



A LITERATURE REVIEW OF PHYSICAL, PSYCHOLOGICAL, AND SOCIAL ASPECTS IN FILARIAL LYMPHEDEMA PATIENTS

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ABSTRACT

Filariasis disease is caused by filarial worms and transmitted by mosquitoes. Filariasis lymphedema is considered scary because it can cause permanent body defects that are aesthetically detrimental and reduce patient mobility. In addition, this disability also causes psychological and social problems for patients. The objective is to conduct a literature review of filarial lymphedema patients' physical, psychological, and social aspects. Methods: A literature review was conducted from the digital database of Pubmed, BMC, PLOS neglected tropical diseases, SAGE journal, and Google Scholar published in English between 2000 until march 2023. The author used the terms "physical" AND "psychological" OR "psychosocial" AND "social" AND "filarial lymphedema". And the last step was all articles were reviewed, articles under review were original research design, cross-sectional studies, cohort studies, descriptive studies, quantitative, and qualitative studies. Results: The nine papers that made up the literature review were released in the years 2005 through 2023. The majority of research demonstrated that physical disabilities resulting from lymphatic filariasis induce reduced physical function in patients. Additionally, seven studies discovered that individuals with lymphatic filariasis experienced depression as a result of their physical limitations, social isolation brought on by stigma, sleep issues, anxiety, marital issues, and financial difficulties.. This literature review found that filarial lymphedema can affect the physical and social aspects of the patients and gradually can affect the mental health of patients. morbidity management program of filarial lymphedema needs to be improv and promote so it can reduce stigma, psychology, the social and physical burden due to lymphedema filariasis.

Keywords: lymphedema filariasis, physical, social, psychological, morbidity management program

ABSTRAK

Penyakit filariasis disebabkan oleh cacing filaria dan ditularkan oleh nyamuk. Limfedema filariasis dianggap menakutkan karena dapat menyebabkan cacat tubuh yang permanen yang merugikan secara estetika dan mengurangi mobilitas pasien. Selain itu, kecacatan ini juga menyebabkan masalah psikologis dan sosial bagi pasien. Tujuan penelitian ini adalah untuk melakukan kajian literatur terhadap aspek fisik, psikologis, dan sosial pasien limfedema filariasis. Metode: Tinjauan literatur dilakukan dari database digital Pubmed, BMC, PLOS Neglected Tropical Diseases, jurnal SAGE, dan Google Scholar yang diterbitkan dalam bahasa Inggris antara tahun 2000 hingga maret 2023. Penulis menggunakan istilah "physical" AND "psychological" OR "psychosocial" AND "social" AND "filarial lymphedema". Dan langkah terakhir adalah semua artikel direview, artikel yang direview adalah original research, studi cross sectional, studi kohort, studi deskriptif, studi kuantitatif, dan kualitatif. Hasil: Sembilan penelitian yang termasuk dalam tinjauan literatur diterbitkan antara tahun 2005 dan 2023. Sebagian besar penelitian menunjukkan bahwa pasien dengan filariasis limfatik memiliki keterbatasan fungsi fisik yang disebabkan oleh disabilitas fisik. Tujuh penelitian juga menemukan bahwa penderita filariasis limfedema merasakan depresi karena cacat fisik dan isolasi sosial karena stigma, masalah tidur, kecemasan, masalah perkawinan, dan masalah keuangan. Kajian literatur ini menemukan bahwa filarial lymphedema dapat mempengaruhi aspek fisik dan sosial pasien dan secara bertahap dapat mempengaruhi kesehatan mental pasien. program penatalaksanaan morbiditas limfedema filaria perlu ditingkatkan dan digalakkan sehingga dapat mengurangi stigma, psikologis, beban sosial dan fisik akibat limfedema filariasis.

Kata kunci: limfedema filariasis, fisik, sosial, psikologis, program manajemen morbiditas

INTRODUCTION

One other public health threat that cannot be ignored is zoonosis (animal-borne disease). About 70% of new human infectious diseases are zoonotic diseases, which are highly influenced by interactions between humans and their environment. Indonesia's dense population with a wide geographical area causes the opening of transportation within the country and between countries which can cause the entry of new disease agents. (Yurianto, 2020)

A chronic disease spread by mosquitoes, filariasis is brought on by filarial worms. When a mosquito bites a human, filaria worms enter the body and infect lymph tissue. Filarial worms, each microfilaria, mature into adult worms after entering lymphatic tissue, causing swelling in the arms, legs, feet, breasts, and sexual organs. In Indonesia, filaria is caused by three different types of worms: *Wuchereria bancrofti*, *Brugia malayi*, and *Brugia timori*. The 2021 Neglected Tropical Diseases (NTD) roadmap from the World Health Organization (WHO) calls for the eradication of filariasis by

2030. Globally, an estimated 1.3 billion people are at risk of developing filariasis at any given time. More than 83 nations are included in this total, with Southeast Asia accounting for 60% of the instances. There will be 9,354 chronic filariasis cases in 34 provinces in Indonesia in 2021. Because of several reported deaths and a change in diagnosis following data validation/confirmation of chronic clinical cases recorded in the prior year, this statistic appears to have declined from the data from the previous year. (Setiaji, 2021) Modeling the annual lymphatic filariasis prevalence in 2000–18 for 73 countries that are currently or were previously endemic was done using a worldwide collection of georeferenced survey locations. The estimated total number of people with lymphatic filariasis infections worldwide in 2000 was 199 million (95% uncertainty interval: 174–234 million). Totals by WHO Region varied from 3.1 million (1.6–5.7 million) in the Americas to 107 million (91–134 million) in Southeast Asia. An estimated 51 million individuals (43–63 million) carried the infection in 2018. Globally, there is a decrease in prevalence; however, priority regions in Africa and Southeast Asia are still less likely to see enough of this to meet recommended infection prevalence levels for local elimination. (Deshpande et al., 2020)

Lymphedema filariasis/ elephantiasis disease is considered frightening because it can cause permanent bodily disabilities, so it is not only detrimental aesthetically and reduces the mobility of the sufferer, but further causes disability which causes psychological and social problems for the sufferer. (Sulianti, 2014) in Ruth's research (2019) Although it does not result in death directly, this disease is a major cause of disability, exclusion, psychosocial barriers, and decreased individual work productivity, causing economic losses. (Dheo et al., 2019) When they find out that they suffer from filariasis, most sufferers will be shocked, sad, and ashamed, and some even feel hopeless and lose the meaning of life. Perceptions of the disease are indicated by changes in behavior, such as staying at home more, avoiding and limiting oneself, and withdrawing because they feel ashamed of changes in body image and are afraid of negative treatment from society. This can have an impact on the sufferer's social and emotional response, namely the existence of social stigma that can cause behavioral disturbances in others, including avoiding physical and social contact. (Reaso et al., 2020)

Activities aimed at preserving and enhancing health with the goal of reaching the community's ideal state of health are referred to as health efforts. The Puskesmas and all other health service facilities in Indonesia operate under the principles of a united health endeavor. Puskesmas is a facility that offers basic healthcare services, such as planning health initiatives, promoting healthy lifestyles, treating and preventing illnesses, and providing rehabilitative care. (Kementerian Kesehatan RI, 2016) One of the powers outlined in the Regulation of the Minister of Health Number 43 of 2019 concerning Puskesmas Act 7 paragraph d pertains to primary healthcare, namely the provision of health services that prioritize patient safety, staff, security, and the work environment. (Kementerian Kesehatan RI, 2019) To ensure that the services supplied are able to satisfy the requirements, wishes, and expectations of the community, public health centers must be implemented with an improved level of performance or quality in service delivery. (Kementerian Kesehatan RI, 2014) One of the public health centers' services that plays an important role in improving the quality of health services for the community and is an integral part of the implementation of health efforts is community health services at the puskesmas. (Kementerian Kesehatan RI, 2019) With two main pillars of prevention strategies—breaking the chain of transmission of filariasis through the administration of mass prevention drugs (POPM) and preventing and limiting disability through chronic case management filariasis—primary health care has roles to play in the integrated effort to eradicate the disease. This task is completed in an all-encompassing, sustainable, and integrated manner. (Yurianto, 2020)

The authors intended to perform a review of the literature about the social, psychological, and physical aspects of filarial lymphedema patients in light of this background.

METHOD

Research design

This study was a literature review by searching for relevant articles to achieve current goals. A narrative literature review design was employed to gather data regarding the social, psychological, and physical characteristics of filarial lymphedema patients.

Data Sources

Collecting articles from the digital database of Pubmed, BMC, PLOS neglected tropical diseases, SAGE journal, and Google Scholar published in English between 2000 until march 2023. The author used the terms “physical” AND “psychological” OR “psychosocial” AND “social” AND “filarial lymphedema”. The last step was all articles were reviewed, articles under review were original research design, crosssectional studies, cohort studies, descriptive studies, quantitative, and qualitative studies. Patients diagnosed clinically as chronic edema for more than six weeks and with filarial lymphedema, with or without adenolymphangitis (ADL), meet the inclusion criteria. Patients who have had filarial lymphedema for less than six weeks are excluded.

Data Analysis

Two reviewers extracted the data. The implications of filarial lymphedema, the causes and countermeasures, study restrictions, and findings were among the variables included in the data extraction that reflected the domain and outcome. The initial author, publication year, study design, kind of study, study sample characteristics, sample size, study perspective, and test instruments were also added as data variables indicating the study features.

RESULTS AND DISCUSSION

Article search from the digital database, found 18 articles from Pubmed, 7 articles from BMC, 16 articles from PLOS neglected tropical diseases, 1 article from SAGE journal, and 187 articles from Google Scholar. In total, 229 articles were obtained, then they were selected based on duplication and the records screened were 197 articles. The articles were then chosen based solely on their abstracts and the first ten pages of Google Scholar. As a result, 187 articles were deemed ineligible due to non-compliance with certain criteria, such as not being NTD other than filarial lymphedema and not being full text accessible until 10 articles had been evaluated for eligibility. Additionally, one article was eliminated due to the use of a systematic review method, which allowed for the exclusion of nine articles that met the criteria. (see Figure 1).

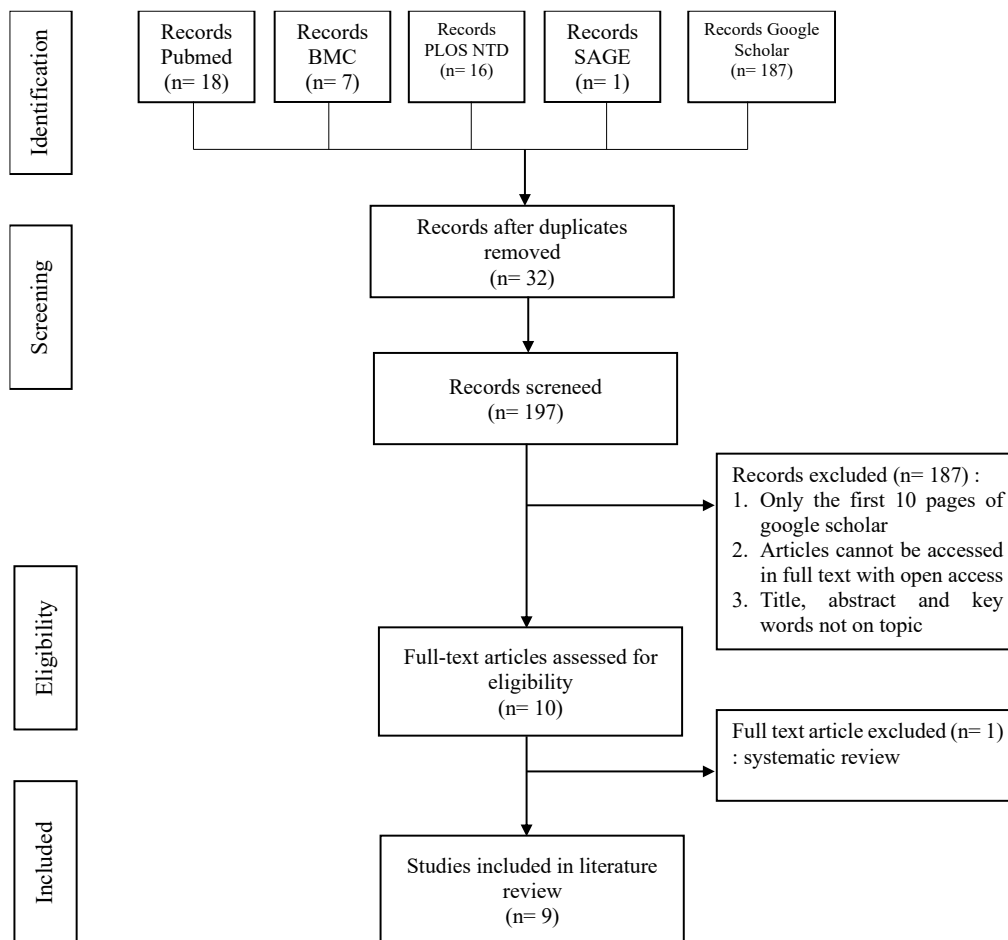


Figure 1. Flowchart of Identification and Selection of Article Process for Literature Review.

The 9 studies included in the literature review were published between 2005 and 2023. 4 studies used quantitative study, 3 studies used qualitative study, and 2 used mixed methods. Study designs were used in studies, including cross-sectional, hospital-based cross-sectional, cohort, and case study. 7 studies were conducted in Asia (Srilanka, India, Indonesia), and 2 studies in Africa. Most of the studies adopted test instruments to measure functional state, mental health status, social health, and stigmatization. 2 studies have a narrative interview to see a perception, knowledge, and prevention of lymphatic filariasis. See Table 1 for a more thorough summary of the listed studies.

Table 1.
Study attributes of the 9 studies that make up the review

Research (First author, year)	Characteristics (design study, type)	Sample attributes (country, size)	Test Instruments	Examine Viewpoints (individual; community)
Rushika S. Wijesinghe, 2015 (Wijesinghe & Ananda, 2015)	Design not stated, Quantitative study	Colombo district of Sri Lanka, 269 participants	SF-36 Questionnaires measure functional state, well-being, and overall health evaluation GHQ-30 Questionnaires assesses an individual's current mental health status	Individual

Krishna Kumari, 2005 (Kumari, Chandrakumar, Das, & Krishnamoorthy, 2005)	Design not stated, Qualitative study	Villupuram district of Tamil Nadu, 174 patients and 15 experts	Interview and 7D5L instrument to assess the outcomes of the disease on physical, mental, and social health	Individual, experts
Wijesinghe Hospital, 2007 (Wijesinghe, Wickremasinghe, Ekanayake, & Perera, 2007)	Cross-sectional, Quantitative-descriptive study	Colombo district of Sri Lanka, 413 participants	The purpose of the questionnaire was to gather data on demographics, disability (impacting daily activities, work, education, attending social events, religious activities, and leisure activities), social implications (differences with family, friends, coworkers, and the community), feelings regarding illness, and marital and sexual issues.	Individual
Obiora A. Eneanya, 2019 (Eneanya, Garske, & Donnelly, 2019)	Cross-sectional, Quantitative study, qualitative study	Rural Nigeria, 52 cases and 52 controls	Questionnaires and narrative interviews	Individual
Parathasarathi Ramanathan, 2020 (Ramanathan, Prabhakar, & Ananthan, 2020)	Hospital-based cross-sectional, Quantitative study, qualitative study	Tamil Nadu, 30 participants	EMIC-CSS was developed to elicit perceptions, beliefs, and practices related to the disease.	Individual
Gnanasekaran Vijayalakshmi, 2023 (Vijayalakshmi, Vanamail, Mahendiran, Meena, & Britto, 2023)	Cohort, Quantitative study	Puducherry, South India 80 participants	SARI-FLE-VER2 and PSS-FLE-VER2	Individual
Edward Agbo Omudu, 2011 (Omudu & Okafar, 2011)	Design not stated, Quantitative study	Benue State, Nigeria 1.702 participants	A questionnaire to assess knowledge, attitude, perception, transmission, and prevention of lymphatic filariasis	Individual
Tali Cassidy, 2016 (Cassidy, et al., 2016)	Design not stated, Qualitative-descriptive study	Odisha State, India 28 program volunteers, 35 community members, 74 family members, and 74 patients	Group discussion	Individual and Group community
Melany S. Reaso, 2019 (Reaso, Ranimpi, Kurniasari, & Fretes, 2019)	Case study design, Qualitative study	Ambon, 2 respondents	Narrative Interviews	Individual

Notes. For test instrument, SF-36= short form questionnaire-36, GHQ-30= general health questionnaire-30, 7D5L= 7-domain 5-level, EMIC-CSS= explanatory model interview catalog community stigma scale, SARI-FLE-VER2= stigma assessment and reduction of impact filarial lymphoedema, PSS-FLE-VER2= perceived stress scale filarial lymphoedema.

The condition known as lymphatic filariasis (LF) or filarial lymphedema is spread by mosquitoes and is brought on by worm infections from the filarioidea family, particularly *Wucheraria bancrofti*. *Brugia timori* and *malayi* are also responsible for the sickness. This is a major global public health and socioeconomic concern. (Fatriyadi & Panjaitan, 2016)

Most of the studies showed that patients with lymphatic filariasis have limited physical function caused by physical disability to normal activities such as being unable to walk, use the toilet and bathing, etc (see Table 2). In (Wijesinghe & Wickremasinghe, 2015) showed that patients with lymphatic filariasis had reduced physical function, limitations on their ability to maintain their physical health, and a lack of understanding about certain aspects of the chronic condition. These findings may have an impact on the patient's perception of their quality of life. The study of (Kumari et al., 2005) also showed that patients are largely dependent on family members for personal care; self-care activities are negatively impacted. The patient's complete physical impairment significantly limits their capacity to do their regular tasks at work and at home. Also (Eneanya et al., 2019) showed that Compared to healthy individuals, chronic LF patients have pain and discomfort, anxiety, decreased mobility, a decreased capacity for self-care, and interference with daily activities at work and home. (Wijesinghe & Ananda, 2015) study revealed that age has an impact on social functioning, physical functioning, role restrictions brought on by health issues, and general health. An individual's performance decreases in this dimension with age.

Eight to nine studies show that patients with lymphatic filariasis have a problem with marriage issues, such as sexual problem, afraid to get married, and afraid the disease can affect the marital prospects of the other family. Compared to unmarried, divorced, or bereaved people, married people have worse physical functioning and more role limits as a result of physical health issues. (Wijesinghe & Ananda, 2015)

Table 2
The physical, psychological, and social outcomes associated with persons suffering from filarial lymphedema

Study (First author, year)	Consequences of filarial lymphedema	Reason	Measures	Result	Research limitation
Rushika S. Wijesinghe, 2015 (Wijesinghe & Ananda, 2015)	Physical, social, psychological, quality of life	Reduced emotional well-being, decreased social functioning, poor physical functioning, increased role limits, increased discomfort, and a worse quality of life perception	Community home-based care program	The findings demonstrated the substantial detrimental effects of chronic lymphedema on a number of QOL dimensions as reported by patients in Sri Lanka's Colombo district. According to the GHQ-30, control subjects' mental health (better than normal; 67,2%) was substantially better	The SF-36 and GHQ-30 were only given during the post-interventional follow-up period, according to this study, so it can not be compared the QOL before and after the intervention

				than patients' mental health (36,2%).	
Krishna Kumari, 2005 (Kumari, Chandrakumar, Das, & Krishnamoorthy, 2005)	Physical, social, psychological, and economy	Individuals' mental health is gradually impacted and can experience anxiety and sadness as a result of physical disabilities, financial difficulties, dependency on others, and the inability to get married and lead a regular life.	Together with morbidity management, transmission control is incorporated into the global lymphedema filariasis elimination effort.	The clinical stages, severity, and effects of filariasis on the physical, mental, and social domains of humans vary amongst the 174 patients with this diagnosis. Mental and social issues are a result of physical disabilities; the severity of mental and social issues increases with the degree of physical disability. Society's ignorance of LF is the primary factor contributing to the disease's stigma and social isolation of its sufferers.	Limitation not stated
Wijesinghe R.S, 2007 (Wijesinghe, Wickremasinghe, Ekanayake, & Perera, 2007)	Physical and psychosocial	Physical disability and psychosocial problem	Morbidity management control	There was a substantial correlation between walking difficulty and 95% of patients. 31% struggle to communicate with family and the community. 77,3% of people have sexual issues.	Due to inadequate facilities for maintaining patient privacy, this study was unable to examine patients for genital manifestations in the clinic.
Obiora A. Eneanya, 2019 (Eneanya, Garske, & Donnelly, 2019)	Physical, social, and economic impact	Physical disability, Feeling stigmatized, avoiding social activity, low income	Morbidity management program	Thirty-four percent of all cases said they felt stigmatized, and they were 36 times more likely to avoid social interactions. Increased health care spending exacerbates the economic effects of lower incomes since 86 times more instances tend to spend more than US \$125 in their	No sample size calculations.

				most recent medical payment.	
Parathasarathi Ramanathan, 2020 (Ramanathan, Prabhakar, & Ananthan, 2020)	Psychological and social stigma	Physical disability, discrimination	Morbidity management program	Sixty percent of the participants suffered from mild stigma. A third experienced severe stigma, while 13% felt moderate stigma. Of the subjects, 23% are stigma-free.	The inference from stigma causation and related factors is limited by the cross-sectional methodology. This study only has a limited sample size.
Gnanasekaran Vijayalakshmi, 2023 (Vijayalakshmi, Vanamail, Mahendiran, Meena, & Britto, 2023)	Physical, social, and psychological	Feel depressed, restricted, and isolate from social function, disfigurement, and disability	Morbidity Management and disability prevention strategy	In the lower extremities of 80 individuals with lymphatic filariasis (LF), grade 2, 3, and 4 LE were seen in 35.0%, 42.5%, and 22.5% of cases, respectively. A noteworthy association ($p < 0.05$) was seen among the various stigma domains.	The main limitation is that we limited our sample to 80 FLE cases in and around Puducherry
Edward Agbo Omudu, 2011 (Agbo & Chukwuemenam, 2011)	Socio-economic and psychological	Avoid social gatherings, sexual dysfunction, and physical disfigurement	Promote and improve lymphatic filariasis prevention and control program	Only 36.1% of people are aware that mosquito bites cause lymphatic filariasis, 64.2% of male respondents believe that those who are afflicted should stay away from social events, and nearly 81.9% believe that swollen limbs and the scrotum are a condition that negatively affects lives.	Limitation not stated
Tali Cassidy, 2016 (Cassidy et al., 2016)	Psychosocial and economic impact	Social stigma, marryability, and missed workdays	Program for managing lymphedema in the community	Patients and family members expressed significant social, physical, and financial challenges, such as lost workdays, social stigma, and marryability.	Cannot prevent bias as it's possible that participants opted to respond to the facilitators in a way that was

					more socially acceptable.
Melany S. Reaso, 2019 (Reaso, Ranimpi, Kurniasari, & Fretes, 2019)	Physical, Social, Psychological	Physical changes experienced, socially isolated,	Not excluded by their family and taking medicine regularly	This study shows that the physical changes experienced by participants have a negative impact in the form of disruption of daily activities. This impact makes it unable to move freely like other people who are not sick. Since experiencing filariasis, participants often ask for help from others. Participants also experienced negative treatment. This study describes the psychosocial responses of filariasis sufferers in relation to achieving psychological well-being.	Small sample size

A higher number of patients reported reduced emotional well-being, decreased social functioning, lower physical functioning, and role constraints brought on by physical health issues. (Reaso et al., 2020) show that participants had experienced negative treatment. The negative treatment received was in the form of ridicule which is referred to as 'elephant's foot'. This condition made her socially isolated because no one wanted to interact with her. Limited and significantly less social functioning is reported too in women than in men. In (Kumari et al., 2005) Physical disabilities cause mental and social problems; the degree of mental and social problems increases with the level of physical disability. (Ramanathan et al., 2020) in their study, 87% of subjects with filarial lymphedema had perceived the social stigma. Similar results in (Gnanasekaran et al., 2023) study, show that lymphedema filarial patients isolate themselves from social functions.

According to the study, physical infirmity during the most productive stage of life, money issues, reliance on others, and the inability to get married and lead a normal life all steadily deteriorate people's mental health and contribute to worry and melancholy. (Kumari et al., 2005). Additionally, seven studies discovered that patients with lymphedema filariasis experienced depression as a result of their physical limitations and social isolation brought on by stigma, sleep issues, anxiety, marital issues, financial difficulties, etc. In (Wijesinghe et al., 2007) patients feelings depressed and a few of them had past suicidal thoughts, (Eneanya et al., 2019) study also found that lymphedema patients have depression and mental health illness due to stigma, sleep problems, and anxiety, and (Gnanasekaran et al., 2023) study show that patients feel depressed because found themselves a burden to the family and society. Different from other studies, studies from (Reaso et al., 2020) show that patients experienced filariasis, often ask for help from others, and also experienced negative treatment, and this condition made socially isolated but this did not make patients feel inferior or make participants isolated themselves, participants optimist to recover. These parallels imply that

collaborative strategies to lessen stigma ought to be derived from other health issues that are stigmatized. To plan such collaborative methods, lessons from the stigmatization of health disorders such as leprosy can be applied. (Hofstraat & Van Brakel, 2015)

as a patient is well-informed on every facet of filariasis, they will be more likely to exhibit positive behavior. Conversely, as information is received more frequently, their knowledge base grows, making it simpler for them to absorb and comprehend new information. The level of knowledge affects the reaction or response of filariasis sufferers so there is a tendency to carry out an immediate supportive treatment and counseling. The positive thoughts that emerged were obtained from the acceptance and support of the family for the participants so that the participants felt happy and excited about living life. Ryff and Keyes (1995) stated in (Reaso et al., 2020) study that the attention, feeling of being loved, recognized, and help that is felt by someone from their social environment by the people closest to them is interpreted as social support. Participants are not isolated by the environment and the environment also accepts the conditions experienced by the participants. This will direct the sufferer to achieve psychological well-being. According to Ryff (1989), psychological well-being can be achieved if a person can understand and accept themselves by having a positive view of themselves and others, being confident in making decisions and behaving.

All of the studies recommended to promote and improve morbidity management program of filarial lymphedema (see Table 2) such as adding patient counseling and rehabilitation program, health education to the community, promoting foot hygiene, training family members, promoting psychological well-being, enhancing medication consumption, improving economic opportunities for patients filarial lymphedema, and a strong political commitment from the government is required to reduce stigma, psychology, the social and physical burden due to lymphedema filariasis.

LIMITATIONS OF THE STUDY

It is important to recognize that one reviewer selected the articles for this review, and two reviewers carried out the majority of the data extraction. Because the second author analyzed the results thoroughly and was consulted during the article selection process, the impact of this bias was minimized.

CONCLUSIONS AND SUGGESTIONS

In conclusion, this review of the literature revealed that filarial lymphedema can have an impact on a patient's social and physical well-being as well as eventually their mental health. The morbidity management program of filarial lymphedema needs to be improved and promoted to reduce stigma, psychology, and the social and physical burden due to lymphedema filariasis.

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