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Developing and demonstrating a comprehensive community-based model for morbidity management, disability prevention and rehabilitation of lymphatic filariasis patients: study protocol for an implementation research

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Background: Lymphatic Filariasis (LF) is a neglected tropical disease and the leading cause of lymphedema worldwide, causing physical, socio-economic, and psychological burdens. Although transmission has substantially declined, many individuals suffer chronic complications. Morbidity management and disability prevention (MMDP) is critical, yet existing health systems lack comprehensive community-based services. This study aims to develop and evaluate a community-based model for MMDP and the rehabilitation of LF patients.

Methods: This non-randomised, open-labelled, parallel-arm implementation research will be conducted in six *Brugia* endemic panchayats of Alappuzha district, Kerala, India, with 1,050 participants. Three panchayats will be assigned to the intervention arm and three to the control arm. The intervention group will receive home-based education, foot-care kits, Complete Decongestive Therapy, customised footwear, and form peer support groups. The control group will receive home-based education alone. Focus Group Discussions (FGDs) will be conducted to explore self-care practices and gaps in care provision. Quantitative outcomes include limb girth, ADLA frequency, quality of life, and self-care practices, which will be analysed for within- and between-group changes. Qualitative data will be transcribed, translated, coded, and thematically analysed.

Discussion: This study addresses the MMDP component of the Filariasis Control Program by developing a sustainable community-based model for lymphedema care. By establishing local CDT centres staffed by trained physiotherapists from the study area, the project aims to provide facility-level care to populations most in need. Findings will guide policymakers on integrating community-based rehabilitation into existing healthcare systems.

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KEYWORDS

complete decongestive therapy, primary limbcare, implementation research, lymphatic filariasis, lymphedema, selfcare practices

Background

Lymphatic Filariasis (LF) is a vector-borne parasitic disease seen in tropical and subtropical regions and caused by filarial worms (1). Lymphedema is a condition where the stasis of protein-rich fluid in the interstitial spaces results in the swelling of extremities. Although there are many aetiologies, in India, filariasis is the commonest cause of lymphedema (1). Initial lymphatic obstruction from the filarial infection and recurrent adenodermatolymphangitis (ADLA) worsen limb swelling, resulting in Elephantiasis (2). In advanced stages, it is a very debilitating condition leading to physical disfigurement of the patient and also has socioeconomic and psychological impact on the patient, affecting their quality of life (QOL) (3–5).

An estimated 31 million people are infected by LF in India, making up 40% of the global LF burden (6, 7). In alignment with global goals under the World Health Organization's Global Programme to Eliminate Lymphatic Filariasis (GPELF), India has made significant progress towards disease elimination. As of now, 40% of endemic districts have cleared Transmission Assessment Survey-I (TAS-I) and have discontinued Mass Drug Administration (MDA) (8).

Although transmission has declined, millions of people living with lymphatic filariasis continue to suffer from long-term complications, with lymphedema being the most common and debilitating (9). Lymphedema management includes the use of anti-filarial drugs in early stages, treatment and prevention of adenodermatolymphangitis (ADL) through limb-hygiene, antibiotics, and antifungals where indicated, and physical measures like complete decongestive therapy (CDT) to reduce the swelling. In selected cases, surgery is helpful (2). CDT comprises an intensive phase of therapy that involves manual lymph drainage (MLD), multi-layered compression bandaging, exercises, and skin care. The role of CDT in managing lymphedema is well established (10).

The vital component in elimination of LF rolled out by WHO is Morbidity management and disability prevention (MMDP). MMDP in lymphatic filariasis requires a broad strategy involving both secondary and tertiary prevention. Secondary prevention includes simple hygiene measures, such as basic skincare, to prevent ADL and progression of lymphoedema to advanced/severe stages. Tertiary prevention includes psychological and socioeconomic support for people with disabling conditions to

ensure that they have equal access to rehabilitation services and opportunities for health, education and income. MMDP could be achieved effectively by establishing community-based Complete Decongestive Therapy (CDT) centre, identification of morbid cases, periodical home visit to check the compliance of patient, and surgical debulking in selected cases.

The current morbidity management practiced in most of the places is limited to education of foot hygiene through demonstrations. Most patients belong to poor socio-economic status and hence they fail to comply with these advises. Further, no footwear suiting elephantoid legs is available in the market, hence they walk around in bare foot leading to injury and secondary infections. These secondary infections create havoc, but they cannot be contained due to lack of use of periodical oral antibiotics, potassium permanganate powder/solutions, topical application of antibacterial/antifungal, moisturizing creams, bandaging/stockings and appropriate footwear.

Brugia malayi is a filarial nematode that infects the lymphatic vessels and lymph nodes of humans and dogs in South East Asian regions (11). The major vectors for LF in Cherthala were identified as *Mansonia annulifera*, *Ma.uniformis* and *Culex quinquefasciatus* (12). LF transmission in the *Brugia malayi* endemic region of Alappuzha District, Kerala, has markedly declined after decades of intensive public health efforts. Despite this success, the existing health systems continue to face significant challenges in delivering comprehensive MMDP services to affected individuals. Many affected persons, particularly those in resource-limited settings, have limited access to facility-based care.

Strengthening community-level capacity for MMDP is essential for sustaining LF elimination gains and improving the quality of life of those already affected. This study, therefore, aims to develop and evaluate a comprehensive, community-based model for MMDP and rehabilitation in selected *Brugia malayi* endemic villages of Alappuzha District.

Methods/design

This protocol is reported in accordance with the Standard Protocol Items: Recommendations for Interventional Trials (SPIRIT) reporting guidelines.

Study design

The study is a non-randomised, open labelled, parallel-arm implementation research trial with two study arms: control and intervention arm.

Abbreviations: LF, Lymphatic Filariasis; MMDP, Morbidity Management and Disability Prevention; ADLA, Adenodermatolymphangitis; CDT, Complete Decongestive Therapy; MLD, Manual Lymphatic Drainage; FGD, Focus Group Discussion; LFSQQ, Lymphatic Filariasis-Specific Quality of Life Questionnaire.

Study setting

The project will be carried out in the Brugia-endemic areas of Cherthala Taluk, Alappuzha District, Kerala. According to various Transmission Assessment Surveys (TAS) 1 and 2, Mf prevalence in Alappuzha District has been below 1%, and Mass Drug Administration was stopped. MMDP clinics in the area are functioning at the level of secondary care institutions (13).

The prevalence of LF lymphoedema will be assessed through secondary data analysis for selected panchayats in Cherthala taluk. Six high prevalence panchayats will be selected, with 3 serving as the intervention arm and 3 as the control arm.

Study participants

Participants will be identified through a review of the local health authority's existing medical registers. All individuals listed as lymphatic filariasis (LF) patients and residing within the designated geographic areas of the panchayats will be considered eligible for inclusion into the research.

Recruitment

Potential participants will be identified for enrolment through medical registers maintained by the local health authority, by conducting community camps, and with support from ASHAs, local leaders, and by word of mouth. The recruitment period will be 12 months, starting after the baseline survey. Once participants are enrolled, they will be followed up during the study period for up to 6 months. Follow-up surveys will be conducted through household visits.

For participants enrolled in the intervention arm for CDT, recruitment will also take place over a 6-month period. These participants will be followed up for up to 6 months at the CDT centres. In the case of loss to follow-up, participants will be visited at their homes.

Timeline

The planned study timeline is summarised in [Figure 1](#) and implementation strategy is depicted in [Figure 2](#).

The Gantt chart outlines the key phases of the study, including participant recruitment, data collection, follow-up, and data analysis. Each phase is scheduled according to the anticipated timeline, providing a clear overview of study progression.

In both arms, the following will be carried out at baseline and at outcome assessment point 2;

- a. Administration of Study questionnaire capturing Quality of Life using LFSQQ, limb girth assessment and frequency of ADLA.
- b. Focus Group Discussion (FGD) among the patients to determine the self-care practices and to identify the lacunae in care provision and access.

Intervention

The intervention arm consists of the following four main components: (1) Home-based education for primary care with provision of Primary Footcare Kit, (2) Complete Decongestive Therapy, (3) Provision for customised footwear, (4) Formation of peer support groups. Each component is described in more details as follows:

1. Home-based primary care for lymphedema management.

From the list of patients obtained from the district administration (LSG/PHC) or health authority, 175 patients will be selected for home-based care from each panchayat. Trained field staff will provide a health education session to all participants about self-management of Lymphoedema at home. A self-care kit will be provided to each participant, with items such as a tub, mug, and towel, along with potassium permanganate powder, moisturizing cream, topical antibiotics, antifungal ointments, and compression bandages. The participants will be educated about limb elevation, foot care and multilayer bandaging of the limb. Among the participants, those having more than 2 episodes of Lymphangitis per year will be given Doxycycline (100mg BD x 5 days a month) and Diethyl Carbamazine (100mg TID x for 5 days a month).

2. Complete Decongestive Therapy.

From the home-based survey, patients with lymphoedema stages II to VII (as per WHO classification) who are willing to participate will be enrolled for Complete Decongestive Therapy (CDT), with a target of 96 patients per panchayat.

3. Customised footwear.

To support foot care, customised footwear will be provided to all patients enrolled for Complete Decongestive Therapy. Professional footwear makers will take detailed measurements of each patient's feet to ensure a precise and comfortable fit.

4. Peer support groups.

Patients who have shown good motivation and achieved good results in CDT and home-based lymphedema care will be encouraged to form peer support groups to help others in their neighbourhood for sustainable foot care in all three panchayats with 10–15 members in a group.

Procedures

Phase I

Training workshops will be organised for the project team (comprising of Medical Officer, 6 Physiotherapists and 2 Multi-purpose Workers) on filariasis-related lymphoedema management, Complete Decongestive Therapy (CDT) and data collection procedures. Therapists from the project team will receive specialised training in Complete Decongestive Therapy (CDT), by the Department of Plastic Surgery at Amrita Institute of Medical Sciences. The training will include both theory and hands-on clinical practice. A digital database will be established to collect and manage data from both control and intervention panchayats.

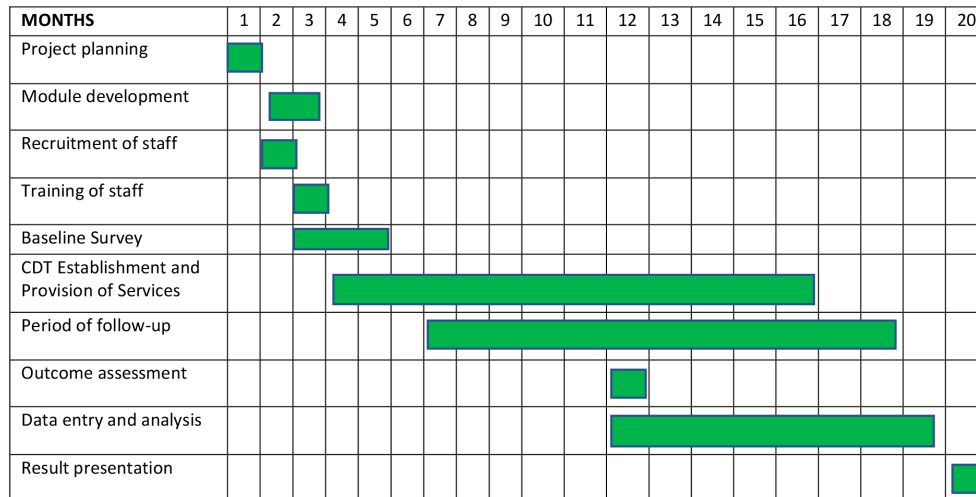


FIGURE 1 Gantt chart illustrating the planned timeline of study activities.

Phase II: CDT phase/intervention phase

During this phase, the intervention will be implemented in the selected intervention panchayats. Participants will receive primary footcare kit, to support and maintain daily lymphoedema care practices.

One CDT Centre will be operated as part of the project in the panchayats under the intervention arm. CDT will be delivered by trained therapist in two phases:

- Intensive Phase: CDT will be provided six days a week for two weeks at the CDT centre.
- Continuation Phase: Participants will receive CDT once every two weeks for one month, followed by once-a-month session at third month and sixth month.

During the continuation phase, participants will be instructed to independently perform CDT techniques at home, including daily foot care and limb elevation, to reinforce the benefits of therapy.

The intervention will be delivered over a total duration of six months. Follow-up assessments will be conducted at three- and six-months post-intervention. participants will receive weekly follow-up phone calls to check on lymphedema status, adherence to exercises, use of compression garments, and self-care practices. During follow-up visits, these aspects will be further reinforced. Intervention can be discontinued at any time at the participant’s request.

Data collection will include the same structured questionnaires and clinical assessments used at baseline, ensuring consistency in outcome measurement across time points.

In addition to quantitative assessments, qualitative data will be gathered through Focus Group Discussions among participants to explore existing self-care practices, challenges in adherence, and barriers to accessing appropriate care with an aim to identify gaps in the provision of care and support services.

All components of the study, including data collection and interviews, will be conducted in Malayalam, the official language of Kerala and the primary language spoken in the study areas.

Outcomes

Limb girth assessment

Limb girth measurements will be used to assess changes in the severity of lower limb lymphedema over time. Measurements will be taken using a non-stretchable measuring tape, with participants in supine position. Standardised circumferential measurements will be recorded at seven anatomically defined points on both lower limbs, including; the tip of the great toe, the base of the metatarsophalangeal joints (C1), the mid-tarsal line (C3), the lateral malleolus (C4), and at 10 cm intervals from the ground level up to 30 cm (C2, C5, C6, C7) (14) (Figure 3).

Measurements will be taken at baseline, 3 months, and 6 months to evaluate changes in limb circumferences.

For participants enrolled for the Complete Decongestive Therapy (CDT), lower limb circumference will be measured at 4 cm intervals, starting from the lateral malleolus and extending proximally toward the thigh, covering the full length of both limbs. Measurements will be performed using a non-stretchable measuring tape, following a validated method in accordance with international best-practice guidelines for lymphedema management (15). All measurements will be taken with participants in a supine position, with the limb fully extended and relaxed to ensure consistency across all time points.

Circumference measurements will be taken before starting CDT, after the 2-week intensive phase, and during follow-up visits at 1 month, 3 months, and 6 months. This follow-up schedule is designed to precisely track changes in limb circumference and assess the effectiveness of CDT over time. It also aims to maintain the benefits achieved during the intensive phase and support the long-term management of lymphedema.

Quality of life

Quality of life will be assessed using the Lymphatic Filariasis-Specific Quality of Life Questionnaire (LFSQQ), a validated tool

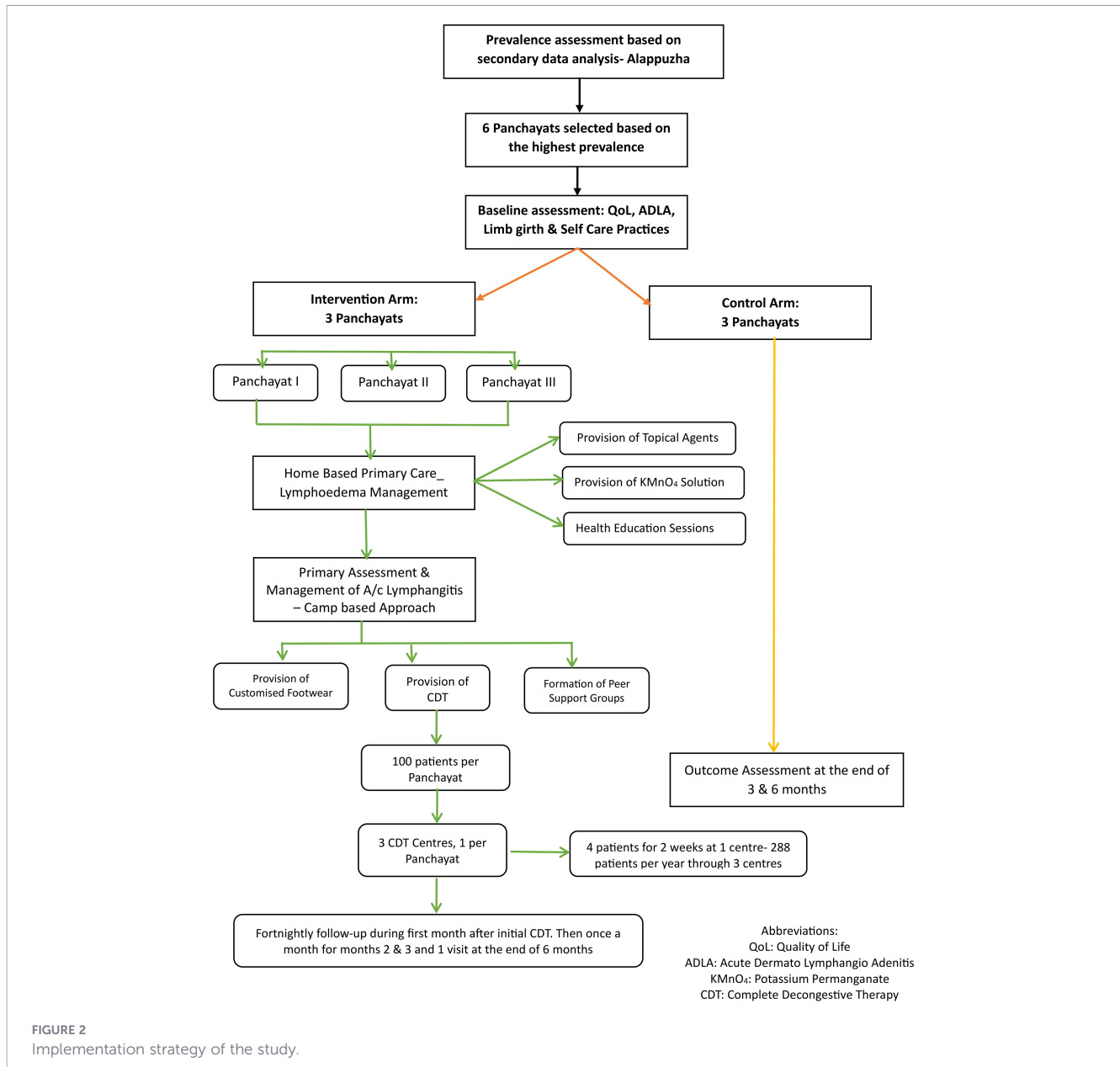


FIGURE 2 Implementation strategy of the study.

developed by the Institute of Applied Dermatology, Kerala, India, specifically for use in individuals with lymphatic filariasis (16). The LFSQQ evaluates health-related quality of life over the past 30 days across seven domains: mobility, self-care, usual activities, disease burden, pain/discomfort, psychological health, and social participation. Each domain contains a variable number of items scored on a five-point scale: no problem, mild, moderate, severe, and most severe. Scores will be calculated based on the number of applicable questions answered, resulting in a total score ranging from 0 to 100, where 0 indicates the worst QoL and 100 the best.

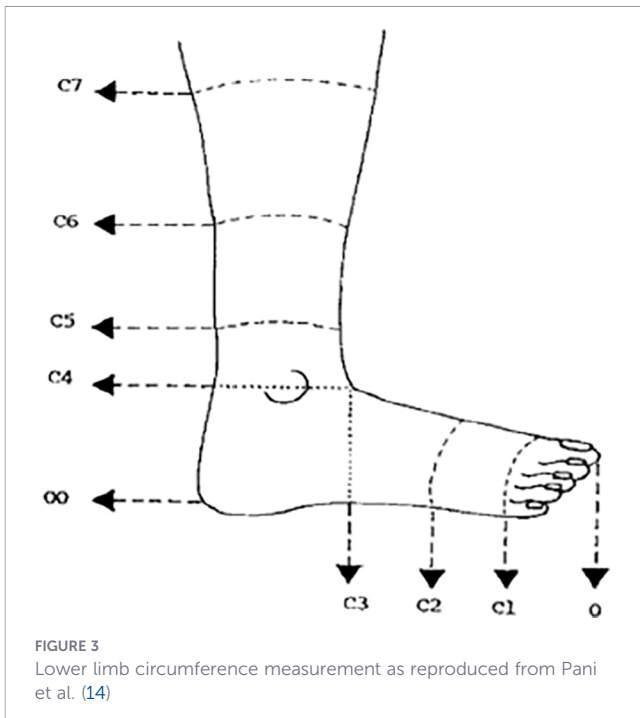
The LFSQQ will be administered at baseline, 3 months, and 6 months post-intervention. Changes in total and domain-specific scores over time will be analysed to determine the intervention’s impact on participants’ quality of life.

ADLA frequency

ADLA episodes will be self-reported by participants and documented at baseline, 3 months, and 6 months. Changes in the frequency of episodes over time will be assessed by comparing the mean number of episodes reported at each time point.

Self-care practices

Self-care practices will be assessed using a structured questionnaire adapted from a validated tool developed by the Centre for Neglected Tropical Diseases, Department of Tropical Disease Biology, Liverpool School of Tropical Medicine (17). It includes questions related to exercises, limb care and hygiene, management of acute attacks and use of support services. Data



will be collected at three time points: baseline, 3 months, and 6 months.

Sample size

Based on the assumption that 1% of the population in each panchayat has filariasis lymphoedema, With the total population of Cherthala Taluk being approximately 700,000 across 20 panchayats, this translates to an estimated 350 patients with lymphoedema per panchayat.

Based on the highest possible proportion of improvement with home based primary care, 50% of the 350 patients, i.e., 175 patients per panchayat will be selected for home-based health education. The study will include six panchayats, resulting in a total sample of 1,050 participants in the home-based care intervention arm (175 patients \times 6 panchayats).

In addition, a subset of patients will be enrolled for intervention involving Complete Decongestive Therapy (CDT), delivered by trained therapists. Each CDT centre, staffed with two therapists, will be able to provide CDT to 4 patients per day. Over a two-week period, this enables treatment of 12 patients per centre per month. With three centres operating, a total of 24 patients can receive CDT monthly. Over a 12-month period, 288 patients will receive CDT in the intervention arm (24 patients/month \times 12 months).

Data management

Data will be collected electronically using the Kobo Collect application (v2024.2.4) installed on tablets issued to trained field data collectors. After submission of forms, data will be automatically uploaded to the Kobo Toolbox server. The uploaded data will be regularly exported in Excel format for review. Any discrepancies

identified will be verified and corrected in consultation with the relevant field data collectors and documented accordingly.

All datasets will be securely stored with access limited to investigators only. Regular backups will be maintained to safeguard against data loss. Confidentiality and anonymity will be preserved throughout data collection, storage, analysis, and dissemination. The principal investigator will take full responsibility for ensuring the appropriate storage and security of data. Data will be retained for 5 years from the completion of the study.

Data analysis

Quantitative data will be analysed once baseline data collection is complete. Descriptive statistics will be used to summarise the demographic and study variables of participants, including limb girth measurements, self-care practices, and quality of life scores. Means and standard deviations will be reported for normally distributed continuous variables and medians with interquartile ranges (IQR) for skewed continuous variables. Categorical variables will be summarised using frequencies and percentages.

Comparisons between the intervention and control groups at baseline will be conducted using independent t-tests for continuous variables that are normally distributed and chi-squared tests for categorical variables. For continuous variables that are skewed or violate normality assumptions, appropriate non-parametric tests (Mann-Whitney U test) will be used. To evaluate changes in quality of life and limb girth over time and across groups, a two-way repeated measures ANOVA will be used. To factor in for the replicates of data timepoints, a linear mixed model analysis will be done. Additionally, paired *t*-tests will be conducted to compare pre- and post-intervention limb girth within each group. Percentage improvements in quality of life and percentage reductions in limb girth will be calculated, along with corresponding 95% confidence intervals. Where appropriate, effect sizes will be reported to quantify the magnitude of changes. All statistical analyses will be conducted using R 4.4.1 software. A significance level of $p < 0.05$ will be used throughout.

Qualitative data-the audio recordings of Focus Group Discussions and In -Depth interviews will be transcribed and translated into English. Following which the data will be manually coded and thematically analysed. Using data triangulation, a conclusion will be obtained.

Dissemination

Articles will be published in peer- reviewed journals. The results of the study will also be shared through conferences, with researchers and national and state health authority. A meeting will be organised at the end of the study to disseminate the results in the communities in the study areas.

Discussion

This study protocol outlines a community-based model for the management of lymphedema under the MMDP component of

Filariasis control program. By establishing locally accessible care through CDT centres and training therapists from study area, the project aims to bring facility level care closer to the affected population.

The intervention is expected to reduce the affected limb girth enhancing functional and social mobility, reduce the frequency of ADLA episodes and improved quality of life. In addition, health education, primary limb care kits, customised footwear and compression bandages will promote sustainable self-care among patients.

Findings from this study will inform policymakers on the disease burden and provide practical guidance for integrating community rehabilitation strategies into existing health systems. Overall, this protocol provides a framework for implementing and evaluating a sustainable, community-based model of lymphoedema management. If successful, it can serve as a model for scaling MMDP interventions within the public health system, thereby improving health outcomes and quality of life for affected populations.

Limitations

The effectiveness of the proposed intervention may be influenced by variability in adherence to self-care practices and the use of limb care kits among participants. Some outcome measurements rely on participant self-report, which could introduce reporting bias. Also, as the intervention is being implemented under the current project funding, its long-term sustainability will depend on successful integration into the existing health system.

Ethics statement

Ethical approval for this study has been obtained from the Institutional Ethics Committee of Amrita Institute of Medical Sciences, ECASM-AIMS-2024-028. All procedures involving human participants were conducted in accordance with the ethical standards of the Institutional Ethics Committee and with the 1964 Declaration of Helsinki or its later amendments. Written informed consent will be obtained from all participants prior to their inclusion in the study. Participants will be informed of their right to withdraw from the study at any time without any consequences.

Author contributions

TJ: Conceptualization, Methodology, Writing – original draft, Writing – review & editing. SM: Visualization, Resources, Writing – original draft, Writing – review & editing. PF: Conceptualization, Writing – original draft, Writing – review & editing. AS: Writing –

original draft, Writing – review & editing. NK: Software, Writing – original draft, Writing – review & editing. ST: Writing – original draft, Writing – review & editing. SI: Writing – original draft, Writing – review & editing. KP: Funding acquisition, Project Administration, Writing – original draft, Writing – review & editing.

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Conflict of interest

The author(s) declared that this work 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) declared that generative AI was not used in the creation of this manuscript.

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References

- Budge PJ, Little KM, Mues KE, Kennedy ED, Prakash A, Rout J, et al. Impact of community-based lymphedema management on perceived disability among patients with lymphatic filariasis in Orissa State, India. *PLoS Negl Trop Dis.* (2013) 7:e2100. doi: 10.1371/journal.pntd.0002100
- Shenoy RK. Clinical and pathological aspects of filarial lymphedema and its management. *Korean J Parasitol.* (2008) 46:119–25. doi: 10.3347/kjp.2008.46.3.119
- Asiedu SO, Kwarteng A, Amewu EKA, Kini P, Aglomasa BC, Forkuor JB. Financial burden impact quality of life among lymphatic Filariasis patients. *BMC Public Health.* (2021) 21:174. doi: 10.1186/s12889-021-10170-8
- K H, Prabhakar VR. Impact of lymphatic filariasis on quality of life of affected individuals: A community based cross sectional survey. *Infolep.* (2016) 6(6):13–8. Available online at: <https://www.leprosy-information.org/resource/impact-lymphatic-filariasis-quality-life-affected-individuals-community-based-cross>.
- Executive Committee. The diagnosis and treatment of peripheral lymphedema: 2016 consensus document of the international society of lymphology. *Lymphology.* (2016) 49:170–84.
- Joy S, Rahi M. Empowering lymphatic filariasis affected individuals in India: acknowledging disability status and ensuring justice. *Lancet Reg Health Southeast Asia.* (2024) 25:100400. doi: 10.1016/j.lansea.2024.100400
- Pati S. Eliminating lymphatic filariasis: India's bold plan to finish 3 years ahead of global schedule. *Indian J Public Health.* (2023) 67:345. doi: 10.4103/ijph.ijph_1030_23
- Update on Sarva Dawa Sevan [Internet]. Available online at: <https://www.pib.gov.in/PressReleasePage.aspx?PRID=2042050®=3&lang=2>.
- Chu BK, Hooper PJ, Bradley MH, McFarland DA, Ottesen EA. The economic benefits resulting from the first 8 years of the Global Programme to Eliminate Lymphatic Filariasis (2000–2007). *PLoS Negl Trop Dis.* (2010) 4:e708. doi: 10.1371/journal.pntd.0000708
- Brandão ML, Soares HPDS, Andrade M do A, Faria ALS de C, Pires RS. Efficacy of complex decongestive therapy for lymphedema of the lower limbs: a systematic review. *J Vasc Bras.* (2020) 19:e20190074. doi: 10.1590/1677-5449.190074
- Marchiondo AA, Cruthers LR, Reinemeyer CR, Snyder DE, Yazwinski TA, Dzimianski MT, et al. Chapter 2-Nematoda, in: Parasiticide Screening: Volume 2: In: *Vitro and In Vivo Tests with Relevant Parasite Rearing and Host Infection/Infestation Methods*. Academic Press. (2020). pp. 135–335. doi: 10.1016/B978-0-12-816577-5.00007-7.
- Regu K, Rajendran R, Ali MKS, Koya SM, Dhariwal AC, Lal S. Decline of brugian filariasis in Cherthala taluk, Alappuzha district, Kerala. *J Commun Dis.* (2005) 37:209–18.
- Meenakshy V, AV K, Sharma SN, Baruah K, Srivastava PK. Lymphatic filariasis elimination in kerala: A success story. *J Commun Dis.* (2023) 55:91–7. doi: 10.24321/0019.5138.202314
- Pani SP, Vanamail P, Jayaraman Y. Limb circumference measurement for recording edema Volume in patients with filarial lymphedema. *Lymphology.* (1995) 28:57–63.
- Best Practice for the Management of Lymphoedema: an international consensus – Wounds International. Available online at: <https://woundsinternational.com/consensus-documents/best-practice-for-the-management-of-lymphoedema-an-international-consensus/> (Accessed February 26, 2026).
- Thomas C, Narahari SR, Bose KS, Vivekananda K, Nwe S, West DP, et al. Comparison of three quality of life instruments in lymphatic filariasis: DLQI, WHODAS 2.0, and LFSQQ. *PLoS Negl Trop Dis.* (2014) 8:e2716. doi: 10.1371/journal.pntd.0002716
- Douglass J, Mableson HE, Martindale S, Kelly-Hope LA. An enhanced self-care protocol for people affected by moderate to severe lymphedema. *Methods Protoc.* (2019) 2:77. doi: 10.3390/mps2030077