Control Actions on Leprosy in Primary Health Care in a Brazilian Capital: Profile of Professionals and Users

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Abstract

Objective: Analyze profile of users of primary health care services affected by leprosy, as well as the medical professionals and nurses responsible for the follow-up of these patients.

Methods: This is a field study that surveyed the socioeconomic and clinical profile of 25 patients affected by leprosy, attended at the municipal health units of the urban area of Teresina-PI, as well as the professional profile and clinical practices of 15 physicians and 19 nurses responsible for the follow-up of these patients.

Results: It was observed a profile of people affected by leprosy, characterized by: individuals aged 50 years or more; predominantly male; with low schooling and income. The clinical characteristics reveal a high prevalence of multibacillary cases of leprosy and with a significant diagnosis of some degree of physical disability. Regarding the profile of the professionals and their clinical behaviors, it was verified that the majority had post-graduation and a long time of experience in primary health care and leprosy control actions, however, it has been shown that they do not always put into practice all actions necessary for the diagnosis and treatment of the disease.

Conclusions: The profile of patients with leprosy treated at the municipal health units in the urban area of Teresina was similar to that found in other Brazilian territories, thus evidencing the need to implement public social support policies and more effective diagnostic and therapeutic follow-up practices by reduce the high rates of endemicity of the disease.

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Keywords
Leprosy; Health professionals; Users.
Introduction

Leprosy is an infectious, slow-onset and chronic disease that manifests itself through lesions on the skin and peripheral nerves, and can cause permanent sequelae [1-3].

The disease is millenarian, with reports of more than 2,500 years in countries like Egypt, India and China, and its prejudice and stigma are associated with the deformities and mutilations resulting from chronic evolution in susceptible people. It is important to emphasize that social ills and prejudice still permeate the lives of people affected in the present times [4].

The discovery of *M. leprae* by the Norwegian physician Gerhard Armauer Hansen in 1873 allowed the demystification of the disease process and the development of research aimed at more effective medicines in the treatment of leprosy, contributing substantially to the control of the problem [5].

Public health policies for the control and elimination of leprosy have been progressively decentralized, especially with the designation of primary health care-PHC as the gateway and regular follow-up of the cases of the disease. Thus, it is understood that the studies focused on this theme are important to point out improvements in care for this clientele, seeking to reduce the prevalence that remains high in many Brazilian territories [6].

Studies [4, 7-8] indicate that leprosy is strongly related to living conditions and poverty, with a risk profile formed by poor young adults living in endemic areas, who usually report another case of leprosy in their home. Therefore, the profile study may point to more comprehensive social policies for the control of endemicity.

On the other hand, it is understood the essentiality of the performance of physicians and nurses in the quality of PHC in leprosy, so that the profile and the clinical behavior of these professionals can be determinant in the evaluation of the quality of care, consequently in adherence to treatment and in the effectiveness of leprosy control actions-LCA.

Thus, this study aimed to analyze the profile of users of primary health services affected by leprosy, as well as the medical professionals and nurses responsible for the follow-up of these patients, so that, in the end, there are elements that support policy modifications to help these clients, improve diagnosis, treatment and prevention of new cases of disease.

Methods

This is a broader field study that evaluated the quality of primary health care in the urban area of Teresina-PI, based on a specific instrument called “Instrument for assessing the performance of primary care in leprosy control actions” developed by Lanza [9]. The socioeconomic and clinical profile of 25 patients affected by leprosy, attended at municipal health units-MHU, as well as the professional profile and clinical practices of 15 physicians and 19 nurses responsible for the follow-up of these patients were surveyed. The research was approved by the Research Ethics Committee-CEP of the UFPI under the number CAAE: 57517316.8.0000.5214.

Results

The socioeconomic profile of the 25 participants with leprosy is presented in the following figures, and it is possible to observe a profile characterized by individuals aged 50 years or older (Figure 1), mean of 52.56 years (SD = 20.37 years; Min = 18 years, Max = 89 years); predominantly male (Figure 2); with a low level of schooling, characterized by incomplete high school education (Figure 3); and low income (Figure 4).

The average monthly family income was 2.04 minimum wages, with 12% of those interviewed having as their only source of family income a social benefit (Figure 4).
Figure 1: Age range of users with leprosy research participants, Teresina-PI (n = 25).

Figure 2: Sex of users with leprosy research participants, Teresina-PI (n = 25).

Figure 3: Degree of schooling of leprosy users participants, Teresina-PI (n = 25).

Figure 4: Family income of patients with leprosy participants, Teresina-PI (n = 25).

Figure 5: Operating disease class in the users participating in the study, Teresina-PI (n = 25).

Figure 6: Degree of physical disability of leprosy users participating in the study, Teresina-PI (n = 25).
The clinical characteristics of patients with leprosy are presented below, and it is possible to observe a high prevalence of multibacillary cases (Figure 5) and, consequently, of patients diagnosed with some degree of physical disability (Figure 6). It is noteworthy in this study, the number of cases in which the assessment of the degree of physical incapacity was not performed (20%).

Table 1. Frequency distribution of the profile of professionals who follow the people affected by leprosy from the municipal health units in the urban area of Teresina-PI, 2017. (n = 34).

| Occupation     | n  | %  |
|----------------|----|----|
| Physician      | 15 | 44.1|
| Nurse          | 19 | 55.9|
| Postgraduate   |    |    |
| Yes            | 32 | 94.1|
| No             | 2  | 5.9 |
| Time at MHU (years) |    |    |
| 0-5            | 12 | 35.3|
| 5-10           | 6  | 17.6|
| 10 years or more| 16 | 47.1|
| Working time at PHC |    |    |
| 0-10           | 5  | 14.7|
| 10-20          | 23 | 67.6|
| 20 years or more| 6  | 17.7|
| Number of LCA trainings |    |    |
| None           | 1  | 2.9 |
| 1-5            | 24 | 70.5|
| 5 ou mais      | 9  | 26.6|
| Working time at LCA (years) |    |    |
| 0-10           | 6  | 17.7|
| 10-20          | 22 | 64.6|
| 20 years or more| 6  | 17.7|
| Total          | 34 | 100|

Source: interview with health professionals, 2017.

Table 2 presents the conduct of physicians and nurses in the management of leprosy cases. Basic aspects of care such as anamnesis and general physical examination are performed by almost all professionals (97.16%), although qualitative aspects of these conducts have not been verified; however, more specific tests for assessment of injuries and degree of physical disability have been ignored by a significant portion of these professionals: sensitivity test-ST with Semmes-Weinstein monofilaments (29.4%), tactile ST (20.6%), thermal ST (23.5%), painful ST (35.3%), palpation of peripheral nerves 8%, among others. This type of conduct worries because it implies the underreporting of lesions and sequelae of leprosy, in order to cause the aggravation of the case.
Discussion

User profile

The profile of users of primary health care services in the urban area of Teresina affected by leprosy reveals characteristics similar to those found in the literature, such as low levels of schooling and income. In a study carried out previously in the municipality of Teresina with 107 patients with leprosy, the profile observed was also of people with low schooling, with 51.4% of the participants presenting only incomplete elementary education [4], revealing the persistence of this scenario in the present time. Research [10] developed in Botucatu-SP found predominance of users with incomplete elementary education (68%), and average per capita family income of 1.1 wages. Another study points out [8] that leprosy is strongly related to living conditions and poverty, with a trend of concentration of patients in less favored layers of society.

A relevant aspect of this study was the occurrence of leprosy cases in the age group of 60 years or older (44%). It is believed that this high prevalence can be explained by the growth observed in the general elderly population of Brazil, especially in the capitals, and by the decrease of the immunity that occurs in this age group. Therefore, it is important to keep a close eye on the cases of leprosy in the population over 60 years of age, since in the aging process a decline in immune function occurs and the elderly are more susceptible to infection [11].

Research [12] carried out in the State of Paraíba to verify the coefficient of detection of new cases of leprosy in the elderly population between 2010 and 2014, found a considerable index of 35.7% in 2011 and 37.7% in 2012. The distribution of leprosy cases from municipal health units in the urban area of Teresina-PI, 2017. (n = 34)

| Domains/Facets                          | Average | Median |
|-----------------------------------------|---------|--------|
| Anamnesis                               | 33      | 97.16  |
| No                                      | 1       | 2.9    |
| General Physical Examination            | 33      | 97.16  |
| No                                      | 1       | 2.9    |
| ST (Semmes-Weinstein monofilaments)     | 24      | 70.6   |
| No                                      | 10      | 29.4   |
| ST (tactile –cotton)                    | 27      | 79.4   |
| No                                      | 7       | 20.6   |
| ST (termal - hot/cold)                  | 26      | 76.5   |
| No                                      | 8       | 23.5   |
| ST (painful- pin)                       | 22      | 64.7   |
| No                                      | 12      | 35.3   |
| Palpation of peripheral nerves          | 30      | 88.2   |
| No                                      | 4       | 17.8   |
| Motor force assessment                  | 30      | 88.2   |
| No                                      | 4       | 17.8   |
| ST Hands                                | 30      | 88.2   |
| No                                      | 4       | 17.8   |
| ST Feet                                 | 30      | 88.2   |
| No                                      | 4       | 17.8   |
| ST Eyes                                 | 30      | 88.2   |
| No                                      | 4       | 17.8   |
| Orientations                            | 30      | 88.2   |
| No                                      | 4       | 17.8   |
| Total                                   | 34      | 100    |

Source: interview with health professionals, 2017.
among Brazilian regions is heterogeneous, and the northeast is one of the regions in Brazil that has long maintained high leprosy detection coefficients in the general population and in the elderly [13]. It is worth mentioning that the epidemiological differences of leprosy in a given territory are associated with different modes of spatial and social organization, thus determining different risks of becoming ill for certain social groups [12].

Another fact observed in the present study was the higher prevalence of male leprosy cases (68%). Although the literature shows that there is no predominance of the disease by sex, some authors have found similar results in their researches. Study on the epidemiological profile of leprosy in the period from 2009 to 2013 in the municipality of Montes Claros-MG verified a predominance of reported cases in males in all years except 2012 [14]. Two distinct studies on the quality of life of patients with leprosy, one performed in the city of Dourados-MS [15], and another in the city of Teresina-PI [4], also found a predominance in males, with rates of 63.3% and 62.6%, respectively. The global data presented by the World Health Organization showed that of the 213,899 new cases diagnosed in 2014 worldwide, 64% were in men[16].

The occurrence of a large number of cases of leprosy in the male sex is attributed to the greater social contact usually maintained between men and their frequent exposure to risky environments [17]. Moreover, the lower concern with body aesthetics and the lack of specific policies for this group could contribute to the late diagnosis [18].

In general, it is possible to understand that the difficulty in achieving the leprosy control goal may be related to the particularity of the local endemic, since the existence of population conglomerates can sustain the transmission rates at high levels, as well as the habits of life established in each territory, the sanitary and economic conditions capable of contributing to the persistence of the disease [5].

The clinical characteristics of leprosy patients highlighted in the present study were the high prevalence of multibacillary cases and the considerable existence of physical disability at the time of diagnosis (Figures 5 & 6). Global data presented by the world health organization [19] show that 61% of the leprosy cases reported worldwide in 2014 were multibacillary. These findings represent a concern, since the high proportion of multibacillary cases and the presence of some degree of disability in diagnosis indicate delayed detection in the community and maintenance of the disease transmission chain.

In a study evaluating the temporal trend of leprosy carried out in the city of Fortaleza-CE, from 2001 to 2012, increasing proportions of multibacillary cases were observed in the years 2005 to 2012, as well as stability in the proportion of cases with grade 1 and grade 2 of disability in diagnosis [20]. In a study conducted in the state of Mato Grosso, evaluating the period from 2001 to 2013, there was a 6.7% increase in the proportion of multibacillary cases and 14% in cases with grade 2 of physical disability at the time of diagnosis of the disease [21].

Regarding the degree of physical incapacity in diagnosis, it was observed that 24% of the study participants already had some degree of disability (16% grade I and 8% grade II), and it is important to highlight that in 20% of the patients assessment was not performed by health professionals (Figure 6). The presence of cases with degree II of disability verified in this study, together with the high percentage of multibacillary cases indicates that the endemic strength in the city of Teresina is still relevant, since it shows that the load of circulating bacilli is high and that the diagnosis is late. It is considered a high proportion of cases diagnosed with grade II disability rates equal to or greater than 10%, mean, between 5 and 9.99%, and low, less than 5% [22].
Professional Profile

Regarding the profile of the professionals participating in the study and their clinical conducts in the management of patients with leprosy, it was emphasized that the group was composed of nurses (55.9%) and physicians (44.1%), although they had a high postgraduate level and a long experience in PHC and LCA (Table 1), demonstrated that they do not always put into practice all the actions necessary for the diagnosis and treatment of the disease (Table 2), either due to structural deficiencies, inputs or problems in the dynamics of the operation of MHU (high patient demand), which would make it difficult to carry out a complete physical evaluation and examination.

The responsibilities of the family health team are multiple and complex, requiring health professionals to have specific knowledge of this area, with greater effectiveness of services in teams with residency in family and community medicine and multiprofessional residency in family health what can be attributed to the training of professionals more focused on the performance of the daily functions of primary care [23].

It can be seen from the data analysis that interviewed health professionals have a broad experience in both PHC and LCA. However, this seems to be insufficient to control the disease in the city.

In a qualitative study carried out in the States of Pará and Maranhão [24] it was observed that although the Ministry of Health promotes frequent training related to the Leprosy Control Program, and that most health professionals participate in these events and consider them as of good quality, what often happens is the lack of commitment in the effective implementation what has been learned. Another problem is the existence of high turnover of UBS professionals, mainly physicians, a factor that compromises the regularity in the implementation of LCA. Emphasis is also placed on the need for greater commitment by management, and it is up to it to monitor, evaluate and collect effective actions of the professionals trained in its sphere of action, besides guaranteeing the integrity of the system, making feasible the actions of the program in all health units.

The training should increase the professionals' knowledge about the pathology so that they are able to diagnose, treat, prevent physical disabilities, and, above all, prevent the emergence of more severe forms of the disease. However, there is a need for permanent education among primary care professionals, focusing on leprosy, considering its importance for Brazilian public health, which requires good training and awareness [25].

Ministry of Health points out that MHU is the gateway for any and all patients, with suspicion or not of leprosy, and it is up to the professionals of this unit to host, identify and, whenever possible, collect samples of the indicated cases, so that the opportunity to detect and trace new cases is not lost. It is also recommended that intradermal smear microscopy be requested by the primary unit physician, in the following situations: in case of doubt in the operational classification for the institution of polychemotherapy; in the differential diagnosis with other dermatoneurological diseases; and in cases suspected of recurrence [26]. It is worth mentioning that negative smear microscopy alone does not exclude the diagnosis of leprosy.

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The sensitivity test is simple to perform and can be used in any outpatient clinic and doctor's office. Several instruments can be used for the investigation of cutaneous sensitivity in its three modalities: thermal, painful and tactile. The thermal sensitivity can be tested by touching the skin with test tubes containing cold water (temperature around 25 °C) and warm (temperature between 37-45 °C). The pain sensitivity can be searched with a sterile disposable pin or injection needle, and the patient must identify if it is the tip or the bottom of the needle or pin that is touching his skin. The perception of the pain-causing tip and the head that provokes the proprioceptive stimulus is tested. Tactile sensitivity
can be assessed by touching the lesions lightly with a dry cotton wick, prompting the patient to point the area touched [27-28].

Semmes-Weinstein monofilaments have also been used in both primary care and referral centers for the evaluation of lesions suggestive of leprosy and skin areas for the detection of neural lesions. It is a quantitative, safe and low cost method, easy to apply, with great sensitivity, specificity and reproducibility when compared to other electrophysiological methods. It is composed of six monofilaments, which exert on the skin weights equivalent to 0.05 grams (green); 0.2 grams (blue); 2 grams (violet); 4 grams (dark red); 10 grams (orange) and 300 grams (magenta) [29-30].

Based on the above, it is observed that it is necessary that health professionals always have an attitude of vigilance regarding the incapacitating potential of leprosy, caused by the impairment of the peripheral nerves Therefore, neurological evaluation should be performed routinely in the diagnosis process, every six months, at discharge from the treatment, in the occurrence of neuritis and reactions, or whenever there are complaints, so that preventive measures and treatment of physical disabilities can be taken [31].

Conclusions

The analysis of the profile of leprosy patients participating in the study reveals characteristics commonly observed in other researches, such as low levels of schooling, low income and distribution in areas historically related to high endemicity. On the other hand, the profile of the professionals responsible for the care of the users affected by leprosy reveals a pattern of trained and experienced people, who, however, fail to perform some important behaviors recommended for the diagnosis of leprosy cases.

In this way, it is possible to suggest that the realization of public policies of social benefits combined with more effective practices of therapeutic follow-up may imply better indexes of early detection, cure, prevention of incapacities, and, consequently, reduction of high indices of endemicity still present in many Brazilian territories.

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