

ORIGINAL RESEARCH

# Lymphatic Filariasis in Southwestern Nigerian Rural Communities: A Cross-sectional Survey of the Knowledge, Awareness, and Predisposing Factors



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## Abstract

**BACKGROUND** Nigeria is the second most endemic country in the world for lymphatic filariasis, with control efforts often hampered by poor community awareness and involvement in intervention strategies.

**OBJECTIVE** The aim of this study was to assess the knowledge, perception, and psychosocial aspects of some residents in Nigerian rural communities about lymphatic filariasis in order to develop disease control and intervention strategies with active community involvement.

**METHODS** A standardized questionnaire was adapted and a scale of measurement was developed. The methodology was quantitative and the study design was cross-sectional. A sample of 203 respondents was selected using a precision of 0.06.

**FINDINGS** A majority (51.2%) had heard of elephantiasis but very few (9.3%) had accurate knowledge of the causes of the disease. Most people (53.2%) had no sources of information about elephantiasis, and of the few individuals that claimed availability of sources of information, information about the mode of transmission of the disease (10.0%) was the most common. Very few individuals (7.9%) believed mosquitoes were associated with elephantiasis, with 16.7% having a history of elephantiasis. The proportion of respondents who did not use mosquito netting (61.1%) was significantly higher than those who did use it (33.0%) ( $P < .05$ ). An appreciable proportion (26.1%) of individuals believed elephantiasis to be an abominable disease, with 5.9% individuals believing that people treat the victims of elephantiasis with disrespect.

**CONCLUSIONS** The study areas are at high risk of lymphatic filariasis. There is a need to create a knowledge-based awareness among the residents for effective management of the disease.

**KEY WORDS** knowledge, awareness, lymphatic filariasis, predisposing factors, Nigeria

## INTRODUCTION

Globally, more than 1.4 billion people are at risk of elephantiasis,<sup>1</sup> as Nigeria and some other countries

contribute more than 80% of global burden of the disease.<sup>2</sup> The World Health Organization (WHO) report of 2011 affirmed that it affects more than 120 million people living in 72 countries

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of the world, and 39 African countries carry more than a third of the global burden of lymphatic filariasis.<sup>3</sup> Researchers have found that lymphatic filariasis is associated with dermatitis, lymphedema, and elephantiasis of the limbs or genitalia, which adversely affect personal and social life and limit occupational activities.<sup>4</sup>

Nigeria was rated the second most endemic country worldwide and also the country with the largest population at risk of infection with lymphatic filariasis in the African continent.<sup>5</sup> Filarial infections have been reported in the coastal and rainforest zones of Nigeria.<sup>6,7</sup> A survey from the Federal Ministry of Health<sup>8</sup> estimated that 20 million people in Nigeria take treatment for elephantiasis. It noted that such a figure only represented about 20% of the at-risk population.

In response to the World Health Resolution 50.29 encouraging member states to eliminate lymphatic filariasis, the WHO launched its Global Programme to Eliminate Lymphatic Filariasis with the aim of eliminating the disease as a public health problem.<sup>9</sup> Moreover, the Nigerian Lymphatic Filariasis Elimination Programme of the Federal Ministry of Health, with the assistance of the Carter Center, initiated a collaboration toward the elimination of elephantiasis in the year 2015.<sup>4,8</sup> Though the year 2015 has gone without the Nigeria initiative accomplishing the set goal for the elimination of the disease, earlier in 2012 the WHO neglected tropical diseases roadmap reconfirmed the target date for achieving elimination as 2020.<sup>2</sup>

Despite this lofty goal, there is a dearth of information about the disparity between level of awareness and accurate knowledge of the disease in most endemic areas in Nigeria that had hampered and may still hamper the elimination program. The design and implementation of health education strategies specific to our participants' population will benefit immensely from this study. The aim of the study was to assess the knowledge, perception, and psychosocial aspects of some residents of Nigerian rural communities about lymphatic filariasis in order to develop disease control and intervention strategies with active community involvement.

## MATERIALS AND METHODS

**Study Area.** The study was conducted in 9 villages within Ijebu North and North-East Local Government Areas in Ogun State, Nigeria. The areas were selected based on the prevailing environmental factors that could predispose the residents to

lymphatic filariasis and information about the presence of the disease in the communities. It was carried out between February and April 2015. The study areas are typical rural settings lacking in basic amenities like good roads, electricity, and good water supply. All health-related issues of the dwellers are referred to underequipped local area community health centers. The people subsist on river water, which of course is often polluted by human excreta as a result of lack of toilet facilities. Poor housing made of mud and practices like storage of water in open earthen vessels with thick forest surrounding dwelling places are prominent factors predisposing the people to mosquito-related diseases.

**Design and Sample Size Determination.** The study was descriptive, and convenience random sampling was adopted to recruit a total of 203 participants. With a 21.0% prevalence of lymphatic filariasis in a previous study in some rural communities in Ogun State,<sup>7</sup> a 177 minimum sample size was computed using a precision of 0.06. The overall sample size used for the study was 203 participants.

**Methods of Data Collection.** A well-structured questionnaire on knowledge, awareness, and predisposing factors of lymphatic filariasis was prepared by researchers with input from a medical sociologist, social psychologist, and parasitologist using a standard WHO questionnaire format. A total of 203 respondents filled the questionnaire. The questionnaire was validated and pretested to ensure reliability and validity before initiating the fieldwork.<sup>10</sup> Research assistants were recruited to administer the questionnaire using the local language to determine the extent of participants' knowledge, awareness, and attitude, as well as their psychosocial behaviors in relation to lymphatic filariasis.

**Ethical Considerations.** All participants were fully informed of the study's objectives and procedures. They were notified that participation was voluntary and that withdrawal at any time was without any penalty. Those who wished to participate gave consent before the administration of the questionnaires. The study made use of only information obtained through questionnaire and therefore ethical approval was not obtained. However, all information obtained was treated in line with the standard ethical procedures.

**Statistical Analysis.** Data were entered in a Microsoft Excel spreadsheet and transferred to GraphPad Prism 6 (GraphPad Software Inc., La Jolla, CA) for analyses. Descriptive statistics was used to estimate

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