Lymphatic filariasis morbidity mapping: a comprehensive examination of lymphoedema burden in Chikwawa district, Malawi.


Quantifying the physical and socio-economic burden of filarial lymphoedema in Chikwawa District, Malawi


**Introduction**

The most common and important symptoms of lymphatic filariasis (LF) are lymphoedema, hydrocoele and acute dermatolymphangioadenitis (ADLA). Although these conditions are not fatal, they can be extremely disfiguring and disabling, and as a result, LF is recognised as one of the world’s leading causes of long-term and permanent disability.

The World Health Organisation (WHO) recently published guidelines to assist endemic countries to successfully initiate morbidity management programmes. These guidelines recommend that morbidity data should be collected at least annually, and should include information relating to the number of patients who have lymphoedema, hydrocoele and ADLAs, further to the number of those treated for these clinical manifestations. To date however, no standardised method for data collection and morbidity reporting has been established.

Understanding the prevalence distribution, severity of cases and the impact on individuals, families and communities will be key factors driving the success of the morbidity management programmes in all endemic countries. To begin to address this programmatic gap, these two studies aimed to determine whether information collected by community drug distributors (CDDs) accurately reflects the magnitude and distribution of lymphoedema within Malawi. As a secondary aim, information was collected relating to the demographic characteristics, LF knowledge and severity of condition of confirmed lymphoedema cases as well as the physical restrictions and the socio-economic impact on affected individuals living in an endemic area of Malawi.

**Methods**

This study was conducted in the Chikwawa District Hospital (CDH) catchment area, within Chikwawa district in the southern region of Malawi. This is one of the most endemic areas of the country with many clinical cases reported among the population. A cross-sectional survey was conducted over a two-week period during May 2013 to verify the number of lymphoedema cases recorded during MDA. Cases were identified using the CDD network and each case was visited by the research team and examined by a clinical officer to confirm lymphoedema. The Dreyer staging survey was used to assess the severity of lymphoedema in the confirmed cases, and further included questions relating to ADLAs. Cases were also interviewed to determine additional information relating to demographics, knowledge and history of LF, MDA history, and reporting of
lymphoedema during MDA or at the health centre.

Secondly, a semi-structured questionnaire was used to assess the impact of lymphoedema across eight different areas (domains) of their lives: mobility, self-care, usual activity, pain/discomfort, cognition, anxiety/depression, social participation and economic impact. The impact of ADLAs on two of the domains (pain/discomfort and cognition) was examined using additional questions asked to those reporting ADLAs in the last six months. Each domain was scored from one to five, with a score of one representing 'no problem' and a score of five representing an 'extreme problem'. GPS co-ordinates of the households of confirmed lymphoedema were recorded.

**Results**

A total of 69 lymphoedema cases were identified (32 per 10 000 population), of which 48 (70%) were female and 21 (30%) male. The majority of cases (51/69) had Dreyer stage 2–3, and almost all (65/69) had experienced acute attacks as a result of their lymphoedema. This burden was much greater than that estimated by Ministry of Health (33 cases).

Lymphoedema cases were most affected by pain/discomfort and anxiety/depression, which also had an economic impact. Male and older (>60 years) individuals reported more problems. Higher disability levels based on a quantified score were significantly associated with decreased walking distance and working hours. ADLAs significantly increased pain/discomfort and reduced cognition, and also affected the individuals’ self-care, social participation and ability to work.

**Discussion**

This study has identified important issues with the current method of collecting morbidity information during MDA, and highlighted how improvements can now be made to ensure that disease burden is better estimated. Considering the Global Programme to Eliminate Lymphatic Filariasis (GPELF) strategic plan stipulates that by 2014 all endemic countries should be collecting and reporting data on morbidity management, there is a need for the continued efforts to ensure the populations most in need are identified and receive the best treatment available, and take advantage of new treatment options being developed for morbidity.

The study highlights that individuals with filarial lymphoedema in Chikwawa District, Malawi are most affected by pain/discomfort, anxiety/depression and further identifies the economic impact of lymphoedema. Here we found that males and older people were more affected by their condition, and were able to demonstrate that an increase in the overall disability level was significantly related to a decrease in physical and economic output as measured by walking distance and working hours.

While this study is limited by its reliance on self-reporting and the lack of information on the aetiology of the identified lymphoedema cases, the survey tool used provides a simple practical model that can be adapted to address specific questions. This research highlights the significant hardship, particularly in relation to ADLAs, filarial lymphoedema causes. The scale of the problem needs to be better defined with new specific tools so that the best support and care can be provided to those in greatest need.
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