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Who struggles to decide? Personality, gender, and career indecision in higher education

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Introduction: Career indecision slows progress through university and into work, yet evidence from Middle Eastern settings remains limited.

Methods: We surveyed 153 Saudi undergraduates across seven programmes and modelled a 12-item Career Decision-Making Difficulties composite against gender, Big Five traits (extraversion, openness, conscientiousness), and educational cohort (first vs final year).

Results: Gender showed no association with indecision. In multiple regression, extraversion was positively related to indecision, openness showed a non-significant negative trend, and conscientiousness showed no reliable effect; overall explained variance was small ($R^2 = 0.075$). First-year and final-year students did not differ significantly.

Discussion: These results indicate that binary gender contrasts add little explanatory power in this context, that approach-oriented traits offer only modest leverage when indecision is treated as a single composite, and that year of study does not, on its own, account for uncertainty. Future work in the region should move beyond composites toward domain-specific difficulty profiles and longitudinal designs to capture change over time.

KEYWORDS

career indecision, personality traits, gender, students, higher education

Introduction

Career indecision is hesitation or uncertainty in selecting or committing to an educational or vocational path. It carries tangible costs for students and universities (Gati et al., 1996; Bimrose and Mulvey, 2015). Reported prevalence varies sharply across settings. In Oman, more than 63 per cent of final-year medical students reported high indecision (Al Ajmi et al., 2024). A United States sample found 7.5 per cent undecided (Arbona et al., 2023). Large student surveys similarly report many respondents selecting “undecided” when asked about their career choices (Willner et al., 2015; Wang et al., 2023). Such divergence likely reflects an interaction between individual differences and socio-cultural and institutional conditions, as suggested by cross-cultural comparisons and studies that link academic structures and guidance practices to decision pathways (Willner et al., 2015; Wang et al., 2025). When left unaddressed, indecision undermines academic persistence, increases demand on counseling services, and disrupts transitions into the labor market, with broader implications for productivity and wellbeing (Priyashantha et al., 2023). In Saudi universities, undergraduate career decision-making is impeded by concrete, recurring barriers. Students often report unclear mapping from majors to occupations,

uneven access to internships and advising, tension between family expectations and personal interests, and limited clarity about labor-market signals across public and private sectors. These conditions complicate the move from broad exploration to committed choices and intensify pressure on university support systems. Locating the problem in this context is essential for identifying who is at risk and where institutional interventions should focus effort (Almaghaslah and Alsayari, 2022; Alnajjar and Abou Hashish, 2024).

Personality traits provide one plausible mechanism. Traits are enduring patterns of thought, emotion, and behavior with documented links to educational and vocational decision processes (Srivastava et al., 2003). Within the Five-Factor Model, extraversion, openness, and conscientiousness map onto exploration, information-seeking, planning, and follow-through that support decisiveness (De Raad and Schouwenburg, 1996; Di Fabio et al., 2012). Although the hard plaster view holds that traits consolidate by early adulthood, longitudinal evidence shows meaningful change during emerging adulthood, including shifts in conscientiousness and openness that matter for academic and career development (Srivastava et al., 2003; Specht et al., 2011). Gender norms and roles also shape access to information, perceived opportunities, and constraints, and these can interact with psychological dispositions to influence decision difficulty (Levin et al., 2020).

Despite this groundwork, evidence from Saudi higher education that jointly models personality and gender against career indecision remains limited. Many studies consider personality or gender in isolation, focus on single programmes, or do not address the Saudi context. This weakens the practical value of findings for institutions that must allocate support to students who present with global indecision rather than distinct subtypes. The present study addresses this gap. We test associations between career indecision and extraversion, openness, conscientiousness, gender, and educational cohort in a Saudi undergraduate sample. The objective is to identify whether these individual differences and student standing relate to overall indecision and to generate guidance that can inform advising and counseling practice in Saudi universities.

Literature review

Personality trait differences

The study of personality traits has deep roots in psychology, beginning with Galton's observations of individual differences (Galton, 1949) and Cattell's mapping of trait dimensions (Cattell, 1943). Subsequent refinements, including Norman's lexical taxonomy (Norman, 1963), Smith's (1967) factor-analytic contributions, and McCrae and Costa's (1987) articulation of the Five-Factor Model, established traits as stable patterns of thought, emotion, and behavior that shape both self-awareness and social functioning (Goldberg, 1995). While these frameworks originated in clinical and psychological contexts, their relevance to educational policy is now evident. Traits are not only predictive of lifespan outcomes such as career satisfaction and stability (Kang and Malvaso, 2023), but also influence academic performance, vocational decision-making, and the effectiveness of institutional

guidance systems (Costa and McCrae, 1992). Integrating personality measures with career indecision instruments such as the CDDQ has provided the basis for policy-relevant interventions that move beyond generic counseling to tailored, evidence-based support (Gati et al., 1996; Di Fabio et al., 2014; Lent and Brown, 2019; Alyahyan and Düşteğör, 2020).

As per these insights, this study focuses on extraversion, openness, and conscientiousness because they align most closely with the student capacities that higher education seeks to cultivate. Extraversion is tied to information-seeking and help-seeking in advising contexts, openness supports exploration and flexibility when evaluating academic and occupational alternatives, and conscientiousness supports planning, organization, and follow-through that translate choices into action (De Raad and Schouwenburg, 1996; Di Fabio et al., 2012). These traits represent approach-oriented resources that universities can strengthen through guidance, mentoring, and curricular design. Neuroticism and agreeableness remain important in the wider literature, including work that links emotional instability and interpersonal style to decision difficulties, but they are not the focus here because our aim is to examine those dispositions that most directly enable exploration, informed choice, and committed progression in undergraduate settings (Martincin and Stead, 2015). This scope keeps the theoretical framing aligned with mechanisms that institutions can practically target through student support.

Hypotheses

H1. Extraversion will be associated with lower levels of career indecision.

H2. Openness will be associated with lower levels of career indecision.

H3. Conscientiousness will be associated with lower levels of career indecision.

Personality traits and career indecision

Unlike assessments that yield a single composite score, the Five-Factor Model generates a multidimensional profile across five domains, namely neuroticism, extraversion, openness, agreeableness, and conscientiousness (Allport and Odbert, 1936; Costa and McCrae, 2002). Such profiles support differentiated interventions rather than one-size-fits-all solutions, which aligns with policy calls for personalized education and guidance. The CDDQ adopts a similar multiscale logic by distinguishing readiness deficits, information gaps, and consistency conflicts (Gati et al., 1996). Evidence indicates that particular traits map onto these clusters, for example conscientiousness to readiness and openness and extraversion to information-seeking (Marcionetti and Rossier, 2016). Critiques nevertheless flag limitations in the readiness

subscales and dysfunctional belief items (Creed and Yin, 2006; Levin et al., 2020). Policymakers and institutions should therefore exercise caution when adopting instruments wholesale and should complement them with context-sensitive adaptations that capture motivational and cultural dynamics.

Consistent with the focus established above, the analysis considers how extraversion, openness, and conscientiousness align with the CDDQ clusters. Prior studies link extraversion to active information search, networking, and help-seeking that reduce information gaps and clarify options, with downstream benefits for decisional confidence in university settings (Di Fabio et al., 2012; Park et al., 2020). Openness has been associated with exploration of non-traditional academic routes and flexible evaluation of alternatives, patterns that correspond to lower information-based uncertainty and fewer conflicts among options when students face divergent pathways (De Raad and Schouwenburg, 1996; Marcionetti and Rossier, 2016). Conscientiousness relates to planning, goal monitoring, and implementation, which aligns with improved readiness to decide and greater stability once a tentative choice is made, thereby limiting inconsistent information effects during later refinements (Costa and McCrae, 1992). At the same time, critiques of the readiness cluster suggest that decisional difficulty can reflect motivational or contextual barriers rather than low planning alone, which motivates testing associations at the cluster level instead of assuming uniform effects across the CDDQ (Creed and Yin, 2006; Levin et al., 2020).

Personality traits, career indecision, and gender

Career indecision remains one of the most common vocational challenges and often delays or distorts career choices (Osipow, 1999; Amir and Gati, 2006). Gati et al. (1996) proposed a taxonomy with three clusters and ten subcategories of difficulties, each linked to different intervention strategies. The taxonomy provides structure, yet external factors such as cultural expectations, family obligations, and institutional barriers remain powerful predictors of indecision (Chuang and Dellmann-Jenkins, 2010; Fouad et al., 2015; Parola and Marcionetti, 2021). At the level of educational policy, this raises a direct question about whether universities equip students to overcome not only personal deficits but also systemic barriers. Gender further complicates these dynamics. Studies suggest that women may encounter consistency conflicts and informational barriers, while men may face readiness-related challenges (Levin et al., 2022; Rossier et al., 2021). Widely used instruments such as the CDDQ often struggle to capture dysfunctional beliefs and motivational constraints that mediate these gendered experiences (Creed and Yin, 2006; Babarović and Šverko, 2018; Levin et al., 2020).

The literature therefore shows that personality traits are central to understanding career indecision, yet trait effects rarely operate in isolation. Socio-cultural and institutional contexts interact with dispositional factors in ways that remain poorly understood, particularly outside Western higher education systems. For educational policymakers and institutional leaders, trait-based guidance frameworks should not be assumed to transfer seamlessly across contexts. The present study employs the CDDQ alongside

Five-Factor Model measures to test how personality mediates the relationship between gender and career indecision among undergraduates in Saudi Arabia.

Hypotheses

H4 Gender will be associated with levels of career indecision.

H5 Seniors will report lower career indecision than freshmen.

Methodology

Participants and sampling

We recruited 153 undergraduates from a large Saudi university. The sample included 104 women and 49 men. The mean age was 21.4 years with an SD of 2.1 and a range of 18–25 years. To ensure disciplinary diversity, we used a clustered convenience approach by academic programme. The seven programmes were psychology, English, medicine, mathematics, law, physics, and business. Within each programme, instructors of core courses announced the study during class and posted an invitation on the learning-management system. All enrolled students who met the inclusion criteria were eligible. Inclusion criteria were current undergraduate status, age 18 or older, and provision of informed consent.

Participation was voluntary and uncompensated. To avoid any perception of pressure, instructors did not know which students participated and study staff handled all data collection. Data were collected via a secure online questionnaire that restricted multiple submissions by account and by IP range. All responses were de-identified prior to analysis and stored on access-restricted, encrypted drives in accordance with institutional policy, and only the study team had access. Surveys with more than 30 per cent missing responses on key measures were excluded. The protocol received institutional ethics approval, and the consent form emphasized anonymity and the right to withdraw at any time. The study involved minimal risk and no foreseeable direct benefits to participants, and no compensation was provided. Because invitations were posted broadly to multiple classes and LMS sites, a conventional response rate cannot be calculated. Per-programme cell sizes were uneven and relatively small in some programmes, so we did not model programme effects and interpret results as analytic evidence for this institution rather than population estimates.

Instruments

Personality traits

We used the 30-item Big Five Inventory two Short Form administered in English, a widely used short measure of the Five-Factor Model with published reliability and validity evidence (Soto and John, 2017; John et al., 2008). Analyses focused on

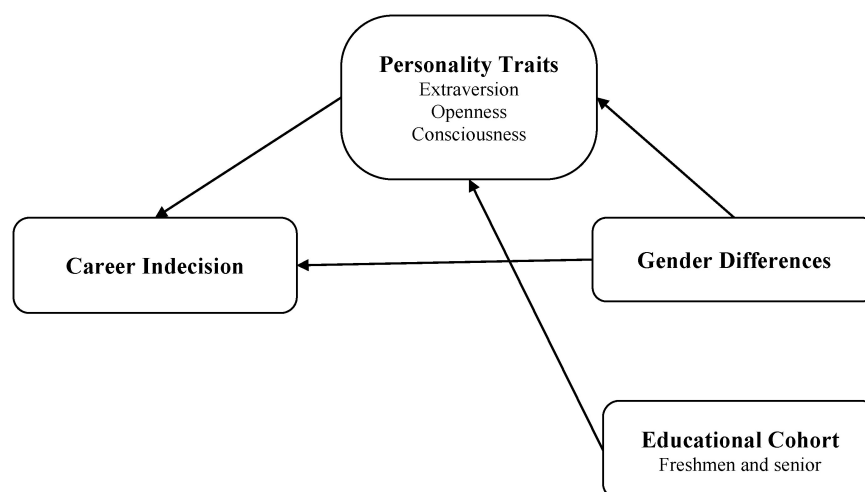


FIGURE 1
The conceptual framework.

Extraversion, Openness, and Conscientiousness because prior work links these traits to exploration and decisiveness. Example items were “I feel comfortable around people,” “I have a rich vocabulary,” and “I keep my workspace organized.” Responses used a five-point scale from 1 strongly disagree to 5 strongly agree. Higher scores indicate stronger trait expression. Scale scores were computed as item means after reverse coding where required. Internal consistency was $\alpha = 0.72$ for Extraversion, $\alpha = 0.70$ for Openness, and $\alpha = 0.76$ for Conscientiousness. A pilot with 15 students confirmed clarity and completion time.

Career indecision

We administered the Career Decision-Making Difficulties Questionnaire developed by Gati et al. (1996). The original instrument has 34 items. We analyzed 12 items that represent the three primary clusters described by the authors. Lack of Readiness had three items. Lack of Information had four items. Inconsistent Information had five items. The short set was used to reduce burden for classroom data collection and to align measurement with clusters that map most directly to advising levers in higher education. Items used the same five-point scale as the personality measure. Higher scores indicate greater difficulty. Scale scores were computed as item means. Reliabilities were $\alpha = 0.72$ for Readiness, $\alpha = 0.87$ for Information, and $\alpha = 0.70$ for Inconsistent Information. An exploratory factor analysis supported a three-factor structure consistent with the intended clusters. The exact 12 items and their cluster mapping are available on request for transparency.

Procedure and preliminary analyses

Participants first provided demographics that included academic level, gender, major, and nationality. They then completed the personality inventory followed by the CDDQ in a single sitting of about 15–20 min. Surveys with more than 30 per cent missing responses on key measures were excluded. The survey language was English. The unit of analysis was the individual

student. The outcome was a single composite of career indecision computed as the mean of the retained CDDQ items on a 1–5 scale. Predictors were gender, educational cohort, and the three trait scales. The design was cross-sectional, so we specified three planned analyses. The three were gender differences in indecision, regression of indecision on traits with gender as a covariate, cohort comparisons between first-year and final-year students.

Construct validity was examined using exploratory factor analysis in SPSS. Principal axis factoring with oblique rotation was used. Items with loadings below 0.40 or salient cross-loadings were removed before computing scale scores. Internal consistency met or exceeded $\alpha = 0.70$ for all retained scales. The study tested the following research questions. (1) Do gender differences relate to levels of career indecision. (2) Do Extraversion, Openness, and Conscientiousness relate to career indecision after accounting for gender. (3) Do first-year and final-year students differ in career indecision and Conscientiousness in ways that could inform the sequencing of career development programming across the undergraduate years (see Figure 1).

Results

Gender and career indecision (RQ1, H4)

A one-way ANOVA found no statistically significant difference in career indecision by gender, $F(1, 151) = 0.629$, $p = 0.429$, partial $\eta^2 = 0.004$. The mean difference 95 per cent CI $[-0.317, 0.741]$ included zero. This result does not support H4. See Table 1.

Personality traits and career indecision (RQ2, H1–H3)

A multiple regression tested whether gender, extraversion, openness, and conscientiousness were associated with career indecision (see Table 2). The model was small in magnitude,

TABLE 1 Tests of between-subjects effects.

Effect	SS	df	MS	F	P	Partial η^2
Gender	1.503	1	1.503	0.629	0.429	0.004
Error	360.485	151	2.387	–	–	–

Outcome is a composite career indecision score on a 1–5 scale. Partial $\eta^2 = 0.004$ indicates a negligible effect.

TABLE 2 Multiple regression predicting career indecision.

Predictor	<i>b</i>	SE	<i>t</i>	<i>P</i>	95% CI	β (std.)	VIF
Gender (female = 1)	0.108	0.265	0.409	0.683	[–0.415, 0.631]	0.049	1.008
Extraversion	0.672	0.313	2.147	0.033	[0.053, 1.291]	0.101	1.030
Conscientiousness	0.479	0.312	1.538	0.126	[–0.137, 1.095]	0.155	1.066
Openness	–0.401	0.245	–1.634	0.104	[–0.886, 0.084]	–0.169	1.043

$F(4, 148) = 2.921, p = 0.023, R^2 = 0.075$. Extraversion was positively associated with indecision, $b = 0.672, SE = 0.313, t = 2.147, p = 0.033$, 95 per cent CI [0.053, 1.291]. Openness was negative but non-significant, $b = -0.401, SE = 0.245, t = -1.634, p = 0.104$, 95 per cent CI [–0.886, 0.084]. Conscientiousness was not reliably related, $b = 0.479, SE = 0.312, t = 1.538, p = 0.126$, 95 per cent CI [–0.137, 1.095]. Gender was non-significant, $b = 0.108, SE = 0.265, t = 0.409, p = 0.683$, 95 per cent CI [–0.415, 0.631]. Given the small R^2 , these are modest, exploratory associations. Predictors were retained *a priori* to align with the literature review and stated hypotheses. Standardized coefficients and collinearity diagnostics are reported in Table 2, and residual plots did not indicate major assumption violations. Based on these estimates, H1 and H3 are not supported, and H2 is directionally consistent but not statistically significant.

Cohort comparisons (RQ3, H5)

Independent samples *t*-tests compared first-year students ($n = 76$) and final-year students ($n = 77$). Career indecision was higher for final-year students than first-year students, $t(151) \approx 1.60, p \approx 0.11$. The standardized mean difference was Hedges’ $g \approx 0.26$, 95 per cent CI [–0.06, 0.58], a small, non-significant effect. First-year $M = 3.35, SD = 0.72$; final-year $M = 3.55, SD = 0.78$. This pattern does not support H5. Conscientiousness did not differ by cohort, $t(151) \approx 0.50, p \approx 0.62$, Hedges’ $g \approx 0.07$, 95 per cent CI [–0.25, 0.39], which is negligible. First-year $M = 3.40, SD = 0.58$; final-year $M = 3.44, SD = 0.56$. Only two outcomes were tested in these cohort comparisons, so no multiplicity adjustment was applied; findings are interpreted as exploratory. Therefore, H5 is not supported.

Discussion

This study tested associations between gender, three personality traits, and career indecision among Saudi undergraduates, and compared first-year with final-year students. We interpret findings in the order of the research questions, connect them to prior theory, and draw practice implications with clear limits.

Gender and career indecision

The null gender difference is consistent with studies that find small or trivial gaps when students have comparable access to information and guidance resources (Gadassi et al., 2015; Atitsogbe et al., 2018). This pattern accords with accounts that locate gender effects on indirect and contextual pathways rather than as a simple main effect (Lent et al., 1994; Levin et al., 2024). A strict reading is that the composite outcome can mute subgroup contrasts that sometimes appear at the cluster level. Prior critiques note that readiness and dysfunctional belief items in the CDDQ can behave unevenly across groups and contexts (Creed and Yin, 2006; Levin et al., 2020). The finding therefore cautions against assuming intrinsic differences between male and female students in university settings and redirects attention to mechanisms such as differential advising use, field access, and social expectations that vary by gender and by institution.

Personality traits and career indecision

Personality accounted for a small share of variance, with extraversion positively associated with indecision, openness directionally negative, and conscientiousness not reliably related. The extraversion result is consistent with evidence that high sociability expands option search and delays commitment when opportunities are abundant and deadlines are soft (Marcionetti and Rossier, 2016). The openness pattern echoes studies linking flexible exploration and information integration to fewer decisional difficulties, although the present estimate is directional rather than definitive (De Raad and Schouwenburg, 1996; Di Fabio et al., 2012; Park et al., 2020). The limited role for conscientiousness admits two explanations. One explanation is that when institutional and social pressures are high, planfulness shows weak ties to choice resolution in information environments that are noisy or contradictory, which aligns with reports of attenuated trait expression under strong contextual demands in emerging adulthood (Srivastava et al., 2003; Roberts et al., 2014). A second explanation is that effects concentrate within specific difficulty clusters rather than in a composite score, a point raised in critiques of the readiness and inconsistency components of the CDDQ (Creed and Yin, 2006;

Levin et al., 2020). The theoretical implication is that approach-oriented traits align with exploration and information processes, yet their observable association with a composite indecision measure remains modest in a live university context.

Cohort differences in indecision and conscientiousness

Final-year students reported higher indecision than first-year students, while conscientiousness did not differ by cohort. This pattern challenges the common expectation of steady declines in indecision and increases in conscientiousness across years (Di Fabio et al., 2012; Lent and Brown, 2019). It also aligns with reports of comparatively high indecision late in training in regional samples, for example among senior medical students in Oman (Al Ajmi et al., 2024). A theoretically grounded interpretation is that proximity to transition points heightens perceived stakes and exposes students to more conflicting signals across family, institution, and labor market. Where guidance structures emphasize early exploration, later demands for commitment may coincide with thin support and greater inconsistency or information conflict even when trait profiles are stable. This interpretation aligns with the literature that treats indecision as context-responsive rather than a linear developmental deficit and cautions against importing assumptions from Western settings without testing them in local systems (Rossier et al., 2021; Lent and Brown, 2019).

Limitations

Several constraints qualify interpretation. First, the design is cross-sectional, so associations cannot be treated as causal and temporal ordering cannot be established. Second, the study was conducted at a single Saudi university with clustered recruitment by programme. This is a convenience sample rather than a probability sample, so findings should be read as analytic evidence for the sampled institution rather than population estimates. Third, career indecision was analyzed as a single composite derived from an adapted 12-item CDDQ set. Fourth, programme-level and disciplinary differences were not modeled because cluster sizes were small and uneven, and the study was not designed to estimate programme effects. Fifth, all measures were self-reported and collected in one session, which can introduce common method variance and shared rater bias. Sixth, the focal models did not include neuroticism and agreeableness and interaction terms were not tested. Future research should incorporate the full Big Five, test interactions, analyze CDDQ clusters separately or validate them at the cluster level, include multiple institutions, and link survey responses to behavioral outcomes such as internships, job search activity, or early employment.

Implications

Theoretically, the pattern fits work that locates gender effects on indirect and contextual pathways rather than as an intrinsic main

effect. The null difference on the composite aligns with models that emphasize the intersection of gender norms, access to information, and dispositional tendencies rather than a simple male–female gap. The small trait associations also matter for explanation. A positive link for extraversion and a directional negative link for openness suggest that approach-oriented traits relate to decision processes as expected, yet their observable influence is modest when indecision is measured as a single composite. This warrants closer attention to mechanisms such as option breadth, information synthesis, and commitment thresholds, and it motivates cluster-level analyses in future work where readiness, information, and inconsistency may respond differently. Higher indecision among final-year students supports a view of indecision as responsive to transitional pressures rather than a linear decline with academic maturity. The final year appears as a point where contextual demands can outweigh dispositional advantages, which models of development in higher education should incorporate.

For universities and policy, the results point to institution-level adjustments rather than broad policy prescriptions. Services are better targeted by dispositional tendencies than by gender categories, since the gender main effect was negligible. Advising can translate trait information into concrete supports, for example helping highly extraverted students narrow options and set commitment criteria, and helping highly open students consolidate exploration into ranked choices with clearer evidence standards. The final year warrants specific attention. Indecision was higher near graduation, which suggests shifting guidance effort toward the final year through embedded decision tasks in capstone courses, time-bound planning conversations, and closer alignment of employer engagement to impending transitions. Because explained variance was small, improvements to the information environment are also indicated. Clear maps from majors to occupations, transparent timelines for internships and placements, and consistent advising touchpoints can reduce confusion when personality differences alone do not determine outcomes. Light-touch digital tools can support this effort by returning immediate feedback and flagging rising indecision on repeated check-ins, provided thresholds are validated locally and used to prompt human follow-up rather than to replace it.

Conclusion

This study tested associations between gender, selected personality traits, and a composite measure of career indecision among Saudi undergraduates. Gender showed no direct association with indecision, indicating that simple male and female contrasts add little on their own. Trait effects were small, with extraversion positively linked to indecision, openness directionally negative, and conscientiousness not reliably related. Final-year students reported higher indecision than first-year students, which points to a pressure point near graduation rather than a steady decline across years. Therefore, the pattern frames indecision as context-sensitive, modestly shaped by approach-oriented traits, and heightened as students approach the labor market. Implications are therefore

targeted to disposition and timing within the institution, and claims are bound to the sampled context.

Data availability statement

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

Ethics statement

This study was approved by the Prince Sultan University Institutional Review Board (PSU IRB-2024-02-0171). Written informed consent was obtained from all participants.

Author contributions

TA: Writing – review & editing, Writing – original draft. NA: Writing – review & editing. MJ: Writing – original draft.

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