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HANSEN'S DISEASE EPIDEMIOLOGICAL PROFILE CHARACTERIZATION IN CAJAZEIRAS REGION IN THE STATE OF PARAÍBA

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Abstract: Hansen's Disease is a chronic, infectious and slowly evolving disease caused by the etiologic agent Mycobacterium leprae, or Hansen's bacillus. The contagion is by secretions of the upper airways and droplets of saliva. Although it is a basically cutaneous disease, it can also affect peripheral nerves, eyes and eventually other organs. Its presentation is manifested in four clinical forms: indeterminate, tuberculoid, borderline or dimorphic and virchowian. And the operational classification for therapeutic purposes consists of two groups: paucibacillary and multibacillary. Objective: To characterize the epidemiological profile of leprosy cases in Cajazeiras - PB. This is a quantitative study, exploratory and descriptive, based on the collection of secondary data contained in the leprosy notification sheets of the Aging and Notification Information System (SINAN), in the period from 2012 to 2016. The work was carried out with the data obtained in the macro-region of Cajazeiras, which gathers about fourteen municipalities. A total of 468 cases of leprosy were reported in the period from 2012 to 2016. Regarding the sociodemographic characteristics, it was identified that the majority are male, brown, age group between 30 and 39 years old and schooling with incomplete elementary school. In relation to the clinical characterization of leprosy, the data show a predominance of the dimorphic form and multibacillary operational classification. It is concluded that it is important to reorganize the work process in order to integrate the control actions to the primary care services, especially in the Family Health Teams, with emphasis on the collective approach.

Keywords: Epidemiology; Hansen's Disease; Notification.

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Introduction

Hansen's Disease is an infectious disease whose etiologic agent is Mycobacterium leprae, which is an intracellular bacillus. It mainly affects the skin and peripheral nerves, which can lead to loss of sensation, atrophies and muscular paralysis. The cases may present from a few infiltrative lesions, with a slight loss of sensitivity, to disseminated lesions, with significant and incapacitating sequelae (Cavalcanti et al., 2012; Silva et al., 2015).

In addition to this disease resulting in economic and psychological harm to patients, it is responsible for the prejudice that falls on the patients. In the early 2000s, mutilations and disfiguring lesions were regarded as divine punishment, hence, these individuals were isolated in leprosy patients and were thus removed from social interaction (Tavares, Marino, 2007; Amaral and Lanna, 2008).

According to the WHO, for 2013, India and Brazil have gained prominence as the countries with the highest number of cases in the world, with 126,913 and 31,044 new cases, respectively. Brazil had a general detection coefficient of 15.44 cases per 100,000 inhabitants for the same year, considered high in comparison to the other countries of the world and is the country with the highest burden of disease in the American continent (Rodrigues, Lockwood, 2011).

The northeastern region of Brazil is the third region with the highest overall detection coefficient (23.8 / 100 thousand inhabitants), considered to be highly endemic for leprosy. In this region, the state of Paraíba, a focus of this research, presented a low prevalence rate (0.85 / 100 thousand inhabitants) in 2015, leaving behind, among the states of the region, Rio Grande do Norte (0.5 / 100 thousand inhabitants) and Alagoas (0.65 / 100 thousand inhabitants) (Brito et al., 2016).

It is believed that leprosy transmission occurs through the intimate and prolonged relationship of the susceptible individual with a bacilliferous patient. The main route of elimination of the bacillus by the individual suffering from leprosy is the airway, through the contact of respiratory tract droplets (Lastória, Abreu, 2012).

The classification of Madrid, defined at the 6th International Congress in 1953, is presented in four different clinical forms: Indeterminate Leprosy (HI), Tuberculoid Leprosy (HT), Borderline or Dimorphic Leprosy (HB) and Virchowian Leprosy (HV). HI is

characterized by the presence of hypochromic cutaneous lesions, with loss of thermal sensitivity and without neural involvement. HT presents well defined hypochromic lesions, loss of thermal sensitivity, tactile and painful, and neural involvement, but smear microscopy is negative. HV has multiple layers of lesions, morphologically variable and rich in viable bacilli, shows loss of skin sensitivity and often shows involvement of other organs. HB represents the evolution of HT and HV (Félix, 2012).

According to the aforementioned author, the operative classification for therapeutic purposes consists of two groups: patients with up to five lesions, which are called paucibacillary, and more than five cutaneous lesions, such as multibacillary. As regards treatment, the World Health Organization (WHO) standardized the following pharmacological approach: Rifampicin, Dapsone and Clofazimine. Its dosages and duration of use will depend on the type of disease (pauci or multibacillary) and associated comorbidities, such as tuberculosis. Lopes and Rangel (2014) say that when left untreated, leprosy can leave severe sequelae to the individual, compromising tact, smell, vision and locomotion. Thus, the nerves of the skin, the legs and the arms, when altered, make difficult the movement; the eyes do not close, with the concomitant fall of the lashes; the extremities of the body, such as fingers, ears and nose, may be injured to the extent that the wearer loses them.

Despite the advances in leprosy control in endemic countries in the last three decades, the detection of new cases has been challenging to reduce the burden of disease as a public health problem in Brazil (Brazil, 2013).

Considering the level of care, through this research it will be possible to meet the needs of health professionals to address this problem, at the municipal level, and strengthen the control of leprosy through activities to prevent injuries and promote the health of the population. In this perspective, this study aims to evaluate the epidemiological profile of leprosy cases reported in the 9th Regional Health Management of Paraíba.

Methodology

This is a quantitative study of an exploratory and descriptive nature, based on the collection of secondary data contained in the leprosy notification sheets of the Aging and Notification Information System (SINAN).

The present study was carried out with data obtained from the 9th Regional Health Management of Paraíba, which includes Cajazeiras and fourteen other municipalities: Bernardino Batista, Bom Jesus, Bonito de Santa Fe, Cachoeira dos Índios, Carrapateira, Monte Horebe, Pit Dantas, Poço de José De Moura, Santa Helena, São João do Rio do Peixe, São José de Piranhas, Santarém (Joca Claudino), Triunfo and Uiraúna. The study population consists of all individuals with leprosy who were notified in the period from 2012 to 2016.

For data collection, a consent form was sent to the 9th Regional Health Management, after authorization, an instrument was sent for data collection, which contained questions about sociodemographic and clinical data of patients with leprosy. In this instrument, socio-demographic variables were analyzed: sex, color / race, age and educational level. The clinical variables were: clinical form (dimorphic, tuberculoid, undetermined, virchovian and ignored / white), operational classification (paucibacillary, multibacillary and ignored / white), degree of physical disability (grade 0, grade 1, grade 2 and ignored / white) and high type (healing, intra-municipal transfer, inter-municipal transfer, interstate transfer, abandonment, death and ignored / white).

The data were collected from May to July 2017, through the completion of the instrument by the head of the 9th Regional Health Management. Therefore, the researchers did not have contact with the notification sheets or database.

The results were presented in tables in the program Microsoft Office Excel, version 2010, and analyzed in light of the pertinent literature, in order to qualify, quantify and describe the findings, without manipulating them.

In order to develop the present research, the ethical aspects guided by resolution 196/96 of the National Health Council, which governs the principles to be observed in the research with human beings, were considered in this way for principles of autonomy, non-maleficence, beneficence and justice.

Researchers are responsible for collecting, storing, analyzing and disseminating data from this research and are committed to respecting the ethical issues involved.

Results and Discussions

Between 2012 and 2016, 468 cases of leprosy were reported in the 9th Regional Health Management of Paraíba, which gathers fifteen municipalities, with headquarters in Cajazeiras.

Regarding the sociodemographic characteristics, the gender with the most prominence is the male, with 277 (59.2%) cases. The color / breed prevailed was brown, with 269 (57.5%). Regarding the age group, the interval between 30 and 39 years prevailed, in 103 (22.0%). Regarding the schooling of the patients studied, most of the individuals had incomplete elementary education, making 179 (38.2%) cases and 56 (12%) were illiterate, which can directly influence the understanding of the orientations brought by the professionals and in the self-care, see Table 1.

Table 1 - Sociodemographic characteristics of leprosy patients

	2012		2013		2014		2015		2016		Total	
Sex	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**N**	**%**
Male	76	48,7	41	56,9	50	64,9	76	66,7	34	69,4	277	59,2
Female	80	51,3	31	43,1	27	35,1	38	33,3	15	30,6	191	40,8
	2012		**2013**		**2014**		**2015**		**2016**		**Total**	
Color/Race	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**N**	**%**
White	44	28,2	9	12,5	19	24,7	26	22,8	3	6,1	101	21,6
Yellow	6	3,8	0	0,0	1	1,3	0	0,0	0	0.0	7	1,5
Brow	80	51,3	47	65,3	43	55,8	59	51,8	40	81,6	269	57,5
Black	23	14,7	12	16,7	9	11,7	18	15,8	5	10,2	67	14,3
Ignored	3	1,9	4	5,6	5	6,5	11	9,6	1	2,0	24	5,1
	2012		**2013**		**2014**		**2015**		**2016**		**Total**	
Age Range	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**N**	**%**	**N**	**%**
< 10 years	1	0,6	0	0,0	4	5,2	1	0,9	0	0,0	6	1,3
10 – 19 years	18	11,5	1	1,4	2	2,6	8	7,0	4	8,2	33	7,1
20 – 29 years	38	24,4	11	15,3	12	15,6	6	5,3	4	8,2	71	15,2
30 - 39 years	22	14,1	20	27,8	14	18,2	32	28,1	15	30,6	103	22,0
40 - 49 years	26	16,7	9	12,5	14	18,2	21	18,4	8	16,3	78	16,7
50 - 59 years	16	10,3	8	11,1	8	10,4	21	18,4	9	18,4	62	13,2
60 - 69 years	18	11,5	10	13,9	11	14,3	11	9,6	4	8,2	54	11,5
70 - 79 years	15	9,6	11	15,3	10	13,0	9	7,9	1	2,0	46	9,8
> 80 years	2	1,3	2	2,8	2	2,6	5	4,4	4	8,2	15	3,2
	2012		**2013**		**2014**		**2015**		**2016**		**Total**	
Scholarity	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**N**	**%**	**N**	**%**
Illiterate	18	11,5	6	8,3	16	20,8	8	7,0	8	16,3	56	12,0
Elementary School Incomplete	73	46,8	30	41,7	25	32,5	34	29,8	17	34,7	179	38,2
Complete Primary Education	11	7,1	6	8,3	0	0,0	4	3,5	2	4,1	23	4,9
Incomplete High School	12	7,7	2	2,8	2	2,6	8	7,0	0	0,0	24	5,1
Complete High School	17	10,9	0	0,0	6	7,8	5	4,4	6	12,2	34	7,3
Incomplete Higher Education	0	0,0	4	5,6	0	0,0	0	0,0	4	8,2	8	1,7
Full Higher Education	2	1,3	3	4,2	0	0,0	3	2,6	4	8,2	12	2,6
Ignored	23	14,7	21	29,2	28	36,4	52	45,6	8	16,3	132	28,2

Source: Research by the authors

Brito et al. (2014), described in his research conducted in the state of Paraíba, in the years 2010 to 2011, that there was a small prevalence of males (52.0%), 49.6% were 40 years old, , 0%) or with a maximum of 4 series (39.3%). Parallel with the values found in the cities that are part of the 9th Regional Health Management, which are inserted in the same state, demonstrated that these numbers still converge with the reality at the state level.

As for the age distribution, it is observed that the majority of the cases occurred in the economically active population, as also observed in studies by Oliart-Guzman et al. (2011), that the youngest population was the most affected, and 3.84% of the cases occurred in individuals under the age of 15, which, despite being a low rate, is worrisome in terms of public health, since this group is more vulnerable to the inabilities that may result from infection and also where clinical diagnosis becomes more difficult.

Regarding the clinical characterization of leprosy, the data show a predominance of the dimorphic form with 116 (24.8%) infected, indeterminate with 110 (23.5%), tuberculoid with 103 (22.0%) and virchovian with 66 (14.1%), see Table 2.

Table 2 - Clinical classification of Hansen's Disease

	2012		2013		2014		2015		2016		Total	
Clinical Form	**N**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Dimorph	40	25,6	14	19,4	16	20,8	34	29,8	12	24,5	116	24,8
Tuberculoid	33	21,2	16	22,2	22	28,6	24	21,1	8	16,3	103	22,0
Undetermined	37	23,7	27	37,5	12	15,6	23	20,2	11	22,4	110	23,5
Virchowiana	30	19,2	9	12,5	10	13,0	9	7,9	8	16,3	66	14,1
Ignored	16	10,3	6	8,3	17	22,1	24	21,1	10	20,4	73	15,6

Source: Research by the authors

Corroborating with these data Silva et al. (2015), found in their work in the northern region of the country, also a predominance of multibacillary classification in relation to paucibacillary, and the dimorph with the highest number of cases reported. Even in different regions of the country, the numbers show similarities in both rank and form compared to the numbers found under the aforementioned regional health. In addition, other research ratifies these figures, mentioning the work of Lana et al. (2011) carried out in Minas Gerais and the research carried out in Paraíba by Brito et al. (2014).

In 73 cases (15.6%) there was no classification as to the clinical form, and this item on the notification sheets was ignored / blank. Such occurrence reflects a failure in the systematization of the assistance to leprosy patients, mainly by medical professionals, who are responsible for diagnosing the disease as well as classifying it. This classification, when possible, should be performed regarding the clinical form and the operational mode, the latter being used to determine the time of use of the multidrug therapy in the treatment. Knowing the classification regarding the clinical form is fundamental, since it is known that the forms virchoviana and dimorph respond for most of the transmission, since they are considered multibacillary (Santos Filho, 2012).

Analyzing the operational classification of the disease described in Table 3, which takes into account the number of skin lesions, 191 cases (40.8%) were reported with paucibacillary leprosy and 248 (53.0%) with multibacillary leprosy.

Table 3 - Operational Classification of Leprosy

	2012		2013		2014		2015		2016		Total	
Operational Classification	**n**	**%**	**N**	**%**	**N**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Paucibacilar	68	43,6	39	54,2	28	36,4	42	36,8	14	28,6	191	40,8
Multibacillary	78	50,0	31	43,1	45	58,4	68	59,6	26	53,1	248	53,0
Ignored	10	6,4	2	2,8	4	5,2	4	3,5	9	18,4	29	6,2

Source: Research by the authors

Table 4 shows the evaluation of the degree of the physical incapacity of the cases in relation to the beginning of treatment. In 258 (55.1%) patients had no functional disability, 113 (24.1%) were diagnosed as having grade 1 disability, and 15 (3.2%) with grade 2. Already 82 (17.5%) of the patients cases were not evaluated or the records were without information on this item.

Table 4 - Assessment of the degree of physical disability

	2012		2013		2014		2015		2016		Total	
Type of discharge	**N**	**%**	**n**	**%**	**n**	**%**	**N**	**%**	**n**	**%**	**n**	**%**
Cure	114	73,1	58	80,6	57	74,0	91	79,8	17	34,7	337	72,0
Intramunicipal transfer	2	1,3	4	5,6	2	2,6	4	3,5	0	0,0	12	2,6
Intermunicipal transfer	0	0,0	1	1,4	2	2,6	0	0,0	0	0,0	3	0,6
Interstate transfer	1	0,6	2	2,8	1	1,3	0	0,0	2	4,1	6	1,3
Abandonment	26	16,7	2	2,8	0	0,0	2	1,8	6	12,2	36	7,7
Death	2	1,3	3	4,2	0	0,0	0	0,0	0	0,0	5	1,1
Ignored	11	7,1	2	2,8	15	19,5	17	14,9	24	49,0	69	14,7

Source: Research by the authors

However, it can be verified an increase of the physical incapacities to the years researched referring to the Grades 1 and 2 in relation to the work referenced by Brito et al. (2014), it is important to point out that this mentioned article represents the cases notified in the same state, using the same platform to obtain the information and differentiating only in the comprehensiveness of the cities surveyed, thus being an important comparative data, since it shows the evolution of the disease over time.

All cases, for which treatment information is available, were treated with the multidrug therapy advocated by the Ministry of Health. This standard regimen is a simple treatment, relatively cheap and well accepted by people who need it. It interrupts the chain of transmission, making it possible to eliminate the disease and prevent the occurrence of physical disabilities.

Regarding the evolution of the treatment in the scope of the research, it was found that 337 (72.0%) of the patients were successful with the recommended therapeutic plan, receiving discharge for cure, thus representing a break in the continuity of the disease transmission. It was also observed that 21 (4.5%) of those infected were transferred intra-municipal, intermunicipal or interstate, 36 (7.7%) of the people abandoned treatment and certainly represent a source of transmission of the disease, mainly for their communicators. Already 05 (1.1%) individuals evolved to death, being necessary to call attention that these deaths may not be related to leprosy. In 69 (14.7%) cases the type of discharge was ignored or not filled, as shown in Table 5.

Table 5 - Reasons for discontinuation of treatment

Degree of Physical Disability	2012		2013		2014		2015		2016		Total	
	N	%	n	%	n	%	n	%	n	%	n	%
Degree 0	90	57,7	46	63,9	43	55,8	58	50,9	21	42,9	258	55,1
Degree 1	45	28,8	14	19,4	11	14,3	30	26,3	13	26,5	113	24,1
Degree 2	4	2,6	2	2,8	3	3,9	3	2,6	3	6,1	15	3,2
Ignored	17	10,9	10	13,9	20	26,0	23	20,2	12	24,5	82	17,5

Source: Research by the authors

Although considered a simple treatment by the competent authorities and provided free of charge by the public health network, the cure rate was approximately 72%, showing that the infection network has not yet been broken, since man is considered the only source of infection of leprosy and the contagion occurs through a sick person, carrying the untreated Hansen bacillus, which eliminates it to the outside environment infecting other people.

Souza (2010) pointed out that the goals recommended by the World Health Organization for the year 2010 were intended to reach the incidence of leprosy of 1 case per 10,000 inhabitants. Unfortunately the reality of the region today does not reach the goal stipulated that year, showing that the number of people contaminated with the bacillus is high and those that evolve to cure, are still few, making them important vectors for the development of new contaminations.

Conclusion

The results revealed the epidemiological profile of leprosy cases in the territory under the responsibility of the 9th Regional Health Management of Paraíba. In this sense, there was a higher prevalence of males, the color / breed was the most prominent was brown, the age group most affected was between 30 and 39 years and in relation to the schooling of the patients, most of the individuals had teaching fundamentally incomplete.

Concerning the clinical characterization of Hansen's Disease, the predominant form was dimorphic and the multibacillary classification obtained a greater predominance of the cases. In the degree of physical incapacity, greater cases with degree 0 were identified, that is, without functional incapacities, and that the majority of the patients followed the

recommended treatment, being discharged by cure. However, the study shows that only about 70% of people achieved this performance, falling below the levels recommended by international organizations in 2010.

It is observed that the structure and organization of health services have an important influence on the design of the current epidemiological situation of leprosy in this micro-region, in which it is possible to promote better assistance through free distribution of medications and monthly follow-up, treatment and the clinical evolution of these patients. Considering this scenario, evaluating the sociodemographic profile of leprosy cases in this region was important in order to better identify their vulnerabilities and adopt measures to prevent and combat this disease. In addition, it is necessary to intensify the development of leprosy control actions, facilitating access to diagnosis and treatment. Therefore, it is important to reorganize the work process in order to integrate control actions to basic health services, especially in the Family Health Teams, with emphasis on the collective approach.

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