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Leprosarium: learning ground to save future generation

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Abstract

Background: Leprosy is a neglected tropical disease that continues to be a public health problem in underdeveloped and developing countries. The fear of the spread of the infection from Persons Affected by Leprosy (PALs) to normal individuals is one of the reasons why they are usually kept in the “Leper Colonies”. Health workers and medical students are not exempted from the fear of the spread of this disease. Many of them are afraid of working among the Persons Affected by Leprosy. The aim of this study was to determine the prevalence of leprosy in families of patients residing at the Baptist Health Service in Ogbomoso, Oyo State Nigeria

Method: A descriptive quantitative observational study design was used and 29 Persons Affected by Leprosy (PALs) resident in the leprosarium and consented to the study were interviewed. Data on age, gender, history of disease in the family, the relationship of a leprosy family member with the index patient, duration of the illness in the index patient, and time spent in the camp by the index patient were obtained using interviewer-administered structured questionnaire. Data was analysed using Statistical Package for Social Science (SPSS) version 26 and this was used to generate frequency tables.

Result: The age of the respondents ranges from 35 to 85 years and the mean age is 59.97 ± 11.9 years. The prevalence of leprosy in families of index patients was 6.4% while 93.1% had no history of contact with leprosy patients. Also, 34.5% had been diagnosed with the disease for about 31-40 years. Less than half (48.3%) of them are living with their children in the camp and none of their children came down with the disease.

Conclusion: Treated PALs in Baptist Health Service, Ogbomoso, Nigeria did not spread the disease to the children living with them. This should encourage the Medical Schools to make use of Leper Colonies as a teaching ground for medical students.

Keywords: leprosy, families, contacts, infectivity, Ogbomoso.



Introduction

Leprosy is a neglected tropical disease that continues to be a public health problem in underdeveloped and developing countries.¹ *Mycobacterium Leprae*, often known as Hansen's bacillus, is an intracellular parasite with high infectivity and low pathogenicity that causes this chronic, granulomatous, slow-onset disease. It is classified as a public health issue because of peripheral nerve impairment and its potentially incapacitating nature.² The spread of leprosy is through nasal droplets and close contact among family members living in the same environments.³

Leprosy in families is a grave epidemiological and social problem because affected children in these families can be a source of infection to other children in their schools.⁴ A leprosy patient in the immediate family, such as parents, siblings, or grandparents living in the same home, was referred to as a family contact. At the same time, the cases in the neighborhood were defined as other than family contact and these were people living in the immediate neighborhood.⁵ Studies using contact tracing and geographic information systems have shown that new patients tend to cluster among the family and social contacts, whether they are children or adults, of previous patients. This emphasizes the important role of coming up with distinct surveillance strategies for this group.⁶

The fear of the spread of the infection from the PALs to normal individuals is one of the reasons why they are usually kept in the "Leper Colonies" where they spend a considerable amount of time being housed and cared for.⁷ They were despised and unwelcome in the community.⁸ Despite being one of the least contagious infectious diseases, the fear of the spread of the disease usually worsens the stigma associated with the disease.⁸ Health workers and medical students are not exempted from the fear of the spread of this disease. Many of them are afraid of working among PALs.⁹

The fear of interacting with PALs by Medical Students deprives them of the opportunity to learn more about the presentation of Leprosy from the Persons Affected by Leprosy. Thereby making them unprepared to rescue future generations from the infection. Because the disease is not very common this day the few cases that present at the hospital are usually missed at the early stage of the presentation. The Leprosarium remains the best place to learn about the presentation of the disease. This study aims to determine the prevalence of leprosy in families of patients residing at the Baptist Health

Service in Ogbomosho, Oyo State, Nigeria. This will help in determining how prevalent is the spread of the infection from the Leprosy Affected Persons to other family members. The outcome of the study will be a great tool for educating health workers and medical students about the fear of the spread of the disease.

Method

Study Area and population

The study was carried out at Baptist Health Service in Ogbomosho which is a major town in Oyo state, Southwest of Nigeria and it is located at about 86 km north of Ibadan, Oyo state capital. It has a population of approximately 655,000 according to the 2006 National Population Census. Majority of the people belong to the Yoruba ethnic group. The town has two degree awarding tertiary institutions; Ladoké Akintola University of Technology (LAUTECH) and the Nigeria Baptist Theological Seminary which attract people of diverse ethnic groups to the town. There are two teaching hospitals (the government owned LAUTECH Teaching Hospital and a mission-owned tertiary hospital -the Bowen University Teaching Hospital), a State Hospital, few primary health care centres, private hospitals and various state and private schools. The town is inhabited mainly by artisan, civil servants, subsistence farmers and traders. Christianity and Islam are the main religious practices.

Study Center

The leper colony in Ogbomosho, Nigeria was established in 1930 and was named "Ago Ireti" (meaning Camp of Hope). To eliminate the strong stigma associated with the disease, the Leper Colony was renamed Baptist Health Service (BHS) in 1947. The settlement is being managed by the Bowen University Teaching Hospital and supported by the Damien Foundation Belgium. There are now 59 persons living in the camp, 34 of these are Persons Affected by Leprosy and the others are 17 children below the age of 18 years, five spouses, and three carers of patients. The criteria for securing an apartment in the camp include a diagnosis of Leprosy and readiness to take the drugs for treatment of Leprosy. The settlement served as a referral center as most people diagnosed with leprosy in the state and neighboring states are referred to the camp for care and they reside in settlements. Residents of leprosy settlements were mainly farmers. Others are unemployed while a few are traders, self-employed, and hospital aid.

Study Design



This study used a descriptive quantitative observational study design. The data was collected between March and May, 2023.

Eligibility Criteria: leprosy patients who are resident in the camp were all eligible to be included in the study once they give an informed consent.

Exclusion criteria: Very sick PALs at the time of the study and those who did not consent to the study were excluded.

Sampling: The study used convenient sampling and all inmates who gave consent for the study were included in the study.

Instruments: The interviewer-administered structured questionnaire was used to obtain information from the PALs. The information obtained included age, gender, history of disease in the family, the relationship of a leprosy family member with the index patient, duration of the illness in the index patient, and time spent in the camp by the index patient.

Data analysis: Completed copies of the questionnaire were collated and entered into an electronic database (that is, Statistical Package for Social Science (SPSS) version 26). Data analysis was subsequently done to generate frequency tables for age, gender, history of disease in the family, the relationship of a leprosy family member with the index patient, duration of the illness in the index patient, and time spent in the camp by the index patient.

Ethical approval was obtained from the Research and Ethical Committee of Bowen University Teaching Hospital. Verbal consent was obtained from participants who reside in the camp and were willing to take part in the study. Participants were assured of confidentiality and that they could withdraw from the study at any stage without affecting their care.

Results

Demographic characteristics of Persons affected by Leprosy (PALs) in BHS, Ogbomoso

A total of 29 PALs who consented to the study were interviewed. The age of the respondents ranged from 35 to 85 years and the mean age was 59.97±11.9 years. Table 1 shows that 51.7% of the respondents were female and the majority of the respondents were between 61-70 years.

Family history and duration of disease among Persons affected by leprosy (PALs) in BHS, Ogbomoso

History of the disease in the family was present in 6.9% while the majority (93.1%) had no history of contact with anyone with leprosy. The highest proportion of the participants had been living with the disease for 31 to 40 years. Less than one-half (48.3%) of them are living with their children in the camp. Nearly one-third of the respondents (31.0%) have spent 21-30 years in the camp.

Table 1: Demographic characteristics of Persons affected by leprosy (PALs) in BHS, Ogbomoso

Variables	Freq (N=29)	Percent (%)
Age Group (years)		
31-40	1	3.4
41-50	7	24.1
51-60	7	24.1
>60	28	48.4
Mean age ± SD = 59.97±11.9 years		
Gender		
Male	14	48.3
Female	15	51.7

Table 2: Family History and duration of disease among Persons affected by leprosy (PALs) in BHS, Ogbomoso

Variables	Frequency N=29	Percentage (%)
Leprosy present in the family		
Yes	2	6.9
No	27	93.1
Family member with Leprosy		
Nil	27	93.1
Both parents	1	3.4
Mother	1	3.4
Duration of illness in the index patient (years)		
1-10	1	3.4
11-20	8	27.6
21-30	6	20.7
31-40	10	34.5
41-50	1	3.4
51-60	2	6.9
61-70	1	3.4
Living with Children		
No	15	51.7
Yes	14	48.3
Duration in Camp (years)		



1-10	3	10.3
11-20	8	27.6
21-30	9	31.0
31-40	7	24.1
41-50	1	3.4
51-60	1	3.4

Discussion

Leprosy can occur at any age from infancy to old age.¹⁰ The percentage of children among cases reflects recent transmission of *M. leprae* and this is an important epidemiological indicator for leprosy.¹¹ In our study, no child with leprosy was found in the camp. This may be because of the intensified control strategies, including the use of a free multidrug therapy regimen provided by WHO, which has reduced the transmission of the disease in the leprosarium. It is also possible that the commonly encountered late presentation for orthodox care in our setting delayed patients' arrival in the camp until adulthood, suggesting that greater efforts are needed to achieve zero transmission. The long incubating period of the disease may be another factor responsible for this finding. Even, if a child is exposed to the causative organism, he/she may not manifest any symptoms until he/she becomes an adult. This finding is similar to what Huang and Jou¹² found in their study in Taiwan between 2002-2011. They reported 81 new cases of Leprosy. However, the leprosy case was not observed among individuals under the age of 19. Contrary to our findings, studies done in Egypt,¹¹ Sri Lanka¹³ and India⁵ found 9.4%, 10.6%, and 12.3% in paediatric age group with leprosy.

Familial transmission of leprosy or Hansen's disease is well established and people with active disease are the main sources of infection.¹⁴ This study showed that 6.9% of study participants contracted the disease from their parents before moving into the camp. This finding further established that the source of infection is another infected leprosy patient who has not been treated, and the most probable route of infection is through the respiratory droplets.¹³ This finding is also in line with what Dave and Agrawal found in a cross-sectional clinical study that was carried out in slums and adjoining villages of Raipur town.¹⁵ They compared the Prevalence of leprosy in children in 100 families, in which at least one patient of proved leprosy with Children of 100 non-leprosy families. They found that in leprous families, prevalence was 14.2 times higher in comparison to children in the control group.

Even though 48.3% of our respondents are staying with their children in the camp, there is no record of any of their children coming down with the disease. This is not surprising because it has been established that the use of multidrug therapy for Leprosy reduces the risk of transmission of infection to healthy individuals.⁸ This may be the reason why the management of the Baptist Health Service uses readiness to use the drugs as one of the criteria for allowing patients to reside in the camp.

This finding should serve as a reassurance for the health workers and medical students who are afraid of coming to the camp to care for the PALs or learning about the presentation of the disease from them. Because of the reduction in the incidence of Leprosy in the community, Leprosy Camp is one of the major centers where medical students can learn about the disease presentation thereby preparing themselves to save the future generation.

Conclusion

Our study revealed that treated PALs in Baptist Health Service, Ogbomoso, Nigeria did not spread the disease to their children living with them. This should encourage the Medical Schools to make Leper Colonies a teaching ground for medical students. The students will learn how the disease usually presents thereby preparing them to take care of the next generation. The risk of transmission of the disease from the treated PALs to healthy individuals is very low.

Declarations

Ethical Consideration: Ethical approval was obtained from the Research and Ethical Committee of Bowen University Teaching Hospital. Verbal consent was obtained from participants who reside in the camp and were willing to take part in the study. Participants were assured of confidentiality and that they could withdraw from the study at any stage without affecting their care.

Authors' Contribution: Amole IO conceived and designed the study. All the authors did the literature review. Amole IO, Adesina SA, Adegoke AO did data analysis. All the authors did data interpretation.³ Amole IO, Adegoke AO drafted the manuscript. Adesina SA, Durodola AO revised the manuscript for sound intellectual content. All the authors read and approved the final version of the manuscript.

Conflict of interest: Nil



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