenomenon is still quite common. We have my local one that we support, or the one in the country I live in, but then I also follow a club that I support in the European Cups because I like it in some way. And we as Sparta have a huge advantage here because Prague is a tourist city, very attractive."—ACS.*

AC Sparta football currently faces a primary barrier in that local fan interest is so high that tickets sell out within hours or days of going on sale through their mobile application. Consequently, very few tickets are available through traditional sales channels that tourists might use. As a result, the marketing director of ACS does not see much value in heavily promoting ticket sales to tourists. Nevertheless, he noted that certain products are specifically marketed to international tourists, including items from the fan shop and stadium tours. *"Previously, we had one tour per week; now, we conduct 80 tours per month, with three to four tours daily. Approximately one-third of these*

TABLE 3 Sparta foreign fan options.

	ACS – Sparta Football	HCS – Sparta Ice Hockey
World league ranking	13-17	5-6
Nations represented on team	Total: 18	Total: 9
	Albania, Australia, Bulgaria, Cameroon, Czech Republic, Ecuador, Finland, Gabon, Georgia, Ghana, Nigeria, Norway, Romania, Serbia, Slovakia, Sweden, Turkey, Zimbabwe	Bulgaria, Canada, Czech Republic, Finland, Latvia, Russia, Slovakia, Sweden, USA
Average season attendance and stadium capacity fulfillment	2019/20–8,634–44%	2019/20–9,042–53%
	2020/21–3,285–17%*	2020/21–0–0%*
	2021/22–7,349–38%*	2021/22–13,200–77%
	2022/23–14,347–76%	2022/23–13,226–77%
	2023/24–17,084–93%	2023/24–13,743–80%
Stadium tours, Fan shops or museums	Stadium tour includes a tour of the museum, press center, locker rooms, dugout and playing field. Ends in the fan shop.	Only fanshop in the training arena.
Social media	Instagram: General, women's + esport	Instagram: 61,6 K followers, at least 2 post every day, story highlights, bigger interaction than on Facebook
	General Instagram: 234 K followers, post at least 2 times a day Women's Instagram: 13,3 K followers, post almost everyday Facebook: 277 K followers, post same as Instagram, less interactions	Facebook: 99 K followers, at least 2 post every day
	X: Main account: 69,7 K followers	
	YouTube: 79 K subscribers, once a week, around 40 K views	YouTube: 13,5 K subscribers, 1,3 K videos, 2 times a week, approximately 1 K viewsTikTok: 32 K followers, 880 K likes, 2 times a week Spotify: podcast, 3 episodes in 2020
	Twitch: 12,6 K followers, live streams	
	TikTok: 211,7 K followers, 3,9 mil. Likes	

Data represents seasons 2019/20 to 2023/24; * attendance affected by the coronavirus pandemic; Sources: TeamForm League Ranking (teamform.com), Champions Hockey League Ranking (championshockeyleague.com), Transfermarkt (transfermarkt.co.uk), Livesport (livesport.cz), Fortuna liga (fortunaliga.cz), Hokej.cz (hokej.cz).

tours are conducted in English." The ACS respondents viewed the promotion of merchandise and stadium tours as inadequate and planned to expand their marketing efforts and product offerings to the Prague city center and airport in the future.

The ACS stadium (Epet Arena) has a capacity of 18,887 seats and is relatively outdated and inadequate in many respects. Due to the increasing interest of fans in purchasing season tickets, Sparta plans to construct a new stadium with a capacity of 35,000 spectators, financed independently. Club managers have confirmed that with the opening of the new stadium, the situation will change dramatically and attracting international tourists will become a priority. This will allow them to offer tourists *"a modern sports arena experience in Central Europe, alongside the Prague Castle and Charles Bridge."*

> *"For us, the priority is to have our Czech fans there, to build that long-term relationship. Unlike the tourists who come here maybe once or twice in their lifetime. We see ourselves as a Czech club at the moment, with fans from all over central Czech, not just Prague. Expanding to include a foreign audience is not just about ticket sales, but also about keeping the same energy. It's a kind of forward-looking vision. It's a question of how feasible, how much Sparta can become a global club."—ACS.*

HCS currently operates a modern ice hockey arena, the second largest in Europe, which hosted the IIHF World Championship in 2024. This event drew a record 797,727 spectators, averaging 12,464 per game. Attendance at Sparta hockey games has also been rising, with average attendance exceeding 13,000 spectators over the last three seasons, as indicated in Table 3. However, according to the marketing director of HCS, only a minimal number of these attendees are foreigners, approximately 200 for important games and as few as 40 for less popular ones. The revenue from these ticket sales is relatively low, prompting HCS to focus its marketing efforts on local fans, ideally those considering purchasing season tickets.

The capacity of O2 Arena for the top Czech hockey league is set at 17,220 seats, providing room to increase attendance further. Unlike AC Sparta, HCS sees current potential to attract more international fans. Although the top manager of HCS believes that tourists do not primarily come to Prague for hockey (unlike football tourists visiting England), both she and the marketing manager see a path to increasing the proportion of international fans over the long term. Certain initiatives aimed at this goal were planned but were not implemented due to the COVID-19 pandemic.

Both hockey managers envision a collaborative marketing strategy with football club ACS to target tourists. *"We would be one brand, each offering slightly different products."* Significant activities in this area from both clubs are expected to commence closer to the opening of the new football stadium.

In terms of social media, both teams present content in Czech and English, and both teams post about Czech and foreign players. Nonetheless, the AC Sparta marketing representative expressed the current reality of Czech sports' position on a European level well, *"We do not currently track foreign fans. We obviously see, on social media, the composition of foreigners. But you cannot really say that they are fans. Because when you play,*

say, Galatasaray Istanbul, you get 5,000 Turks coming to the club at the same time. But they are not your fans. Even if they come to your stadium, they are not likely to follow your club. To them we are still a Czech club."—ACS.

6 Discussion and conclusion

The two primary sports in Czech culture, ice hockey and football, play critical roles in the formation of Czech identity. These sports possess both global and local cultures and significance, reflecting the dynamic of the Czech nation striving for both preservation and uniqueness. This dynamic positions internationalization, examined through figurational theory, as experienced by the Sparta football and ice hockey clubs, as an increasingly important topic for Czech sports. We can extend this comparison, including its consequent tensions to other Eastern European nations, or to other contexts where we encounter Americanization versus Europeanization of sport. In the context of sports globalization, factors such as foreign sport ownership, sport migration, and the pursuit of global fanbases are critical in understanding these dynamics. Figurational theory (Dunning et al., 2004; Elias, 1978), emphasizing historical development, social processes, and interdependencies among groups, such as domestic leagues and international leagues, can help explain why Eastern European sport has been more resistant to globalization compared to Western European sport. Historical interdependencies and power dynamics help explain why football has been Europeanized, while ice hockey has become Americanized.

Football, a far more global game than ice hockey, remains centered in Europe and is subject to 'Europeanization' despite huge increases in foreign team ownership and repeated efforts to buy the absolute best players out of Europe. In contrast, ice hockey's locus in North America subjects the game to 'Americanization' and increasing 'eventification'. Sparta hockey, for instance, shows clear signs of influence from the NHL, adopting this model with far more eventified games than Sparta football. The nature of ice hockey, including the amount of stoppage time and competition format, is conducive to both Americanization and eventification. In terms of eventification, HC Sparta engages fans during commercial breaks with an interactive jumbotron, featuring not only the traditional kiss cam but also activities like fan-celebrity comparisons, loudness checks, and more. This past season, fan entertainers like Cameron Hughes also performed, energizing the crowd with his dancing during breaks in play. As part of the Americanization of the sport, referee helmet cams—primarily aimed at TV viewers—allow fans to listen in on discussions between players and referees. The influence of North American trends is also evident in the adoption of anglicisms by Czech coaches, players, reporters, and fans. Terms such as "skill," "agility," and "one-timer" have become commonplace in Czech hockey vocabulary. Additionally, Czech ice hockey has embraced rule changes inspired by the NHL, with the 'Coach's Challenge' video review being one of the most recent innovations.

Even with five of the top six leagues, and four of the top six ice hockey nations, Europe has not been able to forestall the Americanization of ice hockey. The Sparta brand displays significant fan intersection, with 1/3 of all HC Sparta season ticket holders also owning AC Sparta season tickets. These fans have commodified the Americanization of ice hockey which still symbolizes their national identity, while also holding tightly to tradition at Sparta football games which are currently so full that there is no space for foreign fans.

While Czech fans rabidly follow the best Czechs in the NHL or the Big5, neither Sparta franchise has experienced or embraced a globalization strategy of reaching out to foreign fans from the nations from where their many imports hail. The fans embrace internationalization which bolsters national identity globally, while frequently still resisting globalization locally. Crossan et al. (2024) emphasized that in emerging Eastern European countries, such as the Czech Republic, Hungary, and Ukraine, the racial diversity within football clubs often exceeded that of their fan base. As a result, clubs frequently struggled with incidents of racist behavior from their supporters. With the growing reliance on foreign players and coaches, these clubs naturally became cultural leaders, not only in the fight against racism but also in embracing internationalization more broadly. Dunning emphasized that the social fabric and historical context of a sport in a society influence its approach to globalization (2004). This means that while internationalization brings new opportunities and resources, there is a simultaneous effort to maintain and celebrate what is unique about a nation's sporting culture. Thus, AC Sparta has experienced success drawing foreign visitors to its stadium and museum, selling them merchandise as they exit, even while understanding that they are not, and probably never will be, Manchester United. Consequently, AC Sparta has so far preserved their event game atmosphere to cater to Czech fans, while taking advantage of the European trend of football stadium tours.

It is evident that the two clubs differ in their internationalization strategies. Notably, Sparta football is more competitive on the domestic level, while Sparta ice hockey is more competitive globally, often bringing in more experienced players with NHL experience. Both Sparta teams emphasize only using foreign players to fill roles which they cannot fill with equal quality for price Czech players. Elliott and Maguire (2011) emphasized that while the global movement of athletes, and coaches can enhance the quality and competitiveness of local leagues, it can also lead to tensions as communities strive to retain their unique sporting identities. As we saw at the beginning of this article AC Sparta fans were very resistant to a foreign coach until a foreign coach took them to the top of the domestic league table. Sparta hockey fans might be expected to be more interested in their import players given the numbers with NHL experience, yet they show less interest in foreign players compared to football fans. In any case, fans are more receptive when foreign players are of higher quality, which is more visible in football than in ice hockey given the global position Czech holds in these two sports. Fans also respond more positively when the marketing departments share clear expectations about the expected roles of these foreign imports, even following globalized marketing trends.

Meanwhile, despite HC Sparta outperforming AC Sparta in international competition, it is ACS which profits significantly from its international player transfers and participation in these European leagues. In this regard the Europeanized sport has outperformed the Americanized sport in terms of global capital flows. Thus alongside recent research (Mark et al., 2020; Mark and Betts, 2021) which explains Eastern Europe's slower commodification to globalization outside of late arrival of outside capital and World Systems Theory, we can posit that

commodification cannot be explained without taking into account local–global scope and interdependencies. The European international cup competitions in football, such as the UEFA Champions League and Europa League, have much more media coverage and provide more finances to football than to ice hockey competing in the Champions Hockey League. Football has developed into a far more global game than ice hockey, thus multiplying revenue generating possibilities for football, which Eastern European teams are keen not to be left out of. But the size of the nation, and the reality that the best Czech players will leave home in both sports to play in the top global leagues, means that local teams in both sports need foreign players to compete in European leagues. If they only competed domestically, they would not need foreign players, but for football, such an internationalization backstep would mean a significant loss of revenue.

The clubs increasingly rely on foreign players while varying in their philosophies of migrant acquisition. The average age of imported players in ice hockey stands notably higher at 30.4 years, reflecting the sport's reliance on seasoned professionals. In contrast, football imports average a younger age of 24.2 years. Sparta football distinctly positions itself as a development club, focusing on nurturing young talent to build competitive teams. In contrast, Sparta hockey pursues success at both domestic and European levels by leveraging older, more experienced players. This strategy aligns with their goal of achieving immediate competitiveness and securing titles in the highly competitive ice hockey leagues. AC Sparta football serves as a feeder to Western European teams, and HC Sparta both sends and receives with the elite NHL and KHL, yet neither team views exporting players as a talent drain (Agergaard, 2017; Marques, 2024). These migration exchanges further reinforce the respective Europeanization and Americanization of the two sports. The differing approaches underscore each club's strategic priorities within their respective sports, with football prioritizing youth development and hockey emphasizing experience and immediate performance impact.

In the early days of their existence, both the football club AC Sparta Prague and the ice hockey club HC Sparta Prague featured foreign players on their rosters. However, the Second World War and the subsequent communist era significantly altered this practice. Since the fall of communism in 1989, the number of foreign players in both teams has steadily increased. Both clubs have also gained experience with foreign coaches, and there have been periods when foreign investors owned the clubs. Tolerance towards these foreign elements has grown over time, although the relationship with foreigners is still negatively influenced by the long history prior to 1989. As Dunning et al. (2004) noted, historical development and social processes within a society shape its resilience or acceptance of global influences. The lengthy history of communist rule and the subsequent transition to a market economy in Eastern Europe fostered a strong sense of national pride and cultural uniqueness, which in turn affects how sports are globalized.

The need to preserve cultural identity often leads to a selective incorporation of global elements, balancing modernization with the maintenance of traditional practices. While the communist era and the transition to a market economy have been associated with national pride and a frequent resistance to foreigners and internationalization, sports have played a significant role in changing these attitudes. In the realm of sports, people become more accustomed to foreigners and generally develop a positive attitude towards them. This is because foreign players and coaches bring high-quality performance, and foreign investors and fans bring financial resources to the clubs. Both AC Sparta Prague and HC Sparta Prague are the most popular clubs in the country, with large fan bases. As these clubs foster tolerance towards foreigners and internationalization, they positively influence the perception of globalization within the broader society. The clubs, especially AC Sparta Prague, actively engage with their fans in this regard and thus have a positive impact on how globalization and internationalization are accepted in Czech society.

One critical takeaway from these case studies is the need for sports managers to develop strategies that align with both global trends and local cultural identities. The success of Sparta's football and ice hockey clubs demonstrates the importance of this balance. While embracing Americanization in hockey and Europeanization in football, the clubs have also maintained strong ties to their local fanbase, reinforcing the notion that cultural heritage can coexist with globalization. This highlights a key challenge in sports management: managing cultural diversity in a way that respects national identity while capitalizing on the benefits of internationalization.

In a broader context, the experiences of Sparta Prague underscore the relevance of managing cultural diversity as a competitive advantage in global sport. Successful internationalization strategies not only enhance on-field performance but also strengthen the financial sustainability of clubs through increased media attention, global fan engagement, and cross-border player movements. Furthermore, the selective incorporation of global elements, as seen in the strategies of both Sparta clubs, reflects the wider managerial imperative to adapt to cultural diversity while retaining unique organizational identities. The lessons from Sparta Prague illustrate the broader challenge in sports management of fostering inclusivity without diluting the essence of a club's heritage (Richelieu and Webb, 2021). For sports managers worldwide, the ability to effectively manage this balance will be essential in building resilient, culturally rich, and globally competitive sports brands.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by Ethics Committee Charles University Faculty of Physical Education and Sport (#013/2024). The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

WC: Conceptualization, Formal analysis, Methodology, Project administration, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. JŠ:

Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Validation, Writing – original draft, Writing – review & editing. MK: Conceptualization, Data curation, Investigation, Methodology, Validation, Writing – original draft. TR: Data curation, Validation, Writing – review & editing.

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The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Exploring mindfulness interventions across cultures: a comparative meta-analysis of mindfulness interventions for athletes in Western and Eastern contexts

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Objective: Applying mindfulness training across cultures can be challenging because its internal motivation depends on values, but there are differences between Western and Eastern contexts. This meta-analysis examines the comparative impacts of the Western Mindfulness-Acceptance-Commitment (MAC) approach and the culturally-adapted Chinese Mindfulness-Acceptance-Insight-Commitment (MAIC) mindfulness training for athletes, to explore the importance of cultural adaptation in cross-cultural psychology to psychological skills training.

Methods: This meta-analysis was registered with Prospero (ID: CRD42023474474) and adhered to the PRISMA principles. The PICO search methodology was employed to identify pertinent Chinese and English literature across six databases (Web of Science, PubMed, Scopus, CNKI, Wanfang, and VIP) from 2003 to 2023. The evidence originated from randomized controlled trials. Effect sizes were evaluated across three primary domains: athletic performance, mindfulness, and psychological flexibility, and heterogeneity and publication bias.

Results: Both MAC and MAIC demonstrated positive effects across all outcome categories in 18 studies. MAIC exhibited substantially larger effect sizes compared to MAC. In mindfulness (MAIC: g=1.273, p<0.001; MAC: g=0.521, p=0.001), sports performance (MAIC: g=0.945, p=0.015; MAC: g=0.550, p<0.001), MAC did not provide evidence of improved psychological flexibility (g=0.076, p=0.747), while MAIC demonstrated significant benefits (g=0.964, p<0.001).

Discussion: While MAIC is based on MAC, it yields more significant outcomes. This may be the "Insight" component introduced by MAIC, which skillfully integrates Eastern context. The MAIC strategy not only becomes more appropriate for local athletes but also indirectly enhances their mindfulness, athletic performance, and psychological flexibility, resulting from cultural adaptation. The new idea not only solves the culture shock caused by the direct application of Western MAC approach on Chinese athletes, but also provides a new solution to the problem that there is insufficient evidence to support the effect of the MAC approach on "psychological flexibility." Investigating differential effects between MAC and MAIC contributes to understanding the significance of culturally adapting mindfulness training and transnational movement of practices. The findings will assist practitioners in selecting evidence-based protocols tailored to athlete needs and cultural contexts.

Systematic review registration: Prospero (ID: CRD42023474474).

KEYWORDS

meta-analysis, mindfulness, acculturation, cultural adaptation, sports performance, psychological flexibility

1 Introduction

Psychological skills training (PST) techniques, such as imagery and self-talk, have been widely recognized for their potential to enhance athletic performance by stabilizing methods and optimizing competitive mentality (Siekańska et al., 2021). In recent years, mindfulness-based training has emerged as a promising approach for athletes. Rooted in Eastern meditative traditions, mindfulness interventions were introduced to Western clinical contexts by Kabat-Zinn in 1979 and later adapted specifically for athletes to develop a series of mindfulness training specifically for athletes (Kabat-Zinn, 2003), such as: Mindfulness-Acceptance-Commitment approach (MAC, Gardner and Moore, 2004; Moore, 2009); Mindful-Sport-Performance-Enhancement (MSPE, Kaufman et al., 2009); Mindfulness-Meditation-Training for Sport (MMTS, Baltzell and Summers, 2018).

Recognizing the limitations of traditional PST, Gardner and Moore (2004) developed the Mindfulness-Acceptance-Commitment (MAC) approach, which integrates acceptance commitment therapy (ACT, Hayes and Pierson, 2005) and mindfulness-based cognitive therapy (MBCT, Segal et al., 2002). PST emphasizes improving internal states and will may inadvertently increase unwanted internal states. This is called Ironic effects occurring after thought suppression, also known as rebound effects (Wang et al., 2021). Unlike that, MAC emphasizes acceptance and "Wu-wei (inaction)," allowing psychological experiences to arise and pass naturally (Kee et al., 2021).

Over the past two decades, Gardner and Moore have continually refined and evaluated MAC (Gardner and Moore, 2004, 2012; Moore, 2009). A recent meta-analysis revealed that MAC enhanced athletes' mindfulness ($g = 0.64$, 95% CI [0.00, 0.91]) and potentially sports performance ($g = 0.37$, 95% CI [0.00, 0.79]), but its effects on well-being and psychological flexibility remain inconclusive (Ptáček et al., 2023). Multiple studies demonstrate MAC's efficacy in improving mental health outcomes, including anxiety, depression, and self-compassion (Gross et al., 2018; Oguntuase and Sun, 2022; Sabzevari et al., 2023). Moreover, athletes who engage in mindfulness can improve their focus on themselves, perhaps reducing accidents and promoting physical health (Naderi et al., 2020; Zadeh et al., 2019).

However, problems arise when using MAC effectively in different socio-cultural contexts (such as "National System" for China's competitive sports). MAC aims to develop mindful present-moment acceptance of internal experiences, clarification of valued goals, and response to external cues, Reactions and attention to emergencies are used to improve sports performance. Internal motivation mostly derives from individual values (Gardner and Moore, 2012), while socially oriented values are the more dominant way of thinking in Chinese society, and research shows that when MAC is applied to Chinese Sanda and Wushu athletes, it is difficult for them to recognize or clarify their own values from socially oriented values (Bu and Si, 2014). Furthermore, even when athletes recognize their individual values, they have difficulty realizing those values. It is believed that these difficulties are related to Chinese culture and its unique sports system (Si et al., 2014). They may conflate social values with individual values, thereby disregarding their true desires, complicating their understanding of their internal state and exterior behavior, which undermines the efficacy of mindfulness approach. In order to better utilize the training methods born in different cultural backgrounds, it is necessary to solve the impact of this different culture (Roychowdhury et al., 2021; Su et al., 2019).

Research on transnational migration has flourished in recent years, but transnational movement of ideas and practices has received little attention (Roychowdhury et al., 2021). Acculturation plays a pivotal role in the field of cross-cultural psychology, referring to the phenomenon wherein two distinct cultural groups engage in direct and continuous interaction, leading to alterations in the original cultural patterns of one or both parties (Berry, 2003; Yu and Zheng, 2005). MAC, originating from Eastern Buddhism, yielded positive outcomes when developed and implemented by Western researchers, but faced difficulties when directly applied to Eastern athletes (Bu and Si, 2014). This practice has undergone subtle changes due to cultural adaptation during the ongoing exchange between Eastern and Western cultural contexts. It is crucial to acknowledge that adopting intervention methods from diverse cultural backgrounds without incorporating necessary cultural adaptations may introduce bias into the effectiveness of such interventions. In response to this concern, Chinese scholars have developed an adapted version of the Western-derived MAC approach known as Mindfulness-Acceptance-Insight-Commitment (MAIC), It was developed on the basis of MAC and combined with Chinese social and cultural factors (i.e., acceptance-based coping with adversity, socially oriented values and insights). Which effectively integrates Eastern values (Su et al., 2019).

Given mindfulness's Eastern origins, aligning training with Eastern mental frameworks is expected to enhance its effectiveness for Chinese athletes. Built upon MAC, MAIC integrates "Insight" cultivation to promote dialectical thinking, aligning with China's collectivist context. As athletes navigate personal growth within social duties (Si and Jiang, 2011). Insight enables flexibility in perception (Öllinger and Knoblich, 2009), the addition of "Insight" may support self-liberation and self-sublimation in the face of adversity (Si et al., 2014). Ultimately, localized approaches like MAIC may better resonate with Chinese athletes. Although MAIC has only been implemented for less than 10 years, studies evaluating MAIC training for Chinese athletes provide initial evidence of positive effects on mindfulness, sports performance, health, and related psychological components (Feng and Si, 2015; Bu, 2015; Bu and Si, 2014).

Notably, while MAC fails to present compelling evidence for enhancing psychological flexibility, emerging findings suggest that MAIC enhances this critical capacity for managing adversity (Zhang et al., 2016; Bu et al., 2020). However, considerable debate surrounds the effects of mindfulness on positive emotions, well-being, and psychological flexibility (Liu et al., 2013; Xu et al., 2015). A prior meta-analysis examined the effects of MAC (Ptáček et al., 2023), nonetheless, potential variations in the MAC approach following its revision and adaptation to Chinese culture were not taken into account (Zhang et al., 2016).

While sharing a common foundation, differences between the Western-derived Mindfulness-Acceptance-Commitment (MAC) and the culturally-adapted Mindfulness-Acceptance-Insight-Commitment (MAIC) approaches may exert influence on outcomes. As globalization progresses, psychological skills training is evolving via the integration of the cultural of Eastern and Western contexts. It is essential to consider the disparities that may arise from varying cultural backgrounds during borrowing and transferring, it becomes imperative to systematically evaluate various approaches, taking into account cultural nuances. And the recently developed MAIC approach tailored for Chinese athletes necessitates further validation (Zhang et al., 2016; Bu, 2015). Rigorous evaluation is indispensable in substantiating preliminary indications of localization benefits.

To verify the significance of cultural adaptation in practices, this study explored cross-cultural mindfulness interventions through a meta-analysis approach, aims to: (1) inductively synthesize available data from the past two decades, (2) quantitatively compare outcomes associated with the Western-derived MAC and the culturally-adapted MAIC approach, and (3) offer insights for future culturally-adapted applications. This meta-analysis did not consider the inclusion of other mindfulness training programs (such as MSPE and MMTS). The main reason is that the difference between MAC and MAIC is only the improvement of local cultural adaptation. There is still a big difference in the actual operation of the others mindfulness trainings. Ensure the quality of meta-analysis, reduce bias to a certain extent, and more directly explain the impact of cultural adaptation. We hypothesize that the culturally adapted MAIC approach will more effectively improve psychological flexibility, mindfulness levels, and sports performance outcomes among Chinese athletes compared to the standard MAC approach. Investigating differential effects between MAC and MAIC contributes to understanding the significance of culturally adapting mindfulness training and transnational movement of practices. The findings will assist practitioners in selecting evidence-based protocols tailored to athlete needs and cultural contexts.

2 Methods

2.1 Search strategy and study selection

This meta-analysis research has been registered on Prospero (ID: CRD42023474474) and follows the latest version of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines (Page et al., 2021). To ensure the inclusion of high-quality and sufficient empirical studies, multiple searches and inspections were conducted. The PICO search strategy was employed to determine the appropriate search terms, considering the population (athletes), intervention (MAC or MAIC), comparison (control group or pre-post intervention), and outcomes (all outcomes that may be influenced by MAC and MAIC, comprises four dimensions: mindfulness, sports performance, health, and mindfulness-related psychological components).

The first author and a researcher independently searched for relevant literature published in Chinese and English from 2003 to 2023 in six databases: Web of Science, PubMed, Scopus, CNKI, Wanfang, and VIP. These databases were selected due to their comprehensive coverage of peer-reviewed journals in the fields of psychology, sports science, and complementary and alternative medicine.

For Chinese literature, "advanced search" and "specific queries" were utilized in CNKI, Wanfang, and VIP databases. The search terms included "mindfulness training" OR "Mindfulness-Acceptance-Insight-Commitment" OR "MAIC" OR "Mindfulness-Acceptance-Commitment" OR "MAC" AND "athlete" (in Chinese). The "article abstract" function was used in CNKI, while the "title and keywords" feature was employed in Wanfang and VIP. Due to VIP database limitations, only a maximum of 5 advanced filtering terms could be entered; consequently, "MAC" and "MAIC" were removed from the search in this database.

For English literature, the search formula "(((mindfulness) OR (mindfulness-acceptance-insight-commitment) OR (mindfulness-acceptance-commitment)) AND ((athlete*) OR (player*)))" was used in Web of Science, PubMed, and Scopus. This comprehensive search strategy aimed to capture all relevant studies investigating the effects of MAC or MAIC on athletes' outcomes.

In addition to the database searches, the reference lists of included articles and relevant systematic reviews and meta-analyses were manually searched to identify any additional eligible studies. Furthermore, the authors conducted a gray literature search, including dissertations and conference proceedings, to minimize the risk of publication bias.

The study selection process is presented in a PRISMA flow diagram, depicting the number of studies identified, screened, and included in the meta-analysis. This transparent reporting of the search and selection process enhances the reproducibility and reliability of the findings.

2.2 Inclusion and exclusion criteria

The two authors collaboratively established the inclusion and screening criteria, which were subsequently used by the first author to independently assess and eliminate entries that did not meet these criteria. The inclusion criteria were as follows:

(1) Study design: Only randomized controlled trials (RCTs) were included to ensure the highest level of evidence and minimize the risk of bias. Specifically, setting up a control group (control), randomization of research subjects (Randomization) and blind trial (blind) are necessary.
(2) Intervention: The study must have investigated the effects of either the Mindfulness-Acceptance-Commitment (MAC) approach or the Mindfulness-Acceptance-Insight-Commitment (MAIC) approach. The intervention had to follow the MAC protocol as described by Gardner and Moore (2004) or the MAIC "Mindfulness Training Manual for Chinese Athletes" developed by Si et al. (2014).
(3) Participants: Studies involving athletes of any age, gender, skill level, and sport type were included. Both individual and team sports were considered.
(4) Outcomes: The study had to report at least one of the following outcomes: mindfulness, sports performance, health (including physical and mental health measures), or mindfulness-related psychological components (such as psychological flexibility, flow, or attention).

(5) Language: Studies published in either English or Chinese were included to ensure a comprehensive review of the available literature.
(6) Publication status: Both published articles in peer-reviewed journals and unpublished dissertations were considered to minimize the risk of publication bias.

Studies were excluded if they met any of the following criteria:

(1) Non-compliance with the inclusion criteria, such as non-RCT study designs, interventions not following the MAC or MAIC protocol, or studies not reporting relevant outcomes.
(2) Animal studies were excluded as the focus of this meta-analysis was on human participants.
(3) Conference abstracts, book chapters, and literature reviews were excluded due to the lack of detailed information required for meta-analysis.
(4) Studies with missing or duplicated data were excluded to ensure the accuracy and reliability of the analysis.
(5) Pre-experiments, pilot studies, and quasi-experimental research were not included to maintain the focus on high-quality RCTs.

The strict adherence to these inclusion and exclusion criteria ensured that only relevant, high-quality studies were included in the meta-analysis, minimizing the risk of bias and enhancing the validity of the findings. Any discrepancies in the application of the criteria were resolved through discussion and consensus among the authors.

2.3 Study quality assessment

To ensure the rigor of this meta-analysis, the first author and the researcher independently assessed the quality of the selected RCT studies using the PEDro scale (Sherrington et al., 2000). The PEDro scale is a widely accepted tool for evaluating the methodological quality of RCTs, It possesses moderate to high reliability in assessing RCTs (Maher et al., 2003). It is consisting of 11 items that assess various aspects of study design, implementation, and reporting. Each item is scored as either present (1 point) or absent (0 points), with a total score ranging from 0 to 10 (item 1 is not included in the total score).

Studies were classified as high quality (8–10 points), moderate quality (4–7 points), or low quality (0–3 points) based on their PEDro scores. The two researchers conducted the quality assessment independently and without communication to minimize bias. Disagreements were resolved through discussion and consensus, with the involvement of a third researcher when necessary.

After the quality assessment, a Kappa consistency test (Cohen's Kappa) was performed to evaluate the inter-rater agreement between the researchers. The Kappa coefficient ranges from −1 to 1, with values above 0.6 indicating substantial agreement. This test helps to ensure the reliability of the quality assessment process and the overall robustness of the meta-analysis.

Studies of low quality were excluded from the meta-analysis to maintain the integrity of the findings, while studies of moderate and high quality were included. This approach ensures that the conclusions drawn from the meta-analysis are based on the best available evidence from well-designed and well-conducted RCTs.

2.4 Data extraction

Following the screening and exclusion process, the selected literature was meticulously examined, and pertinent data were extracted using a standardized data extraction form developed by the authors. The extracted data included:

(1) Study characteristics: title, publication year, first author, country, and funding source.
(2) Participant characteristics: sample size, age, gender, sport type, skill level, and years of experience.
(3) Intervention details: type of mindfulness training (MAC or MAIC), intervention duration, frequency, session length, and delivery format (e.g., group or individual sessions).
(4) Control group details: type of control (e.g., waitlist, active control), and any interventions received.
(5) Outcome measures: mindfulness, sports performance, health (physical and mental), and mindfulness-related psychological components (e.g., psychological flexibility, flow, attention). The specific measurement tools used for each outcome were also recorded.
(6) Results: means, standard deviations, and sample sizes for each outcome measure at baseline and post-intervention for both the experimental and control groups. If available, follow-up data were also extracted.

The data extraction process was conducted independently by the first author and the researcher to ensure accuracy and completeness. Any discrepancies were resolved through discussion and consensus, with the second author. If the required data were not reported in the published article, the corresponding author was contacted via email to request the missing information. If the data remained unavailable after two attempts to contact the author, the study was excluded from the meta-analysis.

2.5 Data analysis

Data for each study, including sample sizes, means, standard deviations, *t*-values, and *p*-values, were input into Excel spreadsheets and subsequently entered into Comprehensive Meta-Analysis Version 3.0 (CMA) software for analysis. The effect size, represented by the standardized mean difference (SMD) and corrected using Hedges' *g*, was utilized to examine the influence of mindfulness training on mindfulness, sports performance, health, and mindfulness-related psychological components. Hedges' *g* provides a more accurate estimate of the effect size, especially for small sample sizes, by applying a correction factor to Cohen's *d*. Effect sizes were interpreted as small (0.2), medium (0.5), and large (0.8) (Andrade, 2020).

The outcome variables were divided into four dimensions for integrated analysis: (1) mindfulness, (2) sports performance, (3) health, and (4) mindfulness-related psychological components. A random-effects model was employed, considering the potential variations in mindfulness training effects across individuals and

sports. This model takes into account both within-study and between-study variability, providing a more conservative estimate of the overall effect size.

Heterogeneity among the included studies was assessed using the I^2 statistic, Q statistic and forest plots. Publication bias was evaluated using funnel plots and Egger's linear regression test. Subgroup analyses were conducted to explore potential moderators of the effect sizes, such as participant characteristics, intervention characteristics, and type of control group. Sensitivity analyses were performed to assess the robustness of the findings by excluding studies with extreme effect sizes or high risk of bias, and by using alternative statistical models.

All statistical analyses were conducted using a significance level of 0.05, and 95% confidence intervals were reported for the effect sizes. The results of the meta-analysis were summarized using tables and figures, and interpreted in the context of the existing literature and the specific research questions addressed by this study.

3 Results

3.1 Search results and overview

A comprehensive search was conducted to identify relevant studies investigating the effects of mindfulness interventions on athletes. The initial search yielded a total of 1,859 potentially relevant documents, including 1,847 from electronic databases (Web of Science, PubMed, Scopus, CNKI, Wanfang, and VIP), nine from citation searches, and three from dissertations. After removing duplicates, 1,055 documents were screened for eligibility based on the predefined inclusion and exclusion criteria. The first author and the researcher independently assessed the titles, abstracts, and full texts of the identified articles, while the second author validated the selection process. Disagreements were resolved through discussion and consultation within another invited researcher when necessary.

Following the initial screening, 24 documents met the inclusion criteria and were selected for quality assessment. The quality of the selected articles was independently evaluated by two authors using the PEDro scale, the final average standard deviation of the PEDro ratings for the 24 articles was 7.42 ± 2.12, indicating a moderate to high level of overall quality. The Kappa consistency test was performed to assess the inter-rater agreement between the two authors, resulting in a coefficient of 0.719 ($p < 0.001$), suggesting a substantial level of agreement. Three low-quality documents were excluded based on the quality assessment (only three points), resulting in 21 documents eligible for data extraction. And the average standard deviation of the PEDro ratings for the 21 articles was 8.05 ± 1.38, indicating a high level of overall quality, quality has improved significantly. Of all the papers reviewed, only one article received a rating of 5.5 ± 0.5 from the first author and the researcher, while the remaining publications were graded between 6 and 11, all included publications satisfied the fundamental criteria for RCTs. Despite the potential bias introduced by medium-quality articles, the stringent inclusion and exclusion criteria result in a limited number of RCTs that fulfill the standards in this study area; hence, these medium-quality studies were chosen. During the data entry phase, the content of all papers will be meticulously reviewed and evaluated to enhance the quality of the meta-analysis.

During the data extraction process, two additional articles were excluded due to insufficient or ambiguous data. The excessive number of sub-variables in both the health dimension and the mindfulness-related psychological component dimension rendered it imprudent to aggregate the effect sizes for meta-analysis. Furthermore, the quantity of certain outcome studies was insufficient for inclusion in the meta-analysis. Following the discussion between the two authors, the health dimension and a part of mindfulness-related psychological component data were removed, resulting in a focus on the three dimensions of mindfulness level, sports performance, and psychological flexibility for discussion (Table 1). Leaving a final set of 18 articles for inclusion in the meta-analysis. These 18 articles reported a total of 34 effect sizes, with eight articles (14 effect sizes, total sample size: 378) investigating the MAIC approach and 10 articles (20 effect sizes, total sample size: 544) examining the MAC approach.

The study selection process is summarized in a PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) flow diagram (Figure 1), which provides a visual representation of the number of studies identified, screened, and included at each stage of the process.

A total of 34 effect sizes were recorded, with eight articles (14 effect sizes, total sample size: 378) in the MAIC category and 10 articles (20 effect sizes, total sample size: 544) in the MAC category. The final set of data provides a solid foundation for the subsequent data analysis and synthesis of the effects of mindfulness interventions on athletes' outcomes.

3.2 Characteristics of included studies

The 18 included studies were published between 2003 and 2023 and were conducted in various countries, including Australia, China, Iran, Sweden, USA. The sample sizes ranged from 18 to 160, with a total of 922 participants across all studies.

The studies investigated the effects of mindfulness training on athletes from a variety of sports, such as badminton, shooting, running, basketball, football, golf, volleyball et al., and included participants of both genders and various skill levels (e.g., novice, intermediate, elite).

The mindfulness interventions employed in the studies were either the MAC approach ($k = 10$) or the MAIC approach ($k = 8$), with intervention durations ranging 30 min, 7 weeks and 8 weeks. The control groups in these studies received either no intervention, waiting list control, or an alternative intervention. Outcome measures included mindfulness, sports performance, health (physical and mental), and mindfulness-related psychological components, assessed using various self-report questionnaires and performance tests (Table 2).

3.3 Assessment of heterogeneity

Heterogeneity tests were conducted separately for the MAC and MAIC studies to assess the variability in effect sizes across the included studies (Figure 2). The Q statistic, which evaluates the null hypothesis that all studies share a common effect size, was performed for each subgroup. The results of the Q statistic were statistically significant for both MAC ($Q = 42.208$, $df = 19$, $p = 0.002$) and MAIC ($Q = 33.611$, $df = 13$, $p = 0.001$) studies, indicating the presence of heterogeneity in the effect sizes within each subgroup.

To quantify the extent of heterogeneity, the I^2 statistic was calculated. The I^2 statistic represents the percentage of total variation in effect sizes that can be attributed to true heterogeneity rather than chance. For MAC studies, the I^2 value was 54.982%, suggesting

TABLE 1 Quality evaluation.

Rater	Total number of documents	Low quality	Medium quality	High quality	Kappa	*p*
Du	24	3	10	11	0.719	<0.001
Jiang		3	6	15		

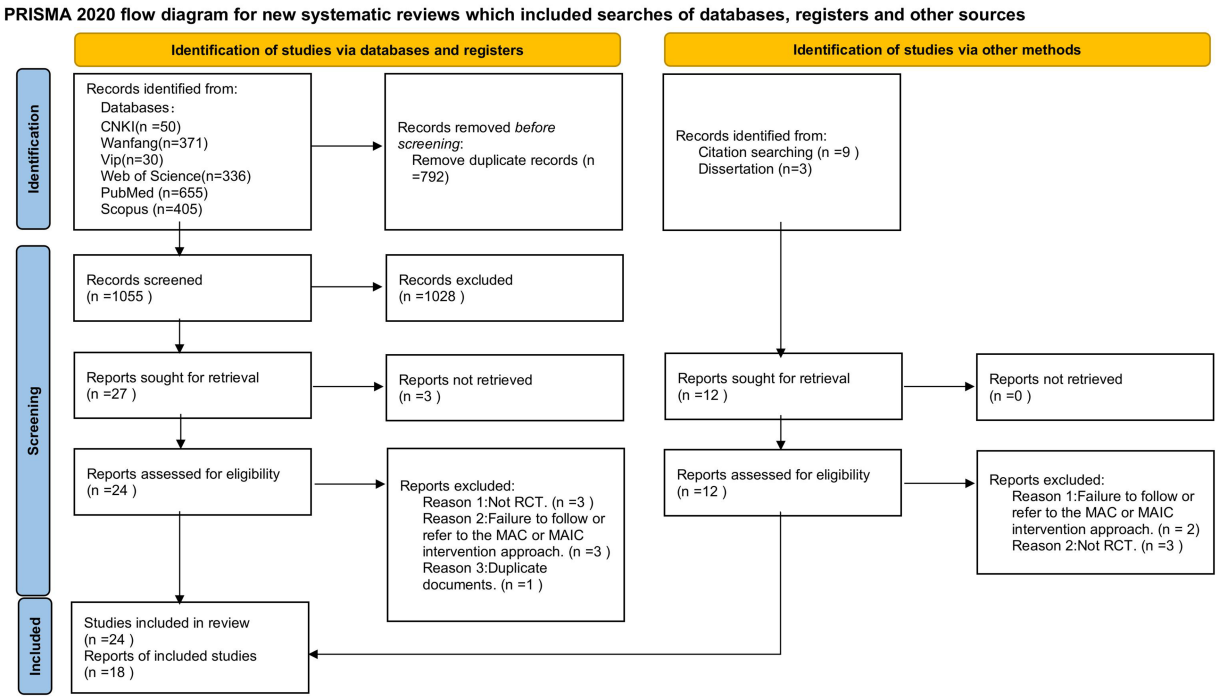

FIGURE 1
PRISMA 2020 flow diagram.

moderate heterogeneity. In contrast, the I^2 value for MAIC studies was 61.323%, indicating moderate to high heterogeneity.

To investigate the key factors affecting its heterogeneity, a subgroup analysis was conducted to examine the heterogeneity across three dimensions. Mindfulness: MAC ($Q = 30.238$, $df = 9$, $p < 0.001$, $I^2 = 70.236$), MAIC ($Q = 20.492$, $df = 6$, $p = 0.002$, $I^2 = 70.720$); sports performance: MAC ($Q = 8.758$, $df = 6$, $p = 0.118$, $I^2 = 31.491$), MAIC ($Q = 9.819$, $df = 2$, $p = 0.007$, $I^2 = 79.631$); psychological flexibility: MAC ($Q < 0.001$, $df = 2$, $p = 1.00$, $I^2 = 0$), MAIC ($Q = 0.065$, $df = 3$, $p = 0.996$, $I^2 = 0$). When combining effect sizes, both MAC and MAIC have moderate heterogeneity. Following subgroup analysis, the heterogeneity of mindfulness and exercise performance remains substantial, necessitating further investigation into its sources. However, the results concerning psychological flexibility exhibit homogeneity, indicating that psychological flexibility is the most significant contributor to heterogeneity when aggregating effect sizes (Table 3). The restricted quantity of available data precluded a robust explanation in the further analysis of the sources of variability between mindfulness and sports performance.

Given the presence of heterogeneity within and across subgroups, the use of a random-effects model for the meta-analysis is justified. The random-effects model accounts for both within-study and between-study variability, providing a more conservative estimate of the overall effect size and allowing for generalizability of the findings to a broader population of studies.

3.4 Sensitivity analysis

To assess the robustness of the meta-analysis results and investigate the influence of individual studies on the overall effect sizes, sensitivity analyses were performed using the one-study-removed method. This approach involves iteratively removing one study at a time from the analysis and recalculating the overall effect size and associated statistics.

The sensitivity analyses were conducted for the MAC and MAIC. The results of the sensitivity analyses are presented in Figure 3, which display the overall effect sizes and confidence intervals obtained after removing each study in turn.

For both MAC and MAIC, the sensitivity analyses demonstrated that the overall effect sizes remained relatively stable and statistically significant, with no substantial changes observed when individual studies were sequentially removed. This finding suggests that the meta-analysis results are robust and not unduly influenced by any single study (Figure 3).

3.5 Publication bias

Publication bias, which refers to the selective publication of studies with significant or positive results, can lead to an overestimation of the true effect size in meta-analyses. To assess publication bias, funnel plots and Egger's linear regression test were employed.

TABLE 2 Input data.

Document coding	Intervention content	Dimensions	Tool	Approach	Duration	Sample	Gender	Sports	Exercise level	Area
(Bu et al., 2020)-1	Mindfulness	M	FFMQ	MAIC	7 weeks	49	M = 29 W = 20	Badminton	High	China
(Bu et al., 2020)-2	Psychological flexibility	P	AAQ-2							
(Liu and Zhang, 2022)-1	Mindfulness	M	FFMQ	MAIC	7 weeks	64	M = 32 W = 32	Mix	Middle	China
(Gang, 2023)-1	Mindfulness	M	FFMQ	MAIC	7 weeks	24	M	Shooting	Middle	China
(Gang, 2023)-2	Psychological flexibility	P	AAQ-2							
(Song and Zhang, 2020)-1	Mindfulness	M	FFMQ	MAIC	7 weeks	74	Mix	Mix	Middle	China
(Song and Zhang, 2020)-2	Sports performance	S	Performance							
(Wang et al., 2021)-1	Mindfulness	M	FFMQ	MAIC	8 weeks	60	W	Long distance running	Low	China
(Zhang et al., 2016)-1	Mindfulness	M	FFMQ	MAIC	8 weeks	43	Mix	Darts	Low	China
(Zhang et al., 2016)-2	Psychological flexibility	P	AAQ-2							
(Zhang et al., 2016)-3	Sports performance	S	Performance							
(Yan et al., 2018)-1	Sports performance	S	Performance	MAIC	7 weeks	40	M	Basketball	Middle	China
(Shen, 2022)-1	Psychological flexibility	P	AAQ-2	MAIC	8 weeks	24	M	Volleyball	High	China
(Shen, 2022)-2	Mindfulness	M	FFMQ							
(Liu et al., 2021)-1	Mindfulness	M	FFMQ	MAC	30 min	57	M = 39 W = 18	Mix	Middle	China
(Naderi et al., 2020)-1	Trait mindfulness	M	CHIME	MAC	7 weeks	160	M	Football	High	Iran
(Naderi et al., 2020)-2	State mindfulness	M	TMS							
(Ajilchi et al., 2022)-1	Mindfulness	M	MIS	MAC	7 weeks	42	W	Unknown	High	Iran
(Dehghani et al., 2018)-1	Sports performance	S	Performance	MAC	8 weeks	31	W	Basketball	Middle	Iran
(Dehghani et al., 2018)-2	Psychological flexibility	P	AAQ							
(Gross et al., 2018)-1	Psychological flexibility	P	AAQ-2	MAC	7 weeks	18	W	Basketball	Middle	USA
(Gross et al., 2018)-2	Mindfulness	M	MAAS							
(Gross et al., 2018)-3	Sports performance	S	Performance							
(Josefsson et al., 2019)-1	Mindfulness	M	AMQ	MAC	7 weeks	69	M = 36 W = 33	Mix	High	Sweden
(Josefsson et al., 2019)-2	Sports performance	S	Performance							

(Continued)

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TABLE 2 (Continued)

Document coding	Intervention content	Dimensions	Tool	Approach	Duration	Sample	Gender	Sports	Exercise level	Area
(Macdougall et al., 2019)-1	Mindfulness	M	CAMS-R	MAC	8 weeks	18	M = 5 W = 13	Mix	High	Australia
(Macdougall et al., 2019)-2	Psychological flexibility	P	AAQ-2							
(Macdougall et al., 2019)-3	Overall Performance	S	Performance							
(Mohebi et al., 2022)-1	Mindfulness	M	MIS	MAC	7 weeks	40	W	Mix	High	Iran
(Zadeh et al., 2019)-1	Mindfulness	M	MMPQ	MAC	7 weeks	44	M	Football	Middle	Iran
(Zadeh et al., 2019)-2-1	Performance-Team	S	Performance							
(Zadeh et al., 2019)-2-2	Performance-Individual	S	Performance							
(Perry et al., 2017)-1	Mindfulness	M	FFMQ	MAC	30 min	65	M = 33 W = 32	Golf	Low	USA
(Perry et al., 2017)-2	Sports performance	S	Performance							

M, mindfulness; P, psychological-flexibility; S, sports-performance; AAQ, Acceptance and Action Questionnaire; AMQ, Athlete Mindfulness Questionnaire; CAMS-R, Cognitive and Affective Mindfulness Scale-Revised; CHIME, Comprehensive Inventory of Mindfulness Experiences; FFMQ, Five Facets Mindfulness Questionnaire; MAAS, Mindful Attention Awareness Scale; MIS, Mindfulness Inventory for Sport; MMPQ, Mindful Movement Performance Questionnaire.

Funnel plots for the MAC and MAIC subgroups were constructed, displaying the effect size against a measure of study precision. Both MAC and MAIC funnel plot showed a symmetrical distribution, suggesting the absence of substantial publication bias (Figures 4, 5).

Egger's test quantified the symmetry observed in the funnel plots. For the MAC and MAIC, the test yielded a non-significant result MAC: (intercept = −0.043, 95% CI [−2.188, 2.101], $p = 0.967 > 0.05$); MAIC: (intercept = 3.905, 95% CI [−0.183, 7.992], $p = 0.059 > 0.05$) confirming the absence of significant publication bias (Table 4).

3.6 Meta-analysis results

3.6.1 MAC studies

A total of 20 effect sizes from 10 MAC studies were meta-analyzed, yielding a statistically significant overall effect size of ($g = 0.482$, 95% CI [0.282, 0.681], $Z = 4.736$, $p < 0.001$). This result indicates that MAC interventions had a moderate positive effect on the outcomes of interest, with the 95% confidence interval not including zero, further supporting the significance of the finding.

3.6.2 MAIC studies

The meta-analysis of 14 effect sizes from 8 MAIC studies also revealed a statistically significant overall effect size of ($g = 1.099$, 95% CI [0.824, 1.374], $Z = 7.836$, $p < 0.001$). This finding suggests that MAIC interventions had a large positive effect on the outcomes of interest, with the 95% confidence interval not including zero, confirming the significance of the result.

3.7 Subgroup analyses

Subgroup analyses were conducted to examine the effectiveness of mindfulness interventions across different outcome domains: mindfulness, sports performance and psychological flexibility.

3.7.1 Mindfulness

Both MAC ($g = 0.521$, 95% CI [0.215, 0.827], $Z = 3.338$, $p = 0.001$) and MAIC ($g = 1.273$, 95% CI [0.826, 1.720], $Z = 5.585$, $p < 0.001$) interventions demonstrated significant positive effects on mindfulness outcomes. However, the effect size for MAIC studies was considerably larger than that for MAC studies, suggesting that MAIC may be more effective in enhancing mindfulness in Chinese athletes (Table 5).

3.7.2 Sports performance

MAC ($g = 0.550$, 95% CI [0.253, 0.847], $Z = 3.624$, $p < 0.001$) and MAIC ($g = 0.945$, 95% CI [0.186, 1.705], $Z = 2.439$, $p = 0.015$) interventions both showed significant improvements in sports performance, with moderate effect sizes. Although the effect size for MAIC studies was larger, the difference between MAC and MAIC was less pronounced for this outcome domain compared to other domains (Table 5).

3.7.3 Psychological flexibility

There exists a significant disparity between MAC and MAIC concerning psychological flexibility. MAC ($g = 0.076$, 95% CI [−0.385, 0.537], $Z = 0.323$, $p = 0.747$) did not yield compelling evidence for

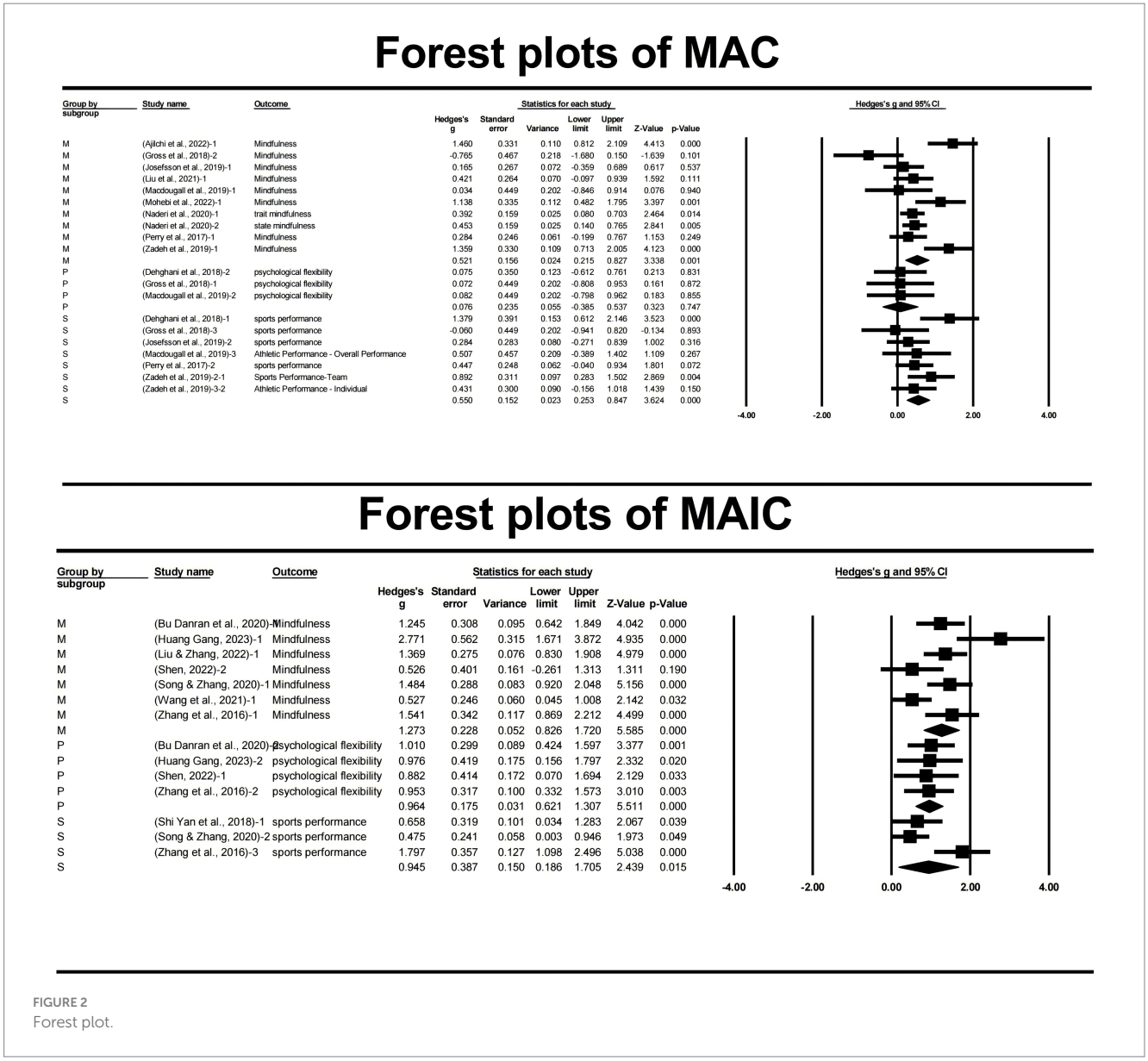

FIGURE 2
Forest plot.

TABLE 3 Investigation of heterogeneity.

	Group	Q	df	p	I^2
MAC	Mindfulness	30.238	9	<0.001	70.236
	Sport	8.758	6	0.188	31.491
	Psychological	<0.001	2	<1	<0.001
	Total	42.208	19	0.002	54.985
MAIC	Mindfulness	20.492	6	0.002	70.720
	Sport	9.819	2	0.007	79.631
	Psychological	0.065	3	0.996	<0.001
	Total	33.611	13	0.001	61.323
Total		103.961	33	<0.001	68.257

enhancement in psychological flexibility; however, MAIC ($g = 0.964$, 95% CI [0.621, 1.307], $Z = 5.511$, $p < 0.001$) was statistically significant. The heterogeneity analysis indicates that this dimension is the most important source of variation between the two mindfulness approaches (Table 5).

The subgroup analyses revealed consistent positive effects of mindfulness interventions across mindfulness and sports performance domains for both MAC and MAIC studies. However, the effect sizes for MAIC studies were consistently larger than those for MAC studies. These findings suggest that the culturally-adapted MAIC approach may be more effective than the standard MAC approach in enhancing various outcomes among Chinese athletes. However, the two methodologies produced markedly distinct outcomes on psychological flexibility. This is the most significant distinction between the two approaches (Table 5).

3.8 Moderator analyses

Moderator analyses were conducted to explore potential factors that may influence the effectiveness of mindfulness interventions, including gender, intervention duration, and skill level.

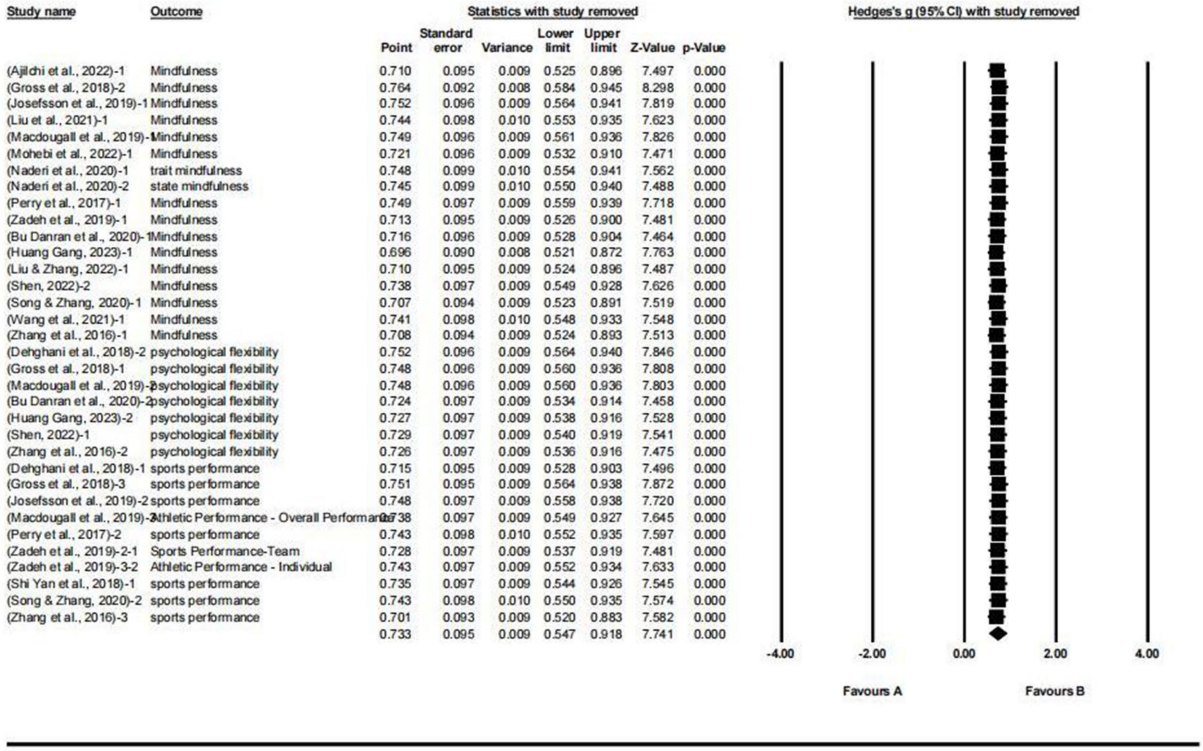

FIGURE 3
One study remove.

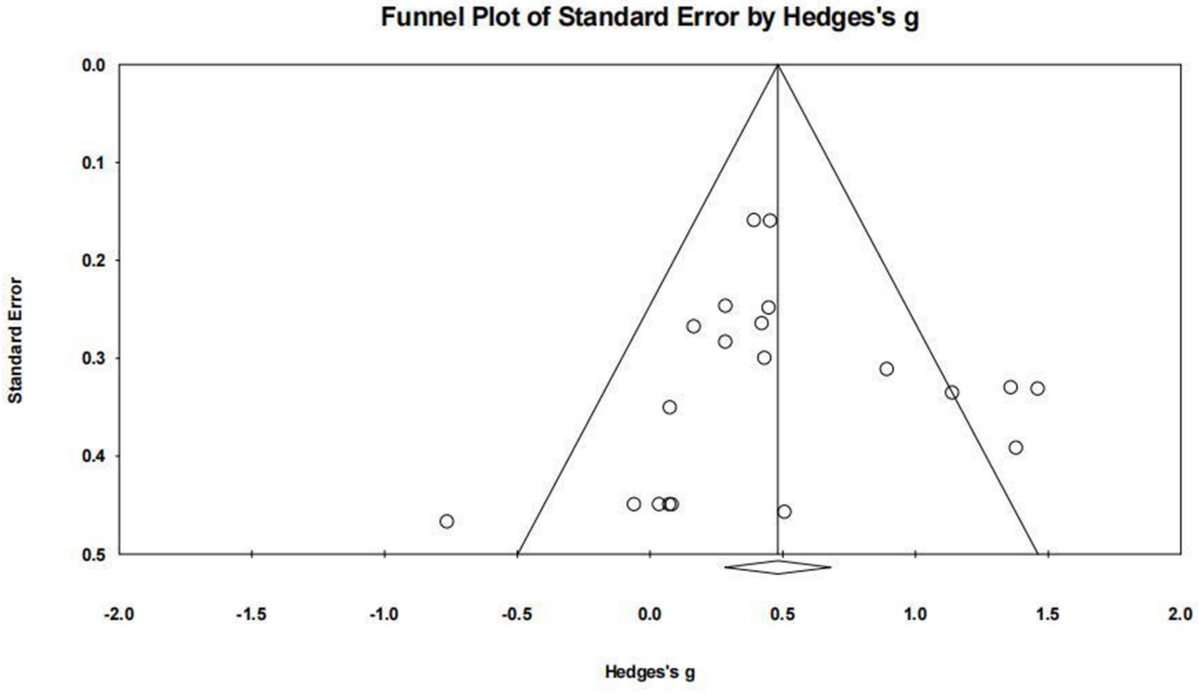

FIGURE 4
Funnel plot of MAC.

3.8.1 Gender

The overall effect size for male athletes ($g = 0.520$, 95% CI [0.017, 1.022], $Z = 2.028$, $p = 0.043 < 0.05$) was slightly larger than that for female athletes ($g = 0.804$, 95% CI [0.495, 1.112], $Z = 5.111$, $p < 0.001$), suggesting that mindfulness interventions may be more beneficial for male athletes. However, both male and female athletes demonstrated significant improvements following mindfulness training.

3.8.2 Intervention duration

The effect sizes increased with longer intervention durations, with 30-min interventions showing a small effect size ($g = 0.382$, 95% CI [0.096, 0.668], $Z = 2.619$, $p = 0.009$), 7-week interventions demonstrating a moderate effect size ($g = 0.773$, 95% CI [0.520, 1.025], $Z = 5.997$, $p < 0.001$), and 8-week interventions exhibiting a large effect size ($g = 0.776$, 95% CI [0.419, 1.134], $Z = 4.261$, $p < 0.001$). These findings suggest that longer mindfulness interventions may be more effective in promoting positive outcomes among athletes.

TABLE 4 Egger's linear regression.

Egger's regression intercept		
	MAC	MAIC
Intercept	−0.04341	3.90454
Standard error	1.02060	1.87591
95% lower limit (2-tailed)	−2.18762	−0.18272
95% upper limit (2-tailed)	2.10079	7.99180
t-value	0.04254	2.08141
df	18	12
p-value (2-tailed)	0.96654	0.05947

3.8.3 Skill level

The effect sizes decreased with increasing skill levels, with novice athletes showing a large effect size ($g = 0.879$, 95% CI [0.418, 1.340], $Z = 3.736$, $p < 0.001$), intermediate athletes demonstrating a moderate effect size ($g = 0.761$, 95% CI [0.419, 1.102], $Z = 4.360$, $p < 0.001$), and elite athletes exhibiting a moderate effect size ($g = 0.627$, 95% CI [0.390, 0.865], $Z = 5.183$, $p < 0.001$). This finding suggests that mindfulness interventions may be more beneficial for athletes with lower skill levels, possibly due to the greater room for improvement in their psychological and performance outcomes.

4 Discussion

The present meta-analysis aimed to validate the efficacy of the Mindfulness-Acceptance-Commitment (MAC) approach and its Chinese counterpart, the Mindfulness-Acceptance-Insight-Commitment (MAIC) approach, in enhancing mindfulness, sports performance and psychological flexibility among athletes. Additionally, the study sought to compare the two approaches and investigate the importance of cultural adaptations in mindfulness interventions. When comparing the overall effect sizes between the two approaches, the MAIC studies demonstrated substantially larger effects than the MAC studies (Table 5). This finding indicates that the culturally-adapted MAIC approach may be more effective than the standard MAC approach for Chinese athletes, highlighting the potential benefits of considering cultural factors when designing and implementing mindfulness interventions.

The subgroup analyses revealed that MAIC interventions yielded larger effect sizes than MAC interventions in all outcome domains. These findings highlight the potential advantages of incorporating

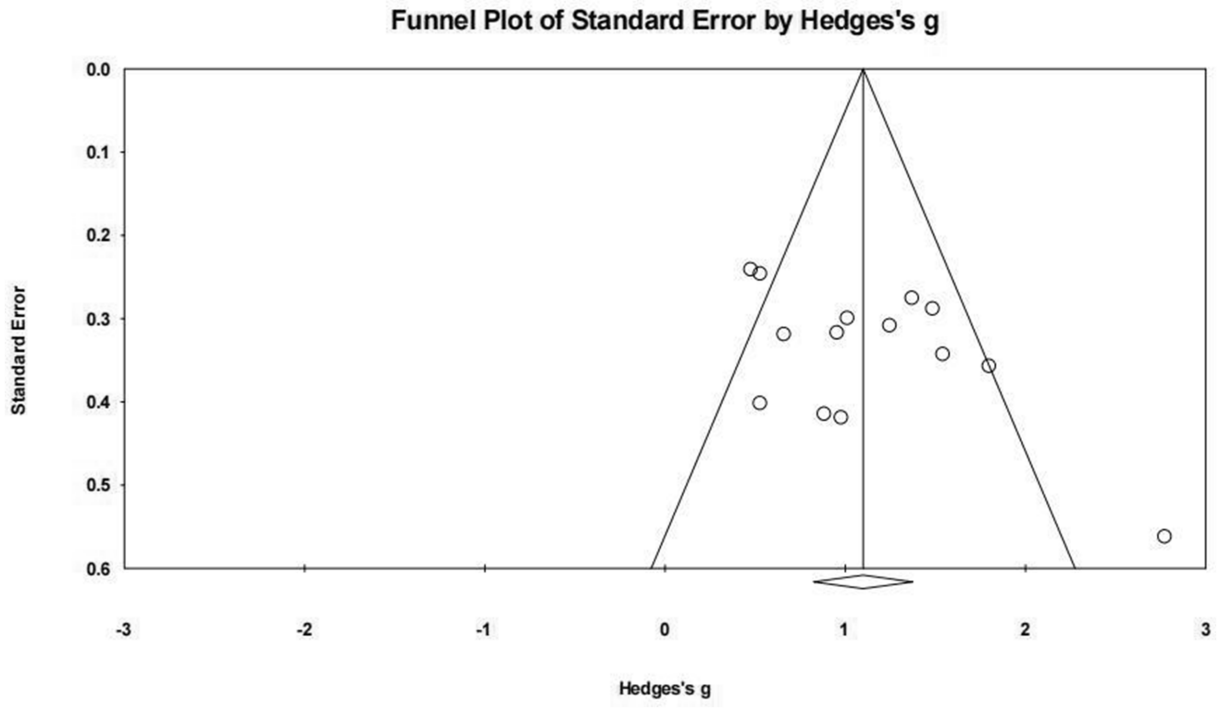

FIGURE 5
Funnel plot of MAIC.

TABLE 5 Data summary.

Group	Subgroup	Number of studies (*k*)	Hedges' *g*	95%CI	*Z*	*p*
MAC	Mindfulness	10	0.521	0.215–0.827	3.338	0.001
	Sport	7	0.550	0.253–0.847	3.624	<0.001
	Psychological	3	0.076	−0.385 to 0.537	0.323	0.747
	Total	20	0.482	0.282–0.681	4.736	<0.001
MAIC	Mindfulness	7	1.273	0.826–1.720	5.585	<0.001
	Sport	3	0.945	0.186–1.705	2.439	0.015
	Psychological	6	0.964	0.621–1.307	5.511	<0.001
	Total	14	1.099	0.824–1.374	7.836	<0.001
Total		34	0.733	0.547–0.918	7.741	<0.001

cultural considerations and adaptations when designing and implementing mindfulness interventions for specific populations. The larger effect sizes observed for MAIC studies across different outcome domains highlight the potential benefits of considering cultural factors when designing and implementing mindfulness interventions. The cultural adaptation of mindfulness training may help to better address the specific needs and preferences of Chinese athletes, leading to more pronounced improvements in mindfulness, sports performance.

These subgroup analyses provide valuable insights into the differential effectiveness of MAC and MAIC interventions across various domains, underscoring the importance of cultural adaptation in optimizing the benefits of mindfulness training for specific populations. Future research should further explore the mechanisms underlying the superior effects of MAIC and investigate the potential moderators and mediators of the relationship between culturally-adapted mindfulness interventions and athlete outcomes.

Despite the disparities between MAC and MAIC in mindfulness and sport performance, both outcomes were positive. The heterogeneity analysis indicated that psychological flexibility was the most substantial distinction between the two. The disparities in mindfulness and exercise performance may arise from various factors, including distinct intervention populations, assessment instruments, and exercise modalities. Insufficient data and a dearth of pertinent literature render a robust explanation for the partition of subvariables unattainable. I hope that additional pertinent studies will arise in the future to enhance this information.

The MAC program helps athletes find their core values and develop "value-driven behavior" to solve problems. In essence, it is a value that highlights individualism. This behavior does not solve the relationship between self and society. It is also difficult to integrate oneself into the process and environment (Bu and Si, 2014). Under China's national system that pursues collectivism, the interests of the country and the collective are above all else. The way of self-expression emphasized by MAC is prone to cultural shock when encountering China's unique national system. The newly incorporated "Insight" component amalgamates Chinese socio-cultural elements, including adversity coping through acceptance, socially oriented ideals, and insights. It adeptly incorporates Eastern values, plays a very good role in neutralizing the relationship between the individual and the collective, it considers the collectivistic nature of Chinese culture and the importance of social harmony (Si and Jiang, 2011).

The disparity in psychological flexibility between MAIC and MAC may be ascribed to the incorporation of the "Insight" component, which is a kind of non-attachment to thinking, looking at problems from a new perspective, and flexibly using different values and worldview to creatively understand things (Si et al., 2014) it can promotes flexibility in perception, which emphasizes the cultivation of dialectical thinking and aligns with the Eastern philosophical underpinnings of mindfulness (Öllinger and Knoblich, 2009; Su et al., 2019; Si et al., 2014), may be particularly beneficial in promoting psychological flexibility among Chinese athletes. This aligns with the growing recognition of the importance of cultural considerations in the development and delivery of psychological interventions (Castro et al., 2010; Sue et al., 2009). However, the preceding article just indicates that the evidence supporting the efficacy of cultural adaptation is encouraging, and our discussion within the domain of sports is groundbreaking, it effectively illustrates the efficacy of cultural adaptation in mindfulness training approaches. By integrating culturally-relevant concepts and practices, MAIC may facilitate a deeper understanding and internalization of mindfulness skills among Chinese athletes, leading to greater improvements in mindfulness levels, sports performance. It not only makes the MAIC approach more suitable for local athletes, but also indirectly strengthens the athletes' psychology flexibility, which is the result of cultural adaptation.

The moderator analyses provided valuable insights into the factors that may influence the effectiveness of mindfulness interventions for athletes. The finding that male athletes demonstrated slightly larger effect sizes than female athletes suggests potential gender differences in the receptiveness to and benefits derived from mindfulness training. This may be related to variations in coping strategies, emotional regulation, or socialization processes between genders (Kang et al., 2018; Wang et al., 2020). However, it is important to note that both male and female athletes benefited significantly from mindfulness interventions, highlighting the universal applicability of these approaches.

The positive association between intervention duration and effect sizes underscores the importance of providing athletes with sufficient time and practice to develop and internalize mindfulness skills. Longer interventions may allow for a more comprehensive understanding and application of mindfulness techniques, leading to greater improvements in athletic well-being and performance. This finding aligns with previous research suggesting that the benefits of mindfulness training may be cumulative and require consistent practice (Wu et al., 2013).

However, there is still controversy about the intervention length. Some research indicates that even 30-min mindfulness training may yield superior outcomes, with variations in intervention durations not being statistically significant (Carmody and Baer, 2009; Fincham et al., 2023; Ribeiro et al., 2018; Strohmaier et al., 2021). Therefore, more evidence is needed regarding the duration of intervention.

The observation that athletes with lower skill levels demonstrated larger effect sizes compared to elite athletes suggests that mindfulness interventions may be particularly beneficial for novice and intermediate athletes. This may be due to the greater potential for improvement in their psychological and performance outcomes, as they may have had less exposure to mental training techniques compared to elite athletes. However, it is important to consider that elite athletes may face unique pressures and demands that could influence their responsiveness to mindfulness interventions (Birrer et al., 2012). Future research should examine the specific needs and challenges of elite athletes in relation to mindfulness training.

The moderator analyses provide practitioners with valuable information to tailor mindfulness interventions based on athlete characteristics and training contexts. For example, coaches and sport psychologists may consider implementing longer mindfulness programs, particularly for male athletes and those with lower skill levels, to optimize the benefits of mindfulness training. The moderator analyses suggest that gender, intervention duration, and skill level may influence the effectiveness of mindfulness interventions for athletes. These findings can inform the design and implementation of future mindfulness programs in sport settings, allowing for a more targeted and evidence-based approach to enhancing athlete mentally and physically.

The current meta-analysis advances the understanding of the effectiveness of mindfulness interventions in sport contexts and highlights the importance of cultural adaptations. The findings support the notion that incorporating culturally-relevant concepts, practices, and values can enhance the acceptability, relevance, and impact of mindfulness interventions for specific populations (Karl et al., 2022). This underscores the need for researchers and practitioners to consider cultural factors when designing and implementing mindfulness programs in diverse sport settings.

The study's findings have important practical implications for coaches, sport psychologists, and other professionals working with athletes. The results suggest that mindfulness interventions, particularly those that are culturally adapted, can be valuable tools for promoting athlete mentally and physically. Practitioners should consider incorporating mindfulness training into their repertoire of psychological interventions, tailoring the content and delivery to the specific cultural context and needs of their athletes.

5 Limitations

Despite the strengths of this meta-analysis, including the comprehensive literature search, rigorous inclusion criteria, and examination of multiple outcome domains, several limitations should be acknowledged.

First, despite the assured quality of the study, the limited number of studies and sample size will significantly impact the robustness of the results in this meta-analysis, particularly in the MAIC subgroup, suggests that the overall effect sizes may be overestimated, it is hoped that more relevant research can be carried out in the future to enrich its content.

Second, despite our efforts to include only high-quality research, several moderate to low quality researches were incorporated, potentially introducing biases that could compromise the integrity of the meta-analysis results. Numerous articles were lost points in PEDro scale for failing to implement triple blinding (e.g., utilizing only single or double blinding), ambiguous randomization procedures, or inadequate concealment during allocation. Future research needs to concentrate on enhancing the quality of RCTs.

Third, the heterogeneity exists. Although the most significant source of heterogeneity was identified by subgroup analysis, the origin of heterogeneity related to mindfulness and sports performance remains insufficiently clarified. This may be ascribed to differing tools, people, and sporting events, among other factors. We hope to investigate this further in the future.

Fourth, the relatively small number of studies included in some subgroup analyses may limit the generalizability of the findings.

Fifth, the moderator analyses were based on between-study comparisons and may be influenced by other study characteristics or confounding factors. Future research should employ within-study designs to directly compare the effectiveness of mindfulness interventions across different subgroups of athletes while controlling for potential confounding variables.

6 Conclusion

This meta-analysis provides compelling evidence for the effectiveness of mindfulness interventions, particularly the culturally-adapted Mindfulness-Acceptance-Insight-Commitment (MAIC) approach, in enhancing various outcomes among athletes. The superior effects of MAIC compared to the standard Mindfulness-Acceptance-Commitment (MAC) approach for Chinese athletes highlight the importance of cultural adaptations in mindfulness interventions.

The subgroup and moderator analyses offer valuable insights into the factors influencing the effectiveness of mindfulness interventions, guiding practitioners in tailoring programs based on athlete characteristics and training contexts. The findings have important practical implications, encouraging professionals to incorporate the cultural adaptation into their transnational movement of practices.

Future research should further explore the mechanisms underlying the differential effects of MAC and MAIC, investigate the long-term sustainability of benefits, and examine the effectiveness of culturally-adapted practices.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

SD: Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – original draft, Writing – review & editing. ZN: Conceptualization,

Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Visualization, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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The impact of family and friend support of physical activity on the participation in physical activity within Indigenous individuals in Saskatoon

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Introduction: Social support within Indigenous worldviews is recognized as a component of health and has been associated with physical activity and sedentary behaviour. Physical Activity (PA) is a modifiable behaviour that can help reduce risks of disease and benefit many dimensions of health. The purpose of this study was to compare the physical activity of Indigenous adults in Saskatchewan with and without family/friend support of PA.
Methods: The Family Influence on Physical Activity questionnaire was used to record the extent and forms of family/friend support of PA. The Godin Shepard Leisure Exercise Questionnaire (GSLEQ) was used to measure weekly PA, including moderate PA (MPA), vigorous PA (VPA), exercise frequency (WEF) and GSLEQ scores.
Results: Indigenous participants overall, First Nations and Cree participants specifically with family/friend involvement in PA reported greater weekly WEF and GSLEQ scores. Indigenous participants overall and First Nations participants specifically with family and friends who watch them engage in PA reported greater weekly VPA and GSLEQ scores. Among First Nations and Cree participants specifically, those with family/friends encouragement of PA reported greater weekly VPA, WEF and GSLEQ scores. Furthermore, First Nations participants with active family/friends reported significantly greater weekly VPA (36.8 $\pm$ 51.5 min·week^{-1} vs. 80.2 $\pm$ 108.5 min·week^{-1}; p = 0.01). Greater weekly VPA was found in Métis participants with family/friend involvement in PA and with family/friends who watch them engage in PA (67.6 $\pm$ 59.6 min·week^{-1} vs. 29.5 $\pm$ 40.8 min·week^{-1}; p = 0.01).
Discussion: Social support, specifically family/friends involvement, has a significant impact on Indigenous participation in PA.

KEYWORDS

First Nations, Métis, social support, exercise, physical activity

Introduction

Canada is inhabited by various distinct and diverse populations, including Indigenous Peoples who are the original inhabitants of these lands, and comprise 5% of the population of Canada (1). This encompasses First Nations, Inuit, and Métis Peoples of Canada (1). Each distinct Indigenous nation in Canada has their own homeland or traditional territory within the lands of Canada, though the majority of Indigenous Peoples do not

reside within their reserve lands (2). Diversity of Indigenous communities and nations is significant, while urban centres and communities such as university settings serve Indigenous populations including diverse identities, histories, and cultures, with identities primarily drawn from Indigenous communities in the province of the university (1, 3).

Indigenous Peoples historically were a healthy population, with their health and wellness reflecting wholistic balance of the physical, mental, emotional, and social dimensions (4, 5). This balance also included strong family relations, community support and cultural connections (5). Cultural connectedness, a measure of attachment, sense of belonging, and group identification is a social factor that uniquely affects Indigenous Peoples' health (6, 7). Current and historical acts of colonization and assimilation, including land displacement, residential schools, culture suppression, and the resulting intergenerational trauma experienced by Indigenous Peoples, have led to greater health disparities compared to non-Indigenous Peoples (8, 9). These health inequities include disproportionally higher prevalence of chronic diseases such as obesity, hypertension and cardiovascular disease (8, 10). While the general population in Canada have been able to reduce their risk of chronic diseases through behaviour and lifestyle changes including diet, tobacco use and physical activity (PA), the same is not true for Indigenous Peoples (8, 11).

Physical activity is one of the most modifiable behaviours to combat chronic diseases and is a significant contributor to health and wellbeing (12, 13). Additional benefits of PA include improving social and emotional wellbeing, which can lead to reductions in depression, stress, and anxiety, reduce social isolation, and increase feelings of wellbeing (14). Within the past 50 years, the health disparities between Indigenous and non-Indigenous populations have increased in part due to growing levels of inactivity and sedentary behaviour, which is influenced by a variety of factors, such as a lack of infrastructure close to reserve lands (15). In the general population, PA is influenced by many factors, including income, education, personal health, social support, community, and family influences (16). There is evidence currently indicating that factors such as cultural connections and social support play important roles in Indigenous Peoples' PA and sedentary behaviour (17–19). There is, however, little understanding of the role of family/friend support for PA on Indigenous Peoples' PA.

It is important to understand the role family support plays in participation in PA within Indigenous communities. Family from an Indigenous perspective is much broader than most Western definitions and includes immediate, extended, and unrelated community members who play significant roles in the lives of individuals (20). In some Indigenous cultures there is no word for family, and this is represented by "the community" (20). The Indigenous concepts of family are therefore influenced by social relations, support systems, language, childrearing practices and location (20). Families are often the primary source of social capital and the main providers of mental health care (20, 21). Research indicating that this extensive family support is essential to Indigenous welfare (20, 21). Family support is not only a crucial aspect of Indigenous ways of life but is also critical to community and individuals' involvement and participation in various health promoting activities (22). Physical activity mentors, individuals who guide, teach, and support individuals in physical activity behaviour in a personal and peer-support type of relationship have been successful in supporting improved physical activity for older adults, and mentors in education and nutritional capacities have supported improved health outcomes among Indigenous Peoples (23, 24), supporting physical activity mentors as potential beneficial supports for Indigenous Peoples' physical activity.

With a decrease in health status and PA participation, it is important to uncover factors which would improve participation amongst Indigenous Peoples (25). Currently within non-Indigenous populations, family support has shown a strong correlation to PA (22). The role of the family for Indigenous Peoples has been and continues to be impacted by colonization, and how family support impacts Indigenous Peoples' PA participation is currently unknown. Recognizing the diversity of Indigenous identities, histories, and cultures within urban spaces in Canada, this study was conducted in partnership with community groups at the University of Saskatchewan, where multiple Indigenous identities are engaged, with sufficient numbers of specific identities to enable a distinctions-based approach. Therefore, the purpose of this study was to compare the physical activity of Indigenous adults in Saskatchewan with and without family/friend support of PA.

Materials and methods

Ethics & community engagement

To ensure the values of the participating Indigenous communities were prioritized during the research, an Indigenous Advisory Committee comprising of members from the Indigenous communities at the University of Saskatchewan (USask) was engaged and collaborated throughout the research process. The Indigenous Advisory Committee included an Indigenous undergraduate student, graduate student, faculty member, staff member, and an Elder, who were all selected by the partnering Indigenous groups, including the Indigenous Graduate Student Association, Indigenous Student Achievement Program, staff at the Aboriginal Students' Centre and other USask Indigenous groups. An Elder is a leader and educator within their community who is respected and recognized as an important knowledge holder and maintains roles and knowledge of culture and ceremony of their community (26), This collaboration facilitated the research using a culturally sensitive way to examine how family support variables applicable to Indigenous Peoples influence PA.

The Usask Behavioural Research Ethics Board approved the research project. Before obtaining ethical approval from the USask Behavioural Research Ethics Board, the study design and measures were developed in partnership with the Indigenous Advisory Committee. The research team strove to balance being respectful to the needs and wishes of the Indigenous community,

which was informed by the Indigenous Advisory Committee, while maintaining the standards of scientific procedures. The Indigenous Advisory Committee was integral in developing the methodology for the project. The interpretation of results from the study was discussed at a lunch and learn session with the Indigenous community and Advisors at the Aboriginal Students' Centre at USask, the Gordon Oakes Red Bear Student Centre, where there were around 100 attendees. The Indigenous Advisory Committee were invited as authors on the publications of the study, but they all declined. Two other studies were conducted in parallel with some of the same participants, evaluating other aspects of Indigenous ways of life and PA, using the same methodology (17–19).

Study design & participants

Participants were recruited through the assistance of partnering Indigenous groups and through PAWS, the USask web portal. Partnering Indigenous groups shared the invitation to participate through their member lists while they highlighted the relevance of the study to their community members. Emails regarding recruitment were sent out to all USask Indigenous identifying staff and faculty, and was shared through the Indigenous student centre email newsletter between 2018 and 2019. The advertisements for participation on PAWS, the university specific online bulletin board that appears when students and employees login to access university web services and platforms, and were also on various physical bulletin boards across USask. These advertisements engaged both targeted email lists of Indigenous staff and students, and university specific recruitment to the broader campus community, reaching Indigenous individuals who may not have self-selected to be included on Indigenous email lists. Eligible participants had to be at least 18 years old and self-identified as Indigenous. Informed consent was gathered from all participants before completing of any measures within this study. Participation occurred through an anonymous online survey (SurveyMonkey Inc., San Mateo, California, USA). Participants were provided the opportunity to be entered in a draw for one of six $50 gift cards to a local Indigenous store. The consent forms for this study were signed online at the start of the questionnaire.

Participants included students, staff, and faculty, including students from a range of years of study, degree types, and those who were living at home or living independently either on or off campus. This study was conducted at the University of Saskatchewan, located in Saskatoon, one of the sunniest cities in Canada (27). Weather in Saskatoon varies from long, comfortable summers with daytime temperatures ranging from 20°C to 35°C, to winters with abundant snowfall and daytime temperatures ranging from 5°C to −30°C (27).

Measures

The Indigenous identities were determined based on participants' responses to the questions regarding Indigenous groups and nations. Initially, there was a multiple-choice questionnaire regarding Indigenous groups, including: First Nations, Métis, Inuit, and other Indigenous Peoples. Then an open-ended question asked participants to identify and specify their Indigenous affiliations and/or nation. An open-ended question collected age and sex was reported as male, female or other/undefined. We collected self-identified gender, but due to small sample sizes of individuals reporting gender that did not align with sex, we chose not to report gender to maintain anonymity of participants. Marital status was reported as married/common-law, divorced, separated, widowed, or single/never married. Employment status options were student, temporarily unemployed, paid part-time or paid full-time. Level of education was reported as some high school, high school diploma, vocational school or some college, college/university degree or professional or graduate degree.

The definition of PA was provided including any play, work, transportation, household chores and recreation, and Indigenous-based examples such as lacrosse and dancing. The Godin Shepard Leisure Exercise Questionnaire (GSLEQ) was used to measure weekly PA (28), as previously used with Indigenous communities (29). Moderate (MPA) and vigorous PA (VPA) were calculated from reported minutes and frequencies of exercise, an overall GSLEQ score was calculated, and an overall weekly exercise frequency (WEF) was determined.

The Family Influence on Physical Activity questionnaire was used to record the extent and forms of family/friend support of PA (30, 31). This questionnaire asks: (1) How many days per week on average do your families/friends encourage you to engage in physical activity? (2) How many days per week on average do your families/friends watch you engaging in physical activity? (3) How many days per week on average do your families/friends involve themselves in your activities, that is, being physically active together with you? (4) My family/friends are physically active. Response options for these questions included (1) never or less weekly; (2) 1–2 days/week; (3) 3–4 days/week; (4) more than 5 days per week, and were collapsed to combine responses 1–2 as a "no" group, and responses 3–4 as a "yes" group. During initial conversations while developing the project, an additional question regarding role models was added on the recommendation of the Indigenous individuals at USask: (5) did you have a physical activity mentor/role model in your life? This included response options of yes or no.

Statistical analysis

Analyses conducted were discussed with the Indigenous Advisory Committee to ensure respectful, useful, and ethical results. A distinctions-based approach was used, examining Métis and First Nations experiences separately. An analysis of Cree/Nehiyawak First Nations specifically was also included. Analyses of other First Nations identities were not conducted due to small sample sizes. An overall analysis of all responding Indigenous participants was also included to reflect the needs and supports of the USask community, where many distinct and diverse Indigenous Peoples are served. Statistical analysis

comparing Indigenous identities was not performed on the recommendation of the Indigenous Advisory Committee, as they felt it did not add to the meaning or usefulness of the findings.

Mean differences were examined within each Indigenous identity with the significance set at $p < 0.05$. Data analysis was conducted using SPSS version 28.0. Statistical analysis included independent one-tailed *t*-tests. All assumptions for the independent *t*-tests were examined and met. Complex regression analyses were not conducted due to the sample size. This form of analysis was selected to reflect the distinctions-based approach, sample size, and community direction of the research question.

Results

From the 140 participants who consented to participate in the study, 124 participants completed the survey (89%) from September 2018 to March 2019. As presented in Table 1, the majority of the participants were female and of Métis or First Nations identities. Of the First Nations participants, 67.5% identified as Cree/Nehiyawak. Participants ranged from 18 to 63 years of age.

Métis participants

As outlined in Figure 1, Métis participants with family/friends involvement in PA reported greater VPA than those without family/friend involvement in PA ($p = 0.01$). Further, Métis participants with family/friends who watch them engage in PA report greater VPA in comparison to those who do not have family/friends watching them engage in PA ($p = 0.01$). Métis participants with PA mentors, a mentor or role model to support, advise, or demonstrate regular PA, reported greater GSLEQ scores than those who did not have PA mentors ($p = 0.04$).

First Nations participants

Among First Nations participants, shown in Figure 2, those with family/friends' encouragement of PA reported greater VPA ($p = 0.002$), WEF ($p = 0.04$) and GSLEQ scores ($p = 0.03$) than those without family/friends' encouragement of PA. First Nations participants with family/friend involvement in PA reported greater WEF ($p = 0.01$) and GSLEQ scores ($p = 0.01$) in comparison to those without family/friends involved in their PA. Furthermore, First Nations participants with active family/friends reported significantly greater VPA ($p = 0.01$) in comparison to those without active family/friends. First Nations participants with family/friends who watch them engage in PA also have greater VPA ($p = 0.01$) and GSLEQ scores ($p = 0.048$) in comparison to participants who reported not having family/friends watch them engage in PA.

Cree/Nehiyawak First Nations subgroup

In Figure 3, Cree/Nehiyawak First Nations participants with family/friend encouragement of PA reported greater VPA, than

TABLE 1 Characteristics of indigenous participants from University of Saskatchewan 2018–2019, by indigenous identity, *n* (%).

	Indigenous			
	Total	Métis	First Nations	
			All	Cree/Nehiyawak
N	123	40	80	54
Age, Years ± SD	30 ± 11	28 ± 12	31 ± 11	30 ± 12
Sex at birth				
Female	93 (75.2)	31 (75.6)	63 (77.8)	42 (77.8)
Male	30 (25.8)	9 (25.4)	17 (23.2)	12 (23.2)
Marital status				
Single, never married	51 (40.8)	14 (34.1)	35 (43.2)	24 (44.4)
In relationship	28 (22.4)	16 (39)	12 (14.8)	7 (13)
Married	18 (14.4)	4 (9.8)	14 (17.3)	9 (16.7)
Common-law	14 (11.2)	2 (4.9)	12 (14.8)	8 (14.8)
Separated/Divorced	11 (8.8)	4 (9.8)	6 (7.4)	5 (9.3)
Employment status				
Student	73 (58.4)	23 (56.1)	48 (59.3)	36 (66.7)
Paid part-time	12 (9.6)	4 (9.8)	8 (9.9)	3 (5.6)
Paid full-time	34 (27.2)	12 (29.3)	21 (25.9)	12 (22.2)
Education status				
High school	29 (23.2)	12 (29.2)	44 (54.3)	13 (24.1)
Some post-secondary	40 (32.1)	12 (29.3)	27 (33.3)	20 (37.0)
College/University degree	32 (25.6)	9 (22.0)	21 (25.9)	14 (25.9)
Professional/graduate degree	22 (17.6)	8 (19.5)	14 (17.3)	7 (13.0)

N, number of participants; SD, standard deviation; Percentages not add to 100% due to missing data or small sample sizes of some categories not listed to maintain confidentiality.

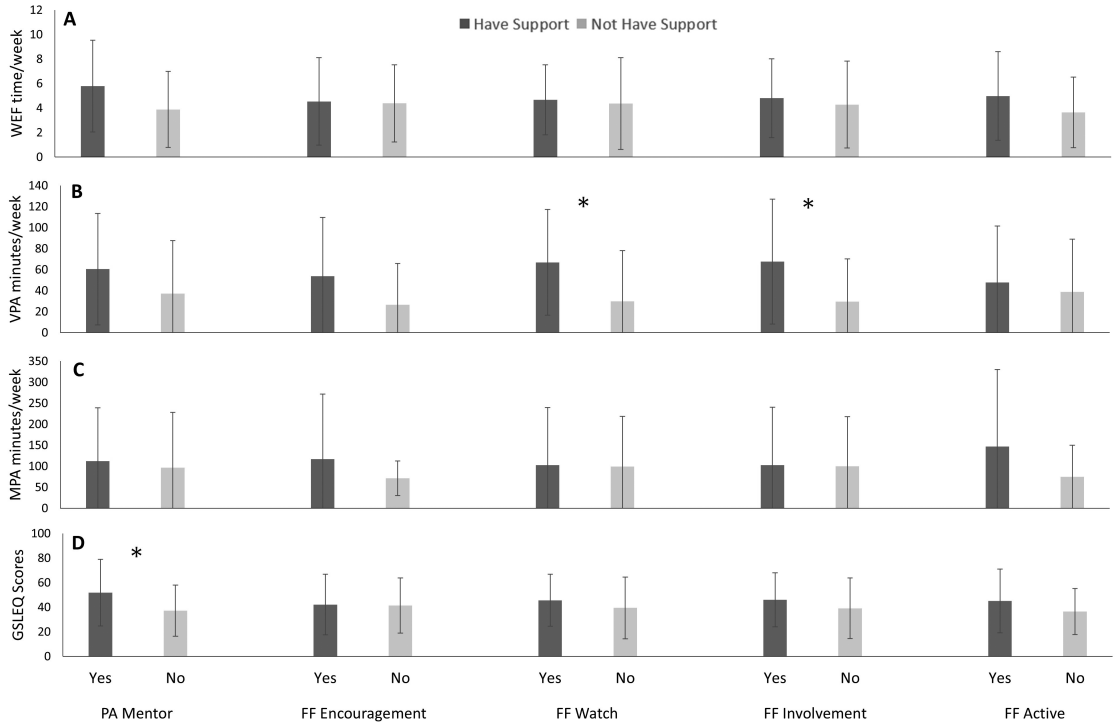

FIGURE 1
Weekly exercise freqeuncy (WEF; A), vigorous exercise (VPA; B), moderate exercise (MPA; C), and Godhin-Shephard leisure-time exercise Questionnaire scores (GSLEQ; D) scores from Métis participants from University of Saskatchewan, 2018–2019.

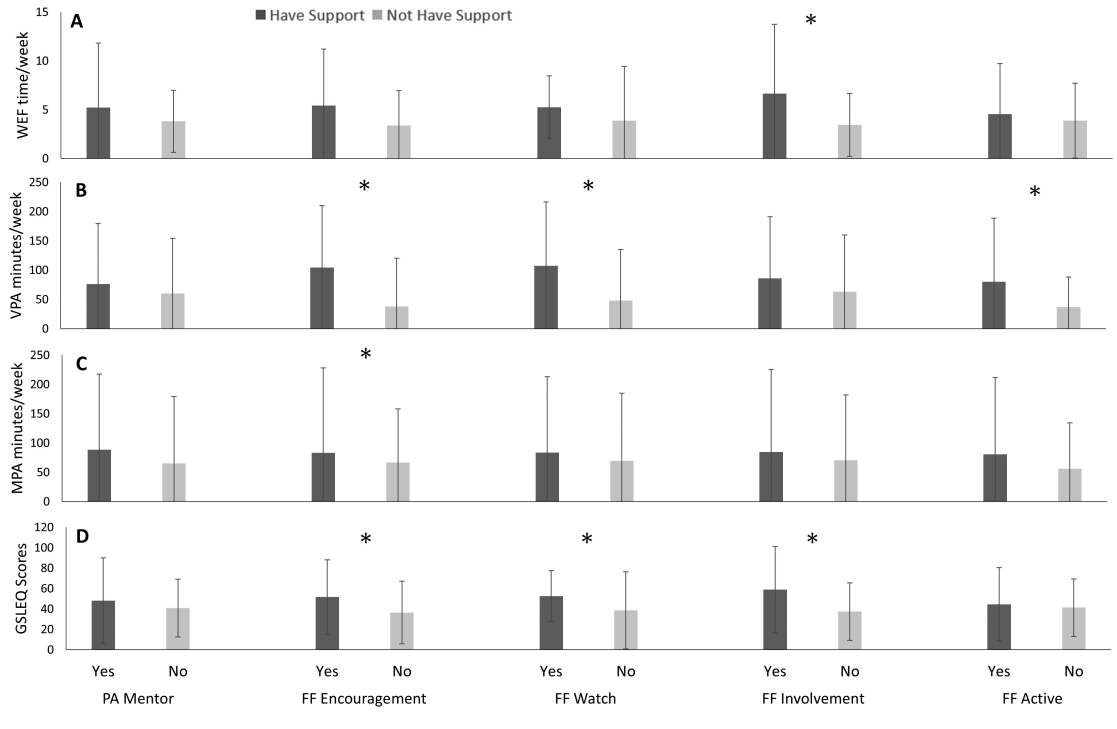

FIGURE 2
Weekly exercise freqeuncy (WEF; A), vigorous exercise (VPA; B), moderate exercise (MPA; C), and Godhin-Shephard leisure-time exercise Questionnaire scores (GSLEQ; D) scores from First Nations participants from University of Saskatchewan, 2018–2019.

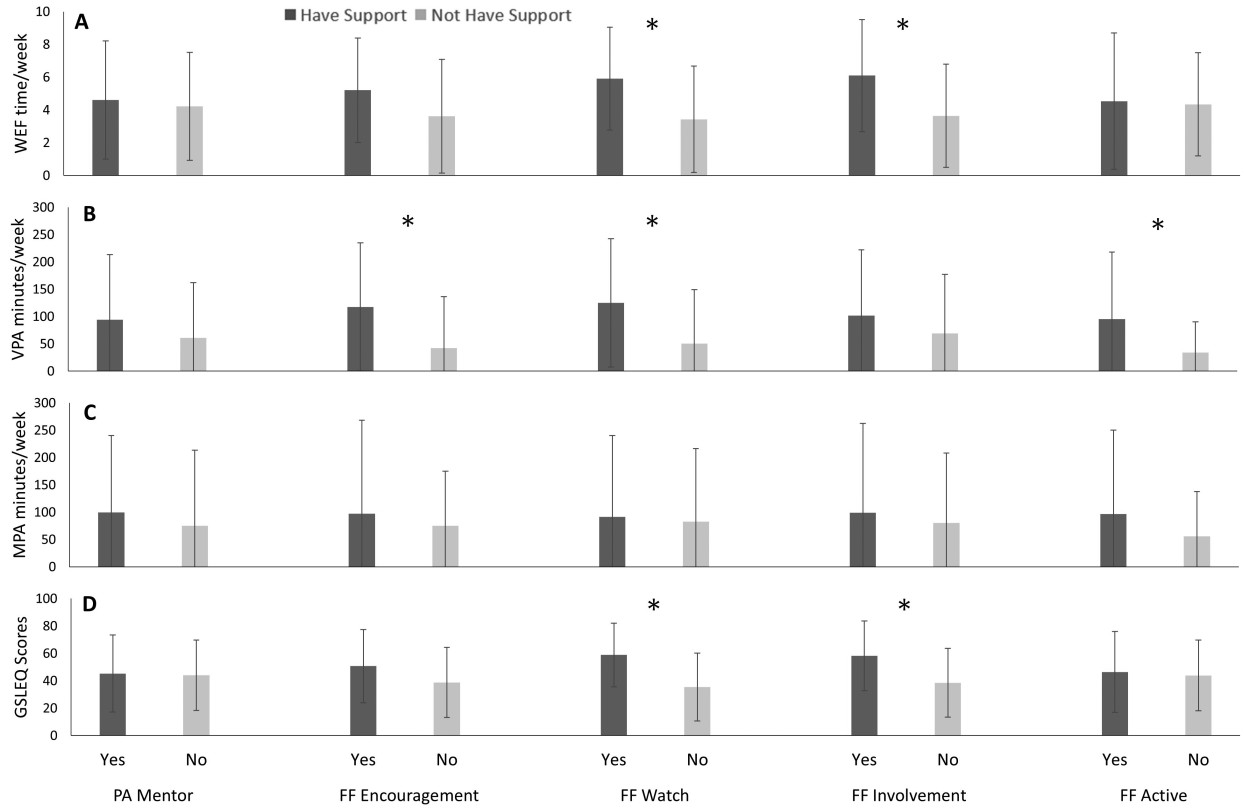

FIGURE 3
Weekly exercise freqeuncy (WEF; A), vigorous exercise (VPA; B), moderate exercise (MPA; C), and Godhin-Shephard leisure-time exercise Questionnaire scores (GSLEQ; D) scores from Cree/Nehiyawak participants from University of Saskatchewan, 2018–2019.

those without family/friends' encouragement of PA ($p = 0.01$).Cree/Nehiyawak participants with family/friend involvement in PA reported greater WEF ($p = 0.01$) and GSLEQ scores ($p = 0.01$) than participants who did not have family/friends involved in their PA.

Indigenous participants

From the collective Indigenous participants within this study, VPA was greater amongst those with family/friend encouragement of PA in comparison to the participants without family/friend encouragement of PA ($p = 0.001$), as seen in Figure 4. Similarly, Indigenous participants with family and friends who watch them engage in PA reported greater VPA ($p = 0.001$) and GSLEQ scores ($p = 0.04$) than those without family and friends who watch them engage in PA. Further, Indigenous participants with family/friends' involvement in PA reported greater weekly exercise frequency (WEF), in comparison to those without this involvement in PA ($p = 0.01$). Greater GSLEQ scores were also reported from Indigenous participants with active family and friends compared to those without active family and friends ($p = 0.01$).

Discussion

This research was significant in identifying greater PA among Indigenous Peoples with family/friend support of PA. These findings build on and are consistent with previous research identifying greater PA among Indigenous Peoples with greater perceptions of social support (18). Another important finding is the distinctiveness of results among different Indigenous identities, with Métis adults reporting greater PA when they have a PA mentor, while this finding was not identified among First Nations adults. Partnering with Indigenous communities at a university enabled an analysis of diverse a Indigenous population, representative of many urban centres, while also including sufficient numbers of participants from specific identities to enable a distinctions-based approach to this analysis.

Within Indigenous communities, a sense of belonging and support from on's community is a significant determinant of health. For Indigenous Peoples, social support is linked to health and wellness, and reinforces cultural identity (32, 33). Previous research has reported that thriving health is more common among Indigenous Peoples with greater social support (32). Among the general population, support from family and friends has been identified as a correlate of PA for adults, and support

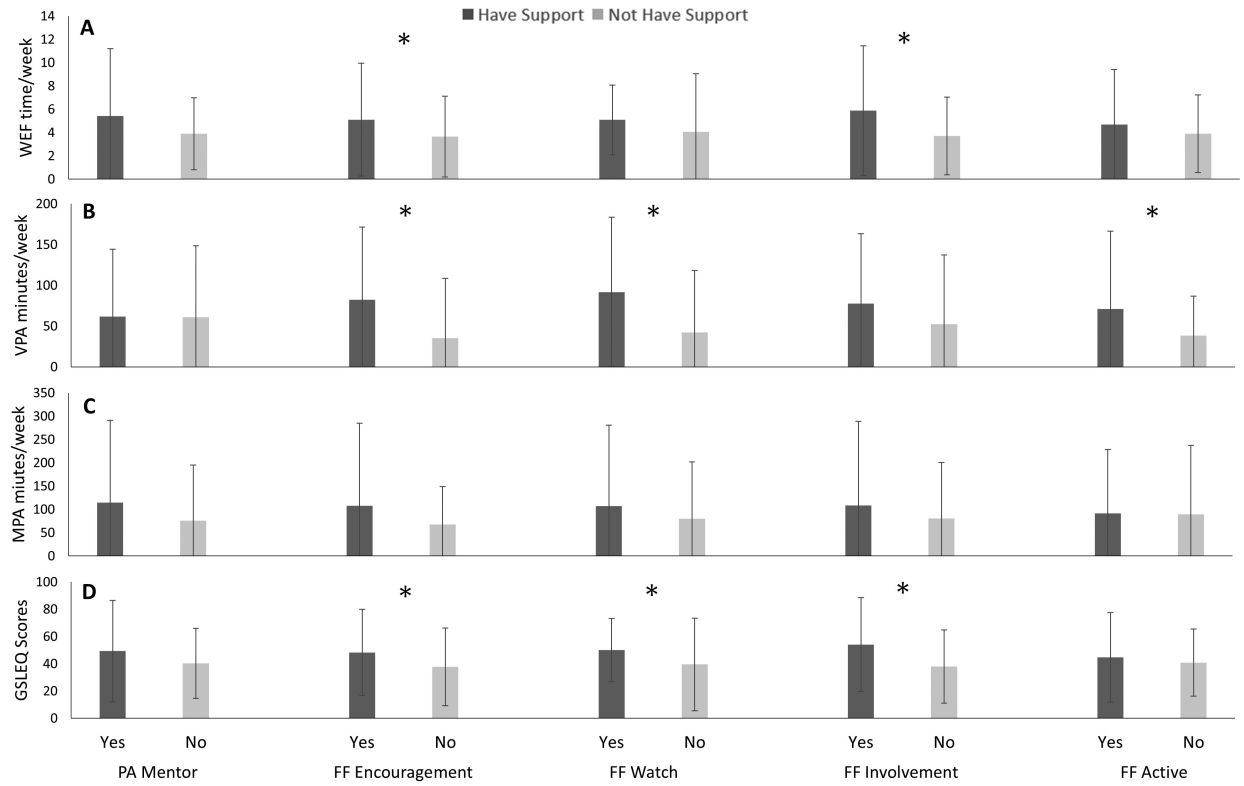

FIGURE 4
Weekly exercise freqeuncy (WEF; A), vigorous exercise (VPA; B), moderate exercise (MPA; C), and Godhin-Shephard leisure-time exercise Questionnaire scores (GSLEQ; D) scores from collective indigenous participants from University of Saskatchewan, 2018–2019.

for physical activity from family/friends has been identified as a correlate of PA among children/youth (34). Furthermore, among adults in the general population, family/friends support for PA is associated with weight reduction (35, 36). Within Indigenous communities, family participation in PA particularly for youth, models positive behaviour, which is imprinted on children through adulthood (37). Within our study specifically, the greater PA among Indigenous Peoples with family/friends involvement in PA among multiple Indigenous identities, supports the strength of this finding.

Family/friend support in the form of PA mentors was associated with greater PA among Métis People specifically. The lack of PA difference among First Nations who have or do not have a PA mentor is consistent with previous findings among children and youth in the general population (34). However, among First Nations youth, having relatives help youth understand their culture is associated with greater PA among First Nations youth (38). Mentorship is an important component of many Indigenous cultures and integral to knowledge transfer and teachings (39). Indigenous mentorship is valuable for connecting people through culture and providing resources for mentees' growth (39). Among First Nations youth, mentorship is associated with decreased weight gain and improved healthy living (40). These findings also highlight the distinctiveness and differences between Indigenous identities and the need for distinctions-based approaches to supporting Indigenous health and wellbeing. This connection to culture and mentorship, consistent with previous reports of greater cultural connectedness associated with greater physical activity support resourcing for Indigenous cultural connections as a potential means of improving physical activity for Indigenous Peoples (17). Future studies should evaluate interventions focusing on expanding cultural connectedness, knowledge, and engagement to evaluate PA changes.

The high levels of VPA reported in this study contrast previous research among First Nations communities identifying participation predominantly in low-intensity PA (41). This may reflect the university campus setting of participants, reflecting a primarily young middle-aged adult population who have access to PA facilities and programs on post-secondary campuses and greater education associated with PA among Indigenous Peoples (42). University populations have been found to have to be highly active, with more than 70% of university students classified as highly active (43). However, physical activity behaviours among university populations are highly variable depending on the country and culture (44), highlighting that Indigenous Peoples experiences may be different from that of other university populations in Canada. Further understanding is required to better articulate the differences in PA among Indigenous Peoples who have post-secondary education and the influence of access to PA facilities and programs may have on PA behaviour.

This study explored Indigenous Peoples' PA behaviour and how it is related to family/friend support, a previously unexplored concept. A strength of this research is the distinctions-based approach, identifying similar and unique modes

of family/friends support of PA among distinct Indigenous identities. Partnership with the Indigenous community and oversight of an Indigenous Advisory Committee is an important strength in this work. Another strength of this study was the diverse perspectives and experiences of Indigenous Peoples represented. As participants representing and experiencing multiple Indigenous identities, and from different income, education, employment backgrounds are included, this sample is closer in representation to urban Indigenous populations. Evaluating PA based on self-reported measures has potential limitations. The university campus setting of this research may limit generalizability to Indigenous populations in other locations or settings. In 2021 just under half (49.2%) of Indigenous Peoples aged 25–64 years in Canada had completed a postsecondary qualification, which is below the rate for the non-Indigenous population in Canada (68.0%) (45). Further, we did not ask which academic unit participants registered with; participants from more health-focused disciplines may have been more interested in participating. Additionally, if students also worked, they may not have been included in either student, or employed categories of our demographic assessment, limiting the consistency of student and employment characteristics. Limitations of this study also include a sex bias in the sample, with more females completing the survey, though this is consistent with a gender bias of more Indigenous women than men in higher education (46).

Family/friends support for PA, including involvement in PA and encouragement of PA are associated with greater PA for collective Indigenous populations, and specifically Métis, First Nations, and Cree/Nehiyawak First Nations. Specifically, among Métis, participants with PA mentors also reported greater PA than those without PA mentors. Family/friends support for PA is an enabler of PA for Indigenous Peoples, though specific identities experience differences in the components of family/friend support for PA. Future studies should evaluate how family, friend, and community support of PA influences PA of Indigenous Peoples living in rural, remote, and on-reserve locations, and those who are not engaged in post-secondary education and careers. Additionally, evaluating sex- or gender-specific experiences among Indigenous Peoples would also be important.

Data availability statement

The datasets presented in this article are not readily available because the participants of this study, and the community partners, did not give written consent for their data to be shared publicly, so due to the sensitive nature of the research partnering with an Indigenous community, supporting data is not available. Requests to access the datasets should be directed to heather.foulds@usask.ca.

Ethics statement

The studies involving humans were approved by University of Saskatchewan Behavioural Research Ethics Board. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

NM: Formal Analysis, Investigation, Visualization, Writing – original draft. AI: Conceptualization, Data curation, Investigation, Methodology, Writing – review & editing. SJ: Formal Analysis, Supervision, Validation, Writing – review & editing. TR: Visualization, Writing – review & editing. MF: Software, Validation, Writing – review & editing. KM: Visualization, Writing – review & editing. HF: Conceptualization, Data curation, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Validation, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Impact of perceived threats, benefits, and athlete brand image on attitudes toward naturalized athletes in the context of China

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Introduction: China's implementation of athletic naturalization has sparked controversy, yet empirical studies on the factors influencing public attitudes toward naturalized athletes remain scarce. This study aims to address this gap by constructing a theoretical model based on social identity theory, examining the impact of various psychological variables on respondents' attitudes toward naturalized athletes in China's national teams.

Methods: Data were collected from 704 online respondents. Descriptive and exploratory factor analyses (EFA) were conducted using SPSS 25.0. Structural equation modeling with partial least squares (PLS-SEM) was employed to test the proposed hypotheses, utilizing SmartPLS 3.0.

Results: The findings indicate that perceived threats negatively impact attitudes ($\beta = -0.134$, $p < 0.001$), while perceived benefits positively influence athlete brand image ($\beta = 0.494$, $p < 0.001$) and attitudes ($\beta = 0.169$, $p < 0.001$). Athlete brand image positively affects attitudes ($\beta = 0.623$, $p < 0.01$) and mediates the relationship between perceived benefits and attitudes. Additionally, sport event involvement positively moderates the relationship between athlete brand image and attitudes. The model explained 33.7% of the variance in athlete brand image and 68.5% of the variance in attitudes.

Discussion: These findings suggest that naturalization decisions should consider the candidates' overall brand image, with the naturalization process being more transparent and the naturalized athletes' contribution being effectively communicated to the public. Additionally, fostering public involvement in sport events can create a more favorable atmosphere for athletic naturalization.

KEYWORDS

naturalized athletes, athlete brand image, sport event involvement, likability, identification, support intention

1 Introduction

Globalization has significantly influenced the development of modern sport, particularly since the 1990s, when the migration of athletes became more frequent due to the increasing professionalization and internationalization of sports leagues and events (Leng et al., 2021). Many countries have adopted the practice of recruiting foreign-born athletes to represent their

national teams, a trend observed in major sporting events such as the FIFA World Cup and the Olympic Games (Maguire and Falcous, 2010; Maoski et al., 2021; Reiche and Tinaz, 2019). This has led to the widespread implementation of athletic naturalization strategies, including in China.

Despite China's ambitious goals of becoming a powerful sporting country and using sports as a symbol of the Great Rejuvenation of the Chinese Nation (General Office of the State Council of the PRC, 2019), the structural weaknesses within its elite sports system have posed significant challenges. As the host of several global mega-events, China aims to deliver outstanding performances but faces difficulties achieving this through its existing athlete training and selection systems alone.

Against this backdrop, recruiting foreign sporting talents to represent China is viewed as an expedited solution. Naturalized athletes are those who voluntarily acquire the nationality of a country other than their birthplace, gaining membership in its sports associations and competing internationally under that nation's flag (Lin, 2013). To date, China has particularly focused on recruiting naturalized athletes in preparation for events such as the FIFA World Cup and Winter Olympics (see Table 1).

These naturalized athletes are considered strategic assets for enhancing the sporting competitiveness of their adopted countries, often requiring significant investments. To maximize the value of these "assets," it is crucial to secure broad public support, which can improve the athletes' adaptability to a new society and enhance their performance (Kim et al., 2020). However, despite the growing presence of naturalized athletes in China's national teams, this strategy has faced intense public scrutiny, with rising concerns about the athletes' underlying motives and allegiance (Leng et al., 2021; Li et al., 2024).

In this context, athletic naturalization has become a prominent issue in academic discourse, prompting the need for further research to identify the factors and mechanisms shaping public perceptions of naturalized athletes. This study aims to construct a theoretical model based on social identity theory and to examine the impact of various psychological variables on individuals' perceptions of naturalized athletes. The findings may contribute to the development of effective strategies for managing the naturalization of athletes in countries seeking to diversify their selection systems, enhance sporting competitiveness, and expand global influence. Moreover, this study could offer insights into a broader conceptualization of the "imagined community" (Anderson, 1983), as the perception of naturalized athletes is closely tied to the public's multicultural acceptability (Lee, 2008; Lee et al., 2018).

TABLE 1 Naturalized athletes who represented China (2019–2024).

Name	Sport	Original nationality
Fei Nanduo (Fernando), Jiang Guangtai (Tyias Browning), and other 4 athletes	Men's football	Brazil/UK
Ye Jinguang (Brandon Yip), Zheng Enlai (Ty Schultz), and other 13 athletes	Men's ice hockey	Canada/US/Russia
Zhou Jiaying (Kimberly Newell), le MI (Hannah Miller), and other 11 athletes	Women's ice hockey	Canada/US
Lin Xiaojun (Lim Hyojun), Liu Shaolin (Shaolin Sandor Liu), Liu Shaoang (Shaoang Sandor Liu)	Men's short track Speed skating	South Korea/Hungary
Zhu Yi (Beverly Zhu), Lin Shan (Ashley Lin)	Women's figure skating	US
Gu Ailing (Eileen Gu)	Women's freestyle skiing	US
Zheng Ninali (Nina Schultz)	Women's heptathlon	Canada
Li Kaier (Kyle Anderson)	Men's basketball	US

2 Literature review and hypothesis development

2.1 Athletic naturalization in China and other countries

Athletic naturalization has been a contentious issue since its inception, particularly when athletes switch allegiances to represent nations with which they have minimal historical, ethnic, linguistic, or cultural ties (Grix, 2016).

In Japan for example, the failure of its ice hockey team to qualify for the Lillehammer Winter Olympics motivated the country to open its domestic sports system (Chiba et al., 2001). The Japanese Ice Hockey Federation (JIHF) began recruiting Canadian-born athletes of Japanese descent to improve the men's national team's performance at the 1998 Nagano Winter Olympics. Recruiting athletes of Japanese ancestry was a strategy employed by the JIHF to quickly build a stronger team and mitigate potential public backlash against fully foreign athletes without Japanese heritage. However, Japanese media criticized this naturalization as a shortsighted policy enacted at the expense of developing domestic players (Chiba et al., 2001).

Since 2013, South Korea has aggressively recruited foreign-born winter sports athletes, despite this contradicting its long-standing ethnic nationalism. The naturalization effort was part of South Korea's nation-building project aimed at preparing competitive national teams for the 2018 PyeongChang Winter Olympics (Shin and Lee, 2021). To facilitate naturalization, the government relaxed the Nationality Law (Article 7) (Choi, 2020) and began allowing dual citizenship (Lee, 2010). As athletic naturalization progressed, the South Korean public became more accepting of white naturalized athletes than those of Black or other ethnic backgrounds, as the country's racial hierarchy, which favors and normalizes white identity, reinforces racist views toward Black people and other people of color (Choi, 2020).

For Qatar, sports investment is a key part of its soft power strategy, centered around three themes: showcasing Qatar's supremacy as a

microstate; pursuing peace, security, and integrity; and addressing national health crises (Brannagan and Giulianotti, 2015). A major challenge to Qatar's sporting success is its small population and low participation rates in sports, especially among women (Reiche, 2015). Naturalization is a key strategy to enhance Qatar's visibility and success in international sports, and the number of naturalized athletes it has is significantly higher than international norms (Reiche and Tinaz, 2019). However, Qatar only grants these athletes temporary citizenship, unless they achieve exceptional success, suggesting that most foreign-born athletes are not seen as true members of Qatari society.

Like Qatar, Turkey is heavily investing in sports as a branding strategy to promote a positive image both domestically and internationally (Polo, 2015). Despite having a much larger population, Turkey faces challenges with low sports participation, a lack of facilities, and an underdeveloped school sports system (Tinaz et al., 2014). Since 2014, Turkey has expanded athletic naturalization after Turkish athletics collapsed due to widespread doping in 2013 (Reiche and Tinaz, 2019). Naturalizing foreign-born athletes has become a key strategy for Turkey in its quest to become a major sporting power.

While China has historically excelled in many Summer Olympic sports, the primary motivation for naturalizing foreign-born athletes is to strengthen its sporting prowess by addressing structural weaknesses in its elite sports system (Hai et al., 2021). This strategy also serves as a response to the threats from other countries, such as the naturalization of footballers in Indonesia and the Philippines, within the broader context of global athletic naturalization. Different from the aforementioned countries, China has achieved a leading position in the recent Summer Olympics and Asian Games (General Administration of Sport of China, 2021), recruiting foreign-born sporting talents is an efficient strategy to improve its overall sporting competitiveness and keep the dominant position in mega sport-events. In the context that China does not encourage immigration, accept refugees or asylum seekers (Sullivan et al., 2023), the major obstacles to the development of athletic naturalization for China include the citizens' exclusive inclination based on the ethnic nationalism (Huang et al., 2021; Ni and Wang, 2020), and the limitation of the nationality law (doctrine of single nationality) (Liang et al., 2020; Qian, 2020; Xu et al., 2019). Scholars generally argue the direct benefits brought by naturalized athletes for the adopting country include improving its international competitiveness, intensifying the domestic competition and consequently improving the indigenous athletes (Hai et al., 2021; Lin, 2013; Ni and Wang, 2020). Academics have also expressed their concerns that the extensive employment of athletic naturalization may restrain the development of the youth training system (Chen and Wang, 2020; Lin, 2013), undermine the public's national pride from elite sport (Lin, 2013; Zhang, 2019), and even blur national identity (Huang, 2014).

2.2 Attitudes toward the naturalized athletes

Given that people's association with athletes can influence their team identification and involvement in certain sports (Funk et al., 2001; Hong et al., 2005; Wu et al., 2012), their perceptions of naturalized athletes may significantly affect their relationships with the athletes' teams, leagues, sponsors, and even the elite sports system as a whole (Kunkel et al., 2020). Thus, understanding public perceptions of naturalized athletes is of critical importance.

To date, various constructs have been employed to measure public perceptions of naturalized athletes, including likability (Kim et al., 2015; Kim et al., 2020; Lee, 2008), positive/negative sentiment (Leng et al., 2021), acceptance (Willis et al., 2010), national identity and perceived similarity (Stelzl et al., 2008).

The previously mentioned constructs do not fully capture the public's psychological perception of naturalized athletes. Therefore, this study employs the construct of attitude to assess respondents' overall perception, encompassing affect, cognition, and behavioral intention (Mcdougall and Munro, 1987). Attitude is a hypothetical construct that reflects a general and enduring positive or negative feeling toward, or evaluative response to, a person, object, or issue (Petty and Cacioppo, 1986). The affective component of attitude refers to an individual's feelings toward a specific object or scenario, which can range from pleasurable to unpleasurable (Schwarz, 2000). The cognitive component consists of beliefs, knowledge structures, perceptual responses, and thoughts, varying from favorable to unfavorable (Breckler, 1984). The behavioral component embodies overt actions, behavioral intentions, and verbal statements regarding behavior, which can range from favorable and supportive to unfavorable and hostile (Breckler, 1984). Therefore, attitude is proposed as the appropriate construct to capture the complete psychological perception of naturalized athletes. Specifically, likability, identification, and support intention are used to represent the three dimensions of attitude.

Likability measures respondents' affection for the naturalized athlete, as interpersonal attraction and liking are central to the affective component of attitude (Liden et al., 1993). Erdogan (1999) defines likability as a source of affection based on physical appearance and behavior. In this study, likability refers to positive feelings and goodwill toward the athlete, reflecting affection for the athlete's behavior or personality traits in the context of sports (Kim et al., 2020; Feltham et al., 1991).

Identification is used to measure respondents' cognitive connection to the specified naturalized athlete, as it reflects the cognitive structures organized by their knowledge, beliefs, and expectations (Merick, 2005). Identification with an athlete involves individuals perceiving a personal link with the athlete, where the athlete's achievements and setbacks are seen as personal experiences (Wu et al., 2012). This identification indicates a deep psychological attachment to the athlete. Stelzl et al. (2008) expanded on the self-management techniques of BIRGing (basking in reflected glory) and CORFing (cutting off reflected failure) by adopting a social identity perspective. These techniques, which typically focus on associating or dissociating oneself from another person or group, can also be applied to others rather than just the self. In this context, in-group members may include another individual within the in-group by emphasizing shared social identity when the individual achieves something positive or exclude them by highlighting their non-shared identity when they do something negative. Accordingly, in this study, identification with the naturalized athlete is operationalized as the willingness to include these athletes as members of the in-group (i.e., the Chinese nation) and to share in their successes.

Support intention measures respondents' behavioral intentions toward naturalized athletes, as intention is a consistent predictor of future behaviors (Fishbein and Ajzen, 1975). Extant literature suggest

the attachment to a favorite athlete can influence spectators' behaviors (Mahony et al., 2002). Support intention is assessed by examining respondents' sport consumption intentions and behavioral loyalty, including game attendance, viewership, media and merchandize consumption, participation in discussions, and word-of-mouth related to the athletes (Braunstein and Zhang, 2005; James and Trail, 2008; Mahmoudian et al., 2021; Shapiro et al., 2013; Shin and Lee, 2021).

2.3 Factors influencing perception of naturalized athletes

Scholars have explored the factors influencing public acceptance of ethnic minorities in national representative roles from various perspectives. From a macroscopic view, historical, economic, and political differences among nations shape the overall receptiveness of their populations to such minorities (Choi, 2020). For instance, East Asian researchers emphasize the role of ethnic composition, noting that ethnically homogeneous societies tend to be more exclusionary toward immigrants, including naturalized athletes (Chiba et al., 2001; Lee, 2008; Maeng and Cho, 2012). In these societies, the myth of pure blood, territorial affiliation, and monolingualism serve as rigid ideological components that construct an exclusive national identity (e.g., Chineseness, Koreanness, Englishness) (Choi, 2020). Conversely, in regions aiming to construct a more inclusive national identity (e.g., Hong Kongness), there is greater flexibility in public attitudes: concepts such as "internationalness" justify ethnic and racial diversity by recognizing citizenship and adoption of local customs as pathways to belonging (Chiu, 2021); the "instrumental-plus" concept measures the representativeness of naturalized athletes by their contributions plus additional factors, such as familiarity with local culture and identification with the region as home (Yung et al., 2021); the "civic-plus" orientation prioritizes rational-legal citizenship and equal treatment, valuing allegiance over ethnic and racial ties, thus allowing for a more inclusive acceptance of naturalized athletes (Yung et al., 2021).

Within a country's unique historical and cultural context, certain sports are particularly emblematic arenas for the expression of nationalistic sentiments, where public opinion often disfavors the recruitment of naturalized athletes. Marathons in South Korea (Choi, 2020) and football in England (Gibbons, 2015) serve as key examples.

From the perspective of individuals in host countries, scholars argue that national identity is closely linked to elite sports at the national level (Burdsey, 2006; Fletcher, 2012; Maguire et al., 1999). Consequently, national identity may be a significant factor influencing attitudes toward naturalized athletes, aligning with immigration studies that suggest the populace's national identity strongly impacts their views on immigrants (Bikmen, 2015; Louis et al., 2013). Furthermore, acceptance levels vary across different demographic groups (Cho and Lee, 2018; Willis et al., 2010).

Despite existing literature addressing factors from macro-level national perspectives to micro-level individual considerations, the psychological and perceptual dimensions of sports remain underexplored in explaining the gaps between national identity and public perceptions of naturalized athletes. As a result, practical solutions to enhance public acceptance are difficult to develop. To address these gaps, we introduce the constructs of perceived threats, perceived benefits, athlete brand image, and sport event involvement. These elements are incorporated into a theoretical model designed to elucidate the mechanism by which individuals form attitudes toward naturalized athletes.

2.4 Effect of perceived threats and perceived benefits on attitudes

This study is grounded in social identity theory, which provides a comprehensive framework for examining intergroup relations. Social identity is defined as "part of an individual's self-concept, derived from their knowledge of membership in a social group, along with the value and emotional significance attached to that membership" (Tajfel, 1981, p. 255). Social identity theory posits that individuals seek to enhance or maintain their self-concept or self-esteem by attributing positive qualities to their in-group and negative qualities to out-groups (Tajfel and Turner, 1979). This theory has been widely applied in research on public perceptions of immigrants (Esses et al., 2006; Kessler et al., 2010) and foreign-born athletes (Stelzl et al., 2008). In line with this framework, we introduce the constructs of perceived threats and perceived benefits in this study to investigate the specific causes leading to positive or negative attitudes toward naturalized athletes.

The concept of *perceived threats* is rooted in the integrated threat theory of prejudice (Stephan et al., 2000), which is frequently employed to study intergroup relations in culturally plural societies, such as local citizens' attitudes toward immigrants. Perceived threats can be categorized as either realistic or symbolic. Realistic threats involve perceptions that the out-group endangers the in-group's existence, political or economic power, or physical wellbeing; while symbolic threats pertain to the belief that the out-group jeopardizes the in-group's "way of life," including values, customs, traditions, beliefs, and attitudes (Bizman and Yinon, 2001). These threats can be experienced at various levels, with individuals feeling personally threatened or perceiving a threat to their in-group as a whole (McLaren, 2003). As perceived threats increase, members of the receiving society often exhibit more negative attitudes toward immigrants (Louis et al., 2013; Stephan et al., 2000; Ward and Masgoret, 2006). Similarly, citizens of an adopting country may perceive athletic naturalization as a threat, expressing concerns such as "depriving local players of opportunities to become national players" or "causing the national identity crisis" (Cho and Lee, 2018, p. 461).

In contrast, *perceived benefits* refer to beliefs about the positive outcomes associated with a behavior, particularly in response to a real or perceived threat (Tingchi Liu et al., 2013). While individuals may perceive benefits from immigrants (Maeng and Kwon, 2015; Pereira et al., 2010), this construct has not been extensively tested in existing immigration studies. Athletic naturalization represents a unique phenomenon distinct from general immigration, often driven by strategic objectives set by sports administrators. The positive and negative effects of athletic naturalization are likely to be directly perceived by individuals based on their sports identity, which is associated with specific sports, teams, or athletes (Funk and James, 2004). For example, the belief that naturalized footballers will enhance the national team's performance is correlated with positive attitudes toward these athletes (Willis et al., 2010).

Given that naturalized athletes can be classified as immigrants, we hypothesize that perceived threats associated with their

introduction will lead to negative attitudes, while perceived benefits will foster positive attitudes. Accordingly, the following hypotheses are proposed:

> *H1*: Perceived threats have a negative impact on attitudes toward naturalized athletes.
>
> *H2*: Perceived benefits have a positive impact on attitudes toward naturalized athletes.

2.5 Effect of athlete brand image on attitudes

Although numerous studies have examined factors influencing public perceptions of naturalized athletes, research specifically addressing the impact of athletes' attributes—particularly their brand image—on respondents remains limited. An athlete's brand image refers to the set of associations that people identify with a particular athlete (Kunkel et al., 2020). Arai et al. (2013) developed the athlete brand image (ABI) model, which encompasses three major dimensions—*athletic performance*, *attractive appearance*, and *marketable lifestyle*—and 10 sub-dimensions (*athletic expertise*, *competition style*, *sportsmanship*, *rivalry*, *physical attractiveness*, *symbol*, *body fitness*, *life story*, *role model*, *relationship effort*).

This model provides one of the first comprehensive frameworks for understanding athletes' brand image and suggests mechanisms to enhance ABI. Liu et al. (2016) adapted this model to the Chinese context, identifying six major dimensions: *external image*, *moral style*, *sports level*, *competition style*, *social responsibility*, and *relationship with fans*. The perception of an athlete is influenced by their overall brand image, which is constructed through both pre-existing and new information encountered by consumers, including fans (Arai et al., 2014). Consequently, perceptions of ABI may vary even for the same athlete.

The ABI has been employed to predict respondents' psychological commitment, behavioral loyalty to specific athletes, and behavioral intentions toward products endorsed by these athletes (Mahmoudian et al., 2021; Shin and Lee, 2021; Väätäinen and Dickenson, 2019). Attitude is also frequently modeled as a dependent variable of image management (Bruner and Hensel, 1996; Homer, 2006; Kirmani and Shiv, 1998). Lee (2008) developed a scale for athlete image—comprising dimensions of sportiness, appearance, performance, and morality—in the South Korean context, demonstrating that sports fans' perceptions of foreign athletes' image (who are playing in South Korea) positively correlate with their likability. Kim et al. (2015) extended Lee's work by confirming the causal relationship among perceptions of foreign athletes' image, likability, and social distance. Additionally, Stelzl et al. (2008), through both archival research and experimental design, confirmed that an immigrant athlete's performance achievements and reputation significantly influence media and public perceptions of the athlete's national identity, determining whether they are recognized as a *bona fide* member of a nation.

Since the aforementioned factors are referred to the athletic expertise and sportsmanship associations of ABI, we integrate the ABI model with attitudes to test whether ABI similarly affects public attitudes toward naturalized athletes. Accordingly, the following hypothesis is proposed:

> *H3*: ABI has a positive influence on attitudes.

2.6 Effect of perceived threats and perceived benefits on athlete brand image, and the mediating effect of athlete brand image

Perceived threats are considered to foster prejudice against those perceived as threatening (Bizman and Yinon, 2001; Stephan et al., 2000). According to social identity theory (Tajfel and Turner, 1979), the social categorization of individuals into out-groups and an in-group triggers a motivation to maintain or achieve positive group distinctiveness. This often involves enhancing the image, prestige, and resources of one's own group by derogating or discriminating against out-groups (Esses et al., 2006). For instance, individuals with traditional racist views may perceive ethnic minorities as generally threatening and, as a result, disparage them in various contexts (Kessler et al., 2010).

Given that image is a direct and perceptible attribute of naturalized athletes, we hypothesize that when individuals feel threatened by athletic naturalization, they are likely to derogate the athletes' image. Conversely, perceived benefits may motivate individuals to hold a positive perception of these athletes' brand image, facilitating their inclusion as in-group members and thereby enhancing the in-group's status. Accordingly, we propose the following hypotheses:

> *H4*: Perceived threats have a negative influence on the naturalized athlete's brand image.
>
> *H5*: Perceived benefits have a positive influence on the naturalized athlete's brand image.

Feeling threatened by a group may not automatically translate into a desire to completely exclude immigrants from society (McLaren, 2003), suggesting that mediators may exist between perceived threats/benefits and attitudes. As Lee et al. (2018) indicated, the image of naturalized athletes mediates perceptions of changing citizenship and multicultural acceptability. Therefore, we propose that ABI serves as a mediator between perceived threats/benefits and attitudes, leading to the following hypotheses:

> *H6*: ABI mediates the relationship between perceived threats and attitudes.
>
> *H7*: ABI mediates the relationship between perceived benefits and attitudes.

2.7 Moderating effect of sport event involvement

Involvement is defined as "a person's perceived relevance of the object based on inherent needs, values, and interests" (Zaichkowsky, 1985, p. 342). Specifically, Trivedi (2020, p. 193) describes sport

involvement as "an unobservable state of motivation, arousal, or interest in viewing a game or participating in a sport-related activity that results in searching, information-processing, and decision-making." Sport involvement can be measured by enduring involvement (EI) that reflects an individual's ongoing interest in sport in general or a specific sport, or situational involvement (SI) which might be invoked by a game or event (Koo and Lee, 2019).

Involvement is recognized as a significant predictor of attitude and behavior, individuals with high involvement are more likely to proactively seek and process information about an object, leading to more favorable attitudes and behaviors (Zhang et al., 2021). Sport involvement can drive desired consumption behaviors, such as game attendance and viewership (Funk et al., 2004; Shank and Beasley, 1998), and serves as an antecedent to psychological commitment and behavioral loyalty (Bee and Havitz, 2010; Doyle et al., 2013). Its moderating effects have been documented in existing literature (Koo and Lee, 2019; Lardinoit and Derbaix, 2001). For instance, Trivedi (2020) confirmed that sport involvement moderates the relationship between corporate image and brand love.

Regarding the impact of sport involvement on attitudes toward naturalized athletes, Chiu (2021) argued that football fans (who are more involved) typically have greater prior knowledge of naturalized footballers' Hong Kongness, leading to a greater willingness to accept these athletes as members and representatives of Hong Kong compared to non-football fans (who are less involved). Willis et al. (2010) found that respondents' interest in football (i.e., the attraction dimension of involvement) is positively associated with their acceptability of naturalized footballers.

Given that events like the Olympics serve as significant platforms for nations to elevate their international recognition and promote patriotic nationalism (Lee and Maguire, 2009), and considering China's proactive recruitment of foreign-born athletes in preparation for the Beijing Winter Olympics, we include sport event involvement (SEI)—reflecting respondents' sense of personal relevance to and interest in a particular event (Wong and Tang, 2016)—in this study, guided by the contact hypothesis. The contact hypothesis (Pettigrew and Tropp, 2000) posits a positive relationship between intergroup contact and favorable social and psychological outcomes: Increased contact with minority group immigrants is associated with more inclusive attitudes toward immigration (McLaren, 2003; Stephan et al., 2000; Ward and Masgoret, 2006). Accordingly, we hypothesize that individuals highly involved with the Beijing Winter Olympics are likely to have more prior knowledge of athletic naturalization (Maeng and Kwon, 2014) and, through exposure to games, news media, and advertisements, will have increased "contact" with naturalized athletes representing China. This contact may result in more positive perceptions of these athletes' brand image and more inclusive attitudes. Therefore, we propose the following hypotheses to examine the moderating effect of sport event involvement:

> *H8*: Sport event involvement moderates the relationship between perceived threats and attitudes.
>
> *H9*: Sport event involvement moderates the relationship between perceived benefits and attitudes.
>
> *H10*: Sport event involvement moderates the relationship between ABI and attitudes.

The hypothesized model is presented in Figure 1.

3 Methods

3.1 Measures

A questionnaire was developed for online data collection, with all items designed to measure the constructs in this study adapted from previous research and modified to fit the context of naturalized athletes and the Winter Olympics. The constructs included in the ABI model were athletic expertise (AE), role model (RM), sportsmanship (SS), external image (EI), competition style (CS), and relationship effort (RE). The constructs of rivalry and life story were excluded, considering their limited relevance to the unique identity of naturalized athletes and the respondents' likely familiarity with them. Following Kunkel et al. (2020), ABI was treated as a reflective-formative hierarchical component, as the lower-order components are not conceptually interchangeable and do not necessarily covary.

The questionnaire comprised 12 first-order constructs and two second-order constructs (ABI and attitude). Specifically, sport event involvement (SEI) was measured using 6 items adapted from Zhang et al. (2021); perceived threats were assessed using 5 items adapted from Cho and Lee (2018), Maeng and Cho (2012), and Maeng and Kwon (2014); perceived benefits were measured using 5 items adapted from Maeng and Kwon (2015) and Pereira et al. (2010). The 21 items related to ABI were sourced from Arai et al. (2013), Liu et al. (2016), and Kim et al. (2015). The attitude construct was divided into three dimensions: likability (measured with 3 items adapted from Kim et al., 2020), identification (5 items modified from Heere and James, 2007, and Stelzl et al., 2008), and support intention (5 items adapted from Bauer et al., 2008; Braunstein and Zhang, 2005; Shin and Lee, 2021). All constructs were measured on a five-point Likert scale ranging from 1 ("strongly disagree") to 5 ("strongly agree"). Additionally, the questionnaire included items on respondents' demographics and their awareness of naturalized athletes. Given that some items were sourced from English and Korean literature, they were translated into Chinese following Brislin's (1980) back-translation procedure to ensure linguistic accuracy.

The content and face validity of the items were evaluated by a panel of experts. Five sport management academics were provided with detailed information about the research objectives, along with a list of constructs, their definitions, and associated items. The academics rated each item on a five-point Likert scale ranging from 1 ("does not reflect the construct at all") to 5 ("reflects the construct very well"). As a result, 4 items were deleted due to receiving an average rating below 4 (Polit and Beck, 2006), leaving a total of 47 items.

3.2 Sample and data collection

The online survey was conducted on a data collection platform[1] from January 27th (1 week before the 2022 Beijing Winter Olympics) to March 20th, 2022 (1 month after the event), to account for potential changes in respondents' awareness as the event progressed. Participants were recruited online, targeting individuals who either intended to watch or had already watched the Beijing Winter Olympics. A list of eight naturalized athletes expected to compete in the Beijing Winter

1 wenjuan.com

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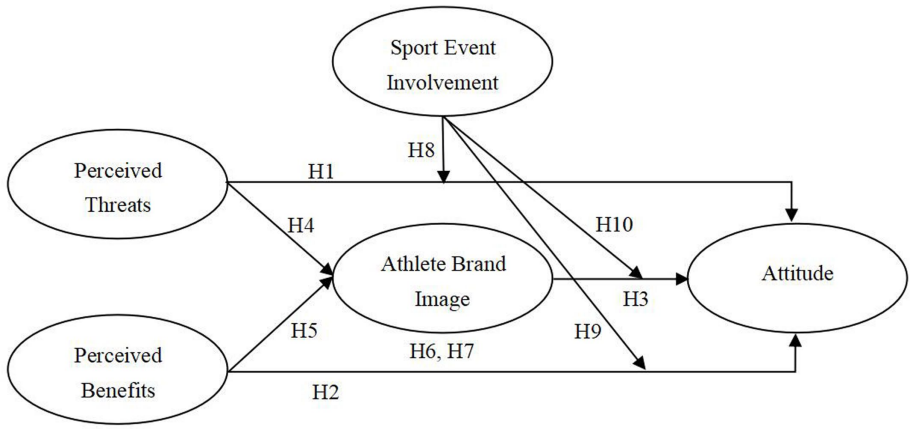

FIGURE 1
The hypothesized model.

Olympics was provided (Gu Eileen, Zhu Yi, Lin Shan, Lin Xiaojun, Zheng Enlai, Ye Jinguang, Zhou Jiaying, Wang Yuting). Participants were first asked to select the athlete they were most familiar with from the list. Those who selected "I have no knowledge of any winter sports naturalized athlete" were excluded from further analysis.

A total of 1,106 questionnaires were collected. After careful examination, 402 questionnaires were eliminated due to inconsistent responses, highly repetitive answers, or unrealistically short response times. This resulted in 704 usable responses (usable rate 63.65%). The demographic profile of the respondents is presented in Table 2. The freestyle skiing athlete Eileen Gu was identified as the most familiar naturalized athlete by the majority of respondents (65.7%), followed by Lin Xiaojun (13.1%), Zhu Yi (10.9%), Lin Shan (6.0%), Zheng Enlai (3.3%), and Wang Yuting (1.0%).

TABLE 2 Demographics of respondents ($n = 704$).

Demographics	Frequency	(%)
Gender		
Male	293	41.6
Female	411	58.4
Age range		
<18	5	0.7
18–24	406	57.6
25–30	179	25.4
31–40	80	11.3
41–50	27	3.8
≥51	7	0.9
Educational level		
Junior high school and below	9	1.2
High school/Technical secondary school	16	2.2
Junior college	30	4.2
Undergraduate	493	70
Postgraduate and above	156	22.1
Income (CNY/Month)		
≤2,999	421	59.8
3,000–3,999	26	3.7
4,000–6,999	99	14.1
7,000–9,999	58	8.2
10,000–14,999	62	8.8
15,000–19,999	15	2.1
≥20,000	23	3.3

3.3 Data analysis

SPSS 25.0 was utilized to perform descriptive analysis and exploratory factor analysis (EFA) on the sample data. To test the proposed hypotheses, structural equation modeling with partial least squares (PLS-SEM) was employed using SmartPLS 3.0. PLS-SEM was considered an appropriate technique for this study for several reasons. First, given that respondents were recruited online, the sample is assumed to be non-normal, and PLS-SEM is well-suited for handling data that do not adhere to strict normal distribution requirements. Second, PLS-SEM allows researchers to model multiple interrelated dependence relationships within a single framework. Additionally, it accommodates both formative and reflective measures (Hair et al., 2011), making it ideal for the complex constructs examined in this study.

4 Results

4.1 Measurement model

The measurement models were first examined to verify the psychometric properties of the constructs used in this study (see Table 3). EFA was conducted to assess the validity of the items for each construct. As a result, one item from AE and one item from SI were deleted due to poor factor loading. Additionally, two items from

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TABLE 3 Psychometric properties of measurement models.

Latent construct and items	*M*	*SD*	Factor loading
1. *Sport event involvement* (AVE=0.796, CR=0.951, Cronbach's α=0.936)			
I paid (would like to pay) attention to the Beijing Winter Olympics.	3.54	1.02	0.865
Watching the Beijing Winter Olympics is important to me.	3.21	1.20	0.882
It is important for me to be involved with the Beijing Winter Olympics.	3.20	1.16	0.920
Spending time on the Beijing Winter Olympics is worthy.	3.59	1.14	0.881
It is my interest to watch the Beijing Winter Olympics.	3.22	1.15	0.911
2. *Perceived threats* (AVE=0.837, CR=0.953, Cronbach's α=0.935)			
Naturalizing foreign-born athletes would hinder the training and development of Chinese-born athletes.	2.40	1.18	0.901
Naturalizing foreign-born athletes is negative for the fairness of sports.	2.20	1.18	0.913
Naturalizing foreign-born athletes would depreciate people's national pride from the national teams.	2.28	1.25	0.930
Naturalizing foreign-born athletes would cause the national identity crisis.	2.23	1.20	0.915
3. *Perceived benefits* (AVE=0.864, CR=0.962, Cronbach's α=0.948)			
Naturalizing foreign-born athletes would facilitate the development of domestic elite sports.	4.25	0.95	0.925
Naturalizing foreign-born athletes would make the domestic elite sports more vibrant.	4.26	0.95	0.950
Naturalizing foreign-born athletes would improve China's competitiveness in international sport events.	4.28	0.93	0.916
Naturalizing foreign-born athletes would enrich China's sport culture by bringing in new ideas and culture.	4.32	0.90	0.927
4. *Athlete brand image*			
Athletic expertise (AVE=0.848, CR=0.957, Cronbach's α=0.939)			
The athlete has prominent athletic skills in his/her sport.	4.67	0.67	0.945
The athlete is a dominating player in his/her sport.	4.62	0.73	0.951
The athlete is accomplished in his/her sport.	4.67	0.71	0.940
The athlete contributes a lot to the national team.	4.50	0.85	0.843
Role model (AVE = 0.867, CR = 0.963, Cronbach's α = 0.948)			
The athlete has no scandals.	4.39	0.87	0.905
The athlete is socially responsible.	4.34	0.88	0.930
The athlete is good role model for others.	4.48	0.81	0.932
The athlete demonstrates good moral standards in our society.	4.43	0.82	0.956
Sportsmanship (AVE=0.921, CR=0.979, Cronbach's α=0.971)			
The athlete strives to win in competition.	4.62	0.71	0.959
The athlete shows fair play.	4.62	0.70	0.967
The athlete shows sportsmanship.	4.63	0.68	0.967
The athlete shows respect for his/her opponents and other players.	4.61	0.69	0.946
External image (AVE=0.875, CR=0.965, Cronbach's α=0.952)			
The athlete is physically attractive.	4.42	0.84	0.942
The athlete is good-looking.	4.34	0.85	0.940
The athlete is stylish.	4.40	0.83	0.945
The athlete is in good shape.	4.49	0.77	0.913
Competition style (AVE=0.881, CR=0.957, Cronbach's α=0.932)			
The athlete's competition style is distinctive from other players.	4.10	0.94	0.903
The athlete's competition style is charismatic.	4.31	0.88	0.960
The athlete's competition style is exciting to watch.	4.30	0.91	0.952
Relationship effort (AVE=0.880, CR=0.956, Cronbach's α=0.931)			
The athlete shows appreciation for fans and spectators.	4.01	0.96	0.902
The athlete appears approachable to his/her fans.	4.27	0.86	0.957

(Continued)

TABLE 3 (Continued)

Latent construct and items	*M*	*SD*	Factor loading
The athlete tries to interact with fans.	4.25	0.88	0.954
5. *Attitude*			
Likability (AVE=0.888, CR=0.960, Cronbach's α=0.937)			
It is pleasurable to watch the athlete playing for China.	4.40	0.87	0.948
I am favorable to see the athlete becoming a member of the national squad.	4.42	0.85	0.962
I would like to make friends with the athlete.	4.38	0.91	0.916
Identification (AVE=0.781, CR=0.915, Cronbach's α=0.860)			
Despite the athlete represents China, I do not think he/she belongs to China.	3.93	1.12	0.868
The athlete is a real Chinese.	4.11	1.06	0.913
When talking about the athlete with people from other countries, I would like to use "We" to describe my relationship with the athlete.	4.17	1.05	0.869
Support intention (AVE=0.881, CR=0.887, Cronbach's α=0.933)			
I would like to follow the media reports about the athlete.	4.11	1.00	0.932
I would like to follow the athlete on social media.	3.85	1.17	0.943
I would like to participate in discussions of the athlete.	3.92	1.12	0.942

identification and another item from SI were removed due to cross-loading on multiple factors.

Following these adjustments, the factor loadings of the remaining 42 items all exceeded 0.60, indicating acceptable convergent validity (Hair et al., 1998). The Cronbach's alpha and composite reliability (*CR*) values for all constructs exceeded the recommended threshold of 0.70 (Nunnally and Berstein, 1994), suggesting good reliability. The average variance extracted (*AVE*) for all first-order constructs exceeded the 0.50 cutoff, further supporting convergent validity (Bagozzi and Yi, 1988).

Additionally, the square roots of the *AVE* for each construct were greater than the corresponding intercorrelations between constructs (see Table 4), providing evidence of discriminant validity (Fornell and Larcker, 1981). Furthermore, all heterotrait-monotrait (HTMT) ratio correlations were below 0.90, meeting the discriminant validity criterion (Henseler et al., 2015).

4.2 Test of common method bias and multicollinearity

Given that all constructs were measured using the same questionnaire, common method bias (CMB) was a potential concern. To mitigate CMB, respondents were assured of confidentiality and anonymity, and a reverse item was included in the survey. The one-factor solution approach (Podsakoff et al., 2003) was employed to assess the presence of CMB. The results indicated a significantly lower model fit for the one-factor model ($\chi^2/df = 20.390$, CFI = 0.510, TLI = 0.486, NFI = 0.498, RMSEA = 0.166) compared to the original model ($\chi^2/df = 2.759$, CFI = 0.956, TLI = 0.953, NFI = 0.934, RMSEA = 0.050), suggesting that CMB was not a serious issue in this study.

Additionally, to check for potential multicollinearity issues, variance inflation factors (VIF) were examined. The VIF values were all below the recommended threshold of 5, indicating that multicollinearity was not a concern (Hair et al., 2011).

4.3 Structural model

A bootstrapping analysis with 5,000 resamples was conducted to assess the validity of the structural model and to determine the path significance of the hypotheses. Key metrics including path coefficients, coefficient of determination (R^2), cross-validated redundancy (Q^2), and effect size (f^2) were used to evaluate the predictive ability of the hypothesized model.

The path coefficients and explained variance for the structural model are presented in Table 5. According to the results, Hypothesis 1 is supported: Perceived threats have a negative effect on attitudes ($\beta = -0.134$, $p < 0.001$). Hypothesis 2 is supported: Perceived benefits have a positive effect on attitudes ($\beta = 0.169$, $p < 0.001$). Hypothesis 3 is supported: ABI is positively correlated with attitudes ($\beta = 0.623$, $p < 0.01$). Hypothesis 4 is rejected: Perceived threats does not have a significant impact on ABI ($p > 0.05$). Hypothesis 5 is supported: Perceived benefits have a positive impact on ABI ($\beta = 0.494$, $p < 0.001$). The model explained 33.7% of the variance in ABI and 68.5% of the variance in attitudes, indicating moderate predictive power of the model.

A blindfolding procedure with an omission distance of 7 was used to calculate Q^2 values, and these results, along with f^2 values, are presented in Table 6. The Q^2 value for each endogenous variable significantly exceeded the threshold value of 0, confirming the model's predictive relevance and the significance of the structural relationships. In terms of effect sizes (f^2), Cohen (1988) categorizes them as small (0.02), medium (0.15), and large (0.35). The results indicated the f^2 effect size for the predictive value of perceived benefits on ABI was medium; the f^2 of perceived threats and perceived benefits on attitudes were small; the f^2 of ABI on attitudes was large. These findings confirm the robustness and significance of the structural model in predicting attitudes toward naturalized athletes.

TABLE 4 Square root of *AVE* (diagonal) and correlation matrix.

	SEI	PT	PB	AE	RM	SS	EI	CS	RE	LIK	IDE	SI
SEI	**0.892**											
PT	−0.102	**0.915**										
PB	0.303	−0.318	**0.930**									
AE	0.224	−0.191	0.445	**0.921**								
RM	0.265	−0.226	0.526	0.688	**0.931**							
SS	0.251	−0.215	0.499	0.653	0.773	**0.960**						
EI	0.229	−0.196	0.455	0.595	0.704	0.668	**0.935**					
CS	0.261	−0.223	0.518	0.677	0.802	0.761	0.693	**0.939**				
RE	0.251	−0.215	0.499	0.652	0.772	0.733	0.668	0.760	**0.938**			
LIK	0.347	−0.340	0.612	0.642	0.759	0.721	0.657	0.748	0.720	**0.942**		
IDE	0.271	−0.270	0.487	0.511	0.605	0.574	0.523	0.595	0.573	0.682	**0.884**	
SI	0.285	−0.273	0.491	0.516	0.610	0.579	0.528	0.601	0.579	0.688	0.548	**0.939**

4.4 Mediating effects analysis

The mediating effects of ABI were tested using a bootstrapping procedure. The results for indirect effects, total effects, and variance accounted for (VAF) are presented in Table 7. These findings show that Hypothesis 7 was supported: ABI partially mediated the relationship between perceived benefits and attitudes. However, Hypothesis 6 was rejected, as ABI did not mediate the relationship between perceived threats and attitudes.

4.5 Moderation effects analysis

To examine the moderating effects of SEI, a two-step approach was employed. First, the main effects of the model were assessed without the interaction term. In the second step, the interaction term was included to evaluate its effect on the dependent variables. The results indicated that SEI moderated the relationship between ABI and attitudes, supporting Hypothesis 10. However, Hypotheses 8 and 9 were rejected, as SEI did not moderate the relationships between perceived threats or perceived benefits and attitudes (see Table 8).

5 Discussion

5.1 Theoretical contribution

The present study aims to contribute to the growing body of knowledge on athletic naturalization by developing strategies to enhance public attitudes toward naturalized athletes from a psychological perspective.

Findings of Hypothesis 1 indicates that perceived threats have a negative impact on public attitudes. When individuals believe that the recruitment of naturalized athletes poses a threat to their community, even if these threats are not personal, they tend to adopt more negative attitudes and distance themselves from these athletes as a means of alleviating the perceived threat. This finding aligns with existing research in immigration studies (Louis et al., 2013; Stephan et al., 2000; Ward and Masgoret, 2006), confirming that perceived threats are relevant when examining naturalized athletes as a distinct category of immigrants.

Conversely, the support of Hypothesis 2 demonstrates that perceived benefits are positively associated with favorable attitudes. Respondents who perceive greater benefits from the naturalization of athletes are more likely to be inclusive and supportive of these individuals, this might be because these people have always expected China's success in elite sports especially of mega sport events like Olympics. Unlike typical international immigrants, naturalized athletes are often elite professionals chosen to represent their adopted countries in sports where those nations are traditionally less competitive on the global stage. As a result, citizens of these countries are more directly exposed to both the benefits and threats associated with the presence of these athletes. Therefore, strategies to improve public attitudes can be developed by effectively communicating the benefits of athletic naturalization. This approach not only enhances public acceptance but also contributes valuable insights to the broader field of immigration studies.

The support for Hypothesis 3 confirms a positive correlation between ABI and public attitudes, highlighting ABI as a significant factor influencing respondents' attitudes toward naturalized athletes. It is intuitive that a positive perception of a naturalized athlete's brand image would lead to greater likability and support, similar to the way people respond to other athletes. However, a more noteworthy finding is that ABI is also positively associated with respondents' deep psychological acceptance of these athletes as members of the Chinese nation. This is particularly important in the context of China, which is known for its strong ethnic nationalism (Pu and Giardina, 2016). Existing studies suggest that an athlete's recognition as a *bona fide* member of a nation typically depends on factors such as ancestral ties to the adopted country, being born or raised there, or fluency in the national language (Choi, 2020). However, the current study demonstrates that the public's flexibility in embracing naturalized athletes can be significantly enhanced through a positive perception of their brand image. Embracing these athletes with a strong ABI could potentially elevate the status of the entire in-group.

The strong correlation between ABI and attitudes observed in this study may also be influenced by the context of the Winter Olympics. This event marked China's first time hosting the Winter Games, and prior to this, China had not achieved the same level of success in

TABLE 5 Path coefficients and explained variance of the structural model.

Hypotheses	Standardized path coefficient	*t*-value	LLCI	ULCI	Supported Yes/No
H1 PT → ATT	−0.134***	4.892	−0.187	−0.078	Yes
H2 PB → ATT	0.169***	4.824	0.098	0.236	Yes
H3 ABI → ATT	0.623***	20.436	0.566	0.686	Yes
H4 PT → ABI	−0.060	1.718	−0.133	0.004	No
H5 PB → ABI	0.493***	11.919	0.414	0.578	Yes
Explained variance					
ABI		$R^2 = 0.337$			
Attitudes		$R^2 = 0.685$			

*$p < 0.05$; **$p < 0.01$; ***$p < 0.001$.

winter sports as it had in summer sports. The success of naturalized athletes, such as Eileen Gu, who won two gold and one silver medal, contributed to China achieving its objective of participating in all sports and delivering its best performance ever at the Beijing Winter Olympics, as highlighted in *Outline of Building a Powerful Sporting Country* (GOSC, 2019). It is plausible that this significant success enhanced the correlation between the public's perception of these naturalized athletes' brand image and attitudes toward them. However, it remains to be seen whether this strong correlation would hold in sports where China traditionally excels (e.g., table tennis, gymnastics, or diving) or in sports that are closely tied to nationalism (e.g., men's football, women's volleyball). Further research is needed to confirm whether the effects observed in this study are consistent across different sports and contexts.

The findings related to Hypothesis 5 indicate that perceived benefits significantly influence people's perceptions of the ABI of naturalized athletes. It is important to note that ABI is not an entirely objective measure; rather, it is shaped by respondents' subjective awareness and perceptions of the athlete. Thus, beyond the athlete's actual brand attributes, there are some other factors that can enhance how people perceive the athlete's brand image. In this study, respondents who saw more benefits from athletic naturalization tended to have a more favorable perception of these athletes' overall brand image.

In contrast, the rejection of Hypothesis 4 suggests that perceived threats do not necessarily lead to a diminished perception of naturalized athletes' brand image. Even when respondents believe that athletic naturalization poses threats to the in-group, they might still evaluate these athletes similarly to other athletes, without derogating their ABI simply because of their special identity. This finding implies that naturalized athletes may be perceived differently from general international immigrants, as perceived threats often lead to prejudice against out-group immigrants.

Furthermore, this study proposed ABI as a mediator, and Hypothesis 7 confirms this mediating role between perceived benefits and attitudes. Perceived benefits not only directly influence attitudes but also enhance perceptions of ABI, which in turn leads to more favorable attitudes. This demonstrates a mechanism by which people develop their attitudes toward specific naturalized athletes.

Lastly, the support of Hypothesis 10 validates the moderating effect of Sport Event Involvement. SEI strengthens the relationship between ABI and attitudes, with the positive correlation between these two being notably stronger among respondents who were more involved with the Beijing Winter Olympics. This could be because those who were highly engaged with the event had greater exposure to naturalized athletes through various channels such as games, news reports, and advertisements. This increased exposure likely helped to solidify their perception of the athletes' ABI, thereby leading to more favorable attitudes.

5.2 Managerial implications

China has already achieved significant success in elite sports through the naturalization of athletes, which has played a crucial role in its progress toward becoming a powerful sporting country. With the recruitment of more foreign-born sporting talents following the Beijing Winter Olympics, it is likely that athletic naturalization will become a long-term strategy. The findings of this study offer several implications for the governance of athletic naturalization practices.

First, this study confirms the relevance of perceived threats and benefits in shaping public attitudes toward naturalized athletes, who are viewed as a distinct category of international immigrants. To mitigate perceived threats, the entire process of athletic naturalization should be made more transparent. For example, providing public access to information about the criteria for naturalization, the assessment process, selection decisions, and associated costs could help reduce public concerns. Transparency in these areas would enable the public to better understand the rationale behind naturalization decisions, thereby alleviating fears and suspicions.

In addition to transparency, enhancing the perceived benefits of athletic naturalization is essential for fostering favorable public attitudes. It is crucial to assess and effectively communicate the true contributions of naturalized athletes to national teams and specific sports. This communication can be achieved through various channels, such as news reports, documentaries, and films, which highlight the successes and positive impacts of these athletes. By helping the public recognize the tangible benefits of naturalization, such efforts can contribute to a more inclusive and supportive environment for naturalized athletes. To this end, further research is needed to explore the long-term and sustainable success of athletic naturalization. For instance, studies could investigate how to maintain consistent success with naturalized athletes and how to

TABLE 6 Q^2 and f^2 values of the latent variables.

	SSO	SSE	Q^2	f^2
ABI	15488.000	12269.180	0.208	PT → ABI: 0.005
				PB → ABI: 0.295
Attitudes	6336.000	3595.380	0.433	PT → ATT: 0.049
				PB → ATT: 0.056
				ABI → ATT: 0.815

TABLE 7 Indirect effect, total effect, and VAF.

Path	Indirect effect	Total effect	VAF	Supported?
H6 PT → ABI → ATT	−0.037	−0.171***	N/A	No mediation
H7 PB → ABI → ATT	0.307***	0.477***	64.36%	Partial mediation

VAF > 80% = full mediation, 20% < VAF < 80% = partial mediation, VAF < 20% = no mediation.
***$p < 0.001$.

TABLE 8 Path coefficients of moderating variables and significant level.

Path	Path coefficient	t-value	CI	Supported?
H8 PT × SEI → ATT	0.049	1.516	[−0.014, 0.113]	No
H9 PB × SEI → ATT	−0.057	1.797	[−0.121, 0.004]	No
H10 ABI × SEI → ATT	0.106**	3.340	[0.045, 0.170]	Yes

**$p < 0.01$.

leverage their popularity to draw public attention to both popular sports and less mainstream sports in China. Engaging more youth in these sports could help build a stronger foundation for future elite sports achievements and medal prospects. By focusing on transparency and effectively communicating the benefits of athletic naturalization, China can continue to strengthen its sporting prowess and foster a more positive public perception of naturalized athletes as valuable contributors to the national sports community.

Second, considering that ABI has the potential to significantly influence public attitudes and serves as a mediating factor between perceived benefits and attitudes, it is essential that the overall brand image of candidates be comprehensively assessed before their recruitment. Evaluating the full spectrum of a candidate's brand image, rather than focusing on a single brand association, is crucial because candidates with a poor image are likely to garner less likability, identification, and support from the public. From the athletes' perspective, careful management of their overall brand image is advisable to mitigate any potential opposition from the public. Since public perception of ABI is partly shaped by pre-existing knowledge and new information about specific naturalized athletes, it is also important to facilitate the construction of a more favorable ABI in the public's mind by highlighting positive aspects of the athletes' image through media channels.

Third, with the confirmation of the moderating effect of SEI on the relationship between ABI and attitudes, it becomes plausible to enhance the public's SEI to foster a more comprehensive outlook on naturalization, thereby reducing exclusionary attitudes toward these athletes. To achieve this, efforts should be directed toward increasing public participation in sports and involvement in various sporting events, such as through China's Fitness-for-All programs, which are likely to lead to more frequent and positive interactions with naturalized athletes. Additionally, leveraging the celebrity status of prominent naturalized athletes can further encourage public engagement with specific sports and events, ultimately fostering a more supportive environment for athletic naturalization.

5.3 Limitations and future research

This study has four major limitations that provide a foundation for future research on athletic naturalization. First, although respondents were free to select any athlete from the list provided, the majority chose Eileen Gu for assessment, which is unsurprising given her status as an Olympic gold medalist and prominent brand endorser. This concentration on a single athlete may limit the generalizability of the findings. To enhance the robustness and applicability of future studies, it would be beneficial to include a more diverse pool of naturalized athletes, enabling comparative and more extensive research.

Second, the data for this study were collected during the Beijing Winter Olympics, and given the cross-sectional nature of the study, it is limited by its inability to track changes in respondents' perceptions of ABI and attitudes over time, particularly as enthusiasm for the event wanes. To address this limitation, future research could adopt a longitudinal approach, allowing for the monitoring of shifts in public perceptions over an extended period.

Third, while the mediating effect of ABI was confirmed, there may be other mediators at play. For instance, since the media is a primary source of information and contact between the public and naturalized athletes, the way media portray these athletes, given their special identities, might mediate public awareness of naturalization and attitudes toward these athletes. Future research should explore more variables as potential mediators in this context.

Fourth, sport event involvement in this study pertains to situational involvement. To gain a more nuanced understanding of the effects of involvement, future research should consider enduring involvement, such as general sport involvement or involvement with a specific sport. These constructs could provide deeper insights into how different types of involvement influence public attitudes toward naturalized athletes.

As the recruitment of foreign-born sporting talents is likely to continue, future research should explore athletic naturalization from various perspectives. Potential areas of study include the development of elite sports systems with naturalization, the impact of naturalized athletes on sports and business, the long-term social integration of naturalized athletes, and the dynamics of interaction between naturalized athletes and the general public. These directions will be crucial for understanding the broader implications of athletic naturalization in the context of both sports and society.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Author contributions

HL: Writing – review & editing, Writing – original draft, Validation, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. DL: Writing – review & editing, Validation, Conceptualization. HP: Writing – review & editing, Validation. AP: Writing – review & editing.

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The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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"Do I need to reinvent myself?" Stigmatization of sport-related identities of Chinese students

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Objectives: While many studies have shown that student-athletes are a stigmatized group and topics related to them have received increasing attention, few studies have focused on the current situation of Chinese sports students (*tiyu sheng*) with the same dual identity as student-athletes. Thus, this study aims to understand and recognize the negative perceptions that students with sports identities experience in the Chinese educational and cultural context and the impact of these perceptions on them.

Methods: This qualitative study used an interpretive description methodology to collect data through semi-structured, in-depth interviews conducted by the researcher with 11 sports students, 4 regular students, 3 teachers, and 2 parents. Then, the interview data was analyzed using reflective thematic analysis.

Results: Three themes were eventually extracted: (1) The onset and development of stigma, (2) Stigma factors in the spotlight, and (3) the Response to stigmatization by sports students.

Conclusion: Findings indicated that sports students are subjected to various stigmas under the negative filters of society. The stigmas suffered by sports students vary across school years and levels, and their perceptions of stigmas may also change over time and in different environments. In addition, being subjected to stereotype threat and self-stigma may have hurt some participants. The study's results also provide evidence that the Internet plays a vital role in exacerbating the development of stigmatization among sports students, which needs to be determined by further research. These findings will contribute to subsequent research on the de-stigmatization of sports students.

KEYWORDS

student-athletes, stigma, sports students, stereotype threat, identity

1 Introduction

The term stigma first referred to the Greeks' use of body marks to signify something morally abnormal or wrong, which were painted or carved on the human body to indicate that they were slaves, criminals, traitors, etc. Later, the term was extended to include all marks or symbols that perceive or infer deviations from the normative situation. Sociologist E. Goffman attributed "stigma" to people who deviate from social norms and used stigma as a starting point for social discrimination (Bos et al., 2013). According to him, stigma is a derogatory, insulting label that society applies to individuals or groups of people because they have some socially undesirable or disreputable characteristic that lowers their status in society. Stigma is formally divided into abominations of the body, such as physical defects, physical disabilities, etc.; blemishes of individual characters, such as mental illness, alcoholism, etc.; and tribal identities, such as race, gender, religion, etc. (Goffman, 1986).

Furthermore, stigma is a state of entitlement in which elements of labeling, stereotyping, isolation, and status deficit coexist, and there is an overlay of various stigmatizing elements in this state (Link and Phelan, 2001). Consequently, stigmatized people also predominantly suffer from other harmful behaviors of others, such as stereotyping. Stigmatization, on the other hand, is a dynamic process by which one group imposes and maintains human inferiority on another group, characterizing the group's qualities that are biased toward the negative and thereby overshadowing other characteristics, becoming an indicator that corresponds to the group's attributes in an essential sense (Goffman, 1986). This process is one of the most common strategies employed by the party in a position of strength and without stigma (Kurzban and Leary, 2001).

Stigma occurs in many areas of society; for example, some people tend to believe that black athletes are less intelligent than white athletes because of their genetic predisposition to athletic performance, and even that black people are often encouraged to participate in athletic training and athletic competition more often than in intellectual endeavors (Moskowitz and Carter, 2018). Globally, many individuals who participate in both competitive sports and higher education have dual career identities in sport and education, often referred to as "student-athletes" in the scientific literature (Steele et al., 2020). This group seems to have a prejudice-prone "paradox" in its intersecting identities, as the general public perceives education and academics as generally related to intelligence (De Castella and Byrne, 2015), while some still maintain the stereotype of the "Dumb Athlete" (Wininger and White, 2015). Even the historical origins of this bias can be traced back to 500 B.C. when Greek athletes were blamed for spending too much energy on competition while neglecting their intellectual development and were described by some philosophers of the time as useless, ignorant, and mentally retarded citizens (Sailes, 1993). In fact, student-athletes have also been subjected to various stigmas (Simons et al., 2007). and they are usually perceived as less intelligent, less motivated, less academically inclined, less willing to prepare for the classroom, and even alcoholic and violent than the average student (English and Kruger, 2016; Levine et al., 2014; Hsu and Li, 2022; Nekvasil, 2018).

The stigma or stereotypes experienced by student-athletes are more related to the "conflictual" nature of their dual identities (Steele et al., 2020; Lu et al., 2018). Identity is one of the aspects of an individual's broader self-concept that encompasses an individual's subjective assessment of who they are and how they fit into relationships with others and the social world (Brewer and Gardner, 1996; Caza et al., 2018). Identity salience refers to the subjective importance of identity relative to other identities, and highly salient identities are more likely to be activated in different contexts and motivate behaviors consistent with that identity (Stets and Burke, 2000). Salient self-identities are often developed around key life roles that reflect levels of commitment and investment in those roles (Stryker and Burke, 2000). Athlete identity is the degree to which an individual identifies with an athlete's role. Athlete identity is a cognitive structure and a social role (Brewer et al., 1993). When athletes are placed in a sports system, they may not engage in exploratory behaviors or have a lower need to participate because they value sports. Their needs for wellbeing and competence are met through sports participation, such as the recognition they can receive from their peers for sports participation and the intrinsic and extrinsic rewards that come with athletic achievement (Brewer and Petitpas, 2017). Academic identity has been defined as the degree to which an individual identifies with the role of a student and is associated with positive outcomes such as goal commitment, commitment to the institution, and persistence in academics (Bowman and Felix, 2017). Regarding student-athletes, studies have found a negative correlation between athlete identity and student identity (Sturm et al., 2011; Yopyk and Prentice, 2005). The contrasting nature of these two identities allows student-athletes to receive special attention.

Stigmatized individuals possess (or are believed to have) specific attributes and traits, and the social identity conveyed by these attributes is devalued in particular contexts (Crocker and Major, 1989). These social identities represent different social groups, and in group categorization, members of the same group are perceived to be more similar than the actual criteria of division. In contrast, different groups are perceived to be more different, which leads to the creation of in-groups and out-groups (Tajfel, 1969). The distinction between in-groups and out-groups may lead to perceptual biases in the "us" and "them" dynamics (Cunningham et al., 2008). In addition, social identity theory explains these stereotypes and stigmas (Hawley et al., 2014), which suggests that people develop their social identities through three main cognitive processes: categorization, social identification, and social comparison. These three stages lead people to categorize themselves and others into a social category or group, give emotional meaning and value to the identification with a particular group, and finally, compare the group they belong to with other groups (Al Ramiah et al., 2011). For such comparisons, people are always more inclined to maintain the superiority of their in-group (Scheepers and Ellemers, 2019). Student-athletes have more athlete identities than ordinary students, and they are naturally divided by the outside world into a separate group distinct from the student body. The perceived bias (prejudice and negative stereotyping of athletes) caused by the group division (Geary et al., 2024), coupled with society's reinforcement of the non-athlete group's identity, may further create a stigma against student-athletes.

The stigma of student-athletes caused by various labels and negative stereotypes can have a negative impact on them. For example, studies have found that discrimination and stereotypes are stressors that negatively impact the mental health of student-athletes (Tran, 2021). They may feel stressed by balancing the roles of student and athlete because they are often categorized as unintelligent in their learning environment (Lu et al., 2018). These pressures and negative influences contribute largely to their poor academic performance (Stone et al., 2012; Dee, 2014), and this outcome may further exacerbate the vicious cycle of stigma. Additionally, many student-athletes report that their sense of belonging on campus is almost exclusively related to their experiences as athletes and on sports teams (Slaten et al., 2020). Athletic identity faces challenges that impact wellbeing, exacerbated by narrow identity development and stereotypes (Geary et al., 2024). Many scholars have been working to understand the situation of student-athletes and make targeted proposals to reduce these negative impacts (English and Kruger, 2020; Leimer et al., 2014).

However, few studies have focused on the Chinese student population, which resembles student-athletes. This group possesses the same dual identity as the student-athletes defined in the previous studies, except that in addition to their student identity, they also have a sports identity that includes athletes. In China, they are called sports students (*tiyu sheng*). From the designation, their sports identity is more in the spotlight, and thus, they are likely to be classified as a

student group with distinctions like the student-athletes in the other studies. At the same time, the associated stigma, stereotypes, etc., would also happen to them. Coupled with the fact that China's society, culture, and education system have their particularities, the encounters of the group of sports students in this context may be even more complex. Therefore, this study examines how students with sport-related identities in China are perceived and treated by the society and people around them and their situation in this context. Understanding and analyzing their experiences in this regard will provide a basis for strategies to reduce the threat of negative stereotypes and de-stigmatization and promote action for educational reform.

2 China's system of admission to universities through sport and students' sport-related identities

In China, there are four main ways to be admitted to college through athletic specialties (The following statements refer to the relevant current documents of the Ministry of Education of China and the General Administration of Sport of China, as well as the actual enrollment patterns of sports students): (1) The unified examination for physical education and sports. Such candidates need to have sports specialties, but they have no athlete-level restrictions. In addition to participating in the Gaokao, they must also participate in the sports professional examination in their provinces. (2) The sports single-entry examination. This is an examination organized by the State for the admission of athletes to specific sports majors in various colleges, and students taking this type of examination must reach the technical level of national Division II athletes (inclusive) or above. This kind of examination includes a separate academic examination and a sports test. (3) Enrolment of high-level sports teams in university (high-level athletes). Candidates taking this type of examination can pursue other non-sports majors, such as law, but they must have obtained the technical level of national Division I athletes (or above). (4) Excellent athletes are guaranteed admission to universities (guaranteed admission). This challenging way requires athletes to reach the technical level of top-notch national/international players, break records, or achieve the corresponding rankings in specific large-scale events (e.g., the Olympic Games) to be eligible for exemption from admission.

Therefore, in China, the student-athlete title is only generalized to some students with athletic identities. General students who take the unified examination for physical education and sports do not obtain an athlete-level qualification in high school, and they need to acquire academic knowledge just like regular students. When they enter the university, they mainly have the theoretical knowledge of sports and the fundamental sports skills required. Most of them do not need to maintain regular training and participate in frequent competitions, so compared with the athlete's identity, they show more of a student's identity, only that their life and study are more related to sports. Not every student who engages in sports can be a student-athlete, the different levels represent different sports experiences, but in China, they all share a common sports identity—sports students (*tiyu sheng*). Clarifying the relationship between athlete, student, and sports identities will help us better understand the stigmatized situation of sports students.

3 Study design

3.1 Materials and methods

Interpretive description (ID) was employed as the methodological approach (Thorne, 2016). The goal of ID is not to focus on culture as in ethnography, lived experience as in phenomenology, or theory construction as in grounded theory (Thompson Burdine et al., 2021). The approach aims to provide a detailed description of experience in accessible language to discover and understand the perspectives and worldviews of a phenomenon, a process, or the people involved (Caelli et al., 2003). It has its own set of philosophical underpinnings to help the researcher go about how to study the phenomenon (Bradshaw et al., 2017). Meanwhile, ID belongs not only to the pragmatist paradigm, consistent with a broad epistemological perspective, but also to the interpretivist paradigm, which is based on relativist ontology and constructivist epistemology (Thorne, 2016). In other words, it is firmly focused on answering practical research questions that arise from real-world problems and, through the interactions between participants and researchers, allows for an understanding of the subjective and multiple realities that people construct and the shared experiences that may exist in them (Hamer et al., 2023). Furthermore, any claim made using ID is a tentative truth that can be revised and modified in the future and does not represent the only definitive truth (Uzzell et al., 2022). ID, as a well-established methodology, can gather detailed descriptions of the phenomenon for this study's exploration of the stigmatization of sports students and help us to get closer to the center of the event through in-depth analyses and explanations of the cause and effect of the phenomenon's emergence.

Reflective Thematic Analysis (RTA) was used to analyze the interview data in this study because this method is suitable for analyzing data from multiple data sources and seeks to generate patterns of shared meaning around specific themes or 'central organizing concepts' (Braun and Clarke, 2013). Thus, RTA as an analytical method fits well with the aim of ID research to explore shared meanings in individual experiences (Thorne, 2016; Hamer et al., 2023; Uzzell et al., 2022).

3.2 Participants

Firstly, to ensure that the primary research subjects have suffered from stigma, we extracted the main negative views about stereotypes and stigma from topics about discussing sports students in online forums and then created a questionnaire accordingly to investigate whether sports students have suffered from these negative behaviors (it will not be specific to privacy, only yes or no answers are required), and then finally recruited subjects willing to participate in the study from among those who were willing to fill in the questionnaire and had actually experienced these encounters. Consideration will be given to inviting sports students from different stages of study and levels to participate to ensure heterogeneity within the sample.

In addition to students with a sports student identity, it was decided to collect data from fellow students, teachers, and parents, as it was felt that they would be able to provide further insights into the situation of sports students, particularly around perceptions of the stigma attached to the sports-students identity. Therefore, all of the

TABLE 1 The demographics of different participants.

Sports-students group				Other group			
Work	Number	Gender	Level	Type	Number	Gender	Work
HS (Age: 16–18)	1	M	I	Mates	1	M	HS
	2	F	II		2	F	HS
	3	M	NO		3	M	UG
	4	M	NO		4	F	UG
UG (Age: 19–22)	1	F	I	Teachers	1	M	HS
	2	F	I		2	F	HS
	3	M	II		3	M	UG
	4	M	NO	Parents	1	M	HS (child)
	5	M	NO				
PG (Age: 23–25)	1	M	NO		2	F	HS (child)
	2	M	NO				

HS, high school; UG, undergraduate; PG, postgraduate; M, male; F, female; I, division I athlete; II, division II athlete; NO, not obtained.

following were considered for inclusion in the study: (1) students who studied in the same classes as the sports students but did not engage in sports, (2) teachers who taught them theory, and (3) parents of students who were currently engaged in sports in high school or college. Finally, formal interviews were conducted with 11 sports students, 4 average classmates, 3 teachers, and 2 parents (Table 1 for details).

3.3 Data collection

Written consent was obtained from all participants before the interviews. Semi-structured interviews were conducted with 20 participants either face-to-face in a private space or by telephone (The interview guide is detailed in Tables 2, 3). The primary interviews were guided by existing literature that served as a theoretical scaffold for the ID research proposal (Yukhymenko-Lescroart and Sharma, 2022; Simons et al., 2007). At the same time, we used a responsive interview style, which means that participants were allowed to take some control over the direction of the conversation, thereby exploring new areas that were not included in the interview guide (Rubin and Rubin, 2011). Questions were asked using as much neutral language as possible to minimize potential bias and preconceptions. The entire interview was transcribed into text and ranged in length from 28 to 67 min (M = 45.6 min; SD = 12.39).

In addition to formal interviews, data were collected through observation and informal conversations, and this methodological triangulation helped overcome the limitations of a single data collection method (Thorne, 2016). Observations and informal interviews are conducted with sports students, classmates, and teachers. Most of this part of the process takes place in high school or college classes and the daily lives of the sports students and will include some club activities and job fairs.

3.4 Data analysis

The analyzing process was carried out using the following six main stages (Braun and Clarke, 2019). The first stage is familiarizing data, which involves reading the transcripts repeatedly and focusing on the respondents' emotions and the research topic to get an overall sense of the situation. The second stage is generating initial codes; we need to read the transcript line by line, emphasizing the parts of the content relevant to the research question and assigning descriptive codes to them. The third stage was generating themes/theme development, which involved grouping codes under different potential themes. The fourth stage is reviewing potential themes, which we must consider: (1) Does the theme have a "central organizing concept"? (2) Is there enough meaningful data to support the theme? (3) Is the theme related to our research question? The fifth stage is refining, defining, and naming the theme; at this point, it is necessary to ensure a manageable amount of overlap between theme and theme. At the same time, its title should adequately reflect the sub-themes in the theme. The sixth stage combines appropriate data extraction to present the theme coherently and consistently with an analytical narrative that addresses the current research objectives. Additionally, observational and informal interview data were added to the analysis process to contextualize the themes and whether they were meaningful.

3.5 Ethics

Several ethical issues were seriously considered throughout the study. First, the researcher prioritizes building relationships with program participants. This was done to get to know the participants and build trust so that they would understand that we sincerely wanted to reach out to the truth and speak out on behalf of those undesirable phenomena so that they would feel comfortable participating in the interviews. Second, after each interview, all recordings of the conversations and their identifying information are kept strictly confidential; the tapes are transcribed, anonymized, and assigned a separate research pen name to protect each participant's identity. Also, the interviews will avoid prejudicial remarks and endeavor to make the participants feel safe and comfortable during the conversation. Moreover, the researcher will indicate the purpose

TABLE 2 Schedule used to guide interviews (for other group).

Topic areas	Questions
Perception of sports students	• What is your image of sports students?
	• Do you have much contact with sports students? What do you think is the difference between being around sports students compared to regular students?
	• Do you think it's easier for sports-students to be admitted to college?
	• Why do you support your children in sports? Is it because they are athletically gifted or something else? (for parents only)
	• How do sports students perform academically differently from the typical students? Do you ever pay special attention to them? (for teachers only)
	• Do you have a sports student friend or would you choose them as your friend? What strengths and weaknesses do you care about them? (for classmates only)
Perception of stigma	• Are you aware of the various stigmas regarding sports students? Is there anyone around you who resents sports students?
	• Where do these stigmas often occur? What are the main areas where these bad perceptions are centered?
	• Do you think the sports students around you fit these bad images? What are your thoughts on these stigmas?
	• What do you think should be done to de-stigmatize the sports student community?

in advance when conducting observations or informal conversations, and the person who expresses their views has the right to decide whether to include them in the research.

4 Findings

This research aims to understand and recognize the phenomenon of stigma associated with Chinese sports-students. Through investigation and analysis, a diagram was created to show the three themes and the sub-themes proposed by the research (Figure 1). The first theme describes the onset and development of stigma. The second one is about the bias factors that are spotlighted in stigmatization. The last is the response of sports-students to stigma.

4.1 The onset and development of stigma

Prejudice against sports has always existed in Chinese education, and most sports students with sports-related identities have experienced or are experiencing stigmas against them from other groups. These stigmas often occur online, on campus, and in their daily lives. Along with the stigma may come discrimination and alienation from different groups.

4.1.1 Denigration of the image of sports students in the internet

Because of the anonymity of the Internet, the lack of regulation, and the difficulty of holding reality accountable, it has also become a hard-hit area for defaming sports students' image. Most of the participants indicated that they had encountered sarcasm against sports students on the Internet:

> *A lot of the videos and comments online carry topics like # Thanks Coach # ChenDian* (Accumulation) *# Stay Away from Injuries… but their content has nothing to do with sports at all; it's all about ridiculing us by parodying some of the sports students' copy…they see these words as a reflection of the sports students' love of braggadocio* (HS1).

> *In many of the videos with danger warnings, it is often commented, "Leave it to the sports students, they are not afraid to die"* (UG3).

It was also observed on the Internet that the keyword "sports students" was often associated with some sarcastic content. However, most of the publishers of these contents have yet to experience with sports students, and even fewer have been hurt by sports students. They do not try to understand the reality but find a bit of causal connection from other online works and put it in their content, then let more people see it, creating a vicious circle of negative stereotypes of sports students.

4.1.2 Alienation from real world toward the sports-student community

As other studies have shown, Chinese sports students suffer from the same academic stigma on campus. This can lead to them being treated differently by their peers and teachers. Teacher 2, for example,

TABLE 3 Schedule used to guide interviews (for sports students).

Topic areas	Questions
Basic information	• How long ago did you start engaging in sports? Reasons for choosing to pursue sports?
	• Through which channel did you enter university? (for undergraduate students only)
Perception of identity	• How do you perceive the sports students? What does sports student status mean to you?
	• Do you find yourself different from the regular students in any way?
	• What words would you use to describe your personality, emotions, behavior, interpersonal relationships and learning?
	• Can you describe what you think the average student looks like?
Daily situation	• How is your daily routine organized?
	• Do you have a lot of non-sporting friends?
	• What is your image in your family? Do they expect more from you?
	• What kind of difficulties do you often encounter? Who do you turn to for help?
Experience of stigma	• How do you think the average students perceive sports students? What misconceptions or bad treatment have you suffered from them?
	• What was your teacher's attitude toward you? Have you ever received a bad opinion or benefit from a teacher? (e.g., grades)
	• Besides school, have you suffered from being viewed or treated badly in society? Where do these experiences often occur?
Cognition of identity stigma	• Are there people around you who fit these "labels"? (sports students or not)
	• How do you perceive and deal with these prejudices? How has the stigma created by these labels and negative stereotypes affected your studies and life?
	• What do you consider to be your shortcomings? Any attempts to change and make up for it?
	• What are some things you think you would want people around you to know about you? And why?
	• What are your future plans?

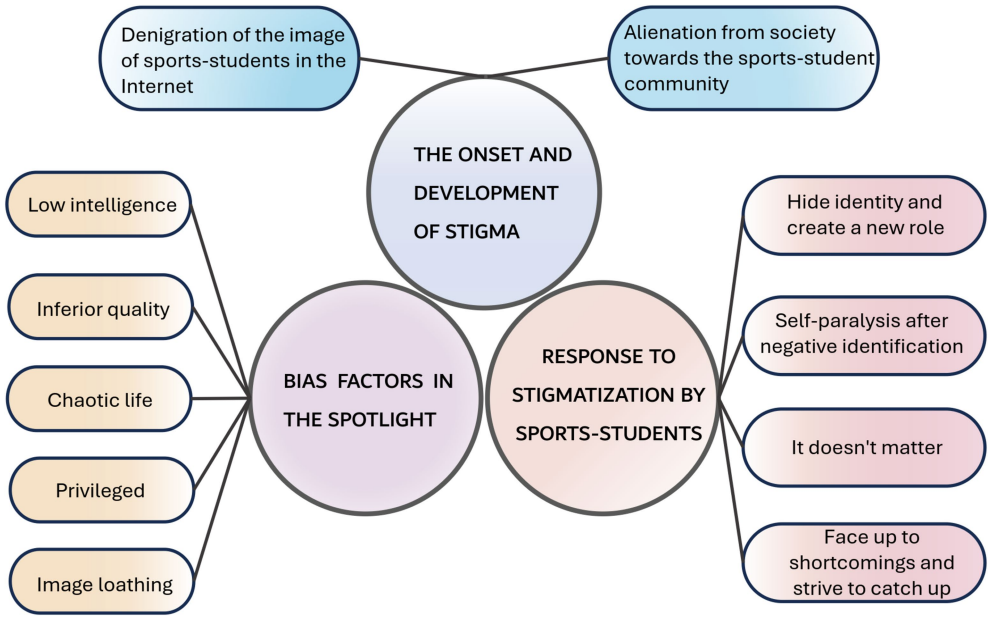

FIGURE 1
Final themes and sub-themes.

spoke of how "*many teachers feel that even if they seriously ask them to study, the results are not good, and simply hope that the sports-students do not affect others*." This neglect often affects the atmosphere of the entire class as well. Classmate 1 stated, "*It's fine to be friends with them, but I guess it's hard to create a crossroads in academics*." These prejudices extend from high school to college, as sports students themselves know all too well:

> *When working together on group work, if they find out it's a group of sports-students, they opt out for fear of getting a low grade. And*

> *sometimes, if we are in a group with them, our opinions are not valued, which is really frustrating* (UG1).

This phenomenon of being academically disliked in college was concentrated among high-level athletes attending normal majors. Participants attending sports majors did not have a strong sense of this type of experience because their peers surrounded them. However, they had other troubles as well:

> *I often feel ignored at some club events, and they seem not to want to talk to me because of who I am… when socializing, I may laugh at myself by using online mocking words about sports-students to find a topic of conversation with them* (UG4).

And people seldom get to know sports students better. In informal conversations, many average students said they had no contact with sports students, and their impressions of sports students came mainly from descriptions on the Internet or in other people's words. Classmate 3 thought that "*they are often out training and competing, and do not have the chance to get in touch with them*." On the other hand, parents of sports students seem to care little about their situation. Parent 1 argued that "*her (child) number one priority right now is to become a Division I athlete as soon as possible to attend a good college*." Parent 2 suggested that, "*I've always thought that as long as he (child) stays out of trouble, gets into college by playing sports, and gets a steady job, that's all that matters*. "But when it came to hiring, the researcher's observations revealed that there were very few jobs that corresponded to sports majors, and recruiters for those jobs that did not restrict majors did not look favorably on the prospects of sports students. In response to all this negativity, from academic ability to workability, PG2 felt that "*the alienation from the real world is much more chilling than the true and false sarcasm online*." The data from the informal interviews showed that these employers mentioned that the reasons for their mistrust centered on two main aspects: first, the low level of contact with the reality of sports students and the poor social evaluation of sports students, and second, the stereotypical belief that sports students do not do well academically and that their careers seem to be suited only to being PE teachers or fitness trainers.

4.2 Stigma factors in the spotlight

Participants felt that sports students are stigmatized in various ways, from inner qualities to outward appearance. Although many of these negative factors existed only in a few individuals, in a sociocultural context where there were various misconceptions about sports students, these prejudices were magnified until they covered the whole group.

4.2.1 Low intelligence

"Dumb Jock" is a common negative stereotype of sports-students, and they carry the stigma of having low intelligence. HS3 mentioned, "*Whenever I have a conflict with someone, the first thing they do is call me limber and simple-minded*." Compared with the general Gaokao, the academic scores required for university admission through sports are lower. The original intention of the relevant organizations in formulating this rule was to nurture more sports talents and balance the time and energy spent on sports training by lowering the score requirement. However, the reality is that most people would think that only students with low intelligence would engage in sports. Informal interviews with many regular students suggest that sports students turn to sports because they fail academically. This statement, however, is not true:

> *My dad was a gym teacher, and he thought I had some athletic talent…they (parents) felt that I could go to a better college* (HS4).

> *So many of us started practicing sports at a young age (this participant started at age 4) and did not have access to a systematic academic education like they (average students) did…I had teammates who were also very smart, ah, and went to college, worked hard, and could get scholarships through their academic performance, not athletic performance* (UG2).

Despite the many examples that can be disproved, it seems that stupidity has become the number one label for sports students underscores only. Participants loathed this bias, and UG4 felt that "*it's the same as recognizing that we are always going to be dumber than everyone else, so why do we have to be inferior?*" As with previous research, the academic failure of sports students is of particular concern. Given the discrepancy between the rhetoric promoting academic supremacy and sports students' educational experiences, this focus on adverse outcomes is understandable. However, many factors contributing to academic failure and attrition are not inevitable or intrinsic to sports students but are products of socialization (Haslerig, 2017).

4.2.2 Inferior quality

Participants felt that people always tie sports-students to some inferior qualities. This subtheme captures some characteristics they mentioned, such as violence, bullying, impulsiveness, laziness, and lack of responsibility. HS3 said, "*We look fitter in sports, so they always think we fight a lot and bully them.*" HS1 also felt that "*many people compare us to ruffians.*" People around the sports students also carry some prejudice. In the informal interview, a student mentioned, "*Some sports students do often fail to hand in their homework, and I do not dare to rush him for fear that he will bully me behind my back.*" Participants perceived most of these described traits as group biases triggered by individual behavior:

> *My parents and coaches taught me from a young age not to use violence to solve problems, much less bully others…many people just map the violence of professional games and conflict onto us…at the end of the day, we are still students, and pretty friendly teammates surround me* (UG1).

> *Sometimes, training does get too tiring for me to resist sleeping (in class)… We participate in class activities much more actively than they (average students) do* (HS4).

The researcher's observation indicates that these so-called traits genuinely exist in a few individuals, while most sports students behave no differently than regular students. Most of them maintain a cheerful,

optimistic mindset and positive attitude due to sports. However, in informal interviews, some people still say that sports students are the representatives of "bad students." Some negative stereotypes have been ingrained in some people's minds for a long time, and even when they come across some of the good qualities of sports students, it seems that these people still feel that the good ones are the exception and the bad ones are the norm.

4.2.3 Chaotic life

Participants indicated that keywords such as smoking, alcoholism, and promiscuity often appeared in people's negative evaluations of sports students' lives. UG3 mentioned, "*People always think that I have a lot of girlfriends, but in fact, I've only been in love twice.*" The stigma of promiscuity is indeed prejudicial. And in the researcher's observation, the daily life of sports students is more relaxed than described. They would drink alcohol a little more frequently than the average students, but not heavily. UG4 stated, "*Sometimes, after finishing a training session or a competition, it is always a good idea to get together for a drink to release stress or to celebrate.*" But there is always an indistinguishable correlation between sports and alcohol consumption, and it cannot be arbitrarily labeled as bad (Palmer, 2014). Some participants were averse to smoking themselves; for example, HS1 said, "*The coach would have to yell at me if I wanted to smoke, and it would affect my athletic performance.*" However, the researcher's reflective journal mentions that the smokers in the observation mainly existed in small groups, i.e., if one person smoked, there was a high probability that his friends around him also smoked and vice versa. And this does not only apply to sports students, but to other student groups as well.

4.2.4 Privileged

In the view of others, sports students seem to enjoy many privileges. In informal interviews, some high school students expressed to the researcher how much they envied sports-students not having to attend morning and evening study sessions, whereas normal students were penalized if absent. In response to this privilege, HS2 referred to, "*We have early morning training, and in the afternoon, we all go back to training after classes, plus we have to relax, shower, and eat, so we do not have time for self-study at all.*" The researcher's online observations revealed that there are often anonymous users in the forums who slam sports students for hogging the use of the school's sports facilities and also charge that it is an unfair privilege given to them by the school. UG5 mentioned, "*We are only allowed to use those facilities freely when we are taking our specialized classes, and we have to make reservations for the rest of the time as well…the school should be made to provide more resources for sports.*"

Furthermore, the so-called "academic privilege" is of most significant concern. Both participants who were not majoring in sports stated that they had heard rumors that they did not have to work hard to get high grades:

> *I had average grades, and my teachers never gave me any special attention…my teammate ranked very high on a final exam once and got a scholarship. Still, there was always gossip in the class that she got high grades by pleasing her teachers and her athletic performance…they just hit the heart that we would not study hard* (UG2).

> *They would always ask if our GPAs included sports scores and if we were taking up a guaranteed spot in graduate school…it made me feel awkward studying the same together as if we were aliens* (UG1).

In response to this stigma, Teacher 3 addressed, "*I have not gone out of my way to take special care of the grades of the sports students, and our teachers have not been notified that we are to be lenient with them in their studies…The school is supposed to have special rules for calculating sports grades, and I'm not sure.*" Be that as it may, the stigma still will not go away from the truth as long as the conflict of interest between the parties involved remains.

4.2.5 Image loathing

In addition to those intangibles being evaluated negatively, the stigma has even grown to the specific outward image of sports students:

> *There are often satirical videos on the internet with the theme "Teach you how to recognize a sports student" that describe male sports students who like to wear socks over their pants, walk on their tiptoes, and sway their bodies from side to side (Figure 2)… female sports students who wear tight yoga pants… Anyway, I do not intentionally pick my outfit now…I'll change back into regular clothes right after a gym session* (PG1).

Most sports students' daily routines did not present distinctive images and behavioral characteristics in the observation. HS1

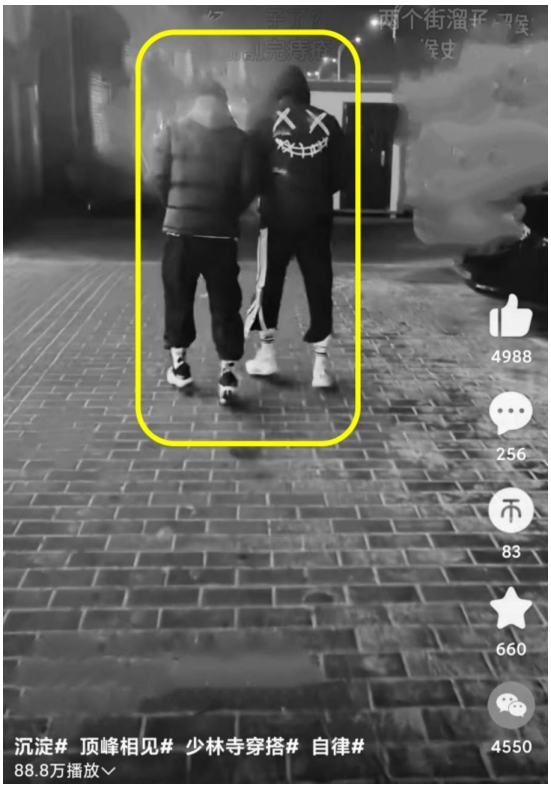

FIGURE 2
Screenshot of the video provided by the participant (relevant privacy information has been blurred).

mentioned, "*It's so tiring to train all day long; where do you find the time to get that whole thing…There are people around me who dress like that, but it seems to be pretty poorly regarded online*." The researcher's reflective journal describes this image loathing as stemming from the mockery of the "cyber sports student," a term used to refer to authors who advertise themselves as sports students in their online work, which consists of a display of outfits and behaviors that are not associated with sports (sort of a show-off). These online depictions of dress or behavior patterns, mixed with stereotypes of sports students, have evolved into one of the leading labels for the outward image of realistic sports students. Still, the label expresses a mockery of this identity, according to UG3: "*We cannot argue with it… sometimes, we accidentally clash with the outfits depicted online. We also laugh at ourselves for wearing an 'Accumulation suit' (derision of such outfits) today.*" The sports students show more helplessness to such taunts; they cannot do more, and if they go for a rebuttal, it may lead to another round of special attention.

4.3 Response to stigmatization by sports students

Stigmatized participants' responses to stigma vary, but both positive and negative coping mechanisms reflect the fact that the stigma in question truly works on the victim. This theme summarizes the responses of sports-students to stigma.

4.3.1 Hide identity and create a new role

The identity of sports students is valued when they are in the field of sports; for example, HS4 referred to, "*Every year when the school sports meet is the time when I am at my highest because I can get a lot of honors for my class*." However, their identity may be belittled or even stigmatized when it is placed in other fields, such as academics, and some of them would be ashamed to admit this identity. UG5 said, "*I rarely mention my identity to others, and if I tell some relatives that I majored in sports, they may think I have no future.*" That is why some people are willing to hide their identity so that they do not have to care about the negative perceptions associated with sports students:

> *If people do not ask me, I will not tell them (my identity), I do not like to be called a sports student… I take the same classes and the same papers as them (average students), Whenever I mention "sports student," (average students) feel I am taking advantage of them* (UG1).

> *On some informal or unfamiliar occasions, I will say that I study other majors (non-sports). I said I was a graduate student, and he would think it was very impressive; when I said I was a sports major, I immediately felt that he had a kind of disdain for the expression… Anyway, as soon as a driver asks, I'll say I'm a graduate student in law… This feeling of being respected is great* (PG2).

Social Identity Theory suggests that individuals will increase their self-esteem by maintaining a positive social identity. Individuals will use strategies to improve self-esteem when their social identity is threatened. If the inferiority of their group cannot be denied, then people will try to leave their current group and join a more favorable group (Stets and Burke, 2000). A similar behavior was seen in the study by a participant who went for a good experience by creating a new role for himself and attributing his identity to a solid out-group to avoid some of the devaluation and conflict.

4.3.2 Self-paralysis after negative identification

In addition to the impact of stigmas from the outside world, the results of the study show that some sports students internalize those stigmas and thus paralyze themselves by demanding less of themselves or avoiding challenging tasks:

> *Sometimes when assigning after-school tasks, some of the sports students would say to me, "Teacher, give me some simple tasks, I cannot study anyway, so I do not want you to worry…" It's kind of frustrating, and it's like they are limiting themselves to that* (Teacher 2).

> *When I instructed him (the child) to learn more about academics, he said he could not do the academics anyway, so he might as well go practice more for the sports test* (Parent 2).

Some participants also stated that they sometimes use those labels as an excuse for themselves. HS3 said, "*Sometimes it is normal to think that you are not good at academics and that it is enough if you can be good at sports.*" In addition to academics, other areas may be less demanding because of who they are. In informal interviews with a handful of high school sports students who smoke, some of them mentioned, "*It's normal for us (sports students) to smoke, and no one else will have a problem with it*." This behavior of internalizing the stigma and paralyzing themselves may harm their studies and lives. Particularly for sports students who are on campus, these self-stigmatizing behaviors may further exacerbate negative external perceptions of this group.

4.3.3 Face up to shortcomings and strive to catch up

Those stigmas create a terrible experience, but some participants show a positive attitude to cope with them. They may reject stigmas by trying not to cater to those wrong impressions through methods such as studying hard and improving their qualities. Although they did not share the same views on stigmas, they all had a positive attitude toward learning and living. Several participants indicated that some stigmas are heard so much that they subconsciously compare these perceptions on themselves to make themselves not annoying to others:

> *I often take note of other people's strengths in the club and want to be as good as they are…When I hear negative opinions about us (sports students), I also look at my weaknesses and hope to do what I can to correct them* (UG4).

Some participants believed that all people have equal status and should not feel free to judge others by some so-called standards. For instance, UG1 said, "*I do not think I'm any different from them; they also have shortcomings, and I believe I can do better.*" Some sports students also work hard in the eyes of others; Classmate 4 mentioned, "*Some sports students in my class do study quite hard and will often come to discuss questions with me.*" Most of these sports students in this study who expressed positive

attitudes toward stigma were at the undergraduate stage, which may be related to the fact that they become more mentally mature as they grow older and the changes in the humanistic environment in which they are living, e.g., high school in China may be primarily aimed at teaching students how to learn. In contrast, at university, it involves more inspirational ideas about life and the value of life. Such changes need to be further explored.

4.3.4 It does not matter

Another thing that some sports students expressed to the researcher was that the stigmas do not affect them. UG3 stated, "*What else can I do? I cannot change anything…do I need to reinvent myself? I've always been like this, I'm not doing anything illegal, I'm not a saint*." And even if they cared about these negative perceptions, there seemed to be timeliness and spatiality. For example, UG2 mentioned, "*Sometimes when I hear those negative things, I always get righteously angry and want to do something, but I always forget about it after a while and feel that it does not matter*." HS2, on the other hand, thought, "*I'm too busy now in my senior year of high school to take care of those (stigmas), so I should just do what I want….*"

The reflective journal talks about this, and it is impossible to accurately determine the pros and cons of this attitude in a stigmatized situation. However, it is inevitable that they certainly chose to be brave amid the ins and outs. These participants expressed their indifference, but through observation during the exchange, it was not that they did not want to make changes to counteract the stigma; it was just that at the student stage, they had too many other things to do, and the most they could do was to minimize the impact of these bad perceptions on themselves, and selectively ignore some of the stigmas from the outside world.

5 Discussion

This study aims to understand and recognize the phenomenon of stigma suffered by sports students in China. The findings suggest that sports students are a group that is being stigmatized, which is the same as other studies of student-athletes. These stigmas fester and spread on the Internet, creating alienation from the sports student group. In addition to the typical stigmas, the study identified new focal points, such as a distaste for the image of some sports students. The alienated group can truly perceive these alienating views from other groups and respond in various ways, with an interesting point being that some participants said they would give themselves another layer of identity to get a good experience. The so-called stigma associated with this group is nothing more than a way for other groups to maintain the dominance of the in-group by covering the entire group of sports students with the human inferiority of some individuals (Al Ramiah et al., 2011).

The study found that sports students were stigmatized about personality and academics, similar to previous studies (Simons et al., 2007; Stone et al., 2012). How stigmas are perceived and treated by others can significantly impact stigmatized individuals, and these stigmas may form the basis of the perceiver's negative expectations of behavior (Goffman, 1986). These expectations can reinforce the perceiver's sensitivity to stigma-related behaviors. Behaviors that may typically occur in various groups stand out when the perceiver confirms the expectations of the stigmatized group. For example, it has been found that while negative academic behaviors may not occur more frequently in student-athletes than in non-athletes, these behaviors become more salient in the minds of faculty and staff due to negative expectations of student-athletes (Simons et al., 2007). So, others discover the terrible aspects of individual sports students. In that case, these impressions become evidence that justifies the negative expectations of this group, which in turn overrides the conclusions of the entire group. Moreover, the derogatory and insulting labeling of these individuals or groups will serve as a starting point for social discrimination (Goffman, 1986), resulting in the alienation of sports students.

5.1 Background and motivation for stigmatization

For stigma inquiry, we must emphasize the contextual nature of stigmatization and the specificity of the perspective of understanding, as well as focusing excessively on the individual while ignoring the socio-cultural contexts and processes that affect the individual (Link and Phelan, 2001). Chinese society has regarded Confucianism as the core of morality and social harmony for thousands of years, while Confucianism has dominated the content of traditional Chinese education, with most parents using it as a guide to their parenting practices. However, Confucianism has placed far more emphasis on education than physical activity (Lau et al., 2007). One can get a glimpse of this from the rules on children's behavior in the Confucian classics, where childish traits and naughtiness are discouraged or even prohibited in the mature Confucian norms. In other words, to a large extent, traditional Chinese education aims to mold the "ordinary child" by the Confucian image of the "ideal child," hoping to present an image of quietness and refinement. At the same time, sports of an active and playful nature are not promoted (Bai, 2005).

Furthermore, Chinese cultural traditions consciously differentiate between "*wen*" and "*wu*," where "*wen*" refers to the use of the mind, while "*wu*" focuses on the body and requires physical strength. Because of the civil service examination system, which was put into effect during the Sui dynasty, the idea that "everything is low-class work except academic study" (*wanban jie xiapin wei you dushu gao*) permeated Chinese society (Yu and Bairner, 2011). The concept of emphasizing civilization over the military (*zhongwen qingwu*) has also impacted the culture of various dynasties (Lorge, 2000). Nevertheless, it is undeniable that this idea not only undervalues physical activities such as sports but also serves to stigmatize parts of the population in some societies (Yu and Bairner, 2011). Studies have also shown that sports students are often categorized as "dumb" and "uneducated." In this traditional culture, they are also more likely to be prejudiced and discriminated against to varying degrees. Moreover, those who are highly intelligent, educated, and talented are often given a positive social image and are more likely to have a higher social status and prestige in the future. In contrast, the image of the opposite group is always relatively negative, and future development is not expected (Yopyk and Prentice, 2005).

Some social systems that have existed for a long time may contribute to stigma out of inertia due to the formation of taken-for-granted cultural norms. For example, the Gaokao system, which has

been in force in China for many years, is the traditional Chinese way of talent cultivation, leading the Chinese to emphasize academic success more (Guo, 2023; Lecheng, 2022). Meanwhile, because Chinese universities generally admit students only based on Gaokao scores, this system maintains the dominant social value of test scores being the most important (Muthanna and Sang, 2016), which in turn profoundly influences the acquisition of values in the socialization process of many people, and may lead to biased understandings of sport and sport-related identities. In current Chinese schooling, most students are admitted to universities based on academic performance. Thus, students with good academic performance and their parents, teachers, and other groups hold the power of discourse (Yu et al., 2018). Social identity theory suggests that to maintain a sense of superiority associated with group membership, people tend to compare their in-group more favorably with other out-groups (Tajfel, 1969). Therefore, as representatives of the dominant values in the social culture, the "Gaokao group" cannot allow others to question the concept of "scores first," which is their favorable identification with their group. Such groups, in a sense of superiority, tend to maintain their status with prejudiced beliefs. As demonstrated in previous research, although the average student knows that there are student-athletes who excel athletically and academically, they also consistently refer to student-athletes with negative attributes, such as minimal academic effort (Yukhymenko-Lescroart and Sharma, 2022). This highlights a form of social comparison that elevates the values of the in-group for academic pursuits over the perceived values of the sports students.

Another possible stigma-motivated explanation is realistic group conflict theory, which argues that bias occurs once groups compete for scarce resources (Zárate et al., 2004). Hostile prejudice against sports students is most substantial among those whose academic performance is closest to that of the sports students in the Gaokao, and prejudice becomes a means of retaliation when there is a conflict of interest (Li, 2014). Besides, there is always the perception that student-athletes are admitted to colleges with lower academic standards than the general student population and are seen as being "pushed ahead" and having too much privilege (Umbach et al., 2006). The narratives in this study also refer to biases related to privilege, and these so-called "privileges" are primarily the result of the collision of interests of the parties involved. For example, "academic privilege" was perceived in conversations primarily by sports students enrolled in general majors because they need to be compared to general students. In contrast, undergraduates in sports-related majors seldom reported such situations. Even though many of the same resources, such as tutoring, are available to athletes and non-athletes alike, traditional students perceive this as unfair and believe that sports students receive special treatment rather than the grades they deserve (Ross and Shinew, 2008).

5.2 The internet's exacerbation of stigma and the plague of intersecting identities

Furthermore, the easy accessibility and virtual nature of the Internet are highly susceptible to frivolous public opinion attitudes, which has led to the Internet gradually becoming a breeding ground for stigmas. Other studies have also shown that one of the main reasons behind these stereotypes is the pervasive influence of negative images of student-athletes on social media (Yukhymenko-Lescroart and Sharma, 2022). Overreporting some bad news can exacerbate negative perceptions of this group (Haslerig, 2017). A low critical mass and rapid diffusion characterize these online stigmatization phenomena. For instance, the climax of the alienation of the image of sports students on the Chinese Internet is fermented in some online videos about their outfits or behaviors. However, it is essential to emphasize that there is nothing morally or legally wrong with these outfits *per se*. Wearing socks, for example, is a fashionable way of dressing worn by many sports stars and fashionistas. What people loathe is the hypocrisy in a quick-fix identitarianism: with a few fixed clothes, a fixed walking posture, a soundtrack, and no accomplishments or proofs required, the average person can rock up and get an identity card. Secondly, there is a perception that this identity is emphasized for bragging rights purposes, which overlaps with other prejudices about sports students. This ultimately creates a two-way corroboration of image and identity for this group, whereby a lousy image represents a specific identity, and a fixed identity is perceived to come with a negative image. The anonymity of the online virtual society and the weakening of social norms and ethical constraints have led some online users to mock this figurative identity. This includes the element of herding because once prejudices are formed and accepted by society, more people will follow the most unobstructed path, conforming to the trend to win the favor of the group or to differentiate themselves from the group they are targeting (Yukhymenko-Lescroart and Sharma, 2022).

Identity reflects the order and position of people in the social structure, a normative guideline for measuring each other and orienting interpersonal relationships, and a group category defined by the distinguishing characteristics that members of a society take pride in (Caza et al., 2018). Those stigmatized sports students in this study appeared to have two distinct identities, where the student identity was valued, and the sports identity always seemed to be prejudiced. The stigma is context-dependent because a person's social identity is devalued in one context but not another. For instance, an athlete's athletic identity is stigmatized in the academic realm but highly valued in the athletic realm (Simons et al., 2007). This is why some sports students hide their sports-related identities in certain situations to prevent being categorized as outliers. In addition to external compartmentalization, the interaction of these two identities can be troubling for themselves. A study indicated that college athletes are more susceptible to psychological distress when the student role is not differentiated from the athlete role because negative experiences in one role are carried over into the other (Settles et al., 2002). For example, research suggested that athletic identity or negative athletic performance may interfere with a student-athlete's academic ability (Stone et al., 2012; Fuller et al., 2017). This could also explain some participants' expressions that sports students are no worse than regular students and can even surpass them. Because without the time constraints and physical demands of athletic training, they would perform just as well as the average person (Singer, 2008).

5.3 Impact of stigmatization

Social identity threat due to group activation of negative group stereotypes or stigmatization may impair people's social quality of life (Martiny and Nikitin, 2019). Some of the sports students in this study

would internalize those stigmas and thus paralyze themselves; they would demand less of themselves or avoid challenging tasks. Corrigan argued that stigma is an integrated whole consisting of public stigma and self-stigma. Public stigma is the derogatory stereotyping of particular stigmatized groups by generalized social groups, while self-stigma is the self-depreciation and self-discrimination that follow public stigma (Corrigan, 2004). Thus, besides the impact of stigmas from the outside world, research findings demonstrate that some sports students internalize those stigmas and paralyze themselves by holding themselves to lesser standards or avoiding challenging tasks. Other research also suggested that student-athletes may believe that they lack the intellectual capacity to succeed academically. This belief can become a prophecy that hinders self-fulfillment, causing them to essentially internalize the "dumb jock" stereotype and attempt to avoid or resist academic situations (Steele, 1992).

The study also found that while sports students lost their identification with academics, they also increased their identification with sports. This phenomenon may lead them to devote more time and energy to sports, strengthen their ties with peer groups, and look down on regular students as "nerds." Identity is then reorganized, and their self-worth becomes entirely dependent on the field of sport (Simons et al., 2007). This can further increase the social distance from the general student population, and the lack of contact between the two groups is likely responsible for some of the stereotyping (Yukhymenko-Lescroart and Sharma, 2022). The study also revealed that self-stigmatization seemed to improve after encountering virtual spaces; for example, some participants reported that they also flirted with their sports identity online, which was not an identification with public stigma but more of a recreational form of self-stigmatization. The cyberspace provided a venue for them to escape their negative emotions, which gradually diluted the substantive content of some stigmatized people's sense of self-depreciation. Thus, the relationship between self-stigmatization and public stigmatization associated with sports students is no longer the traditional concomitant relationship in the virtual space, which is yet to be fully understood.

Stigmatized individuals are often subject to stereotype threat, which can be generated by simply reminding individuals of their stigmatized social identity (Hsu and Li, 2021). This can negatively affect the target, who will be threatened regarding perceptions, beliefs, attitudes, and academic ability (Stone et al., 2012; Riciputi and Erdal, 2017). However, it has also been suggested that stereotype threat may lead to the opposite response, i.e., the threatened target should be highly motivated to perform well on the task to overcome the negative portrayal (Steele and Aronson, 1995). Nevertheless, if the threat depletes the cognitive and other resources needed to accomplish the task, they may be unable to overcome the burden by increasing their effort (Schmader and Johns, 2003). Consistent with the previous research demonstrated (Harrison et al., 2009), this hypothesis is supported by the descriptions of some of the threatened sports students in this study who felt that they had tried hard. However, the results were sometimes different from what they had hoped for.

Additionally, research has shown that some participants preferred to display a student identity or even create a respected identity while avoiding a sports identity, which may also be a strategy to cope with threats. In such a situation for individuals with multiple group identities, an effective strategy for eliminating stereotype threat is switching group identities, i.e., switching from a negative to a positive group identity, which aims to eliminate the cognitive dissonance that triggers the threat (Schmader et al., 2008). Some studies are also actively exploring strategies to mitigate this threat, such as focusing such groups on alternative identities to reduce barriers to academic engagement (English and Kruger, 2020); in addition, developing mental toughness may be a way to increase their wellbeing and reduce the stigma of seeking help (Bird et al., 2021).

5.4 Implications and limitations

The study results are expected to bring more attention to the real information about this group instead of going with the flow of stigmatization to drown out the truth. The group of Chinese sports students has its peculiarities, but they are still displaying the role of students primarily; sports should not have been stigmatized in the first place, and sports-related identities should not be a reason to be biased against them. Like all students, sports students are multifaceted and committed to exploring opportunities to define their academic, professional, and personal paths (Haslerig, 2017). Other scholars have already called for a reform of the term student-athlete, arguing that if the term exists, there should also be terms such as student musician, student artist, or student engineer (Staurowsky and Sack, 2005). Similarly, in China, where education is diverse, "sports students" should not be singled out for judgment.

Simultaneously, educational institutions should also promote changes to help de-stigmatize sports students. For example, rules and regulations related to sports facilities and students' academic performance should be open and transparent to reduce suspicion of privilege; secondly, intergroup contact reduces prejudice (Pettigrew et al., 2011), so interactions between different groups of students should be facilitated to increase understanding of sports students by lowering group boundaries and increasing inclusiveness; and to help integrate sports students into the community through the creation of diversified employment opportunities; Corresponding psychological support should also be given to sports students to avoid self-paralysis and negative coping brought about by stigma. In short, this is a systematic project that requires the attention of administrators.

The findings should also be considered in light of their limitations. Specifically, due to the complexity of China's educational environment, we do not have a comprehensive understanding of what happens to sports students in some areas; for example, the researcher learned that some high schools divide their sports students into separate classes for teaching, and the pros and cons of such a model are yet to be fully understood. In addition, what was obtained through the one-time interviews in the research design was a snapshot of participants' perceptions of stigma at the time. Future research may also adopt a longitudinal approach to the study to explore how sports students' understanding of stigma changes over time and in their environment and how they find themselves amid such changes.

6 Conclusion

This study aims to understand and recognize Chinese sports students' experiences of stigma and their perceptions of this. The study suggests that sports students generally suffer from stigma related to the traditional Chinese culture of valuing civilization over the military and the college entrance examination system in which academic

performance holds the power of discourse. At the same time, people's stereotypical image of sports identity also contributes. These implicit factors and the fermentation of some online events have added negative filters to the identity of sports students in society. Among the common stigmas come from the negative portrayal of sports students in terms of intelligence, quality of life, and authority. The findings also provide new insights, such as image loathing festering mainly on the internet, where people mock some so-called sports students' outfits or behavior. This may indicate that the internet is a vital enabler in stigmatizing modern sports students. The study also found that the effects of stigma have permeated groups of sports students in different school years and at various sports levels. Of note, stereotype threat and self-paralysis following self-stigma may induce harmful consequences. These findings will provide evidence-based support for subsequent research on the de-stigmatization of sports students.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors without undue reservation.

Ethics statement

The studies involving humans were approved by Ethics Committee of Physical Education College of Jilin University. The studies were conducted in accordance with the local legislation and institutional requirements. Written informed consent for participation in this study was provided by the participants' legal guardians/next of kin. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

JC: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Writing – original draft. WN: Conceptualization, Formal analysis, Funding acquisition, Methodology, Project administration, Resources, Supervision, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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A taxonomy of athletic values and implications for clinical practice

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Introduction: The current study surveyed collegiate student-athletes regarding their perceived level of importance surrounding 30 previously derived and empirically obtained athletic values to improve viability of sport psychological practices.

Methods: A total of 162 student-athletes enrolled in a private Midwestern NCAA Division 1 university within the United States of America completed tasks asking them to sort and rate utilized values based upon perceived importance surrounding athletic performance and sustained excellence.

Results: Results revealed a hierarchy of athletic values, favoring intrinsic values, useable when emphasizing the importance of value-driven behavior in applied sport psychological practices. Minimal differences were seen across gender, ethnicity, sport classification, and other comparative groups.

Discussion: Current results may help inform sport psychological practice while working within value-based frameworks.

KEYWORDS

sport psychology, mindfulness acceptance and commitment, value-driven behavior, performance enhancement, athletic values

Introduction

Values represent personal beliefs that can directly influence inward thoughts and outward behaviors (Rokeach, 1973). While the concept of values is seemingly universal, they are perceived differently by each individual, group, and culture. Thus, values may have different meaning to different persons. Understanding personal values and fostering appropriate value-driven behavior is a common therapeutic technique throughout the field of clinical psychology [see Acceptance and Commitment Therapy (ACT)] (Hayes and Strosahl, 2004). It is also a vital aspect of clinical sport psychological practice, holding a prominent place within the Mindfulness, Acceptance, and Commitment (MAC) (Gardner and Moore, 2004) sport psychological intervention approach. Despite this, to the authors' knowledge, there have been no attempts to delineate a taxonomy of values used by athletes for sport performance enhancement. The current study sought to identify and examine such athletic values.

Introduction to values

Values can be described as trans-situational motivations which serve as guiding principles for individuals' lives. From an early age, children learn values not only in the home, but from outside influences as well. For example, Cranmer and Myers (2017) found that the behaviors, attitudes, and values of parents are regularly internalized, adopted, and replicated by their children. Halstead and Taylor (2000) also found that children are exposed to several external factors, cultivated from the interactions with mass media and other agencies and situations that influence personal values. These values are said to change over the lifespan and be further

influenced by historical events, life stages, and emotional development, with much of this change occurring during adolescence and as emerging adults (Gouveia et al., 2015). As adolescents internalize socialization and learning experiences, they build upon the social skills they are learning, understand the social roles they play, incorporate expectations they receive from others, and evaluate the overall abilities they develop (Schwartz, 2012). De Agrela Gonçalves Jardim et al. (2017) further found that value changes during adolescence follow predictable patterns related to an individual's value system which further influence value-driven behaviors.

Values and athletic participation

Chen et al. (2010) found that participation in athletics can improve health, promote prosocial values, cultivate life skills, provide social interaction, as well as enhance confidence, motivation, a sense of empowerment, and self-esteem. Ryckman and Houston (2003) found that for most individuals, school is one of the first social environments where an individual can express and apply their values. Kohn et al. (1985) found that the educational experiences of athletes and non-athletes promote intellectual openness, flexibility, and formation of self-directed values, and these experiences frequently challenge norms, expectations, and conformity to traditional values. Research has further suggested that the promotion of moral values in sport can help enhance fair play (Ring et al., 2023).

One of the primary areas of sport psychology theory and research surrounds the role of motivation in athletic performance (Gardner and Moore, 2004). Accordingly, two types of motivation that influence athletic values and performance have been articulated and examined: intrinsic and extrinsic motivation (Deci, 1975; Morris et al., 2022). Extrinsic motivation can be described as affecting behavior through external factors that are independent of personality (i.e., verbal praise, rewards, acknowledgment), whereas intrinsic motivation supports the satisfaction of needs independent of external factors from the environment, e.g., someone engaging in an activity for the pleasure and satisfaction experienced through learning, exploring, or trying something new (Vallerand, 1997).

In addition to the type of motivation employed, the type of task and motivational effort required may depend on values that the athlete perceives as most important. Task involvement represents a focus on mastering a new task in which success is judged by completing the task at hand, whereas ego involvement represents a focus on demonstrating that acquired ability in which success is determined by establishing power over others (Lee et al., 2008). However, both task and ego involvement are highly influenced by individualized values held by the athlete. For example, if a football player adopts a more task involvement focus and perceives mastering a new play as intrinsically motivating, he will be more motivated to master this task. On the other hand, if a football player adopts a more ego involvement focus, he will be more likely to master the task for external validation and praise. Overall, research has suggested that task involvement focus is considered more favorable over ego involvement focus as the former yields greater mastery skills, promotes prosocial attitudes, and mediates the effect of competence values (Lee et al., 2008).

When considering applied sport psychological practice more directly, value-driven behavior is an integral aspect of the Mindfulness, Acceptance, and Commitment (MAC) treatment framework. Briefly, this treatment modality aims to integrate mindfulness exercises, acceptance techniques, and psychological skills training programs with the aim of enhancing athletic performance through non-judgmental, present moment awareness (Gardner and Moore, 2004). This approach consists of seven modules, largely focusing on mindfulness, value identification, and behavioral implementation (Gardner and Moore, 2004). Recent meta-analytic research has shown that mindfulness-based therapeutic treatment yields large effect sizes in improving the level of mindfulness, reducing psychological anxiety, and benefitting athletic performance (Si et al., 2024). Specific to MAC, this form of treatment has been shown to increase task-focused attention (Gardner and Moore, 2007), enhance athletic performance based upon coach ratings (Moore, 2009), yield greater acceptance of negative thoughts and emotions within athletes (Dehghani et al., 2018), and show promise in both injury reduction (Zadeh et al., 2019) and enhanced athletic performance (Zadeh et al., 2019; Zhang et al., 2016). The MAC approach has also shown increased effectiveness in athletic training performance and sport-related mindfulness relative to treatment focusing solely on psychological skills training (Josefsson et al., 2019).

Within the third MAC module, athletes identify personal values and learn of the importance of acting in a manner that is congruent with these values rather than allowing their behavior to be directed by thoughts and emotions. Significant time is spent exploring the distinction between athletic outcomes or goals and values which represent the process of achieving these outcomes. The overarching purpose of the values component is to increase action in service of personal values in the athlete. These identified values are used to foster value-driven behavior and commitment to sport is necessary for goal attainment and sport enhancement (Gardner and Moore, 2004; Gardner and Moore, 2007). True adherence to value-driven behavior allows the athlete to continue training and achieve successful performances in the face of inevitable setbacks or adversity. More recent extensions to this module have suggested an alternate approach to value identification focusing on a preferred sequence of delineating team values followed by individual values (Josefsson et al., 2020) with the hope of lessening factors which may limit therapeutic engagement.

Current study

Previous research has shown how values are shaped for individuals and develop over time. Indeed, it seems logical to think that each individual has an ordered system of personalized and prioritized values. Previous models have suggested values vary in importance, and values common across all societies include the interests and welfare of others (universalism, benevolence) versus the pursuit of one's own interests and dominance over others (power, achievement), as well as values that emphasize independence of thought, action, and feelings (self-direction, stimulation) versus those that emphasize order, preservation of the past, and resistance to change (security, conformity, tradition) (Schwartz, 2012). However, research on the values that are relevant to athletes and the hierarchy of importance of specific athletic values is scarce. This is surprising given that Lundgren et al. (2012) found that mindfulness and acceptance-based methods such as MAC are growing in popularity and understanding and targeting positive value-driven behavior is a vital component of these interventions for sport performance enhancement. As such, the current study sought to identify commonly utilized athletic values for performance enhancement in collegiate student-athletes and to examine their perceived importance relative to one another, thus categorizing the most salient and common values utilized by them.

We also sought to examine differences in perceived value importance across gender, ethnicity, sport classification, and academic standing.

Methods

Participants

Participants included NCAA Division I student-athletes enrolled at a private Midwestern university located within the United States. Inclusion criteria for the current study required student-athletes to be officially listed on the eligibility roster of a university sanctioned NCAA sponsored sport. A total of 180 student-athletes initiated survey protocols. From this starting point, 18 were ultimately excluded due to minimal completion of basic demographic questions. The remaining 162 participants who completed survey protocols were included within the current study.

Procedure

Following institutional review board (IRB) and athletic department approval, surveys were distributed using the online survey tool Qualtrics and sent to student-athlete campus emails. Student-athletes were asked to complete two tasks using a previously derived list of athletic values. Utilized values were previously identified by Merz et al. (2017) after surveying student-athletes currently receiving sport psychological services regarding the personal values they perceived as of notable importance to athletic success. More specifically, these values were collected during the value-based section (module three) of the Mindfulness, Acceptance, and Commitment (MAC) (Gardner and Moore, 2004; Gardner and Moore, 2007) protocol as highlighted above. Responses were then compiled, leading to the selection of 30 unique values based upon frequency of reporting.

The first task (henceforth known as the sorting paradigm) requested that student-athletes sort all 30 athletic values (21 intrinsic and 9 extrinsic) into three separate groups with 10 values evenly placed in each group (i.e., of least importance, of average importance, of most importance) based on their perception of importance to performance enhancement and personal athletic success. Second, student-athletes were asked to rate the importance of each value independently on a 5-point Likert scale (1 = extremely important to 5 = not at all important) also based upon utilization and importance for athletic success. To prevent priming effects, the presentation of these survey tasks was counterbalanced, so that 50% of participants completed the sorting paradigm first, while the remaining 50% completed the Likert scale paradigm first. Following the completion of both survey paradigms, student-athletes answered brief demographic questions assessing age, gender, ethnicity, sport participation, and academic standing. Due to overall sample sizes, the senior and graduate student categories were combined following study completion.

Statistical analyses

Data analyses were conducted using the Statistical Package for Social Sciences (SPSS) version 29. Participants who did not complete the survey or were missing data greater than 50% were excluded from data analysis. Prior to data analysis, data were examined for outliers and abnormal distribution characteristics. Frequency and descriptive statistics were conducted to examine age, gender, ethnicity, sport type, and academic standing in school. Given the emphasis on ordinal level data, nonparametric statistics were emphasized throughout analysis procedures. Specifically, within the sorting paradigm (i.e., ranking empirically derived values based upon sorting responses), a Friedman's test was performed. Within the Likert scale paradigm, non-parametric Mann Whitney U analyses were conducted to examine group-level differences across obtained ordinal level data. In instances in which variables were comprised of more than two groups (e.g., academic standing), *post hoc* Kruskal-Wallis tests were performed to further examine group differences.

Results

Sample characteristics

A total of 162 NCAA Division I student-athletes enrolled at a private Midwestern university located in the United States participated in the current study. Student-athletes were between the ages of 18 and 30 years old ($M = 20.12 \pm 1.93$), largely female ($N = 118$, 73.3%), and represented all academic grade classifications (Freshmen $N = 42$; Sophomore $N = 44$; Junior $N = 37$; Senior/Graduate Student $N = 39$). A majority of the student-athletes identified as White/Caucasian ($N = 129$; 79.6%) and the remainder Non-White/Caucasian ($N = 33$; 20.3%), including those identifying as Black/African American ($N = 13$), Hispanic or Latinx ($N = 4$), Asian or Asian American ($N = 3$), and multiracial ($N = 13$). Student-athletes participated in a variety of collegiate sports including baseball ($N = 7$), basketball ($N = 8$), cheer/dance ($N = 10$), cross country ($N = 22$), field hockey ($N = 16$), soccer ($N = 14$), softball ($N = 12$), swimming and diving ($N = 25$), tennis ($N = 3$), track and field ($N = 39$), and volleyball ($N = 6$). In terms of sport classification, 45.1% ($N = 73$) of participants were involved in team sports while 54.9% ($N = 89$) were involved in individual sports.

Ranking of values within sorting paradigm

Due to some participants prematurely discontinuing the study and the counterbalanced nature of task presentation, incomplete surveys were encountered and total participant numbers for subsequent analyses are stated in relevant sections. To effectively rank perceived importance of empirically derived values based upon sorting responses, a non-parametric Friedman's test was performed ($N = 119$). Notably, given the presence of 30 values, concerns regarding multiple comparisons and a significantly inflated type I error rate were anticipated. A Bonferroni correction was applied (0.05/465), rendering our significant alpha threshold at 0.0001. Table 1 provides a list of derived athletic values, as well as ranking values based upon the Friedman's test. Note that lower scores represent a higher tendency to rate "of most importance" and higher scores represent a higher tendency to rate "of least importance." Based upon Friedman's test results, values were then grouped into four distinct categories. Importantly, the values within each category were not significantly different from one another; however, the values within

TABLE 1 Ranked order of athletic values.

	Athletic value	Mean rank
Tier 1	Hardworking	7.63
	Self-improvement/personal growth	8.41
	Mental toughness	8.99
	Commitment	8.90
	Having fun/enjoying the experience	10.37
Tier 2	Confidence	11.18
	Ability to learn from mistakes	11.83
	Leadership	12.09
	Positive attitude	12.19
	Personal health	12.31
	Reliability/consistency	12.52
	Trust in oneself	13.03
	Trust in others (teammates, coaches, support staff)	13.52
	Coachability/receptive to feedback	13.64
	Personal ambition	13.91
	Communication	14.50
	Physical toughness	14.56
Tier 3	Team improvement	15.48
	Selflessness/humility	15.80
	Enthusiasm	18.16
	Make family proud	18.79
Tier 4	Financial gain (scholarship money)	19.96
	Faith	20.40
	Opportunity for future success	20.45
	Make teammates happy	20.47
	Make coaches happy	21.73
	Bravery	22.32
	Travel opportunities	23.23
	Enhanced self-image/social status	23.95
	Future earnings potential	23.95

Tier 1 = "of most importance;" Tier 2 = "of average importance;" Tier 3 = "of least importance;" Tier 4 = "of no importance."

each category were significantly different from values within other categories ($p < 0.0001$).

Ranking of values within Likert paradigm

To allow for additional in-depth analysis, student-athletes also ranked individual athletic values based on perceived importance via a 5-point Likert scale. To remain consistent with values from other analyses (i.e., Freidman's test), lower scores represented greatest perceived importance.

Attempts were made to assess group differences across several hypotheses. Given concerns for multiple comparisons, a Bonferroni correction was again utilized, rendering our significant alpha threshold at 0.002 (i.e., 0.05/30) for subsequent analyses (Table 2).

Gender

Using responses across Likert scale questions, non-parametric Mann–Whitney U tests were conducted to examine differences between genders related to the importance of individual athletic values ($N = 151$). Overall, no statistically significant differences emerged after conservative error corrections were utilized. Some non-significant trend level differences were seen between males and females across *Opportunity for Future Success* ($U = 1{,}659$, $Z = 2.293$, $p = 0.022$, $r = 0.19$) and *Future Earning Potential* ($U = 1712.5$, $Z = 2.075$, $p = 0.038$, $r = 0.17$), where male student-athletes placed greater emphasis than their female counterparts.

Ethnicity

Using responses across Likert scale questions, non-parametric Mann–Whitney U tests were conducted to examine the potential differences in the perceived importance of certain athletic values between ethnicity (i.e., White/Caucasian or Non-White/Non-Caucasian). Overall, no statistically significant differences emerged.

Sport classification

Using responses across Likert scale questions, non-parametric Mann–Whitney U tests were conducted to examine the potential differences in the perceived importance of certain athletic values between student-athletes engaged in team sports (e.g., baseball, basketball, soccer, volleyball, softball, field hockey) relative to those engaged in individual sports (e.g., tennis, cross country, track, swimming and diving; $N = 153$). One statistically significant difference did emerge in that student-athletes involved in team sports emphasized *Confidence* at a higher degree ($U = 2037.50$, $Z = 3.464$, $p < 0.001$, $r = 0.28$) when using conservative error corrections. Additionally, several non-significant trend level differences were seen across *Trust in Others* ($U = 2173.50$, $Z = 2.856$, $p = 0.004$, $r = 0.23$), *Team Improvement* ($U = 2{,}242$, $Z = 2.568$, $p = 0.010$, $r = 0.21$), *Selflessness/Humility* ($U = 2{,}247$, $Z = 2.553$, $p = 0.011$, $r = 0.21$), *Financial Gain* ($U = 2{,}268$, $Z = 2.399$, $p = 0.016$, $r = 0.19$), *Leadership* ($U = 2305.50$, $Z = 2.351$, $p = 0.019$, $r = 0.19$), *Future Earnings Potential* ($U = 2{,}297$, $Z = 2.302$, $p = 0.021$, $r = 0.19$), *Personal Health* ($U = 2{,}332$, $Z = 2.268$, $p = 0.023$, $r = 0.18$), and *Make Family Proud* ($U = 2332.50$, $Z = 2.172$, $p = 0.030$, $r = 0.18$). All trend level values were emphasized more by student-athletes involved in team sports.

Academic standing

Post hoc Kruskal-Wallis analyses were conducted to investigate whether there were significant differences in value sorting across student-athlete academic standing. Overall, no statistically significant differences emerged.

Discussion

The current study investigated commonly utilized athletic values for performance enhancement and examined their perceived importance relative to one another, thus categorizing the most salient and common values utilized for collegiate student-athletes. We also sought to examine differences in perceived value importance across gender, ethnicity, sport classification, and academic standing. Results yielded several noteworthy findings.

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TABLE 2 Individual rankings within Likert paradigm.

Athletic value	Mean ± SD
Hardworking	1.20 ± 0.40
Self-improvement/personal growth	1.27 ± 0.49
Mental toughness	1.36 ± 0.61
Commitment	1.43 ± 0.61
Having fun/enjoying the experience	1.46 ± 0.65
Confidence	1.53 ± 0.66
Ability to learn from mistakes	1.61 ± 0.68
Leadership	1.62 ± 0.64
Positive attitude	1.65 ± 0.65
Personal health	1.66 ± 0.70
Reliability/consistency	1.66 ± 0.68
Trust in oneself	1.73 ± 0.73
Trust in others (teammates, coaches, support staff)	1.76 ± 0.73
Coachability/receptive to feedback	1.78 ± 0.72
Personal ambition	1.81 ± 0.79
Communication	1.90 ± 0.84
Physical toughness	1.86 ± 0.75
Team improvement	1.95 ± 0.76
Selflessness/humility	2.01 ± 0.73
Enthusiasm	2.23 ± 0.65
Make family proud	2.32 ± 0.72
Financial gain (scholarship money)	2.44 ± 0.73
Faith	2.44 ± 0.75
Opportunity for future success	2.47 ± 0.73
Make teammates happy	2.47 ± 0.66
Make coaches happy	2.58 ± 0.58
Bravery	2.66 ± 0.58
Travel opportunities	2.76 ± 0.50
Enhanced self-image/social status	2.83 ± 0.43
Future earnings potential	2.84 ± 0.45

M, Mean; SD, Standard Deviation.

This study is believed to represent the first attempt at cataloging a taxonomy of athletic values commonly utilized by collegiate student-athletes to aid with performance enhancement. Results of the value sorting paradigm suggested a hierarchy of athletic values, ranging from most important to least important, as well as a 4th category of athletic values largely perceived as unrelated to athletic performance. Intrinsically motivated values were heavily featured among the "of most importance" and "of average importance" categories, while the 8/9 extrinsic values were found in the lowest derived tiers. More specifically, among tier 3 and 4 values (see Table 1), nearly 73% (8/11) of ranked values would be categorized as extrinsically motivating. *Team Improvement* represented the only extrinsic value to be deemed "of average importance." Overall, this suggests that student-athletes within the current sample placed significantly greater value on intrinsically motivating values and view them as far more important in achieving athletic success than extrinsically motivating values.

It is not surprising to see more intrinsically motivating athletic values ranked higher than their extrinsic counterparts. This does align with previous research in a large international cohort of male youth (mean age of 14.64 years) soccer players which suggested that task orientation was more directly related to instrument-based personal values (e.g., honesty, responsibility, integrity) while ego orientation was related to more extrinsic values (e.g., social recognition) (Berengüí et al., 2022). Student-athletes may regard intrinsic motivators as more important due to their accessibility. For example, a student-athlete may value working hard more highly than the opportunity to travel since they have far more control and individual influence over the former relative to the latter. Additionally, working hard not only increases their chances of enhancing their performance, but could also have secondary benefits if their performance improves or reflects well upon the team as whole. Second, extrinsically motivated behaviors are generally externally regulated and involve tangible rewards or accolades. Previous research has shown that while these externally regulated rewards may be perceived as motivating, the placing of too much pressure can diminish overall motivation. Specifically, Deci and Ryan (1985) found that added pressure in the form of threats, pressured evaluations, and goals imposed by another diminish intrinsic motivation by promoting an external locus of causality. Thus, student-athletes in the present study may have perceived extrinsic motivators as controlling and/or diminishing their overall autonomy.

Regarding intra-athletic differences, statistically significant differences were not seen across gender, ethnicity, or academic standing after controlling for multiple comparisons. Only a single value (*Confidence*) exhibited a statistically significant difference across team versus individual sport classification. This is not a novel finding in that previous research (Jakobsen, 2014) has also suggested a general lack of differences in intrinsic/extrinsic motivators among individual versus team sport classification. A few interesting trend level results did emerge across the current study. For example, current data suggested that male student-athletes may value *Opportunity for Future Success* and *Future Earnings Potential* more highly than their female counterparts. Results also suggested that student-athletes involved in team sports may place a higher level of importance across *Trust in Others*, *Team Improvement*, *Selflessness/Humility*, and *Leadership*. These certainly make conceptual sense. Regarding the former, male athletes have historically had more opportunities to play at the professional level than female athletes. Additionally, given the significant wage disparity between male and female athletes across all professional sports, male student-athletes are likely very aware of future opportunities they could experience being a collegiate athlete. Regarding the latter, these values all involve a team atmosphere and how an athlete might interact with other members of said team. This could support previous research suggesting that team-based sports may foster a greater sense of belonging (Bang et al., 2024) and diminished psychiatric distress (Bang et al., 2024; Pharr et al., 2019). It is important to highlight that effect sizes for these findings ranged from 0.17 to 0.23, placing them in between common thresholds to designate small (0.10) and moderate (0.30) magnitudes (Cohen, 1992), suggesting diminished clinical implications at the present moment. While we feel that these trends enhance the current study given their conceptual alignment, it is imperative to understand that while they may represent potential areas of interest for future research with larger and more diverse samples, they do not represent statistically significant results.

Implications for clinical practice

When considering specific sport psychology interventions that emphasize value identification and foster value-driven behavior (e.g., the MAC approach), current results provide some proof of concept for a working taxonomy of potential athletic values to discuss with student-athletes who are seeking services. Gardner and Moore (2004, 2007) described the goals of the value identification exercise within the third treatment module of the MAC approach as being able to discuss how values and value-driven behavior influence one's performance, while also achieving control of internal experiences to prepare oneself to perform at the optimum level. However, identifying personal values can be somewhat of an ambiguous process for some individuals, requiring more abstract thought relative to what they are used to. In these cases, current results could be used as a springboard to discuss common values provided by athletes to discuss if the client feels that they are relevant to their experience. Overall, results allow for the potential of a more streamlined process for both athletes and sport psychology consultants in identifying athletic-related values and the tailoring of interventions to improve athletic performance.

Second, the strong perceived relationship between intrinsically motivated values and subsequent athletic performance is encouraging as identifying and fostering intrinsic values is an integral part of sport psychological practice and serves to enhance value-driven behavior. Current findings should be viewed as mechanisms for enhancing the effectiveness of sport psychological interventions as they aim to enhance athletic performance by strengthening internal resources to aid in the maintenance of attention/focus, increase confidence, and develop coping strategies for dealing with adversity or setbacks. In essence, it directly addresses individualized intrinsic values and belief systems, strengthening them so that athletes can perform at their highest level. The results of the current study suggest that student-athletes place a high level of importance toward intrinsic values, especially regarding what they feel is helpful toward promoting athletic success. As such, the student-athletes in the current sample are indirectly validating the main goal and purpose of sport psychological interventions.

Thirdly, current results also provide guidance to the sport consultant working with an athlete who presents with a high level of extrinsically motivated values or one who appears hyper-focused on their athletic identity and the results of their performance. For example, Good et al. (1993) suggested that individuals who possess strong athletic identities place a significant amount of value in how they are perceived solely on their athletic performance. Thus, if an athlete does not perform well or is unable to compete, they may begin to struggle with their social and athletic identities. Furthermore, athletes who suffer a serious or chronic injury and must undergo physical rehabilitation often experience elevated levels of depression and mood dysfunction (Brewer et al., 2010). By tailoring interventions to focus on specific mental skills training, coping strategies, and mindfulness work, student-athletes may see more of an improvement in their performance rather than focusing on one's social status, playing time, individual stats, etc. However, the first step of this process would likely include working with the athlete to transition their focus to more intrinsically motivating values. The current results are believed to assist consultants in this process by providing credibility to the consultant's claims emphasizing the importance of controlling what can be controlled (i.e., intrinsic motivators) and opening up new avenues of internal, thought-based growth and performance enhancement. By doing so, this would ultimately provide student-athletes the tools and skills to deal with challenges that may arise, while also utilizing these skills beyond athletics.

Finally, largely null findings across ethnicity comparisons could suggest that both white/Caucasian and non-white/Caucasian student-athletes utilize similar values and may approach athletic performance and performance enhancement in similar rather than dissimilar ways. This could also be said about class standing. Subsequently, this knowledge would allow clinicians to cast a broader net when assisting athletes in identifying important personal values. However, given the sparse research on these topics, further inquiries are necessary.

Limitations and future considerations

The current study has several limitations which should be considered. First and foremost, while our overall sample size may be appropriate for an initial exploratory study, it is likely that some analyses were under-powered. This may also explain the resultant trend-level findings across several group-based comparisons. While these trends largely made conceptual sense and are believed to somewhat validate our findings, it is imperative that the current study be replicated with a larger sample size to see if current results hold. Second, the current study was under-represented across several major sports, including baseball, basketball, football, and soccer/European football. Future research should focus on data acquisition from larger university settings and strive for more diversity across sport types. This is especially important as the sports mentioned above all have higher earnings potential and opportunities for professional level participation, meaning that extrinsic values could be more influential in this sample. However, this is speculative at this point and needs to be further examined. Third, there remains the possibility that student athletes identified values which they deemed more socially acceptable rather than their true beliefs. Future research may wish to include a social desirability scale to assess the degree this sort of behavior may have occurred. Finally, female student-athletes comprised 73.3% of the current sample, while White/Caucasian student-athletes comprised 79.6% of the current sample. While this represents the demographics of the university which this data was obtained reasonably well, there are generalizability concerns surrounding the larger body of NCAA student-athletes, as well similarly-aged athletes across the world. The current study also did not assess socioeconomic status (SES) among student athletes or nationality/cultural upbringing. Future research should focus on replication and expansion in a more demographically and culturally diverse sample.

Conclusion

The current study sought to examine and delineate a taxonomy of values based on their perception of importance relative to athletic success in a group of collegiate student-athletes. Overall, the results yielded a useful summary of ranked list of athletic values, with a strong preference toward intrinsically motivating values rather than extrinsically motivating values. These findings have several noteworthy clinical implications, including the validation of sport psychological practices. They also benefit clinicians working with student-athletes by providing a springboard to discuss values important in their lives

and how to transition personal mindsets toward value-driven behavior with the goal of eventual sustained athletic success.

Data availability statement

The raw data supporting the conclusions of this article can be made available by the authors upon reasonable request.

Ethics statement

The studies involving humans were approved by Saint Louis University Institutional Review Board. The studies were conducted in accordance with the local legislation and institutional requirements. The ethics committee/institutional review board waived the requirement of written informed consent for participation from the participants or the participants' legal guardians/next of kin because Electronic survey. Implied consent based on voluntary participation to complete the survey following electronic presentation of informed consent document.

Author contributions

JC: Conceptualization, Data curation, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing. ZM: Conceptualization, Formal analysis, Methodology, Supervision, Writing – original draft, Writing – review & editing. JG: Supervision, Writing – original draft, Writing – review & editing. MR: Conceptualization, Supervision, Writing – original draft, Writing – review & editing.

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Conflict of interest

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Sustainable strategic nation branding through sports: leveraging soft power via mega-event hosting

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Introduction: This study examines the strategic management of nation branding from a soft power perspective, focusing on Qatar's use of sports mega-events to enhance its global image. In contrast to hard power, soft power, in the realm of national or public diplomacy, refers to using cooperation rather than coercion to influence the impressions and preferences of others. Our research highlights the efforts by the government of Qatar to leverage sporting events, such as the FIFA World Cup, to boost international visibility, enhance cultural exchange, and attract tourism and investments.

Methods: Using document analysis and semi-structured interviews, we investigate how global sports serve as a unique soft power vehicle for nation branding, building the attraction and appeal of a nation.

Results: Our findings deepen insights into how nations can strategically and sustainably use globally known and popular sports to cultivate soft power, heighten national pride, and project a positive identity on the world stage.

Discussion: We contribute to the literature on soft power by developing a systematic conceptual framework for understanding how mega-sports events can be strategically managed to support nation branding and public diplomacy.

KEYWORDS

soft-power, sustainable nation branding, strategic management, sports events, Qatar, international relations

1 Introduction

Strategic decisions made by organizations rely on organizational capabilities to design systems that protect organizational units from external forces (Grewatsch et al., 2023). While organizations—whether firms, nations, or other collective entities—can be construed as having agency in decision-making or capability-building, such actions and capabilities ultimately derive from individuals, systems, processes or governance within the organization. Such systems enable organizations to address societal challenges effectively based on the strategic management of organizational processes (Bryson et al., 2024). Strategic management involves developing ideas, processes, and hierarchies in a manner conducive to both innovative and holistic thinking (Xia et al., 2023) and is therefore a crucial discipline at multiple levels. For example, businesses of varying sizes and as well as nations can benefit from holistic thinking guided by strong strategic intent (Bryson et al., 2024). Nations can benefit from strategic thinking rooted in a clear understanding of the processes required to support nation branding,

which refers to deliberate actions to enhance the image of a nation through marketing and communication (Nicolescu and Barbu, 2024a; Nicolescu and Barbu, 2024b; Hao et al., 2021). These branding endeavors require both intent and resourcefulness, underscoring the critical role of public policymakers (Rojas-Méndez and Khoshnevis, 2023). In the branding literature, such national branding efforts resonate with normative control (Müller, 2017), which reflects the exercise of soft power (Günek, 2018).

This paper contributes to both national branding, also sometimes referred to as place branding, and strategic management literatures by exploring the mechanisms through which nations translate strategic intent into soft power initiatives. While national branding emphasizes the further improvement of the image of a country through deliberate marketing and communication efforts, strategic management focuses on the systems and processes enabling such efforts. By integrating these perspectives, we highlight how strategic management principles underpin successful nation branding practices and impact in competitive global contexts. Our dual focus provides an enhanced framework for understanding how nations use strategic capabilities to achieve soft power objectives.

Extending on the seminal work of Nye (1990), soft power is commonly understood as the ability to obtain desired outcomes through attraction and persuasion rather than coercion. Globalization has resulted in increased competition between nations and has made it imperative for governments to focus on the magnetism of a nation to attract and influence foreign audiences (Lee, 2015; Moharrak et al., 2025). Thus, the concept of soft power has gained traction in recent years as countries increasingly strive to enhance their national appeal. However, wider interest in soft power does not necessarily mean wider understanding. The definition of soft power, and its implementation, relevance, and required resources remain contested in the literature and researchers to date have not delivered a comprehensive model or explanation of the complete dimensions and implementation of soft power (Bae and Lee, 2020; Grix and Brannagan, 2016). A notable gap persists in investigation of the practical mechanisms that enable the operationalization and realization of soft power. Moreover, the relationship between soft power, nation branding, and public diplomacy remains underexplored, as existing research often treats these concepts as distinct or somewhat overlapping, but without clearly defining their interconnections. Based on these gaps in the research regarding the relationships and mechanisms underlying soft power, our study enhances understanding of how nation branding and public diplomacy contribute to the achievement of soft power. Providing a clear understanding of the concept and strategic intent behind soft power can guide managers and policymakers toward more thorough and successful implementation (Abdullahi and Othman, 2020). To clarify the interrelationship of soft power, nation branding, and public diplomacy, we examine the soft power strategy of the nation of Qatar through the hosting of sports mega-events, which provide a compelling setting for the analysis of soft power principles and practice.

2 Soft power, national cultures, and strategic action

2.1 Strategic shift from hard power to nation branding

Hard power can be a currency of world politics (Trunkos, 2013), but such coercive agents are increasingly ineffective in a rapidly evolving worldwide context dominated by social media and global culture (Kashif and Udunuwara, 2024). Modern interconnected societies enable individuals to easily share perspectives, thereby easily falsifying some traditional notions of hard power (Daßler et al., 2019). Technological advances further highlight the need for strategic changes in political approaches (Pinto, 2023). Rest apart, hard power can lead to national disasters (Desmidt and Meyfroodt, 2021; Mouazen et al., 2023), indicating a strong role of strategic management among public policymakers (Bryson et al., 2024). Moreover, this also supports the thesis of this paper that holistic and more sustainable agenda (i.e., nation branding) is possible when policymakers are understanding and implementing strategic management initiatives (Desmidt and Meyfroodt, 2021). Focused strategic action in globally popular domains helps build trust, encourage foreign investment, and strengthen global trade and bilateral agreements (Lee, 2015; Moharrak et al., 2025; Sertyesilisik, 2021), positioning nation branding and public diplomacy as a key component of sustainable national development.

We examine and seek to further provide and deepen a systematic understanding of how the hosting of mega-sport events can escalate the soft power of a nation, emphasizing strategic, political, and policy development aspects, as well as emotional and sociocultural dimensions. Previous research on mega-sports hosting from the Arabian Gulf countries or nearby emerging markets has particularly studied collective emotional impacts and long-term sociocultural transformations. For instance, Sullivan (2018) investigated the impact of the collective pride and unity generated during the South Africa 2010 FIFA World Cup to show how emotional contagion—the sharing and spread of emotions—plus the propagation of common national goals increased the sense of national agency and societal cohesion. Along similar lines, Ishac et al. (2018, 2024) and Ishac et al. (2022) revealed how the hosting of the 2022 FIFA World Cup by Qatar built community pride, attachment, and support for the Qatari 2030 national vision throughout demographic groups in the nation. Further underscoring the social and psychological dimensions, subsequent research found that these reactions of residents to mega-sport event hosting in Qatar could inform the plans for and benefits of future hosting initiatives (Al-Emadi et al., 2024). An ongoing and futuristic perspective on sport mega-event hosting underscores the sustainability perspective of such events. Also drawing on the hosting of the 2022 FIFA World Cup by Qatar, Al-Muhannadi et al. (2024) examined the evolution of innovations in environmental and cultural sustainability elicited by the international spotlight on the hosting of mega-sport events, while calling for further analysis of the long-term durability of these effects.

While the above research showed how mega-sport events advance soft power through emotional, social, and sustainability impacts, some inferences can also be drawn about policy development with respect to sustainability, community engagement, and cultural grounding. Environmental innovations such as carbon-neutral technologies and modular stadium designs that occurred as part of the Qatar 2022 FIFA hosting suggest a potential for ongoing sustainability initiatives (Al-Muhannadi et al., 2024). Results achieved in building community pride and attachment offer guidance for possible social sustainability policies to enhance resident inclusion in event planning (Ishac et al., 2018, 2022, 2024). Finally, the development and continuation of policies grounded in Gulf faith and culture while also promoting intercultural awareness and understanding can be considered as a means of maximizing both cultural sustainability and global support

(Al-Emadi et al., 2024; AlShamali and AlMutairi, 2023). As there is still a need for more comprehensive frameworks for long-term soft power implementation and attendant policy development, we pursue further insights based on the hosting of mega-sport events.

2.2 Sports as a catalyst for nation branding

Nations can effectively leverage sports as a tool for nation branding and public diplomacy, given the integral role in sports globally in social life (AlSarraf and AlMutairi, 2025; Nicolescu and Barbu, 2024b; Kashif et al., 2019). Major sporting events attract tourists worldwide and stimulate economic growth (Vrondou, 2023), reinforcing the connection between sports and national development. Contemporary evidence suggests that hosting particularly large, international sports mega-events enhances the image of a nation and contributes positively to nation branding (Li et al., 2024). Successful event organization not only boosts national pride but also serves as a strategic example of governance branding (Gulavani et al., 2024). A case in point is the use of rugby to establish a national brand identity in various Commonwealth countries, demonstrating how government branding can revolutionize strategic thinking (Kahiya et al., 2023). This earlier outcome highlights the importance of strategic management by policymakers in using sports to advance nation branding agendas, as reflected in impressions formed by key opinion leaders as well as the general public (Vila-López and Küster-Boluda, 2024).

Nation branding extends beyond sports to include the broader concept of cultural positioning, an essential part of national brand management at the macro level (Schühly, 2022). Culture, encompassing art, music, sports, and folklore, provides what can be termed the natural identity of a nation (López Hernández, 2022). Countries such as the US, UK and Canada differentiate themselves through distinct cultural markers compared to nations in the Middle East or Africa, reflecting varying national agendas. Hofstede's (2011) cultural dimensions model—considering of factors such as individualism, risk tolerance, and power distance—provides a framework to analyze national identity. Additionally, elements such as local heritage, language, and literature contribute to national cultural branding (Albuloushi and Algharaballi, 2014; AlMutairi and Yen, 2022; Brewer and Venaik, 2012; López Hernández, 2022). Strategic management of these cultural assets is crucial for projecting a cohesive, attractive, and appealing national image.

Mega-sport events can play a pivotal role in nation branding and public diplomacy by building the national image alongside strengthening emotional and social connections. Sullivan (2018) demonstrated how collective emotions such as pride and unity, generated during mega-events, contribute to a sense of national transformation, aligning with nation branding goals. Ishac et al. (2018, 2024) and Al-Muhannadi et al. (2024) highlighted how hosting events such as the FIFA World Cup intensifies community attachment while also exhibiting sustainability initiatives, upselling the appeal of Qatar to international audiences. It is furthermore valuable to encompass various resident and visitor groups in shaping perceptions critical for effective public diplomacy (Al-Emadi et al., 2024) and to encourage foreign investments into new products through trust (Al Reshaid et al., 2024). In these ways and more, mega-sport events have the power and potential to project soft power and advance both nation branding and public diplomacy objectives.

2.3 Political values and global collaboration

In addition to national culture, political and moral norms and values also play a key role. Modern political systems are evaluated by other nations through public media, tourism, and sports events (Sertyesilisik, 2021). Foreign policy also remains a cornerstone of modern nation branding, reflecting state collaboration strategies and international goals (Northedge, 1968). Globalization has further amplified the importance of cooperation, with countries increasingly coordinating interests and pooling resources to achieve shared, desired outcomes (McClory and Harvey, 2016). These efforts highlight the need for public policymakers to integrate political, economic, and cultural strategies into holistic nation branding, public diplomacy and soft power initiatives.

Holistic thinking among policymakers is critical for the successful execution of nation branding agendas, particularly through sports event organization. For instance, the Olympics in China exemplify strategic governance, showcasing the potential of well-orchestrated global events to reshape international perceptions (Diodato and Strina, 2023). Similarly, efforts by South Korea to host sports events have created strong emotional bonds with international audiences, elevating the national brand (Kim and Kim, 2024). In Africa, strategic sports event organization has countered negative stereotypes and helped to create a more positive image of the continent (Quansah, 2024). These examples demonstrate that sports-based nation branding requires substantial effort as well as a well-rounded strategic approach. Ultimately, such initiatives underscore the importance of visionary policymaking and a commitment to sustainable nation branding strategies.

2.4 Generating soft power

Since soft power derives from attraction and persuasion rather than force, it can be argued that generating non-coercive influence primarily relies on positively framing the mindsets, perceptions and emotions of target audiences in ways that can influence their behaviors. Foreign policy specialist Mark Leonard notes that attracting tourism, increasing inbound investments and trade, and encouraging public support for national positions are examples of national objectives which rely on soft power since audiences cannot, or at least should not, be coerced into visiting, investing or supporting a nation (Leonard and McLaren, 2002). He further reasons that behavioral influence can be achieved through the pillars depicted (Figure 1).

Although not explicitly mentioned in his model, it can be reasoned that 'encouraging people to subscribe to national values and see the country as an attractive destination for tourism, trade, education etc.' resembles the concept of soft power as it relies on influencing and persuading foreign audiences to behave in ways that fulfill national objectives, while each of the underlying stages of influence can be achieved through nation branding and/or public diplomacy initiatives. The latter two concepts essentially serve as 'mechanisms of image-building and building a platform for dialogue and trust… which have been used to describe the process of persuasion' (Nygård and Gates, 2013, p. 2). Upon examining the various definitions and aims of nation branding and public diplomacy initiatives throughout literature, this paper proposes the following definitions for each:

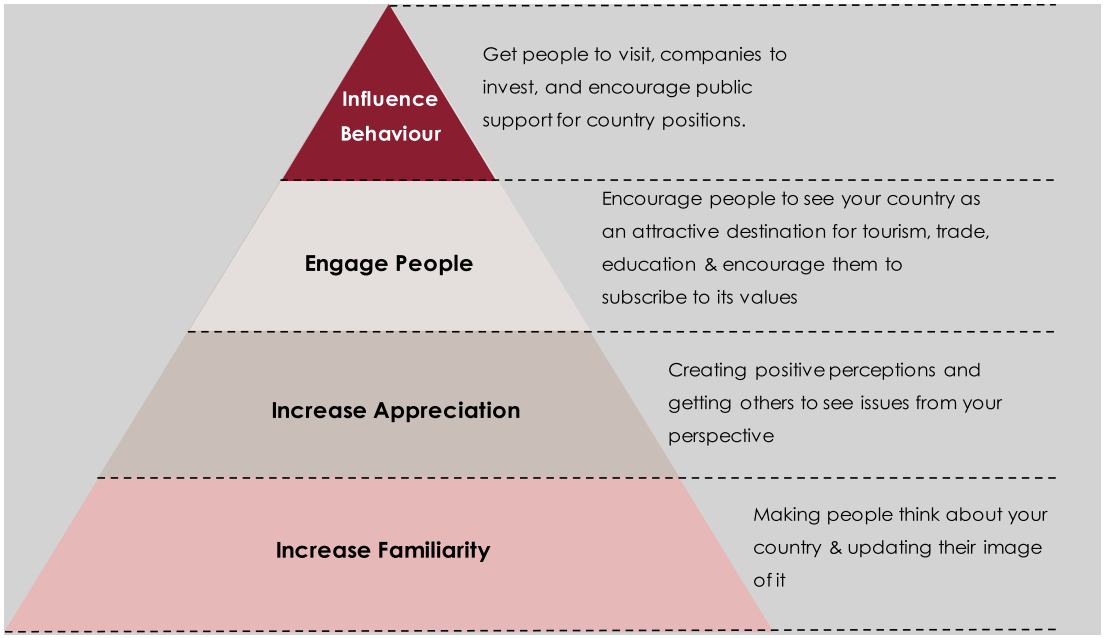

FIGURE 1
Behavioral influence pyramid. Source: adapted from Leonard and McLaren (2002).

Nation branding is the repetitive promotion of simplistic messages, images and information directed at mass audiences to increase familiarity and generate top-of-mind associations regarding a country's existence, image, identity, and/or competitive advantage.

Public diplomacy is the strategic communication and engagement process which conveys complex messages tailored toward target audiences to cultivate understandings, build trust and credibility and foster relationships between governments and foreign publics.

Given that nation branding aims to increase awareness about a nation, (re)mold its image/identity and promote its competitive advantage(s), it has been reasoned that the former two aims primarily relate to the familiarization pillar of the pyramid as they increased awareness of a country and its image irrespective of others. These initiatives mainly disseminate the name of a country on a global scale, or inform others about the current nature of a country through slogans that foster an awareness of a "friendly" population or a nation that has modernized.

Although the latter aim of promoting competitive advantages can also serve to increase familiarity, it has been reasoned that it primarily relates to increasing appreciation for a nation since it distinguishes a country from others in a way that allows for it to "stand out of the crowd." As noted by Nye, it is the unique cultural elements of the U.S. that make it seem attractive, exciting and admirable by others. Thus, through promoting a country's unique culture, business environment, tourism industry, etc., nations can make others not only know about them but appreciate them for matters such as tourism or investment. Therefore, the aims of nation branding can be transposed onto the bottom third of the behavioral influence pyramid.

Overlapping with nation branding in the appreciation pillar are the public diplomacy initiatives which rely on one-way communication channels to explain policy decisions or cultural contexts. It can be argued that through increased understandings, foreign audiences may begin to appreciate a culture that was once considered "closed" or "different" or begin to appreciate policy decisions that they once viewed as rash and unreasonable due to a lack of understanding. Due to the one-way nature of these explanatory initiatives, this part of public diplomacy does not transcend into the engagement pillar.

However, public diplomacy initiatives which consist of two-way exchanges to build trust or cultivate long-lasting relationships have been categorized under the engagement pillar. These exchanges allow for first-hand experiences, the chance to engage in constructive dialogues and are highly subject to individual interpretations. Due to these characteristics, two-way exchanges are viewed as more credible sources than scripted messages conveyed via one-way channels and are more effective in transforming the mind-sets of foreign audiences if managed strategically. Based on these understandings, nation branding and public diplomacy initiatives have been transposed onto the behavioral influence pyramid to develop the Soft Power Hierarchy as follows (Figure 2).

Understanding this phased approach between nation branding, public diplomacy and soft power can help nations establish a holistic strategy toward generating soft power.

3 Methods

Qatar has been identified as a prime case study setting to develop a thorough understanding of how sports mega-events can be used to fulfill each of the pillars of the soft power hierarchy, based on the challenging notion of strategic management of a nation. Thus, to develop a 'holistic' picture of the soft power framework and correlated objectives outlined above, documentary analysis and semi-structured interviews were conducted to unveil the overarching goals and strategies which must be adopted by Qatar to strategically position a nation brand. This is in line with the suggestions made by qualitative

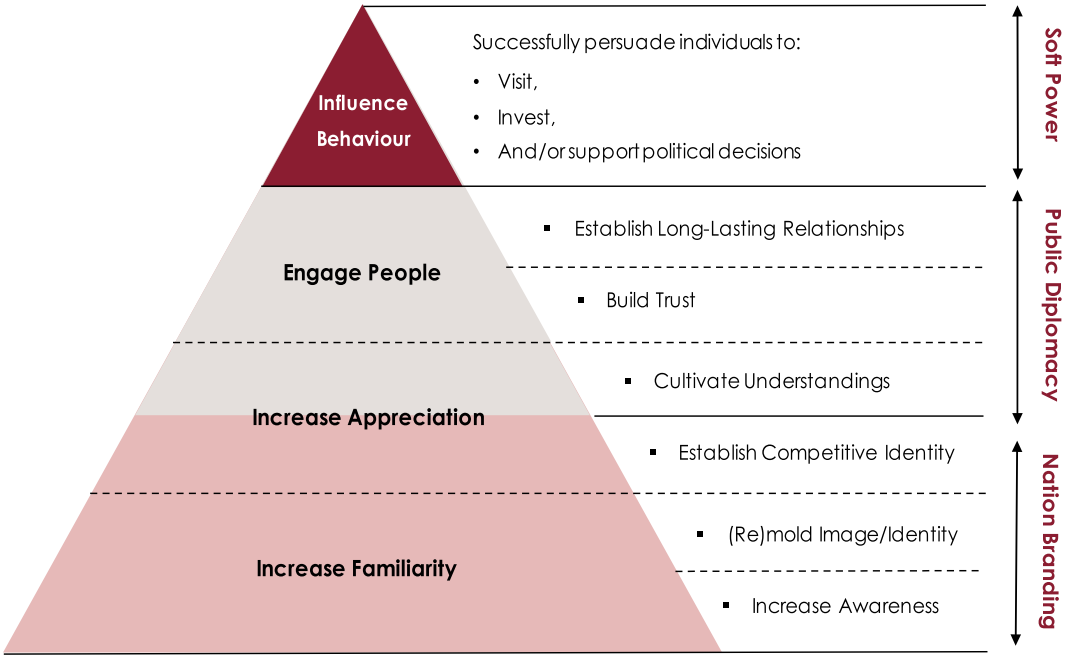

FIGURE 2
Soft power hierarchy. Source: adapted from Leonard and McLaren (2002).

market researchers, investigating branding issues and challenges (Kashif and Udunuwara, 2024).

Since context-driven data was required, the research team opted for a qualitative case study investigation (Edwards and Holland, 2013). In this regard, researchers recommend using triangulation as a useful technique to strengthen the methodology of the study (Kashif and Udunuwara, 2024). An underlying assumption of data triangulation is that 'data collected in different ways should lead to similar conclusions, and approaching the same issue from different angles can help develop a holistic picture of the phenomenon (Crowe and Sheppard, 2012). It therefore helps guard a researcher against the accusation that their findings are simply an artifact of an unreliable method or source (Patton, 2005). As such, the researchers triangulated the data collected from the document analysis and the semi-structured interviews to ensure consistency of our findings.

3.1 Document analysis

The first objective of this study was to understand the pre-determined goals of the nation and the way in which sport event strategies are positioned to fulfill soft power ambitions. Thus, a thorough documentary analysis was conducted as this method is known to '*help the researcher uncover meaning, develop understanding and discover insights relevant to the research problem*' (Merriam, 1988). Depending on the topic at hand, the documents reviewed can range from personal memos and letters to official government documents (Grix, 2010). While it is beneficial to have access to a wide array of documents from different levels and sources, the primary focus should be on the reliability of documents and their relevance to the purpose and design of the study rather than the quantity and breadth of documents (Bowen, 2009).

Due to this latter point, the main focus of this method will be on official government documents relating to the country's long-term national vision and its respective sport strategies. Thus, national sport strategies and relevant reports and publications were extracted from official government websites. In cases where strategy documents were not made available, however, relevant online articles which disclosed details from interviews with government officials of local sports councils were used in addition to reports provided by personal contacts within local sports organizations. The publication dates and time periods of each document were also accounted for to track any changes in the strategies adopted by Qatar. This helped to determine whether the nation was shifting their focus from internal ambitions to external ambitions.

Despite the relevance of these findings which provide important backgrounds and contexts, policy documents such as these are stagnant in nature as they are published at a specific point in time, are forward-looking and cover a timespan of at least 5-years. Thus, they fail to account for today's rapidly changing environment unless frequent update reports are released (Bowen, 2009). To address the stagnant nature of document findings and build on the details unveiled throughout this process, semi-structured interviews were conducted with key officials, as advised by qualitative researchers (Patton, 2005).

3.2 Semi-structured interviews

Interviews are key to obtaining primary data and can provide researchers with the opportunity to understand the socially constructed realities and perspectives of individuals (Patton, 2005; Kashif and Udunuwara, 2024). Semi-structured interviews consist of a general outline of questions and topics to be covered but is not

meant to rigidly guide the discussion (Bryman, 2008). This allows for the interviewee and the respondent to have more liberty in asking and answering questions, but it remains imperative that the interviewer keeps informants on track to obtain relevant answers (Kashif and Udunuwara, 2024).

Semi-structured interviews were therefore employed throughout this study to further build on the findings obtained from the document analysis. A combination of criterion-based sampling which relies on identifying 'a sample that has the characteristics relevant to the research question' (Nastasi, 2014) and snowball sampling which 'typically proceeds after a study begins and occurs when the researcher asks participants to recommend other individuals to study' were used to identify interview candidates throughout this research (Creswell et al., 2006). The initial approach of relevant interview candidates was facilitated by one of the researchers' networks. The use of these initial contacts helped establish a sense of trustworthiness amongst the interviewer and interviewees, while also allowing snowball sampling to occur after the interviews were concluded. The research team ensured the maintenance of neutrality in the sampling process by ensuring the criterion-based sampling was met with each interviewee.

It is also important to note that due to familiarity with the mentality of Gulf citizens, the researchers were able to tailor their approach in ways that helped optimize response rates. The mentality of Gulf citizens was taken into consideration when initiating contact with interview candidates. Also, despite being an expat the physical features of the primary researcher closely resemble those of Gulf citizens which enhanced credibility and acceptance amongst interview candidates as it fostered a sense of trust. Rather than being viewed as a "Westerner" looking to gain insider information, the researcher was treated as a local who had genuine interest in bettering the sporting industry of the Gulf. This resulted in more open communication and facilitated their willingness to share information and put the researcher in contact with other interview candidates in the region.

The foundational criteria for interview candidates for the study relied on two main points. The first requirement was that individuals worked within the local sport council, National Olympic Committee, or a local organizing committee of a top-tier sport event within Qatar due to their direct relevance to the objective at hand. The second point was that candidates should be working as a manager or above to maximize the depth of knowledge obtained throughout the interview process. This criteria is inspired by qualitative market researchers, exploring similar issues of brand management (Kashif and Udunuwara, 2024). However, a contingent point was offered in which candidates who were below manager level but had a minimum of 5 years' work experience in their role could be interviewed due to their relevant expertise and depth of knowledge that may have been obtained over time but may not be represented in a job title such as "officer." While this criterion was established prior to initiating contact with certain individuals, it also applied to the "snowball sampling" candidates which were recommended by initial contacts (Parker et al., 2019). All interviews occurred face-to-face and relied on notetaking and voice recording based on written consent.

To protect confidentiality and anonymity of interview candidates, participants were informed prior to the interview that their personal and organizational information will remain anonymous and thus verbal and written consent was obtained by the participant at the start of each interview. A coding system was developed to avoid disclosing interviewee names and job titles. The name of each organization and department is provided, however candidates are classified under levels according to their title and/or years of work experience. Officers or individuals with 5 years of work experience will be classified at Level 1; Experts, Senior Officers or those with 7 years of work experience will be classified at Level 2; Managers and those with 10+ years of experience; will be classified at Level 3, and Directors, Board Members, or Executives with 15+ years of experience will be classified at Level 4. Table 1 below is a true depiction of our sample.

TABLE 1 List of interviewees in Qatar.

Qatar interviews organization: name level and department code			
Governing sports bodies	Qatar Olympic Committee	Level 4 Strategic Planning and Project Management	Q1QOC
	Qatar Olympic Committee	Level 4 Marketing	Q2QOC
	Qatar Olympic Committee	Level 4 International Relations/Events Planning & Operation	Q3QOC
	Qatar Olympic Committee	Level 3 Operations	Q4QOC
	Qatar Olympic Committee	Level 3 Operations	Q5QOC
Event specific organizations	2022 Supreme Committee	Level 3 Media Relations	Q6SC
	2022 Supreme Committee	Level 3 Public Relations	Q7SC
	2022 Supreme Committee	Level 2 Media Relations	Q8SC
	2022 Supreme Committee	Level 3 Tournament Operations and Planning	Q9SC
	2022 Supreme Committee	Level 3 Stadium Project Manager	Q10SC
	International Centre for Sport Security	Level 4 Communications	Q11ICSS
	International Centre for Sport Security	Level 4 Planning Coordination and Legal Affairs	Q12ICSS
	Sheikh Khalifa Stadium	Level 1 Project Welfare	Q13SKS
	Sheikh Khalifa Stadium	Level 3 Health and Safety	Q14SKS
	Jusoor Institute	Level 3 Project Management	Q15JI
Other	Qatar University	Level 3	Q16QU

4 Results

A thematic analysis approach was used for data analysis. The first step of thematic analysis requires that a researcher familiarizes themselves with the data by reading through it many times so that patterns and themes begin to take shape in their subconscious minds (Spencer et al., 2003). After the "passive" reading process, researchers may begin to generate codes as they "actively" search for meanings and patterns throughout the data sets. Some of these codes may be inductively driven by the data itself, while others may be deductively developed according to *a priori* set of codes that are directly related to the research questions (Crabtree, 1999).

Due to the subjective and interpretive nature of coding, these codes were validated by third parties (Braun and Clarke, 2006). Once codes were generated (and approved by the author team), they were then grouped under broader themes and sub-themes to identify commonalities and differences within and across sources (Gale et al., 2013). Some initial codes may serve as a theme or sub-theme in itself, whereas others may be discarded as they are found to be irrelevant to the main patterns that have been identified from the findings or placed under a "miscellaneous" category (Tuckett, 2005). Each point within these themes were then reviewed and re-adjusted until 'candidate themes adequately capture the contours of the coded data… [after which] a thematic map can be established from the outcome of this refinement process to display how they fit together, and the overall story they tell about the data' (Braun and Clarke, 2006).

Themes were inspired by the framework presented above. This deductive and inductive reasoning in which priori themes and new emergent themes from the data were used are the modern ways to construct a pragmatic investigation. A combined approach is appropriate when the project has some specific issues to explore but also aims to leave space to discover other unexpected aspects.

After reading, re-reading, highlighting and annotating each document thoroughly, critical inferences were developed in regard to Qatar's strategic approach and common themes were noted. This allowed for the researchers to tailor interview guides that specifically addressed the strategies adopted by the nation. Interview recordings were then transcribed using *transcribe.wreally.com* which is an online platform that offers an integrated audio player and text editor within the same page. Following the transcriptions, the authors reviewed the transcriptions to ensure accuracy of the transcriptions. Given that the interview questions were built off document analysis findings, the data obtained from the interview recordings was analyzed in accordance with the pre-determined document analysis framework. This concurrent analysis either validated or corrected for what was noted throughout the examined policy documents and allowed for the researcher to solidify certain inferences.

4.1 Document analysis

In October 2008, Qatar launched the Qatar National Vision 2030 (QNV 2030) which outlined the nation's overarching aim and the fundamental pillars on which the strategy was built. In 2011 and 2019, the country also released 5-year National Development Strategies (NDS reports) to reaffirm or redirect the nation's focus while also providing updates on the progress that has been made. These reports were significantly more detailed than the 2030 Vision and were useful in understanding the intricacies of Qatar's overarching vision. In regards to sport-specific documents, the nation has released the 2011–2016 Sport Sector Strategy (SSS) and the 2023–2030 strategy to date. Thus, the following sections will draw on the soft power themes that have emerged from each of the aforementioned documents.

Prior to delving into these details however, it is imperative to highlight that Qatar's 2030 National Vision begins with the following overarching aim:

> *'The National Vision aims at transforming Qatar into an advanced country by 2030, capable of sustaining its own development and providing for a high standard of living for all of its people for generations to come' (*General Secretariat for Development Planning, 2008*, p. 1).*

When reading this statement independently, it is easy for one to infer that the strategy is primarily inward looking as it explicitly notes the intention to serve the local population and future generations. When looking at it through a more analytical lens however, the mere mention of "transforming Qatar into an advanced country" points toward an outward looking and soft power-related ambition. The phrasing implies that Qatar's current status is lagging behind nations that are considered "advanced" and thus requires a *transformation*.

Upon adopting a thematic analysis to review the details presented within each strategy document, it was found that Qatar is undoubtedly striving to advance its soft power and that sports play a pivotal role in achieving this goal. The nation also demonstrated a rather comprehensive understanding of the key pillars identified within the Soft Power Hierarchy as it was found that the country aims to: (a) increase its international visibility, (b) distinguish itself as a regional cultural hub and a global sporting hub, (c) foster deeper understandings with foreign audiences via dialogues and exchanges, (d) adopt commonly accepted global norms and standards to enhance its credibility on the international front, and (e) increase its cooperation and influence on the international stage while attracting tourism, investments, aid and trade.

4.1.1 Increasing international visibility

When reviewing national documents, it became apparent that Qatar was determined to increase its visibility on the global front. This intention has been expressed manifold throughout the first National Development Strategy (2011 NDS) and the Sports Sector Strategy in particular. In fact, both documents identify sport as a primary way of disseminating Qatar's name on the international stage. For example, the 2011–2016 National Development Strategy states that: 'at the international level, sport events and athletes help raise Qatar's regional and global profile' (General Secretariat for Development Planning, 2011, p. 202). Echoing these perspectives, the sport strategy documents reason that fostering local talent to participate in world championships such as the World Cup and Olympics, can further disseminate Qatar's name on the global stage to foster an awareness of its existence. These strategic decisions are directly linked to the awareness objectives of nation branding initiatives that aim to instill a country in the minds of foreign audiences and are in line with the arguments made by previous scholars who have argued that countries use SMEs to "place themselves on the map" and "increase their international visibility."

4.1.2 Distinguishing Qatar as a regional cultural hub and global sporting hub

As discussed in the literature review, it can be difficult for nations to generate cohesive brands or simplistic messages that cut across various sectors. To address this limitation, they can focus on establishing "sub-brands" that are industry-specific and work toward attracting specified target segments such as tourists or investors which can collectively contribute to the nation's overall brand. Qatar has clearly adopted this approach by selecting culture and sport as the main sub-sectors in which they aim to distinguish themselves from regional neighbors.

Throughout each document, various explicit references have been made to establishing the nation as a "cultural destination," a "centre of cultural exchange," a "cultural hub," a "sport hub," a "centre for sport," and a "first-class sport destination." Not only are these words used multiple times, but they have been identified as specific targets that have driven strategic decisions as can be seen in the comments below:

> *'Target: Establishing Qatar as a hub of Arab culture through distinctive national identity, strong community cohesion and a vibrant and creative culture' (2011 NDS).*
>
> *'[Qatar] is also strategizing to become a global sports hub with an array of first-class facilities and a host of regional and international sporting events' (2011 Sport Sector Strategy).*

The 2011 NDS further notes that the 'government will improve branding of the country's global image using cultural exchange programs and regional arts initiatives to promote Qatar's culture', it also emphasizes that a 'global branding project will be implemented to improve the visibility of Qatar's cultural sector.' It is for these reasons that the nation heavily invested in the establishment of a wide array of museums and cultural initiatives to instill Qatar's heritage within the nation, while also promoting it abroad.

Unlike the Arab culture which may not be universally understood, sports is known for being a universal language that appeals to a wide audience. Establishing Qatar as a "global sports hub" can be classified as a two-way image transfer process known as co-branding 'whereby image elements from one entity, say for example the Olympic Games which can either be positive, neutral or negative, transfer onto another. In this regard, "sport hub" can serve *as the* brand or as a key facilitator of promoting Qatar *as a* brand. Aside from serving *as the* brand, sport can be a key facilitator of promoting Qatar *as a* brand in itself through disseminating Qatar's name on the global front as was described earlier.

4.1.3 Foster deeper understandings of the nation via constructive dialogues and exchanges

Further building on these foundations, explicit references are made to the concept of public diplomacy as each document emphasizes the importance of fostering relationships and deeper understandings via constructive dialogues and first-hand exchanges. In fact, one of the key outcomes identified throughout the 2030 Vision is to develop a spirit of tolerance, *constructive dialogue* and openness toward others at the national and international level. Supporting this objective, the 2011 NDS also focuses on the intensification of cultural exchange with Arab people in particular and with other nations in general to create a positive image for Qatar and enhance international relations.

The following passage also demonstrates Qatar's intentional use of sport to fulfill the public diplomacy aim of relationship-building which has been identified within the soft power hierarchy presented earlier:

> *'International sport is also a powerful tool for international engagement and diplomacy through tourism, aid and trade… and [Qatar] is using sports to forge friendships and improve relations between nations worldwide' (SSS 2011).*

Based on these comments it is clear that Qatar has adopted the soft power rationale associated with SMEs. It does not shy away from admitting to the underlying intention of using one-way and two-way communication channels that are generated by such initiatives to foster an understanding amongst foreign audiences and perhaps bridge the gap that exists between Qatar and neighboring nations, as well as those from afar.

4.1.4 Enhance trust and credibility by conforming to globally accepted norms and standards

Drawing on the objectives outlined in the 2030 National Vision, the cultural growth section begins with the following quote: 'the state of Qatar will preserve national heritage and enhance Arab and Islamic values and identity' (General Secretariat for Development Planning, 2011, p. 204). This point is raised due to the inevitable impact that globalization and popular culture has had and will continue to have on Qatari society (ibid). Furthermore, as the nation attempts to transform and open its doors to expats and foreign tourists, it stresses on the importance of finding a balance between modernization and the preservation of Qatar's Arab identity.

Despite the intention to retain Qatar's cultural identity however, the National Development Strategy underlines that 'social tolerance, benevolence, constructive dialogue and openness toward other cultures' must also be instilled in the minds of all citizens as 'the country's population grows and diversifies, as a new generation ages in a more open society and as private and international interests invest in Qatar's future' (General Secretariat for Development Planning, 2011, p. 162).

Further linking this concept to their sport strategy, the nation believes that 'by developing an array of first-class sports facilities and continuing to host regional and international competitions and events, Qatar will be well positioned to meet QNV 2030's goal of spirit of tolerance, constructive dialogue and openness through the common sporting principles of teamwork, fairness and aspirational excellence' (General Secretariat for Development Planning, 2011, p. 196).

Another point clearly exhibiting the point of maintaining credibility through the adoption of commonly accepted norms is the infamous labor rights case that has surfaced since Qatar won the right to host the 2022 World Cup. Again, relating to the concept of soft power, a country's policies have the ability to generate likeability, respect and admiration amongst foreign audiences which can directly or indirectly lead to influence. However, if a nation adopts controversial policies, this can harm its credibility and lead to resentment or resistance on the international level.

4.1.5 Attracting tourism, investments, and trade and increase cooperation on the international stage

In recent years, Gulf nations have increasingly tried to diversify their economies away from oil revenues. In order to do so, Qatar has

prioritized tourism, foreign direct investments (FDI) and trade as ways to diversify its economy. These objectives rely on persuasion rather than coercion as individuals cannot (or at least should not) be forced into visiting, investing or trading with a nation.

Linking these objectives to sport, the 2011 NDS explicitly identifies sport as a powerful diplomacy tool which can attract tourism, investments and trade to lower Qatar's reliance on oil and gas revenues (General Secretariat for Development Planning, 2011,). Echoing these perspectives, the SSS also states that 'the provision of quality sports facilities and services, including outdoor recreation facilities, also makes Qatar an attractive place to work, live and visit' (Qatar Olympic Committee, 2011, p. 14).

The 2030 QNV explicitly states that 'Qatar will continue to build upon its role in the international community by assuming an increased regional role economically, politically, and culturally, particularly within the framework of the GCC, the Arab League and the Organization of Islamic Conference' (General Secretariat for Development Planning, 2008,, p. 12). These intentions are directly linked to the concept of soft power as Qatar clearly indicates *how* they intend on becoming influential and relative to *whom*.

4.2 Interview analysis findings

As shown in the Table 1, a total of 16 interviews were conducted in Qatar. Five themes have emerged from the interview process, which include: (a) increasing Qatar's international visibility through sport, (b) fostering deeper understandings amongst foreign audiences, (c) establishing strategic relationships and networks, (d) enhancing Qatar's credibility as mega- event hosts, and (e) "soft disempowerment."

4.2.1 Increasing Qatar's international visibility through sport

As noted in the soft power hierarchy, the first step toward gaining soft power is to generate an awareness about the existence of a nation and its identity which can be done through simplistic messaging and branding techniques that generate top-of-mind awareness across audiences. Throughout the interview process, various candidates expressed that those who resided in countries outside of the Middle East were typically unaware of Qatar's existence let alone its characteristics. Thus, sport has been identified as a key tool for promotion and publicity, alongside other branding initiatives, due to the competitive advantage it can give the nation. For example, one candidate stated:

> *People used to confuse Qatar and not know where it is. Qatar distinguished themselves by using sport because that's what the other countries did not really go after. Dubai has an economic and tourism distinction and we do not want to compete with them in that sense (Q1QOC).*

The candidate also highlighted that sport is meant to complement other branding efforts that are in place:

> *QTA has a strategy in which they try to promote Qatar in every occasion. They even launched the tourism logo in a way that promotes Qatar not only in the region, but internationally. They have their own campaigns and branded taxis in London for example. It's creating a brand for Qatar. It was a very strategic move on their part to brand the nation (Q1QOC).*

These statements reaffirm Qatar's explicit intention of branding the nation through sport and using it as a unique selling point. Prior to investing in such branding initiatives and winning the right to host the 2022 World Cup, Qatar lived in the shadows of its regional neighbors as international audiences hardly knew of the country. In recent years however, the country has been at the forefront of international discussions and if it is not known for its national airlines, Al Jazeera/Bein broadcasting network, or investments in football clubs, it is most definitely known as the host of the 2022 FIFA World Cup. Speaking from personal experience, another candidate added:

> *Before I came here, when I tell people I'm going to Qatar they ask where is that? If you mention the word Dubai, everyone knew it. The perception is that Qatar was a desert without anything but now everyone knows where Doha is… or almost everyone (Q2QOC).*

Further building on this, and relating to the point of establishing a competitive identity to increase appreciation toward a nation, one interviewee provided the following perspective:

> *The main motive earlier, behind Qatar's bid in the 2000s for the Asian Games was to put Qatar on the map because we all know before then, Qatar only had oil related revenues. They decided to put Qatar on the map through sports events because basically the country could not offer anything more at the time (Q3QOC).*

Worth mentioning here is that this particular statement was made as the interview candidate introduced his position and discussed his experience during the Asian Games. No explicit question was asked regarding Qatar's motives behind sporting bids, nor its intent to promote the nation's image or raise its profile. Without probing, another specialist provided the following perspective:

> *From a sporting perspective, there are a number of reasons why countries bid and host mega-events. Some bid for major sports events with the intention of using it to leverage the bid to showcase the city or country as a whole: bidding for biddings sake. From the perspective of Qatar as well, obviously bidding and hosting mega-events is a perfect opportunity to bring media to the country to communicate what the country is about (Q16JI).*

These responses point toward a consistent ideology disclosed within the strategy document in which the nation strategically uses sporting events to foster an awareness of its existence and establish a competitive advantage. While one candidate attributes an increased awareness of Qatar to the 2022 World Cup, another one credits the Asian Games (a second-order event) for being the turning point.

4.2.2 Fostering understanding

Throughout the interview process, various candidates expressed the way in which Qatar is commonly misunderstood or misrepresented on the international front particularly since it is associated with negative and outdated stereotypes.

Respondents highlighted that the mere staging of sport tournaments, particularly the 2022 World Cup, is a sign of progress and openness in itself:

> *The 2022 World Cup will be the first time the tournament has ever been hosted in an Arab or Muslim country. It is an opportunity for the Arab World to unite and showcase its true, peaceful nature to the rest of the world. It is an opportunity for the region to be in the headlines for reasons other than conflict. It is an opportunity for people to travel to the region and go beyond the stereotypes (Q7SC).*

Similar to BRICS nations that have used first-order events as a way to signal their arrival onto the world stage, Qatar views sport events as a way of signaling its transformation into a more progressive state. Furthermore, through stating that Qatar wants to "be in the headlines for reasons other than conflict," "go beyond stereotypes," and "dispel misconceptions and build understandings" as it "can still be looked upon as a closed culture," it is evident that the nation is struggling from stereotypes that are not in-line with current contexts or intended narratives.

Reaffirming this notion, respondents have also articulated the significance of first-hand exchanges as a way to portray a more accurate picture of the nation especially since the media has painted a distorted picture:

> *Misconceptions are created when people just follow news. They're just following Western news which might not depict an accurate picture of what is truly happening (Q12ICSS).*

> *There's a perception that you'll be living under same system that KSA are living under for example or the other extreme, the Emirates; but that's not the case (Q9SC).*

In regards to commonly accepted morals and values, other respondents also reaffirmed that Qatar will continue to preserve its identity, accurately portray it through sport events and also demonstrate that despite the differences, the nation is open, accepting and tolerant toward others as shown in the comments below:

> *We are trying to retain and preserve our identity, yet we are leaving room for other cultures to come and showcase what they have. At the end of the day Qatar has its own identity, it is a Muslim/Arab country and there are a few things we cannot get rid of (Q10SC).*

Key stakeholders have absorbed the logic that first-hand exchanges serve as a more credible source of information than the media; however, news travels faster to foreign audiences than audiences do to foreign nations. Thus, Qatar has pinpointed sport as a way of attracting foreign audiences to their nation so that they can engage in first-hand experiences which depict a more accurate picture of the nation and replace the negative or outdated stereotypes that are portrayed via secondary sources.

4.2.3 Establish strategic relationships and networks

Another key point linking SMEs to the concept of public diplomacy is the way in which they can result in the establishment of relationships and networks. Without probing for such answers, interview candidates within Qatar disclosed that sport events were in fact being used to facilitate relationships and networks with pre-determined markets, organizations and businesses. This particular point has actually been a key driver of Qatar's event selection criteria as one member from the International Olympic Committee (IOC) stated:

> *Our strategy was based on a matrix. We wanted to identify federations and events, we selected federations that had the most power within the IOC… we listed their influence within the IOC and listed what major events they have to offer for us to host. We also assessed events based on TV exposure- participation by countries, which countries are most developed? (Q2QOC).*

Instead of selecting events that fulfill inward looking ambitions such as promoting active lifestyles or facilitating the development of advanced infrastructure, the QOC selects events based on their significance within the IOC, their extended reach to a global audience and the participation of developed countries within the tournaments themselves. Each of these criterions can be classified as outward-looking ambitions in which Qatar is striving to engage with external parties. A project manager at Josoor explained that:

> *Although workshops are designed for mid-level and above, we gather speakers from around the world and we try to maximize their stay here by tailoring fringe events around the workshops to broaden their impact but also show them more of Qatar (Q16JI).*

Whether it is through bringing international experts to train locals, or through sending locals abroad, Qatar has managed to extend its reach and network beyond its regional premises. It can be argued that these international exchanges were made possible by FIFA's affiliated network which has allowed for Qatar to engage directly with other nations that have hosted a World Cup in the past.

Aside from Josoor Institute, the International Centre for Sport Security (ICSS) was also established with the primary purpose of transferring knowledge by bringing in international expertise. However, through leveraging its affiliated media network, the presence of this entity has helped Qatar tap into key target markets as explained in the comments below:

> *We had mixture of sports journalists and international media from different markets and made sure of showcasing anything the journalists wanted to see in particular such as our new modern convention center (Q12ICSS).*

Thus, the ICSS has allowed for Qatar to leverage its existing network of foreign media representatives to positively showcase the nation in external markets. This can enhance the effectiveness of Qatar's strategy for two reasons. First, foreign press is likely to have a more "trustworthy" or credible relationship with entities that they have worked with in the past; and second, foreign audiences are more like to accept information from their local media sources rather than Qatar itself as they are deemed as more credible. Another key point that has emerged from these comments are the key target markets that Qatar wishes to engage with to bridge potential gaps that exist due to

cultural differences, misunderstandings or a lack of awareness about the nation.

4.2.4 Establishing credibility as mega-event hosts

In addition to increasing familiarity, generating deeper understandings, and fostering relationships through sport mega-events, interview candidates in Qatar also highlighted the importance of enhancing their credibility as mega-event hosts. As noted in an earlier section, countries that host first-order events typically establish their credibility by hosting second and third-order events first. Qatar has also absorbed this hosting mentality as interviewees explicitly stressed on the role of smaller scale events in securing the right to host the 2022 World Cup.

When discussing the selection criteria above, the interviewee pinpointed that the Arab Games was an exception as it did not follow the criteria outlined in the strategy matrix:

> *In 2010, we hosted the Arab games which was a unique story, it followed a different strategy. During 2009 and 2010, Qatar was bidding to host the 2020 Olympics. To do that we wanted to show the IOC that we have the capabilities to host an Olympic-like multisport event (Q2QOC).*

By labeling this as a unique story and one that followed a different strategy, it can be inferred that the Arab Games is not viewed as a tournament that is "significant" within the IOC; and due to its regional scope, it does not have the wider global reach that Qatar wants nor does it involve the developed countries that Qatar would like to engage with. Relating to this, another candidate stated:

> *The Arab Games showed the region and the IOC what we could do. I think it really raised our profile a lot and at the same time we were bidding for other events with the federations. As those federations came and saw the work and facilities and hospitality that we have, they knew about us (Q4QOC).*

In addition to the Arab Games, other interviewees stressed on the importance of using the Handball Tournament, Asian Games and other events as a stepping stone to establish Qatar's reputation as credible mega-event hosts and also to build their hosting expertise:

> *Before the Asian Games, Qatar hosted smaller events to build the experience, the profile, etc. There have been more than 40–50 events a year and it maintains also what we started with the Asian Games. The Asian Games to me is what turned Qatar around. It proved Qatar can organise sports events and go to any length needed to have such tournaments (Q3QOC).*

Interviewees from each organization have expressed the way in which Qatar's labor force has benefitted from hosting a wide array of mega-events over the years. Initial tournaments relied on a higher number of foreign expertise, but with time, the transfer of knowledge to Qataris has led to a rise in the number of locals working in Qatar's sporting industry. Thus, the country has slowly managed to enhance their capabilities internally and readjust perceptions externally through the hosting of second and third-order events.

4.3 Theoretical model as an outcome

Understanding these characteristics helped unveil the way in which soft power, public diplomacy and nation branding fit into the Soft Power Hierarchy. This theoretical model served as a guide to analyze how Qatar utilized sports mega-events to enhance its soft power. Throughout the strategy documents and interview process in Qatar, various comments were made in regard to using sport to emerge from the shadows of its local/regional neighbors (namely Dubai and Saudi Arabia) and to correct for negative/outdated stereotypes. Qatar's strategy was explicitly linked to the concepts of nation branding, public diplomacy and soft power which exhibited that the country had a clear understanding of the relationship between sport events and each of the soft power components. As summarized in Table 2, sport events were being used to place the nation on the map, signal its transformation, establish its competitive identity as a sporting hub, showcase its culture, enhance its credibility, and foster long-lasting relationships to extend its global influence and increase inbound tourism and trade, all of which have been highlighted as key components of the Soft Power Hierarchy. Thus, Qatar serves as a prime example of an emerging state that is using sport to extend its international influence through adopting a holistic approach.

5 Discussion and conclusion

Based on the document analysis, it has become evident that Qatar clearly intends on operating across all the levels identified in the soft power hierarchy. Although the documents do not present these initiatives in the sequential order of the soft power hierarchy, they each acknowledge the need to establish a brand and fostering an awareness of the nation via one-way image-projection channels (nation branding). They also place a special focus on hosting cultural exchanges and sporting events to engage in constructive dialogues and foster deeper understandings between countries, both of which fall under the public diplomacy umbrella. The country has also outlined its intent to adopt commonly accepted norms and values and conform to international standards to enhance its credibility amongst foreign audiences. It is only upon doing so that the country can position itself as an influential economic, political, and cultural leader within the region and begin to extend its influence to an international audience.

Each of these objectives have been linked to sport as well as the country explicitly states its overt intention to use sport as a nation branding and public diplomacy tool to enhance its soft power. Sports events and athletes have been identified as a way to "raise the nation's regional and global profile," international sport events have been labeled as a "powerful tool for international engagement and diplomacy" and credited for "forging friendships and improving relations between nations"; and the establishment of sporting facilities and hosting of mega-events has been linked to making Qatar an "attractive place to work, live and visit."

Despite the internal benefits that sport may bring to the nation, it has also become evident through interview responses that through hosting mega-events, the nation ultimately aims to fulfill external objectives relating to the concepts of nation branding, public diplomacy and soft power. Respondents expressed the way in which Qatar has managed to successfully put itself on the map through

TABLE 2 Qatar document analysis and interview findings in relation to soft power hierarchy.

	Qatar		
	Soft power hierarchy pillars	Doc analysis	Interview analysis
Soft power	Attract Tourism	☑ Attract international tourists particularly via sport events	☑ Primarily target audiences from developed nations
	Attract Investment/Trade/Business	☑ Diversify economic revenues and attract FDI	☒ N/A
	Obtain Political Support	☑ Increase regional and international cooperation and influence	☑ Events associated with influential federations in IOC, events in which developed & loudest countries participate
Public diplomacy	Establish Long-Lasting Relationships	☑ Build strategic partnerships and business networks	☑ FIFA affiliated network, ICSS affiliated network, Jusoor network, etc.
	Build Trust/Credibility	☑ Instill values of tolerance, benevolence & openness, & reform labor laws to conform to international standards	☑ Showcase hosting capabilities by hosting smaller scale events, open to other cultures, ammended labor laws
	Cultivate Understandings	☑ Engage in exchanges to foster deeper understandings	☑ Exchange programs, showcase Qatari culture, tackle negative criticism
Nation branding	Establish Competitive Identity	☑ Sporting hub and Cultural hub	☑ Sporting hub
	(Re)mold Image/Identity	☑ Modernized and developed nation	☑ No longer a desert, transforming
	Increase Awareness	☑ "Place Qatar on the map"	☑ "Place Qatar on the map," brand the nation

Source: The table has been developed by the authors.

hosting mega-events, and that branding the nation was a primary driver behind their sport event strategy.

At the public diplomacy level, the event selection criteria were strategically tailored to select events that are popular in the developed countries with which Qatar seeks to further engage an develop relationships, and their affiliated marketing mechanisms were also directed at establishing a dialogue with these audiences in hopes of creating and readjusting their perceptions through first-hand visits. Furthermore, the nation intentionally selected events based on their significance and potential influence in the IOC. The constant need to be affiliated with advanced nations and influential powers at the political and sporting level points toward Qatar's soft power ambition of rising above its "small-state status" to be seen as a global player and one of the "big guys" regardless of its size.

Upon successfully doing so, the nation realized the way in which the negative press and cultural divide between Western and non-Western nations may impact its ability to attract spectators and hinder its reputation. Therefore, various measures have been implemented to bridge these gaps and create an understanding amongst foreigners that Qatar is in fact open to tolerating different cultures while maintaining its own traditions, and that it is a friendly, warm and hospitable nation contrary to the alleged conservative environment it hosts and the alleged negative terrorism and labor rights reports that have surfaced in recent years. The Gulf Crisis, between Qatar and the Kingdom of Saudi Arabia between 2017 and 2018, has also posed an additional challenge for the nation as it has severed ties between regional neighbors and impacted Qatar's reputation on the global front. Nonetheless, the nation remained relatively optimistic that the 2022 World Cup will not be impacted by the Gulf Crisis and that building bridges with those from developed countries and Western nations remains their primary objective as they are the main target audiences.

There are several interesting outcomes based on the findings of data collected for the purpose of this study. The discussion of these findings is classified into three broader elements. First, soft power can be exhibited through attracting tourism toward nations. This is in line with the findings of previous studies where attraction of tourists has helped nations in establishing and to strengthen their image (Avraham, 2020). However, a more focus on attracting sports tourism is a unique aspect of this study, underexplored by previous researchers. Another manner which evolved from the data is via investment in business and trade. There are several studies where investment and trade options are outlined to develop nations. However, from the perspective of our study, these opportunities can help in establishing soft power for nations. In this way, our study contributes to previous findings which were focused more on organizations rather than nations (Sertyesilisik, 2021; Grewatsch et al., 2023). Extending on this point, it also paints an image of strategic intent which is required among policymakers to chalk-out strategies which establish strong national image. Another element of soft power is bilateral ties/relationships with other nations. There is a strong need felt to collaborate with other country states. However, slightly diverging from the extant literature, we position political support to collaborate in a more holistic yet sustainable manner which can outline a positive way forward.

We have reflected on the potential of mega-sport events to enhance a nation's soft power based on increased global visibility, enhanced international relations, and competitive business advantages (Anholt, 2007; Leonard and McLaren, 2002). Venturing deeper, we more profoundly surface the internal and regional impacts of hosting sports, including creating community pride, promoting cultural exchange, and enhancing the nation branding. Events like the 2022 FIFA World Cup in Qatar illustrate how nation branding and public diplomacy intertwine to present

a modern and progressive identity, dispelling outdated stereotypes and reinforcing regional solidarity (Nye, 2004; Szondi, 2008). In the Arab world, such investments not only serve economic goals but also project values of cultural richness and unity, deploying soft power to strengthen both internal cohesion and global influence (AlBuloushi et al., 2024; Grix and Brannagan, 2016; Mattern, 2005). The accomplishments of Qatar as nation increasing in prominence on the global stage underscore the strategic role of mega-events in reframing narratives and advancing sociocultural and political aspirations n a highly competitive global attention arena.

While sport and hosting mega-sport events represent noteworthy tools of soft power for Qatar, they are part of a broader, multifaceted strategy. Qatar also uses cultural diplomacy, education initiatives such as the establishment of global university campuses, media platforms like Al Jazeera, and diplomatic networks to enhance its soft power reach (Nye, 2004; Szondi, 2008). We note these complementary approaches alongside the use of mega-sport events to provide a balanced understanding of how Qatar strategically projects its influence on the global stage. The synthesis of approaches indicates a commitment to cultivating a well-rounded and resilient soft power identity.

Another important domain is public diplomacy which plays a key role in building mutual trust and friendly relationships among nation states (Daßler et al., 2019; Sertyesilisik, 2021). A key feature of this element is strategic thinking, based on the principles of strategic management (i.e., setting long-term goals, thinking holistically, outlining an inspiring vision, and implementing and learning from the implementations). An important part of public policy is openness toward others which is not frequently discussed in extant nation branding literature, particularly in instances where a strategic management agenda inspires implementations. Reinforcement is particularly used by brand marketers to strengthen brands (Avraham, 2020) however, our agenda is more macro in its perspective, thus, steering away from the extant literature. A key to partnerships is a strong reinforcement strategy which supports dialogue at all levels. This includes political leaders and even strategists, engaged in the process of implementing the strategies. This way, it can deepen understanding among key stakeholder groups.

The 2022 FIFA World Cup represents a significant case for examining the impact of nation branding on soft power, particularly in the Arabic-speaking world and the GCC region. Prior to the event, sentiments were mixed, with criticism centering on the suitability of Qatar as a host due to its size and cultural differences (Nye, 2004). However, during the event, extensive cultural diplomacy efforts and Qatar's emphasis on its Arab identity helped foster regional pride and solidarity, shifting perceptions positively among neighboring nations (Grix and Brannagan, 2016; Szondi, 2008). Post-event analyses indicate that Qatar relied on and benefited from the World Cup not only to enhance its global visibility but also to bolster regional unity and reshape its image as a hub for cultural and sporting excellence (Anholt, 2007). Comparing public sentiment across these time periods highlights how strategic soft power initiatives can alter perceptions over time.

Finally, another theme which is emphasized as part of this study is nation branding. Although much has been said about it, nation branding from our perspective is missioned around building a desirable global image of a country, inspired by elements of the national identity, while polishing the existing stereotype and heightening stakeholder awareness. Various sports can help build this new image for Qatar and to steer away from unjustified stereotypes. Such a transformation becomes possible when policymakers understand key components of nation branding, interwoven with strategic thinking, and forging a way forward to develop and implement a sustainable soft power-based agenda. With such insights, our study extends and amplifies extant research on nation branding (Rojas-Méndez and Khoshnevis, 2023).

In conclusion, our study has highlighted Qatar's strategic use of sport as a central tenet in advancing its soft power, nation branding, and public diplomacy. By leveraging globally renowned sports mega-events to attract international audiences, build multilateral relationships, and intensify intercultural understanding, Qatar has developed a capability to mine the complexities of global perceptions while also handling challenges such as the Gulf Crisis and periodic negative media coverage. The findings emphasize the importance of strategic intent and holistic public policymaking in reshaping national identity and bridging cultural divides. Qatar's example underscores how integrating strategic management principles with nation branding efforts can transcend traditional approaches, positioning a nation as a competitive and advantageous player on the global stage. Ultimately, our research contributes to the broader understanding of how soft power, grounded in culture, diplomacy, and strategic vision, can transform a nation's global image and redefine its role in international relations.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The studies involving humans were approved by Loughborough University Ethics Approvals (Human Participants) Sub-Committee. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

LE-D: Conceptualization, Data curation, Formal analysis, Investigation, Methodology, Visualization, Writing – original

draft, Writing – review & editing. FA: Conceptualization, Formal analysis, Investigation, Methodology, Visualization, Writing – original draft, Writing – review & editing. KP: Conceptualization, Methodology, Validation, Supervision, Writing – review & editing. NA: Conceptualization, Methodology, Validation, Supervision, Writing – review & editing. AA-E: Conceptualization, Methodology, Validation, Supervision, Writing – review & editing.

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Inheritance and development of traditional martial arts under the perspective of group dynamics: a case study of Ma's Tongbei martial arts

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Introduction: In the modern context, the inheritance and development of traditional martial arts face numerous challenges. This study focuses on Ma's Tongbei martial arts and aims to explore its inheritance and development from the perspective of group dynamics. It will reveal the deep-seated principles of the traditional martial arts inheritance mechanism and provide references and inspirations for modern martial arts education.

Methods: This research mainly adopts the ethnographic research method to deeply analyze Ma's Tongbei martial arts group and study its inheritance and development from the perspective of group dynamics.

Results: The group structural characteristics of Ma's Tongbei martial arts are analyzed, revealing the complex internal social relationships and norms within its unique social system, as well as the central position of the master-disciple relationship. It is found that group cohesion plays a crucial role in maintaining the stability of martial arts styles and promoting their development. It can inspire members to actively learn and inherit traditional skills and encourage innovation under the concept of "holistic integration and versatility in martial arts", keeping Tongbei martial arts vibrant and adaptable to the needs of modern society.

Discussion: Through the analysis of the group dynamics of Ma's Tongbei martial arts, this study provides important references and inspirations for modern martial arts education. Meanwhile, potential future research directions are pointed out, including the study of martial arts group dynamics in cross-cultural contexts and the exploration of interactions and group dynamics between different martial arts styles, aiming to provide theoretical support and practical guidance for the modern inheritance of traditional martial arts.

KEYWORDS

group dynamics, martial arts, Ma's Tongbei martial arts, group cohesion, sport psychology

1 Introduction

1.1 Traditional Chinese martial arts

There are numerous schools of traditional Chinese martial arts, among which Ma's Tongbei martial arts is just one. For example, Shaolin wushu is one of the outstanding representatives of traditional Chinese martial arts, renowned worldwide for its rich history, unique skills, and profound cultural connotations. Chinese martial arts are rich in content and

have significant stylistic differences. Some, such as Tai Chi, pursue the strategy of using softness to overcome rigidity. Their movements are slow and gentle, and they contain profound philosophical ideas and principles of health preservation (Lin et al., 2007). Others are renowned for their vigorous intensity, such as Nanquan (Southern Fist), which prioritizes explosive power and incorporates vocalization techniques (Ma, 2016). While schools like Baguazhang focus on agile footwork and dynamic body mechanics. Collectively, these diverse martial traditions form a rich tapestry of Chinese martial culture, each carrying unique historical, cultural, and philosophical significance.

However, these differences are more evident in terms of style and the expression of strength. From a broader perspective, many martial arts schools share numerous commonalities. In terms of their transmission methods, they all place great emphasis on master-apprentice lineages, featuring relatively clear inheritance systems (Wang, 2018). The older generation of martial artists passed on their exquisite skills and unique understanding of martial arts to the next generation through oral teaching and heartfelt instruction. This inheritance is not only a relay of techniques but also a transmission of martial arts culture and spirit. Martial arts etiquette is an important component of traditional Chinese culture and a moral code of conduct that all practitioners adhere to. Whether for those who practice or teach martial arts, etiquette is a part they highly value (Yu, 2014). Etiquette regulates the behavior of martial artists in apprenticeship ceremonies and daily practice and exchange activities, especially ritual movements such as the salute of clasping hands and bowing. All these actions show the martial artists' respect for their teachers and martial arts. Their every word and deed also reflect the spirit of martial arts etiquette. The spirit of martial morality is the soul of martial arts. All schools emphasize that martial artists should possess justice, bravery, tenacity, and humility. They stand up against injustice, adhere to principles of fairness and justice in competition, and do not bully the weak with strength, which reflects the moral responsibility of martial artists. At the same time, each martial arts school has its community with common pursuits and goals, and they have a strong cohesion.

The cultural characteristics of Chinese martial arts in terms of cultural inheritance, etiquette standards, and the spirit of martial morality are not unique. Looking at the history of world martial arts development, Karate has not only established a lineage of historical inheritance but also emphasizes respect for the spirit of the martial way and has developed a rigorous etiquette procedure (Rielly, 2011). This cultural commonality is not only found in Karate but is also vividly reflected in traditional martial arts systems such as Taekwondo. Taekwondo focuses on politeness, integrity, perseverance, self-control, and an indomitable spirit, pursuing the dual cultivation of technique and spirit (Roesner, 2012). Therefore, they have all formed their unique cultural inheritance, etiquette standards, and the spirit of martial morality in their respective development processes, which essentially have similarities with Chinese martial arts.

The uniqueness of Ma's Tongbei martial arts lies in its breakthrough of the limitations of traditional martial arts schools and its creation of an inclusive martial arts system. It not only inherits the traditional essence of Chinese martial arts but also extensively integrates the strengths of various schools, demonstrating an open and inclusive philosophy. This has injected powerful vitality and broad development potential into it. Additionally, Ma's Tongbei not only promotes international exchanges but also absorbs the advantages of sports projects including fencing, budo, and taekwondo, mainly in terms of their training methods and competition rules, making it more diverse and rich. Therefore, taking Ma's Tongbei martial arts as a research subject is of great significance and representativeness for revealing the inheritance and development of traditional martial arts in the contemporary era.

1.2 History of Ma's Tongbei martial arts

Ma's Tongbei martial arts is a part of traditional Chinese martial arts. It is not a specific sect, but rather a comprehensive martial arts system with a wide range of content. In the construction of the Tongbei martial arts system, Mr. Ma Fengtu is a central figure. Drawing upon extensive knowledge from various sources and throughout history, Mr. Ma adopted the philosophy of "Holistic integration and versatility in martial arts" to extract the strengths of different martial arts styles and to make connections between them. Through this approach, he gradually developed a well-rounded martial arts system (Ma, 1997).

However, during the process of transmission, due to historical changes and regional differences, the name of Tongbei martial arts may have been expressed in various ways, leading to a blurred understanding of its true essence. Nevertheless, Professor Ma Mingda holds a deep respect for and a sense of responsibility toward traditional martial arts, dedicating himself to the research of Tongbei martial arts. He delved into the works, techniques, and essence of past generations of practitioners, systematically organizing them, and thus established an accurate and comprehensive definition for Tongbei martial arts. This is evident in the article "From Tongbi to Tongbei - on origin of Tongbei wuxue" where it is stated, "Tongbei is not a specific style of martial arts, nor is it a traditional sect in the conventional sense. It is a category of martial arts, a comprehensive and well-structured martial arts system with extensive content. It can also be described as an integrated martial arts system that draws from the strengths of various sources and integrates them" (Ma, 2001). Based on his research and organization of Tongbei martial arts, Professor Ma Mingda has put forth a comprehensive and clear definition. His research goes beyond merely unifying the terminology associated with Tongbei martial arts; it has provided a deeper understanding and cognition of the system. This has laid a solid foundation for the continuation and development of Tongbei and has also set the right course for subsequent scholars and enthusiasts. Overall, the establishment of the concept of Ma's Tongbei martial arts represents a reclamation of its intellectual identity, which to a certain extent has significantly enhanced its cohesion.

The Ma's Tongbei martial arts system is primarily divided into two main parts: the theoretical system and the technical system, which are interdependent and complementary to each other. On the one hand, from the perspective of the theoretical system, Tongbei martial arts inherits the "Wen Tong Wu Bei" (Literary and martial skills are both well-prepared) ideology of the Yan and Li schools (Ma, 2000). Hence, among its disciples, there is a saying that "without reading 10,000 books, it's difficult to become a true practitioner of Tongbei" highlighting the significance of literary cultivation. The foundation of the theoretical system lies in the inheritance of the "Wen Tong Wu Bei" ideology from the Yan and Li schools. This not only underscores Tongbei Martial Arts' emphasis on learning and self-cultivation but

also highlights the close connection between martial skills and wisdom in life. Teaching the students of Tongbei martial arts, it is emphasized that only by possessing extensive knowledge and profound cultural understanding can one truly become proficient in Tongbei and better fulfill the broader goal of serving society.

Ma's Tongbei martial arts revolves around the core concept of "holistic integration and versatility in martial arts." It suggests choosing the strengths of various schools based on sound reasoning, rather than haphazardly assembling without basis, and it discourages stagnant and closed-minded approaches. "Holistic integration and versatility in martial arts" hold profound significance, emphasizing the "fusion of ancient and modern wisdom, and the harmonization of internal and external cultivation." The concept of "integrating ancient and modern knowledge" involves drawing wisdom from the history timeline. Traditional martial arts embody the refined techniques and philosophical essence passed down through generations of predecessors. The classic techniques, training methods honed over centuries, and insights into martial philosophy represent invaluable cultural treasures. Meanwhile, modern martial arts have evolved through advancements in scientific training and competitive frameworks. By merging historical martial principles with contemporary methodologies, practitioners can both preserve the essence of traditional martial arts and leverage modern scientific innovations to enhance training efficacy.

"The concept of 'harmonizing internal and external cultivation' emphasizes the comprehensive integration of multiple strengths. It not only requires practitioners to meticulously refine external martial skills—such as mastering techniques, and routines, and flexibly applying combat strategies to demonstrate exceptional martial prowess—but also places paramount importance on nurturing internal virtues, including martial ethics and mental discipline. Furthermore, this philosophy encompasses the assimilation of essential elements from diverse martial styles and schools, incorporating their strengths into one's practice to achieve well-rounded development." The concept of "drawing on the best from different martial arts styles" embodies the core philosophy of "holistic integration and versatility in martial arts." In the field of martial arts, different styles and regional practices each have their unique characteristics. For instance, Tai Chi emphasizes yielding to force with softness, remaining still while in motion, and focusing on health and harmony (Horwood, 2008). By adopting the strengths of various schools and integrating these advantages into one's martial practice, a more comprehensive, distinctive style can be developed, which can then leverage greater strengths.

Within the framework of the "holistic integration and versatility" concept, Ma's Tongbei martial arts has developed the concept of "Tongbei Jin" (Tongbei Power). "Tongbei Jin" unifies the four jin techniques of "swallowing and spitting", "opening and closing," "rising and falling," and "twisting and turning" into a cohesive whole. From a technical perspective, "Tongbei Jin" primarily draws from the power principles of the Piguaquan style. It comprehensively incorporates the distinctive power characteristics of other schools such as Bajiquan, Fanziquan, and Chuojiao, resulting in a unique pattern of power circulation and a distinctive martial arts style (Ma, 2001).

On the other hand, from a technical perspective, Ma's Tongbei martial arts primarily encompasses two major aspects: weaponry and boxing techniques. In daily training, especially during the initial learning phase, the foundation is usually established through boxing techniques. The introductory arts of Ma's Tongbei martial arts system include "Tongbei Tantui" (Ma, 2011), "Baji Xiao Jia," and "Twelve Strikes." "Baji Xiao Jia" is akin to the regular script in calligraphy, where each move and posture is executed calmly and composedly, totaling 24 movements, including initiating and concluding postures. The main purpose of "Baji Xiao Jia" is to prepare for practicing "Bajiquan" and to explore the expression of "Tongbei Jin" ultimately transitioning into the practice of the larger frame techniques (Ma, 2014). From here, it can be seen that the progression within Ma's Tongbei martial arts system is characterized by distinct stages, especially evident in the transition from one technique to another. "Twelve Strikes," as an introduction to the system, consists of 12 techniques, that serve as routine training in daily practice (Chen and Feng, 2023). In addition to the foundational techniques, Ma's Tongbei system also encompasses various series of techniques, including the "Piguaquan" series, the "Bajiquan" series, the "Fanziquan" series, and the "Weapons" series. Among these, the "Piguaquan" series forms the cornerstone of Tongbei system. Importantly, the system preserves many classical martial arts treasures within its weaponry, such as the "Po Feng Dao" and the "Bian Gan" techniques, among others.

It's essential to clarify that, like any cultural form dominated by physical techniques, the techniques within Tongbei martial arts system are not entirely original creations. Instead, they are a combination of inherited and original elements, developed under the principle of "integrating the best from various sources" These techniques are then integrated with the distinctive practice style of "Tongbei Jin, "thus preserving the integrity of the original techniques while infusing them with new vitality. The construction of Tongbei martial arts system is built upon a complete foundation of both theoretical and technical aspects. Through generations of Ma's lineage's transmission and dedication, the Ma's Tongbei Martial Arts system has gained acclaim both domestically and internationally, garnering a considerable number of followers.

1.3 Group dynamics and sport

Eys et al. explore dynamic group environments in sport and exercise, highlighting the importance of group dynamics in physical activity and reviewing progress on a number of key and ongoing topics as well as emerging ones. Recommendations for future research are made in order to advance the field. Understanding group dynamics requires consideration of the prevalence of groups in sports and exercise environments, as well as the fulfillment of basic needs such as a sense of belonging. The article also identifies four key research areas: team environments, structural issues, team processes and emergencies, and applied principles of team dynamics. They suggest that there are tremendous opportunities for researchers to contribute to the theory, research, and practice of group dynamics in sports and exercise (Eys et al., 2019).

Research related to group dynamics and sports has also provided insights into the interactions within sports teams and explored how these interactions can be optimized to improve overall team performance and individual athlete development. Research suggests that coaching behaviors (including leadership, fairness, and competence) are critical in shaping team cohesion and reducing internal conflict. These attributes of the coach can influence team members' role clarity, role conflict, and thus overall

team effectiveness (González-Ponce et al., 2022). Group cohesion is recognized as a key factor in improving individual athlete skills and reducing negative experiences. A cohesive team promotes positive member development in personal and social skills, initiative, cognitive skills, and goal setting (Bruner et al., 2014a). Group norms are standards that guide team behavior and expectations, and they are influenced by both individual and social factors. Understanding the formation and role of group norms can help sports teams build more favorable team environments, particularly in competition, practice, and social settings (Bruner et al., 2014b). Cohesion is considered to be a remarkable attribute of successful teams, whether in the work, military, sports, or exercise fields. It plays such an important role in group dynamics that some social scientists call it the most important small-group variable (Burke et al., 2014).

The presence of cliques in sports teams is inevitable, and they have a complex impact on team dynamics and performance. Cliques can lead to isolation and conflict, but they can also promote better teamwork and individual performance through inclusive behaviors and positive team management strategies (Martin et al., 2015). In addition, organizational culture and group dynamics are closely linked and interact in sports. Establishing a strong and coherent organizational culture helps to support the positive development of young athletes and creates and maintains positive group dynamics through the role of cultural leadership (Storm et al., 2020).

In summary, the above studies have highlighted the importance of understanding and managing group dynamics in sports, particularly in terms of promoting positive athlete development, enhancing team performance, and reducing internal conflict. To achieve these goals, sports organizations and coaches need to focus on optimizing group structure, enhancing cohesion, clarifying norms, managing small groups appropriately, and fostering a positive organizational culture. However, there is a gap in research on group dynamics in martial arts. In this study, Ma's Tongbei martial arts is selected as a case study, and based on the theory of group dynamics, its role in the inheritance and development of traditional martial arts is discussed in depth, with a view to providing a new perspective for the inheritance and dissemination of traditional martial arts.

2 Theoretical foundations

Group dynamics is a social psychological theory devoted to exploring the developmental patterns of groups, their internal dynamics, and their relationships with individuals, other groups, and society. Lewin (1947) published an article in the inaugural issue of the journal Interpersonal Relations entitled 'Frontiers in group dynamics. Concept, method, and reality in social science. In this article, Lewin pays particular attention to participation in social change and emphasizes that "in social research, the experimenter must take into account factors such as the personality of individual members" (Beauchamp et al., 2007).

Group dynamics suggests that groups are much more effective than single individuals because a common set of social goals and values develops within the group, and these standards bind the members together, prompting individual motivation to combine with the group's goals. It is easier to trigger change by changing the group than by changing the perceptions or behavior of individuals alone. As long as the group's values remain the same, it is difficult for individuals to abandon the group's standards (Miao et al., 2000). Since the beginning of social psychology, group dynamics has been widely regarded as one of the core areas of the discipline. The term "group dynamics" has a double meaning: on the one hand, it describes the intrinsic dynamics and evolutionary properties of groups; on the other hand, it represents a field of science that focuses on the study of group behavior. Generally speaking, group dynamics is not regarded as a separate discipline, but rather as an important field of study under social psychology and sociology (Widmeyer et al., 2002).

Groups significantly influence the psychology and behavior of individuals. Individuals, after joining a group, will have common psychological changes such as identity, belonging, role consciousness, overall consciousness, and exclusion consciousness, which constitute the psychological characteristics of the group. At the same time, the behaviors of group members will also show common trends of change, such as facilitation, inertia, standard, herd, and deindividuation behaviors, and these common changes constitute the behavioral characteristics of the group. By comparing group decision-making with individual decision-making, we can gain a deeper understanding of the unique manifestations of group psychology and behavior in the decision-making process (Zhao, 2021).

The importance of group dynamics theory in exploring martial arts is mainly reflected in the fact that it provides a framework for understanding how martial arts groups interact with each other through factors such as social structure, cohesion, role distribution, and behavioral changes to jointly promote the transmission and development of martial arts skills. Considering that martial arts is not only about the learning of techniques, but also about the transmission of culture and spirituality, the group dynamics perspective can help us to analyze in depth how these elements are manifested in the master-disciple relationship, the interactions between practicing partners, and how they affect the behavioral patterns of the individuals and the group, thus providing scientific theoretical support and practical guidance for the teaching, dissemination and preservation of martial arts.

3 Research methodology

Research design: This study primarily employs ethnographic research methods, taking Ma's Tongbei martial arts as a specific case. In its regular intensive training venues, in-depth and systematic investigations were carried out. The research period spanned from 2020 to 2024, during which the researchers conducted a total of 600 h of field participation and observation, truly integrating into the learning and practical environment of Ma's Tongbei. During the research process, the researchers adopted case study methods and combined them with cross-referencing of literature, aiming to gain a comprehensive and multi-angle understanding of the research subjects. As participants, the researchers engaged firsthand in the daily training, communication, and inheritance activities of Tongbei martial arts, striving to reveal the internal mechanisms of martial arts inheritance and development from within the group. Through this direct participation and observation, the purpose of the study is to understand the interactions between individuals and groups in the process of martial arts learning, and how these interactions promote skill transmission and innovation.

Data collection: This study will collect data through three main avenues: participant observation, personal journaling, and deep reflection. In terms of participant observation, the researchers will immerse themselves in the learning environment of Ma's Tongbei martial arts. Besides directly participating in learning Tongbei martial arts, will also join the Tongbei WeChat group, carefully documenting the communication methods, collaboration mechanisms, and role differentiation among group members, focusing on the behavioral performances and interaction patterns of the group during the learning process, providing abundant empirical materials for analyzing group dynamics.

Personal journaling, on the other hand, serves as an in-depth excavation of the individual learning experience of the participants, covering various stages from initially joining Ma's Tongbei martial arts to gradually delving deeper. It records the difficulties and challenges, breakthroughs and progress, emotional fluctuations, and insights gained during the learning process, comprehensively presenting the individual's growth trajectory and psychological journey within the group learning atmosphere.

In the deep reflection stage, the researchers will systematically analyze the group dynamic data obtained from participant observation and the individual change content in personal journals. By applying relevant theoretical frameworks and academic perspectives, they will delve into the intrinsic mechanisms and interrelationships of factors such as group cohesion, influence among members, and recognition of collective goals in the inheritance and development of Ma's Tongbei martial arts. In doing so, they aim to construct a comprehensive understanding system of the multi-level and multi-dimensional dynamics effect of Tongbei martial arts groups.

Data analysis: This study employs a scientifically rigorous approach to encode practical notes and observation records, accurately refining key themes and patterns of group interaction, learning motivation, and individual growth. As both practitioners and researchers, to minimize the influence of subjectivity on the research, critical thinking is always maintained during the data analysis and interpretation process to avoid over-interpretation and biased explanations. When analyzing, an objective stance is upheld, focusing on exploring the shaping effect of groups on individual learning paths, as well as the specific ways in which individuals promote skill acquisition and cultural inheritance through group interactions. Special attention is paid to group dynamic factors that affect the inheritance and innovation of Ma's Tongbei martial arts, such as cohesion, communication modes, decision-making participation, and member relationships. These factors are deeply analyzed for their promoting or hindering effects, thereby comprehensively revealing the core role and internal logic of group dynamics in the inheritance and development of Tongbei martial arts. This provides new theoretical and practical insights into the inheritance of traditional martial arts.

4 Discussion and analysis

Group Structure deals with the way groups are formed, their membership, and their interrelationships in group activities. These structural factors not only define the behavioral patterns of group members but also help us to understand and predict group actions and their effectiveness. Group structure is therefore critical to understanding group behavior and improving group performance. In studying group structure, key variables include leadership style, size, social norms, role allocation, member status, and overall membership composition (Zhao, 2021).

As a unique school of traditional Chinese martial arts, the inheritance and development of Ma's Tongbei martial arts not only relies on its superb skills and profound cultural heritage but is also inextricably linked to its unique group structure and group dynamics. In the process of participating in the training of Ma's Tongbei martial arts, we have personally experienced the unique charm of its group structure and gained a deeper understanding of the inheritance mechanism of Tongbei martial arts. In the following section, from the perspective of group dynamics, combining knowledge of Tongbei martial arts and the author's personal experience, we will delve into the characteristics of the group structure of Ma's Tongbei martial arts, especially its strong cohesive force, and how this cohesive force has contributed to the continued development of this martial arts school.

4.1 Structure of the Ma's Tongbei martial arts community

The group structure of Ma's Tongbei martial arts is not a simple collection of individuals, but rather a social system that contains complex social relationships and norms, and whose internal members interact with each other to shape the dynamics of the school's transmission and development. Within this system, the master-disciple relationship is central, and elements such as role allocation, group norms, and collective decision-making mechanisms together form a multi-layered social structure that provides a solid organizational foundation for the transmission and development of Tongbei martial arts.

The mode of transmission of traditional martial arts mainly includes the forms of family transmission and master-disciple transmission. However, with the increasing development of society, the limitations of family-based transmission have gradually emerged and its influence is relatively limited. Therefore, the master-disciple relationship is the core of Ma's Tongbei martial arts transmission and the cornerstone that maintains the stability of the group structure. The master is not only the transmitter of skills but also the transmitter of culture, values, and behavioral norms. This relationship goes beyond the mere transmission of knowledge but is also a spiritual inheritance that builds a strong identity and emotional bond. The master's words and teachings will subtly influence the disciple's martial arts philosophy, moral cultivation, and behavior, and shape their martial arts personality (Ma, 2003). Ma's Tongbei martial arts emphasizes "strictness in the selection of students, strictness in the transmission of skills," and masters will examine the character, qualifications, and understanding of martial arts when accepting students to ensure that skills are passed on to those who are truly passionate about martial arts and have a good character (Ma, 2014). This strict screening mechanism ensures the quality of the transmission of Tongbei martial arts and strengthens the emotional bond between master and disciple. The master-disciple relationship is not only about teaching skills but also about emotional exchange and spiritual inheritance. The care and teaching of the master to the apprentice, and the respect and gratitude of the apprentice to the master, together constitute a warm and powerful emotional atmosphere within the Tongbei martial arts

community. This close master-disciple relationship is also in line with the contextual learning theory proposed by Lave and Wenger (1991). The importance of learning through an apprenticeship in a community of practice is emphasized. Through teaching by word and example, the master passes on martial arts skills, cultural concepts, and values to the apprentice by osmosis, so that the apprentice gradually integrates into the cultural atmosphere of Tongbei martial arts and develops a sense of identity and belonging to the school.

Upon first entering Tongbei martial arts, beginners are struck by Master's rigor and attention to etiquette. Master not only teaches martial arts skills but also focuses on cultivating the character and cultivation of beginners. The principle of "cultivating morality before practicing martial arts," and the principle that martial arts should be based on morality and should not be used as a bullying tactic, has instilled in the beginner a deep sense of respect and love for the Tongbei martial arts. Mr. Ma Fengtu, the founder of Ma's Tongbei martial arts, attached great importance to the master-disciple relationship. He believed that the inheritance of martial arts is not only the teaching of techniques but more importantly the inheritance of spirit. He once said, "Martial arts is not just a technique, it's a discipline" (Ma, 2003). Mr. Ma Fengtu's son, Professor Ma Mingda, has also inherited his father's belief that there must be certain requirements and conditions for accepting disciples and that the quality of apprenticeship should be improved rather than the number of disciples. It can be seen that a quality master-disciple relationship is the "lifeline" of the Tongbei martial arts and is the key to ensuring that the school can be passed on from one generation to the next. In addition, the establishment of a master-disciple relationship also implies a responsibility and commitment. The master promises to teach his life's work and to guide his pupil's growth, while the pupil promises to respect his master and study hard to pass on and develop the Tongbei martial arts. This two-way responsibility and commitment further strengthen the emotional bond between master and apprentice, making the master-apprentice relationship an important guarantee for the inheritance and development of Tongbei martial arts, forming a united, friendly, and loving Tongbei family.

Clear role allocation and hierarchical order are the keys to maintaining stability, promoting inheritance, and building harmonious group relations. There are clear role assignments within the group, such as master, senior disciple, junior disciple, etc., and each role corresponds to different responsibilities and obligations. This hierarchical order is not to suppress individuals but is an important mechanism to maintain the stability of the group and orderly inheritance (Zhao, 2021). As an assistant to the master, the senior disciple assumes the responsibility of guiding the junior disciple and passing on his experience, as well as being a role model for the junior disciple to follow. The junior, on the other hand, has to respect both the master and the senior disciple, learn with an open mind, and train hard. This clear distribution of roles and hierarchical order creates a benign interaction that promotes the effective transmission of skills and harmonious development within the group. Obviously, this hierarchical order is not rigid and stereotypical but is based on mutual respect and trust. Senior disciple guidance to his Junior is not condescending, but rather, he uses his own experience and realization to help his junior to better understand and master the martial arts techniques. Junior disciple respect for Seniors is not blind obedience, but recognition of experience and ability. This harmonious relationship is an important manifestation of unity and love within the Tongbei martial arts community. The distribution of roles and hierarchical order in Tongbei martial arts reflects the ethical concept of "order of seniority" in traditional Chinese culture and is also in line with the role theory of group dynamics (Biddle, 2013). Role theory suggests that individuals play different roles in groups, each with a corresponding set of behavioral norms and expectations. Clearly defined role allocation and hierarchical order help to regulate the behavior of members, reduce conflict, and increase the efficiency of the group. In Ma's Tongbei martial arts, this kind of role allocation and hierarchical order is not only conducive to the transmission of skills but also to the transmission of martial virtues. In the process of instructing his junior, a senior disciple should not only teach techniques but also set a good example for his junior and guide him to develop good martial virtues.

Strict group norms and etiquette are an important guarantee for shaping the culture of Tongbei martial arts, strengthening identity, and passing on the spirit of martial virtues. Norms and etiquette such as respect for teachers, humility, and courtesy are an important part of the Ma's Tongbei martial arts, which strengthens the members' sense of responsibility and belonging and shapes the group's cultural atmosphere (Ma, 2018). Tongbei martial arts focuses on etiquette, from the start to the finish, every movement implies reverence for the martial arts and respect for the tradition (Ma, 2014). Members also treat each other with courtesy, reflecting the cultivation of martial virtues and friendship toward fellow members. These norms and etiquettes not only regulate the behavior of the members but more importantly reinforce their identity and make them members of the Tongbei martial arts cultural community. These norms and etiquette are not empty forms but are the embodiment of the spirit of Tongbei martial arts. Honoring teachers reflects respect for knowledge and experience, humility and courtesy reflect the cultivation of martial virtues, and these spiritual qualities are an important safeguard for the inheritance and development of Tongbei martial arts. In addition, the Tongbei group norms and etiquette also reflect Tongbei Wushu's inheritance of traditional culture and its emphasis on martial virtues. Martial Arts is the soul of martial arts and is the moral quality and spiritual realm that martial arts practitioners should possess. Through strict group norms and etiquette, Tongbei martial arts integrates the spirit of Wude into daily training and life, cultivates the moral integrity of its members, and shapes their Martial Arts personalities. For example, Ma's Tongbei martial arts requires the practitioner to have a "calm mind and upright body" during practice. This is not only a technical requirement, but also a moral one, requiring the practitioner to maintain inner peace and integrity, and not to be impatient or bullying. The importance of these norms and etiquette is deeply appreciated in the personal practice of Tongbei martial arts. Before the start of each training session, the practitioner salutes the master as a sign of respect and appreciation. When sparring with senior disciples and junior disciples, they also have to be courteous to each other and point to point, so as not to hurt each other. These etiquette norms not only make the training more standardized but also teach the Tongbei disciples how to respect others more and improve their martial virtues.

In addition, the group dynamics demonstrated in Ma's Tongbei Martial Arts Age have a role in shaping behavior and stimulating potential as a means of promoting individual growth. Phenomena such as herd behavior, social comparison, and de-individuation in group interactions influence members' training attitudes, learning outcomes, and behavioral patterns, reflecting the role of group dynamics in shaping individual behavior. In group training, generalist disciples will observe, learn from, and compare with each other, and this social

comparison will motivate them to train harder and improve their skills. At the same time, the group also creates certain norms and pressures that motivate members to be disciplined and train seriously. This group dynamics can stimulate the potential of individuals and promote their growth and progress. Thus, group dynamics are an important manifestation of the vibrancy within the Tongbei martial arts community and its ability to continue to cultivate excellence and promote the development of martial arts techniques. Festinger's (1954) Social Comparison Theory explains this phenomenon well, emphasizing that individuals assess their own abilities and values by comparing themselves with others. In the Tongbei martial arts community, social comparisons and mutual incentives among members promote the continuous improvement of their skills and martial virtues.

4.2 Cohesion of the Ma's Tongbei martial arts community

The Ma's Tongbei martial arts group demonstrates strong cohesion, which is a key factor in maintaining the stability of the group and promoting the development of the martial arts school. The cohesion of Tongbei martial arts mainly stems from the shared history, traditions, and values among its members, the close master-disciple relationship and fellowship, the common training goals and pursuits, as well as the sense of ritual and belonging in group activities.

Members' identification with the history, culture, and values of Ma's Tongbei martial arts forms a common belief and goal that can enhance the centripetal force of the group (Ma and Ma, 1995). Tongbei martial arts have a long history and deep cultural heritage, and its concept of "holistic integration and versatility," the idea of "integration of reason and image, body and use," and the spirit of "once you get the art, you must test the enemy" have all deeply influenced every generation of Tongbei practitioners. The spirit of combat has deeply influenced every generation of Tongbei practitioners. This common cultural identity has given them a strong sense of belonging and mission, and they are jointly committed to passing on and developing Tongbei martial arts. This common cultural identity is the cornerstone of the cohesion of Tongbei martial arts, which brings together members from different backgrounds and of different ages to form a cultural community with common goals and values. In the Tongbei martial arts community, the collective consciousness is reflected in the members' recognition of the history, culture, and values of Tongbei martial arts, as well as their shared sense of responsibility for the inheritance and development of Tongbei martial arts. Tongbei martial arts emphasizes the importance of "holistic integration and versatility," and advocates learning from the strengths of various martial arts styles and adopting the advantages of all (Ma, 2001). This requires members of Tongbei martial arts to have an open mind and a spirit of tolerance, which is also an important part of the culture of it. Tongbei martial arts is not a closed and conservative martial arts school, but one that actively absorbs the advantages of other martial arts schools and constantly innovates and develops. This spirit of openness and tolerance makes followers appreciate Tongbei martial arts even more and strengthens their determination to pass it on and carry it forward.

The emotional bond between masters and disciples and the mutual support among fellow disciples can build a solid network of social relationships and enhance members' sense of belonging and responsibility (Huang et al., 2021). Within the Tongbei martial arts community, there is a deep sense of camaraderie between masters and disciples and between fellow disciples, who respect, help, and encourage each other to overcome difficulties and make progress together. This close network of social relationships provides members with emotional support and strength in action, enabling them to pursue their martial arts dreams with greater determination. The atmosphere of solidarity and appreciation in Tongbei martial arts is an important manifestation of the cohesion of the Tongbei martial arts group, which enables the members to form a strong sense of trust and responsibility and to work together to safeguard the interests and honor of the group. Social exchange theory (Homans, 1958) can explain this mutually beneficial social relationship by emphasizing that individuals seek to maximize rewards and minimize costs within groups of people. In the Tongbei martial arts community, members support and help each other and work together to safeguard the interests of the group, reflecting the principle of reciprocity in social exchange theory. Tongbei martial arts groups often organize activities where Tongbei disciples train together, study together, and live together, experiencing the joys of growth and the trials of frustration together, and this shared experience makes the bond between followers even deeper.

The members' common pursuit of martial arts skills and their understanding of "Tongbei Jin" form a common goal and promote cooperation and mutual motivation among members. The martial art of Tongbei pursues the realm of comprehensive advancement and all-around development, members continue to refine their skills by sparring and discussing with each other during training. This common pursuit has enabled them to form a positive learning atmosphere, stimulating their potential and promoting the continuous development of their martial arts skills. The common pursuit of martial arts skills is an important manifestation of the cohesion of Tongbei martial arts, which has led to the formation of a healthy competitive relationship among the members, and the joint promotion of the progress of martial arts skills. Goal-setting theory (Locke and Latham, 2002) emphasizes the importance of clear, challenging, and achievable goals in motivating individual and group performance. In the Tongbei martial arts community, members share the pursuit of martial arts skill refinement, and this common goal motivates them to strive for excellence. The motivational effect of the common goal motivates each individual to aspire to improve his or her martial arts skills and to achieve the state of "Tongshen Dahua" (A realm of transcendence, freedom, and omnipotence; Ma, 2001).

Joint participation in training, competitions, and ceremonial activities enhances the collective consciousness and emotional experience of members and strengthens group identity. The Tongbei martial arts group organizes regular training activities. Training is not only a platform for improving skills but also an opportunity for members to exchange feelings and enhance friendships. By participating in these activities together, members feel more deeply the cultural charm of Tongbei martial arts and the power of the group, strengthening their identity and sense of belonging. Group activities are an important manifestation of the cohesion of Tongbei martial arts, which enables members to form common memories and emotional experiences, and enhances the vitality and centripetal force of the group. Durkheim's theory of fundamental forms of religious life emphasizes the role of rituals and symbols in constructing collective consciousness and social solidarity (Durkheim, 2016). In the Tongbei martial arts community, various ritual activities strengthened members' collective consciousness and enhanced their sense of identity and belonging to the Tongbei martial arts.

4.3 Group dynamics

The cohesion of the Ma's Tongbei martial arts community is not static but rather translates into a driving force for the development of the school. The cohesion of Tongbei martial arts motivates its members to actively learn and pass on the traditional techniques while encouraging innovation under the concept of "holistic integration and versatility" to maintain the vitality of the martial arts. Tongbei martial arts is not static, but rather evolves and innovates as it is passed on. While learning traditional techniques, members also actively explore new techniques and training methods, combining Tongbei martial arts with the needs of modern society to make it more adaptable to the times. The spirit of inheritance and innovation is an important reason why Tongbei martial arts has been able to maintain its vitality throughout its long history.

The atmosphere of learning and mutual support within the group is conducive to the cultivation of excellence and ensures the continued development of the Ma's Tongbei martial arts school. The Tongbei martial arts community focuses on talent development, with masters providing personalized guidance to their apprentices according to their characteristics, and senior brothers helping their apprentices to solve their learning difficulties. This good learning atmosphere and mutual support provide fertile soil for the growth of talents, which makes Tongbei have many talents and successors. This talent cultivation mechanism is an important guarantee for the continuous development and growth of Tongbei martial arts.

Cohesion enhances members' sense of identity and pride in Tongbei martial arts, prompting them to actively participate in the dissemination and promotion of martial arts culture. Members of Tongbei Martial Arts Academy actively participate in various martial arts competitions and performances to show the glamor of Tongbei Martial Arts Academy to society and spread the spirit of Tongbei. This active cultural dissemination has expanded the influence of Tongbei martial arts and provided a broader space for its development and growth. In the face of the challenges of the external environment, cohesion enables the group to unite and work together to cope with difficulties and maintain the stable development of the martial arts school (Du and Wang, 2021). In modern society, traditional martial arts faces challenges from the impact of Western sports culture and social transformation. With its strong cohesion, the Tongbei martial arts community is able to unite as one and respond positively to these challenges, innovate and develop on the basis of inherited traditions, and maintain the vitality and viability of the martial arts school. This spirit of unity and solidarity is the key to Tongbei Wushu's ability to survive and develop in the face of adversity. In the 1980s, there was a wave of "de-traditionalisation" in the Chinese martial arts community, with some believing that traditional Martial Arts had become obsolete and should be replaced by modern competitive Wushu. In the face of this challenge, the Tongbei martial arts community adhered to its philosophy did not blindly follow the trend, and ultimately succeeded in preserving the traditional characteristics of Tongbei martial arts.

5 Conclusion

Through in-depth analyses of the group structure of Ma's Tongbei martial arts and its strong cohesive force, this study reveals the key factors that have enabled this traditional martial arts school to maintain its unique style and sustain its development over time. Group dynamics played a crucial role in the transmission and development of Ma's Tongbei martial arts. This demonstration of group wisdom and collective power not only provides a new perspective for understanding the inheritance mechanism of traditional martial arts but also offers valuable lessons for the practice and theory of modern martial arts education.

In conclusion, the case of Ma's Tongbei martial arts provides us with a framework for understanding how traditional martial arts can survive and develop in modern society. By strengthening community building, enhancing cohesion, and innovating on the basis of inheritance, the Ma's Tongbei martial arts will not only be able to adapt to the needs of the times but also make an important contribution to the revival of Chinese martial arts. Future research should continue to explore how group dynamics can be utilized to promote the transmission and innovation of martial arts in different cultural and social environments, in order to ensure the vitality and continuity of this ancient art form.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent from the patients/participants or patients/participants' legal guardian/next of kin was not required to participate in this study in accordance with the national legislation and the institutional requirements.

Author contributions

WY: Conceptualization, Data curation, Methodology, Writing – original draft, Writing – review & editing. YH: Conceptualization, Methodology, Supervision, Writing – original draft, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Attitudes toward gender equality in sport among Europeans

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Introduction: This study examines the role of societal, interpersonal, and individual factors in explaining Europeans' attitudes toward gender equality in sport and the role of interactions between gender, age, and social class.

Methods: The empirical analysis uses survey data from residents in 27 European countries in 2022 (n = 19,396). Respondents' attitudes toward gender equality in sport are captured by two statements about evenly following female and male sport in the media and the inspirational potential of female role models among managers, athletes, officials, and coaches. Regression analyses are estimated with the attitude variables as outcomes. Societal (gender equality climate in country), interpersonal (sport participation), and individual factors (gender, age, social class; and their interactions) served as independent variables.

Results: The results show that respondents have higher attitudes toward female role models than toward female sport in the media. A country's gender equality climate has a negative association with following female sport in the media, but a positive one with female role models. Sport participation is positively associated with female sport in the media. Women score higher on both attitude measures. Older individuals and those from lower social classes evenly follow female sport in the media. Interactions between gender, age, and social class also explain attitudes toward gender equality in sport.

Discussion: This study is innovative as it provides information about how the resident population thinks about gender equality in sport and which factors are relevant for higher or lower attitudes. The European-wide dataset is unique and allows a comprehensive analysis.

KEYWORDS

female, women, media, role models, social class, sport participation

1 Introduction

Though strides have been made, gender equality in sport is not a reality. Consider, for example, that girls and women have fewer opportunities to be physically active or participate in formal sport – patterns that are evident around the world (Skauge and Seippel, 2022; Feraco et al., 2024). Furthermore, gender violence against girls and women athletes persists and limits their ability to fully participate in physical activity and sport (Nite and Nauright, 2020; Roberts et al., 2020). Gender differences are also apparent in leadership roles, where women are underrepresented as coaches, board members, and sport managers (Evans and Pfister, 2020; Hindman and Walker, 2020; Knoppers et al., 2021). Even when gains in representation are realized, traditional structures favoring men and masculinity persist (Jeanes et al., 2020).

Inequalities are also pervasive in the media coverage, marketing, and consumption of sport (Delia et al., 2022). In this case, women receive a fraction of the attention that men do, and those who do are frequently hypersexualized or come from majority backgrounds (Cooky et al., 2021; Darvin et al., 2021; Isard and Melton, 2021). The lower media coverage and media attention of female sport is problematic because especially women look for female role models

(Lesch et al., 2024), but lack the possibility when male sports are prominent in the media (Wicker and Frick, 2016). Collectively, this evidence is supportive of Fink's (2016) contention that gender inequalities are deeply embedded and taken-for-granted in sport.

The persistence of gender inequalities in sport has spurred considerable research on the topic. Much of this scholarship has focused on people directly involved in sport, including athletes, coaches, managers, and spectators (Adriaanse and Claringbould, 2014; Lagaert and Roose, 2016; de Soysa and Zipp, 2019; Harmon, 2020; Valiente, 2023). However, community members and others indirectly related to sport and physical activity hold important influence, too. These individuals shape a community's or region's norms and values around social topics. Organizational actors and broader industries (like sport) frequently seek to align their processes and actions with the broader community expectations, as doing so enhances legitimacy (Washington and Patterson, 2011; Nite and Edwards, 2021; Robertson et al., 2022). Furthermore, ideas about gender, equality, and sport are malleable and dependent on context and time (Wicker and Cunningham, 2023); therefore, gaining an understanding of a population's attitudes toward gender equality and the factors that shape them is an important endeavor.

Therefore, the purpose of this study is to examine the correlates of individuals' attitudes toward gender equality in sport. The focus is on attitudes toward consuming female sport in the media and on the inspirational potential of female role models in sport. Drawing from LaVoi's (2016) ecological-intersectional model, we investigate the role of societal, interpersonal, and individual factors. Moreover, LaVoi (2016) also emphasizes the importance of intersectionality, recognizing that individual characteristics might interact with each other to form subsequent attitudes and perceptions. These aspects are mirrored in the two research questions of this study:

RQ 1: How are societal, interpersonal, and individual factors associated with individuals' attitudes toward gender equality in sport?

RQ 2: How do gender, age, and social class interact to explain attitudes toward gender equality in sport?

The research context is Europe, and we utilize data from a 2022 wave of the Eurobarometer. The findings enhance our understanding of the European resident population's attitudes toward gender equality in sport and which factors shape their perceptions.

2 Theoretical framework and hypotheses

We ground our work in LaVoi's (2016) ecological-intersectional model. Like other multilevel frameworks (Cunningham, 2023), LaVoi (2016) highlighted that various factors in an ecological system – including those at the societal, organizational, interpersonal, and individual levels – are likely to influence access to sport and experiences in that context. Such a perspective is useful, as a focus on any one level of analysis will potentially tell just part of the story; instead, the ecological intersectional model makes explicit that factors at various levels of analysis shape attitudes and behaviors. As an important extension, LaVoi (2016) underscored the importance of intersectionality. That is, people's individual characteristics are likely to intersect in synergistic ways to relate to the obstacles and facilitators they encounter (Crenshaw, 1990; Hooks, 2000). Thus, whereas women might have less access to sport than men, there is also variation among women owing to differences in social class, race, sexuality, and so on.

2.1 Societal factors

We considered the influence of one societal-level factor: the gender equality within the country. Consistent with the World Economic Forum (2021), a country has greater gender equality when women participate economically, are educated, are healthy, and are politically active. In such contexts, women and men have access to resources and opportunities to be successful. For example, as gender equality in a country increases, women engage in more entrepreneurial activities (Rietveld and Patel, 2022), women have greater access to finances to support their business ventures (Chundakkadan and Sasidharan, 2022), and the endorsement of gender stereotypes lessens (Wicker and Cunningham, 2023).

We suspect that these patterns might carry over to sport, too, such that people's attitudes toward gender equality in sport mirror how women are treated, in general, in the respective country. These tenets align with research in the sport context showing that cultural values within a country are related to opportunities for women leaders and the treatment of women athletes (Ahn and Cunningham, 2017; Okada, 2023). Similarly, in their study of European Union countries, Lagaert and Roose (2016) observed that the gender equality in a country linked closely with a smaller gender gap in sport attendance. This research suggests that the gender equality in a country might influence how people perceive women in sport and their attitudes toward gender equality in sport. Thus, we hypothesized:

> *H1:* A country's gender equality climate will be positively associated with attitudes toward gender equality in sport.

2.2 Interpersonal factors

With respect to interpersonal factors, we focused on sport participation. Active sport participation allows for many physical and psychological benefits, but people realize social benefits, too. Consider, for example, that women constitute a sizeable share of sport club members across Europe (Nichols and Taylor, 2015; Seippel and Skille, 2015; Breuer and Feiler, 2022); thus, women and men have a chance to interact with one in various activities, such as sport competitions, social gatherings, and their participation in club operations.

The context of the interactions is also important. Sport participation is a communal experience, where people have shared goals and strive for a common outcome (Lee and Cunningham, 2014). These are the very conditions that serve to reduce intergroup anxiety and promote convivial interactions among people who are different from one another (Allport, 1954; Pettigrew and Tropp, 2006). Indeed, sport can serve as a site for reducing prejudicial norms, and it is even more effective than other bias reducing strategies, like music (Gim and Harwood, 2023).

Previous researchers have offered some support for these connections. Vezzali et al. (2022), for example, conducted a large-scale study across Europe and Asia. They found that the more people were exposed to women's sport success, the less likely they were to endorse gender stereotypes. The patterns were especially strong for men in the study. Likewise, Wicker and Cunningham (2023) analyzed responses to the European Values Survey and observed that participation in sport clubs was linked a decrease in gender stereotypes. Collectively, these findings point to a positive association between sport

participation and attitudes toward gender equality in sport. Thus, we hypothesized:

> *H2:* Sport participation will be positively linked with gender equality attitudes in sport.

2.3 Individual factors

Finally, we considered several individual factors, including gender. Fink (2016) noted that sexism is deeply embedded in sport. Indeed, sport is an activity that was created by men and for men, and the social constructions of gender inequalities are so firmly engrained that they are institutionalized in nature (Cunningham, 2008). These dynamics are important because gender equality in sport might therefore represent a threat to the existing order or to advantages men currently enjoy. Indeed, previous researchers have noted that men's sexist beliefs are frequently driven by their desire to maintain current societal arrangements (Sibley and Becker, 2012) and feelings of entitlement (Grubbs et al., 2014). Thus, we predicted:

> *H3:* Women will express more positive sentiments about gender equality in sport than will men.

We also examined the influence of age. Previous researchers have reliably shown that younger generations hold more liberal, progressive attitudes toward social issues than do their older counterparts. Consider, for example, an extensive study from Bhatia and Bhatia (2020), who employed machine learning to examine how people thought about gender over the 20th century. The researchers showed that the strength of gender stereotypes diminished over time, largely owing to changes in how people thought about feminine characteristics. Likewise, in their study of sexism around the world, Barreto and Doyle (2023) found that, relative to their younger counterparts, older people generally expressed more biased sentiments toward women. These patterns are likely to carry over to sport, as well, especially when considering that milestone events (e.g., laws promoting girls' and women's sport participation; equal pay in major sport events like Wimbledon) have occurred within the past 50 years. Thus, younger people have grown up in a sport world that is more equitable than what older generations experienced. Thus, we predicted:

> *H4:* Age will be negatively related to gender equality attitudes in sport.

We also considered the influence of social class. As Côté (2011) noted, social class reflects "a dimension of the self that is rooted in objective material resources (income, education and occupational prestige) and corresponding subjective perceptions of rank vis-à-vis others" (p. 47). Following this conceptualization, we considered objective and subjective measures in our treatment of social class. The influence of class on subsequent attitudes about justice and equality is mixed. On one hand, education is frequently linked with more progressive attitudes about change and people who are different from the self (Gang et al., 2013). Likewise, researchers out of Australia have shown that income holds a negative association with the endorsement of patriarchal gender beliefs (Perales and Bouma, 2018). On the other hand, social class is linked with power, status, and the subjugation of others. Results from large-scale studies suggest that subjective measures of class positively relate to systems justification, social dominance, and conservativism (Vargas-Salfate et al., 2018). The latter constructs do not correspond with support for change or greater equality for those who do not have it. Given this evidence, we predicted:

> *H5:* Social class will be negatively related to gender equality attitudes in sport.

Finally, as previously noted, LaVoi (2016) emphasized the importance of intersectionality, recognizing that individual characteristics might interact with each other or with factors at other levels to predict subsequent attitudes, opportunities, and experiences. Indeed, subsequent researchers have shown that adopting an intersectional lens meaningfully contributes to the understanding of physical activity patterns (Lim et al., 2021), access to sport (Cunningham et al., 2021), sport coaching opportunities (Rankin-Wright et al., 2020), and decision making in sport organizations (Knoppers et al., 2022), among others. We explore these possibilities in our second research question.

3 Methods

3.1 Data source and sample

The study is based on data from the Eurobarometer, a regular multi-country survey of European residents which is commissioned by the European Commission and the European Parliament and conducted by Kantar Public. Specifically, the analysis uses data from the 97.3 wave which were gathered in April and May 2022. Individuals from 27 European countries (i.e., the members of the European Union) were surveyed using a multi-stage, random probability sampling procedure, ensuring that the country-specific samples are representative. The target sample size for larger countries is 1,000 respondents, while it is 500 for smaller countries such as Cyprus, Malta, and Luxembourg (European Commission and European Parliament, 2022). Overall, the raw data include $n = 26{,}569$ respondents. During the data cleaning process, observations with missing values on core variables were removed, leading to a complete case sample of $n = 19{,}396$ which can be used for the empirical analysis.

3.2 Variables

Table 1 provides an overview of the variables used in this study and their measurement.

3.2.1 Attitudes toward gender equality in sport

The outcomes of interest are two variables capturing respondents' attitudes toward gender quality in sport. The questionnaire included statements about (1) evenly following female sport in the media as for male sport (*Female sport media*) and (2) the inspirational potential of female role models among managers, athletes, officials, and coaches (*Female role models*). Respondents were asked to state their level of agreement on a four-point scale.

TABLE 1 Overview of variables and summary statistics (n = 19,396).

Variable	Measurement	Mean	SD	Min	Max
Female sport media	You evenly like to follow female sport in the media (online, written, TV) as you do for male sport (1 = totally disagree, 4 = totally agree)	2.87	0.98	1	4
Female role models	Female role models among managers, athletes, officials & coaches are inspiring more women and girls to follow their example (1 = totally disagree, 4 = totally agree)	3.22	0.78	1	4
Gender equality climate	Gender gap score 2021 in country (0 = no equality, 1 = perfect equality)	0.76	0.05	0.69	0.86
PA vigorous	Number of hours per week of vigorous intensity physical activity	1.96	3.16	0	15.75
PA moderate	Number of hours per week of moderate intensity physical activity	2.29	3.37	0	15.75
PA light	Number of hours per week of light intensity physical activity	3.39	3.61	0	15.75
Female	Gender (1 = female, 0 = male)	0.524	0.499	0	1
Age	Age (in years)	49.88	17.72	15	97
Social class	Perceived social class (1 = working class of society, 5 = higher class of society)	2.52	0.96	1	5
Educational level	Respondent's educational level (1 = very low, 32 = very high)	7.08	3.33	1	32
Not working	Employment status: Not working (1 = yes, 0 = no)	0.425	0.494	0	1
Employed	Employment status: Employed (1 = yes, 0 = no)	0.498	0.500	0	1
Self-employed	Employment status: Self-employed (1 = yes, 0 = no)	0.077	0.266	0	1
Relationship	Respondent is in a relationship (1 = yes, 0 = no)	0.643	0.479	0	1
Internet_never	Frequency of internet use: never/no access (1 = yes, 0 = no)	0.091	0.287	0	1
Internet_often	Frequency of internet use: often (1 = yes, 0 = no)	0.057	0.231	0	1
Internet_daily	Frequency of internet use: daily (1 = yes, 0 = no)	0.853	0.355	0	1
Diffpaybills_never	Difficulty paying bills last year: (almost) never (1 = yes, 0 = no)	0.666	0.472	0	1
Diffpaybills_sometimes	Difficulty paying bills last year: from time to time (1 = yes, 0 = no)	0.262	0.440	0	1
Diffpaybills_mostly	Difficulty paying bills last year: most of the time (1 = yes, 0 = no)	0.072	0.258	0	1
Life satisfaction	Satisfaction with the life you lead on the whole (1 = not at all satisfied, 4 = very satisfied)	3.08	0.68	1	4

3.2.2 Gender equality climate

At the societal level, we measured gender equality in a country (*Gender Equality*) by drawing from the global gender gap report, which is annually published by the World Economic Forum (2021). This variable is a combined score that captures women's economic participation, educational attainment, health and survival, and political empowerment. The score ranges from *0* (no equality) to *1* (perfect equality), with various points in between. To ensure causality time-wise and given the survey data are from 2022, the 2021 gender equality measure was used.

3.2.3 Sport participation

The survey contained a number of questions capturing individuals' level of active sport participation. Respondents were asked about the weekly number of days of exercise in three different intensities (i.e., vigorous, moderate, light) and the number of minutes they spent in general for each intensity. For each intensity, the frequency variables (days) was multiplied by the duration variable (minutes per day), resulting in the number of minutes of physical activity by intensity per week. These measures were converted into hours by dividing the figure by 60, yielding the weekly number of hours for vigorous-intensity (*PA vigorous*), moderate-intensity (*PA moderate*), and light-intensity physical activity (*PA light*). Respondents who are not physically active at any of these intensities score 0 on these variables.

3.2.4 Individual factors

The survey assessed a number of personal characteristics. The individual factors of interest are gender (*Female*), age (*Age*), and a subjective assessment of social class (*Social class*). The latter has five categories, from the working class of society (*1*) to the higher class of society (*5*).

3.2.5 Controls

A set of individual variables was used as controls in the analysis, including educational attainment (*Education level*; is a measure from 1 to 32 which harmonizes the different education systems and degrees across Europe and makes them comparable in this combined measure), employment status (*Not working*, *Employed*, *Self-employed*), whether respondents are in some of relationship (*Relationship*), their frequency of internet use (*Internet_never; Internet_often; Internet_daily*), and their difficulty paying bills (*Diffpaybills_never; Diffpaybills_sometimes; Diffpaybills_mostly*) as a proxy for their financial situation. The study also controls for individuals' self-reported level of life satisfaction (*Life satisfaction*).

3.3 Empirical analysis

The empirical analysis strategy is three-fold. First, descriptive statistics of all variables are provided to give an overview of the

structure of the sample. In a second step, linear regression analyses are run to examine how societal, interpersonal, and individual factors shape the two individual attitude variables. These estimations (Models a) answer the first research question. Third, the same two regression models are estimated with interaction terms for the three individual factors of interest to answer the second research question. Specifically, gender, age, and social class are interacted with each other, and the resulting three interaction pairs are included in this second set of models (Models b). All models are linear regressions estimated using ordinary least squares, although the two attitude statements are ordinal in nature. However, existing comparative research has indicated that there are virtually no differences in findings depending on whether linear or estimators like ordered probit are employed for ordinal variables (Ferrer-i-Carbonell and Frijters, 2004).

In all models, the remaining variables from Table 1 serve as independent variables. All independent variables were checked for multicollinearity. In the first set of models excluding interaction terms, all variance inflation factors are far below the critical threshold of 10 (Hair et al., 2013), indicating that these models should not be distorted due to multicollinearity. In the second set of models with interaction terms, the variance inflation factors are slightly higher than 10 for the interaction terms and the variables used to compute these (gender, age, and social class). By construction, the variables gender, age, and social class are correlated with their interaction terms. Thus, higher VIFs are normal in models including interaction terms. For the analysis of effects, the coefficients of the normal terms and the interactions are required, which is why the normal terms should not be omitted. Typically, such regression models would control for the countries; however, including country dummies is not possible as these are highly correlated with the gender equality score. An α-level of 0.05 is used for determining statistical significance.

4 Results

Table 1 includes the summary statistics. The gender make-up shows that 52.4% of respondents are female. Average age is 49.88 years. On average, respondents tend to assign themselves to a class between lower and middle class of society ($M = 2.52$ on a five-point scale). With 7.08 on a scale from 1 to 32, respondents' average educational level can be considered rather low. Regarding employment status, 42.7% are not working, 49.8% are in some form of employment, and 7.7% are self-employed. Altogether, 64.3% of respondents are in some form of relationship. Most respondents (85.3%) use the internet on a daily basis, 5.7% use it often (but not daily), and 9.1% never use it or have no access to the internet. Concerning respondents' financial situation, 66.6% (almost) never have difficulty paying bills, 26.2% have such difficulty sometimes, and 7.2% have difficulty most of the time. Average life satisfaction is 3.98 with a range from 1 to 4.

Turning to the outcomes of interest, individuals have higher attitudes toward female role models in sport ($M = 3.22$ on a four-point scale) than toward evenly following female and male sport in the media ($M = 2.87$). At the societal level, the average gender equality in the 27 European countries of the study is 0.76 with a range from 0.69 to 0.86. Concerning sport participation, respondents exercise on average 1.96 h per week at vigorous intensity, 2.29 h at moderate intensity, and 3.39 h at light intensity.

Table 2 displays the regression models for the two attitude measures, with Models 1a and 2a excluding interaction terms and Models 1b and 2b including them. For models 1b and 2b, the 95% confidence intervals and the VIFs are shown as well. Gender quality climate in the country is significantly negatively associated with following female sport in the media, while having a significant positive relationship with female role models. This means that H1 can only be confirmed for female role models, while it has to be rejected for following female sport in the media. Turning to the interpersonal level, all three sport participation measures have a significant positive association with evenly following female sport in the media. They are not significant in the model for female role models. Thus, H2 is only confirmed for following female sport.

At the individual level, female gender has significant positive relationship with both attitude measures, meaning that women have higher attitudes toward gender equality in sport. These results confirm H3. Age is positively associated with following female sport in the media, while it is insignificant in the model for female role models. Thus, H4 is only partially confirmed. Perceptions of social class have a significant negative relationship with following female sport in the media, while the effect is insignificant in the model for female role models. This means that H5 is only partially supported for following female sport. Table 3 summarizes the outcomes of the hypothesis testing.

The models 1b and 2b include the interaction terms. The interaction between female gender and age has a significant and negative association with both attitude measures, indicating that younger women express higher attitudes toward gender equality in sport. The interaction between female gender and social class is positive and significant in the model for following female sport in the media and insignificant in the model for female role models. Thus, women from higher social classes evenly like to follow female sport in the media. The same pattern of effects is evident for the interaction between age and social class: Older people from higher social classes like to evenly follow female and male sport in the media, while there is no significant effect for female role models.

5 Discussion

The purpose of this study was to examine the correlates of people's attitudes toward gender equality in sport. We drew from the ecological intersectional model (LaVoi, 2016) to focus on factors at the societal, interpersonal, and individual levels. Results show that people generally had positive attitudes toward gender equality in sport, and that the gender equality climate in their country (societal level), their sport participation (interpersonal level), and personal characteristics (individual level) were predictive – though not always in the proposed direction and not consistent for both attitude measures. In the following space, we discuss the findings and propose some implications.

Interestingly, the gender equality climate in respondents' country held differing associations with their attitudes toward gender equality in sport, with the effect being negative for evenly following female and male sport in the media and positive for the inspirational potential of female role models. The first finding was contrary to our expectations, as well as previous research related to gender and sport (Lagaert and Roose, 2016; Wicker and Cunningham, 2023). The latter studies

TABLE 2 Regression analyses for attitudes toward gender equality in sport (n = 19,396).

	Female sport media					Female role models				
	Model 1a	Model 1b	95% CI		*VIF*	Model 2a	Model 2b	95% CI		*VIF*
	b	*b*	*LL*	*UL*		*b*	*b*	*LL*	*UL*	
Constant	3.206***	3.384***	3.097	3.671		2.135***	2.101***	1.874	2.327	
Gender equality climate	−1.450***	−1.474***	−1.791	−1.157	1.092	0.773***	0.762***	0.513	1.012	1.092
PA vigorous	0.016***	0.017***	0.011	0.022	1.570	0.001	0.001	−0.003	0.006	1.570
PA moderate	0.005*	0.005	0.000	0.010	1.610	0.003	0.003	−0.001	0.007	1.610
PA light	0.006**	0.006**	0.002	0.010	1.201	0.003	0.003	−0.001	0.006	1.201
Female	0.098***	0.272***	0.159	0.386	17.203	0.025*	0.192***	0.103	0.282	17.203
Age	0.004***	0.003*	0.001	0.006	10.773	0.000	0.001	−0.001	0.003	10.773
Social class	−0.042***	−0.145***	−0.193	−0.098	10.999	−0.002	−0.008	−0.045	0.029	10.999
Female × Age	–	−0.006***	−0.007	−0.004	10.331	–	−0.003***	−0.004	−0.001	10.331
Female × Social class	–	0.041**	0.013	0.070	8.941	–	−0.013	−0.036	0.009	8.941
Age × Social class	–	0.002***	0.001	0.002	16.725	–	0.000	0.000	0.001	16.725
Educational level	0.014***	0.013***	0.009	0.018	1.241	0.001	0.000	−0.003	0.004	1.241
Not working	Ref.	Ref.				Ref.	Ref.			
Employed	−0.050**	−0.048**	−0.080	−0.016	1.365	−0.005	−0.004	−0.029	0.022	1.365
Self-employed	−0.069*	−0.064*	−0.119	−0.008	1.173	−0.015	−0.014	−0.058	0.030	1.173
Relationship	0.003	−0.014	−0.044	0.016	1.120	0.001	−0.007	−0.031	0.017	1.120
Internet_never	Ref.	Ref.				Ref.	Ref.			
Internet_often	0.030	0.012	−0.062	0.087	1.594	−0.102***	−0.104***	−0.163	−0.045	1.594
Internet_daily	0.239***	0.218***	0.162	0.275	2.156	0.103***	0.099***	0.054	0.144	2.156
Diffpaybills_never	Ref.	Ref.				Ref.	Ref.			
Diffpaybills_sometimes	0.012	0.009	−0.025	0.043	1.182	−0.023	−0.025	−0.051	0.002	1.182
Diffpaybills_mostly	−0.109***	−0.115***	−0.171	−0.058	1.151	0.006	0.005	−0.040	0.050	1.151
Life satisfaction	0.084***	0.084***	0.062	0.106	1.187	0.129***	0.129***	0.111	0.146	1.187
R^2	0.057	0.057				0.074	0.074			
F	33.185***	33.185***				44.461***	44.461***			

Displayed are the unstandardized coefficients; LL = lower limit; UL = upper limit; ***$p < 0.001$. **$p < 0.01$. *$p < 0.05$; Ref. = reference category.

focused on gender stereotypes and active sport participation in sport clubs, whereas we were interested in gender equality attitudes toward passive sport consumption in the form of watching female sport in the media. Our findings suggest that individuals living in a country with a lower level of gender equality express a greater desire to evenly follow female and male sport in the media. This means that within European countries where females are less represented in the labor force and in politics and score lower in terms of educational level and health status, individuals would like to consume as much female sport in the media as male sport.

The positive association between a country's gender equality climate and attitudes toward female role models in sport was in line with our expectations. It echoes existing research related to gender and sport showing that a country's level of gender equality shapes individual perceptions, attitudes, and behaviors (Lagaert and Roose, 2016; Wicker and Cunningham, 2023; Wicker et al., 2024). In the present study, the findings suggests that in countries with a more equal representation of females and males in the labor force and in political positions as well as higher education and a higher health status of females, the inspirational effect of female role models in sport for women and girls is considered higher. It is possible that in these countries respondents have learned from experience and might have witnessed inspirational effects in the labor market and in politics already. Put differently, when female representation is low in a country and only a few females hold leading positions, residents might have difficulty imagining the inspirational potential of female role models. Collectively, the findings stress the importance of the societal environment in shaping individuals' attitudes toward gender equality in sport.

Highlighting the importance of interpersonal factors, results showed that sport participation was positively associated with attitudes toward gender equality in sport in terms of evenly following female and male sport in the media. This pattern held across all three physical activity intensities. We argue that the benefits materialize because sport is commonly a site where (a) women and men interact together, especially in Europe where many individuals practice sport in non-profit sport clubs (Nichols and Taylor, 2015; Seippel and Skille, 2015; Breuer and Feiler, 2022); (b) people can see and attest to others'

TABLE 3 Outcomes of hypothesis testing.

Hypothesis	Hypothesized effect	Female sport media	Female role models
H1 Gender equality climate in country	Positive	Not confirmed	Confirmed
H2 Sport participation	Positive	Confirmed	Not confirmed
H3 Gender (female)	Positive	Confirmed	Confirmed
H4 Age	Negative	Not confirmed	Not confirmed
H5 Social class	Negative	Confirmed	Not confirmed

talents and contributions (Vezzali et al., 2022); and (c) and people cooperate with one another to achieve goals (Lee and Cunningham, 2014). The findings are also consistent with previous scholarship showing that the more people participate in sport clubs, the fewer gender stereotypes they endorse (Wicker and Cunningham, 2023), although the present analysis does not consider the location of physical activity.

Individual factors were also important, particularly the effects of gender and social class. Both women and people from poorer social classes expressed more positive attitudes toward gender equality than did their counterparts. These patterns likely result from issues of power and status. That is, sexism and the subjugation of women is embedded in sport (Fink, 2016), just as people from higher social classes are more likely than their peers to participate in and reap the benefits of sport (Cunningham, 2023). As gender equality represents a change to the normalized structure and pattern of arrangements, people who currently benefit the most in sport (i.e., men, older people, and people with higher social status) are unlikely to endorse changes.

The positive association between age and evenly following female and male sport in the media is contrary to expectations and existing research on gender stereotypes (Bhatia and Bhatia, 2020; Barreto and Doyle, 2023). This finding suggests that either biased sentiments toward women have decreased among older people or these sentiments do not apply to following female sport. It is possible that especially older people express a desire for a gender equal sport consumption in the media. In Europe, sport broadcasting is dominated by football (soccer), meaning that other sports including female sports are covered less. This includes public and private free-to-air networks, but also pay-tv channels. Female sport can be consumed on the internet, e.g., streams are provided on specific websites or social media websites. Model 1a documents a positive association between daily internet use and attitudes toward gender equal sport consumption in the media, supporting the importance of internet usage. However, older people tend to use the internet less for a variety of reasons.

Consistent with the ecological intersectional model (LaVoi, 2016) and theorizing related to intersectionality (Crenshaw, 1990; Hooks, 2000), personal characteristics interacted with one another to predict attitudes toward gender equality. All three interactions between female gender, age, and social class explained the even consumption of female and male sport in the media. Importantly, the effect of age turns negative at the intersection with female gender, while the effect of social class turns positive when interacted with female gender and age. This finding indicates that both female gender and age can mitigate the negative effects of social class, which tend to be driven by conservatism (Vargas-Salfate et al., 2018) and patriarchal gender beliefs (Perales and Bouma, 2018).

The importance of female role models is not shaped by social class, only by the intersection of female gender and age, with young women scoring lower on both attitude measures. It is possible that this population group is less interested in sport consumption and seeks role models from other areas than sport, such as influencers on social media. Moreover, as young women grow up in a decade with higher societal awareness for topics like gender equality and diversity, they might perceive a lower need for actively working on gender issues like gender equality in sport.

The present study makes several contributions to the body of research. Theoretically, it applies LaVoi's (2016) ecological-intersectional model to the European population's attitudes toward gender equality in sport. The application indicates that these attitudes are shaped by factors at the societal, interpersonal, and individual levels and that individual factors also interact with each other, supporting the usefulness of this theoretical model. Empirically, this study draws on a unique dataset covering 27 European countries allowing a comprehensive analysis. The findings provide insights not only about the level of attitudes, but also about relevant factors shaping them. Collectively, this research enhances our understanding of European's attitudes toward different aspects of gender equality in sport and contributes to the debate about gender diversity in society and in sport.

6 Conclusion

This research examined the role of societal, interpersonal, and individual factors in explaining European's attitudes toward gender equality in sport. The findings suggest that individuals' attitudes are not only shaped by personal characteristics, but also by factors at higher levels. Different factors are at work when looking at the attitudes toward evenly following female and male sport in the media and toward the inspirational potential of female role models: With the exception of female gender, factors do not have a consistent effect on both attitude measures. Also, more factors have a significant association with following female sport in the media than with female role models. Collectively, it is not possible to develop a one-size-fits-all implication for increasing attitudes toward gender equality in sport. A nuanced look is necessary, but also future research on this topic.

Future research endeavors might also be shaped by the limitations of this work. The present research is limited by the available data and variables. This means it shares the limitations of existing studies based on cross-sectional data and it can only include measures that were assessed in the survey. For example, for a more nuanced assessment of attitudes, it would be interesting to know more about the availability of female sport in the media in each country or to each respondent. Moreover, information about whether respondents have male or female role models in sport would be insightful. Another avenue for future studies would to explore the role of other personal factors like ethnicity/race, cultural factors (e.g., religion, sporting tradition), and country-level factors like gender politics and policies within each country or the availability of women's sport content on television and/or at streaming platforms.

Data availability statement

Publicly available datasets were analyzed in this study. This data can be found at: Doi: 10.4232/1.14055.

Ethics statement

Ethical review and approval was not required for the study on human participants in accordance with the local legislation and institutional requirements. Written informed consent from the patients/ participants or patients/participants' legal guardian/next of kin was not required to participate in this study in accordance with the national legislation and the institutional requirements.

Author contributions

PW: Conceptualization, Data curation, Formal analysis, Methodology, Writing – original draft, Writing – review & editing. GC: Conceptualization, Writing – original draft, Writing – review & editing.

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The illusion of inclusion: examining the limitations of diversity metrics in baseball

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The importance of diversity, equity, and inclusion (DEI) in sports has become widely discussed in recent years, and many sports organizations have dedicated extensive resources to DEI initiatives. Much of the focus has been on the representation of underrepresented minorities within sports, and many organizations rely heavily on representation as a metric for success of their DEI initiatives. In the current work, we examine the potential limitations of diversity metrics currently used in professional sports organizations. Recently, reports have suggested that player and coach diversity in Major League Baseball are good, with high international Latino representation, and DEI efforts should therefore be focused elsewhere. However, across two studies utilizing datasets of Major and Minor League Baseball players (Study 1) and coaches (Study 2), we find evidence that, despite the high diversity, some baseball players and coaches in the lower levels seem to have less ability to advance than others. Specifically, international Latino players are less likely to make it to as high of a level in baseball as US-born players, and international Latino coaches are more likely to get stuck in the lower levels of coaching. Moreover, in a third study surveying players in the independent Frontier League, we find evidence that non-White players feel less of a sense of inclusion. We provide insight and recommendations for how sports organizations and researchers can better measure and interpret the progress of DEI initiatives in sports.

KEYWORDS

diversity equity and inclusion, diversity metrics, sports, Major League Baseball, measuring diversity, Latin American players and coaches

1 Introduction

A great deal of work has documented the organizational advantages of diversity, equity, and inclusion (DEI) initiatives, defined as practices or policies geared toward improving the experiences and outcomes of people from underrepresented and historically marginalized identity groups (Dobbin and Kalev, 2022; Nishii et al., 2018; Nkomo et al., 2019; Portocarrero and Carter, 2022; Roberson, 2019). Generally, DEI initiatives aim to (1) increase the representation of underrepresented minorities, (2) reduce gaps in success between marginalized and non-marginalized groups, and (3) develop more inclusive work environments (Leslie, 2019). Increasing an organization's diversity—often understood as the numerical representation of people from underrepresented identity groups—is the most used metric for the success of DEI initiatives (Leslie, 2019). While increasing the representation of people from underrepresented and marginalized communities is important, overreliance on diversity numbers as a sole measure of the success of DEI initiatives may give a false sense of progress (Leslie, 2019; Nishii et al., 2018; Nkomo et al., 2019). Further, as organizations become more diverse, it is important that they are also intentional in their efforts to create more inclusive environments, which can produce job satisfaction, organizational commitment, and decreased stress (Shore et al., 2018). Recognizing the importance of inclusion, there have

been calls to move beyond efforts and metrics focused solely on diversity to work that deepens our understanding of how to create truly inclusive organizations in which everyone is treated fairly, is valued for who they are, feels that they belong, and can fully engage at all levels within the organization (Nishii et al., 2018; Nkomo et al., 2019; Roberson, 2019; Shore et al., 2018). Importantly, this shift toward expanding the scope of how we measure the success of DEI initiatives adds to, rather than replaces, the importance of increasing representation of minorities within organizations, especially in high-level positions.

Given that minority groups are often underrepresented in organizations, especially at higher levels within the organization, there are few contexts in which it is possible to empirically examine or measure the additional barriers to inclusion in highly diverse organizations. However, sports organizations tend to have a higher representation of minority group members as compared to other organizational domains (e.g., African-Americans are well represented as players in many professional sports such as football and basketball; Czopp et al., 2015; Kay et al., 2013). Given this, the sports domain is uniquely positioned for scholars to examine the additional barriers to inclusion that exist for minorities even in highly diverse organizations. In fact, sports have been widely used as a context to study the treatment of minority groups (Carrington, 2015; Ertug and Maoret, 2020; Lowe, 2021; Parsons et al., 2011; Sartore and Cunningham, 2006; Zhang, 2017).

In the current work we examine Major League Baseball (MLB) as a case study of how the most common DEI metric, the representation of historically underrepresented minorities, can create inflated perceptions of progress that are counterproductive to positive change. Importantly, we do not argue that MLB and other organizations should not utilize diversity numbers as a metric of the effectiveness of DEI initiatives. Rather, we examine evidence of the limitations of diversity as a sole metric and explore how metrics of gaps in success and perceptions of inclusion can provide important insights for sports leagues and organizations as they make policy decisions.

1.1 Measuring diversity in sports

The Institute for Diversity and Ethics in Sports (TIDES) conducts research and publishes reports related to gender and racial equity and ethical issues in collegiate and professional sports. One of the main reports TIDES publishes is an annual Racial and Gender Report Card for various professional sports leagues such as Major League Baseball (MLB). The Report Cards include information on hiring practices, demographic composition of the league at every level (i.e., players, coaches, managers, owners, etc.), and other relevant information about a league's diversity practices. These Racial and Gender Report Cards are internationally recognized and provide important information to sports leagues as they aim to develop DEI initiatives.

Looking at baseball specifically, in 2023 MLB received an A for player racial diversity and an A+ for coach racial diversity on their Report Card, with 40.3% of players and 38.3% of coaches in MLB identified as "people of color," many of whom are international Latinos (Lapchick, 2023a). Like other sports organizations, MLB's racial diversity quickly declines when looking at the front offices, receiving only a D+ for presidents/GMs and a C+ for senior administration. Thus, a tempting interpretation of the MLB Report Card is that racial diversity on the field is acceptable, and DEI initiatives should focus on (1) gender diversity among coaches and (2) racial and gender diversity in the front offices [see Lapchick (2023b)][1]. To be clear, both of these goals are important and warrant attention. However, it is also important to understand whether the high racial diversity reported at the player and coaching levels indicates that DEI goals have been achieved on the field and thus warrants "moving on" to focus efforts on other areas. It is possible that the high diversity grades do not necessarily mean that baseball is completely inclusive and fair for all players and coaches. In line with this, interviews we conducted with Minor League Baseball (MiLB) players revealed that international Latino players may face additional barriers, such as language barriers and cultural differences, that make it harder for them to advance through the professional baseball system (Malcomb et al., in press).

1.2 Overview of current research

In the current work, we aimed to reconcile the high diversity grades for players and coaches (Lapchick, 2023a) with other evidence of additional barriers to advancement in baseball for international Latino players (Malcomb et al., in press). We first wanted to understand whether the diversity reports showing that MLB has high representation at the top playing level painted a complete picture of how inclusive and fair the whole baseball system is. Though the TIDES reports only utilize data from the Majors, MiLB is part of the MLB system; when players are drafted or signed by a team, they usually start at a low level in the Minors and get moved up to a higher level as they improve. Therefore, in Study 1, we utilized an archival dataset of baseball players in the Majors and Minors to examine whether international Latino players and players from other underrepresented groups displayed evidence of less career progression. In Study 2, we created a cross-sectional dataset of coaches across all levels of the Minors and Majors to examine whether international Latino coaches were less likely to move up in the ranks. In Study 3, we aimed to supplement our findings from the first two studies by collecting survey data from players in the Frontier League related to their perceptions of inclusion in baseball. Overall, we hope our work will help organizations more effectively utilize DEI metrics as tools to advance diversity, equity, and inclusion.

2 Study 1

2.1 Method

We developed a dataset of professional baseball players in MiLB and MLB by merging data from two sources. Our first source was data from Baseball Cube, a reputable repository of baseball statistics and information (Baseball Cube, 2025). This dataset consisted of all players who played in MiLB and/or MLB from 1992 (the first year of the 7-tiered system for progression from the Minors to the Majors;

1 One additional goal of MLB is to increase the number of African-American players; despite high representation of people of color, African-American representation specifically has been decreasing.

Baseball Reference, 2023a) through 2022. We merged these data with self-reported player ethnicity data collected by MLB and shared with our research team. Our final dataset comprised 50,477 players (30,343 were US-born, and 18,404 were born in a Latin American country/territory), but we used different subsets of players for the different analyses. Please see the Supplementary materials (SOM) for additional information about our methods. We had the following two primary outcome variables of interest.

2.1.1 Highest level achieved

This dependent variable captures the highest level in MiLB or MLB that a player achieved in their career, from Rookie Ball (Rk), Short Season A ball (SS), A, Advanced A, AA, AAA, and MLB (the 7-tiered system; Moore, 2013). These were coded 1–7 with 1 being the lowest level (Rk) and 7 being the highest level (MLB).[2]

2.1.2 Longevity

This dependent variable captures the number of years each player spent in baseball at any level, up through 2022. It was calculated by subtracting the start year from the end year for each player and adding 1.

2.2 Results

To examine differences in the progression through baseball between US-born players and international Latino players, we ran independent-samples *t* tests predicting highest level achieved and longevity from nationality. We found that US-born players made it to significantly higher levels within baseball during their career compared to international Latino players, advancing about a level higher on average (see Table 1). Moreover, the US-born players also had significantly greater longevity than the international Latino players, playing baseball for almost two years longer on average (see Table 1). Given that making it to MLB is the ultimate goal, we also examined how making it to MLB varied by nationality. Our results showed that while 13.9% of US-born MiLB players made it to MLB, only 7.5% of the international Latino players did ($p < 0.001$; see Table 1). Although we would have liked to control for performance, we were unable to do so because there is not an overall metric of a player's performance that makes sense across the levels in baseball. However, playing college baseball in the US is sometimes considered an additional training period for players. So, in additional analyses (described in SOM), we confirmed that nationality matters for highest level achieved and longevity beyond the effects of college attendance.

We next examined the effects of ethnicity (White, Black, Hispanic) on player outcomes. The vast majority of the international Latino players in our data self-reported as Hispanic (99.1%), so we could not examine the effects of ethnicity for international Latino players. Therefore, we focused our ethnicity comparisons on the US-born players for whom we had self-reported ethnicity information. Our results showed that White players made it to a significantly higher level than Black players but had a shorter longevity (see Table 2). The US-born Hispanic players had highest level and longevity scores that fell in the middle and were not significantly different from the other groups. Thus, these results indicate that there are some differences in US-born players' outcomes based on their ethnicity, but the difference between US-born and Latin American players is much larger.

TABLE 1 Study 1 Means, standard deviations, and percentages by nationality.

Measures	US born players *Mean (SD)*	International Latino players *Mean (SD)*	Statistical analysis results
Highest level achieved (Levels 1–7)	4.04 (1.97)	2.86 (2.18)	t (48,745) = 61.18, $p < 0.001$, $d = 0.57$
Longevity (in years)	6.31 (3.78)	4.50 (4.08)	t (48,745) = 49.74, $p < 0.001$, $d = 0.46$
Made it to Majors (% of group)	13.9%	7.5%	χ^2 (1, N = 48,747) = 460.03, $p < 0.001$

See SOM for the results for other nationalities.

3 Study 2

3.1 Method

We created a dataset of coaching staff for all 30 MLB organizations, including all their affiliated MiLB teams, as of Opening Day in 2020.[3] For each coach, we coded their name, coaching position, current level, and nationality. There were 1,100 coaches that had both their current level and nationality available and thus were included in the dataset. Twenty-eight coaches were not from the United States or a Latin American country and thus were excluded from the dataset, leaving 1,072 coaches (740 US-born coaches, 332 international Latino coaches). Current level was coded using the same 1–7 tier scale utilized for the highest level measure in Study 1.

3.2 Results

As predicted, the results of an independent-samples t test revealed that US-born coaches were at a significantly higher level within baseball on average ($M = 4.79$, $SD = 2.21$) compared to international Latino coaches ($M = 2.95$, $SD = 2.40$), t (1,070) = 12.29, $p < 0.001$, $d = 0.81$. Importantly, our results held when we accounted for contextual factors such as coaching in the Dominican Summer League (see SOM). In other words, baseball coaches from the US were more likely to be coaching at a higher level than coaches from Latin American countries. One factor that might contribute to these results is that international Latino coaches are less likely to have played in the Majors, an experience that helps coaches obtain higher positions (see SOM).

2 Note that MLB eliminated SS ball in 2021 (Baseball Reference, 2023b), but we otherwise kept the same coding scheme for players in the final two years of our dataset.

3 Note that there ended up being no 2020 MiLB season due to the pandemic, but we were able to capture the intended coaching staff before decisions to cancel the season were made.

TABLE 2 Study 1 Means and standard deviations for US-born players by ethnicity.

Measures	White players (n = 9,713)	Black players (n = 956)	Hispanic players (n = 736)	Statistical analysis results
Highest level achieved (Levels 1–7)	4.60_a (1.99)	4.42_b (2.17)	4.50_{ab} (2.12)	F (2, 11,402) = 4.35, p = 0.013
Longevity (in years)	7.69_a (4.12)	8.15_b (4.93)	7.80_{ab} (4.48)	F (2, 11,402) = 5.39, p = 0.005

Means with different subscripts were significantly different at the $p < 0.05$ level according to Fisher's LSD test.

4 Study 3

4.1 Method

We surveyed 148 baseball players who were about to begin the 2022 season in the Frontier League, an independent, professional MLB Partner League (MLB.com, 2025). The participants were mostly White Americans (72.4% White, 81.1% from the US).

Players who agreed to complete the survey began by selecting the language they wanted to take the study in (English or Spanish) and then reported information about their demographics and playing backgrounds. Then participants rated themselves on several performance items using a 5-point scale (*1 = poor, 5 = great*) as a measure of their subjective performance (M = 3.69, SD = 0.78; α = 0.85). Next, they rated their agreement with items measuring inclusion ("This team gave me the feeling that I belong;" α = 0.97; from the belonging subscale of the Group Inclusion Scale; Jansen et al., 2014), task cohesion (e.g., "Our team was united in trying to reach its goals for performance;" α = 0.73; Carron et al., 1985), and social cohesion ("Our team liked to spend time together in the offseason;" α = 0.69; Carron et al., 1985) using 5-point Likert scales (*1 = strongly disagree, 5 = strongly agree*). Though our main variable of interest is inclusion, we included measures of cohesion because they are commonly used in sport studies and provide additional information about how players relate to their teammates. See SOM for more information.

4.2 Results

For each analysis, we used all the relevant data we had; some participants skipped questions or otherwise did not answer the entire survey. Due to the small number of international Latino players in this dataset, we focused our comparisons on White vs. non-White players (collapsing across non-White ethnicities).

White players reported significantly greater inclusion (M = 4.25, SD = 1.00) than non-White players (M = 3.78, SD = 1.29), t (105) = 2.02, p = 0.046, d = 0.43. The inclusion scale was significantly correlated with the mean performance rating, r (107) = 0.426, $p < 0.001$. Thus, people who felt like they were more included within the team thought they performed better on the field. We also found significant correlations between inclusion and both task cohesion, r (107) = 0.459, $p < 0.001$, and social cohesion, r (107) = 0.380, $p < 0.001$. Interestingly, inclusion correlated more strongly with performance, task cohesion, and social cohesion for the non-White players than for the White players (see Table 3). We do not want to make too much of the comparisons due to the small sample size of non-White players, but the big difference for social cohesion is especially interesting (indicating perhaps that minority players can feel included even if they are not socially close to others, whereas White players feel included if they are friends with their teammates).

TABLE 3 Means, standard deviations, and bivariate correlations for variables in Study 3 by player ethnicity.

White players (n = 77)				
Variable	M (SD)	1	2	3
1. Inclusion	4.25 (1.00)			
2. Performance	3.65 (0.79)	0.423*		
3. Task cohesion	3.49 (0.97)	0.420*	0.336*	
4. Social cohesion	3.68 (0.80)	0.190	0.130	0.436*

Non-white players (n = 30)				
Variable	M (SD)	1	2	3
1. Inclusion	3.78 (1.29)			
2. Performance	3.77 (0.75)	0.521*		
3. Task cohesion	3.36 (0.90)	0.570*	0.277	
4. Social cohesion	3.16 (1.05)	0.566*	0.289	0.669*

*$p < 0.05$.

5 Discussion

Across three studies, we examined whether the high diversity on the field in MLB reflects that the pipeline is inclusive, as evidenced by equal opportunities for advancement and player attitudes. In Study 1, we found that international Latino MiLB players are not making it to as high of a level in baseball or having as long of a playing career. In Study 2, we found that international MiLB and MLB Latino coaches were also more likely to be at a lower level in baseball than US-born coaches. Finally, Study 3, we found that non-White players in the Frontier League reported a lower sense of inclusion on their teams. Overall, our studies provide some evidence that despite high player and coach diversity in the Majors, there is still work to be done.

5.1 Limitations and future directions

Though our data in Studies 1 and 2 provide evidence that international Latino players and coaches are less likely to progress into higher levels of baseball compared to US-born players and coaches, we are unable to speak to what causes this gap in success. We hope that future research can delve into the reasons for these differences (e.g., language barriers, instances of discrimination). However, our results do

clearly indicate that there is still room for improvement at the lower levels of baseball when it comes to making this diverse league truly inclusive, and the current norms for measuring and tracking diversity in sports may be limited. Further, although we cannot be sure of the causal order between inclusion and performance in Study 3, and therefore we cannot determine whether increasing inclusion would increase performance, the results are very interesting nonetheless and should provide some motivation to baseball teams to try to be more inclusive.

Ideally, we would have liked to run the analyses in Studies 1 and 2 controlling for objective performance to rule out that US-born players and coaches advanced higher because they performed better. However, because the players start at different levels in the Minors, and performance statistics change by level (as it is harder to perform well in higher levels), it was not possible to find a performance statistic with the same meaning across players. We also do not know of any performance statistics that indicate coaching ability. Moreover, we would have liked to account for an individual's native language and years in the US, along with coach race in Study 2, had we possessed the necessary data. As technology advances and more data becomes available, we urge researchers and organizations to develop even more holistic data repositories.

It is important to note that due to the shifts in the meaning of racial and ethnic labels/groups across cultures (e.g., 99.1% of international Latino players in Study 1 self-reported as "Hispanic," though some may be perceived as "Black" within a US context) and limitations in how demographic information is collected currently (e.g., there are limited ethnicity labels for players to choose from when self-reporting), we were unable to meaningfully examine how nationality and ethnicity intersect with one another in the current context. As organizations make changes in how data is collected, future researchers will be able to examine how multiple salient identities intersect to create unique experiences for players.

5.2 Practical implications

As sports become more multicultural and diverse, sports organizations should carefully consider how they utilize DEI metrics. Especially for leagues like MLB where there is salient diversity among many aspects of social identity (e.g., nationality and ethnicity; Zitek et al., 2024), it is important to critically evaluate how data is collected and interpreted. In line with current best practices in research, MLB (and others) should consider asking demographic information as open-ended questions to allow full self-reporting, rather than providing specific categories (e.g., White, Black, Hispanic). If it is unrealistic to allow open-ended questions, the multiple-choice questions should at the very least be updated in two important ways. First, the options provided to select from should be expanded to include relevant racial/ethnic categories from the prominent cultures and countries represented in the data. Second, participants should be able to select multiple racial/ethnic categories, rather than having to choose one or select "two or more," which does not provide meaningful information for interpretation.

More broadly, to utilize DEI metrics more effectively, organizations should ensure that they collect data in a context-relevant way. Looking specifically at baseball, both ethnicity and nationality are context-relevant (Zitek et al., 2024). By examining the data at the intersections of ethnicity and nationality, we can better understand that while overall there is high representation of "people of color" within baseball at the player and coach level, different minority groups have different experiences. The challenges faced by international Latino players and coaches may not be the same as those faced by US-born Hispanic players and coaches, and thus these issues require different solutions. It is important for the different DEI initiatives to recognize that a "one-size-fits-all" approach does not work, and the programs should be targeted toward different groups (Apfelbaum et al., 2016). Analyzing the data using a context-relevant approach provides more clarity to the causes of inequity, which ultimately paves a better path forward in creating solutions.

In addition to shifting how data is collected, organizations must also carefully consider how data is analyzed and the conclusions drawn from DEI metrics. While the TIDES Report Cards currently provide incredibly valuable information, it is important for individual leagues to examine how well the data represents their sport and what meaning they can take away from these reports. For example, in this paper, we have shown how the interpretation of high player diversity in MLB shifts when we examine progression though the MiLB pipeline and the likelihood of making it to the Majors. By failing to include the Minors in the assessment, the barriers to one of the most vulnerable populations (international Latino players) might be overlooked, which risks perpetuating inequality within baseball.

We hope that our work provides some insight into the importance of triangulating between various DEI metrics before making policy decisions. In this paper, we provide a metric illustrating a disparity between international Latino players and coaches and US-born ones (Studies 1 and 2) and a metric of player inclusion (Study 3). By combining these metrics with the diversity metrics provided in the Report Cards, more accurate and appropriate policy decisions can be made. More specifically, despite the high representation of international Latino players and coaches, MLB should continue to focus efforts on mitigating their barriers to success and ensuring baseball is a fair and inclusive sport for everyone.

Regardless of what DEI initiatives are put into place, we recommend that MLB and teams make participation in these programs optional. Past research has demonstrated backlash against mandatory DEI initiatives (Dobbin and Kalev, 2016) and recent work shows that mandatory initiatives can harm autonomy and prevent people from participating authentically (Malcomb and Zitek, 2024). Even though many players enjoy the diversity of baseball (Malcomb et al., in press), they may want to choose to engage in various inclusion-building programs, rather than being forced.

6 Conclusion

We applaud leaders in baseball for thinking about diversity, equity, and inclusion, as evidenced by the various programs put in place by MLB and the individual teams and their engagement with our research team. For example, many MLB teams are now hiring education coordinators and offering language classes in English and Spanish to players in all levels to help reduce the language barrier (Malcomb et al., in press). Further, we applaud the immense work done by the TIDES foundation to increase transparency and accountability in sports organizations on their diversity efforts. We do not see our work as opposed to any of these efforts, nor do we intend to suggest that organizations should not measure diversity. Rather, we believe that our results provide important insights for sports organizations and researchers alike into the importance of cultural context and identity

when examining diversity, equity and inclusion. The most prominent diversity metrics used in MLB currently point to the success of representation among players and coaches for "people of color," particularly international Latinos. Although it may be tempting for MLB to focus more strongly on gender diversity and front office diversity in the coming years, our results suggest that more progress can still be made in the lower levels. Despite the high diversity grades, some baseball players and coaches in the Minors seem to have less ability to advance than others. Specifically, international Latino players do not make it to as high of a level in baseball as US-born players, and international Latino coaches may get stuck in the lower levels of coaching. Moreover, in the independent Frontier League, the non-White players feel less of a sense of inclusion.

Through a deeper analysis of the full pipeline of players and coaches, and by utilizing social identity groups relevant to the context of baseball, we have highlighted a few major limitations with diversity metrics as they are currently used in sports and provide insight into how sports organizations and researchers can better measure and interpret diversity. DEI metrics are a powerful tool that organizations should continue to build and utilize, but organizations should also ensure they spend time understanding what they are measuring, how they are measuring it, and what the limitations of their data are.

Data availability statement

The datasets presented in this article are not readily available to maintain the privacy of identifiable information within the data. Requests to access the datasets should be directed to the corresponding author.

Ethics statement

The studies involving humans were approved by the Institutional Review Board (IRB) at Cornell University. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their informed consent to participate in this study.

Author contributions

CM: Conceptualization, Data curation, Formal analysis, Methodology, Writing – original draft, Writing – review & editing. EZ: Formal analysis, Methodology, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2025.1512033/full#supplementary-material

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Exploring the impact of cross-cultural training on cultural competence and cultural intelligence: a narrative systematic literature review

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Introduction: Cross-cultural training programs are widely used to enhance cultural competence and cultural intelligence (CQ) across various professional fields. This narrative systematic literature review examines training strategies from various fields to identify the most effective approaches for application in sports. It addresses two key research questions: (1) What training components have been used in the delivery of these training programs? (2) What is their effectiveness in improving cultural intelligence and cultural competence?

Methods: A systematic search was conducted to identify qualitative and quantitative studies published between 2000 and 2023. A total of 27 articles met the inclusion criteria. These articles describe the type of training program delivered, the activities performed, and their outcomes on participants' cultural competence and/or cultural intelligence. Programs were categorized on delivery methods (didactic, experiential, or mixed) and information was extracted on training content, participants, duration, and timing.

Results: Most programs used mixed delivery methods that combined lectures, educational tasks and experiential activities. They showed positive, though not always statistically significant, impact on participants' cultural competence and/or cultural intelligence.

Discussion: In sports, tailored programs that address culture- and sport-relevant knowledge, skills and communication may help coaches navigate cultural differences.

KEYWORDS

diversity, acculturation, intercultural, expatriate, migrant, coach education, professional development

Introduction

Sports migration and globalization increasingly mean that sports coaches and athletes work in culturally diverse contexts, with an expectation of effective performance and interactions. Coaches often choose to migrate to develop their sport or their career (Borges et al., 2015, 2020, 2023, 2024) but whether abroad or within their home country, cross-cultural interactions can pose challenges. Challenges for sports coaches can be due to cultural differences, such as those between foreign and domestic players and coaches (Khomutova, 2015; Sain et al., 2022), communication and language barriers (Borges et al., 2022a), and the need to understand new cultural norms and values (Schinke et al., 2013; Borges et al., 2015). Additionally, challenges may arise from a lack of

familiarity with the new environment (Ryba et al., 2013) and from understanding the unique needs of the athletes they work with (Duchesne et al., 2011). Therefore, cross-cultural training is a useful educational tool aimed at promoting intercultural learning to enhance individuals' cultural awareness and improve their cultural competence to manage cultural differences (Borges et al., 2022a, 2022b, 2023; Chen, 2015).

Despite various conceptualizations of cultural competence, there is a consensus that it refers to the ability to function effectively across different cultures (Whaley and Davis, 2007). In their review of cultural competence models, Leung et al. (2014) identified more than 30 models and more than 300 related constructs, which generally adopt an individual-differences approach (Sandberg, 2000). By taking this approach, cultural competence was conceptualized as a set of personal characteristics, which are summarized into three content domains of (a) intercultural traits, (b) intercultural capabilities, and (c) intercultural attitudes and worldviews. Cultural competence models grounded in personality mostly focus on intercultural traits, while models drawing on the intelligence literature focus on intercultural capabilities, including cultural intelligence (Leung et al., 2014). Regarding cultural competence in the sports context, Burden and Lambie (2011) developed the Sociocultural Competencies for Sports Coaches (SCSC), by adapting the competencies model from Sue et al. (1992). These sociocultural competencies focus on attitudes/beliefs and skills and specify knowledge as an important domain (but not traits). Specifically, it comprises three competencies: (a) coaches' self-awareness of personal biases and beliefs, (b) coaching skills and strategies, and (c) knowledge of athletes' worldviews.

One of the most prominent models is the Cultural Intelligence Model (Earley and Ang, 2003) which has shown to predict various outcomes of interest (Leung et al., 2014; Matsumoto and Hwang, 2013). Cultural intelligence (CQ) refers to a person's capability to function effectively in multicultural settings, reflected in a set of capabilities (Ang and Van Dyne, 2015). The conceptualization of cultural intelligence draws upon the Sternberg and Detterman's (1986) multi-loci theory of intelligence, consisting of four dimensions: motivational, metacognitive, cognitive, and behavioral, along with their associated sub-dimensions (Earley and Ang, 2003). Metacognitive CQ pertains to the cognitive processes and mental capacity to acquire cultural knowledge, whereas cognitive CQ refers to knowledge structures concerning cultures and cultural distinctions. Motivational CQ pertains to the ability to direct and maintain energy to function and perform effectively in intercultural contexts while behavioral CQ is the capacity to modify behaviors (verbal and nonverbal) to function appropriately in various cultures. For instance, an individual possessing a higher behavioral CQ might adapt one's verbal and non-verbal behaviors to suit various cultures, while an individual with a higher metacognitive CQ is more likely to formulate action plans before engaging in cultural interactions.

Cultural intelligence is a specific form of intelligence, and it distinguishes itself from other prominent approaches to cultural competence (Van Dyne et al., 2017). For example, cultural competence models rarely consider all dimensions and factors simultaneously, whereas the cultural intelligence model is comprehensive (Ang et al., 2015). Moreover, cultural competence models focus on a variety of narrower personality dimensions (e.g., self-awareness, cognitive flexibility), whereas cultural intelligence model focusses on broader intercultural capabilities (Ang et al., 2015). Prior studies have extensively examined the concepts of cultural competence and cultural intelligence, as well as the outcomes of cross-cultural training across multiple domains. Nevertheless, there is a paucity of research conducted in sports settings. A recent study by Borges et al. (2022b) investigated the cross-cultural training needs of 209 football coaches and addressed the concept of cultural intelligence in sports. They found that coaches with international experience rated their cultural intelligence (CQ) higher than those without such experience. In addition, the study found that coaches preferred training focused on cross-cultural communication skills, delivered through practice-based methods with in-person attendance, and conducted before moving to a foreign country. While this study offers initial insights into cross-cultural training for sports, further research is needed to determine the specific training elements required for coaches across various sports.

To our knowledge, no other studies have explored sport-specific cross-cultural training, as such programs have yet to be developed and implemented. This study aimed to gather and synthetize information from training programs in different fields with a view to later transferring the most effective strategies to the sports field. We expect cultural training programs to have a positive and significant impact on participants' cultural competence and cultural intelligence (CQ), with varying effects across different dimensions depending on the type of program delivery.

Research questions

The following research questions were formulated using the PICO framework to specify the population (adult participants), the intervention was cultural training programs, the comparator included pre-post designs, no training, or any alternative training, and the outcomes measured (quantitative or qualitative) effectiveness in terms of cultural intelligence and/or cultural competence either qualitative.

> *RQ1*: What training components (i.e., content, delivery type, duration) have been used in the delivery of cross-cultural training programs aimed at improving the cultural intelligence and/or cultural competence of participants across different multicultural settings?
>
> *RQ2*: What is the effectiveness of cross-cultural training programs in improving the cultural intelligence and cultural competence of participants across different multicultural settings, as assessed through quantitative and/or qualitative study designs?

Method

The systematic review was carried out in accordance with the PRISMA 2020 statement (Page et al., 2021) and used the PRISMA checklist protocol (Rethlefsen et al., 2021) which enables researchers to identify critical areas of focus for research and facilitates the procedure for those who conduct the research.

Eligibility criteria

For the review, we were interested in studies that used a cross-cultural training program and measured its effectiveness in terms of cultural competence and cultural intelligence.

TABLE 1 Inclusion and exclusion criteria used for the study.

Feature	Inclusion	Exclusion
Language	• Published in the English language	• Papers written in a language other than English
Date of publication	• Papers published between 2000–2023	• Papers published prior to 2000
Type of studies	• Peer-reviewed empirical papers • Papers with the keyword "cultural intelligence" or "cross-cultural training" in the abstract • Papers included the within subject and/or between subject design, or both • Papers included qualitative and/or quantitative research methods • Papers reported cross-cultural training program delivery methods (i.e., content, delivery type, duration, and participants) • Papers reported the impact of cross-cultural training programs on CQ and/or cultural competence	• Extended abstracts, posters, books, theses, chapters, unpublished material, or short papers about research that is still going on • Conference papers

Information sources

The literature search was conducted using the EBSCOhost interface which searched the following databases: Academic Search Complete, Education Research Complete, MEDLINE, ERIC, APA PsycInfo, Business Source Premier, CINAHL Complete, SocINDEX with Full Text, Hospitality & Tourism Complete, Teacher Reference Center, SPORTDiscuss with Full Text. A manual search of key articles' reference lists was also conducted for papers that were either highly cited or papers that became clear through the research as being highly relevant.

Search strategy

To ensure a comprehensive but specific search for eligible papers, the search terms were first developed and tested by the researchers. The final search terms used were: ("cross-cultural training" or "cct" or "cross-cultural program" or "cross-cultural education") AND ("cultural intelligence" or "cultural competence"). The limiters developed in this review were: "peer-reviewed," "published date (2000–2023)," and the language selected as "English." We included studies from 2000 to 2023 to ensure our review reflects current evidence and the latest developments in training programs (Moher and Tsertsvadze, 2006). The search terms and limiters were used for all databases using the EBSCOhost interface. See Table 1 for inclusion and exclusion criteria.

Selection process

The initial search conducted by DU resulted in 475 papers. After the removal of duplicates and records automatically marked as eligible by automation tools, DU and JS independently screened all study titles and abstracts for inclusion and any disagreements were discussed and resolved by referring back to the eligibility criteria. DU and JS then reviewed all the full-text papers. Of the 64 papers, six were discussed between DU and JS and agreed, and 8 were discussed with RO or MB and agreed. Only three papers were discussed with RO/MB, which changed the decision taken previously. This process resulted in 20 papers, with seven additional papers added through citations resulting in the final inclusion of 27 papers (Figure 1). The full text of excluded papers is included in the Supplementary material.

Data collection process

Details of the 27 papers were extracted and compiled into a table (DU and JS). Any uncertainties and disagreements regarding the variables during data extraction were resolved through discussions between authors. As an example, six papers were excluded because they contained insufficient information concerning the type and implementation of the training. Authors were not contacted to provide further information about the training programs.

Data items

For each paper, data was collected about the components of the cross-cultural training program (delivery method, participants, content, duration) and its outcomes on cultural intelligence and cultural competence, as well as study design.

Quality assessment

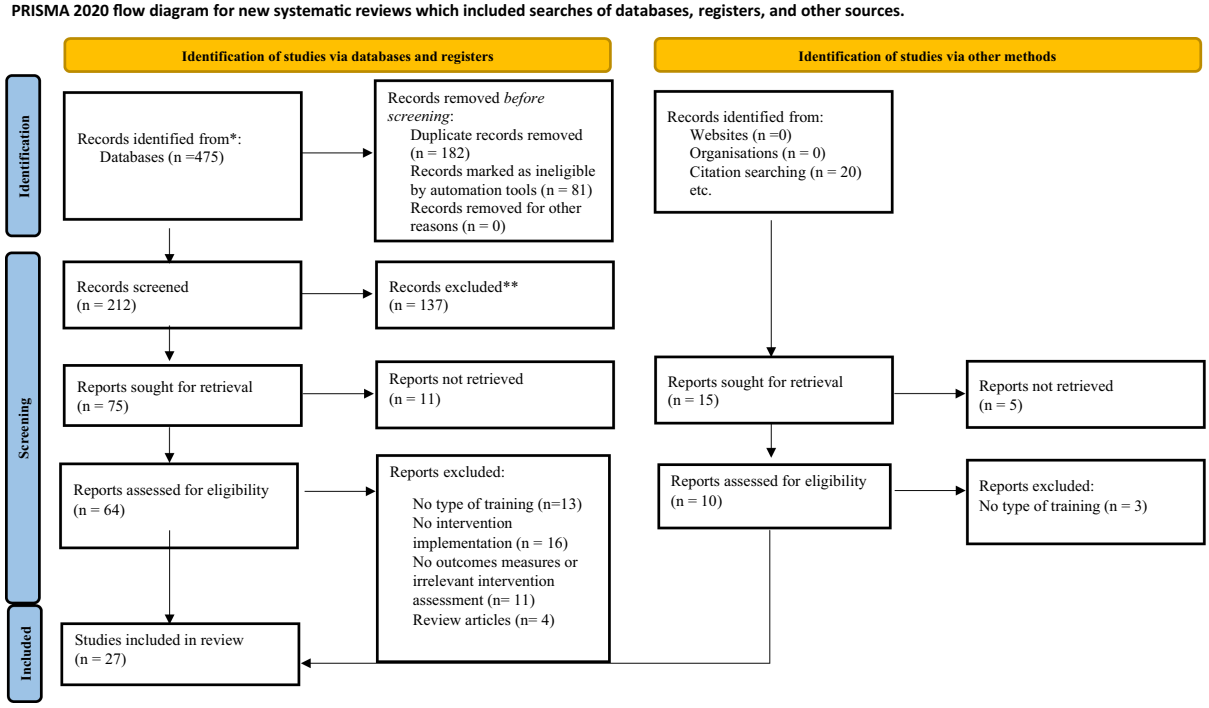
A quality assessment of papers was not performed as the focus was on synthesizing findings related to the types and impacts of training programs, rather than on evaluating the methodological quality of the individual studies.

Synthesis method

A narrative synthesis was used because it is the most appropriate way to discuss the different components of training delivery as per our main research question.

Results

The reviewed studies delivered training across a variety of participant groups including students at different education levels and settings ($n = 21$), working professionals ($n = 3$), psychiatry nurse residents ($n = 1$), military and government members ($n = 1$), and mental health professionals ($n = 1$). Most training was offered in person, often supplemented by online resources, with only one program delivered entirely online (see Kirste and Holtbrügge, 2019).



Note: Each step was performed independently by two reviewers (DU & JS).

Source : Page MJ, et al. BMJ 2021 ;372:n71. doi: 10.1136/bmj.n71.

FIGURE 1
PRISMA flow chart of the study selection process.

The duration of these programs ranged from a full-day workshop (Hiller and Woźniak, 2009) to a six-month course (Presbitero and Toledano, 2018). Additionally, five programs required participants to spend time abroad lasting from 1 week to 4 months, with four of these offering pre-departure training (Alexander et al., 2021; Alexander et al., 2022; Eisenberg et al., 2013; Engle and Crowne, 2014). See Supplementary Table 1 for detailed information.

> *RQ1*: What training components (i.e., content, delivery type, duration) have been used in the delivery of cross-cultural training programs aimed at improving the cultural intelligence and/or cultural competence of participants across different multicultural settings?

In response to this research question, we categorized the studies into three delivery types: (1) didactic, (2) experiential, and (3) mixed delivery methods (See Supplementary Table 2 for detailed summaries of each program's content and components).

Didactic delivery

Seven studies employed didactic methods, incorporating various activities: courses, group discussions, briefings, as well as self-directed and group-directed tasks relevant to the cultural topics (Harris et al., 2008; Pandey, 2012; Rehg et al., 2012; Smith and Bahr, 2014; Spitzer, 2015; Ramsey and Lorenz, 2016; Kirste and Holtbrügge, 2019). The primary focus of these courses was on culture-general and culture-specific knowledge. For instance, Smith and Bahr (2014) offered an overview of cultural competence, discussing its definitions and presenting cultural characteristics of the Hispanic population including aspects like second-language acquisition and parental involvement (i.e., culture-general and specific knowledge). Likewise, Harris et al. (2008) provided psychiatry residents with general cultural knowledge as well as culturally sensitive techniques for interviewing, diagnosing, and reviewing patients tailored to their practice settings.

Group activities mostly consisted of discussions, briefings, and presentations while individual activities included tasks such as self-reflection essays, case studies, and readings. For example, Spitzer's (2015) program asked students to create surveys and compare responses from first- or second-generation immigrants to typical acculturation patterns described in the literature. In Pandey's (2012) workshop, participants analyzed video clips from popular films such as "Outsourced" and "My Big Fat Greek Wedding." Of the seven programs using a didactic delivery, only one relied entirely on online resources, with participants completing four training units and exercises over 2 weeks (Kirste and Holtbrügge, 2019).

Experiential delivery

Seven studies used experiential delivery including activities such as simulation games (Bücker and Korzilius, 2015; Rahayu and Arga, 2019) and cultural immersion (Wood and St. Peters, 2014; MacNab, 2012; Alexandra, 2018a, 2018b) followed by group discussions. For example,

Wood and St. Peters (2014) developed cross-cultural study tours, immersing participants in unfamiliar cultural environments through visits to organizations and community engagement. MacNab (2012) and Alexandra (2018a, 2018b) used self-selected cultural immersion experiences, combined with group reflection program as part of the *7-stage Experiential CQ Education* program. Majda et al. (2021) introduced a set of six experiential activities, such as role-playing and simulation exercises to improve nursing students' cross-cultural communication skills and CQ. Overall, experiential programs relied on interactive methods like simulations and immersion to foster cultural awareness and practical skills within multicultural settings.

Mixed delivery

Thirteen studies used a mixed approach combining didactic and experiential methods. These programs typically combined courses, educational tasks and experiential activities. Courses addressed cultural concepts, such as CQ and leadership (Azevedo and Shane, 2019), the functioning and operation of cultures (Presbitero and Toledano, 2018), cultural dimensions (Eisenberg et al., 2013), and cultural competence (Kratzke and Bertolo, 2013). Tasks included film assignments (Engle and Crowne, 2014; Azevedo and Shane, 2019), presentations (Azevedo and Shane, 2019; Dunlap and Mapp, 2017), and journaling on cultural experiences (Alexander et al., 2021; Alexander et al., 2022; Azevedo and Shane, 2019). The experiential components ranged from role playing to simulations and cross-cultural conversations (Kurpis and Hunter, 2017; Young et al., 2018).

Some training programs ($n = 4$) used preparatory activities related to field trips abroad (Eisenberg et al., 2013; Alexander et al., 2021; Alexander et al., 2022; Engle and Crowne, 2014). For instance, Engle and Crowne's (2014) program included preparatory readings, film tasks, and cultural case studies. After their international experiences, participants took part in debriefings and were encouraged to submit cultural case studies for future students. Similarly, Eisenberg et al. (2013) used cultural preparation before study abroad programs, leading to significant gains in overall CQ.

Role-playing activities, such as the BaFa BaFa game, were used to simulate cross-cultural interactions (Hiller and Woźniak, 2009; Fischer, 2011; Kratzke and Bertolo, 2013). These activities engaged participants in cultural role assignments, encouraging them to reflect on their reactions and the behaviors of others in foreign cultures.

Self-reflective essays were also a key component in several programs (Kratzke and Bertolo, 2013; Dunlap and Mapp, 2017; Alexander et al., 2021; Alexander et al., 2022; Azevedo and Shane, 2019), aiming to improve cultural self-awareness and deepen the understanding of cross-cultural interactions. The goal of these training programs was to help participants understand their own behaviors and the reactions of individuals from different cultures. For example, Azevedo and Shane (2019) required trainees to interview a manager facing a cultural challenge and write a reflective essay, and Young et al. (2018) asked trainees to interact with refugees from diverse cultures and reflect on their experiences.

> *RQ2*: What is the effectiveness of cross-cultural training programs in improving the cultural intelligence and cultural competence of participants across different multicultural settings, as assessed through quantitative and/or qualitative study designs?

This section includes a synthesis of qualitative and quantitative results reported in the reviewed studies. Overall, the findings point to positive outcomes for participants engaging in cross-cultural training programs, though not all effects were statistically significant.

Qualitative outcomes

Eight studies (four using qualitative methods only) reported improvements in participants' cross-cultural competence (Hiller and Woźniak, 2009; Kratzke and Bertolo, 2013; Pandey, 2012; Spitzer, 2015; Smith and Bahr, 2014; Fakhreldin et al., 2021; Kurpis and Hunter, 2017; MacNab, 2012; see Supplementary Table 3). Participants described benefits as gaining greater cross-cultural communication skills (Pandey, 2012; Kratzke and Bertolo, 2013), cultural awareness, culture-general knowledge, and cultural competence (Pandey, 2012; Spitzer, 2015). These benefits may have been associated with the specific activities in which they were involved. For example, readings and case studies program led to a better understanding of culture-related components such as cultural competence (Pandey, 2012; Spitzer, 2015), while role-playing and simulation exercises were particularly effective in enhancing communication (Kratzke and Bertolo, 2013), behavioral flexibility, empathy, and confidence in interacting with different cultural groups (Hiller and Woźniak, 2009).

Quantitative outcomes

Nineteen studies quantitatively assessed outcomes, generally reporting positive effects on CQ and cultural competence, though some findings were not statistically significant (see Supplementary Table 4).

For instance, four of six programs using didactic methods showed improvements in cultural competence (Harris et al., 2008) and in cultural intelligence and/or its dimensions (Rehg et al., 2012; Smith and Bahr, 2014; Ramsey and Lorenz, 2016). Ramsey and Lorenz (2016) found that a cross-cultural management course, which included cultural concepts and video clips as part of the educational tasks, had a significant and positive impact on the CQ scores of the experimental group. Similarly, Rehg et al. (2012) found that a cross-cultural awareness course significantly improved participants' cognitive and behavioral dimensions of CQ (Class 2), with smaller gains in motivational CQ, likely due to the course's focus on culture-specific knowledge and the influence of cultural backgrounds on behavior. Harris et al. (2008) also found lasting improvements in cultural competence which were maintained at a 9-month follow-up. In contrast, one study found no positive effects of an online-only CQ training program on students' CQ levels (Kirste and Holtbrügge, 2019), raising questions regarding the effectiveness of online-only education compared to in-person approaches.

Experiential methods consistently showed improvements to cultural competence and cultural intelligence and/or its dimensions (MacNab, 2012; Wood and St. Peters, 2014; Alexandra, 2018a, 2018b; Rahayu and Arga, 2019; Bücker and Korzilius, 2015; Majda et al., 2021). For example, participating in the 7-stage CQ education program led to improvements across all domains of cultural intelligence among participants (Alexandra, 2018a, 2018b; MacNab, 2012). However, some studies reported varied outcomes across CQ dimensions such as significant

gains in cognitive, metacognitive, and motivational CQ but no change in behavioral CQ, despite the practical cross-cultural activities (Wood and St. Peters, 2014). Similarly, the Ecotonos program was effective in developing the metacognitive, behavioral, and motivational CQ, but less effective in changing cognitive CQ (Bücker and Korzilius, 2015). Significant improvements in CQ did not translate into increased cultural competence in Majda and colleagues' program (2021).

Nine of ten programs that used mixed delivery methods showed improvements in cultural intelligence and/or its dimensions (Eisenberg et al., 2013; Engle and Crowne, 2014; Dunlap and Mapp, 2017; Presbitero and Toledano, 2018; Young et al., 2018; Azevedo and Shane, 2019; Alexander et al., 2021; Alexander et al., 2022; Fakhreldin et al., 2021). For instance, Alexander et al. (2021) combined a cultural learning course with a study abroad experience of either 3 weeks or 6 weeks. Their first study reported significant increases in all CQ dimensions, except motivational CQ, suggesting that cultural immersion did not enhance participants' motivation. However, their 2022 study showed positive results on all CQ domains, regardless of the duration of the study abroad experience. In another study, Azevedo and Shane (2019) compared the CQ scores of students and professionals after both groups completed a similar cultural intelligence training program. While students reported significant increases in all dimensions of CQ, including a moderate increase in behavioral CQ, professionals only showed significant improvement in the cognitive dimension, with no significant changes in other areas. The differences in outcomes may stem from program differences in activities or learning preferences between groups.

Engle and Crowne (2014) showed that short-term international experiences were effective in improving CQ, while both Dunlap and Mapp (2017) and Eisenberg et al. (2013) found that pre-departure courses focusing on the target country's culture enhanced overall CQ. However, they also found poor results in motivational and behavioral CQ despite the experiential nature of the program.

Kurpis and Hunter (2017) found that international students scored higher in cognitive CQ than domestic students, despite receiving no formal training. Both international and domestic students perceived benefits in discussing the similarities and differences between the host country and the students' home countries. Presbitero and Toledano (2018) and Fakhreldin et al. (2021) reported increases in overall CQ scores following programs that combined courses with experiential activities such as case studies and role-playing. In contrast, Fischer (2011) found a significant improvement only in behavioral CQ, with significant decreases in all other dimensions after role-playing and behavior modification sessions.

Discussion

This review demonstrates that didactic training effectively enhances cultural competence and cognitive CQ but has limited impact on behavioral and motivational CQ. Experiential training improves overall CQ, though its effects on cognitive and behavioral CQ, as well as cultural competence, remain inconsistent. Mixed-delivery programs provide the most balanced CQ gains; however, inconsistencies persist in motivational and behavioral CQ, with some programs even showing declines in these specific dimensions. In sum, cultural training programs generally lead to positive outcomes, though changes in the cultural competence and/or cultural intelligence of participants are not always statistically significance. Most training programs have been implemented in educational and business settings, with study abroad experiences being particularly common in education. These programs often immerse students in foreign cultures through local events and interactions (Crowne, 2013), with some providing pre-departure courses to set expectations and reduce anxiety (Caligiuri et al., 2001). Previous research supports the positive impact of pre-departure courses on overall CQ (Koo Moon et al., 2012; Chen, 2015), consistent with the findings in this review. Some studies did not find the expected improvements in motivational and behavioral CQ (Alexander et al., 2021; Wood and St. Peters, 2014) following study abroad experiences - a result that has been observed in earlier research (Varela and Gatlin-Watts, 2014). Factors such as high pre-existing motivation, language barriers, or greater opportunities for interactions within the student group may have limited interactions with locals, potentially affecting behavioral CQ (Wood and St. Peters, 2014). Moreover, the cultural distance between home and destination countries could affect the efficacy of training, as larger cultural dissimilarities may lead to adjustment challenges (Kim et al., 2008). For example, Americans often find it challenging to culturally adjust when travelling to Africa (Black et al., 1991), which may impact CQ and competence of Americans following such experiences.

Didactic methods including classroom discussions and instructional materials are often seen as more effective for cognitive CQ (Lopes-Murphy, 2014), and experiential methods for behavioral and motivational CQ, because of the intuitive alignment between methods and dimensions (MacNab, 2012). However, our findings show that experiential methods can also enhance cognitive CQ (e.g., Wood and St. Peters, 2014) while didactic methods can also enhance behavioral CQ (Rehg et al., 2012). Notwithstanding, the review shows that a mixed-delivery approach is the most effective. This aligns with a previous critical review by Littrell and Salas (2005), which emphasizes the benefits of using a variety of delivery methods and activities.

Simulation games, employed in both experiential and mixed delivery programs, produced varied results. Although intended to enhance cultural awareness and CQ, some studies reported no significant improvement in behavioral or cognitive CQ, and some participants may have found these games challenging, overwhelming or counterproductive (Fischer, 2011; see also Bruschke et al., 1993). While they have shown positive effects on cultural competence in some cases (Kratzke and Bertolo, 2013; Hiller and Woźniak, 2009), their impact on CQ remains inconsistent (Fischer, 2011; Bücker and Korzilius, 2015).

Reflective journaling plays an important role in improving self-awareness and intercultural competence by encouraging participants to critically assess their cultural experiences including how cultural values and communication styles influenced their interactions (Alexander et al., 2021; Alexander et al., 2022; Root and Ngampornchai, 2012). However, its effectiveness in improving all dimensions of CQ varies (e.g., Alexander et al., 2021; Azevedo and Shane, 2019) likely due to differences in journaling activities or insufficient guidance (Ryan and Ryan, 2013).

Organizations may consider participants' specific needs and context to achieve positive training outcomes (Littrell and Salas, 2005). For instance, in global business, focusing on host-country social and business customs through pre-departure, post-arrival, or sequential CCT is effective in preparing expatriate workers (Littrell and Salas, 2006). In education, pre-departure programs help students prepare for studying abroad (Dunlap and Mapp,

2017). In psychiatry, integrating culture- and context-specific knowledge—such as culturally sensitive techniques for interviewing and diagnosing—enhances practitioners' understanding and effectiveness when working with diverse patients (Harris et al., 2008). Similarly, in sports, tailored programs that address culture and sports relevant knowledge, skills, and communication may help coaches and athletes navigate cultural differences (Borges et al., 2022b). Additionally, effective programs frequently provide online support for expatriates, ensuring instant access to training while keeping costs low (Greengard, 1999, cited in Littrell and Salas, 2005). A cost-benefit analysis could compare cultural training programs with one another, enabling organizations to select the most effective training based on cost and applicability across different settings (Lee and Ervin, 2018). However, to our knowledge, no such analysis currently exists.

Limitations and future research

In this study we did not include a quality assessment or a risk of bias assessment. This was because its focus was on synthesizing training outcomes rather than evaluating methodological quality. However, this means that the study can provide no suggestions regarding future methodological improvements to the field. Future studies can incorporate needs assessments to tailor cultural training programs to specific organizational and contextual requirements. To enhance evaluation methods, research could combine standardized, validated quantitative measures, such as CQ Scale (Ang et al., 2007) or CQ Sport scale (Borges et al., 2022b), with qualitative feedback, including post-experience reflections, to provide a more comprehensive understanding of cultural competence or CQ outcomes. Future research can implement long-term follow-up assessments (see Harris et al., 2008) with care to include co-variate measures such as migration experience, to better assess the sustained impact of cultural training programs. Finally, with the increasing shift toward digital learning, future studies should continue to explore the effectiveness of online or hybrid cultural training programs.

Conclusion

This review shows the effectiveness of cross-cultural training programs, particularly those that use diverse activities and mixed-delivery methods, in improving participants' cultural competence and intelligence. However, further research is needed to develop and evaluate programs tailored specifically for sports settings. It is essential that individuals engaged in multicultural interactions have the tools to effectively manage cultural differences and training programs are generally effective in achieving this.

Data availability statement

The data is publicly available in the Supplementary materials of this manuscript.

Author contributions

DU: Conceptualization, Formal analysis, Investigation, Writing – original draft, Writing – review & editing. JS: Formal analysis, Writing – review & editing. EV: Supervision, Writing – review & editing. MB: Conceptualization, Methodology, Supervision, Writing – review & editing. RO: Conceptualization, Methodology, Supervision, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

Generative AI was used for grammar checking.

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Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2025.1511788/full#supplementary-material

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Of the few Black coaches in Brazilian professional basketball leagues: approaches to racism

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Introduction: Within Brazilian sports, Black individuals are significantly underrepresented in leadership roles, a disparity especially evident in elite sporting spheres, which remain highly exclusive. This study aimed to investigate the perceptions of Black elite basketball coaches regarding the impact of racism on their professional trajectories within Brazilian professional basketball leagues.

Methods: Semi-structured interviews were conducted with four Black professional basketball coaches (two men and two women) working or who had worked in Brazil's primary leagues, the NBB (Novo Basquete Brasil—New Basketball Brazil) and the LBF (Liga de Basquete Feminino—Women's Basketball League). Data were analyzed using reflexive thematic analysis.

Results: Five broad themes and seven subthemes emerged from the narratives: (1) Support Network, encompassing the individuals, events, and environments that shaped their careers; (2) Combating Racism, detailing strategies developed to cope with racism, with two subthemes: (a) Blaming the Victim, and (b) Dealing with Racism; (3) Barriers, describing obstacles that complicated their professional journeys, with three subthemes: (a) Questioning Professional Competence, (b) Disadvantages, and (c) Perception of Structural Racism; (4) Black Individuals in Leadership Roles, emphasizing the importance of visibility and representation, with two subthemes: (a) Identity, capturing their self-recognition as Black individuals, and (b) Importance of Black Individuals in Leadership Roles; and (5) Accumulation of Prejudices, highlighting the compounded effects of racial and other intersecting biases.

Discussion: The findings emphasize the urgent need for policies promoting a more inclusive and equitable environment for Black basketball coaches in Brazil. Tailored interventions addressing the unique challenges encountered by Black male and female coaches could mitigate the impacts of structural racism. Implementing such strategies could foster a more just landscape within Brazilian basketball, providing Black coaches with enhanced opportunities to succeed and contribute in leadership roles.

KEYWORDS

sports, prejudice, professional career, coach development, social justice

1 Introduction

In Brazil, over 55% of the population identifies as light-skinned Black or Black (i.e., Black individuals); however, more than 68% of leadership positions are held by individuals who identify as White (Brazilian Institute of Geography and Statistics—IBGE, 2018, 2023). This scenario can be explained by a series of structural mechanisms in society that have contributed to the establishment and maintenance of the discriminatory popular belief that Black individuals lack the aptitude for tasks with high intellectual demands. Such mechanisms reinforce discriminatory practices directed at Black individuals who have restricted access, hinder progress, and undermine self-confidence. However, these practices are not easily identifiable, as they are not always visible, which complicates the fight against this type of prejudice, known as structural racism, that impedes or hinders Black individuals access to leadership roles while maintaining the privileges of certain groups, such as White men (Almeida, 2019).

But it is not only race that is a target of structural oppression; other social markers, such as gender, serve as justifications for the discrimination of certain groups. This means that the interaction between the characteristics that make up a person's identity (i.e., intersectionality), Crenshaw (2002) such as being a woman and Black, can exacerbate the violence suffered by the victim, making these characteristics inseparable; they must always be considered together. These factors contribute to the scarcity of Black women in leadership positions, in addition to imposing extra layers of violence that make their professional journeys more arduous (Ribeiro, 2016). Therefore, Black individuals who somehow manage to attain such positions likely arrive there after experiencing repeated acts of violence, which exacerbates the injustice, as they must deal with emotional pressures, for example, that compound the existing pressures and demands of these roles.

Specifically, sports—a sociocultural phenomenon of great magnitude, with diverse meanings and present in various forms in most people's lives (Machado et al., 2015)—constitute a field of political dispute where various power relations are reproduced, including the dominance of a predominantly White class over racialized and marginalized Black bodies (Ferreira Junior, 2021). In the Brazilian sports scene, basketball has a long and significant history on the international stage, having won numerous titles with both the women's and men's national teams (Galatti et al., 2021). To promote Brazilian basketball nationally, the National Basketball League was established in 2008, responsible for organizing the men's adult national basketball championship, named the Novo Basquete Brasil (NBB) (Meneses et al., 2016). The same occurred for women's basketball with the launch of the Women's Basketball League (Liga de Basquete Feminino—LBF) in 2010 (Galatti et al., 2021), promoting greater visibility through media and television channels, better working conditions for athletes and coaches, and increasing competitiveness among teams (Bemeli, 2018).

Both in the NBB and the LBF, we observe a significant number of Black athletes compared to the number of non-Black athletes. However, this pattern does not extend to leadership positions, specifically in the role of coaches, similar to what is observed in the National Basketball Association—NBA and in the Women's Basketball Association—WNBA (Hindman et al., 2022). For this research, we analyzed the websites of the federation, the National Basketball League, news articles, and interviews about the coaches who led the teams in these leagues. We found that in all the years of the NBB and LBF up to 2022, out of 109 coaches, only 8 were Black. In 2023, there was only one Black coach in the NBB (Duarte, 2023), indicating that in basketball, the number of Black individuals in leadership positions may be lower than in the broader Brazilian professional landscape. In accordance with previous studies, we used a binary race variable, which is based on examinations of available media sources (Foreman and Turick, 2021). For many athletes becoming a coach is a common path after retiring from their athlete career, as evidenced by the number of coaches who were former professional athletes. Thus, this low number of Black coaches may indicate a hostile scenario for Black athletes transitioning to a coach career. Understanding the trajectories of Black coaches who have served or currently serve as head coaches in NBB and LBF teams can contribute to proposals actions that make the paths of current and future generations of Black coaches easier and fairer.

This study aims to investigate the perceptions of former or current Black head coaches in basketball from the NBB and/or LBF regarding the effects of racial and/or gender prejudice on their professional journeys.

2 Materials and methods

2.1 Procedures

In this study, semi-structured interviews were conducted with two Black male coaches and two Black female coaches who worked in the main Brazilian professional basketball leagues, the National Basketball League (LNB - Liga Nacional de Basquete), that organizes the men's national championship - NBB (New Basketball Brazil), and the Women's Basketball League (LBF - Liga de Basquete Feminino), which organizes the women's national championship. The coaches were identified on the LNB and LBF websites., which contain information about all the teams participating in the championship editions, that is, from 2008 to 2022 for the LNB, and from 2010 to 2022 for the LBF (National Basketball League, n.d.; Women's Basketball League, n.d.). After identifying each team coach, we gathered photos of them from 52 different websites, including social media platforms in order to carry out the heteroclassification, which consists of the classification of someone's skin color or race by a third person. The description is presented in Table 1.

We identified a total of 109 coaches, of whom eight were Black. In the NBB, there were 69 male coaches, three Black and 66 White, while in the LBF, we found 40 coaches, both male and female, 35 White and five Black. We tried to contact all eight coaches, four replied and agreed to participate in the research, two men and two women. We understand that this is a small sample in absolute numbers,

TABLE 1 Number of men and women holding the position of head coach in the NBB and LBF leagues.

	NBB		LBF	
	Men	Women	Men	Women
Black coaches	3	0	2	3
White coaches	66	0	30	5
Total	69	0	32	8
General total	109			

NBB, Novo Basquete Brasil (New Basketball Brazil); LBF, Liga de Basquete Feminino (Womens' Basketball League).

however, it represents 50% of the total population of Black coaches in the leagues studied and, therefore, the perceptions of these volunteers can contribute to the understanding of the phenomenon.

The interview guide included questions about career trajectory, the people and events that influenced their careers, how they reached their current positions, and their perspectives on racism throughout this trajectory. It was pilot tested with a 59-years-old male Black coach who worked with grassroots sport and its final version demonstrating the questions that started the conversation is provided as Supplementary material. It is worth noting that we redirected questions according to the conversation flow and made it comfortable for coaches to talk about topics not initially suggested.

The included participants completed a questionnaire specifically designed for this research to collect sociodemographic data for the description of the participants. Afterward, we conducted semi-structured interviews via a digital platform, and both video and audio were recorded for later transcription. All data were collected in 2022, the final year of analysis.

The interviews were conducted by two authors of this study, both Black women with prior experience as basketball athletes and coaches. At the time of the interviews, one was an undergraduate research student, and the other was pursuing her doctorate. The third author, a White woman with a PhD and extensive experience in research of this nature, was involved in the entire design of the study and the interview script, but not in data collection. This approach aimed to create a safer environment, exclusively composed of Black individuals, to encourage the emergence of topics experienced by Black people.

2.2 Participants

The names of the participants in this research are kept confidential, and pseudonyms were used throughout the study.

Ana, born in the southern region of Brazil, is a 41-year-old female coach who worked in the LBF for 2 years. She holds degrees in physical education and pedagogy and is currently working with youth teams. Ana had a 14-year career as an athlete and became a coach immediately after retiring at the age of 28.

Camila, a foreigner born in a Central American country, is 50 years old and coached in the LBF for 5 years. Camila earned many titles as an athlete, both with her national team and with teams in Brazil, where she began playing at the age of 20. She has a degree in physical education and took on a coaching role with youth teams at the club where she played, immediately after retiring as an athlete.

José is a 47-year-old Black male coach with a degree in physical education. He has been coaching in the main Brazilian men's basketball championship, the NBB, for 6 years, and has a total of 9 years of experience as a coach, working at all levels, from youth development to elite performance. He was born in the southeastern region of Brazil and ended his athletic career at the age of 38, beginning his coaching career shortly thereafter.

Carlos was born in the southeastern region of Brazil and is 62 years old. He has coached 4 teams in the NBB, starting his coaching career at the age of 41 after retiring as an athlete. He holds a degree in physical education.

This project was approved by the Ethics and Research Committee of the University of Campinas (number omitted for blinding). All participants signed the Free and Informed Consent Form (TCLE) before data collection began. All volunteers were informed about the potential risks of participating in this research, such as the emotional distress that could arise from discussing experiences of racism, as well as the psychological support available to them if needed, in accordance with the guidelines established by the Brazilian National Research Ethics Commission (Comissão Nacional de Ética em Pesquisa—CONEP).

2.3 Data analysis

The questionnaires were analysed descriptively. The interviews were transcribed verbatim, and their content was checked with the participants. We analysed the data following the six steps of reflexive thematic analysis (i.e., 1—familiarization; 2—coding; 3—generating themes; 4—reviewing themes; 5—defining and naming themes; and 6—reporting) (Braun and Clarke, 2019). An inductive/deductive analysis was conducted, considering the lack of studies on the development of Black coaches, particularly in South America, and we relied on more established theories regarding racial and gender biases to identify potential patterns in the results. Supplementary Figure S1 represents the analysis process carried out by the three researchers.

3 Results

The analysis of the interview transcripts resulted in 5 overarching themes and 7 sub themes that depict the main perceived barriers and supports throughout these individuals' career paths, as well as how they dealt with the prejudice they faced, building successful professional trajectories despite challenges not experienced by their White colleagues. In this section, we present the role of the support networks the coaches developed along the way, the strategies they built to combat racism, the barriers they had to overcome related to the various forms of prejudice they encountered, the meaning they attach to seeing more Black people in leadership roles in sports, and the negative effects they observed when different social markers of prejudice intersect. Figure 1 is a schematic representation of the main findings.

3.1 Support network

In this theme, the coaches describe how various people contributed to their journeys toward becoming head coaches in elite basketball teams and how they felt that, without these partnerships, they either would not have reached those positions or would have felt less secure on the path. Although everyone needs support in their professional journeys, these coaches perceived the support they received as essential to diminishing the effects of structural racism on their careers, which they understood as an additional obstacle on their path.

The interviewees explain how their careers started, noting the influence of people who already knew them from their previous athletic careers and trusted their abilities enough to open doors for them. The coaches believe that the opportunity to work at a high-performance level in a leadership role would not have happened

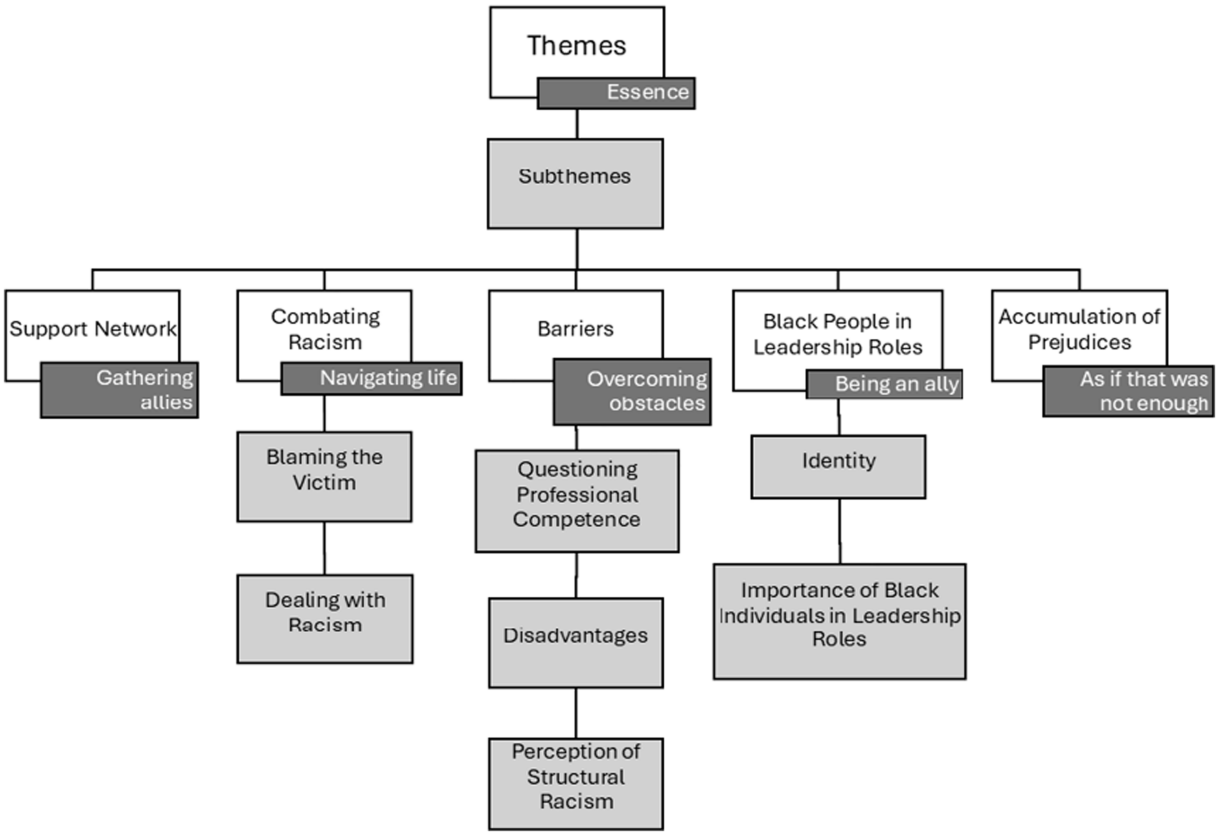

FIGURE 1
Schematic representation of the main findings. White boxes = the five themes; Smaller dark-gray boxes = main idea of each theme; light-gray boxes = seven subthemes.

without the support of these individuals, as José explains: "I think in my career, what I did on the court and the relationships I built on the court helped me get the opportunities." José refers to the opportunity he had to become head coach of Club A early in his career, where he began his basketball journey as an athlete. He believes this was the chance to showcase his work as a coach, which was facilitated by the relationships he had built within the club.

> "And the leadership role, the opportunity I had to be head coach, came from Club A, the team where I was trained as an athlete, you know? In the neighborhood where I was born, at the club where I grew up, a club where I won many titles as a player. So, I had all this goodwill to come back and show my work, you know? So, my opportunity was given mainly because of what I had built on the court, you understand? And it was in a place where people already knew me, and I think if it hadn't happened that way, my first step would have been different because after that, I did well, I showed results, and so on. I managed to break into the market, you know?" (José)

Coach Ana also comments on the people she met during her athletic career and on completing her degree in physical education, which allowed her the opportunity to work as a basketball coach for children and as an assistant coach, giving her the chance to experience a coaching role before taking on the head coach position.

> "[…] Maria was playing and had a basketball school, and she invited me to work there. I was still a junior player, but I enjoyed being around the kids. I think I already had that coach instinct. So, she invited me to help, and I was an assistant, helping in the school. Later, when I moved to other clubs and ended up in City X, which was the last club where I played, I finished my degree in Physical Education. At the time, Jorge was our coach, and I was already assisting him. I was a player and an assistant. I wore the uniform, but I was assisting, and I started enjoying it." (Ana)

Carlos shares how he got his first opportunity to lead a team and emphasizes the importance of seizing the moment when it arises, as it might not come again. The current head coach, who Carlos would eventually replace, had promised him the position once the season ended. However, when the coach realized he would not be able to finish the season, he offered the position to Carlos right away, knowing that Carlos would not have had the chance otherwise.

> "It had to be quick; the decision had to be quick. I had initial doubts, but then this coach friend of mine said, 'Imagine if you stay here until the season ends as a player. Then a new coach comes in, resumes the work, and who knows if you'll still be here or if he'll want you? The plans we had for you to be my assistant coach won't work because I'm leaving, but you can be the head coach.' And I thought, 'He's right,' and I changed course, accepted the offer, and stopped playing." (Carlos)

Another point raised was the importance of support networks for these coaches to achieve their positions. For Ana, the encouragement and trust of certain people, even when she doubted herself, were crucial.

> "Maria said, 'Ana, we need you to take over the team because Jorge can't do it right now. We need someone who represents basketball here in City X, and that person is you! Can we do this together?' And I remember saying to her, 'But I love the kids, what about the kids?' And she said, 'Don't worry, it'll all work out; we'll make it happen.'" (Ana)

For Carlos, the support network played an essential role in his career. He realized that his skills and knowledge alone were not enough to keep him in the position; he needed the trust of others.

> "And I stayed at Club B for 7 years, always backed by someone. It's interesting because sometimes it's not just about your ability, your knowledge, or your dedication. No, it's also about your friendship with someone, or whether someone likes you more or less, and that person has the power to move you around, keep you here, or take you away. So, these things happen." (Carlos)

The support from close friends and family also played a crucial role in Ana's career. The encouragement to persevere and be resilient in following the path she had chosen, as well as the support to finish her degree, gave her the strength to continue her journey.

> "My mom always said, 'It's very important for you to have a profession; it's very important for you to have a degree,' so my mom encouraged me, and my uncle, who was already a Physical Education teacher, encouraged me as well." (Ana)

3.2 Combating racism

In this theme, the coaches describe their perceptions of the subtle racism they have experienced throughout their lives and careers, as well as the strategies they developed to combat the effects of this prejudice, such as victim-blaming. This is a commonly used and widely disseminated strategy to normalize prejudice, exonerating the true culprits. They also discussed the individual strategies they found helpful in dealing with the racism they faced.

3.2.1 Blaming the victim

In this subtheme, we highlight the coaches' narratives about how they used to justify the racism they experienced by blaming themselves or victims of prejudice in general. This strategy can be considered dysfunctional, as it can increase the victim's suffering while absolving the aggressor. By blaming themselves for the racism they experienced, they gained a sense of control over their own lives, giving a false sense of empowerment. This logic assumes that if they are to blame, they can somehow change the situation by taking individual action. However, while this strategy might have some impact on the individual trajectories of each coach, the structural aspects that hinder their professional journeys remain invisible and unchallenged, perpetuating this kind of prejudice. It's clear that the discomfort victims feel when confronting structural racism is significant, given the sense of powerlessness against the violence unacknowledged by society and the invisibility of their suffering. Thus, this strategy can be understood as a defense mechanism against this pain.

For example, when asked about why we see so many Black athletes but few Black coaches, Camila initially attributes this to the individual motivations of each athlete, who may choose to follow other paths. While her statement is true, it simplifies a complex phenomenon.

> "So, as I mentioned, it depends on the person, it depends on whether a Black person wants to choose this career. In my case, I've been a player since I was 8 years old, so I chose physical education as a profession. There are people who don't identify with it. In my case, I pursued it because I wanted to be a coach, but I encountered a lot of difficulties, you know?" (Camila)

When asked to give advice to hypothetical Black coaches aspiring to reach his position, Carlos emphasized the need for self-improvement, presenting a solution based on individual actions that worked for him and therefore are validated by his experience. However, considering the low number of Black coaches in Carlos's context, we can conclude that while this strategy may have localized success and is necessary for professional development, it does not reflect structural changes that could help more black coaches follow this path. Additionally, the logic of individual responsibility is evident, implying that as long as one acquires skills, failing to achieve the goal may be blamed on a lack of effort in pursuing professional development courses, for example.

> "I think self-improvement is key. You need to watch a lot of games, find references you identify with, and try to get as close as possible to them to understand their process. I think the advice I would give is to self-improve to have clarity in your steps. And then, don't be rigid—being open to new ideas is important—but I think you need to have an identity. And I think you can build that identity as you develop yourself. In the end, it's all about education and learning. I believe studying is the way." (Carlos)

3.2.2 Dealing with racism

In this subtheme, the coaches describe strategies they adopted to minimize the effects of racism in their professional careers and personal lives. José expresses his surprise and discomfort at being considered for and occupying a position that society does not usually associate with black people. For José, the comfort zone was never being considered for the role he aspired to.

> "[…] I was always overlooked, and now I'm not overlooked anymore; I'm chosen. And then I say, 'Wow, this feels weird.' You're not comfortable with it, even though it's a good thing. You go from being overlooked to being chosen, and that's good. Now they're choosing me, but because I've been overlooked so much, it creates anxiety and discomfort. My comfort zone, what I was used to, was being overlooked. So, it's like that—sometimes we've taken so many hits that being in the comfort zone feels normal, it's normal, it's normal." (José)

Comparing his professional journey to that of non-Black coaches, Carlos comments on how the absence of Black people in coaching staff positions is normalized.

> "How can I put it? It's something so normal for us, so everyday, that people don't even notice it. If we don't talk about it—because sometimes we remain silent, and even I wouldn't have talked about this if you hadn't asked for this interview. I wouldn't be discussing this, which is our fault too, so we don't talk about it. But we need to start diversifying." (Carlos)

Frustrated with the normalization of this phenomenon, Carlos questioned a non-Black colleague about his ability to act in favor of changing this scenario, but with no success.

> "I said, 'Marcos, why can't you change this? For example, in your team, why not have a Black person on the coaching staff? Have you noticed that there's not one on the staff?' He thought for a moment and said, 'Yeah, you're right.' But it wasn't his cause, you know? It wasn't his issue." (Carlos)

The experience of understanding the social structures that hinder their professional paths helped these coaches develop strategies to keep pursuing their goals. José comments on this: "When the tie benefits the other team, it's always the other's. So, you always have to play to win. It's complicated because I'm in this limbo of 'it's good and it's bad.'

Reflecting on the changes she observes in society, Ana acknowledges that racism still exists, but due to social pressure, it's less explicit — people do not speak openly about it, and they feel pressured to moderate their behavior when addressing Black individuals. When she says, "[…] they are being careful, not changing the way they think, but being careful about how they speak about Black people, especially Black women," Ana recognizes that racism and sexism aren't directly targeted at her, which she views as progress.

Another strategy to minimize violence was always demonstrating kindness, being very polite, and making an effort to be seen as a pleasant person, especially in challenging or vulnerable situations, with the hope of advancing professionally by earning the sympathy of those who make career-influencing decisions.

> "Oh, because you're Black,' I may be Black, but look, 'I'm better than you because I do this, I do that, and you don't, you can't do it.' So be polite when facing someone who challenges you, be classy, rise above." (Camila)

> "[…] because I'm always polite—I've always been very polite on and off the court. I'd show up, but I didn't talk much, and maybe that wasn't the best approach. Being that way wasn't… it's just who I am, you know? But it didn't help much because if I had been more flexible, more talkative, and smiled more, maybe I would've come across as more pleasant." (Carlos)

The strategies adopted by these coaches do not change the racist structures that create the challenges they face. Still, they represent individual approaches to avoiding further harm, such as the effort to always appear pleasant.

3.3 Barriers

In this section, the coaches describe the obstacles that have made their professional journey more difficult or convoluted. These barriers have been overcome through strategies developed over the course of their careers and personal lives, yet they still add additional steps to these individuals' paths. Constantly having their professional competencies questioned, they feel the need to be better prepared than their peers in order to provide convincing arguments. Moreover, they perceive themselves as starting from a disadvantage, as if the race toward their goals is longer for them. In trying to make sense of this, they recognize a social structure that resembles a force pulling them in the opposite direction of the path they have chosen to follow.

3.3.1 Questioning professional competence

The coaches report being continually questioned about their ability to perform their roles. They feel a persistent need to prove their effectiveness and perceive a low tolerance for errors, which contrasts with the treatment received by non-Black individuals. José describes the pressure he feels when he has a professional opportunity: "So, I think that's it. When a Black person gets a position, it's like having a knife at their throat; they have to prove themselves. There is not the luxury of 'let us work with you,' you know?"

While other professionals might focus on preparing to excel in their work, José grapples with the need to feel more prepared in order not to be excluded: "[…] but in my process, I often felt I had to please everyone, that I had to be exceptional because if I wasn't or did not put in the effort, I would be excluded […]." The fears of these coaches are realized, as Carlos describes: "I worked in City X, I won more than I lost, and I was fired because I lost a game there, and I was fired. It was just, I do not know, whatever, I was fired," indicating that he was not informed of the reason for his dismissal despite a record of victories, which are highly valued in decisions regarding the retention of coaches in sports, in Brazil at least.

Another point raised by José illustrates how he perceives that Black individuals are often praised only for their physical attributes when it comes to roles requiring physical strength, expressing dissatisfaction with the scrutiny he faces while attempting to fulfill a position that demands high intellectual capacity: "Because when it comes to athletes, our physical attributes, which are theoretically superior—strength, power, and so on—come into play. But regarding the intellectual aspect, knowledge, etc., we are questioned."

Another expression of this excessive questioning is the low tolerance for error that these coaches experience while performing their roles, a behavior not observed towards White coaches, creating tension among Black coaches, as explained by José and Ana:

> "[…] I feel that if I were to perform poorly in that first year, I would easily be labeled and left behind, you know? What I feel is that the tolerance is much lower, you see? The ease of labeling a Black person's lack of success in a leadership position is much quicker than for a White person." (José)

> "It was a big challenge, and the expectations were high for this team. In the first game, we lost by 20 points. Can you imagine everything that went through my mind? Everything that went through the directors' minds? I think they considered firing me." (Camila)

Thus, these coaches face an additional layer of pressure and demands that not only add tension but also require an effort not experienced by White coaches.

3.3.2 Disadvantages

In this section, the coaches describe how they feel disadvantaged in their professional trajectories, facing fewer opportunities even when they are prepared. José comments on the obstacles faced by Black individuals and the injustice of not being able to compete professionally under the same conditions as others:

> "What I believe, and I often tell my friends when we discuss this, is that being Black doesn't mean you won't run the same race; you will run the same race, but you start behind. It's like we are running a 100-meter race, and the Black person starts 100 meters behind." (José)

> "I wanted more based on my ability and commitment; I wanted more because I have a lot to offer, but the opportunities don't open up. But I don't martyr myself over it. I start to think, 'Well, the bad luck isn't mine; it's theirs,' as frustrated as I may be with all this. And maybe I'm just like everyone else; I stay silent, and sometimes we don't have the opportunity to speak about it." (Carlos)

Carlos describes his frustration with the lack of opportunities and the silencing he experiences. The feeling of always being behind is constant, and these coaches face the routine demand to "prove their worth" in order to secure the opportunities they believe they already deserve.

> "But what I see is that a Black person always has to pay first to then have the opportunity, you know? You always have to prove you are better to get the opportunity. If you are equal, the opportunity is often given to others, to those with White skin." (José)

Another observed disadvantage is the homogenous reproduction within the field, as Ana explains, which she considers a disadvantage since most managers and leaders are White males (Foreman and Turick, 2021).

> "So sometimes there are people who end up leaving this profession where they could excel, perhaps out of fear of what could happen and what they might face ahead. All of this can weigh heavily on people. But I imagine that this tendency to give opportunities to those who are already closer is what generally prevails." (Ana)

This phenomenon is echoed by Camila, who explains that she received an opportunity due to an invitation from a woman. However, she highlights her potential to reach higher positions, consistent with her achievements as a coach in her current and previous career, as an athlete.

> "And I was never given any opportunity; the opportunity I'm getting now is from this woman who invited me to be a coach, the only one who valued me. Here in my city, I'm a sports initiation coach, but I could be a project coordinator. I could be something bigger, but no one asks, no one speaks; they have implemented various initiatives but don't care at all. So, being a woman and Black is already difficult, and being a foreigner makes it even harder." (Camila)

3.3.3 Perception of structural racism

In this subtheme, the coaches report their perceptions of a racist social structure that hinders their professional trajectories. Being structural, it is often imperceptible to many, as its effects are naturalized. Consequently, the actions taken by the interviewees are often discredited, as José expresses: "It's difficult for me to speak because racism in Brazil is always very veiled. So, when you talk about it, you are always met with 'Oh, you are exaggerating,' 'Oh, it's not like that,' 'Oh, it's not such and such.'" Ana no longer works in the field and points out that it is common for people experiencing this type of prejudice not to express their discontent or complaints:

> "I think that many times I didn't hear about the Black experience because maybe the person thought it but didn't say it, knowing that nowadays such behavior is not well accepted. We don't accept it; it's not that we used to; we kept quiet, we were afraid of the consequences, and now we aren't afraid anymore." (Ana)

Carlos' comments illustrate the silencing and the normalization of a mindset among those in leadership positions in Brazilian basketball that establishes mechanisms that exclude Black individuals from these roles.

> "Yeah, because for me it hasn't been explicit yet. […] There are plenty of competent people, so why aren't they in those layers of the league, of the CBB [Brazilian Basketball Confederation], that kind of thing? If this voice isn't heard, isn't spoken about, if you accept it, and as I told you, it seems like… I don't think it's normal, but I don't know the term that fits better; it's something that's there, we're already anesthetized to it." (Carlos)

The interviewees also highlighted another expression of structural racism, relating to the fact that while there are many Black athletes, many considered outstanding, few transition to coaching careers, as José describes:

> "And in sports, you don't need to look very hard; just look at the coaching staff, the basketball teams; just look at the coaching staff in volleyball and soccer. I can count them on one hand. How is it that we are the majority, yet we are the minority in coaching roles?" (José)

José further expresses his discontent by pointing out the absence of Black individuals in other roles within coaching staff:

> "It's because I've known it since I was a child.' That's how things have always been, and they follow that path. It's no wonder that here I think I'm the only Black coach in the NBB; I think I am the only Black coach, and very few others are assistants or physical trainers; the number is infinitesimal. If you think about it, it's very small. Why is that? 'Oh, they lack ability, training?'" (José)

Ana describes how achieving the position of coach did not guarantee that she was considered competent or deserving of retention in that role:

> "[…] but there were opportunities for me to be there through my work, grassroots basketball, a structure built over many years,

> working hard, trying, fighting, and then someone comes in and says, 'I want to be here, doing this, this, and that,' and the people above me simply say, 'Now you step aside because this person is coming in,' and this person was White, this person was a man." (Ana)

Thus, the frustration of these coaches is evident as they recognize their competence while grappling with the challenges they face in achieving their objectives, as José points out: "How is it that we are the majority, yet we are not the majority anywhere—not in one place or another, nowhere, in no sport, you know?"

3.4 Black people in leadership roles

In this section, the coaches recognize their identities and describe how they see themselves in the world. Ana explains, "Look, I'm going to tell you, this is a very difficult topic to discuss. I have always considered myself a Black person, being the daughter of a Black father and a White mother; I have always seen myself as Black." Based on their life experiences, they highlight the importance of Black individuals holding leadership positions, such as those they have occupied as coaches.

3.4.1 Identity

In this subtheme, the coaches describe how they perceive themselves and how they constructed their identities. In the sociodemographic questionnaire, José identifies as light-skinned Black. At the beginning of the interview, when asked to confirm this information, José states, "I have complete awareness of my Blackness, so to speak. After all, my entire family, on both my mother's and father's sides, are all Black. I consider myself Black; the light-skinned Black label is just for the certificate." José refers to the fact that on his birth certificate he is described as light-skinned black. Ana, a light-skinned Black woman, recounts the discomfort she has felt throughout her life when others constantly tried to convince her that she was not Black.

> "But over time, some people couldn't convince me because I believe we have our own personality and opinions. However, many people criticized me for saying I was Black, saying 'No, you're not Black. Really? Look at you; you're light-skinned, you're 'sarará' [an informal term used in Brazil to describe light-skinned Black people].' That's what people would say." (Ana)

Camila also reflects on the meanings she assigns to her identity as a Black woman:

> "Being Black is also a privilege; it's a privilege because you are unique, and you can show the world that being Black means you can be better, much better than others think. So, for me, being a woman and Black is the greatest challenge and the greatest privilege I feel. To me, it embodies both a challenge and a privilege." (Camila)

By mentioning that being a Black woman is both a privilege and a challenge, Camila demonstrates an awareness of the difficulties she has faced and continues to face, while also appreciating herself.

> "So, it's about being careful not to try to fit into a role that isn't ours, seeking acceptance, you know? 'Oh, I'm not accepted, so I'll mold myself, I'll try to fit in. I'm salt, but I want to be sugar.' If you're salt, you're salt; that's it." (José)

Like José, the interviewees show awareness of who they are, acknowledging their life experiences related to their Black identities and how this connects to their chosen profession, shaping the relationships they establish in their professional context.

3.4.2 Importance of Black individuals in leadership roles

The coaches recognize the importance of having more Black individuals in leadership positions and see this as a crucial point for changing the current landscape. José emphasizes his commitment to providing development opportunities for other Black individuals, revealing his awareness of the disparities in opportunities available to Black and non-Black individuals.

> "Ah, my coaching staff is the most Black in the NBB [laughs]. Not because it's forced, but I see the importance of saying, 'Hey, come here and develop just like others can.' I have no prejudice; I do open opportunities for them to experience this and grow within it." (José)

José and Ana describe their sense of responsibility to contribute to the paths of future generations, facilitating a process that was more challenging for them.

> "I believe we also need to be committed to and develop others, right? If I can take a step forward, I should look back and extend my hand so that others can also move forward. If I can climb the mountain, I should throw a rope to help someone else climb it too. I think this will create a virtuous cycle for change in the medium and long term." (José)

> "Because it opens space for other people and changes the mindset. Sometimes, as I told you, a young woman might think she isn't capable and wonder, 'Am I going to go there and then hear so much nonsense? Why should I enter this? I might end up hurt; forget it. I'll do something else and leave this aside.' So, the more Black women in leadership, the better for us. It provides more encouragement for those coming up and for those growing up, showing that things need to be different, that things must change. The more, the better, for sure." (Ana)

Ana and Camila describe the importance they place on being positive role models for athletes, encouraging development, and showing their willingness to help. Yet, they also express vulnerability regarding the futures of young people in Brazil.

> "I have been able to support people, boys and girls who have gone through my programs and are now graduates. I would tell them, 'Guys, go to college! In whatever way I can help you, I'm here to help.' There's always been that interaction with the sports department, and we'd say, 'Look, there's a student who is applying for college and got in. Let's get a scholarship,' and we were able to do that. Thank God, just as I received support, I was also able to encourage many of my former athletes to graduate and pursue careers as physical education teachers." (Ana)

> "I want to create courses for coaches, especially Black women coaches. Everyone can participate, but the main goal is for many Black individuals to take part in this project. I want to teach courses on how to introduce basketball, how they should approach these kids, how to integrate basketball into their lives so they fall in love with the sport. That's my project; I want to set up these courses to reach out to these individuals and attract more of the Black community." (Camila)

3.5 Accumulation of prejudices

The intersection of prejudices was very present in the statements of the coaches. The women coaches emphasize the challenges they have faced in aspiring to work professionally in a predominantly male environment. Ana expresses her dissatisfaction while also showing self-doubt when stating that "women deserve to be considered, even as women."

> "So unfortunately, it's that thing where we have to prove every day that, no matter how much we are women, we have the capability to be at the top as coaches or in any other profession. I just wish we didn't have to prove this every day; I wish people would look and say, 'She is a woman, but we will give her a vote of confidence.'" (Ana)

The female coaches describe their confusion in not being able to determine whether the prejudices they face are due to being black or being women.

> "[…] since I have only worked with men and not with women, I think the story I told back at Location X where I had that impasse, I don't know if it was because of the color of my skin, but I know I suffered a lot, and I think it was mainly because I am a woman, not just because of my skin color but because I am a woman." (Camila)

> "So sometimes we think, 'Wow, is it really that, or is it better not to think about it, better to delete it from my mind that it was that, better to find another excuse, like, is it just because I'm a woman, or is it because I'm just younger, or is it because I don't have much experience? Should I just leave it at that? Or should I consider that what weighed in was racism?'" (Ana)

> "During the course of this championship, I faced many difficulties; I brought in an assistant coach who started to undermine me, and I had to fight against that, you know? It was very difficult, and yet, they believed in me, and it was the biggest challenge of my career because I was black, a woman, and a foreigner, so I was not well regarded." (Camila)

In addition, José has a condition that causes a change in the color of his skin and recounts the difficulties he has faced as a result: "Because the condition has this characteristic, it is much more visible on black skin than on white skin; it draws much more attention and is much more exposed than on white skin."

> "As a coach, I have experienced situations where people do not greet me because they are reluctant to shake my hand. It's sad; I believed more in the ignorance of the person than in anything else. But it's more about the person wanting to protect themselves from an imminent contagion than anything else." (José)

In general, the accumulation of different social markers that are targets of prejudice in our society has exacerbated the suffering of these coaches, imposing on them demands that non-black coaches typically do not face.

4 Discussion

The results of this study contribute to the understanding of the barriers and supports that Black basketball coaches face on their journeys to elite basketball leagues in Brazil. It also enhances the comprehension of the human strengths, resilience, and strategies that these professionals develop to achieve success in their careers. Generally, the coaches experienced specific challenges in their professional paths that made their journey more difficult compared to their white counterparts. The extra effort they had to expend was recognized by these coaches, and after reaching the position of head coach in their teams, they look around and find themselves nearly alone. They then take on the responsibility of paving the way for a new generation of coaches like themselves, trying to ease the journey for those following the same path (Foreman and Turick, 2021).

Taking on the role of head coach was not an easy task for the participants in this research, as corroborated by the accounts presented, and a solid support network in sports and their personal lives was a decisive factor. The coaches noted that the relationships they established while they were athletes enabled their entry into coaching, as it was generally their former coaches who invited them to begin their journey. A notable characteristic in the careers of coaches is the need to establish a network of contacts that allows for entry and continuity in this field. This, combined with structural racism, which excludes Black individuals from management and leadership positions by perpetuating the belief in their inadequacy for such roles and offering decision-making positions to white individuals (Fast and Jensen, 2006; Cunningham, 2020; Foreman and Turick, 2021), makes the journey of Black coaches more challenging, with an exacerbation in the case of Black women. This occurs because there is a tendency for white coaches to endorse the hiring of other white coaches (i.e., homologous reproduction—Kanter, 1977). Thus, relying on a close network of contacts to start a career can be complicated for most Black individuals wishing to become coaches, as the criteria and minimum competencies required for the position remain subjective and unclear, hindering their preparation for the role.

The support these coaches received from their families was also crucial. Emotional support and understanding were highlighted as decisive factors. The coaching career in professional leagues is challenging. In addition to uncertainties, coaches must deal with constant travel, time away from family, inadequate salaries, frequent job changes, among other issues (Carson et al., 2018). For the interviewed coaches, sharing uncertainties, receiving emotional support, and encouragement were very important in the decisions they had to make throughout their careers, such as relocating. Seeking social support by Black individuals who are victims of racism is an important behavior that can help mitigate the negative impacts of racism on the well-being of Black people (Marshburn

and Campos, 2021). Thus, considering that the stress and insecurity faced by Black coaches throughout their careers may be exacerbated by structural racism, emotional support networks play an essential role in their professional journeys.

The strategies that the interviewed coaches developed to confront the racism they experienced throughout their professional paths proved effective for each of them, allowing them to achieve their goals despite suffering. However, considering that racism is part of an oppressive structure that establishes a power dynamic in which Black coaches have little or no power (Almeida, 2019; Rankin-Wright et al., 2017), the strategies employed by these coaches, emphasized as necessary for future Black coaches to enter the system, tend to be dysfunctional for most individuals and may cause further suffering. Being motivated to pursue a career as a coach in elite basketball does not guarantee success for anyone, regardless of skin color, but the chances are lower for racialized men and even lower for racialized women. Additionally, when they reach the position, recognition and respect will be lesser compared to their non-Black peers (Rankin-Wright et al., 2017). For instance, Obenauer and Langer (2019) analyzed data on the performance of coaches and teams in the National Basketball Association and found that Black coaches who had experienced an early period of success in their career were more likely to be fired and less likely to receive awards then White coaches. Therefore, the coaches participating in this study, who are situated in a society whose dominant culture marginalizes Black individuals (Silva et al., 2021), express legitimate ways of thinking, as they are a social construct, but these thoughts reinforce the perpetuation of structural racism, maintaining the privileges and power of certain groups over others, as the focus remains on the victim and the social structure is not questioned (Nunes, 2010).

The normalization of occupying more socially recognized positions with greater decision-making demands by White men legitimizes discrimination within organizations, including in sports. This ensures that discrimination is no longer interpreted as harmful or offensive by individuals, and thus it goes unnoticed, is reproduced, and perpetuated (Rankin-Wright et al., 2017; Almeida, 2019). Therefore, the discomfort expressed by coach José upon being selected for the head coach position can be interpreted as an internalization of the socially constructed belief that Black individuals would not be capable of fulfilling this role.

The interviewed coaches acknowledge barriers that have hindered their career advancement throughout their personal and professional lives. This study shows that there are few Black individuals who attain the position of head coach in elite teams in Brazil, at least in basketball. These coaches reported facing constant questioning of their abilities to perform their roles, which reproduces the belief that Black individuals are incapable of holding leadership positions. These factors suggest a scarcity of opportunities, and the coaches' accounts indicate an increased emotional burden necessary for maintaining their positions. This adds an obstacle to their journeys that is not present for white coaches, for example, constituting a disadvantage (Picanço, 2014).

When studying the experiences of racialized coaches in the United Kingdom, Rankin-Wright et al. (2017) observed that racialized coaches avoided making mistakes as much as possible to prevent questioning and distrust regarding their abilities. Therefore, while non-racialized coaches focus on performing their roles well, racialized coaches face the additional demand of avoiding errors, which is contradictory since mistakes are one of the variables that prompt us to reevaluate decisions and improve. This is corroborated by Hindman et al. (2022), who analyzed data from the 1997 to 2021 seasons and found that Black women, Black men, and White women coaches in the Women's Basketball Association were more likely to be fired than White men. Although better performance, measured by wins, reduced the likelihood of dismissal, racialized coaches and White women remained at higher risk of losing their positions even after controlling for performance. This suggests that winning more games, or making less mistakes, may not be enough to offset the impact of racial and gender biases in job security. Rankin-Wright et al. (2017) also found that the volunteers in their research attempted to downplay their identity traits by adopting behaviors of the dominant group to integrate into the context. While this strategy yields some effect, as the coaches in the mentioned study were indeed part of the context, they continue to be perceived as less competent to perform their roles, as racism structures society and their phenotypic characteristics of race and gender trigger prejudice (Almeida, 2019; Puwar, 2004). Thus, from a collective perspective, adopting behaviors of the dominant group reinforces the perpetuation of racism.

Ana's discomfort at being categorized as white by acquaintances exemplifies the complexity of the phenomenon of identity construction and affirmation for Black individuals occupying the role of head coaches in sports teams. While assuming this classification could ease her professional life, it represents a significant burden for her, as she identifies as Black. Generally, the coaches participating in this study are confident in their identity and, being in leadership positions, can help future Black coaches see themselves on this path, in addition to opening doors for these coaches by challenging the system, questioning imposed certainties, and bringing more Black individuals into their coaching staffs, as exemplified by coach José, who asserts that his coaching staff "is the most Black" in the championship. By examining the history of the presence of Black coaches over 32 years in the American football league (NFL—National Football League), Foreman and Turick (2021) found that Black coaches in supportive roles on coaching teams, such as assistant coaches, were less likely to assume central leadership positions. However, when these coaches were led by head coaches who were part of marginalized groups, the chances of them occupying central leadership roles increased during certain periods of the research.

Openly embracing one's identity and leading from it is not an easy task, as reaffirming one's views on personal aesthetics, intellectual quality, and dignity as a human being represents a daily struggle. This emotional burden can be difficult to bear (Gomes, 2007). We found that the coaches interviewed in this research actively seek self-affirmation and remain vigilant about the messages they receive regarding their appearance and abilities. Their pursuit of self-appreciation demonstrates a robust sense of confidence in their competence to excel in their chosen profession. Notably, these coaches have reached a highly sought-after position, indicating that they have cultivated essential skills such as self-confidence and resilience, which have significantly contributed to their professional achievements.

In this context, the concept of intersectionality becomes particularly relevant, as it underscores the complex interplay between race and gender that shapes the identities and experiences of these coaches. Intersectionality recognizes that race and gender are not merely additive but are intertwined structural oppressions that exacerbate the challenges faced by marginalized individuals Crenshaw (2002). This is particularly evident in the experiences of Black women,

who navigate the compounded effects of both racial and gender discrimination (Ribeiro, 2016). Bruening (2012) notes that Black female coaches often face distinct forms of racism within the sports environment, which differ markedly from those encountered by their Black male peers. The female coaches interviewed have highlighted the unique challenges they face in their work environments due to their gender; many express uncertainty regarding whether the prejudice they encounter stems from their gender or their race. This confusion resonates with the findings of Rankin-Wright et al. (2017), who documented similar experiences among Black female coaches.

The coaching career presents significant challenges for all women (Barreira, 2021), but Black women face additional hurdles that intensify their struggle for recognition and advancement (Campos, 2023). For instance, Camila, a successful athlete and head coach for a women's team in the LBF, points out the scarcity of opportunities afforded to her, despite her qualifications. Her experiences illustrate how intersectionality shapes identity and professional pathways, as the dual challenges of gender and race create formidable barriers. Furthermore, intersectionality encompasses the unique experiences of individuals like coach José, who faces distinct forms of adversity tied to both his racial identity and specific physical characteristics. His experiences reflect how different axes of identity converge to create complex realities marked by multiple forms of oppression. This interplay, which compels him to navigate aggressions stemming from different sources, exemplifies the importance of understanding intersectionality as a critical framework for analyzing the lived experiences of Black individuals in professional settings.

5 Conclusion

The findings of this study reveal that Black coaches in the Brazilian basketball scenario still face difficulties entering the elite leagues as head coaches and, once they managed to achieve the desired position, they struggle with the lack of support and structural racism, making them feel they do not fit there. This is not new finding, but the persistence in the occurrence of these patterns of behavior indicates that we need to do a better job as a basketball community, specifically managers and decision makers, in order to offer more equitable opportunity and treatment for current and future Black coaches.

This study demonstrates the complexity of the experiences of Black basketball coaches, emphasizing the barriers and supports that have impacted their professional trajectories. Support networks, both in sports and in personal life, emerge as essential for overcoming obstacles imposed by structural racism, enabling these professionals to reach prominent positions in elite teams. The analysis highlights how these coaches build strategies to deal with prejudice, demonstrating resilience and asserting their identities. However, the still limited presence of Black coaches in leadership positions, particularly Black women, underscores the need for more opportunities and structural changes to address the intersecting challenges of racism and sexism they face.

In practical terms, these findings indicate that basketball leagues with similar characteristics to the two that were the focus of this study should promote inclusive policies to increase Black representation in leadership roles, enhancing the visibility of these professionals and enabling them to serve as role models for future generations. For example, systematic identification and monitoring of Black athletes willing to pursue a coaching career and development of coach education programs within institutions so these people have better chances to succeed. Mentorships could serve as additional support, helping to reduce inequality in access to opportunities. For example, the Brazilian Olympic Committee offered in 2024 a mentorship program for women coaches in an effort to reduce gender inequities in sports coaching. Ten elite female coaches had to opportunity to be mentored by experienced coaches for 1 year, participating in online and face to face activities. The program was called Individualized Mentorship Reflection and Action (MIRA – Brazilian Olympic Committee, 2024). This is an example of a mentoring program that could be designed and targeted at Black coaches already working in high-performance basketball who, similar to the coaches interviewed in this study, may feel isolated or professionally invalidated and could benefit from mentorship provided by more experienced colleagues and the establishment of a meaningful professional network. Additionally, the importance of personal and club-based support networks highlights the need for spaces where these coaches can share their experiences and find emotional support, a crucial factor in facing the psychological and professional impacts of racism. Sports organizations must, therefore, review institutional practices to create environments that recognize each individual's competencies and foster their potential, regardless of race or gender. This could be achieved by educational programs targeted at sports managers and decision makers, for instance.

We highlight the small sample size in this study as an important data, a denunciation of the low number of black coaches in the main Brazilian basketball leagues. On the other hand, it prevents broad generalizations and suggests that this topic would be relevant for future research. The intersection of different social markers, such as race and gender, and their impact on leadership opportunities within sports more broadly, may also be explored in future research. Longitudinal studies on the career progression of Black coaches across various sports could provide a better understanding of changes over time and an empirical basis for structural interventions and affirmative policies. Moreover, investigations analyzing the perspectives of sports managers could shed light on institutional barriers and attitudes that perpetuate racist structures, offering valuable insights for building a fairer and more inclusive sports environment.

Data availability statement

The datasets presented in this article are not readily available because the dataset contains information that could identify the subjects. Requests to access the datasets should be directed to bartirapalma@gmail.com.

Ethics statement

The studies involving humans were approved by Ethics Committee of the Faculty of Physical Education of the Universidade Estadual de Campinas. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study. Written informed consent was obtained from the individual(s) for the publication of any potentially identifiable images or data included in this article.

Author contributions

JM: Conceptualization, Investigation, Methodology, Project administration, Validation, Visualization, Writing – original draft, Writing – review & editing. BP: Conceptualization, Formal analysis, Investigation, Methodology, Project administration, Writing – original draft, Writing – review & editing. LG: Conceptualization, Project administration, Supervision, Writing – original draft, Writing – review & editing.

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Supplementary material

The Supplementary material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2025.1511967/full#supplementary-material

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Corrigendum: Of the few Black coaches in Brazilian professional basketball leagues: approaches to racism

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sports, prejudice, professional career, coach development, social justice

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In the published article, there was an error in Table 1 as published. There was an inversion in rows 3 and 4 of the table, which incorrectly suggested that there are more Black coaches than White coaches, when in fact the opposite is true.

The corrected Table 1 and its caption appear below.

The authors apologize for this error and state that this does not change the scientific conclusions of the article in any way. The original article has been updated.

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TABLE 1 Number of men and women holding the position of head coach in the NBB and LBF leagues.

	NBB		LBF	
	Men	Women	Men	Women
Black coaches	3	0	2	3
White coaches	66	0	30	5
Total	69	0	32	8
General total	109			

NBB, Novo Basquete Brasil (New Basketball Brazil); LBF, Liga de Basquete Feminino (Womens' Basketball League).

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Beyond the Grind: The Intercultural Challenges and Cohesion Efforts in MiLB

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Minor League Baseball (MiLB) comprises players with a wide variety of backgrounds, including many born in the United States and Latin America, and these players spend years trying to work their way up to the Major League level. This paper describes a qualitative study that explores people's experiences in MiLB, focusing on the challenges that players face and how these challenges might differ for players of different backgrounds. We interviewed 18 MiLB players, nine coaches, and two team education coordinators. Using a thematic analysis technique, we learned that the language barrier seemed to produce problems for the young players, especially those who spoke only Spanish and could not fully benefit from the coaching. Also, some interviewees talked to us about the challenges of intergroup relations, where cliques can form and some players may face biases from coaches. These results suggest that MiLB is challenging for everyone, but there are unique challenges for international Latino players and other minorities. However, we also learned that many teams are trying to solve these issues by offering language classes and other programs. Notably, many interviewees reported positive attitudes toward diversity. Ultimately, we found that while all players experience the same grind trying to make it to the Big Leagues, some players also experience unique and additional barriers to succeeding. We contribute to the broader conversation on the role of cultural diversity in sports.

KEYWORDS

baseball, multicultural, intercultural, diversity, inclusion, language, sport psychology

Introduction

Baseball has long been considered America's pastime, but the reality of that may be shifting as roughly 29% of Major League Baseball players are international players (Lapchick, 2023). As the baseball field seems to become more diverse, the experiences of minority players remain underexamined. In the current work, we explore (1) the experiences of Minor League players with a particular interest in how players from diverse backgrounds may experience unique barriers, and (2) potential solutions to advancing equity and inclusion in baseball. We aim to contribute to a broader conversation on the role of cultural diversity in sports.

The MiLB context and predictors of success

Most baseball players dream of playing Major League Baseball (MLB), but getting there is a long, difficult, and constant grind. After signing with an MLB organization, players usually start in Minor League Baseball (MiLB), aiming to make it to the Majors. Many players remain

in the Minors for 4–6 years (Gaines, 2013), earning meager salaries while playing in these lower levels. When players make it to the Majors, their pay improves dramatically, but around just 10% of MiLB players get there (More Than Baseball, 2022).

To get to the Majors, an MiLB player must develop into an excellent pitcher or hitter who can compete against the best. The athlete has to stay motivated throughout the long and arduous process of advancing through the Minors. For many players, this involves years of low pay, unappealing housing and food options, frequent travel, needing to move and adjust to new teams, and searching for a job in the offseason while also having to stay in shape (see More Than Baseball, 2022).

Both physical and psychological factors are significant predictors of success in professional baseball (Smith and Christensen, 1995). What might predict success in MiLB? Sport research has shown that more (v. less) successful athletes are more likely to have physical advantages like height and excellent vision (Epstein, 2013), as well as psychological advantages like greater self-confidence (Jekauc et al., 2023; Lochbaum et al., 2022), better emotion regulation (Tamminen and Kim, 2024; Wagstaff, 2014), and more grit (Apró et al., 2024). Moreover, athletes are more likely to perform better if they feel like their team is cohesive and inclusive (Carron et al., 2002; Malcomb and Zitek, 2025). Athletes are also more likely to succeed with more resources and better coaching (Berry and Fowler, 2021; Tompsett and Knoester, 2022).

The above factors and many others should predict good performance in MiLB, but the likelihood of having high confidence, the ideal emotional states, feelings of inclusion, good coaching, plentiful resources, and more differs for different athletes. There is a lot of diversity among players in MLB and its pipeline (Lapchick, 2023; Malcomb and Zitek, 2025), and their social identities are salient to them (Zitek et al., 2024). There are US-born players of different ethnicities, some of whom played college baseball first and some of whom were drafted straight out of high school (McCue et al., 2019). There are also many international players from various countries who can sign at just 16 years old. About 35% of MiLB players come from Latin American countries/territories such as the Dominican Republic, Venezuela, and Puerto Rico (Malcomb and Zitek, 2025). The international Latino players might first play in the Dominican Summer League, but they soon move to the United States to join their next MiLB team (Ruiz et al., 2020). Players with different backgrounds could have vastly different experiences in the Minors.

While all MiLB players likely face some challenges, international Latino players, Black players, and others who are not White Americans might face additional challenges. Past research from a variety of sports suggests that athletes from minority groups have additional barriers to success. First, athletes from minority groups tend to report a lower sense of belonging within their team or organization (Malcomb and Zitek, 2025). Second, athletes who move to a new country often face acculturation stress, as they aim to learn the language and adjust to their new environment's norms, customs, and values (Ryba et al., 2016; Schinke et al., 2016). Third, athletes from minority or subordinate groups often experience bias in many forms (Gurgis et al., 2022). Athletes are judged based on stereotypes related to their race, ethnicity, appearance, gender, and nationality (Eagleman, 2011; Foy and Ray, 2019; Peña, 2025; Sartore and Cunningham, 2006; Stone et al., 2012; Stone et al., 1997). Moreover, evaluators such as coaches and referees sometimes treat athletes who share their same identity more favorably (Cunningham et al., 2013; Parsons et al., 2011; Thrane, 2025), such as when a White coach gives more playing time to a White player (Zhang, 2017). This can be especially problematic for minority athletes if they are dissimilar from the decision makers in their sport. And when athletes experience lower belonging, acculturation stress, knowledge of stereotypes, and/or biased treatment from coaches and others, this can harm their mental health (Choy et al., 2021), physical health (Gonzalez-Guarda et al., 2021), performance (Gentile et al., 2018; Krendl et al., 2012; Stone et al., 1999), and desire to participate (Bevan et al., 2021).

Current research

In the current work, we conducted a series of interviews with MiLB players and coaches to understand their experiences and learn more about potential barriers to success for the players and the practical ways MLB could mitigate these barriers. Following our primary data collection, we also interviewed two MLB education coordinators to learn more about the programs being implemented by MLB teams to help alleviate key barriers. Coding and analysis were conducted following guidelines for thematic analysis (Braun and Clarke, 2006; Braun and Clarke, 2021; Braun et al., 2016). Initially emphasizing an experiential approach, we utilized coding as an analytic tool to create a hierarchical structure of codes and initial themes. We then shifted to a more critical approach and further refined our themes through iterations between the data, literature, team discussions, and our goals in the research project.

Interviews with MiLB players and coaches

Participants and procedure

During the baseball season in the summer of 2019, we conducted 27 semi-structured interviews with players ($n = 18$) and coaches ($n = 9$) from six different MiLB teams (see Table 1 for detailed demographics). Our contact at MLB headquarters connected our research team to individual MiLB clubhouses. We then coordinated with each team to schedule interviews with players and coaches who agreed to participate. Most interviews were in-person at the clubhouse, but a few were via phone. Interviews were audio recorded with consent; otherwise, detailed notes were taken. No one on the research team was fluent in Spanish, so if an interviewee spoke only Spanish, the clubhouse provided a translator.

In collaboration with our MLB contact and his staff, we developed guiding interview questions to help us understand the experiences of MiLB players (for the complete list of questions, see Table 2). In these interviews, we asked players to tell us about their backgrounds, their main challenges in MiLB, the interpersonal dynamics on their teams, and how players' experiences might differ depending on their backgrounds or clubhouses. We asked coaches similar questions, plus questions about onboarding players and their coaching methods. After conducting all 27 interviews, we transcribed the recorded interviews using Otter.ai software and manually reviewed the transcripts for accuracy.

TABLE 1 Demographic information for interview participants.

		Players	Coaches	Total sample
Age	Average	22.89	48.0	31.26
	Range	20–28	29–62	20–62
Nationality	# of US born	14	6	20
	# of Non-US born	4	3	7
	Countries represented	Canada, Dominican Republic, Puerto Rico, United States, Venezuela	Dominican Republic, Jamaica, United States, Venezuela	Canada, Dominican Republic, Jamaica, Puerto Rico, United States, Venezuela
Teams	# of teams represented	5	6	6
	Levels of Minors represented	4 (A-, A, AA, AAA)	4 (A-, A, AA, AAA)	4 (A-, A, AA, AAA)
Interviews	Sample size	18	9	27
	# recorded	18	8	26

TABLE 2 Guiding interview questions.

Interview questions for players
What was your experience in baseball before signing your first contract? *(ex. Travel ball, house league, high school ball, college ball, national team, etc.)*
What are some of your main challenges as a Minor League player? *(ex. Financial, being away from home, nutrition, etc.)*
Do you feel a sense of cohesiveness on your team? If there are cliques on the team, how are they formed?
What have been the successes and challenges that you have faced moving from one level to the next in Minor League Baseball?
If you have played in different organizations or different levels of the Minors, please discuss the factors that vary from team to team. *(Coaches, facilities, towns, etc.)*
How do you feel the Minor League experience differs for players from diverse backgrounds?

Interview questions for coaches
If the coach has played Please discuss your transition from one level to the next when you were a player. What were the challenges that you faced?
What are some of the struggles that you see the players on your team facing? (*On-field or off-field*)
Are there cliques on the team? How are the groups formed?
Please discuss the process of onboarding new players onto the team, whether at the beginning of the season or as players are acquired, sent up, or sent down.
How are you prepared to manage and work with a team of players from diverse backgrounds and with unique personalities? Does your organization provide you with training and support to face this challenge?
How do you feel the Minor League experience differs for players from diverse backgrounds?

Data familiarization and initial coding

Members of the research team independently familiarized themselves with the data by reading the transcripts, summarizing the data, and noting potential codes. The research team then met to develop an initial codebook, iterating between the data, our individual notes, and group discussion. We next systematically coded the interviews and began organizing codes based on commonalities among the experiences of the players and coaches, generating initial themes. Our coding and initial theme generation at this stage were primarily descriptive, summarizing the experiences and opinions of our participants (see Table 3 for data extracts illustrating prominent codes and initial themes).

Summary of data

Like in the report by More Than Baseball (2022), many interviewees spoke about the low pay, the difficulty obtaining additional employment in the offseason, nutrition and travel hardships, and the mental challenges associated with playing a highly competitive sport. Another common challenge brought up by players was the language barrier between the Americans and international Latinos. Our interviewees described how the language barrier led cliques to form based on language and that some players had trouble communicating with their coaches. Although the language barrier seems challenging for everyone, it might produce additional hardships for international Latino players, who, for example, may not be able to understand coaching instructions given in English by their mostly American coaches.

Some players and coaches shared that players were sometimes treated differently based on their identities. Sometimes the interviewees considered this differential treatment to indicate unfair bias against minority groups. For example, one player said, "Sometimes when a Latin [American] guy does something bad, like, they'll yell at them. And then when an American guy does the same thing they, like, they do not do anything about it" (player 8). In addition to their nationality, a player might experience bias due to race. For example, one coach

TABLE 3 Data extracts illustrating prominent codes and initial summarizing themes.

Summarizing themes *(Details on included codes)*	Data extracts representative of codes
Resource constraints *Challenges related to finances, nutrition, travel, family, and staying healthy*	"I'd say that the biggest thing for me this year was the travel…we'll have trips that takes 7 h, 5 h, and you have to drive back, work the night after game, and then have to play the next day. So, just, it messes you up to switch gears a little bit...on the road it's hard to find the right food because …you are on the bus. So you have to Uber places, it's definitely a lot harder to get the food that you want, the food that your body might need. There's been a lot of gas station trips just trying to find any little thing, kinda trying to find nuts or seeds or little fruit cups from there. So yeah, I think the travel and nutrition is just hard to get consistently, consistently good out of those two things." (player 11)
	"Being able to support and live a comfortable life while playing I think is tough when you get paid what you get paid… it's hard being away from family and friends. Cuz we are gone all year. Then the time we are home, we have to designate a lot of it to get ready for the next season. Some other challenges, staying healthy is a big challenge, just physically the workload of the schedule. And then being able to perform under the time frame that we have to recover is pretty tough, but I think it's a part of it. It just comes with the job." (player 18)
	"I can deal with the shitty fields, hotels, travel schedules, and food. But when I have to get a job just so I can make it through the offseason, it does not sit right with me. Serving steaks should not be my primary focus in the offseason." (player 12)
	"You're not making a lot of money. You're kind of living paycheck to paycheck, kind of even going minus most of the time." (player 14)
Mental toughness *Psychological challenges in professional baseball*	"It's tough because…baseball is a failure sport. You know, you get like, 3 hits out of 10 times and you are the best of the world. But you are a failure seven more times. So you are dealing with that. And those players, you know, it's tough. I've been through that too as a player. And it's challenging every day to keep your mind tough and just keep moving forward. Even though you went 0 for 4 for the night or 0 for 5 with three strikeouts. Tomorrow's another day, you know, so you have to be prepared for that day, day by day. So mental part is tough. And I think that's why baseball is more mental sport than anything else. Because they all got talent, you know, they all that's the reason why they're here. …it's it's more mental or whoever's been tougher mentally is going to forward quicker. And that's the way I see it" (coach 22)
	"Some of the struggles that I see like some of those guys, they on a process to learn how to how... they need to handle themselves when they come to be a professional baseball player, because baseball, not every time things gonna go your way. So you had to keep your mind strong. When those times come when you fail, how to stay strong. And think about, okay, I gotta have a one more day to perform and be a better player...that's one of the struggles that I see that those guys that... they need to be mental tough." (coach 20)
	"Some of the setbacks are when you are not doing so well. And you have to keep digging and keep trucking along when, you know, you are not making a lot of money. There's other things to be doing. So just really sticking through it. The grind, as we all call it, is definitely, it's rewarding in the end." (player 16)
Language and cultural barriers *Additional challenges unique to non-English speakers and international players*	"…coaches pretty much were going to be American, and for them to get the fullness or the full benefit of the coaches, they had to understand English." (coach 21)
	"…since I work as the pitching coach and work with the pitchers, being able to hit a group message and get that translated, which that does take some extra time, I had to have somebody who's going to translate, because I can only speak enough to be able to help guys, mainly just pitching types of delivery and stuff. But as far as having a conversation, that's what makes it a little bit difficult for me. And then having to have somebody translate and go through the filter of that, without my message directly impacting them and getting across the way I want it to get across, having to rely on somebody else that, that makes it a little bit different." (coach 19)
	"They do they make sure that the guys from other countries are like going to English class and kind of learning our culture, so that they can adapt because obviously, like, we, I feel like we have an easier time adapting to them then they have or they are having to adapt to us, and our culture of how we do things in like America. But I think for the most part, like they do a pretty good job" (player 6)
	"I think going over in to Korea, and being the foreigner really opened up my eyes to some of the challenges that, that, you know, other people might have, I think, you know, like I said, the Latin players coming over, especially at such a young age…I went over to Korea when I was 26 years old, and I, I struggled with the language barrier, and just trying to figure things out and, and I had a translator, and these guys, you know, they do not have a translator, and they are kind of, you know, fending for themselves and trying to figure out how to live in America. And I think that can be extremely difficult for sure. And I think I gained a lot of respect for those guys. And the challenges that they have." (player 17)

(Continued)

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TABLE 3 (Continued)

Summarizing themes *(Details on included codes)*	Data extracts representative of codes
Ingroup and outgroup effects *Cliques formed by social identity groups; coaches' preference for certain players; discrimination experienced*	"I've seen sometimes they prefer the white guys over the Latin guys… Sometimes, sometimes when, when a Latin guy does something bad… like they'll yell at them. And then when American guy does the same thing they, like, they'll do not do anything about it." (player 8)
	"It's definitely a double-edged sword, certain things that you can get away with as a White player that you are not allowed to get away with as a Black player." (coach 24)
	"Um, I would say there are some cliques sometimes between language barriers and things like that, because we have some guys maybe know like 20 words in English. So it's kind of like they got to stick with the guys that know both. And some, some of us do not know any words like in Spanish. So just kind of stick with the guys that do not know any in Spanish…." (player 1)
	"...as we get into pro ball, you know, those were the kinda cliques that started….you know it might be more of the Spanish speaking players… they would hang more together, obviously, you know the language, it's just easier to communicate within their own language…." (coach 25)
	"So, if there's a coach, who's Dominican and can relate to the Dominicans on the team, or like the people with different backgrounds... I think they are more inclined to really like, take... to help them out in a way in a sense, like, like give them extra work and really try to teach them rather than um like people like of different backgrounds." (player 9).
Team cohesion and shared goals *Efforts to learn from one another, grow together, and build team chemistry*	"For instance, a lot of the college guys, I mean, we all get along together, I think the one thing that like separates a little bit is, you know, if there's like Dominicans on the team, to Americans, I think that's, there's like a little bit of a like a, like a separation between the two. But everyone kind of gets along. And I.. it kind of feels like a team, rather than you are playing for individual self, which I definitely like, love, playing it on a team rather than a bunch of individuals who are just trying to outperform each other... does not really feel like that, which is good." (player 9)
	"Just because everybody knows that we are all trying to make it to the Big Leagues. And there's not, there's not too many spots up there. So we know that we are competing for the spot, but at the same time it helps you, I've noticed just with myself, whenever I try to help somebody else, it helps me get a better understanding of what I'm trying to do. If I'm trying to, teaching, if I'm showing somebody maybe that they need to catch the ball more out of front, I'm helping them out. But at the same time, I'm reminding myself that I need to do the same thing." (player 11)
	"We tell them a lot of times, ... you win the game in the clubhouse before you before you even go out and feel the team chemistry and stuff like that… ... we try to get our Latin American players as well as our English players to interact with each other, and, you know, learn about each other's countries and upbringings and stuff like that. So and I'm sure in the clubhouse in there where they develop team chemistry they do that." (coach 27)
	"I would say it's easier for guys who speak the same language to, you know, gravitate towards each other just because it's easier communication. I mean, the [team name] are doing a good job though, they have like English class Spanish class pretty much every week. So they are doing a good job to try and mix those groups up. But I think language is the main one… I mean, guys show interest in like, trying to learn Spanish like here, I would say it's probably like half 'n' half. So you got like guys, that speak only English trying to learn Spanish, Spanish guys trying to learn English. So that kind of builds that team chemistry as I was talking about." (player 7)
	"It's kind of cool knowing people who come from other countries, other cities, and getting to know each other and share being teammates here…they are looking at the same goals, just to make it to the Big Leagues" (player 13)

(Continued)

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TABLE 3 (Continued)

Summarizing themes *(Details on included codes)*	Data extracts representative of codes
Positive attitudes toward diversity *Coaches adapting to the needs of players; acknowledgement of the importance of support for players from diverse backgrounds*	"I was actually talking to a guy about this yesterday, if I worked with the Latin pitcher different than, say, a college pitcher. And I said yeah, I mean sure you do. Because the level that they are, they are on it, we are pitching at the same level, but as far as... typically, they are a little bit younger. So working with them, and giving them a more simpler task, because most of them did not go to college. So, they did not have 4 years to be able to pitch and learn what they needed to do. So, keep it simpler." (coach 19)
	"And then we try and teach English to the guys like during the game like… we try to like give them a phrase every day to try and learn. So it's just been fun. I've had fun with just being able to learn their culture, how they work, because it's a totally different world, where they are from." (player 6)
	"There's a lot of players from Latin America. And for me, it's been really cool to get to know them and understand their lives away from baseball, as well as in baseball. It's something I would never have experienced before. And I've gotten to know them personally and really enjoyed their friendship…camaraderie, throughout baseball, it's cool, it's opened my eyes and kind of opened my world a little bit more than it would have been before." (player 16)
	"Our coach spoke both languages. So he'd say everything in English, then he would say everything in Spanish right after. So both groups can understand it. And some guys I'd say do not speak English, or do not speak Spanish. And that was really helpful to have everybody on the same page. Again, it was annoying if you had to repeat yourself, but that's something that they do. Meals will be like... try to cook what people prefer, you know, there will be like a large percentage of guys from the Dominican Republic…they made meals that were like Dominican meals. That was cool. Just inclusion, inclusive stuff like that." (player 4)
	"Having like a language barrier between some people can kind of can make it like people will group together but I think like you try and learn the other languages and I think that that helps. And they have like in Florida, they'll have us take, like, Spanish classes, where you can try and like kind of break that barrier.…Well, here… the Spanish guys have to still take English class and we do not have to. But I think I think obviously a lot of them want to learn more because it helps to stay in America and be able to, like, be on their own. So I think that's it's definitely like a motivating factor for them. Then for us, it's motivating so you can [hangout with] your friends and be able to talk to them more." (player 2)
	"I feel like if you come in here with a mindset that like it's different, and like you do not understand anything, like you are gonna be in trouble. But if you have an open mind, and you just you work to understand them and understand where they are coming from, that it just makes you adapt and get used to it." (player 3)
	"I think it only hurts people if they are not open to learn or trying to get on the same page. That would be it... but I took Spanish in high school, and I'm not fluent, but I know enough to communicate on the field, that it's kind of second nature for them... But I know enough Spanish where we can communicate on the field… You can just learn enough either way, which is not asking much, then it's really not a hindrance. (player 5)

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said, "[There are] certain things that you can get away with as a White player that you are not allowed to get away with as a Black player" (coach 24). Moreover, consistent with other research on same-identity favoritism (Zhang, 2017), other interviewees hinted that coaches might be biased toward players who are similar to them. Some coaches "give them extra work and really try to teach them rather than people of different backgrounds" (player 9). If coaches favor people of the same identity, then this will disproportionately affect minority players since most coaches are White Americans. In sum, bias toward minority players is a problematic barrier that seems to work in conjunction with systemic barriers.

The differential treatment was sometimes considered necessary due to the players' different backgrounds. For example, one coach mentioned that he keeps it simpler for Latin American players "because most of them did not go to college. So, they did not have four years to be able to pitch and learn what they needed to do" (coach 19). Other interviewees mentioned that it is helpful for players to have a coach who shares an identity with them and therefore understands their perspective. For example, when a Latin American player has a Latin American coach, that can be highly beneficial, because, as one player said, "a coach who's Dominican…can relate to the Dominicans on the team" (player 9). Unfortunately, one interviewee pointed out that Black coaches are rare and therefore Black players might not have anyone who can relate to them in that way.

Though the interviewees acknowledged that cliques seemed to form naturally based on language and cultural differences, along with other differences in backgrounds, many interviewees held an overall positive attitude toward the team's diversity. For example, one player said that he enjoyed the formal language classes offered by the organization, and another player talked about how the players informally helped each other learn Spanish and English to enhance their ability to communicate. Players also spoke about enjoying learning about different cultures, with one saying that it "kind of opened my world a little bit more than it would have been before" and "it's just been fun." Consistent with this, other research has revealed that Latin American baseball players view the cultural transition as a positive experience (Gentile and Arth, 2022). In short, despite the challenges, many players really liked the multicultural environment in MiLB.

Interviews with Education coordinators

To follow up on our initial insights, we conducted unstructured interviews with two MLB education coordinators between 2019 and 2021. Many MLB organizations recognize that international players face extra barriers, and they have therefore hired education coordinators to facilitate various aspects of international players' transition to the United States. The education coordinators work with players at all levels in baseball, often spending a lot of time at the Dominican Summer League. The education coordinators also oversee the language classes. Thus, a goal of these interviews was to learn more about the challenges faced by players of different backgrounds, but we centered much of our conversation on the initiatives teams were putting into place to help address these issues.

One education coordinator commented that teams had realized in the past 10 years that there was a competitive disadvantage in underfunded or non-existent education programs and had therefore started increasing their resources. At the time of our interviews, language programs were enacted in a variety of different ways across the various organizations. For example, while almost all organizations offered some sort of English courses for Spanish-speaking players, some organizations also offered Spanish courses for English-speaking players. Moreover, these courses might cover more than just language. One education coordinator said, "When I first started, there was more of a focus on practical English, but more recently we have transitioned to incorporate learning personal and professional skills." Beyond the language barrier and challenges with acculturation, the education coordinators pointed out that a lack of formal education can also be an added challenge for some Latin American players. The international Latino players can sign with a team at a younger age than the Americans, which can lead them to get pulled out of school earlier. Also, some Latin American countries do not have as strong of education systems as others, and therefore there are differences within the international Latino players. The education coordinators keep this in mind as they work on their programming. One education coordinator told us that, at the time of these interviews, most MLB organizations were instituting programs to help the young international players earn their GEDs, as they recognized the importance of education.

Theme development and refinement

Following these interviews, the research team reviewed the coding and initial theme generation from the player and coach interviews, integrating findings from the interviews with education coordinators. Insight from the coordinators mirrored many of the key issues brought up by players but introduced a solution-oriented lens through which we thought about the barriers to success. Following recommended thematic analysis practices (Braun and Clarke, 2006; Braun and Clarke, 2021), our analysis approach was both descriptive and interpretive from this point on, allowing us to understand more latent patterns in the data. After collecting, coding, and summarizing the data, the first two authors worked to further develop themes, iterating between the data, coding and initial themes, writing, discussions with co-authors, and previous literature.

Theme 1: The same grind, but different struggles

As noted previously, there are many structural barriers faced by players in MiLB: the low pay, difficulty getting a job in the offseason, intense travel schedules, difficulty getting the proper nutrition, and stress of competing at a high level. Players and coaches alike conceptualized these hardships as just part of "the grind," commonly used in sports to describe the long, difficult, and demanding season. Specifically in the context of the Minors, these hardships are both expected and accepted as "part of it" while they are all trying to make it to the Majors.

More broadly, the impact of some of these structural barriers on players differed for players from different backgrounds. For example, several interviewees mentioned that younger players may struggle through learning how to live on their own for the first time, while the players who came to the Minors after playing in college may have an easier time with the adjustment. Moreover, some MiLB players have large signing bonuses and therefore may not have as many problems with the low salaries.

The barrier most noted by our participants was the language barrier. Many players can only speak either English or Spanish when they start in MiLB, and suddenly they need to interact with people who speak another language in this competitive, high-stakes environment. As one coach said, though players are "kind of all in the same boat, [MiLB could] definitely be more challenging for a person that does not speak English, or like the native language" (coach 23).

The language barrier was discussed in terms of creating social and task-related challenges. For social challenges, players described how language differences created cliques on the teams, such that Spanish speakers would hang out with each other and English speakers would hang out with each other. The tendency to interact more with similar others (homophily) is consistent with other research on intergroup relations (Carey et al., 2022).

While these cliques and the language differences between players did not seem to bother any of the interviewees, the task-related challenges brought about by language differences seemed to have a larger impact. More specifically, "…coaches pretty much [are] going to be American, and for [players] to get the fullness or the full benefit of the coaches, they [have] to understand English" (coach 21), putting Spanish-speaking players at a disadvantage for developing their skills and learning from their coaches. Differential access to quality coaching could partially explain why American players progress through the Minors more easily than international Latino players do (Malcomb and Zitek, 2025).

Some interviewees also brought up biases that could hinder the advancement of international Latino and other minority players. Some players mentioned that some coaches might get more frustrated with certain individuals than others and might "yell at" the international Latino players or not let a Black player "get away with" something. One education coordinator also mentioned that there are sometimes issues with stereotypes and biases on the part of decision makers, which can affect which players get promoted, retained, or cut. Moreover, the coaches seemed to have different expectations for different athletes, which was understandable since the athletes had very different starting points. However, if coaches have lower expectations for some athletes based on their backgrounds, they might give them worse feedback and fewer opportunities, potentially hindering their development (Solomon et al., 1996; Weaver et al., 2016).

Theme 2: Breaking barriers in the dugout, building chemistry on the field

Though several players and coaches mentioned experiences of discrimination, many of our participants also spoke of the dissimilar treatment across players as not inherently negative; coaches recognized that different players had varying needs, and they tried to coach them differently, such as, for example, giving different instructions to an American player who had attended college vs. a young international Latino player who had not. Giving individual consideration is an important element of good leadership and can bring about good performance in sports (Mach et al., 2022). That said, coaches certainly need the ability to communicate with players to be able to give them the individual attention they deserve.

Given the challenges due to the different player backgrounds, the language barrier, and the intergroup dynamics, it might be important for coaches to get additional training. They can learn how to reduce cliques to help team cohesion and performance (Eys et al., 2009), and how to find a coaching style that fits their players. Past research has indicated that autonomy-supportive coaching behavior can help buffer against athletes' acculturation stress (Morela et al., 2019). One education coordinator agreed with our other interviewees that getting players from different countries to be a cohesive unit can be challenging. However, some players have done a great job promoting inclusive environments on their teams. This education coordinator strongly endorsed the importance of not just hiring *bilingual* coaches but also hiring *bicultural* coaches who can better relate to the Latin American players and can therefore help them progress through the Minors.

These positive aspects of recognizing and adapting to the unique needs of diverse players reflected a broader ideology of multiculturalism within baseball, broadly defined as recognizing and celebrating the meaningful differences between different racial, ethnic, and cultural groups (Rosenthal and Levy, 2010). Importantly, while players and coaches alike acknowledged the additional barriers of learning a new language and culture for many international MiLB players, the underlying sentiment was not one of assimilation to an American culture (i.e., an expectation that international players will simply learn English and "fit in" to American culture). Rather, many seemed to view this context of baseball through an intercultural lens whereby everyone was actively learning each other's cultures (Yogeeswaran et al., 2020). For example, while players and coaches acknowledged how important it is for teams to provide English classes for the international Latino players, many also pointed out the importance of having English-speaking players learn Spanish.

Discussion

MiLB is hard, with the low pay, grueling schedule, complicated intergroup dynamics, and long road to the Majors. But as we learned in our interviews, some players have extra challenges. For example, the international Latino players move to a new country, learn a different language, face acculturation stress, and possibly experience bias and frustration from their mostly English-speaking coaches. This might explain why American players progress through the Minors more easily than international Latino players do (Malcomb and Zitek, 2025).

Despite the many challenges that were mentioned about MiLB in general and the diverse environment in particular, some players also noted benefits of the experience. Specifically, it seems that many players have a positive attitude toward diversity. They like meeting people from different cultures and learning new languages. According to theory and research on the contact hypothesis within and outside of sports, interacting with outgroup members and working together to achieve a common goal can help improve intergroup relations and reduce prejudice (Allport, 1954; Ellison et al., 2011; Graber and Zitek, 2022; Lowe, 2021; Mousa, 2020; Pettigrew and Tropp, 2006; Zhou et al., 2019). Positive feelings about the outgroup were already apparent in our interviews, and intergroup relations should improve further as these players continue in baseball.

MLB has been working to address the challenges faced by MiLB players, as evidenced by hiring education coordinators, the development of language classes, the increase of MiLB players' pay, and more. As new initiatives are implemented that focus on removing barriers for minority players and generally improving intergroup relations, we are optimistic that MiLB players will

be enthusiastic participants given their current positive views on diversity. MLB can better leverage its diversity if all players feel like their team is cohesive and inclusive, as these beliefs relate to greater perceived performance (Malcomb and Zitek, 2025).

Finally, although many interviewees focused on interactions between American and international Latino players, some race-related issues were also mentioned. For example, some of our interviewees said that there may be different expectations and standards for White vs. Black players. This is a crucial issue for league leaders to consider as they work to increase the number of Black players in MLB (see Castrovince, 2023).

Limitations and future directions

Our study produced interesting insights but also had some limitations affecting interpretations and generalizability. First, we interviewed just 18 players, nine coaches, and two education coordinators. We could not interview players from all organizations or levels of the Minors, we did not have any Asian or Asian-American participants in our sample, and we had just six nationalities represented. Players from these other groups may have had different experiences. Second, though players and coaches spoke about their own experiences, we cannot say for sure how the barriers reported and the attempts to correct them (e.g., the language programs) affect player and team performance. Future research could further study this, perhaps by incorporating performance statistics. Finally, future research should explore the intersection of identities such as nationality and race/ethnicity and how the intersection might affect player outcomes.

Conclusion

In conclusion, through interviews with MiLB players and coaches, we learned about the challenges of the Minors. We found evidence that minority players face additional barriers to success beyond the challenges faced by White and/or American players. While some players talked about individual-level biases, another prevalent contributor to inequality was a set of structural barriers. For example, because most coaches speak English, the Spanish-speaking players seemed disadvantaged in getting instructional training and forming relationships with coaches. Despite the challenges, many interviewees had positive attitudes towards the growing diversity within baseball and the initiatives that aim to overcome some of these structural barriers, such as the language classes. Given this prevalent positive view of diversity, we hope that players and coaches will choose to participate in other initiatives put forward by MLB and its associated teams as they work to ensure that all players have an equal opportunity to succeed.

Data availability statement

The data presented in this article are not readily available to maintain the privacy of identifiable information within the data. Requests to access the datasets should be directed to the corresponding author.

Ethics statement

The studies involving humans were approved by Cornell Institutional Review Board for Human Participants. The studies were conducted in accordance with the local legislation and institutional requirements. The ethics committee/institutional review board waived the requirement of written informed consent for participation from the participants or the participants' legal guardians/next of kin because we read participants the consent form, and the IRB allowed us to get verbal consent.

Author contributions

CM: Data curation, Methodology, Validation, Writing – original draft, Writing – review & editing, Investigation, Formal analysis. EZ: Investigation, Methodology, Validation, Writing – original draft, Writing – review & editing, Data curation, Conceptualization, Project administration, Supervision. SG: Data curation, Formal analysis, Investigation, Methodology, Writing – review & editing. BP: Conceptualization, Data curation, Investigation, Methodology, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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The authors declare that no Generative AI was used in the creation of this manuscript.

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Investigating the perception dimensions of sports disciplines stigma in China: social identity and participation willingness

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Introduction: This study aims to explore the dimensions of stigma perception in sports disciplines, focusing on the impact these dimensions have on the public's willingness to participate in stigmatized sports. The research seeks to identify and analyze the dimensions of stigma, test hypotheses regarding their influence, and investigate the mediating role of social identity in this relationship.

Methods: The study was conducted in China using in-depth interviews with 36 sports enthusiasts, followed by a comprehensive questionnaire survey. Grounded theory was employed for the qualitative analysis of interview data, resulting in the identification of three primary dimensions of stigma: participant group stigma, negative events stigma, and discipline value stigma. Structural Equation Modeling (SEM) and path analysis were utilized to validate the proposed model and analyze the mediating effects.

Results: We find that all three dimensions significantly influence the willingness to participate in sports disciplines, with negative events stigma having the most substantial impact. Social identity partially mediates the effects of these stigma dimensions on participation willingness, indicating that the perceived stigmas negatively impact social identity and participation willingness.

Discussion: The results underscore the importance of addressing stigma in promoting sports participation. The findings align with existing literature on the negative impacts of stigmatization but extend the understanding by highlighting the mediating role of social identity. The study suggests that efforts to reduce stigma and enhance social identity could significantly boost public engagement in sports. Future research should explore additional mediating variables and the long-term effects of stigma reduction interventions.

KEYWORDS

stigma in sports, perception dimensions, participation willingness, mixed methods research, society identity

Introduction

The dissemination of sports disciplines is often considered to have a strong positive correlation with the process of globalization. The wave of economic globalization continues to drive the globalization of the sports industry, fostering international partnerships, collaboration between sports organizations, and the global circulation of sports resources (Liu et al., 2017; Major and O'Brien, 2005). Against this background, many emerging sports disciplines are entering China. Currently, under the influence of the two major policy strategies of national fitness and Healthy China, the focus of China's sports development is shifting from

highlighting the number of gold medals representing competitive sports levels to the overall development level of social sports participation representing the entire society (Zhang and Saunders, 2020). In this process, the socialization and marketization of Chinese sports are also accelerating, and the public has higher demands for the quantity and quality of sports. How to promote the development of various sports programs, expand the population engaged in regular physical exercise, and better serve the national fitness initiative has become a key task in current sports work in China.

However, in China, stigmatization of sports disciplines occurs frequently. The stigmatization of sports disciplines refers to the high degree of negative and difficult-to-eliminate stereotypes that the public holds about a particular sports activity. These stereotypes have rapid and widespread dissemination characteristics. For example, the sport of Ultimate Frisbee has been labeled with derogatory terms such as "frisbee girl" and "mating call," while golf has been stigmatized as an "official's sport" (Song et al., 2022; Zhao and Zhu, 2021). Such labels lead these sports to become stigmatized disciplines. Due to courtesy stigma, those associated with or related to the stigmatized entities also suffer devaluation, inevitably becoming affected by the stigma (Ali et al., 2012; Liu and Kozinets, 2022). In the context of stigmatized sports disciplines, participants, who are directly associated with these activities, are inevitably influenced by courtesy stigma. They are compelled to adopt more conservative self-management measures, such as avoiding participation in stigmatized sports and reducing their exposure related to these activities, to maintain their identity within the broader social circles and mitigate the stigma's impact on themselves. This situation results in a vicious cycle of negative development for the stigmatized sports disciplines.

The core issue of sports disciplines stigma and the resulting derivative stigma phenomena not only hinder the promotion of the stigmatized sports but also severely impact the development of their related industries. This negative influence extends beyond the realm of sports, significantly affecting the implementation of national fitness strategies and the achievement of high-quality development goals in the sports industry. Therefore, Exploring the structural dimensions of sports stigmatization from a psychological perspective, understanding its formation mechanisms and impacts, and subsequently finding effective countermeasures holds significant theoretical and practical value.

Based on the above discussion, this paper aims to focus on exploring the current structural dimensions of sports disciplines stigma. We seek to develop a comprehensive measurement scale grounded in these structural dimensions and to examine the multifaceted impacts of each dimension on sports disciplines participation.

Literature review

The advancements in stigma theory and its application

The term 'stigma' originates from ancient Greece, where individuals, such as slaves, criminals, and traitors, were marked with symbols as a means of labeling and banishment. This act of marking constituted what is now referred to as stigma. Since Goffman's seminal work in 1963, conceptualizing stigma as an inherently unreliable attribute that transforms an individual from a complete, ordinary person to one with a blemished character (Goffman, 1963) the definition of stigma has undergone several developments and supplements (Link and Phelan, 2001). Stafford and Scott (1986) and others have proposed that stigma involves characteristics opposite to societal norms. Drawing on Goffman's definition, the concept of discrimination is subsequently introduced to refine the understanding of stigma, which is delineated as the ascription of undesirable traits to individuals. Link and Phelan (2001), in consolidating previous research, constructed modified concepts related to stigma, emphasizing its expansion into various facets of social life with societal development. Therefore, a multidimensional sociological exploration of the nature and consequences of stigma becomes crucial from a multidimensional sociological perspective.

Presently, Ongoing scholarly debates persist on the precise definition and mechanisms of stigma. Rooted in social psychology, 'stigma' is comprehended as personal attributes or labels deemed societal defects (Major and O'Brien, 2005). Individuals subjected to stigma are perceived as lacking certain normal attributes (Pescosolido and Martin, 2015). The formation mechanism of stigma involves public stigma, which impacts individuals through enacted stigma, perceived stigma, and internalized stigma, leading to self-stigmatization (Bos et al., 2013).

As stigma theory permeates various disciplines, marketing has witnessed corresponding research. In marketing, stigma is defined as negative labels, biases, and derogatory attributes associated with interest groups and their products or services for commercial purposes (Mirabito et al., 2016). Scholars, with a focus on consumer behavior, have delved into the impact of stigmatized products on consumer shopping behavior. For instance, Shin and Jin (2021) investigated the willingness of consumers, driven by social status pursuit, to purchase fur products amid increasing global animal protection awareness. Barlow et al. (2016) explored the influence of stigmatized products on the industry category, using craft beer in the United States as an example. Results consistently showed that both consumer group and product stigmatization significantly negatively affect shopping behavior.

Brands, like products, face stigmatization. Certain brand attributes can create impressions that may lead to brand stigma, such as the brand's country of origin (Wang et al., 2004), brand category, or brand fit (Lafferty, 2007). In the current landscape, scholars propose that the resolution of industry stigma relies heavily on corporate social responsibility (CSR) tools, involving sponsorship or charitable actions to improve the tainted image of the industry (Palazzo and Richter, 2005).

Stigmatization studies in sport

Existing research on sports stigmatization predominantly concentrates on specific disciplines, groups, and brands, with a noticeable dearth of macro-level studies on the perception dimension of stigmatization in sports.

The examination of sports participation group stigmatization has been undertaken. Lee et al. (2021) employed attribution theory to investigate the mechanisms underpinning the formation of athlete group stigma and analyzed its resultant impacts. The study found that internal attribution, in comparison to external attribution, intensifies public stigma towards athletes, negatively affecting the willingness to purchase products associated with stigmatized athletes. Teachers, especially in physical education, face biases rooted in stereotypes, with sports teachers often associated with aggression (McCullick et al.,

2010). Traditionally, physical education has been associated with ideals of toughness, strength, and competitiveness (White and Hobson, 2017). Under this paradigm, male physical education teachers are sometimes unfairly characterized as overly aggressive or unrefined in their leadership, while female physical education teachers may be stigmatized as exhibiting masculine traits—often labeled as tomboys or even as homosexual. These negative stereotypes have been perpetuated and amplified by portrayals in film and television over time (McCullick et al., 2010; Walton-Fisette et al., 2017).

In addition to sports participation group stigmatization, published studies also research on the stigmatization of specific sports disciplines. Taking disc golf as an example, media and reports often portray it as a non-competitive and non-intensive sport, contributing to its stigmatization (McGinnis et al., 2016). Despite efforts to reduce land use and environmental impact, disc golf is still labeled by environmental organizations as a damaging activity, resulting in defamation and stigma (McCullick et al., 2010). There are also studies focusing on the stigma experienced by professional cyclists within the context of clean sports. The excessive use of banned substances in past competitions, coupled with inadequate regulation, generated negative impressions, leading to stigma associated with professional cycling and its athletes. The study discussed and summarized the coping measures of professional cyclists under stigma, categorized into self-restraint, strengthened supervision, and social advocacy stigma resolution chain (Sefiha, 2017).

Concerning sports brand stigmatization, brand image, as a crucial intangible asset (Aaker and Keller, 1990), serves as a comprehensive evaluation and reflection of consumer perceptions of product characteristics and the overall spirit of the enterprise. Brand stigmatization occurs when consumers impose negative labels on a brand, damaging its image and reputation. Gerke et al. (2014) focusing on the country of origin's impression, used outdoor sports brands from New Zealand as an example, demonstrating that consumer perceptions transfer specific impressions of the brand's home country to the sports brand and its products. The higher the consistency between brand products and the consumer's perception of the brand's home country, the greater the consumer's approval of the sports brand and its products, influencing purchasing behavior.

Finally, stigmatization related to group attributes involves gender, sexual orientation, body shape, and social status. These factors may incur varying degrees of stigma, impacting sports participation. In the realm of sports, diversity efforts are primarily propelled by commercial interests rather than a social justice framework (Hartmann-Tews, 2023). Consequently, sexual minority groups such as 'LGBTQ+' lack commercial interests, leading to negative societal and market responses and exacerbating the unfair treatment of sexual minority groups in sports (Baeth et al., 2023; Denison et al., 2021). Thedinga et al. (2021) asserted that individuals with obesity often face shame and discrimination related to weight in sports and exercise environments, leading them to cope with these experiences by excluding themselves from sports and exercise.

Research on factors influencing the choice of sports disciplines

Scholars have investigated various factors influencing the choice of sports disciplines at different levels, broadly categorized as intrinsic and extrinsic factors.

Starting from intrinsic factors, Casper et al. (2011) constructed a model based on ecological system theory, highlighted the impact of participants' preferences, personalities, and habits, in addition to external factors from school and family, on their sports participation and disciplines selection. Bevan et al. (2022) identified social psychological factors, such as anxiety about physique and appearance, as influencing individuals' concepts and choices in sports participation, which exacerbate self-stigmatization and hinder their love for and involvement in sports (Somerset and Hoare, 2018).

The selection of sports activities by individuals is also influenced by external factors, such as the life stage of the participants and societal evaluations of the particular sport (Kamphuis et al., 2008; Pot et al., 2014). These external elements play a significant role in shaping people's choices in sports participation. Jenkin et al. (2017) found that the selection of sports disciplines by the elderly is influenced by factors such as the practicality of sports disciplines, health benefits, and participation costs. Additionally, the gender ratio within the school can also influence students' choices and participation in sports disciplines. Gender imbalance may lead schools to prioritize providing sports resources for the gender-dominant group, thereby influencing students' choices and involvement in sports disciplines (Ferry and Lund, 2018).

Literature summary

In summary, stigmatization is a multifaceted structure encompassing perceptual, categorical, and reactive dimensions. When a particular sport is stigmatized, it weakens the public's perception of the sport, causing certain sports participation groups to fall into a 'self-stigmatization' trap. This impedes the socialization process of the sports disciplines and subsequently affects the development of the disciplines associated industries. Reflecting on past literature, this paper observes a concentration on sports teachers, specific sports disciplines, sports brands, and stigmatized groups. The emphasis on pathways to resolve stigma is evident, but a systematic study of the perception dimensions of stigmatization in sports disciplines at a macro level is lacking. Therefore, this paper adopts a mixed research method, presenting two research objectives. The first, grounded in grounded theory, aims to elucidate the perceptual dimensions of stigmatization in sports disciplines. The second, through questionnaire data collection, utilizes structural equation modeling to analyze the influence of various dimensions on the degree of perceived stigma in sports disciplines. The conclusions drawn from this study will broaden the research boundaries of stigmatization in sports disciplines and provide theoretical guidance for the positive development of sports disciplines.

Study 1: analysis of sports disciplines stigmatization dimensions based on grounded theory

Methods

Grounded theory referred to the adoption of a bottom-up research approach, employing a systematic inductive analysis procedure. Based on empirical data, it sought to identify core concepts relevant to the

research problem, thereby constructing a rigorous and scientific theory (Charmaz, 2014). Procedural grounded theory emphasized human subjective understanding and highlighted the interconnection of existing experiences and hypothetical theories through causal relationships. This paper utilized the three-level coding of procedural grounded theory to analyze textual data obtained through in-depth interviews.

Data collection

Grounded theory research required the use of purposive sampling in interviews to enhance result diversity (Gratton and Jones, 2004). Consequently, this study employed purposive sampling with specific inclusion criteria. Interviewees were selected based on their participation in or observation of at least one sports discipline within the past year and their familiarity with public perceptions or stereotypes surrounding certain sports. To ensure a diverse range of perspectives, potential participants were identified via established sports networks, online forums, university clubs, and social media groups. The research team directly contacted these individuals via email and messaging platforms, provided a detailed explanation of the study's objectives, and obtained informed consent prior to conducting the interviews.

Strict adherence to ethical standards was maintained throughout the process—from the selection of interview subjects to the interview process and subsequent data handling—to ensure that participants' personal privacy was fully protected. The interviews focused on three main aspects: (a) interview explanations, (b) basic information about interviewees, and (c) semi-structured interview questions, as outlined in Table 1. Informed consent was obtained from all participants, who were fully briefed on the purpose and content of the interviews, and participation was entirely voluntary. Participants were also assured of the confidentiality and privacy of their responses.

The interviews yielded a total of 36 interviewees. The data from 26 interviewees were transcribed into text, resulting in approximately 82,000 words of textual data. The procedural grounded theory method was employed to sequentially analyze the textual data, generating initial concepts, subcategories, and main categories, ultimately forming the dimensions of stigma perception in sports disciplines. The data from the remaining 10 interviewees were used to test theoretical saturation.

TABLE 1 Semi-structured interview outline.

Serial number	Basic questions
1	What considerations guide your participation in a specific sporting activity?
2	In your estimation, which sporting endeavors are notably influenced by public prejudice?
3	Please provide an analysis of the factors contributing to bias against these sports, as per your understanding.
4	Are there sports in your everyday life that elicit feelings of aversion or discrimination?
5	Kindly elucidate on the specific aspects that prompt your disapproval, and the discriminatory nature associated with these sports.
6	Have you encountered instances of bias or discriminatory conduct while engaged in a particular sport?
7	(If affirmative) Please specify the manifestations of these biases or discriminatory behaviors.

Open coding

Open coding involved conceptualizing and categorizing acquired data by gradually organizing raw data based on specific principles. This process utilized concepts and categories to accurately represent the data's content, resulting in the inductive summarization of abstract concepts. To streamline the analysis and minimize interference from complex textual data, the raw interview transcripts (82,000 words from 36 interviews) were rigorously cleaned by removing habitual phrases (e.g., colloquial fillers), irrelevant sentences, and content misaligned with interviewees' original intentions. For instance, statements like "Discrimination is encountered when my technical skills in the sport are insufficient" were stripped of non-essential language and retained as core excerpts. Subsequently, the refined data underwent preliminary conceptualization. Through line-by-line analysis, 28 initial concepts were inductively extracted. Examples include: technical discrimination (e.g., exclusion due to skill level) and social motivation (e.g., participating to network with high-status individuals). These concepts were iteratively compared, refined, and grouped into 10 subcategories. Redundant or overlapping concepts (e.g., gender bias) were merged to ensure clarity. Table 2 illustrates this process, mapping interview excerpts to concepts (e.g., "body-shape discrimination" under Group Participation Behavior) and their evaluative properties (e.g., "good/bad").

This study primarily used the expression 'alphabet letter + number' to code categories for subsequent analysis. In summary, the 10 subcategories finally organized were: Group Participation Behavior (a1), Group Participation Motivation (a2), Group Participation Image (a3), Contest Violations and Prohibitions (a4), Encroachment of Social Resources (a5), Deviant Offenses (a6), Negative Media Coverage (a7), Sporting Participatory Value (a8), Sporting Competitive Value (a9), Sporting Culture Value (a10).

Axial coding

Axial coding was the second stage of the coding process, involving continuous comparison and classification. It aimed to connect primary and secondary conceptual categories into a relational network. Based on this, this study synthesized the 10 subcategories into relational main categories through constant comparative analysis, this hierarchical aggregation resolved overlaps (merging Deviant Offenses and Contest Violations under Negative Events Stigma), resulting in three main categories: stigma of participant groups, stigma of discipline value, and stigma of negative events (see in Table 3).

Selective coding

Selective coding referred to the process of choosing core concepts within the identified categories. Through continuous analysis, secondary concepts related to the core categories were concentrated, systematically explained, and the relationships between the main and secondary concepts were verified. Ultimately, the core category

TABLE 2 Examples of open coding.

Interview content coding	Conceptualization	Categorization	Category Properties	Evaluative Properties
Discrimination is encountered when my technical skills in the sport are insufficient. Feeling excluded as a result of perceived shortcomings in my physique. Some individuals argue against the involvement of females in XX sports …	Technical discrimination Body-shape discrimination Gender discrimination …	a1 Group Participation Behavior	Behavior exhibited when groups participate in sports disciplines	Good/bad
More for taking photos, and showing off. They participate in this sport merely to get to know people of social standing. …	Showing off motivation Social motivation …	a2 Group Participation Motivation	Motivation and objectives pursued by the group participating in a specific sports activity	Good/bad
Always wearing clothing unsuitable for sports These sports are meant for the participation of wealthy individuals. ….	Clothing image Social image …	a3 Group Participation Image	Appearance and Inner Image of Participating Groups	Appropriate/ Inappropriate
Many athletes in XX sports abuse performance-enhancing drugs Intentional interference with opponents is common in ice sports. The widespread existence of gambling is undermining the public's impression of XX sport. …	Drug violations. Contest violations Betting on contest …	a4 Contest Violations and Prohibitions	Violations and prohibitions arising around a certain sports disciplines	More/less
Occupation of our football fields by those who play xx sports The ordinary sport has been co-opted as a means of socializing and matchmaking. The space needed for XX sport could be used to build multiple basketball courts …	Occupation of the space Value displacement Waste of resources …	a5 Encroachment of Social Resources	Sports disciplines' occupation and waste of social resources	More/less
Match-fixing and biased refereeing are prevalent in xx sports Incidents of fan riots are common in xx sports …	Corruption in competitions Fans riots …	a6 Deviant Violations	Unethical and illegal behavior surrounding a certain sport	More/less
Videos of XX sport often exploit the appeal of female participants by focusing on their appearance and attire. There are often numerous rumors surrounding well-known athletes, but the majority of these are mostly untrue. …	Malicious reporting Distortion of Facts …	a7 Malicious Media Coverage	Negative and false publicity related to sports disciplines	More/less
After watching a match of XX, it felt overwhelmingly dull. XX sport lacks competitiveness and is only played by individuals with poor physical fitness. XX sport involves a higher risk of injuries due …	Sporting Attractiveness Sporting competitiveness Sporting risks …	a8 Sporting Participatory Value	Attraction of the Sports Disciplines in Terms of Spectatorship and Participation	High/Low
There are hardly any competitions for XX sports in China The xx sport lacks high-level leagues. …	Number of events Level of events …	a9 Sporting Competitive Value	Competitive Attraction Value of the Sports Disciplines	High/Low
The XX sport has lost many of its original movement techniques over the years. In my impression, XX sport is often associated with playing with pets I dislike these emerging trendy sports …	Cultural misalignment Cultural absence Subcultural identification …	a10 Sporting Culture Value	Cultural Value of the Sports Disciplines	High/Low

Open coding involves extensive text analysis. To save space, this table presents only a partial display.

TABLE 3 Main results for axial coding and selective coding.

Core categories	Main categories	Corresponding categories	Encompassed concepts
Sports disciplines stigma-aware dimensions	Participation group stigma	a1 Group participation behavior a2 Group participation motivation a3 Group participation image	Technical discrimination; Body-shape discrimination; Gender discrimination (3 concepts) Showing off motivation; Social motivation (2 concepts) Clothing image; Social image; Sexual orientation (3 concepts)
	Negative events stigma	a4 Contest violations and prohibitions a5 Encroachment of social resources a6 Deviant violations a7 Malicious media coverage	Drug violations; Contest violations; Betting on contest (3 concepts) Occupation of the space; Value displacement; Waste of resources (3 concepts) Corruption in competitions; Fans riots (2 concepts) Malicious reporting; Distortion of Facts (2 concepts)
	Disciplines value stigma	a8 Sporting participatory value a9 Sporting competitive value a10 Sporting cultural value	Spectatorship; Competitiveness; Safety (3 concepts) Event types; Number of events; Event popularity; Event professionalism (4 concepts) Cultural absence; Subcultural identity; Cultural dislocation (3 concepts)

extracted was 'Perception of Stigma in Sports.' Based on this, the paper identified three dimensions of stigma perception in sports: stigma associated with participant groups, stigma related to negative events, and stigma related to the value of the sports disciplines.

Theoretical saturation testing

The saturation test of the theory examined whether the concepts and categories proposed at each level of coding were sufficient. It involved progressively abstracting, summarizing, and inducing from the initial data. If the relevant codes did not generate new concepts, it indicated that the theoretical model was relatively saturated and passed the saturation test. In this study, coding analysis was performed on the remaining 10 transcripts of in-depth interviews. The results showed that the latest coded concepts could be entirely incorporated into existing concept codes without generating new concepts and categories. Therefore, it could be considered that the theoretical model had achieved saturation.

Study 2: the impact of stigmatization perception dimensions on the degree of stigmatization in sports disciplines

In Study 1, through conversations with respondents, we found that some respondents did not immediately reduce their willingness to participate in stigmatized sports after perceiving the stigma. Instead, they experienced a process of concern. For example, one respondent stated, "Many people think that participating in ultimate frisbee, especially for women, is a way to meet the opposite sex. If I continue to participate and share it online, I am worried about being misunderstood (Respondent 6, female)." We hypothesize that perceived stigma triggers public concern about social identity associated with continued participation in such sports, leading to a decreased willingness to participate.

Social identity, as an interactive social psychological theory, investigates the role of self-concept, cognitive processes, and social beliefs in group processes and intergroup relations (Hogg, 2016). It emphasizes key concepts such as self-concept, social identity, and group processes. Based on speculations drawn from existing research (Rees et al., 2015), in the context of sports as a human-centric endeavor, the stigma attached to specific sports disciplines is inevitably expected to impact participants. Awareness of cultural negative stereotypes surrounding certain sports disciplines, such as being overweight, makes individuals vulnerable to social identity threats triggered by concerns about potential devaluation, discrimination, rejection, or negative stereotyping (Hunger et al., 2015). This influence not only creates an identity barrier between groups participating in stigmatized sports and those in conventional sports but also extends to affect the group's sense of identification and belongingness towards the stigmatized sports. Ultimately, these influences significantly shape the willingness of individuals to engage in stigmatized sports activities.

On this basis, we speculated that social identity plays a mediating role in the influence path of stigma perception of sports events on the willingness to participate in sports events. Therefore, we introduced social identity as a mediating variable and constructed a standardized structural equation model for further measurement (see in Figure 1).

Study design

In study 2, we employed online survey method, utilizing the 'Wenjuanxing' platform for distribution and preliminary data processing. Wenjuanxing platform, a secure and widely used tool for academic research in China. The platform ensures participant anonymity, encrypts data transmission, and provides automated filtering of invalid responses (e.g., duplicate IP addresses or inconsistent answers to attention-check questions).To ensure the authenticity and validity of the data, two control questions were included in the questionnaire to filter out invalid responses. A total of 450 questionnaires were distributed, and after excluding those with incorrect answers to the control questions, 363 valid responses were retained, resulting in an effective response rate of 81%. The study adhered strictly to ethical standards, informing participants about the guidelines and purpose of the questionnaire after obtaining their consent.

Results

Reliability and validity analysis

SPSS 26.0 was employed to perform a reliability analysis on the scale. The results revealed an internal consistency reliability of 0.713 for the overall scale. For Participant group stigma, Negative events stigma, Disciplines value stigma, Social identity, and Disciplines participation willingness, the internal consistency reliabilities were 0.936, 0.931, 0.925, 0.935, and 0.963, respectively. These results affirm the reliability and stability of the constructed scale for the perception dimensions of sports disciplines stigmatization (see in Table 4).

Exploratory factor analysis

After confirming the reliability of the scale, we conducted an exploratory factor analysis (EFA). First, we performed the Kaiser-Meyer-Olkin (KMO) test and Bartlett's test of sphericity on the scale items. A KMO value greater than 0.7 and a Bartlett's test p-value less than 0.01 indicate a high level of reliability for the scale (see in Table 5), allowing us to proceed with the factor analysis.

Using principal component analysis and the varimax rotation method, we extracted factors from the 24 items based on eigenvalues greater than 1. Five common factors were extracted from the 24 items, with a cumulative variance contribution rate of 80.015%, which exceeds the 60% threshold. This indicates that the five factors explain 80.015% of the variance of the 24 items. The detailed results of the exploratory factor analysis are presented in Table 6.

Descriptive statistics and correlation analysis

The results indicated that the three dimensions of perceived stigma in sports were significantly negatively correlated with both the willingness to participate in the sport and social identity. At the same time, social identity was significantly positively correlated with the willingness to participate in the sport. Additionally, the three dimensions of perceived sports stigma were significantly positively correlated with each other (see in Table 7).

The model fit test

Confirmatory factor analysis results showed: $\chi 2 = 389.451$, df = 242, $\chi 2/df = 1.609$, RMSEA = 0.041, GFI = 0.919, CFI = 0.982, IFI = 0.982, TLI = 0.980. Following the criteria for judging model goodness-of-fit, the output results of confirmatory factor analysis were all within an acceptable range (see in Table 8). Hence, it was evident that the sports disciplines stigma scale had good structural validity.

Main effects analysis

Subsequently, a structural equation model and path analysis were conducted. The results of the main effects analysis (see in Table 9) indicated significant negative effects of stigma associated with participant groups, negative events stigma, and disciplines value stigma on the willingness to participate in sports disciplines ($\beta_{\text{Participant group stigma}} = -0.236$, $\beta_{\text{Negative events stigma}} = -0.303$, $\beta_{\text{Disciplines value stigma}} = -0.258$). Considering the magnitude of the path coefficients, differences emerged in the impact of the three dimensions on the perception of stigma in sports disciplines. Stigma associated with negative events had the most substantial impact on willingness to participate, followed by disciplines value stigma, while participant group stigma had the smallest impact.

Mediation effects analysis

For the examination of mediation effects in the perception of stigma variables, the study employed the Bootstrap method using Amos Graphics with 5,000 resampling settings and a confidence level of 95%. To determine whether a variable has a mediation effect, it is crucial to observe whether the 95% confidence interval (95% CI) of the regression coefficient ab includes 0. If 0 is not included in the 95% CI, there is a mediation effect. If 0 is included in the 95% CI, there is no mediation effect. If both a, b, and c' are significant, and the sign of ab is the same as c', then a partial mediation effect is observed. If at least one of a and b is not significant, and the 95% CI of ab includes 0 (non-significant), then there is no significant mediation effect. According to Table 10, social identity partially mediates the impact of stigma associated with participant groups, negative events stigma, and disciplines value stigma on the public's willingness to participate in sports disciplines.

Discussion

This study employed a mixed-methods approach to explore the stigma associated with sports disciplines in China. Our qualitative analysis revealed three key dimensions of stigma—participant group stigma, negative events stigma, and disciplines value stigma—each of which contributes uniquely to the public's negative perceptions of certain sports. The subsequent quantitative phase confirmed that these dimensions significantly reduce the willingness to participate in sports, with negative events stigma showing the strongest influence ($\beta = -0.303$). Besides, our findings indicate that social identity partially mediates the relationship between these stigma dimensions and participation willingness, highlighting the role of social identity in shaping sports engagement.

Participant Group Stigma is a critical dimension, encompassing group motivation, characteristics, and social image, which significantly affect public participation willingness. Beyond physical appearance-related stigma (Bevan et al., 2022; Inderstrodt-Stephens and Acharya, 2017), this study highlights the role of gender and sexual orientation in stigma formation, emphasizing the motivation-behavior chain and enriching the understanding of stigmatization dimensions; Negative Events Stigma is the most impactful dimension, surpassing participant group and disciplines value stigma in its effect on public perception. It includes misconduct during events and negative media coverage, which significantly reduce participation willingness. For instance, football

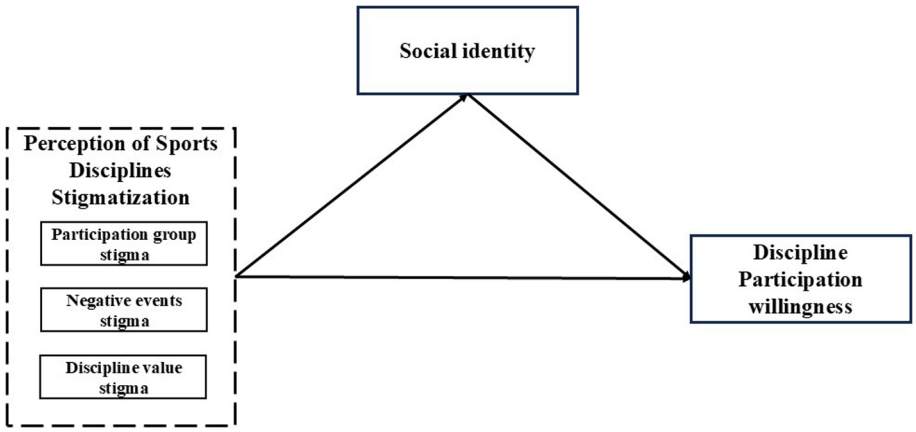

FIGURE 1
Standardized model of Study 2.

hooliganism has been linked to violence, damaging public identification with the sport (Frosdick and Marsh, 2013). The rapid dissemination of negative events through media further amplifies stigma (Hill and Fuller, 2018). This study extends the scope of negative events to include operational issues in sports organizations, which exacerbate public resentment and stigma perception; Disciplines Value Stigma represents a novel dimension, focusing on how deviations from sports norms and values contribute to stigmatization. High-risk sports, for example, are perceived as non-conforming and insecure, clashing with mainstream culture (Vanreusel and Renson, 1982; Wheaton, 2015). This subcultural value system reinforces stigma, shaping negative public opinions and highlighting the need to explore the cultural dynamics of high-risk sports.

Social Identity as a Mediator: Social identity plays a key role in linking disciplines value stigma, participant group stigma, and negative events stigma with the willingness to participate in sports. According to social identity theory, people form distinct social groups based on shared characteristics. Sports participation offers a venue where these groups interact and sometimes conflict, leading to the formation of exclusive networks that reinforce group identity while excluding outsiders. The rise of social media has further amplified this exclusivity, intensifying negative opinions and stereotypes that contribute to the overall stigma of sports disciplines.

TABLE 4 Reliability test results of the revised scale.

Latent Variable	Latent Variable	Cronbach's α
Participation group stigma	6	0.936
Negative events stigma	5	0.931
Disciplines value stigma	5	0.925
Social identity	5	0.935
Disciplines participation willingness	3	0.963

TABLE 5 Results of KMO and Bartlett spherical test.

KMO and Bartlett test		Value
KMO value		0.953
Bartlett	Approximate chi-square	8350.932
	df	276
	p	<0.001

Conclusion

This study systematically identified three key dimensions of stigma in Chinese sports disciplines—participant group stigma, negative events stigma, and discipline value stigma—and demonstrated their significant negative impact on public participation willingness. Among these, negative events stigma exerted the strongest influence, underscoring the role of media and organizational misconduct in amplifying public aversion. Social identity emerged as a critical mediator, linking stigma perceptions to reduced engagement, thereby highlighting the psychological mechanisms underlying participation barriers. The findings advance theoretical frameworks on sports stigmatization by integrating multidimensional perspectives and emphasize the necessity of collaborative governance involving stakeholders to mitigate stigma.

Implications

The stigmatization perception dimensions of sports disciplines, constructed in this study, reveal that the perception of disciplines stigmatization is a multidimensional variable. Unlike previous studies that focused on specific sports groups or individual disciplines, the stigmatization perception dimensions of sports disciplines aim to comprehensively explain the stigmatization factors of various sports disciplines at the conceptual level of 'sports.' Compared to previous research, which emphasized the external environment and public opinion for the mitigation of sports disciplines stigmatization, this

TABLE 6 Scale items, sources, and standardized regression weights.

Dimensions	Items	Standardized regression weights	Standard Error	Source
Participation group stigma	I do not appreciate the appearance presentation of the xx sports community.	0.874	0.047	In-depth Interview (Sartore and Cunningham, 2010)
	The clothing image of the xx sports community does not conform to the general societal norms.	0.857	0.049	
	I perceive an arrogant and aloof attitude from the xx sports community.	0.856	0.047	
	I think that xx sports are more suitable for specific gender participation	0.800	0.056	
	The overrepresentation of sexual minority groups in xx sports makes me uncomfortable	0.834	0.053	
	I believe the motives of the xx sports participants are more for show	0.835		
Negative events stigma	I believe the xx sport has a higher frequency of violent incidents and deviant behavior	0.835	0.046	In-depth Interview (Goepfert et al., 2019)
	I think that xx sports further propagate body image anxiety	0.876	0.046	
	I think that xx sports intensify controversies regarding gender topics	0.843	0.048	
	I think that xx sports are considered a hotspot for competition corruption	0.854	0.043	
	In the promotional process, xx sports deliberately use and amplify their own stigma	0.865		
Disciplines value stigma	I think that the engagement experience of xx sports is low	0.786	0.048	In-depth Interview (Pavlidis and Fullagar, 2012)
	I think that the viewing experience of xx sports is low	0.874	0.049	
	I think that the competitive elements of xx sports is low	0.870	0.051	
	I believe the culture represented by the xx sport is niche and rebellious	0.855	0.050	
	I believe the xx sport poses a threat to mainstream sports culture	0.837		
Social identity	When someone praises this sport, it feels like a personal compliment.	0.875		In-depth Interview (Mael, 1988)
	I am very interested in what others think about the sport.	0.892	0.049	
	When someone criticizes this sport, it feels like a personal insult	0.854	0.049	
	When I talk about this sport, I usually say 'we' rather than 'they	0.859	0.046	
	If a story in the media criticized this sport, I would feel embarrassed	0.837	0.050	
Disciplines participation willingness	Stigma will make me lose interest in this sport	0.962		In-depth Interview (Ganesh et al., 2000)
	Stigma will deepen my negative impression of this sport	0.956	0.024	
	Stigma will reduce my willingness to participate in this sport	0.925	0.027	

TABLE 7 Results of descriptive statistics and correlation analysis.

	M ± SD	1	2	3	4	5
1. PGS	3.61 ± 1.34	1				
2. NES	3.71 ± 1.24	0.644**	1			
3. DVS	3.59 ± 1.23	0.606**	0.617**	1		
4. SI	3.75 ± 1.14	−0.407**	−0.396**	−0.415**	1	
5. PW	3.99 ± 1.75	−0.684**	−0.701**	−0.684**	0.562**	1

Significant at the 0.01 level (two-tailed). PGS refer to Participation group stigma; NES refer to Negative events stigma; DVS refer to Disciplines value stigma; SI refer to Social identity; PW refer to Participation willingness.

TABLE 8 Model fit test results.

Fit index	x^2 / df	RMSEA	GFI	CFI	IFI	TLI
Recommended value	<3	<0.8	>0.9	>0.9	>0.9	>0.9
Observed Value	1.609	0.041	0.919	0.982	0.982	0.980

study highlights the need for a shared and collaborative governance responsibility among multiple stakeholders. Only through such an approach can effective governance and mitigation of sports disciplines stigmatization be achieved.

Next, this study emphasizes that public perception of sports disciplines stigmatization is a complex dimension involving various aspects of society, government, groups, and individuals. Therefore, the

TABLE 9 Path analysis.

	Standardized Path Coefficient	Unstandardized Path Coefficient	Standard Error	t	P
Participation group stigma →Disciplines Participation willingness	−0.236	−0.313	0.067	−4.694	***
Negative events stigma → Disciplines Participation willingness	−0.303	−0.427	0.072	−5.949	***
Disciplines value stigma →Disciplines Participation willingness	−0.258	−0.372	0.070	−5.304	***

*** Represents $p < 0.001$.

TABLE 10 Results of mediating effect test.

Path	C total effect	*a*	*b*	ab mediating effect	ab (95%CI)	c′ direct effect	Conclusions
PGS → SI → PW	−0.375*	−0.191*	0.246**	−0.047*	[−0.131, −0.013]	−0.313*	Partial mediation effect
NES → SI → PW	−0.483*	−0.161*	0.246**	−0.040*	[−0.121, −0.004]	−0.427*	Partial mediation effect
DVS → SI → PW	−0.446*	−0.209*	0.246**	−0.051*	[−0.152, −0.018]	−0.372*	Partial mediation effect

* Indicates $p < 0.05$, ** indicates $p < 0.01$.

improvement and alleviation of stigmatization in sports disciplines cannot solely rely on government initiatives or disciplines associations. It requires a multi-party shared responsibility and collaborative governance to efficiently advance the governance and mitigation efforts of sports disciplines stigmatization.

Ultimately, the stigmatization perception dimensions of sports disciplines, introduced from the public's perspective, focus on exploring public awareness of stigmatized sports disciplines. We delve into the general perception dimensions of stigmatization in sports disciplines, offering a comprehensive interpretation of the stigmatization phenomena across various sports disciplines. From a theoretical perspective, this study provides an in-depth exploration of the sources of stigmatization perception dimensions in sports disciplines, moving beyond the study of specific disciplines or groups. In practical terms, the public's perception of sports disciplines stigmatization is a complex dimension, and when faced with an already established stigmatization environment, the emphasis should not only be on the external environment and public opinion's mitigation but also on the specific analysis of different sports disciplines. This includes seeking internal reforms and external environmental improvements as dual paths for the mitigation of stigmatization in sports disciplines.

At the same time, it is also important to emphasize the role of social identity in this process. Social identity not only serves as a transmitter of threats but also as a force for repair and reconciliation (Rees et al., 2015). A deeper understanding of the mediating role of social identity contributes to revealing the psychological mechanisms behind sports disciplines stigmatization and provides valuable insights for developing strategies to improve willingness to participate. This underscores the importance, in managing and promoting sports disciplines, of considering not only specific stigmatization factors but also individuals' social identity and emotional aspects.

Limitations and future research

This study mainly focused on the general public's perspective when exploring the perception dimensions of sports disciplines stigmatization. In terms of the selection of interviews and questionnaires, the selection of interviews and questionnaires is mainly aimed at the public, and there is a lack of emphasis on professional groups such as professional athletes, sports administrators and policy makers. In the face of the current situation that some sports in China are seriously polluted and the causes are complex, future studies need to further expand the sample scope and further extend the level of stigma perception of sports in the study of professional sports groups, so as to obtain richer conclusions. Also, future studies might explore the dynamic interplay between public perceptions and those held within professional circles. Understanding how stigmatization influences and is influenced by different stakeholders can provide valuable insights for developing targeted interventions and strategies to mitigate the negative effects associated with stigmatized sports.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author/s.

Ethics statement

The studies involving humans were approved by Ethics Committee of Chengdu Sport University. The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

MeW: Conceptualization, Data curation, Formal analysis, Investigation, Software, Writing – original draft, Writing – review & editing, Methodology. YZ: Conceptualization, Investigation, Supervision, Validation, Writing – review & editing. MiW: Investigation, Methodology, Resources, Software, Writing – review & editing. XZ: Investigation, Project administration, Resources, Supervision, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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Analysing gender disparities in youth sports coaching: an international survey (FEMCoach project)

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Introduction: The issue of gender inequality has a significant impact on the sporting world, with a range of implications and consequences. In the field of coaching, women are confronted with inequity throughout their careers, which frequently has a detrimental impact. To gain a deeper insight into the under-representation of women in sport coaching, framing the Female Sport Coaching Training Programme (FEMCoach) project, an investigation was carried out to examine coaches' educational support. After reviewing the scientific literature, a survey was developed aiming to analyse the needs of women youth sports coaches in practice to design coaching educational programmes that promote gender equity in youth sports.

Methods: The present study collected and analyzed survey data from 463 coaches (45% women and 55% men) from 24 different countries, sports and competitive levels. Coaches completed a 40-question online survey, divided into seven topics: (1) sociodemographic data, (2) the inclusion environment for sports practice, (3) coach professional activities, (4) menstrual cycle, hormonal contraception and pregnancy/childcare, (5) barriers for females in sport, (6) coaches' courses, and (7) gender differences.

Results: Some differences were found between women and men coaches' perceptions regarding barriers or stigmas that women face in practice. Most women's [80% (±5%)] and approximately half of men's [54% (±5%)] believe that women coaches sometimes face discrimination and/or mistrust and most of the women's [78% (±6%)] and the majority of men's [64% (±5%)] recognize different opportunities for coaches between genders. Considering the presence of topics related to female biology in coaches' education process the majority of women [72% (±5%)] and men [63% (±5%)] considered that they were not approached enough, agreeing most of the coaches, women [92% (±3%)] and men [87% (±4%)], that coach education programmes should be more expanded to cover it. In open-ended questions coaches agreed that educational programmes can promote gender equality and mentioned a lack of contents related to equity, identity and female biology.

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Discussion: Finally, accepting the limitations, this survey study provides relevant contextual information and practical applications for coaching educational programmes targeting women coaches and athletes and insights for governing bodies and institutions to foster gender equality in coaching.

KEYWORDS

sports coaching, educational programmes, women, female, gender equality, youth sports

1 Introduction

Stereotypes about gender have an immediate and ongoing effect on every aspect of people's lives (Preece and Bullingham, 2022). Gendered actions are socialized and perpetuated from a young age due to the normalization of societal stereotypes (Anderson and White, 2018), enriched by traditional gender-specific roles (Spence and Helmreich, 2014). Although men and women frequently perceive these gender ideologies differently, the results are often restrictive and discriminatory (Grabrucker, 1998). Nevertheless, research can encourage future change since stereotypes are socially shaped and not absolute (Azzarito and Solmon, 2009).

Male dominance in sports is intrinsically linked to hegemonic constructions of femininity, which emphasize traits such as "delicacy" and "vulnerability" (Bell, 2008). Since the 1970s, the absolute number of women and girls participating has gradually increased, with a significant rise in participation in health and fitness programmes (Norman, 2010). Yet, these improvements in sports have not been reflected in the proportion of women in coaching and leadership positions, and the coaching profession continues to be particularly restrictive for women (Norman, 2008). Regardless of social status, ethnicity, sexual orientation, or gender identity, organized sports should be accessible to all, as sports and participation in sports promote social inclusion (Bailey, 2005) and support inclusive practices (Braumüller et al., 2020).

Gender stereotypes influence people's perceptions of themselves and others (Anderson and White, 2018), their behavior (Mulvey and Killen, 2015), their presentation (Carroll, 2019), their professional opportunities (Bird and Rhoton, 2011), and their participation in sports (Staurowsky, 2016). Women and girls are less physically active than men and boys of the same age (Women in Sport, 2022). Menstruation is one of the main reasons why young women quit playing sports or engaging in physical exercise. According to recent studies, 70% of girls avoid exercising during their menses because of pain (73%), fear of leaking (62%), tiredness (52%), and/or self-consciousness (45%) (Women in Sport, 2022). In general, female athletes from different sports and competition levels emphasize that menstruation is difficult and might have a detrimental effect on their athletic experiences (Adam et al., 2022). For young girls to benefit from physical exercise and not to consider their menstrual cycle an obstacle to participation, it is fundamental to learn how to encourage and keep them involved in sports (Keil et al., 2024).

Moreover, in a school-based context, research has shown that 42% of girls stop participating in physical education classes during their menses (Youth Sport Trust and Women in Sport, 2017). Sports participation benefits from an inclusive and diverse approach, and successful participation in sports is more likely to increase the probability of long-term commitment (Côté and Hancock, 2016). Research shows that youth sports programmes focused on play and engagement across various contexts typically enable long-term gains that align with global governments' agendas for excellence and participation (Comeau, 2013; Skille, 2011). International sports organizations and governing bodies should consider this integrative approach to provide their members with more inclusive and beneficial sports opportunities (Côté and Hancock, 2016).

Regarding coaches' knowledge, behaviors, and attitudes, it is recognized that they significantly impact youth sports experiences (Lafrenière et al., 2011), making these variables essential for the quality of coaching and the outcomes of young athletes (Li et al., 2024). Coaching entails responsibility for an athlete's physical and technical development, as well as their psychological and social wellbeing, positioning the coach as a central figure in establishing and monitoring ethical sporting behavior (Norman, 2016). In Western society, athletes' involvement in sports and their social and moral wellbeing leads to the assumption that coaches perceive their role as one that embodies an ethic of care and prioritizes ethical considerations beyond just technical aspects. In coaching, an ethic of care depends on the relationships that coaches build with their athletes, the interpretation of their knowledge and beliefs, and the effort to make coaching more inclusive and accessible (Denison, 2007).

Research shows some accomplishments in the participation of minority groups both as participants and in coaching. However, growth has been slow due to sporting organizations and governing bodies making minimal changes to their working methods, definitions, and rewards of competence. The understanding and interpretation of sociocultural issues, as well as the way in which individual and group differences are still supported, alongside the lack of changes to sports leadership, contribute to these challenges (Ely and Meyerson, 2000). As a result, persistent inequities remain in the field of sports.

Building appropriate and responsive educational tools and policies requires understanding coaches' experiences with discrimination and gathering their perspectives on potential solutions, given the critical role that coaches play in creating safe and inclusive athletic environments (Papageorgiou et al., 2023). Several educational programmes in sports have been developed to raise awareness and combat discrimination. However, it is challenging to significantly change attitudes (Dixon et al., 2016), sometimes leading to the reinforcement of generalizations

or stereotypes through anti-discrimination training, which perpetuates coaches' issues when navigating the complexities of real situations (Moustakas and Kalina, 2023). A recent study stated that to combat discrimination, education must begin in schools and athletic organizations. Moreover, anti-discrimination workshops and coach education were considered essential to addressing these issues in society and as key components in fostering long-lasting inclusiveness. The same study applied a survey to investigate the content that must be included when developing a training programme for youth coaches and staff about inclusion and combating discrimination, revealing the most important specific training activities, general awareness of discrimination and diversity, and content on specific marginalized groups (Kalina and Moustakas, 2024). In this context, describing the most important content to include in educational programmes, especially targeting the needs of female coaches, remains a gap in the literature.

To support the development of the FEMCoach programme, partners conducted extensive data collection with coaches through an online survey presented and discussed in this study, aiming to analyse the needs of women youth sports coaches in practice to design coaching educational programmes that promote gender equity in youth sports.

2 Materials and methods

2.1 Participants

All participants received a freely accessible online survey invitation (via e-mail, phone, or social media) and were asked to complete the survey regarding the needs of women sports coaches. The online survey was available for data collection from July 5th until October 21st. By the end of this period, a convenience sample of 476 practitioners from various countries and all levels of competition had completed the survey. Since this is a pilot study, *a priori* sample size calculation was not conducted. We considered the number of respondents sufficient, as indicated by previous similar studies (Ciaccioni et al., 2024; Dalamitros et al., 2023; Kalina and Moustakas, 2024). The study was approved by the Universidade de Trás-os-Montes e Alto Douro (UTAD) Ethics Committee (Ref. Doc70-CE-UTAD-2024) and was designed in accordance with the Declaration of Helsinki (World Medical Association, 2025). Participants were informed about the study's aims beforehand, and participation was voluntary.

2.2 Study design

A descriptive design was used for this study. The survey was developed using a web-based platform (Google Forms®), which facilitated data collection (https://forms.gle/RfMbJpZEEUbsbAcy5). The structure of the survey combines multiple-choice questions (i.e., only one answer allowed), checkboxes (i.e., multiple answers allowed), Likert scales, and open-ended, free-text responses to identify the perceived and actual needs of female coaches. The survey was created following a narrative review that collected scientific information on the subject. A total of 40 questions were included, divided into seven sections: (1) sociodemographic data (14 questions), (2) the inclusion environment for sports practice (three questions), (3) coach professional activities (one question), (4) menstrual cycle, hormonal contraception, and pregnancy/childcare (nine questions), (5) barriers for females in sport (five questions), (6) coaches' courses (three questions), and (7) gender differences (five questions). The survey was designed to be user-friendly, with completion taking up to 5 min. All data were collected and stored anonymously, and respondents provided informed consent.

2.3 Data collection method

The survey was structured into seven sections to carefully address key issues regarding women's youth sports coaches' needs in practice. This division allows us to investigate different aspects of women in sports coaching, and it was created (BR, JA) based on our group's previous narrative review, which established the current state of women's youth sports coaching education in Europe.

2.3.1 Section 1: sociodemographic data

This initial section is intended to collect sociodemographic information from the participants' sample, characterizing coaches with information such as their gender, age range, nationality, race, and educational level, and contextualizing their training environments by collecting data on the countries in which the coaches currently work and where they have previously worked, alongside the duration of their coaching experience. Additionally, it considers their expertise, the age range of their athletes, the classes and genders they coach, and the number of hours they dedicate to coaching.

2.3.2 Section 2: the inclusion environment for sports practice

Section 2 delves into practitioners' opinions regarding the school's environment and inclusion, gender equity and equal opportunities, and healthy practices.

2.3.3 Section 3: coach professional activities

Section 3 exclusively focuses on professional activities and the degree to which coaches from different sports may have a different perspective on the hierarchisation of their professional activities.

2.3.4 Section 4: menstrual cycle, hormonal contraception, and pregnancy/childcare

Section 4 aims to determine if coaches believe that there is a stigma related to the menstrual cycle, hormonal contraception, and/or pregnancy and childcare. In this section, we evaluate whether athletes use any menstrual cycle tracking software if pregnancy is a limiting factor for their careers, including these topics in the coaches' education process and coach/athlete communication regarding them.

2.3.5 Section 5: barriers for females in sport

Section 5 aims to explore the cultural values associated with sports and gender, the different treatment of genders, and social justice and ethical issues.

2.3.6 Section 6: coaches' courses

Section 6 approaches coaches' opinions regarding the usefulness of certain contents of learning courses, their consideration for participants' gender differences and their readiness to deal with gender identity questions.

2.3.7 Section 7: gender differences

Section 7 is the final section, which evaluates coaches' opinions on gender differences and whether they believe coaches' courses can promote gender equality.

2.4 Data analysis

Data were extracted from the online survey (Google Forms®) and exported to a spreadsheet (Microsoft® Excel for Mac version 16.89.1) for two types of analysis.

First, as detailed in previous research (Altarriba-Bartes et al., 2021; Pernigoni et al., 2022), absolute and relative (percentage) frequencies were calculated for categorical variables. Observed frequencies were described using qualitative terms, defined as follows: All = 100% of participants; Most = ≥75%; Majority = 55–75%; Approximately half = ∼50%; Approximately a third = ∼30%; Minority = <30%. Additionally, for each proportion, 90% compatibility limits were calculated (i.e., the percentage of participants that chose a particular response to a question) to evaluate the margin of error using the following formula: 90% compatibility limits = $\pm$ 1.65*$\sqrt{[x\ (100 - x)/n]}$, where "x" represents the proportion and "n" the total sample size (Pernigoni et al., 2022).

Second, a qualitative content analysis was conducted on open-ended responses, following established methodologies (Gibbs, 2007; Krippendorff, 2004). Statements were defined as units of analysis, according to the pragmatic approach in discourse analysis (Brown and Yule, 1983). Based on previous deductive categories derived from survey sections, raw data were analysed, and thematic units and codes were inductively created to explore gender-related issues in sports coaching (Table 1). The coding process was developed and reviewed by two researchers (RF-L, VL-R).

TABLE 1 Associated categories and themes in qualitative content analysis.

Gender-related issues associated with sports coaching	
Category	Thematic units
Educational programmes	Topics to promote gender equality to practice sport
	Topics to promote gender equality to coach
Female-coach practice	Stereotypes and mistrust
	Leadership position for women
	Personal life
	Access criteria to coach

Categories and themes related to use in qualitative content analysis.

3 Results

The survey gathered a total of 476 responses, with 463 deemed suitable for further analysis. Inconsistent or incomplete data from 12 surveys led to the exclusion of those participants, and one participant was excluded due to gender categorization. Responses were categorized by gender, and it was not possible to consider "others" as a group since only one participant selected that gender option and, for this reason, was excluded from further analysis. The majority of responses came from Europe, while only a limited number originated from Africa, Asia, South America, or North America ($N = 42$).

3.1 Frequency analysis

3.1.1 Sociodemographic data

The full participants' sociodemographic characteristics are described in the Supplementary material. Approximately half of the participants considered for analysis were women [45% (90% compatibility limits ±4%)], with approximately a third aged between 18 and 24 years old [29% (±5%)]. The other half were men [55% (±4%)], with approximately a third aged between 34 and 44 years old [27% (±5%)]. The majority of participants are White/Caucasian [82% (±3%)], and nationalities are from 24 different countries, mostly from the consortium countries: Cape Verde [6% (±2%)], Greece [19% (±3%)], Poland [8% (±2%)], Portugal [43% (±4%)], Serbia [10% (±2%)] and Spain [15% (±3%)] [93% (±2%)] and the majority of them work in these countries [91% (±2%)]. Approximately half of the female coaches have sports coaching experience of more than 7 years [44% (±6%)], and the same applies to the majority of men [56% (±5%)]. The majority of female coach individual sports [58% (±6%)], while the majority of male coach team sports [55% (±5%)]. Additionally, most of the coaches are experts in coaching [84% (±3%)], and half have either a master's degree, a PhD or a higher level of education [50% (±4%)]. Finally, the majority of female coaches [76% (±5%)] and the majority of male coaches [69% (±5%)] reported dedicating a maximum of 20 h per week to coaching. Details regarding the genders coached, the competitive level of athletes, and the age range of athletes coached are presented in Table 2.

3.1.2 The inclusion environment for sports practice

Regarding the results for Section 2 of the survey (Figure 1), half of the female coaches [49% (±6%)] and the majority of the male coaches [57% (±5%)] believe that schools encourage sports to promote gender equality among children and youth by creating strategies to increase sports participation and inclusion. Moreover, half of the women [51% (±6%)] and the majority of the men [61% (±5%)] believe that teachers' training and coaching education

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TABLE 2 Frequency distribution of participant data characterization ($N = 463$).

Coaches	Women (%)	Men (%)
Total (%)	45	55
Genders coached (%)		
Women	94	63
Women exclusively	40	6
Men	59	93
Men exclusively	5	36
Others	5	5
Class of athletes coached		
World class	6	7
Elite/international level	16	23
Highly trained/national level	37	46
Trained/developmental	60	62
Recreationally active	36	36
Sedentary	7	10
Age range of athletes coached		
5–10 years old	46	32
11–15 years old	59	61
16–20 years old	27	39
21+	19	25

World Class, Olympic and/or World medallists; Elite/International Level, competing at the international level (individuals or team-sport athletes on a national team); Highly Trained/National Level, competing at the national level; Trained/Developmental Level, local-level representation; Recreationally Active, meet World Health Organization minimum activity guidelines (Adults aged 18–64 years old completing at least 150 to 300 min of moderate-intensity activity or 75–150 min of vigorous-intensity activity a week, plus muscle-strengthening activities two or more days a week; children and adolescents, aged 5–17 years old, doing at least 60 min per day of moderate-to-vigorous intensity activity a week, plus strengthening muscle and bone at least 3 days a week); Sedentary, do not meet minimum activity guidelines (McKay et al., 2022).

programmes provide essential training on gender equality to ensure equal opportunities in sports. Additionally, the majority of the women [73% (±5%)] and the majority of the male coaches [81% (±4%)] feel that their working environment is well prepared regarding health practices for sports training.

3.1.3 Coach professional activities

Considering the results for Section 3 (Figure 2), female and male coaches shared similar opinions regarding the hierarchy of coaches' professional activities, with approximately half of all women [51% (±6%)] and the majority of men [56% (±5%)] identifying the most important activities as "organizing your athlete's rest and recovery process," "planning the training process," and "organizing your pedagogical work."

In the second place, nearly half of the coaches, women [43% (±6%)] and men [46% (±5%)], similarly consider "improving your athletes' personal manners," "working out your athletes' physical preparedness," or "working on your athletes' theoretical preparation" for this position.

In third place, approximately half of the coaches—women [45% (±6%)] and men [40% (±5%)]—selected "control over your athletes' technical schooling," "control over your athletes' tactical schooling," or "working on your athletes' motivation sphere."

Finally, in tenth place, the majority of coaches, women [59% (±6%)] and men [57% (±5%)], chose "organizing your athletes' rest and recovery process," "giving first aid," or "organization of your pedagogical work."

3.1.4 Menstrual cycle, hormonal contraception, and pregnancy/childcare

Regarding the results for Section 4 (Figure 3), concerning the topics of the menstrual cycle, hormonal contraception, and pregnancy/childcare, the majority of female coaches [59% (±6%)] feel that there is a stigma related to the menstrual cycle, while less than half of the male coaches [39% (±5%)] share this view. Half of the women [54% (±6%)] and less than half of the men [35% (±5%)] perceive a stigma related to hormonal contraception, and the majority of women [54% (±5%)] as well as less than half of the men [35% (±5%)] feel there is a stigma related to pregnancy and/or childcare. Regarding communication, the majority of women [67% (±5%)] and only half of the men [51% (±5%)] reported that discussing these topics is normal. In terms of the usage of tracking software by their female athletes, approximately one-third of women [32% (±5%)] and half of the men [48% (±5%)] indicated they do not know if their athletes use it. Additionally, half of the women [53% (±6%)] and the majority of the men [56% (±5%)] believe that pregnancy is a sensitive topic regarding the futures of their athletes. With respect to the inclusion of these three topics in the coaches' educational process, the majority of women [72% (±5%)] and men [63% (±5%)] feel they are not sufficiently addressed, agreeing with most coaches, including women [92% (±3%)] and men [87% (±4%)], that coach education programmes should be expanded to cover them more comprehensively. Finally, less than half of the women [45% (±6%)] and men [41% (±5%)] feel that there is open communication between coach and athlete regarding these topics.

3.1.5 Barriers to females in sport

Concerning the results for Section 5, a minority of women [21% (±5%)] and more than a third of men [40% (±5%)] disagree or strongly disagree with the affirmation that "the cultural values associated with sport made some men believe that coaching belongs to them," while the majority of women [56% (±6%)] and approximately a third of men [33% (±5%)] agree or strongly agree with this affirmation (Figure 4).

Regarding coaches' practices, if they ever felt obligated to demonstrate their coaching abilities to a person of a different gender, the majority of women responded "yes" [70% (±5%)], while the majority of men responded "no" [66% (±5%)]. A majority of women [80% (±5%)] and approximately half of the men [54% (±5%)] believe that female coaches occasionally face discrimination and/or mistrust. The frequency of this behavior is perceived by the majority of women [64% (±6%)] and men [62% (±7%)] as occurring no more than twice a month (Figure 5).

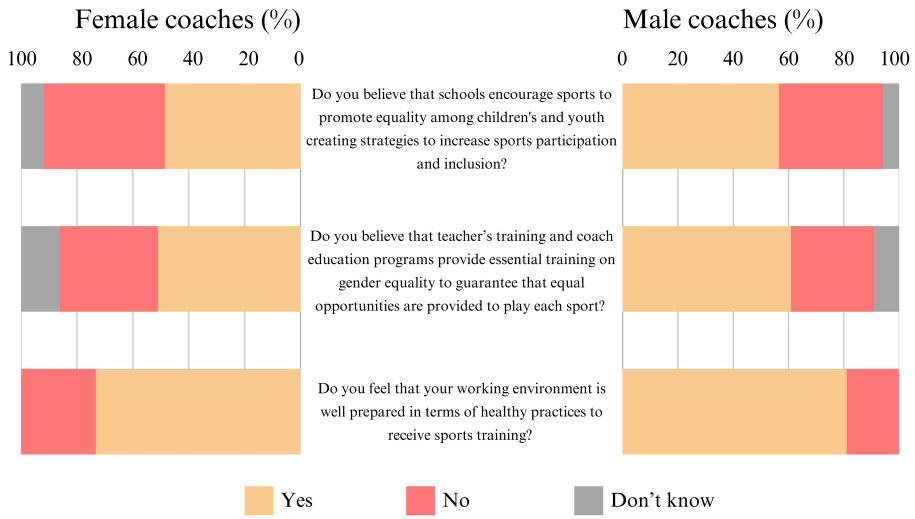

FIGURE 1
Frequency distribution of the results for Section 2: the inclusion environment for sports practice (N = 463).

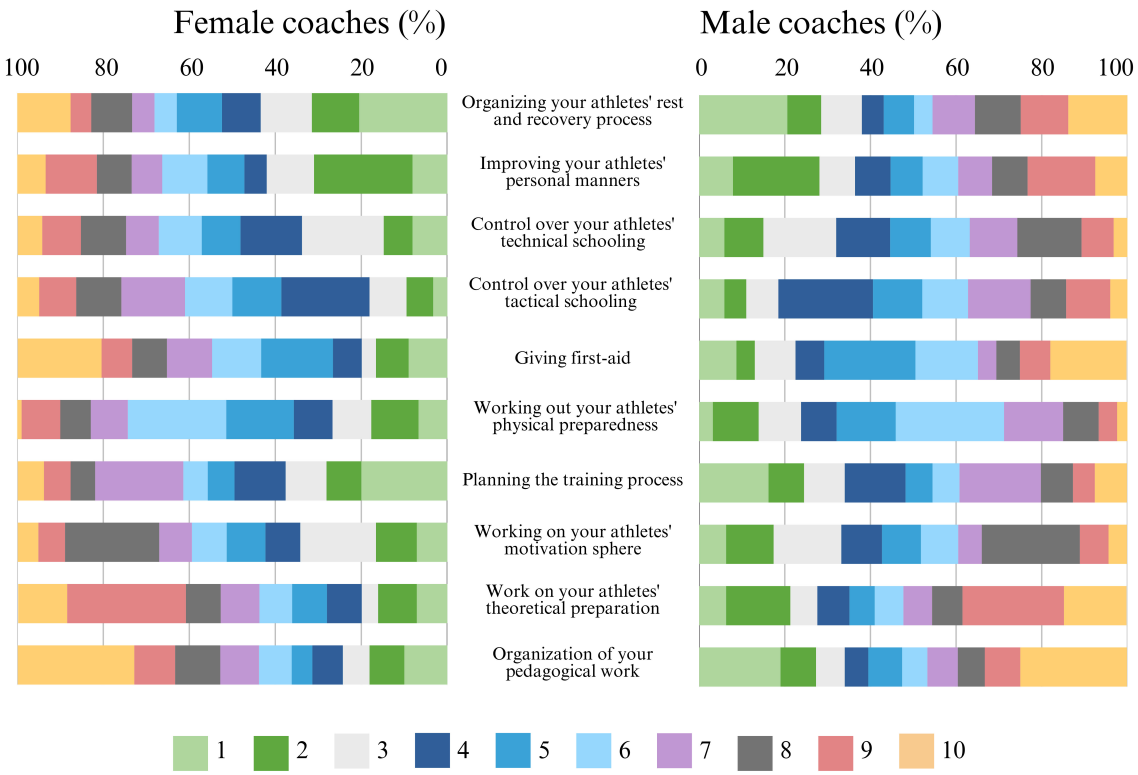

FIGURE 2
Frequency distribution of the results for Section 3: coach professional activities hierarchisation (N = 463).

3.1.6 Coaches' courses

Regarding the results for Section 6, the most useful types of content to include in coaching courses for women are "practical sessions" [60% (±6%)], "psychological contents" [63% (±5%)] and "activity and skill acquisition" [51% (±6%)], while for men, they are "practical sessions" [60% (±5%)], "knowledge acquisition" [59% (±5%)] and "teaching and learning" [54% (±5%)] (Figure 6).

Approximately half of the women [48% (±6%)] and the majority of the men [59% (±5%)] feel prepared to address

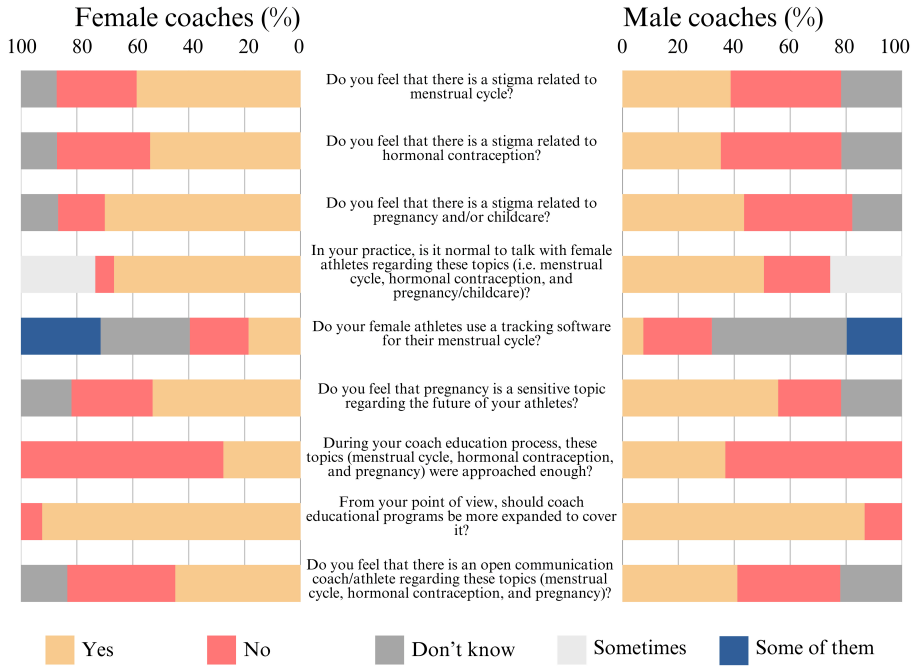

FIGURE 3
Frequency distribution of the results for Section 4: menstrual cycle, hormonal contraception and pregnancy/childcare (N = 463).

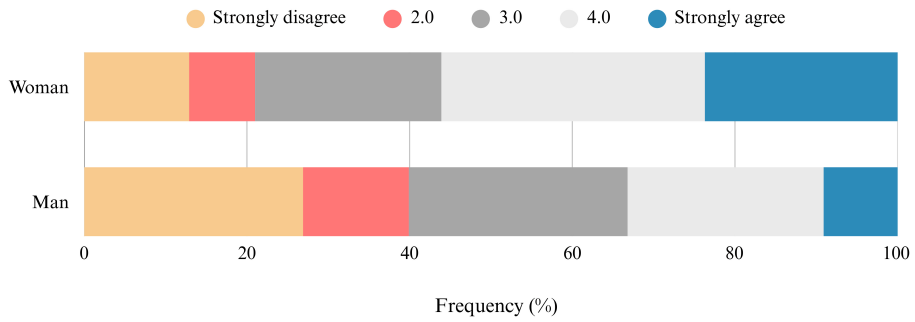

FIGURE 4
Frequency distribution of coaches' opinions regarding the following affirmation: "The cultural values associated with sport made some men believe that coaching belongs to them (N = 463)."

questions of gender identity among their athletes. However, over a third of the women [40% (±6%)] would like to gain more knowledge on the topic, and approximately a third of the men [30% (±5%)] reported feeling unprepared. More than a third of the coaches, both women [41% (±6%)] and men [37% (±5%)] indicated that the contents (e.g., didactic and educational materials) of their coaching course(s) did not account for participants' gender differences (Figure 7).

3.1.7 Gender differences

Finally, regarding the results for Section 7 (Figure 8), approximately half of the women [52% (±6%)] and the majority of the men [57% (±5%)] view gender equality as an equal opportunity between both genders. The majority of the women [78% (±6%)] and the majority of the men [64% (±5%)] recognize differing opportunities for coaches between the genders. Approximately half of the women [53% (±6%)] believe that their standard coaching practices were primarily influenced by gender relations, while the majority of the men [68% (±5%)] did not.

3.2 Qualitative content analysis

3.2.1 Educational programmes

Regarding coaches' opinions on the open-ended question: "In your opinion, what are the most important topics to be included in coaching education programmes regarding social

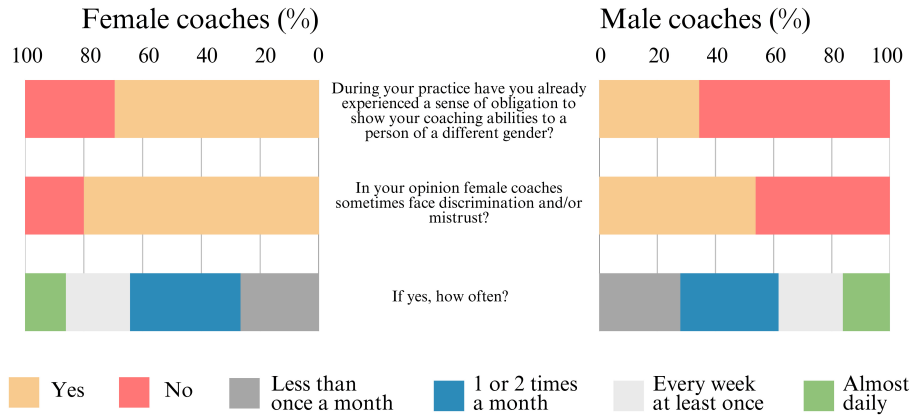

FIGURE 5
Frequency distribution of the results for questions related to barriers that women can face in sports (N = 463).

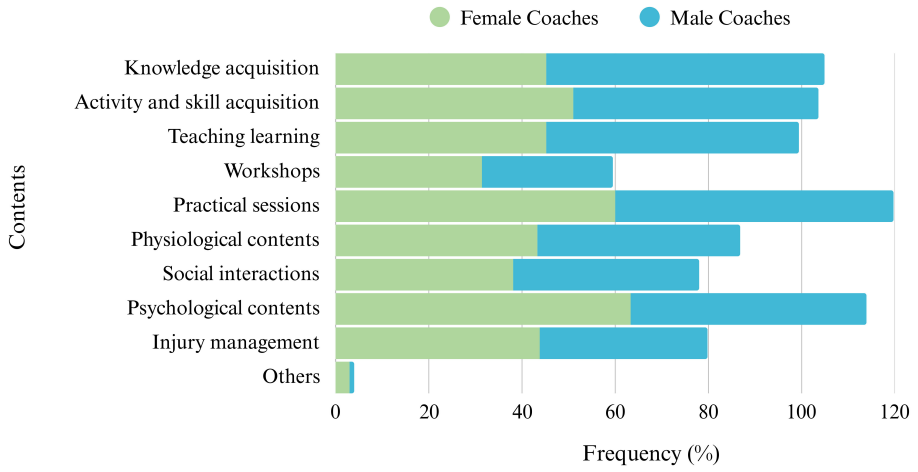

FIGURE 6
Frequency distribution of the contents of coaches' educational courses (N = 463). Others include training load, first aid, social construction of an athlete, identity, equality, menstrual cycle, mental illness, motor control, disabilities, and ethics.

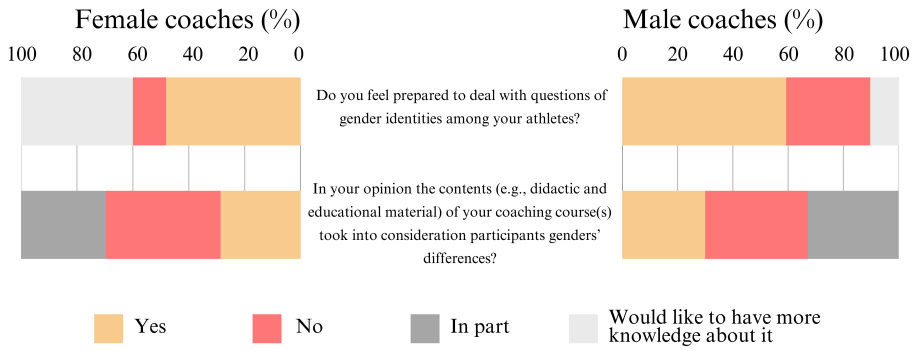

FIGURE 7
Frequency distribution of the coaches' opinions related to questions of gender identities (N = 463).

justice and ethical issues?" participants often referred to the importance of *gender equality and equity in practicing sport* as topics to be included in coaches' educational programmes. Coaches' opinions frequently mentioned justice, respect, education, communication, equal rights, mental health, female biology, and empathy.

Moreover, we can read below some examples of coaches' opinions:

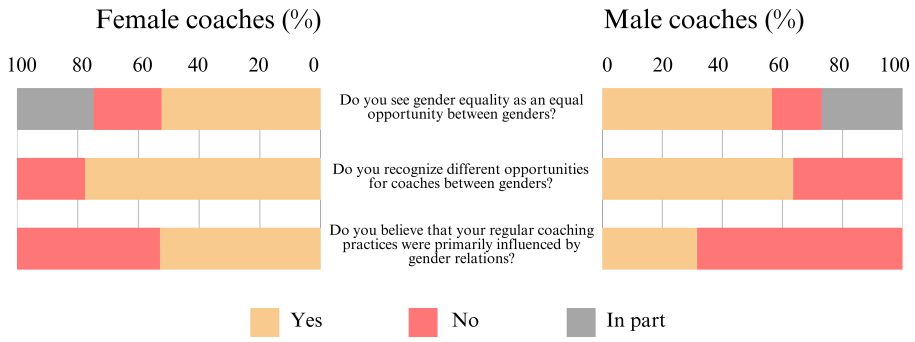

FIGURE 8
Frequency distribution of the coaches' beliefs on gender differences (N = 463).

"Principal differences in terms of performances among gender, ages, etc., in different situations and sports." (man, over 55 years old, Portuguese, individual sports coaches, more than 7 years of experience, male and female athletes from 11 to 20 years of age)

"Planning, programming and training specific for women." (women, between 35 and 44 years old, Serbian, individual sports coaches, more than 7 years of experience, male and female athletes from 5 to 10 years of age)

"Awareness of the hormonal changes that your team could be experiencing according to their age. Also, how to treat and talk to them so they can feel free to talk about these topics with you." (women between 18 and 24 years old, Spanish, team sport coach, between 2 and 5 years of experience, female athletes from 5 to 15 years of age)

"Education on the psychological, physiological, and ethical aspects of coaching transgender athletes." (man, between 25 and 34 years old, Portuguese, team sport coaches, more than 7 years of experience, male and female athletes from 21 years of age)

Regarding the coaches' opinions on the open-ended question: "Do you believe that coaches' courses can promote gender equality?" The most frequent answer was affirmative. We can read the following opinions related to including *topics that promote gender equality in coaching*:

"By incorporating topics such as gender equality, deconstructing stereotypes, and raising awareness about the importance of diversity, these programmes can help create a more inclusive sports environment. Additionally, providing equal opportunities for access and career progression for female coaches can significantly contribute to reducing disparities and promoting a culture of equality in sports." (man, between 45 and 54 years old, Cape Verdean, team sport coaches, more than 7 years of experience, male athletes from 21 years of age)

"By incorporating gender-sensitive training, education on bias, and strategies to foster inclusivity, these courses can help break down barriers that have traditionally limited opportunities for women in sports." (man, between 35 and 44 years old, Greek, team sport coaches, more than 7 years of experience, male athletes from 16 to 20 years of age)

"The coach himself has to know how to deal with athletes of both genders. Everyone has the right to practise all sports. The coach has to be ready to accept and understand a girl and a boy. Regardless of the sport they practice." (women between 25 and 34 years old, Portuguese, individual sports coaches, more than 7 years of experience, men and female athletes from 5 years of age)

"Including topics related to equality, deconstructing stereotypes, and promoting an inclusive environment can not only improve the quality of coaching but also create a more equitable sports culture. By preparing future coaches to deal with gender dynamics in an ethical and inclusive way, we ensure that sport becomes a space where all people, regardless of gender, can have equal opportunities to thrive." (women between 45 and 54 years old, Portuguese working in Angola, team and individual sports coaches, more than 7 years of experience, men and female athletes from 11 to 15 years of age)

3.2.2 Female coaching practice

Regarding the coaches' opinions related to the open-ended question: "What is your opinion regarding barriers that female coaches can face in practice." we can read the following opinions by coaches which are related to *stereotypes and mistrust*:

"As far as gender equality is concerned, women are at a disadvantage when it comes to entering the sports labour market. There are more men as coaches in the various sports, and the macho impetus is still very much in vogue." (man, between 35 and 44 years old, Portuguese, team sport coaches, more than 7 years of experience, male and female athletes from 5 to 20 years of age)

"Female coaches face barriers such as gender stereotypes, lack of opportunities, wage disparities, increased pressure and scrutiny, lack of representation, and challenges in balancing work and family, which limit their progress and success in sports." (Men, from 45 to 54 years old, Cape Verdean, team sport coaches, more than 7 years of experience, male athletes from 21 years of age)

> "Inequalities in perceived competence: Female coaches may be perceived as less competent than their male counterparts. Discrimination and sexism." (woman, 25 to 34 years old, Polish, individual sports coach, between 2 to 5 years of experience, female athletes from 11 to 20 years of age)
>
> "Gender role assumptions; leadership stereotypes, marginalisation, masculine hegemony, male-run and manage coach education, no career pathway, no merit recognition, bullying/harassment, the low payment." (woman, 25 to 34 years old, Portuguese, individual sports coaches, more than 7 years of experience, men, women and other genders' athletes from 11 years of age)

The majority of coaches' opinions follow the same line overall. When existing, depending on the sport that we are considering and the country itself, the major barriers for female coaches are mistrust, discrimination, and the lack of parity with their male counterparts and patriarchal societies.

The still-existing stereotypes, social barriers, authority issues, prejudices, traditions and stigma related to *women in leadership positions* are also pointed out as gender differences in coaching positions. Coaches also mentioned:

> "Male athletes don't respect so many female coaches." (man, between 45 and 54 years old, Portuguese, individual sports coach, between 5 and 7 years of experience, male and female athletes from 5 to 10 years of age)
>
> "Prejudice, questioning of competence and female leadership, professional and personal conflicts." (woman, 25 to 34 years old, Cape Verdean, team sport coach, between 2 to 5 years of experience, female athletes from 11 to 20 years of age)
>
> "Female coaches face lots of barriers in practice. Gender stereotypes are one of them, as many sports are viewed as male-dominated. So, female coaches struggle against the perception that men are naturally superior and suited to leadership roles. The lack of role models is another example. Female coaches are underrepresented. Young women don't have female role models to look up to." (women between 18 and 24 years old, Spanish, team sport coach, between 2 and 5 years of experience, female athletes from 5 to 15 years of age)

There are also coaches reporting not feeling any barrier in their sport but acknowledging this issue in other sports:

> "I don't notice any barriers from female coaches in the sport that I coach (…) because the sport heavily values women's empowerment. But based on what I've observed in other sports, it's quite uncommon to see women coaching men, but the opposite - that is, men coaching women - is, I must admit, fairly prevalent. It's also usual for athletes to migrate into coaching roles, and male performance in absolute terms is typically better than female performance. Therefore, I believe this is why people confuse good coaches with strong athletes and still see a male coach as being better than a female." (man, between 25 and 34 years old, Portuguese, team sport coaches, more than 7 years of experience, male and female athletes from 21 years of age)

In relation to *personal life*, coaches reported that women sometimes struggle with:

> "Pregnancy periods when related to competitive calendars, lacking some understanding from club managers." (man, over 55 years old, Portuguese, team sport coaches, more than 7 years of experience, male and female athletes from 5 to 15 years of age)
>
> "In my country, female coaches have the duty to raise their children and take care of the home. They cannot devote as much time as male coaches. The first years of coaching are less professionally active. When the children are older, male coaches have more coaching experience. In my opinion, this is where the difference comes from." (women between 45 and 54 years old, Polish, team sport coaches, more than 7 years of experience, female athletes from 11 to 15 years of age)

In addition, differences in society are perceived by many coaches, who report, to some extent, positive differences between now and the past. Thus, we support a gender equality view sustained in a society that provides equal opportunities to women as it does to men, with gender just considered as a factor in coaching (as in every other aspect) because there is still a different treatment of women than there is of men just because of gender and not sustained by any other reason, and that is exactly where our concerns must be focused. All the other factors related to the professional quality of the coach must always be taken into consideration, and, from our point of view, hopefully, one day, that will be all that will really matter.

Thus, in order to promote gender equality, *access criteria to coaching* is fundamental. It is detrimental that opportunities are the same for all genders and that merit and competencies must always be the top priorities. A coach's opinion that goes in line with this is above mentioned:

> "The lack of respect for a woman is, sadly, higher than for a man. Women have to face a disadvantage in order to perform their coaching skills. Although gender is now a new item in selecting a coach, (…) there's a lack of meritocracy in the process, and some women are forced to be good. There should be equal opportunities, and people should compete for places the same way, with gender independence." (men, between 25 and 34 years old, Spanish, team sport coach, female athletes from 11 to 20 years of age, more than 7 years of experience)
>
> "I believe that there is only one barrier, which is opportunity." (woman, 25 to 34 years old, Cape Verdean, soccer, individual sports coach, between 2 to 5 years of experience, men and female athletes from 5 years of age)

4 Discussion

The main objective of this survey study was to analyse the needs of women youth sports coaches in practice to design coaching educational programmes that promote gender equity in youth sports. In this study, we explore coaches' beliefs on gender equality

and identity issues and whether coach educational programmes can influence them.

The present study provides novel insights into coaches' opinions and feelings regarding gender equality and identities, ultimately providing relevant information on programmes' contents that address female coaches and female athletes, along with practical insights for governing bodies and institutions to promote gender equality in coaching.

We found that the opinions of women's and men's coaches differ regarding the barriers or stigmas that women face in practice, primarily describing feelings of mistrust and discrimination, a lack of parity compared to their male counterparts, and the influences of patriarchal societies. The majority of coaches believe that educational programmes can promote gender equality and noted a lack of content related to equity, identity, and female biology (especially the menstrual cycle and how it affects sports performance).

4.1 Creating stereotypes from the first contact with sports

The initial contact with sports often occurs in the early years of a child's life and is typically developed within a school context, where participants in various sports share similar physical and motor competence profiles that become more diverse as they grow older. Due to the similarities in anthropometric, physical, and motor skills profiles at a younger age, schools provide an opportunity for students to try out different sports before entering the years of specialization (Lovell et al., 2019). A more gender-divergent physical education culture that minimizes gender differences is currently more acceptable and promoted throughout Europe. Symbolic and social boundaries are gradually disappearing as a result of the social creation of a gender-neutral physical education culture and the merging of cultures (Lundvall, 2016). Positive physical education experiences enhance physical activity levels in adulthood (MacNamara et al., 2011), and understanding the facilitators and barriers to sports equips professionals with the necessary skills to promote lifelong sports and physical activity participation (Corbin et al., 2020). Negative stereotypes about gendered norms and sexuality are encountered by individuals who continue to play the sport as adults due to a lack of broader educational exposure (Grundlingh, 2010).

According to Hay and Penney (2013), societal values, cultures, opinions, political influences, and personal beliefs all play a role in the social construction of physical education. As a curricular subject, there is a distinct gendered habitus that favors particular groups in physical education (Green et al., 2007; Metcalfe, 2018), either discouraging or reinforcing specific forms of femininity and praising masculinity and conventional masculine traits such as strength, speed, and competitiveness (Anderson and White, 2018). Both teachers' and students' gendered habits and the domination of masculinity are cemented by these discourses, which are frequently reproduced and reinforced in practice (Valley and Graber, 2017; Walseth et al., 2017; Wrench and Garrett, 2017). In fact, a limited, binary conception of gender is formed by the physical education environment in schools and is perpetuated in the subject through practices, instruction, and didactic materials, making it difficult to challenge stereotypes (Anderson and White, 2018), while remaining prevalent gendered norms, stereotypical practices, and disparities (Metcalfe, 2018; Valley and Graber, 2017). The present research results reveal the need to improve teachers' training and coaching educational programmes to provide essential training on gender equality and guarantee the provision of equal opportunities in sports.

A systematic review concluded that the most frequent physical activity barriers for young girls are the lack of support from peers, family, and teachers, followed by a lack of time. The most identified facilitators for physical activity among young girls are weight loss/management and peer, family, and teacher support (Duffey et al., 2021). Physical activity promotion should attempt to implement strategies that can change the role and relationship of negative gender norms (World Health Organization, 2019). By establishing cultural expectations of what it means to be feminine or masculine (Corr et al., 2019), gender norms and stereotypes have a particular impact on physical activity participation by restricting access to and existing opportunities. Gender stereotypes are perceived by young girls as a barrier to physical activity engagement, and perceived gender dominance arises when physical activity options are viewed as socially acceptable for boys only, diminishing the value and accessibility for girls (Martins et al., 2014; Standiford, 2013). To meet the needs of young girls, curriculum development must use an inclusive approach. When creating a physical education curriculum that considers the preferences of young girls in a gender-responsive manner, an intersectoral approach, including education, sports, and health sectors, should be considered, probably requiring new policies in the field. Examples of how to adjust a curriculum for young girls include making it non-competitive and flexible, individually designed with a range of opportunities, and providing time for physical activity. The present research revealed the potential to increase schools' encouragement through sports to promote gender equality among children and youth, creating strategies to increase sports participation and inclusion. A possible strategy to increase physical activity opportunities may include policies and programmes that can promote physical activity outside of the conventional physical education setting in schools, such as active breaks and active extracurricular activities (Duffey et al., 2021). Identifying the barriers that limit participation may be simpler with more discussion of negative gender norms in the environments where physical activity occurs (Martins et al., 2014). For instance, institutions, educators, and boys should be involved in acknowledging and addressing their role in promoting these norms and developing supportive environments for girls' participation in physical exercise.

4.2 Female biology and sports

Regarding stigma in sports considering menstrual-related issues, research supports our findings, reaffirming the need for a change (Heather et al., 2021). Menstruating athletes face struggles due to their menstrual cycle-related physical (e.g., menstrual cramps, tiredness, bloating) and psychological symptoms (e.g.,

mood changes, low motivation) (Nolan et al., 2023). Athletes and coaches frequently view menstruation as a taboo, creating obstacles to open communication about the menstrual cycle (Bergström et al., 2023). Studies have shown a lack of confidence in discussing the menstrual cycle among both male and female coaches due to the delicate nature of the subject (Brown and Knight, 2022; Marais et al., 2022), limiting athletes and coaches from having timely and open discussions about menstrual symptoms and dysfunction, which is also impacted by the widespread stigma associated with the menstrual cycle and the lack of knowledge regarding this subject (Bergström et al., 2023; Findlay et al., 2020; Verhoef et al., 2021). This issue is more prevalent when male coaches are involved (Brown et al., 2021) due to a general bias and belief that the menstrual cycle is a "women's subject" (Holmes et al., 2021), which is supported by our results: fewer male coaches reported it being normal to talk about these topics. A coordinated and combined effort is needed from all stakeholders to shift perceptions of the menstrual cycle and end the social stigma associated with menstruation (Martínez-Fortuny et al., 2023).

The interaction between coaches and athletes is essential to the athletic environment, as coaches have a significant impact on players' personal and professional growth as well as their accomplishment of intrapersonal, interpersonal, and collective goals (Jowett, 2017). Athletes and coaches may promote gender equity and foster a more successful, supportive, and inclusive athletic environment if they understand their roles in managing menstrual cycle-related factors and provide appropriate assistance. Athletes frequently state that the presence of a male or female coach influences the amount and quality of communication during the menstrual cycle, indicating discomfort and insecurity when discussing the subject with male coaches (Brown et al., 2021; Findlay et al., 2020; Verhoef et al., 2021). They believe that male coaches are unable to relate to their menstrual concerns, limiting their ability to provide helpful guidance or support (Kolić et al., 2023; von Rosen et al., 2022). As a result, athletes often choose to conceal their symptoms, attributing menstruation-related pain or discomfort to non-menstrual causes (Brown et al., 2021). Studies indicate that male coaches can be reluctant to address the subject with their athletes, particularly the younger ones, while female coaches and physical education instructors are generally more open in their support and communication about the menstrual cycle, using their own experiences and knowledge of menstruation symptoms to assist in this process (Brown and Knight, 2022; Höök et al., 2021). Research also indicates that athletes tend to discuss menstrual cycles with female coaches and female staff members (von Rosen et al., 2022). Concerning male coaches, studies show their interest in learning more about how the menstrual cycle affects their athletes' training and performance, as well as how to approach and communicate with their athletes regarding menstrual symptoms (Bergström et al., 2023; Clarke et al., 2021).

To create a safe environment for young women and girls to discuss their menstrual cycle, it is crucial to de-stigmatize menstruation, enabling educators and coaches to provide young athletes with the support they need (van den Berg and Doyle-Baker, 2025). Studies conducted on female professional athletes at the senior level revealed that 76% of athletes did not talk to their coaches about their menstrual cycle despite its impact on their daily lives, training, and performance (Armour et al., 2020). Furthermore, research found that although participants believed their menstrual cycles affected their performance, only 27% of elite athletes discussed them with their coach (Solli et al., 2020). The primary reasons reported for this reluctance were shame or discomfort caused by stigma and the fact that coaches are men. Out of the 140 athletes in the study, 44% of those with female coaches discussed menstruation with their coach, whereas 22% of those with male coaches did the same (Solli et al., 2020).

Education regarding the menstrual cycle is advised for coaches and athletes. According to recent studies (Brown et al., 2021; Clarke et al., 2021), coaches receive little to no education on the subject, which is especially problematic for men as they have no firsthand experience with menstruation. Any coaching certification or course should include instruction for coaches to help destigmatise topics related to female biology (Keil et al., 2024). Education is the most crucial element in raising awareness of the menstrual cycle and encouraging open communication among athletes and coaches (Bergström et al., 2023; Clarke et al., 2021; Verhoef et al., 2021).

Between coaches and staff, it is unclear who is responsible for gathering, organizing, and sharing menstrual cycle tracking data (Marais et al., 2022). According to the results of our research, a high percentage of coaches do not know whether their female athletes are using tracking software. This may indicate a lack of knowledge regarding the benefits of this tracking for both athletes and coaches or a lack of confidence between athletes and coaches in sharing personal information.

Menstrual tracking data can be useful for understanding the menstrual cycle, identifying symptom patterns, finding coping mechanisms, customizing training programmes according to athletes' symptoms, and providing breaks when needed (Epstein et al., 2017). It is crucial to ensure that menstrual tracking data are handled appropriately due to the power dynamics between coaches and athletes, especially in elite sports, as well as to decrease athletes' dissatisfaction stemming from coaches' failure to provide follow-up information (McHaffie et al., 2022). Thus, sporting organizations should establish official procedures and structures for menstrual cycle tracking and data management, clearly defining the roles and responsibilities of all parties involved (Levy and Romo-Avilés, 2019).

In the Srinivasa Gopalan et al. (2024) review, three key factors of sporting environments that support healthy sports participation for athletes related to the menstrual cycle are recognized. (1) The presence of female coaches is significant for open communication concerning the menstrual cycle since they can relate to the struggles and experiences of menstruation (Brown and Knight, 2022). Given the historical underrepresentation of women in coaching, support, and administration roles in sports (Forsyth et al., 2019), this reinforces the need to expand opportunities and roles for women in sports leadership. (2) Exposure and experience are key as athletes learn to control and express their menstrual symptoms over time (von Rosen et al., 2022), and coaches increase their awareness (Brown and Knight, 2022). Additionally, involving older teammates in the creation of a supportive environment for younger athletes by sharing their knowledge and insights about the menstrual cycle can also help (Forsyth et al., 2023) or make athletes see their "role models" in sports talking openly about it (Keil et al.,

2024). (3) In addition to gaining insight and understanding over time, athletes and coaches should emphasize comfort and trust in their relationships for open communication (Brown and Knight, 2022; Marais et al., 2022).

In line with our findings, Raudasoja and Ryba's (2024) research indicates that some individuals treat pregnancy as a taboo. Additionally, to avoid unfavorable reactions from their coaches and sports officials, pregnant athletes often delay disclosing their pregnancy (Davenport et al., 2022; Pullen et al., 2023). The participation of pregnant women in competitive and elite sports is a social issue that remains highly controversial and is viewed as a sensitive topic by many of the coaches involved in this research. Sport has historically been perceived as inappropriate for pregnant women due to its underlying logic of striving for peak performance, which often comes at the expense of other aspects of life (Douglas and Carless, 2009), thereby perpetuating a sexist culture (Fink, 2016). Davenport et al. (2023) found that coaches recognized the importance of reliable information regarding the safety of training during pregnancy. The existing guidelines are regarded as too conservative for elite athletes, and individualization, using specific benchmarks and athletes' subjective levels of discomfort as indicators, is recommended as a more effective strategy than applying a standardized schedule for all athletes participating in sports during pregnancy and returning to sports after giving birth (Davenport et al., 2023). In both traditional and social media, pregnant athletes are often portrayed as irresponsible, with sexism, particularly sexual objectification and unfair discrimination, identified as the primary factors contributing to this stigmatization (Weaving, 2020).

Considering the presence of these topics related to female biology in the coaches' education process, the results of the present research reinforce that they are not sufficiently addressed and that coach education programmes should be expanded to cover them. It is recommended that coaches frequently update their knowledge on issues related to female biology and maintain a clear and understandable manner of speech for athletes' comprehension. As our results confirm the lack of open communication between coaches and athletes regarding these topics, changes must be implemented. Additionally, since gender education is a powerful tool for reaching all age groups and influencing broader social change, it is recommended that mandatory content be created in schools (Raudasoja and Ryba, 2024).

4.3 Gender as a barrier to sports coaching

Overt or structural causes are not always the reasons for the barriers that prevent women from achieving positions of power in sports. Conversely, relatively minor events often shape women's experiences as coaches. Some men believe that coaching is primarily a male domain due to the cultural values associated with sports, and women who aspire to be successful often encounter feelings of doubt and mistrust from their peers. Consequently, female coaches often feel pressured to demonstrate their coaching abilities to men (Norman, 2010), which is supported by the present research results, where the majority of women indicated that they had experienced a sense of obligation to show their coaching skills to someone of a different gender, while most men reported that they have never experienced this. When asked if they agreed with the assertion: "the cultural values associated with sport made some men believe that coaching belongs to them," coaches' opinions varied significantly, with the majority of women and only a third of men agreeing with this statement, reflecting differing understandings between genders. Moreover, male and female coaches' opinions diverge when asked about their beliefs regarding whether female coaches sometimes face discrimination and/or mistrust; in this case, the majority of women, but only half of the men, agreed with the statement.

According to Aitchison et al. (1999), the industry where women face the greatest discrimination and harassment in sports. Everhart and Chelladurai (1998) studied gender disparities in preferences for a coaching career and examined discrimination as a potential barrier for women pursuing coaching. Female coaches encounter numerous obstacles due to the unbalanced organizational structures prevalent in the coaching industry. Research in this field has demonstrated that women often receive less for their efforts than men, yet they quantitatively express some degree of satisfaction working within these institutions. Three retention factors (i.e., recognition and collegial support, inclusion, and working conditions) have been identified as significant in shaping work experiences. Despite women stating that inclusivity is an important aspect of their work experience, more men reported feelings of inclusivity (Pastore et al., 1996). In the present research, differences can be found in how men and female coaches perceive these ideas, reinforcing the need for greater awareness and the development of clear actions to combat the real barriers that women still face in their coaching careers.

Coaches must develop the ability to identify and address social justice concerns by becoming aware of social disparities, the unequal distribution of power, and ethics in both their actions and those of others. This process can also encourage coaches to engage in deeper self-reflection (Cushion et al., 2003). According to Culp (2014), 43 student coaches from the United States participated in a 16-week social justice course based on social constructivism. Throughout the course, topics related to inequality were introduced and explored. Analysis after the course revealed shifts in coaches' social justice ideologies, a greater understanding of under-represented groups' perspectives, and an enhanced critical perspective when analysing sports procedures. In the same study, results suggested that coaching educational programmes might benefit from emphasizing constructivism and democratic education (Culp, 2014).

The findings of Norman (2016) showed that viewing gender equity through an "equal opportunities" lens leads to a narrow conceptualization of such issues by coaches. This perspective fails to challenge dominant and discriminatory ideologies and does not enable coaches to effectively address equity within their practices. Consequently, coaches struggle to understand the importance of managing these issues. While equal opportunities between genders in sports coaching are a necessary step, they are certainly not sufficient to address and solve this issue when considering the bigger picture.

Equality and equity are multifaceted ideas that encompass distribution among groups, access to resources, the quality of

interpersonal relationships, and whether people relate as equals (White, 2007). When discussing equality, Baker et al. (2009) raised several important questions, such as: (1) to understand equality, it is necessary to recognize the patterns of inequality, (2) these patterns need to be challenged using a suitable framework, (3) the goals of equality must also be determined, and (4) the best institutional structures for attaining equality in various situations must be established. This should outline the institutional strategies that would be most effective in fostering equality within a given setting.

To ensure equity (i.e., to mitigate potential inequities for people and groups), various institutions, sectors, and organizations work toward equality (i.e., everyone has equal opportunities and access to the system) through various projects, programmes, and services.

Sports continue to be considered as an inequitable, gendered, hegemonically male institution. Thus, identities, organizational practices, and processes of control and action are differentiated between men and women largely dominated by men (Fielding-Lloyd and Meân, 2011). In the present research, most coaches recognize different opportunities for coaches of various genders. Several coaches view gender equality as an equal opportunity between genders, and working to enhance inclusion through an equal opportunities ideology has the advantages of challenging inequality in sports, eliminating unfairness, and increasing the likelihood of minority groups being employed, trained, and retained in leadership roles (Ely and Meyerson, 2000). However, instead of scrutinizing organizational structures and cultures, an "equal opportunities" approach shifts the focus to external variables as the reason for under-representation (Lusted, 2009; Shaw and Slack, 2002).

Regarding gender relations, previous research has emphasized that they are at the heart of women's sporting experiences and constitute motives for their under-representation in sports leadership or for unequal athletic experiences (Norman, 2010). In Norman's (2016) study, participants' experiences revealed that gender relations, intersecting principally with religion and ethnicity, supported their everyday coaching practices. In the present research, considerable differences between men and women were observed when asked if their regular coaching practices were primarily influenced by gender relations, with a greater impact reported by women.

Instead of being understood as power dynamics or factors influencing how people perceive their lives, aspects of an individual's identity are viewed as "add-ons" (Ely and Meyerson, 2000), contributing to a narrow and weak approach to these questions among coaches and athletes (Norman, 2016).

4.4 Coaches' education for a paradigm change

Independent of gender, the differences in the hierarchisation of coaches' professional activities and the type of sport coached are well established. Thus, the perception of coaches changes depending on the sports' needs (Sterkowicz et al., 2007). Over the years, professional activities have been described, developed, and studied across various sports disciplines (Sterkowicz-Przybycień and Purenović-Ivanović, 2021). A hierarchy of their importance related to sports success has emerged from previous publications that considered coaches' perspectives on the value of professional activities in different sports [e.g., judo (Sterkowicz et al., 2007), artistic gymnastics (Sterkowicz-Przybycień and Purenović-Ivanović, 2021), taekwondo (Bujak et al., 2012), and karate (Dobrzycki, 2020)]. This hierarchy can be applied to enhance the educational programmes for upcoming generations of coaches in these fields (Sterkowicz-Przybycień and Purenović-Ivanović, 2021). The results of the present research indicate that coaches' gender did not have a considerable impact on the hierarchisation of coaches' professional activities. However, more research should investigate whether there are differences in coaches' perceptions of the hierarchisation of professional activities, considering specific sports and the gender of the coach. Researchers acknowledge the need for further investigation in this area to enhance current coaching educational programmes (Radojević et al., 2019).

When studying the individual impact of coaches' educational programmes, the research mentioned the need for an adaptive approach, considering genders (e.g., girls/women may benefit more from content related to physical activity and self-esteem than boys/men) (Douglas Coatsworth and Conroy, 2006; Guagliano et al., 2015). The present research results reinforce the need for a gender-sensitive approach when creating coaching educational programmes, considering the different degrees of usefulness that coaches attribute to various types of content to be included in such programmes. In addition, according to the results, they could also benefit from a reformulation of the didactic and educational material, considering participants' gender differences. This also emphasizes the importance of future studies to create large-scale interventions designed specifically for girls, particularly when female coaches supervise them. The complex effects of coaching highlight the need for a comprehensive approach to coaching education that incorporates the numerous demands and experiences of athletes and the progress of coaches (Li et al., 2024).

Over the past 10–15 years, the effectiveness of coaching for youth has begun to include more robust outcomes, such as identity, mental health, social-emotional wellness, and moral education, as well as outcomes focused on equity and justice (Newman et al., 2024; Zeisner and Smith, 2022). It is important to understand that several variables appear to affect coaching effectiveness, including team individuality and coach dynamics, athletes' age and gender, the type of sport, how coaching educational programme interventions are conducted, and the backgrounds of coaches (Li et al., 2024).

It became clear from the results of the present research that not all coaches feel prepared to address questions of gender identity among their athletes and that they wish to gain more knowledge about this matter. This also highlights the need to incorporate this topic into coaching educational programmes to promote inclusivity. Everyone involved in sports (i.e., coaches, educators, athletes, administrators, doctors, and so on) should receive training on how to prevent heteronormativity from being reinforced and how to foster supportive environments, equipping them to prevent, identify, and address prejudice and discrimination due to their crucial role in translating policy to the field (Kavoura and Kokkonen, 2021).

A scoping review found that addressing some problems faced by athletes and coaches, including gender and sexual

minorities in sports, could be improved by combining the implementation of anti-discrimination policies with gender and sexual diversity education for all involved (Kavoura and Kokkonen, 2021). Existing discriminatory ideas about gender and sexuality continue to thrive at a micro level due to the lack of strategic direction, actions, or guidance from national governing bodies, as well as inadequate sociocultural education for coaches (Norman, 2013). By highlighting the importance of inclusivity and exemplifying alternative approaches to institutional structures, athletic departments can act as "social change agents" and influence the sports environment for transgender athletes as well (Cunningham, 2015). There will likely be more educational opportunities through continuing education programmes and professional conferences as research on transgender needs and experiences progresses (Munson and Ensign, 2021).

5 Conclusion

To the best of the authors' knowledge, this study is the first to analyse the needs of women youth sports coaches through their opinions on the educational programmes' content and the perceived barriers and stigmas related to female coaches. The majority of participants recognized gender differences in the sports coaching profession and agreed that coaching programmes represent a primary approach to a paradigm shift. Therefore, it appears that theoretical and practical aspects align with the evidence of perceived needs among female coaches, which may serve as a starting point to help optimize both female coaches' careers and the development of female athletes by adapting coaching training to female biology.

Starting from what is, for many, the first contact with sports in physical education, schools must encourage sports to promote equality among children and youth, creating strategies to increase sports participation and inclusion. It is important to ensure that teachers' training and coaching educational programmes provide essential training on gender equality to guarantee equal opportunities to play each sport.

Regarding the menstrual cycle, hormonal contraception, and pregnancy/childcare, a significant stigma is associated with these topics. Their relevance for open communication in coaches' educational programmes may stand as a first step to start changing mentalities and help coaches deal with these topics among female athletes, ultimately improving their performance. A discussion on gender identities must also be included as part of coaches' education so they can easily comprehend and manage issues that athletes may face. Concerning barriers for women in sports, the cultural values associated with sports have helped create some of them, and clearly, the sense of mistrust or discredit is still strongly present in the population of female coaches.

Regarding coaches' professional activities, the results indicated a similar pattern across genders. However, further research should explore whether different sports and/or the gender of the coach will influence these results, which must be considered in coach education. Finally, coaching educational programmes should adopt a gender-sensitive approach and consider coaches' gender adaptation of the content to their specific needs. These actions will help reduce gender inequalities and contribute to promoting equal opportunities between genders.

Considering the results obtained and acknowledging the limitations, we can conclude that this survey study provides relevant contextual information and practical applications that may be useful for educational programmes aimed at women sports coaches and female athletes. Additionally, it offers insights to promote gender equality and inclusivity in coaching, aspiring for equal opportunities between the genders in the coaching profession.

6 Strengths

The main strength of the present study is that it provides a comprehensive approach and an up-to-date panorama of coaches' perceptions regarding the existence of gender differences in the coaching profession, considering both women's and men's opinions on the sports coaching profession from diverse backgrounds and countries.

This study represents an innovative investigation into female coaches' needs and barriers within their profession, opening the discussion about gender equity in coaching. By acknowledging gender differences in coaching, essential insights are provided regarding the challenges that female coaches face in practice, creating an important approach to develop the necessary strategies to improve their opportunities and, consequently, their professional careers. By reporting the stigmas related to female biology and highlighting the importance of addressing these topics in coach education programmes, we foster a supportive environment for female coaches and athletes. The discussion on the significance of specific topics in coach educational programmes encompasses various fields and reflects the current and actual needs of female coaches to implement conscious changes and raise awareness about the need for shifting mentalities.

In summary, the study's strengths lie in its innovative focus, new insights, and significant contributions to the discussion concerning gender equity within the coaching profession.

7 Limitations

The present study acknowledges some limitations that should be considered, primarily related to the data collection instrument. The use of online surveys may result in varied interpretations of the questions posed, depending on the respondent. Although efforts were made to employ simple and precise language while keeping the questions concise and offering multiple options, along with extensive testing of the survey prior to distribution, misinterpretations may still have occurred. To reduce the impact of incorrect assumptions, we provided the lead researchers with contacts in case coaches required clarification. Additionally, the survey did not undergo a validation process for internal consistency or reliability of the collected responses (e.g., test-retest reliability), which may introduce some ambiguity into the final data.

Another potential limitation is the possibility of a response bias, as the largest proportion of survey answers were from Portugal. Thus, possible stereotypes and cultural differences among

participants may have affected the results (Kemmelmeier, 2016). Moreover, it is necessary to recognize the different degrees of emphasis given by each country to sports, in general and in specific types of sports. Moreover, a potential strategy to mitigate cultural bias should be considered for future research, including authors from different nationalities to analyse the results.

Furthermore, potential biases emerged from the convenience sampling approach since the survey was designed to be openly accessible to coaches and was advertised across various platforms (e.g., email, phone, social media), allowing all interested coaches to participate. This enrolment strategy limited the authors' ability to obtain crucial information regarding the practitioners who participated in the survey and those who did not (e.g., the rate of participation or rejection in each group).

Moreover, the results of the presented survey must be interpreted with caution because (1) the a priori sample size calculation was not performed, and although we considered the number of responders to be adequate in relation to the sample size of previous similar studies (Ciaccioni et al., 2024; Dalamitros et al., 2023; Kalina and Moustakas, 2024), the compatibility limits of proportions appear, in some cases, inadequate for comparison, suggesting that a larger sample size would be required, and (2) the uncertainties for comparisons of proportions are, in some cases, too large to draw confident conclusions.

Finally, the survey was developed exclusively in English, possibly making some coaches unable to participate, which created a sample bias regarding the English-speaking practitioners willing to participate in the study.

8 Practical applications

Despite the study's limitations, the results from this research may be applied in the development of sports coach

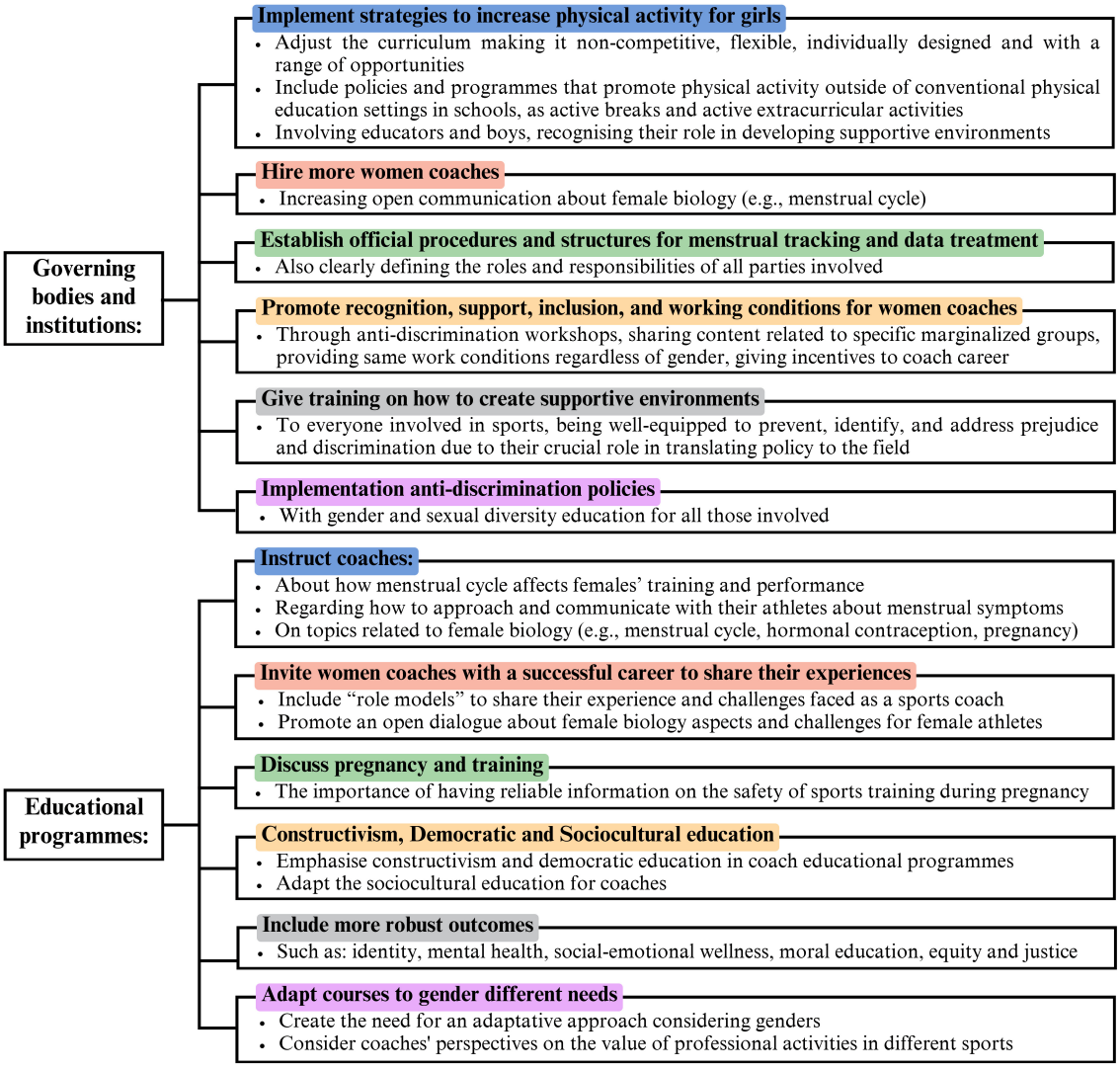

FIGURE 9
Key findings to promote gender equality in sports coaching.

educational programmes, as they contribute to a deeper understanding of coaches' perceptions of gender equity among peers, emphasizing key issues and areas for intervention. These educational programmes would specifically address women's needs, helping coaches engage with their athletes and confront the stigma associated with topics such as the menstrual cycle, hormonal contraception, and pregnancy/childcare. The educational programmes can also include structured discussions concerning gender identity and cultural perceptions of gender in sports.

The present study may also encourage reflection among schools, governing bodies, and institutions regarding inclusivity and gender equity in educational programmes, raising awareness of gender biases. Eventually, this could lead to the development of strategies to increase the participation rates of women and girls in sports and physical activities, as well as to ensure equal opportunities for all children and youth.

In conclusion, the practical applications of this study emphasize the importance of targeted educational programmes and awareness movements that directly address the needs of female coaches and contribute to a more equitable coaching landscape. This strategy may lead to meaningful improvements in the coaching profession and foster a more inclusive environment for all athletes (Figure 9).

9 Future lines

The present study establishes a foundation for ongoing research efforts by identifying several areas for further investigation. Longitudinal studies could assess the effectiveness of the proposed interventions and the long-term effects of adapting sports coach educational programmes to a more gender-sensitive approach.

To strongly support and solidify the results on this subject, future research should recruit more practitioners to resolve the sample size problem, develop a more effective recruitment method to minimize potential sampling bias and explore new directions in cross-cultural differences.

Following these future lines, we will be able to enhance the foundational knowledge gained from this study, ultimately striving for significant progress in gender parity within the sports coaching field in Europe.

Data availability statement

The raw data supporting the conclusions of this article will be made available by the authors, without undue reservation.

Ethics statement

The studies involving humans were approved by the Universidade de Trás-os-Montes e Alto Douro (UTAD) Ethics Committee (Ref. Doc70-CEUTAD-2024). The studies were conducted in accordance with the local legislation and institutional requirements. The participants provided their written informed consent to participate in this study.

Author contributions

VD: Writing – original draft, Writing – review & editing. JC-G: Writing – original draft, Writing – review & editing. VL-R: Writing – review & editing. RF-L: Writing – review & editing. JA: Writing – review & editing. LC: Writing – review & editing. SD: Writing – review & editing. BR: Writing – review & editing. GP: Writing – review & editing. NL: Writing – original draft, Writing – review & editing.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Generative AI statement

The author(s) declare that no Gen AI was used in the creation of this manuscript.

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Supplementary material

The Supplementary Material for this article can be found online at: https://www.frontiersin.org/articles/10.3389/fpsyg.2025.1560764/full#supplementary-material

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Cultural background and diversity: N'golo and Capoeira in play

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Introduction: Capoeira is an Afro-Brazilian polysemic cultural manifestation, commonly known as fight-game formerly practiced only in streets and restricted environments and currently in training centers, gyms, and mainly in schools. The main question is: how this practice that was marginalized, prohibited by the Brazilian Penal Code in the past, can today promote an improvement in interpersonal relationships and cultural diversity among people?

Methodology: This is a documentary research characterized by a historical approach, based on capoeira-*body* to understand the body narrative. Sources: analysis of N'golo drawings by the artist Neves e Sousa in Galeria Verney (Portugal).

Results and discussion: Categories established *a priori*: *1. characterization of body practice, 2. musicality* and *3. body elements.* In short, we argue that understanding of the African roots in Capoeira is an instrumental for promoting inclusion and representation, highlighting Cultural Diversity in Physical Education as well in people daily life, in different practical contexts of teaching, all over the world.

KEYWORDS

Capoeira, N'golo, cultural diversity, ancestry, African diaspora, inclusion, interpersonal relationships, history of sport

1 Opening the *roda* (introduction)

Opening the *roda*[1] (Capoeira circle) means starting the game. This study will primarily explore an approach between Capoeira fundamentals (historical, bodily knowledge) and Cultural Diversiust promotion in Sports in order to understand its ability to unite individuals from various cultural backgrounds and how it has the potential to reduce cultural disparities. As can be seen in global newspapers and magazines throughout the time, this manifestation is also present in areas of social vulnerability and refugee camps, with the aim of reducing differences and promoting harmony between people, as exemplified in the reports "Capoeira brings fun and peace to refugees in the Democratic Republic of Congo" (United Nation High Commissioner for Refugees – Unhcr Brazil, 2014) and "Capoeira unites Israelis from across the country" (I24News English, 2023).

1 For illustration only, it consists of a circle with different people, in which someone is placed around the circle holding Capoeira musical instruments, like *berimbau* (resonating gourds), *atabaque* (drum), *pandeiro* (tambourine), and *agogô* (double bell), while people are clapping and singing. Inside the circle are two people playing—fighting and dancing—according to the melody. Each different kind of berimbau sound means varied types of Capoeira games.

Capoeira has a very unusual trajectory, from crime to heritage (Pasqua et al., 2023), a practice that emerged from enslaved workers since colonial times, when people removed from Africa were brought to Brazil, where they recovered and reinvented their knowledge. For this reason, it was also formerly called the *slave game* or *war dance* (Tavares, 2012). Capoeira was severely repressed in imperial times and prohibited by the Brazilian Penal Code (1890); people only practiced in a hidden way. De Araújo (1997) defends a theory of 'multiple transformations of Capoeira,' which greatly assists the framing of this modality in different scopes, contributing to the emergence of different expressive forms of Capoeira, mainly those of a ludic nature and sporting, the latter influenced by the ideas of modern sport widespread during the course of the 19th century. It was recognized as a Brazilian Intangible Cultural Heritage by Instituto do Patrimônio Histórico e Artístico Nacional (2008) and World Intangible Cultural Heritage by United Nations Educational, Scientific and Cultural Organization (2014).

In pursuance of illustration and comparison with other sports, Pasqua et al. (2020) conducted a study on the relationships between Capoeira and Gymnastics (Gymnastics for All), in which they identified and analyzed possible relationships of consonance and dissonance between them. In the first moment, the difference in the migratory processes that involved the conception of Capoeira (forced migration and slavery process; recovery and reinvention of ancestral African practices) and the development of Gymnastics (European immigration and resignification of different gymnastic practices) in Brazil was highlighted. For today, the study (Pasqua et al., 2020, p. 165) concluded that, despite different historical trajectories:

> *[..] have in common the possibility of expression in the artistic field, pointing to a broader exploration of the manifestation of Capoeira for the creation of artistic compositions, not only with an addition of specific movement of this practice, nor with a berimbau sound, but from the understanding of the improvisation technique, body dialogue, musical sensitivity and ginga also in the historical sense.*

Still in the field of Gymnastics, Locci et al. (2023) analyzed the role of the Hungarian immigrant coach Ilona Peuker as a protagonist in the development of Rhythmic Gymnastics (RG), also called Modern Gymnastics, in Brazil (1953 to 1995), especially regarding her role as a gymnastics coach, coach developer, and in the establishment of relationships between European and Brazilian cultures. They drew on oral histories and documentary research based on documents from Ilona (photographs, letters, certificates, etc.). From this study of images, it was possible to perceive the impact of an original style that enchanted audiences in Brazil and Europe due to the 'Brazilness' in Gymnastics.

Inspired by studies like this and based on previously developed research (Pasqua and Toledo, 2018; Pasqua and Toledo, 2019), we sought to understand Capoeira from image documents, which could give clues about its trajectories and the cultural and sporting impact on the practice of Capoeira in various fields of action and expression. Therefore, we emphasize studies on Capoeira iconography that have contributed to the cultural context of Capoeira (Pasqua, 2020; Pasqua et al., 2023; Araújo and Jaqueira, 2020; Castro Júnior, 2018, 2010; Desch-Obi, 2008).

As a polysemic bodily practice, Capoeira can be expressed in many dimensions. e.g., as an art, sport, history, or education tool. Authors from different backgrounds have interpreted Capoeira as an art and cultural manifestation (Silva, 2008; Castro Júnior, 2010; Tavares, 2012; Rosa, 2015; Reis, 1997; and Pasqua and Toledo, 2021), enhancing the body aspects of Capoeira. In sports, we mention Pasqua et al. (2012) and Gomes et al. (2025), who dealt with sports and Capoeira competitions, and Araújo and Jaqueira (2013), who conducted a praxeological analysis of the first regulated sport of Capoeira. For the historical facet, we highlight research developed by Soares (1993, 1998) and Pires (1996, 2001). For educational purposes, we mention Silva (2020a), Silva (2020b), and Silva (2009).

In order to understand the senses and meanings of Capoeira's bodily knowledge, it is necessary to comprehend this manifestation beyond the Brazilian context, going overseas in the Black Atlantic scenario (Thompson, 2011b), as a cultural practice resulting from the African diaspora. Considering Capoeira as belonging to this African bodily substrate, or with a "wider range than Brazil" (Soares, 1993, p. 36), means admitting a more comprehensive stance for establishing parallels between Capoeira and other body manifestations considered 'mothers' and 'cousins.' In this way, we emphasize the African diaspora also from the perspective of the maps by Eltis and Richardson (2010).

There are bodily manifestations in Africa that are very similar to the practice of Capoeira in Brazil, such as N'golo and Bassúla, already mentioned by Soares (1993) and Pires (1996), which are known as the 'mothers of Capoeira.' The N'golo, focus of this manuscript, is also popularly known as the Zebra dance[2]. There are other dances that may have influenced the body knowledge repertoire of Capoeira, such as Bassúla, Cabangúla, and Umudinhú, mentioned in the study by Barão (1999), and the Cujuinha (warrior dance), Uianga (hunters' dance), and the Cuissamba (dance of judgment and punishment), found with Zulu (1995).

Based on these premises, we present one of the maps in the book "Atlas of the Transatlantic Slave Trade," by Eltis and Richardson (2010), two renowned historians who developed the first most comprehensive and updated atlas on the 350-year history of trafficking, kidnapping, and coercion of about 12.5 million people from Africa to almost all countries that had an Atlantic coast, 80% of trafficking trips ever made. This Slave Voyages[3] database is available online and is one of the most complete sources of information on slavery in the Atlantic. We highlight the map of the Transatlantic Slave Trade from Portugal and Brazil in the period between 1,526 and 1867 (Eltis and Richardson, 2010, p. 30) to illustrate the number of people from different African geographic spaces (Figure 1).

According to Capoeira (2011), there are several "cousins" of Capoeira, bodily manifestations with African origin or due to the African presence in the Americas, in the *Black Atlantic* that currently have more visibility: stick fight (Haiti), jugar palo (Venezuela), calinda (Trinidad) maní or bambosá (Cuba), head-butting (Venezuela), knocking and kicking (United States), ladja (or danmyé, ronpom, or kokoyé, Martinique), mrengé (Comoros, Indian Ocean), morengy (or watsa) (Madagascar, Indian Ocean), and moringue (Reunion Island, Indian Ocean). Stotz and Falcão (2012) also dealt with laamb, a grappling fight present in Benin, Nigeria, the Ivory Coast, Togo, Ghana, Burkina Faso, and Mali.

2 Our corresponding author from Angola, Janguinda Kambwetete Moniz (Professor Cabuenha), an artist and Capoeira player, gave us the information that it is not just an allusion to the zebra animal but also to the Mufic frog.

3 *Slave Voyages—TRANS-ATLANTIC SLAVE TRADE DATABASE*. Available at https://www.slavevoyages.org/.

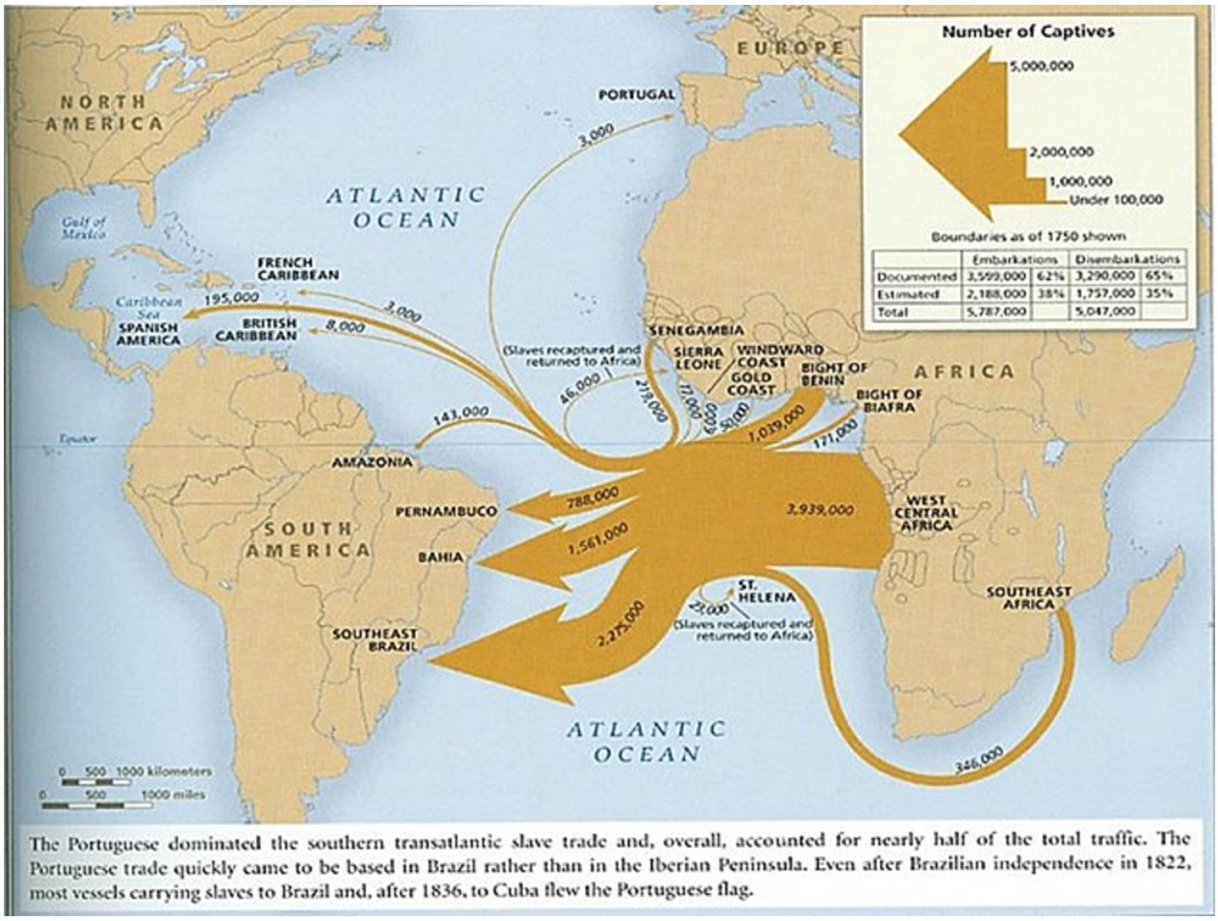

FIGURE 1
Map 1 (16). The Portuguese and Brazilian Transatlantic Slave Trade (1526–1867). Source: Eltis and Richardson (2010, p. 30).

In this context, Pasqua and Toledo (2021) point to the overcoming of a binary vision of Capoeira, strongly linked to fighting and games, and approaching the field of arts, not only by valuing the sphere of dance but also by what it *can* do for the body in the arts in general. Corroborating new conceptions of the body from Capoeira, like the *Capoeira-body* (Castro Júnior, 2010, p. 22), defined as "[…] *devices used for the narratives and knowledge production*" and a *"[…]corporeality that symbolizes the esthetic dimension of art-capoeira,*" something very specific of this corporal manifestation.

In other words, it is not the body in Capoeira or practicing Capoeira; it is a certain body, specific, that expresses itself (and therefore the artistic character) and that is constituted only while doing Capoeira, a body that *´[..] besides being a fighter and a player, it is dancing and theatrical, creative, that is, a producing body of knowledge, free body, body as an identity that is at the same time collective (belonging to the universe of Capoeira) and preserves the individuality of the being.*' (Pasqua and Toledo, 2021, p. 89).

Departing from body knowledge to think about Capoeira, and based on the *esthetic of cool* (Thompson, 2011a), we would like to highlight two different (but complementary) esthetics from Capoeira-body narratives, such as *ginga* (Rosa, 2015) and *floreio* (Pasqua, 2020). Rosa defined *ginga* as, and subsequently, what the esthetics of *ginga* would be, as

> *Ginga may be defined as a swaggering way of sliding or tilting (parts of) the body from one side to another when walking or otherwise, acting in society. It functions, more importantly, as a central mechanism with which one may "juggle" weight across time and space, while maintaining a cool and supple sense of flow.* (Rosa, 2015, p. 24).*[…] this "juggling mechanism" is the key element of a non- hegemonic system of bodily organization and knowledge production, which exercises a distinct way of perceiving and interacting with others.*

Furthermore, based on Thompson (2011b) and Gottschild (1998), Rosa (2015) defines the esthetics of *ginga*, thought of from a polyrhythmic body, with the following principles: *(a) call-and-response and apartness in movement;* and *(b) serpentine pathways and high-affect juxtapositions,* in which it means (a) question and answer (dialogical relation) and isolation of the parts of the body in time and space (from the privilege of a particular form, a style to the detriment of a standard form) and (b) patterns in the form of a serpent, the movement like a snake; spiral; ability to move lightly in sinuous patterns) and high-impact juxtapositions (ability to throw one's body into balance and imbalance—irony and paradox—juxtaposition also observed in movements that distance, delay, disorient, surprise or shock, with characteristics of fluidity, body flexibility, from swings, turns, rounds, circular, spiral movements.

On the other hand, Pasqua (2011, p.101) identified that one of the most unique characteristics of Capoeira, among many others, is the *floreio* (more than only acrobatic gestures), which can be understood as *'[…] a bodily, factual and mysterious knowledge, expressed in a multifaceted way through movement and between movements, under a condition that carries the ancestry and presence in the game and that, therefore, allows negotiating with time and with each other.'* (Pasqua, 2020, p. 261). The acrobatic *floreios* in Capoeira inspire even more forms and creative possibilities of expression, such as breaking the body, falling apart, and melting, resulting in completely non-standardized forms, reinforcing this heritage of preservation of different identities and ways of moving in a cultural practice.

We assume that these body narratives present in Capoeira, such as the *ginga* and the *floreio,* have been shaped by a heterogeneous set of ideas under which African peoples and their descendants have recuperated and (re)structured their communities and systems of knowledge production in Brazil and other colonial places. Following this strand of thought, this process of heritage can be understood as a process of identification, as Rosa (2015, p. 7) stated:

> *I pulled the expression "processes of identification" from the writings of Martín-Barbero (1987,2003). I use it here to differentiate "essentialized identities" (*i.e., *fixed ideas, images, and discourses whose variables are imagined static and constant) from flexible and complex processes articulated across a range of intersecting categories (gender, race/ethnicity, sexuality, class, nationality, etc.) situated in a particular time and space. I also dialogue with Pinheiro's (2008) understanding of individuals as "movable territories."*

In this sense, the goal of this article is to investigate and critically analyze a set of depictions of N'golo, one of the "mothers of Capoeira" (Capoeira ancestor), to understand the meanings of heritage representation in Capoeira. This discussion pays close attention to bodily narratives present in N'golo drawings and their impact on the collective imagination of this practice and consequent promotion of Cultural Diversity in sports nowadays.

With that in mind, our discussion pays close attention to how the *N'golo-bodies* are related to *Capoeira bodies* as devices of knowledge production based on heritage and how the understanding and appreciation of ancestry in bodily practices can promote the understanding of current forms of expression as well as respect for different identities currently present in the field of sport, reducing violence and prejudice and promoting social integration and a sense of humanity.

2 How to play in the *roda* (materials and methods)

This research is characterized as documentary with a historical approach, from the theoretical perspective of Revel (1998)[4], which helps us synchronously identify and analyze the manifestations of body knowledge in different practices between the particular and the context of diaspora. This historical perspective was strengthened by the studies of Veyne (2008), which comprise the study of sources beyond the documents in order to understand the continuities and, above all, the discontinuities concerning this knowledge in the diasporic context.

The present research sought to understand the sources through a historical approach, and more specifically, through a narrative centered on the body, which was more coherent with the corporal knowledge of Capoeira. Thus, although Veyne (2008) mentions in his studies the appreciation of oral narratives (for a composition with documentary sources) in a historical study, we chose to revise this author's proposal for body narratives. In this perspective, the appropriation of this author's studies makes a fundamental contribution to identifying some continuities between these three chosen practices and, above all, the existing discontinuities between them, which together give Capoeira its identity. To understand the heritage of body narratives in Capoeira, we investigated one Capoeira ancestor practice, being our primary source being the N'golo drawings by Neves e Sousa.

To understand the body narrative present in the sources, we based ourselves on the theoretical framework of Castro Júnior (2010), based on his definition of *the Capoeira body*, a body that presents dramatic narratives:

> *The body in capoeira is composed of a rich repertoire of gestures called blows, which represent a framework of ways with which the body performs movement. The blows are endowed with senses and meanings, and each one has a functionality for its practitioners. The constitution of this set of elements was conjectured over time in the practice of capoeira; new strikes appeared, preserving others and disappearing many others. In this cultural practice, there is a whole ritual of incorporating values that are transmitted by the masters through corporality that symbolizes the aesthetic dimension of capoeira art "what the body does is a socio-historical symbolization characteristic of each group." (ibid., p. 23).*

Hence, the *Capoeira-body* concept already mentioned becomes essential to understanding an object of research. Thus, the analysis was performed from categories established *a priori* (Gil, 2007) (Table 1):

Because category 3 has the body as a centrality, we developed a form of identification that could facilitate the understanding of different forms of expression:

- Situations involving agonistic or fight-like movements (attack, opposition, combat, dispute)
- Situations involving dance-like movements (danced body modes, synchrony, body expression)
- Situations involving acrobatic movements (body inversion movements, balance, virtuosity)
- Situations involving displacement movements (gain of space, or exchange and transition of place)
- Situations involving theatrical movements (representation of a certain action or symbol of the culture of a character or person; dramatization).

For didactic and methodological purposes, we followed the procedures of analysis as well as Pasqua et al. (2023). In this study, the authors analyzed the drawings present in the illustrated book *Jogo da*

4 From particularity to universality, the scale games represent an experience of microanalysis.

Capoeira from Carybé's (1951) work, paying close attention to a few overlapping game tactics or attitudes related to fight, play, dance, sports, and drama. In short, they argued that Carybé's artistic depictions of Capoeira have been instrumental to the recognition of this Afrocentric practice as an Intangible Cultural Heritage of Humanity by UNESCO in 2014.

Our examination of Neves e Sousa's drawings, as well as these authors' works made with Carybé artworks, is grounded on theoretical tools and approaches drawn from the authors' previous scholarship. At the start, our analysis is guided by fundamental elements of art criticism, namely *form, content*, and *context* (Belton, 1996), and its applicability to movement analysis (Banes, 2007), as well as Gumbrecht's (2007). Understanding of the esthetic experience of sport spectatorship. Following Belton and Banes, we pay close attention to esthetic principles coming from the esthetics of the African diaspora.

Our analysis of *form* (the two-dimensional representation of N'golo's esthetic principles and movement qualities on paper) and *content* (the multiple attitudes they elicit or evoke) is enhanced by an examination of the *context* of these N'golo drawings. Within this series of drawings, our analysis considers movements, body position, and dramatization. Meanwhile, our contextualization of the artist, the players, and the games seconds Castro Júnior's understanding of the Capoeira-body, Lepecki's (2010) notion of the *body as archive*, and Tavares's concept of *weapon archive* (*arquivo arma*, in Portuguese Tavares, 2012). Together, these concepts enable us to unpack how the practice of Capoeira archives a particular way of thinking and doing things rooted in African heritage (N'golo) and how it also functions as a living weapon or act of resistance within a racist context. Hence, the importance of this visual collection.

This study was part of a larger research project, which investigated the practices whose primary sources were (A) N'golo drawings by Neves e Sousa, 1955; (B) Panther Dance (documentary video); and (C) Ladja (video recording—collection). To illustrate, we will present a summary of the main results in Table 2. However, in this manuscript, we will pay special attention only to N'golo.

TABLE 1 Categories of the study.

Category	Description
Characterization of body practice	Was created in order to identify the body practice studied because they are not common in the field of Physical Education, being necessary to make yourself known, to know briefly about the history, its logic and objective.
musicality	Was created on account off understand and highlight the quality of percussive practices present in almost all artistic manifestations in the African central-west region influenced by Thompson's studies (2011a)
Bodily elements.	Has with the objective of recognizing the gestures and dialoguing with the similarities and differences of the practices

Source: From the authors.

2.1 The primary source—N'golo drawings (Angola)

N'golo is an African manifestation considered the "mother" of Capoeira (Soares, 1993; Soares, 2002; Pires, 1996; Vieira and Assunção, 1998). Of Bantu origin, the N'golo comes from Angola, the region of greatest slave trade to Brazil. This is a collection of drawings by Neves e Souza, with drawings about N'golo. The imagery sample is composed of 20 drawings in black and white (the 20 drawings are numbered in the catalog from 9 to 27 and 33) of N'golo, present in the collection of the artist Albano Neves e Sousa, dated 1955.[5]

Albano Silvino Gama de Carvalho das Neves e Sousa was born in Matosinhos in 1921, during his parents' vacation trip to Portugal. He lived his childhood in Angola, and later, he was integrated with the Mission of Ethnographic Studies of the Museum of Angola. Graduated in 1943 from the superior course of the Porto School of Fine Arts, he has his greatest importance in painting, but his work developed in different aspects: drawing, literature, botany, ethnology, etc., always portraying Europe, Brazil, and Africa, mainly Angola.

A thumbnail sample of the analyzed images is shown below. This diagram was organized according to the sequence in which the drawings were presented, having been numbered from 1 to 20 for this research, but they have specific numbers according to the organization of the folder in the museum. In this research they will be presented with the inscription, for example, Drawing NS 1 (9), indicating NS, which means *Neves e Sousa*; the first number, 1, indicating the sequence in which it was made available by the museum; and the number between parentheses, (9), indicating the number that is inscribed in the portfolio of drawings organized by the museum. Due to the limitations of the article, we will highlight only a few in a large size for the analysis of the results.

When it comes to ethical considerations about the source of Neves e Sousa's drawings, the images were only provided and authorized for the exclusive purpose of this research, after consulting the collection in person, during a specific visit for this purpose, to the Livraria/Galeria Municipal Verney, in the municipality of Oeiras (Portugal) on 11 July 2018. Thus, the assignment and presentation of these images in the work were authorized by the Divisão de Biblioteca e Equipamentos Culturais—Município de Oeiras, Livraria/Galeria Municipal Verney/Colecção Neves e Sousa on July 24, 2018.

3 In the roda: *Capoeira-body* playing with *N'golo*-body (discussion)

As a matter of fact, the theme of Cultural Diversity has been gaining strength on the world stage, especially in the XX century, and it is relevant to international agendas, such as the UN 2030 Agenda (United Nation, 2015). Some of its sub-themes have been more prominent, such as debates on gender, ethnic-racial prejudice, ways of life of native peoples, ancestry, and immigration movements, among others, and have been studied by different areas, no longer only as a central theme of the Humanities (especially Anthropology), but constituting itself as a transversal theme of other areas, such as the

5 Source for bibliographic data on the artist Neves e Sousa: insert of the Livraria-galeria Municipal Verney (2018). Edition of Municipality of Oeiras (Portugal). Division of Culture and Tourism, with the collaboration of Professor Dr. Fernanda Marta Marques. The images were only given and authorized for the exclusive purposes of Ph.D. research (Pasqua, 2020).

TABLE 2 Summary table of analysis categories of some ancestral manifestations of Capoeira.

Categories based on the *capoeira-body*			
	N'golo	Panther dance	Ladja
Characterization of body practice	Region: Angola African martial art Dispute—corporal dialogue of combat between two individuals—male. Form of circle. Only with clothes covering the lower body.	Region: Ivory Coast Ritual of the Senufo culture, African acrobatic dance. Dispute between clans—demonstration of skills—one individual—male. Form of circle. Panther outfit.	Region: Martinique Central American martial art with African roots. Dispute—body dialogue—combat between two individuals—male. Form of circle. Everyday or work clothes.
Musicality	Those responsible for the songs, in the standing position, also seem to practice fighting. It does not feature musical instruments. There are claps and mouth sounds, imitation of animal sounds (zebra and frog).	Those responsible for the instruments have a specific hat, play and sing in a sitting position, but do not seem to practice the dance. There are no claps. There is chorus response. Instrument similar to the *berimbau*, family of the *balafom*, in addition to the *xequerê (agbê)*	Those responsible for the instruments play and sing, in a seated position, but do not seem to practice fighting. There are no claps. There is chorus response. Instruments: drum - *tanbou alendjé*, played horizontally, "lying down", with hand and foot, and on the back it is played with two *tibwa* sticks by another musician.
Bodily elements	Priority presents situations with agonistic or fight-like movements. There are situations with: dance-like; acrobatic; displacement and theatrical movements. Main bodily elements: swing, kicks (straight and rotated), defense, head butts, sweeps, takedowns and acrobatics, similarly to Capoeira gestures.	Priority presents situations with dance-like movements. There are situations with: acrobatics; displacements and theatrical movements. Mainly bodily elements: dance steps (similar to frevo and hip hop); acrobatics (similar to Capoeira and acrobatic gestures from Gymnastics and Dances). Serpentine pathways.	Priority presents situations with agonistic or fight-like movements. There are situations with: dance-like; acrobatic; displacement and theatrical movements. Main bodily elements: swing, kicks (straight and rotated), defense, head butts, sweeps, takedowns and acrobatics, similarly to Capoeira gestures.

Source: From the authors, based on Pasqua (2020) and Pasqua and Toledo (2018, 2019).

area of Health, among them Sports Sciences. Thus, the theme of this research is aligned with this international trend and parallel with other studies that enable these theoretical approximations of Cultural Diversity and Sport.

We highlight the studies of Kamphoff et al. (2010), Gill (2017), and Gill and Kamphoff (2009), which have focused on the relationship between Cultural Diversity and Sports Psychology, evidencing the contemporary challenges that these relationships impose and should be considered in the psychological guidance of athletes and institutional sports programs in an applied way. Capoeira is in this context mainly because it is a polysemic practice and therefore also has a sporting character (Pasqua et al., 2012; Gomes et al., 2025), which carries in its practice aspects related to ancestry, cultural diversity, immigration, and the struggle of a people, among others.

Thus, studying this intersection between Capoeira, Cultural Diversity, and Sport contributes to its development in the cultural and sports fields, including its application in the context of Sports Psychology. According to the materials and methods, we will describe primary source analysis results referring to the ancestral bodily practices of Capoeira, following the categories established *a priori*.

3.1 Category 1. Characterization of body practice

N'golo is also known as Engolo or Zebra Dance (Assunção and Peçanha, 2008; Desch-Obi, 2008; Assunção, 2022; Kabwenha, 2024), a bodily-centered manifestation in which some blows resemble the kick of a zebra. This manifestation is typical of the Mucope region (Angola). In the work of Desch-Obi (2008), the author presents *Engolo techniques*. According to Assunção and Peçanha (2008, p. 16), "N'golo is danced by boys in southern Angola" as part of the puberty ritual, also called *mufico, efico,* or *efundula*, a rite of passage from the girl to the woman. The N'golo ritual is preceded by an open-hand fight, called Liuéta, in which you must hit the opponent's head with your hands. Later, the N'golo, in which you must hit the opponent's head with your feet, is performed, similar to a zebra kick.

Added to the N'golo collection are drawings of C'hancula, the manifestation of the Oxen dance, typical of the Mucope region (with the pastoral peoples), in which the subjects express in movements how their cattle are doing, what happened in the day, or other dangerous situations, the size of the ox, among others. The set of drawings by Neves e Sousa makes it possible to characterize the *N'golo-body* manifestation as a fight-dance practiced by male subjects, with attack and defense movements at all levels (high, medium, low) and with different strategies (blows from the inverted position) and the presence of acrobatic gestures.

There is a presentation of characters, the ones who perform the dance of the oxen and the Chipalanca, Mufico's helper, which reveals an organizational structure of the ritualistic, since there is a highlight of a person, possibly a leader—the quimbanda. The mufico, a (feminine) rite of passage, is described by the theoretical framework in which only the male part is registered in the collection.

From the assumption of Castro Júnior (2010, p.22), which constitutes the term *Capoeira-body*, emphasizing it as a "body composed of a rich repertoire of gestures" (ibidem, p. 23), we think

that this corporeality also plays a fundamental role in the understanding and study of certain practices. To do so, we depart from this same principle to create the terminology *N'golo-body*, understanding that this body narrates the social drama of those living in Mucope (Angola) in 1955, a culture based on rites of passage, celebrated in fight-dance, in a society that has at least one base of pastoral cultivation, with a repertoire of specific gestures that keep values incorporated and transmitted by the masters of N'golo, characterizing the esthetic dimension of this ritual.

3.2 Category 2. Musicality

In none of the 20 drawings in the sample are musical instruments, presenting only clues to the musicality in N'golo, such as, for example, sequences of movements that suggest rhythmic quality and gestures in which the two hands of the subjects touch each other, configuring palms, as can be seen in drawings NS 4 and NS 6.

According to our technical correspondent in Angola, Professor Janguinda Kambwetete Moniz (Kabwenha), the dispute in N'golo takes place in the form of a circle and is accompanied by clapping and sounds with the mouth, imitating the sound of animals, which in this case, he claimed to also be the sound of the animal frog Mafuma: '*The mouth sounds are sometimes songs composed in small verses…. Furthermore, most of the time, they have different intonations, it can be a whistle or a scream (all very melodic…). The sound that symbolizes the Frog (Mafuma) is incorporated right at the beginning of the practice*' (Professor Janguinda, via telephone contact, Oct. 2019).

He also claims that the berimbau is present in many places in the Angola region, with the names Mbulumbumba, Xikomba, Hungu, and Urucungo, but it is not part of the N'golo martial art. It is possible to find more nomenclatures of the berimbau in Rego (1968) in addition to specific studies on the instrument in Kubik (1979), which in no way relate this instrument to N'golo. As we also see in the documentary "Body Games: Capoeira and Ancestry" (Body Games, 2013), the berimbau is present in some regions of Angola; however, its direct relationship with N'golo is not evident.

Furthermore, in Sousa's work ([1972?]), the author states, "The fight is rhythmic with applause and whoever makes a blow out of time is disqualified" (ibidem, s.n.). In this section, he emphasized the occurrence of palms, which he had already demonstrated in his drawing record. Clapping provides rhythmic quality, and it is not a musical instrument. This statement was also registered in De Araújo (2004).

In this way, we identified a continuity of the rhythmic quality of the clapping present in N'golo, also in Capoeira; however, there was a discontinuity in the use of the imitation of the sounds of the animals (frog and zebra) at the moment of the circle. In most Capoeira groups, there are songs, chants, *corridos*, and musical instruments, with no imitation of animal sounds to compose the "orchestra" of the circle.

3.3 Category 3. Bodily elements

In N'golo, there are individual and double gestures with male subjects. We adopted as an analysis procedure only to bring the abbreviations of the drawings, as already mentioned (i.e., NS + number), which can be consulted in the diagram (Figure 2) or in some of the larger examples that we will demonstrate below. In general, we present what was identified in the sample in the table (Table 3).

From the general analysis, we highlight here only one drawing of each situation.

3.3.1 Situations involving agonistic or fight-like movements N'golo

In Figure 3, there is a fight-like situation with agonistic movements in which the pairs vary between the high and medium plane positions. Consider the drawing divided into three parts: the first being double n.1 (one person standing and the other in an inverted position); the second pair being n.2 (both people are standing); and person n.3 (alone). In parts 1 and 2, there is an evident bodily dispute, and in part 3, it looks like a type of rehearsal or enhancement of a blow with the right leg back or a situation with balletic movement. In 2, the person strikes a kick with his left leg forward toward the opponent while the opponent seems to defend with his left knee, or it could also be that he is attacking with a *joelhada (knee kick)* at the same time as receiving the blow.

Still on part n. 1, in the work of Desch-Obi (2008, p. 221), it is possible to identify an image very similar to the one found in the collection, which describes how to *push kicks to the back* (*from an inverted position*). In Capoeira it is possible to find kicks backward from the inverted position by means of a more rectilinear movement, such as a *calcanheira* (heel kick), um *gancho* (kick with the outside side of the foot), um *pisão* (kick with the sole of the foot), or using a circular motion such as *meia-lua-de-compasso* or *rabo-de-arraia* (both blows performed in a rotating manner, attacking with the foot, whether or not using the hands on the ground).

3.3.2 Situations with dance-like movements N'golo

In Figure 4, there is a situation of dance-like movements. The person is in a high plane, supporting most of the weight on the front leg, which has the knee flexed, while appearing to support or even slide the left foot backwards. At the same time, his right arm is raised upwards, and his hands are with their fingers. This configuration is much more similar to a danced movement than a fought one; however, it refers to the *ginga* movement in Capoeira, the movement of *standing rasteira,* and *the* dance movements of the orixás (orishas). This drawing appears in the work of Desch-Obi (2008, p. 223) with the description *standing foot sweep.*

And we consider the limit of the source because the subject has its back turned, generating difficulty in identifying the subject's expressiveness, whether it is aggressive or of celebration or contemplation. Why did the artist want to portray the subject from behind? What would your intention be? To portray the beauty or exoticism of these *N'golo-bodies?* Or would it be another form of bodily expression present in this manifestation, in addition to the fight, a pause, or a situation of balletic or theatricality that is very important in this context of the fight or of the ritual performance? If it is another form of expression that is more theatrical and dance-present in the fight, we point to a continuity of this *characteristic* and discontinuity for the *form* of this expression in Capoeira.

FIGURE 2
Diagram of N'golo drawings, Livraria-galeria Municipal Verney (2018). Source: Pasqua (2020, p. 130).

3.3.3 Situations with acrobatic and displacement movements N'golo

In Figure 5, there is a situation of acrobatics, with displacement and possibly agonistic movements. There is a pair in the context of a dispute and two images with individual movements. This image appears in clippings in the work of Desch-Obi (2008, p. 219, 223, and 224). Consider the image divided into 3 parts, with double no. 1, the person with both hands on the floor (no. 2), and the person with one hand on the floor and the other hand suspended (no. 3).

From the reference drawing NS 11, there is, in item 1, a subject who is in inverted support, which would be similar to the *bananeira* (handstand) of Capoeira, and the other subject is in the middle plane, with all his weight on his left leg, knees flexed, arms alternating, looking at his partner, which in Capoeira would suggest a counterattack of *cabeçada* (headbutt). Desch-Obi (2008, p. 219) described the same drawing as in 1. *Lunge with hand on the ground*, a charge, and a *bote* (boat) with its hand on the ground, and 2. *Handstand.*

In item 2, it is possible to identify a subject in a low plane, with both hands resting on the ground, practicing a backward blow from the back position. In Capoeira, this could be described as a *calcanheira* (rectilinear motion), a *meia-lua-de-compasso,* or *rabo de arraia* (blows from circular movements). Desch-Obi (2008, p. 223) described drawing as *a circular kick with the body supported by hands.* It can also be interpreted as an essay on *aú* (cartwheel), an acrobatic *floreio*.

In item 3, the person appears to move on the ground in a circular shape with the entire weight supported by the left arm and hand, which resembles the movement of *rolê* da Capoeira (passage on the floor rolling). These movements are performed in order to gain space or to move closer to study the space of the floor and other objects.

TABLE 3 Analysis of situations present in N'golo Drawings of Livraria-galeria Municipal Verney (2018).

Evidence	Quantity	Drawings
Situations with only agonistic or fight-like movements	4	NS 2, NS 9, NS 10, NS 12
Situations with only dance-like movements	6	NS 1, NS 6, NS 13, NS 15, NS 18, NS 19
Situations with only theatrical movements	1	NS 20
Situations with only displacement movements	0	–
Situations with only acrobatic movements	0	–
Situations with only agonistic or fight-like movements and dance-like movements	5	NS 3, NS 4, NS 8, NS 14, NS 16
Situations with dance-like movements and acrobatic movements	1	NS 7
Situations with agonistic or fight-like movements, acrobatic movements and displacement movements	2	NS 5 e NS 11
Situations with dance-like movements and theatrical movements	2	NS 17 e NS 19

Source: From the authors, based on Pasqua (2020).

Compared to Laban's factor of movement *space*, one could think of the study of space through the kinsphere of one and the other. Desch-Obi (2008, p. 224) describes drawing as *lateral movements out of low defensive postures.*

In all the items observed in Figure 5, we identified continuities in relation to Capoeira in all situations, whether of attempted attack during the execution of the acrobatics or of displacement and study of space on the floor.

3.3.4 Situations with theatrical movements N'golo

In Figure 6 there is a theatrical situation, in this case, the highlight of the character, in which a subject described in the drawing as Chipalanca, Ajudante do Mufico (Mufico's Helper), is represented. As previously described, the Mufico is the rite of passage from girl to woman in which the practice of the martial art Engolo is practiced.

When resuming Figure 2, Diagram of N'golo drawings Livraria-galeria Municipal Verney (2018), the last 4 drawings, NS 17, 18, 19, and 20, are characterized by theatrical situations, with NS 17 to 20 identified as "Dança dos Bois" (Dance of the oxen) and NS 20 as "Chipalanca."

Unlike the other drawings, the character here comes to life through the details and expressions of the face. There is a similar drawing in another work by the same author (Neves e Sousa, 1972 [?], n.p.). It is noted that the oldest record (1955) relates the "Dança dos Bois" to the character "Chipalanca," and later, in 1972[?], the author relates the same character to the N'golo, which possibly indicates the close relationship between "Dança dos Bois" and N'golo.

There is a drawing extremely similar to this, one being a reference to the other, in the work of Neves e Sousa (1972 [?], n.p.) with the following caption: *"This is Chipalanca <<Quimbanda> > which governs the ceremonies of the <<Efico> > in Mucope and which, therefore, also gives laws concerning the N'golo… In short, he is the <<Mestre Pastinha> > of this function…*. "Approximately 20 years after his first drawing, the author establishes the relations between the master of the N'golo ritual and the Capoeira master. Mestre Pastinha was a recognized Capoeira master in Brazil during the twentieth century.

It should be noted that the name of this master Chipalanca is also a reference to Quimbanda, which is the name of an Afro-Brazilian religion, and in this way, we could infer that he would be a master Curandeiro (healer). In Brazil, there are three religions of African origin, often taken as equals, such as Candomblé, Umbanda, and Quimbanda. Despite their similarities, they were labeled as right–left, white-black, due to the repression of Christian morality (Carvalho and Bairrão, 2019).

The term Curandeiro has other meanings, which are as follows:

> *Curandeiro, *s.m.* Otyimbanda / Various species of … omuhakulf, omufili, ofilai, enkhununu (in the case of alleged greater magical powers), ondundu (idem), embanda (idem) / Antelope horn used by the … Ohiva (and more meanings of onomatopoeia).
>
> *Curandice, *s.f.* Oumbanda, oundundu, oufiliai ounhkhunun/ Payment due by … Omalilo, Ondyambi. (Silva,1966, p. 145).

The term "Curandeiro," we have in Kubik (1979, p. 25):

Umbanda is the indigenous medical science of Angola. Because its concepts are based on theories about human nature, unlike Western cultures, *Umbanda* has often been misinterpreted by Westerners as "witchcraft." The *vimbanda* (plural of *kimbanda*) were alternately called "priests," "soothsayers," "witches' doctors," "prophets," "healers," "native doctors," "herbalists," etc., according to the philosophies and religious perspective of the observer.

Therefore, it is possible to suppose that Neves e Sousa gave some prominence to this character because of his important role in the ritual of the N'golo, which is circumscribed to a rite of passage and has a religious nature.

On the occasion of the visit to the Neves e Sousa Collection, when the request for the folders of drawings referring to the N´golo was made, we were unaware that there would be the "Dança dos Bois" in the same folder, which was a revelation about the complexity of the practices of the N´golo. It should be noted that the N´golo presents not only a martial art but a more complex ritual in which the Engolo fight is part.

According to researcher Janguinda Kambwetete Kabwenha (corresponding Angolan author), in the festivals and rituals of the N´golo, the aforementioned C´Hancula may or may not occur, whose correct spelling is Onkhakula (Neves e Sousa leaves in his register two ways of writing that should probably help in the pronunciation—C´Hancula and Cankula, but which would not necessarily be the correct ones). Onkhakula is also a ritual of dance and fighting, ox poetry, or cattle poetry, because they are pastoral regions, according to ethnographic studies conducted in this region by missionary Father Carlos Estermann.

Professor Josivaldo Pires de Oliveira (Mestre Bel), a scholar of the sources and works of the Spiritan missionary priest Carlos Estermann, in southern Angola, 1924–1976 (Oliveira, 2018), states about the importance of the studies of these missionaries with the objective of

FIGURE 3
Drawing NS 8 (16)—N'golo—Dança da Zebra—Mucope. Source: Acervo Neves e Sousa. Livraria-galeria Municipal Verney (2018). In: Pasqua (2020, p. 150).

FIGURE 4
Drawing NS 13 (21) –s/título (reverso do n° 20). Source: Acervo Neves e Sousa. Livraria-galeria Municipal Verney (2018). In: Pasqua (2020, p. 158).

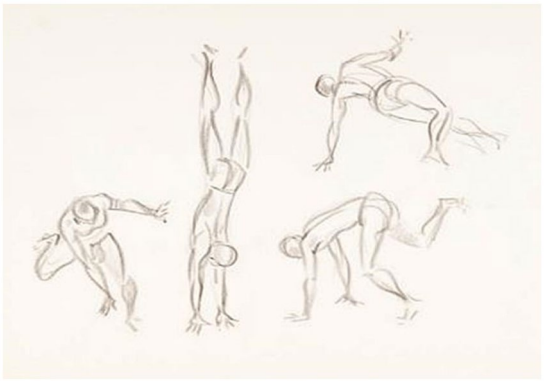

FIGURE 5
Drawing NS 11 (19) –s/ título (reverso do n° 18). Source: Acervo Neves e Sousa. Livraria-galeria Municipal Verney (2018). In: Pasqua (2020, p. 154).

evangelization in Angola, because, despite the colonialist objective of knowing the culture of the so-called "indigenous" in depth so that they can penetrate their universe of representation and bring salvation, they have made a great contribution to science:

> *These societies practiced pastoralism, and as they still practice today, the cultural dimension of the pastoral life of these populations did not escape Father Estermann's descriptions: music, art, religion, etc. For these societies, cattle were an essential element of social life, related to elements of economic, political, religious, and customary nature. The records produced by the priest did not miss these elements of characterization of the groups that inhabited the south of Angola, more precisely, the southwestern region. Some of these practices, which emphasized the ritual value of cattle, attracted his attention, resulting in important records in his relevant ethnographic essays, published at different times during his missionary activity. In this way, it can be said that Father Carlos Estermann was a Spiritan missionary who dedicated himself to the ethnography of the pastoral peoples and cultures of southern Angola.* (Oliveira, 2018, p. 52).

3.3.5 Considerations of category 3 bodily element

In view of the presentation of the drawings, it is possible to conclude that the ritual of the N'golo comprises other dances and fights besides the Engolo (zebra dance), such as the Liuéta (which precedes the Engolo) and the Onkhakula (Dança dos Bois—Dance of the oxen), and the religious rites based on the figure of the Curandeiro (healer). In this way, we point to a discontinuity in relation to Capoeira because the practice of the latter is not linked to any rite of passage present in society.

The rites of passage in Capoeira take place in the Baptisms and Festivals, in which the subject changes his rank, color of the rope/cord/cordel, or just the title, much more due to a sporting tradition

FIGURE 6
Drawing NS 20 (33)—Dança dos bois—Tala-Ó—Mucope—Cankula. Source: Acervo Neves e Sousa. Livraria-galeria Municipal Verney (2018). In: Pasqua (2020, p. 167).

resulting from modernity in Brazil than a mention of the transformations of the human being in his life cycles. Furthermore, the Capoeira schools in general do not conceive the ritual of the Capoeira roda (circle) as a specific religion but rather, much more in the sense of a philosophy of Capoeira, in which each capoeirista (Capoeira player) has their own.

There is no record of the presence of the female sex, even though the event of Mufico is a ritual of the passage from girl to woman, a celebration of the moment of puberty. The female part of the rituals is not revealed, or little is portrayed, possibly because it is more reserved. In Capoeira, the presence and performance of the female sex is verified and has been highly valued, especially in recent years, with the formation of several Capoeira masters, in addition to specifically female events, which do not occur with the practice of fighting in the N'golo. In this case, the female presence in the source of the drawings is not identified and is not even today, because there is no evidence of N´golo masters in remaining places of the practice, as could also be observed in the documentary "Jogo de Corpo: Capoeira e Ancestralidade" (2013).

This visual aspect of the *N'golo-body*, analyzed first-hand without any interference from literature by itself, for Capoeira connoisseurs would be enough to establish relationships of extreme similarity. The source reinforces the relationship of similarity and awakens us to think of the *Capoeira-body* (Castro Júnior, 2010) as one of the possible legacies of an *N'golo-body.*

In view of the analysis of the drawings, although the majority presented were situations of agonistic movements and situations of danced movements, confirming the fight-dance binomial, we reinforce that it was possible to advance as well as in the study of Capoeira, understanding that N'golo is also about a polysemic practice. From the analysis of the collection, it was possible to identify that the N'golo comprises other dances and fights besides the N'golo (zebra dance), such as the Liuéta (which precedes the N'golo) and the Onkhakula (oxen dance), and the religious rites based on the figure of Chipalanca, healer (Figure 6).

The power of the *N'golo-body*, based on a body narrative of a series of movements that sometimes resemble fighting and sometimes resemble dancing, which is unbalanced forward and backward and sideways, a conception of balance and imbalance, as well as the polycentric and polyrhythmic body of Rosa (2015), with her pelvic and shoulder girdles talking in different directions, with blows, defenses, dances, displacements, and acrobatic movements expressed in inverted positions, in addition to characters such as the subject of the dance of the oxen and the Chipalanca, representing the rituals of the people of Mucope. Moreover, this pugilistic tradition observable in the drawings, as well as in the assumptions of Desch-Obi (2008), brings the *N'golo-body* closer to the body-archive-weapon conception of Tavares (2012), a tradition of fighting in Liuéta, in N'golo, and in C'hankula.

N'golo-body also plays *floreios* in nouns and verbs (form and characteristic, Pasqua, 2020). The *floreio,* in terms of the quality of form and acrobatic gesture, appears in inverted support movements, such as the aú, headstand, head spin, and handstand. In addition, it can be thought of as a *luta floreada* ('flowery fight,' 'decorated fight,' and 'beautiful fight'), just like Capoeira, because it has different situations with danced movements during the dispute, since many times they were also portrayed in drawings with fight situations, just as there are several drawings with only situations of danced movements. The *floreio,* as a characteristic, also unfolds in the dimension of allegory in the dance of the oxen, as the body expression performed in the dance is allegorical, a metaphor for everyday events expressed in the language of the body that dances. The source reinforces the relationship of similarity and prompts people to think of the *Capoeira-body* (Castro Júnior, 2010) as one of the possible legacies of an *N'golo-body.*

Furthermore, the *floreio,* as a form, has a dimension of identity in the N´golo, whether with the dimension of mandinga in the unfolding of dispute or *agon* (NS 5), a situation of play or setting up an ambush or trap, or *mimicry* (NS 7 and NS 11). The *floreio* as a characteristic also unfolds in the dimension of allegory in the Dança dos Bois because the body expression performed in the dance is allegorical and a metaphor for everyday events expressed in the language of the dancing body.

4 Ending the roda or maybe opening a new one... (conclusion)

As previously mentioned, this study opens new perspectives to consider Capoeira in the sportivized scope, considering it as a polysemic practice that addresses dance, game, fight, and sport. This study presents analyses of the cultural relationship between the bodily practices of different peoples and highlights the similarities and differences between them. In this perspective, it identifies the influences of N'golo in the current practice of Capoeira, as well as its differences, arising from a miscegenation of races and peoples, and in

the recovery and reinvention of knowledge in the context of the struggle and resistance experienced in colonial Brazil (slavery process). These cultural and historical aspects cannot be neglected from their current practice and should be considered not only in the field of sociology or anthropology of sport but also in other areas, such as sports psychology.

Based on the assumption that Capoeira is a polysemic practice and that it must be understood beyond the Brazilian context, we seek a foundation in the body knowledge of African matrices that were recovered and reinvented overseas. From the study of African body practices considered ancestral to Capoeira, specifically the N'golo in this manuscript, we were able to infer that the body narratives present in the *N'golo-body* are very similar to the *Capoeira-body*, expanding the understanding of N'golo beyond fighting as a multifaceted practice. Therefore, the polysemic characteristic of Capoeira also seems to be a reflection of the polysemy present in N'golo.

Despite the discontinuities in relation to the musicality of the N'golo, the religious aspect and the figure of the healer related to the Efico, and the feminine absence of fighting practices, the *floreio* manifests itself in the N'golo in a very similar way to Capoeira, both as a form and characteristic, in the dimensions of allegory, identity, and mandinga. As in Capoeira, the *floreio* and *ginga* are bodily knowledge of the N'golo, imprinting similar stylistic characteristics.

In a paradoxical way, the analysis itself pointed to components that are not visible, or intangible, enigmatic units that are difficult to understand, because it is something that is felt and accomplished bodily, which in turn gave rise to a more fluid analysis, not being the objective of this article, which will be presented in future work, based on a different background, the Anthropology of Performance (Turner, 1988). In this sense, the aspect of intangibility of the floreio will be analyzed, unfolding in looks at the worldview, the becoming-animal, the weapon, the spiritual and the anthropophagic behavior, and the mystery understood under allegories.

For future research, we will continue to analyze images about other ancestral practices of Capoeira, namely, one of non-Bantu origin, which historically had a minority of enslaved people brought to Brazil from the Ivory Coast, the manifestation called Panther Dance, and one of a similar context to the process of recovery and reinvention of knowledge in the Americas, specifically in Martinique, French Caribbean, the manifestation called Ladja, considered one of the "cousins" of Capoeira.

In addition, we intend to continue investigating other ancestral practices that can provide clues about the esthetics present in *Capoeira-bodies* today, which impact the understanding of the practice itself as well as the understanding of Cultural Diversity and Ethnic-racial relations in sports in Brazil and around the world.

Thus, admitting the potency of *N'golo-bodies* and *Capoeira-bodies* as devices for knowledge production, leaving behind the need for classification, and exploring the senses and meanings of the educational practice of Capoeira as a representation of Cultural Diversity in sports is what we envision also broader understanding for promoting inclusion by respecting ancestry and sense of humanity belonging. This research showed that, from different theoretical epistemologies (Capoeira framework, history, and body-Capoeira narratives), we can consider Capoeira as a polysemic bodily manifestation that dialogs and transits, which is and manifests itself in a plural way at the same time as in unity, dance, game, fight, art, and culture.

The research data show and strengthen a perspective of African influence, already so debated in Brazil (and outside of it), but it brings to the center of the debate how Capoeira can be a practice that, at the same time, has a cultural diversity and also produces a unique culture, which is on the move in history (with cultural backgrounds). Re-signifying, therefore, the ways of understanding, practicing, and living the bodily manifestations that have cultural diversity in their genesis from their teaching and what their learning can potentiate for the formation of more sensitive, non-binary, open citizens of the world to the experience, to the ecological and human conceptions of each of these cultures, producing a re-signification of themselves and of society.

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Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Author contributions

LP: Writing – original draft, Writing – review & editing. ET: Writing – original draft, Writing – review & editing.

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The influence of college students' exercise participation on feelings of self-deficiency: the mediating effect of social support

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Objective: To explore the influence of college students' exercise participation on their feelings of self-deficiency and its mechanisms, with social support as a mediating variable.

Methods: The study utilized the Physical Activity Rating Scale (PARS-3), the Feelings of Inadequacy Scale (FIS), and the Social Support Rating Scale (SSRS). A stratified random sampling method was used to select 981 college students from different provinces and universities for a questionnaire survey. Statistical methods, including confirmatory factor analysis, regression analysis, and the Bootstrap method, were employed for data analysis.

Results: Exercise participation significantly and negatively predicted college students' feelings of self-deficiency. Social support exhibited a significant mediating effect between exercise participation and self-deficiency. Furthermore, the three dimensions of social support—subjective support, objective support, and support utilization—showed significant indirect effects. The mediation pathways were as follows: exercise participation → subjective support → self-deficiency, exercise participation → objective support → self-deficiency, and exercise participation → support utilization → self-deficiency.

Conclusion: Exercise participation significantly reduces feelings of self-deficiency among college students, either directly or indirectly through social support. In the future, universities can help mitigate students' self-deficiency and promote their physical and mental wellbeing by optimizing physical activity spaces and constructing social support networks from the perspectives of exercise participation and social support.

KEYWORDS

college students, exercise participation, social support, self-deficiency, mental health

1 Introduction

In today's fast-paced and highly competitive society, college students often face significant pressures arising from academic workloads, career advancement, and increasingly complex social relationships (Li and Gao, 2024). These intertwined sources of stress serve as potential factors triggering psychological issues among college students. In particular, when confronted with challenges and difficulties, students may question and negate their self-worth and abilities, leading to negative self-perceptions. This, in turn,

manifests as heightened feelings of low mood, inferiority, and self-deficiency, potentially escalating into severe mental health issues such as anxiety and depression.

Self-deficiency sentiment (SSD) refers to a subjective psychological state where college students perceive or are aware of deficiencies, inadequacies, or inferiority in certain aspects of themselves. SSD encompasses five dimensions: social confidence, learning ability, self-esteem, appearance, and physical fitness (Bernichon et al., 2003). Beyond objective recognition of actual deficiencies, SSD involves excessive self-criticism, undervaluation, and an exaggerated focus on perceived flaws. The causes may stem from biased evaluations of personal abilities, inappropriate comparisons with peers or societal standards, and prolonged internalization of negative feedback. Excessive SSD can distort students' perceptions of their abilities and value, resulting in feelings of inferiority, anxiety, and depression, which negatively impact academic performance and social behaviors (Zhuang et al., 2021).

Exercise participation refers to individuals' attitudes and behaviors in actively engaging in physical activities, which positively influence physical fitness, mental health, and social adaptability (Teixeira et al., 2012). According to the Health Promotion Theory (Kim and Yoo, 2024), engaging in physical activities not only enhances physical fitness and reduces disease risks but also alleviates stress, depression, and anxiety, thereby promoting mental health. Additionally, it improves social skills, interpersonal relationships, and self-worth. Such positive attitudes and behaviors can mitigate feelings of self-deficiency arising from cognitive distortions and social inadequacies. Empirical studies also demonstrate (Karunagharan, 2023; Joldasbayev, 2024; Skodlar et al., 2013) that exercise participation significantly improves individuals' sense of belonging, psychological resilience, mental and physical health, interpersonal relationship quality, quality of life, self-esteem, and self-efficacy, while reducing negative outcomes such as aggression, work stress, anxiety, and self-deficiency. Therefore, this study hypothesizes H1: Exercise participation significantly and negatively predicts self-deficiency.

Social support refers to the various resources and assistance individuals receive from their social networks that alleviate psychological stress, ease tension, and enhance social adaptability. It comprises three dimensions: objective support, subjective support, and support utilization (Inui et al., 2022). Previous studies suggest (Che et al., 2018) that the mechanism by which social support enhances health primarily relies on two theoretical models: the "buffering" model and the "main effect" model. The buffering model posits that social support mitigates or eliminates the adverse effects of stressors on physical and mental health by providing a buffering effect during stressful or psychologically taxing events. The main effect model, on the other hand, asserts that social support has an inherently positive impact independent of stressors, promoting physical and mental health regardless of the presence of stressful circumstances. Empirical evidence (Wijaya et al., 2024; Teng, 2024; Tan et al., 2022) highlights the significant correlation between social support and mental health. Social support not only enhances self-esteem, self-efficacy, resilience, and psychological flexibility but also alleviates the negative impacts of depression, non-suicidal self-injury, psychological fatigue, and negative emotions on mental health (Naxton, 2024; Slesinger, 2021; Ng, 2024). Moreover, studies (Kelly et al., 1991) confirm that positive health beliefs and exercise behaviors significantly predict higher levels of social support. Based on these findings, this study predicts that exercise participation may reduce college students' self-deficiency by enhancing social support. Hence, hypothesis H2 is proposed: Social support mediates the relationship between exercise participation and self-deficiency.

Although preliminary research has explored the relationship between physical exercise and self-deficiency (Chu, 2022), such as Yin's (2023) findings that exercise participation provides college students with a platform to showcase and challenge themselves, fostering a sense of achievement and confidence that contributes to positive self-perceptions, self-efficacy, and psychological resilience, the mechanisms underlying the impact of exercise participation on self-deficiency remain unclear. Zhang et al. (2022) noted that exercise participation significantly regulates the psychological resilience of university faculty and indirectly influences occupational burnout through this mediating factor. However, how exercise participation influences self-deficiency and its underlying mechanisms require further exploration. Therefore, this study investigates the mediating role of social support in the relationship between exercise participation and self-deficiency among college students. By delving into the specific pathways of influence, this research aims to clarify the multifaceted value of exercise participation and provide scientific evidence and practical guidance for preventing and mitigating psychological deficiencies in college students, thereby fostering their holistic development.

2 Research methods

2.1 Data collection method

The data for this study were collected through an online questionnaire distributed *via* Wenjuanxing, a popular survey platform in China. The survey was conducted anonymously, and participants were fully informed about the study's purpose and provided informed consent prior to completing the questionnaires. The data collection process was standardized, and all participants filled out the survey independently, which minimized biases that may arise from face-to-face interactions (social desirability bias or researcher influence). This study has obtained ethical approval from the Research Ethics Committee of Hunan Normal University, with the approval number of 20250304.

2.2 Research sample

A stratified random sampling method was used to select Guangdong Province (eastern region), Hunan Province (central region), and Sichuan Province (western region) as sample provinces, based on differences in geographic location and economic development levels (Table 1). Within each province, one double first-class/elite undergraduate university, one regular undergraduate university, and one vocational college were randomly selected as sample units, according to educational tiers.

TABLE 1 Demographic characteristics of the study sample.

Variable	Category	Number (*n*)	Percentage (%)
Gender	Male	533	54.3
	Female	448	45.7
Grade Level	Freshman	318	32.4
	Sophomore	303	30.9
	Junior	198	20.2
	Senior	162	16.5
School Type	Double First-Class/Elite University	366	37.3
	Regular Undergraduate University	315	32.1
	Vocational College	300	30.6
Only-Child Status	Only Child	201	20.5
	Non-Only Child	780	79.5
Household Registration	Urban	138	14.1
	Town/County	333	34
	Rural	510	51.9

From each sample unit, 2–4 classes of students across different grades were randomly chosen as participants. After informing participants of the study purpose and obtaining informed consent, 981 valid data samples were collected, including 533 males (54.3%) and 448 females (45.7%); 318 freshmen (32.4%), 303 sophomores (30.9%), 198 juniors (20.2%), and 162 seniors (16.5%); 366 students from double first-class/elite universities (37.3%), 315 from regular undergraduate universities (32.1%), and 300 from vocational colleges (30.6%); 201 only children (20.5%) and 780 non-only children (79.5%); 138 urban household registrations (14.1%), 333 town/county household registrations (34.0%), and 510 rural household registrations (51.9%).

2.3 Measurement tools

2.3.1 Exercise participation

The Physical Activity Rating Scale (PARS-3) revised by Liang Deqing (Liang, 1994) was used to measure exercise participation. The scale evaluates participants' exercise levels based on three dimensions: duration, intensity, and frequency of participation, with the formula: exercise level = intensity × duration × frequency. The scale includes four items scored on a 5-point Likert scale. Intensity and frequency are scored from 1 to 5, while duration is scored from 0 to 4. The total score ranges from 0 to 100, with higher scores indicating greater exercise participation. In this study, the Cronbach's Alpha coefficient for the scale was 0.871, and the Spearman-Brown split-half reliability was 0.804.

2.3.2 Classification of exercise participation

In this study, exercise participation was measured using the Physical Activity Rating Scale (PARS-3), which assesses three dimensions: frequency, intensity, and duration of exercise. Participants were classified based on the following criteria: low frequency (less than once per week), moderate frequency (1–3 times per week), and high frequency (more than three times per week); low intensity (light activities, such as walking), moderate intensity (moderate activities, such as jogging), and high intensity (vigorous activities, such as running); exercise duration was categorized as less than 30 minutes, 30–60 min, and more than 60 min. This classification method allows for a more detailed analysis of participants with varying levels of exercise involvement.

2.3.3 Self-deficiency sentiment

The Self-Deficiency Sentiment Scale (FIS) developed by Fleming and Courtney (Buss, 2001) was used to assess participants' self-deficiency. The scale includes five dimensions: social confidence, learning ability, self-esteem, appearance, and physical fitness, with 36 items scored on a 7-point Likert scale ranging from 1 ("never") to 7 ("always"). Higher scores indicate stronger self-deficiency sentiments. In this study, the Cronbach's Alpha coefficient for the scale was 0.897, and the Spearman-Brown split-half reliability was 0.839.

2.3.4 Social support

The Social Support Rating Scale (SSRS) developed by Xiao Shuiyuan (Xiao, 1994) was used to measure social support. This scale consists of 10 items across three dimensions: objective support, subjective support, and support utilization. Items 6 and 7 are scored based on the number of sources reported by participants (0 if no source), while the remaining items use a 4-point grading system (A, B, C, D) scored from 1 to 4. Higher total scores indicate greater levels of social support. In this study, the Cronbach's Alpha coefficient for the scale was 0.782, and the Spearman-Brown split-half reliability was 0.767.

2.4 Control variables

Given the significant effects of individual differences such as gender (Ackerman et al., 2001) and grade level (Lippa, 1995) on college students' self-deficiency, this study included key demographic factors—gender, grade level, only-child status, type of school, and household registration—as control variables. This was done to eliminate interference from individual differences and ensure the accuracy and validity of the research results, thus providing a clearer understanding of the mechanisms through which exercise participation affects self-deficiency.

2.5 Data processing

The collected data were systematically processed and analyzed using software tools such as SPSS 26.0, AMOS 21.0, Excel 2024, and Mplus 8.3. The internal consistency and stability of the scales were tested using Cronbach's Alpha coefficients and Spearman-Brown split-half reliability. Confirmatory factor analysis was employed to check for potential common method bias

TABLE 2 Descriptive statistics and their correlation coefficients of sports participation, sense of self-deficiency, and social support among university students.

Variables	*M*	SD	Physical activity	Self-perceived deficiency	Social support
Physical activity participation	31.532	6.580	1.000		
Self-perceived deficiency	110.388	41.582	−0.404*	1.000	
Social support	36.508	6.951	0.243*	−0.235**	1.000

*$p < 0.05$, **$p < 0.01$.

among the variables of exercise participation, self-deficiency, and social support. Descriptive statistics and correlation analyses were conducted to assess the status and interrelationships of the three variables. Hierarchical multiple regression analysis was used to verify the mediating role of social support in the relationship between exercise participation and self-deficiency. Path analysis and model fit testing using Mplus 8.3 were performed to evaluate the goodness of fit of the influence pathway model.

3 Result

3.1 Control and testing of common method bias

3.1.1 Procedural control

To enhance data quality, strict procedural controls were implemented in the research design and measurement process. A pilot survey was conducted to comprehensively review and revise the questionnaire items, ensuring clarity and accuracy. The sequence of questionnaire items was balanced to minimize order effects on the results. An anonymous survey approach was used to reduce social desirability bias. Measurements of the three variables—exercise participation, self-deficiency, and social support—were conducted at two separate time points to avoid confounding effects from overlapping measurement periods. Surveyors were uniformly trained to ensure the standardization and consistency of the data collection process. Additionally, trap questions and patterns of response regularity were employed to screen and clean the collected data, excluding invalid or anomalous responses.

3.1.2 Statistical testing

Confirmatory factor analysis (CFA) was applied to test for common method bias between the variables of social support and self-deficiency. The dimensions of intensity, duration, and frequency in the Physical Activity Rating Scale (PARS-3) are independent and non-aggregable single indicators, and thus, common method bias testing was not required. The core of the CFA method involves testing a hypothesized single-factor model to evaluate whether "all data variation can be attributed to a single latent factor." This approach assesses both convergent validity (whether measurement items effectively reflect the same construct) and discriminant validity (whether different constructs can be effectively distinguished).

The results showed that for the Self-Deficiency Sentiment Scale (FIS), χ^2/df was 2.304, AGFI = 0.910, NFI = 0.906, CFI = 0.924, and RMSEA = 0.04. For the Social Support Rating Scale (SSRS), χ^2/df was 2.209, AGFI = 0.905, NFI = 0.907, CFI = 0.903, and RMSEA = 0.05. These results indicate satisfactory levels of convergent and discriminant validity for the two variables, with no significant common method bias.

3.2 Descriptive statistics and correlation analysis

Table 2 shows that the mean score for exercise participation among college students was 31.532 ± 6.580, indicating a moderate level of participation based on the scoring standard (20–42 represents moderate activity levels). The mean score for self-deficiency sentiment was 110.388 ± 41.582, below the theoretical midpoint of 144, suggesting a generally low level of self-deficiency. The mean score for social support was 36.508 ± 6.951, above the theoretical midpoint of 24.5, indicating a relatively high level of social support. Correlation analysis revealed significant negative correlations between exercise participation and self-deficiency ($r = -0.404$, $P < 0.05$), significant positive correlations between exercise participation and social support ($r = 0.243$, $P < 0.05$), and significant negative correlations between social support and self-deficiency ($r = -0.235$, $P < 0.01$).

Additionally, demographic variable analysis showed significant differences in self-deficiency levels. Female students reported higher self-deficiency than male students ($T = -2.383$, $P = 0.017$), potentially due to gender differences in social confidence and physical self-perception influenced by societal expectations. Urban and town-dwelling students had significantly lower self-deficiency levels compared to rural students ($F = 2.995$, $P = 0.049$), possibly due to disparities in educational resources and socioeconomic environments, which affect confidence in learning abilities and self-esteem. No significant differences were observed for grade level, only-child status, or school type ($P > 0.05$).

3.3 Regression analysis of exercise participation on self-deficiency

A hierarchical regression analysis was conducted, with self-deficiency as the dependent variable. Gender, grade level, only-child status, school type, and household registration were included as independent variables, with categorical variables dummy-coded prior to regression. Results (Table 3) indicated that gender and household registration significantly and negatively predicted

TABLE 3 Regression analyses of sport participation on feelings of self-deficiency.

Dependent variable	Value	Gender	Grade	Yes/no	Only child	School type	Household registration location	F	R^2	ΔR^2
Sense of self-deficiency	β	−0.171	0.434	0.035	−0.052	−0.060	−0.402	37.880**	0.163	0.161
	t	−5.240**	1.207	1.089	−1.637	−1.785*	−13.695**			

*$P < 0.05$.
**$P < 0.01$.

TABLE 4 Regression analyses for tests of the mediating effect of social support between sport participation and feelings of self-deficiency.

Regression equation		Overall fit index			Significance of regression coefficients	
Outcome variable	Predictor variable	R	R^2	F	β	t
Social support	Physical activity participation	0.243	0.059	12.142**	0.244	5.019**
Subjective support		0.316	0.100	12.470	0.259	4.411**
Objective support		0.220	0.048	6.744	0.149	2.304*
Support utilization		0.304	0.092	12.141	0.235	5.197**
Sense of self-deficiency	Physical activity participation	0.402	0.161	9.421**	−0.265	−5.103**
	Social support	0.235	0.055	8.142**	−0.270	−6.121**
	Subjective support	0.100	0.010	4.101**	−0.142	−2.012*
	Objective support	0.241	0.058	9.690**	−0.200	−3.643**
	Support utilization	0.192	0.037	6.372**	−0.303	−5.144**

All variables were standardized before being entered into the regression equation.
*$P < 0.05$.
**$P < 0.01$.

self-deficiency ($P < 0.05$). These demographic variables were subsequently controlled for in the analysis.

When exercise participation was added as an independent variable with demographic variables controlled, results showed that exercise participation significantly and negatively predicted self-deficiency ($\beta = -0.402$, $P < 0.01$), explaining 16% of the variance. Thus, hypothesis H1, stating that exercise participation significantly and negatively predicts self-deficiency, was supported.

3.4 Mediation effect of social support between exercise participation and self-deficiency

The bias-corrected percentile Bootstrap method was used to test mediation effects, as it provides higher stability and accuracy than the traditional Sobel test (Karazsia, 2009). This method involves repeated random sampling with replacement from the original dataset to generate multiple bootstrap samples, allowing the estimation of population parameters based on these sample statistics. The analysis employed Model 4 in the Process macro, with 5,000 bootstrap samples. A mediation effect is considered significant if the 95% confidence interval does not include zero. Gender, grade level, and other demographic variables were controlled to focus on the core relationship among variables.

Regression analysis (Table 4) showed that exercise participation positively predicted overall social support ($\beta = 0.244$, $P < 0.01$) and its dimensions. Exercise participation also negatively predicted self-deficiency ($\beta = -0.265$, $P < 0.01$). Social support and its dimensions—subjective support ($\beta = -0.142$, $P < 0.01$), objective support ($\beta = -0.200$, $P < 0.01$), and support utilization ($\beta = -0.303$, $P < 0.01$)—significantly and negatively predicted self-deficiency.

Mediation analysis results (Table 5) showed that the direct effect of exercise participation on self-deficiency was significant [$\beta = -0.402$, Bootstrap 95% CI (−0.520, −0.331), excluding zero]. Social support exerted a total indirect effect [$\beta = -0.189$, Bootstrap 95% CI (−0.196, −0.165), excluding zero], indicating a significant mediating role of social support. This mediation effect comprised three specific pathways:

1. Exercise participation → Subjective support → Self-deficiency [effect size: −0.029, Bootstrap 95% CI (−0.148, −0.030), excluding zero], confirming the mediating role of subjective support.
2. Exercise participation → Objective support → Self-deficiency [effect size: −0.061, Bootstrap 95% CI (−0.066, −0.117), excluding zero], confirming the mediating role of objective support.
3. Exercise participation → Support utilization → Self-deficiency [effect size: −0.099, Bootstrap 95% CI (−0.120, −0.097), excluding zero], confirming the mediating role of support utilization.

Model fit testing using Mplus 8.3 indicated good fit indices: $\chi^2/df = 2.410$, RMSEA = 0.089, CFI = 0.903, TLI = 0.905, SRMR

TABLE 5 Bootstrap analyses of tests of the mediating effect of social support between sport participation and feelings of self-deficiency.

Impact pathways	Standardized effect value	Proportion of total effect	Bootstrapped standard error	95% CI		Significance
				Upper limit	Lower limit	
Total effect	−0.591**	—	0.012	−0.425	−0.480	Significant
Direct effect	−0.402**	68.02%	0.043	−0.520	−0.331	Significant
Total indirect effect	−0.189**	31.98%	0.041	−0.196	−0.165	Significant
Physical activity participation → subjective support → sense of self-deficiency	−0.029*	4.91%	0.005	−0.148	−0.030	Significant
Physical activity participation → objective support → sense of self-deficiency	−0.061**	10.32%	0.012	−0.066	−0.117	Significant
Physical activity participation → support utilization → sense of self-deficiency	−0.099**	16.75%	0.045	−0.120	−0.097	Significant

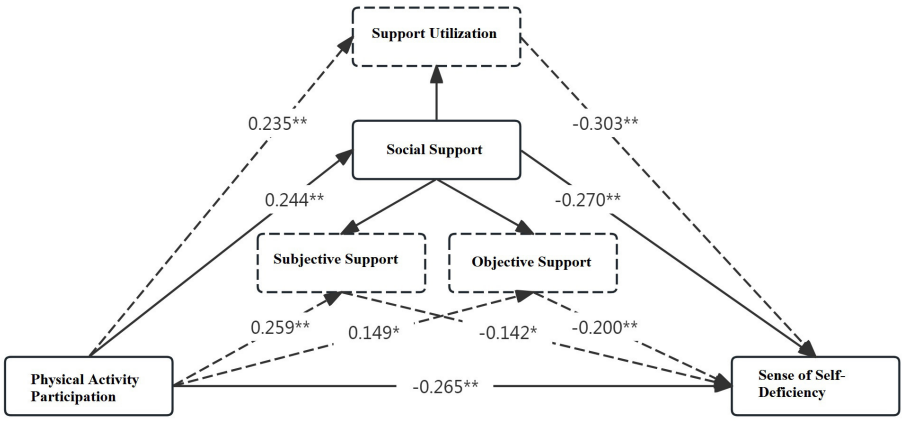

FIGURE 1
Results of structural equation modeling analysis.

= 0.059. Structural equation modeling (Figure 1) demonstrated that exercise participation positively influenced social support (β = 0.244, $P < 0.01$), and social support negatively influenced self-deficiency (β = −0.270, $P < 0.01$). These results validated the mediating role of social support and its dimensions—subjective support, objective support, and support utilization—in the relationship between exercise participation and self-deficiency, supporting hypothesis H2.

4 Discussion

4.1 Comparison with previous studies

This study found that exercise participation significantly reduced college students' sense of self-deficiency, a result consistent with previous research (Kotera et al., 2022; Petrocchi and Couyoumdjian, 2016; Schanche et al., 2021). Numerous international studies have shown that physical exercise can reduce self-deficiency by enhancing self-efficacy and self-confidence (Jones et al., 2005; Yang et al., 2023). However, unlike Western studies, which primarily focus on improving self-efficacy and independence, our research found that, within the Chinese cultural context, social support plays an important mediating role in the relationship between exercise and self-deficiency. This finding supports the significant role of social networks in individual mental health within collectivist cultures, highlighting the positive impact of family, peer, and school support (Chang and Chen, 2022). Furthermore, this study revealed that gender and household registration background significantly affect self-deficiency, with females and rural students exhibiting higher levels of self-deficiency, which is consistent with previous studies (Zhang, 2020; Sagar and Jowett, 2012). These differences may be related to societal expectations of different groups and differences in self-perception within the cultural context, particularly when social pressure regarding body shape and appearance is more pronounced, which can affect the self-evaluation of females and rural students.

4.2 Direct effect of exercise participation on self-deficiency

College students, being in a critical transitional period from campus to society, face complex and dynamic social environments and challenges. These include high expectations and pressures from families, structural employment difficulties, and self-negation triggered by peer comparisons (Zhang and Nukulkij, 2024). Such factors make them prone to feelings of self-deficiency, which can negatively affect their learning motivation, social interactions, emotional regulation, behavior patterns, and self-confidence. These issues may even escalate into severe psychological problems, making self-deficiency an urgent mental health concern.

According to the Health Promotion Theory, this study hypothesized that exercise participation significantly and negatively predicts self-deficiency. The empirical results not only confirmed this hypothesis but also aligned with previous findings by Soyeon A (Soyeon and Fedewa, 2011), Mingli (Liu et al., 2015), and Wu Jingtao (Wu et al., 2022), which demonstrated that physical exercise significantly alleviates negative emotions and promotes mental health. The direct mechanisms through which exercise participation reduces self-deficiency in college students can be understood across psychological, behavioral, and social dimensions:

4.2.1 Psychological dimension

Exercise participation reduces self-deficiency by enhancing physical self-esteem, self-efficacy, and emotional regulation. Research indicates (Strahan et al., 2006) that societal aesthetic standards significantly influence college students' body image perceptions, leading many students to underestimate their physical attractiveness relative to societal norms. This misperception affects self-concept, emotional experiences, and strategies for weight management, potentially fostering low self-esteem and self-deficiency. However, regular exercise participation induces positive psychological changes, such as increased release of neurotransmitters like endorphins, which evoke feelings of pleasure, excitement, and satisfaction. These positive emotional experiences improve students' emotional states, resilience, and ability to cope with adversity. By fostering a more positive body image and reinforcing self-recognition, exercise participation helps improve self-esteem and reduces tendencies toward self-deprecation and depression stemming from physical appearance or fitness deficiencies (Wang et al., 2024).

4.2.2 Behavioral dimension

Consistent and regular exercise participation enhances self-regulation and promotes the internalization of positive behavior patterns, thereby weakening perceptions of self-deficiency. Despite facing challenges such as academic stress, emotional relationships, diverse social activities, and digital device dependence (Marciano et al., 2022), understanding the intrinsic value of exercise—such as health benefits, psychological enhancement, and social functions—can motivate students to participate autonomously. Over time, this fosters the integration of exercise into their lifestyles as a stable behavioral pattern (Kumanyika et al., 2008). Such patterns strengthen their sense of control and accomplishment, reduce self-doubt and self-negation, and promote positive self-perceptions. Particularly in team sports, the experience of successfully completing tasks or competitions enhances confidence, reinforces self-efficacy, and fosters positive behavioral tendencies.

4.2.3 Social dimension

Exercise participation provides an effective platform for social interaction, helping students enhance social skills, build social confidence, and reduce self-deficiency. During sports activities, students engage in close communication and collaboration with teammates to achieve shared goals. This process promotes effective interaction in diverse environments, enhances teamwork abilities, and broadens social networks by interacting with individuals from varied backgrounds. These experiences improve social adaptability, foster openness and inclusivity, and alleviate self-deficiency linked to social confidence. However, attention should be paid to students who invest significant effort in sports but fail to achieve desired outcomes, to prevent feelings of learned helplessness (Fox and Magnus, 2014).

4.3 Mediating role of social support between exercise participation and self-deficiency

Mediation analysis confirmed that social support significantly mediates the relationship between exercise participation and self-deficiency, supporting hypothesis H2. The "buffering" and "main effect" theories of social support (Liu et al., 2021) highlight its protective role in promoting mental health. Unlike other groups, college students face diverse challenges in academics, employment, social relationships, and emotions, yet their access to social support networks is relatively limited, primarily relying on peers, teachers, counselors, and family. Exercise participation provides opportunities for broader interactions, expanding their social support networks, and enhancing their ability to perceive and utilize social support.

When students encounter challenges, the emotional support, encouragement, and practical problem-solving offered by sports team members form a robust support system. This system enhances self-efficacy through positive feedback, reduces perceived stress, and significantly shapes their self-perception. Not only does it directly improve psychological states and alleviate negative emotions, but it also fosters the accumulation of positive self-cognition over time, reducing self-deficiency levels.

The mediating effect of social support is comprised of three pathways:

1. Subjective support pathway:

Subjective support refers to the emotional support individuals feel, such as being respected, understood, cared for, and accepted. During sports participation, students often receive recognition and encouragement from peers, teammates, and coaches. These positive external feedbacks reinforce their subjective experiences of support, boosting confidence and motivation to engage in sports.

This creates a virtuous cycle of positive psychology and behavior, reducing self-negation and mitigating self-deficiency caused by external pressures or internal self-doubt.

2. Objective support pathway:

Objective support involves tangible resources and assistance received during social interactions, such as material aid, stable social connections, and practical help. Through sports, students gain access to resources like participation opportunities, professional facilities, and funding provided by schools, families, and society. Additionally, sports broaden social networks, enabling stable relationships and friendships that offer valuable advice and guidance. These factors collectively reduce self-deficiency.

3. Support utilization pathway:

Support utilization reflects the ability to actively and effectively mobilize social support resources in times of stress or difficulty. Among the three pathways, support utilization showed the most significant mediating effect (Table 5), emphasizing its crucial role in reducing self-deficiency. Limited access to social support networks can leave students feeling isolated, especially when facing academic pressures, career uncertainties, or employment challenges (Van Hees et al., 2015). Exercise participation as a social activity helps expand support networks, strengthen communication with coaches, teammates, family, and friends, and provide timely practical and emotional support. This enhances students' ability to face challenges and fosters a sense of belonging and personal identity, thereby reducing self-deficiency.

Exercise participation significantly and negatively predicts self-deficiency among college students, highlighting its positive role in mitigating self-deficiency levels. The mediation model revealed that exercise participation impacts self-deficiency both directly and indirectly through social support, offering valuable insights into the mechanisms of this relationship. These findings emphasize the importance of encouraging exercise participation and fostering robust social support networks in addressing self-deficiency. Future research could further explore additional mediating or moderating variables to uncover the complex interplay of factors influencing self-deficiency. Such studies could help design more comprehensive interventions and strategies to promote exercise participation and strengthen social support systems, ultimately fostering the positive development of college students.

4.4 Research limitations

This study identified the mediating role of social support in the relationship between exercise participation and self-deficiency, clarifying its pathways of influence. However, several limitations remain:

1. The sample size was relatively limited due to time and resource constraints, making it difficult to comprehensively reflect the overall status of college students. Future research should expand and optimize the sample size and structure to enhance generalizability and validity.
2. The study used a cross-sectional survey, which effectively collected large samples but could not infer causal relationships between variables. Longitudinal designs, such as cross-lagged studies or experimental research, are needed to explore causal chains and mechanisms of influence.
3. While focusing on the mediating role of social support, other potential variables influencing self-deficiency, such as family environment, economic conditions, teacher-student relationships, and campus culture, were overlooked. Future studies should incorporate these factors to explore their mediating or moderating effects, providing a more comprehensive understanding of the complex mechanisms through which exercise participation impacts self-deficiency.
4. This study classified exercise participation using the PARS-3 scale; however, self-reported exercise participation may introduce biases, particularly in the classification of frequency and intensity, affecting the accuracy of the classification. The sample included fewer low-frequency and low-intensity exercisers, which may not fully reflect the impact of these groups. Future research could improve the classification method and ensure balanced analysis of participants at all levels of exercise involvement through more precise measurement tools or longitudinal tracking studies.

5 Conclusion

Exercise participation directly reduces self-deficiency among college students and exerts an additional indirect effect through the mediating role of social support. This dual pathway underscores the multifaceted benefits of exercise participation and highlights the potential of leveraging social support to enhance its impact. The findings provide a scientific basis for interventions aimed at reducing self-deficiency and promoting the physical and mental wellbeing of college students.

The study's results suggest targeted strategies for optimizing exercise participation and enhancing social support to effectively reduce self-deficiency. These strategies include optimizing sports activity spaces by upgrading campus facilities, fostering a robust campus sports culture, and establishing sports guidance services. Building social support networks is equally essential, involving the development of a comprehensive support system, promotion of practical activities such as volunteering and academic exchanges, and the creation of a collaborative framework connecting families, schools, and communities. These efforts aim to foster students' physical and mental wellbeing while reducing self-deficiency through enhanced engagement in sports and strengthened social support systems. This study proposes the following specific measures:

(1) Universities should optimize sports facilities and activity spaces, construct multi-functional and easily accessible sports facilities, and offer a variety of sports activities to encourage students to participate more actively in exercise.
(2) Strengthening the social support network, schools can promote student interaction and build a robust social support system by organizing group activities, providing psychological counseling programs, and enhancing teacher-student support.
(3) For students from different gender and regional backgrounds (female students and rural students), universities should develop personalized mental health and exercise programs to help them overcome feelings of self-deficiency.

(4) Schools can develop a comprehensive health promotion strategy by integrating physical exercise, mental health education, and social activities to foster the overall physical and mental development of students.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding authors.

Author contributions

YX: Writing – original draft, Writing – review & editing. ML: Writing – original draft, Writing – review & editing. BL: Conceptualization, Data curation, Software, Writing – original draft, Writing – review & editing. YF: Formal analysis, Resources, Writing – original draft, Writing – review & editing. KT: Project administration, Supervision, Validation, Conceptualization, Data curation, Formal analysis, Funding acquisition, Investigation, Methodology, Resources, Software, Visualization, Writing – original draft. YT: Data curation, Project administration, Writing – review & editing. XZ: Methodology, Validation, Writing – review & editing.

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The author(s) declare that no Gen AI was used in the creation of this manuscript.

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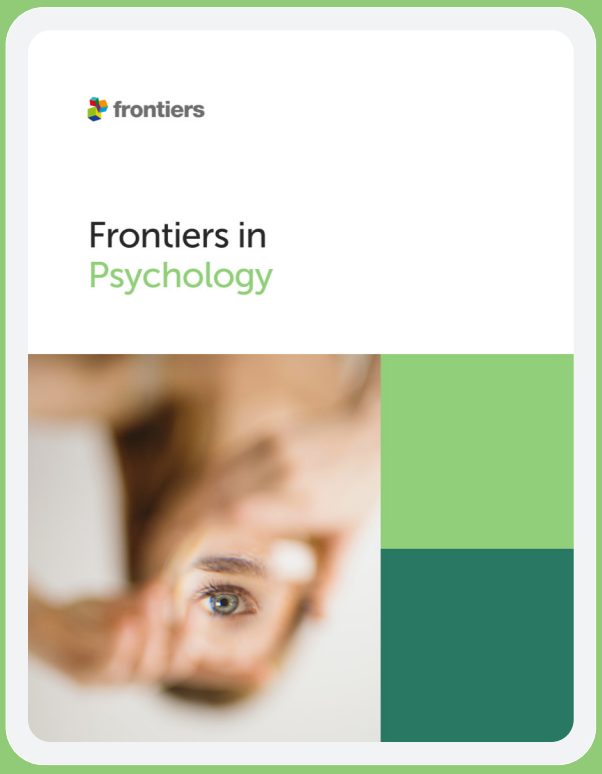

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