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ACTIVE SEARCH FOR LEPROSY THROUGH HEALTH EDUCATION AMONG RIVERSIDE POPULATIONS

BUSCA ATIVA DE HANSENÍASE POR MEIO DE EDUCAÇÃO EM SAÚDE ENTRE POPULAÇÕES RIBEIRINHAS

BÚSQUEDA ACTIVA DE LA LEPRO A TRAVÉS DE EDUCACIÓN PARA LA SALUD EN POBLACIONES RIBEREÑAS

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ABSTRACT

Objectives: to identify cases of leprosy in three micro-areas of Combú Archipelago and associate the occurrence of the disease with the history of contact and sociodemographic factors. **Method:** descriptive study with quantitative approach conducted in the micro-areas 2, 3 and 5 of Combú Archipelago, State of Pará, Brazil. Three educational actions were performed with 88 riverside inhabitants and all of them underwent dermato-neurological examination. **Results:** three new cases of leprosy were identified, representing a prevalence of 28.9/10,000 inhabitants. The precarious living conditions and the culture of the study population significantly influenced the health indicators, evidenced in this study by the high rate of the disease among the riverside inhabitants. **Conclusion:** the findings reveal that leprosy is a serious public health problem and reinforce the importance of epidemiological surveillance of the disease in this region. **Descriptors:** Leprosy; Nursing; Health Education.

RESUMO

Objetivos: identificar casos de hanseníase em três microáreas do Arquipélago do Combú e relacionar a ocorrência da doença com a história de contato e os fatores sociodemográficos. **Método:** estudo descritivo de abordagem quantitativa desenvolvido nas microáreas 2, 3 e 5 do Arquipélago do Combú, Estado do Pará, Brasil. Foram desenvolvidas três ações educativas com 88 ribeirinhos e todos realizaram exame dermatoneurológico. **Resultados:** foram identificados três casos novos de hanseníase, configurando prevalência pontual de 28,9/10 mil habitantes. As precárias condições de vida e a própria cultura inerente a eles refletiram significativamente nos indicadores de saúde, evidenciados neste estudo pelo alto índice da doença entre os ribeirinhos. **Conclusão:** os achados reafirmam a hanseníase como um grave problema de saúde pública e reforçam a importância da vigilância epidemiológica da doença nesta região. **Descritores:** Hanseníase; Enfermagem; Educação em Saúde.

RESUMEN

Objetivos: identificar los casos de lepra en tres micro-regiones del Archipiélago de Combú y relacionar la ocurrencia de la enfermedad con la historia de contacto y los factores sociodemográficos. **Método:** estudio descriptivo de enfoque cuantitativo realizado en las micro-regiones 2, 3 y 5 del Archipiélago de Combú, Estado de Pará, Brasil. Fueron realizadas tres acciones educativas con 88 habitantes ribereños y todos realizaron el examen dermatoneurológico. **Resultados:** se identificaron tres nuevos casos de lepra representando una prevalencia puntual de 28,9/10.000 habitantes. Las precarias condiciones de vida y la cultura de estos habitantes influyó significativamente los indicadores de salud, evidenciados en este estudio por el alto índice de la enfermedad entre los habitantes ribereños. **Conclusión:** los hallazgos indican que la lepra es un problema grave de salud pública y refuerzan la importancia de la vigilancia epidemiológica de la enfermedad en esta región. **Descriptores:** Lepra; Enfermería; Educación para la Salud.

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INTRODUCTION

Leprosy is a chronic infectious disease that still represents a serious public health problem in countries of Africa, Asia and the Americas. Among them, India, Brazil and Indonesia concentrate more than 85% of known cases worldwide, which refers to the need of effective strategies and major investments to eradicate the disease.¹

Despite governmental efforts, including the implementation of multidrug therapies throughout the national territory, Brazil is still considered the country with the highest priority for the control of the disease in Latin America. In 2012, Brazil concentrated 92% of cases in the American continent, with prevalence of 1.51 cases per 10,000 inhabitants and detection of 17.17 cases per 100,000 inhabitants.²

However, epidemiological data indicate that there has been a continuous reduction of cases in Brazil in the last decade, mainly due to the decrease in the number of patients undergoing treatment and the number of cases diagnosed in adults and children. There has also been a reduction of cases diagnosed with grade II disabling injuries.² Although promising, this panorama is far from the goal set by the World Health Organization (2010)³ to obtain a prevalence less than or equal to one case per 10,000 inhabitants. Only then it will be possible to consider the eradication of leprosy as a public health problem.

The distribution of leprosy in Brazil is heterogeneous and is related to the socioeconomic inequalities between different regions of the country.⁴ Cases of the disease are diagnosed throughout the country. The northern and center-western regions are considered hyperendemic, and the northeastern region has a very high endemicity rate.²

Over the past few years, as well as in the national scene, there has been gradual decline in leprosy incidence rates in the State of Pará. However, it is considered a hyperendemic state, characterized by the high detection rate with 50 cases per 100,000 inhabitants in 2012.² This indicator reveals a worrying epidemiological situation in the state which, in national terms, occupies the fifth place among the Brazilian states regarding the absolute number of new cases.^{5,6}

The distribution of cases in the State of Pará is also heterogeneous, with greater concentration in the cities located in the northeastern and southwestern regions, in addition to the metropolitan area of Belém, which has a great demand for specialized

care.⁷ Current strategies used by health services to detect cases are limited, especially in areas where the access of health professionals becomes difficult as a result of commuting, thus prevailing the diagnosis in the spontaneous demand at health units. In this context, there are riverside populations living in environments where commuting is difficult due the geographical features of the territory.⁸

The geographical context of the capital city consists of 39 islands, among which is the Combú Archipelago that is home to riverside inhabitants living on the banks of river channels. Healthcare is provided to this population by a Family Health Strategy team that faces difficulties of all kinds to ensure continuity and efficaciousness of health actions. Among these difficulties, there is insufficient number of professionals, such as physicians and community health agents, a fact that makes meeting healthcare needs difficult. There are reports of the existence of suspected cases of leprosy in the archipelago, including micro-areas without community health agents coverage, which complicates even more healthcare actions and the control of the disease in these populations.

Another difficulty is related to the access to the urban center of Belém that requires transport logistics unavailable on the island. In addition, there is lack of regulation of access to specialized consultations, which greatly contributes to the exclusion of this population from healthcare actions and services. This scenario reflects additional challenges requiring strong commitment of health teams for detecting new cases of leprosy in order to control this endemic disease.

Decentralization of healthcare provided to leprosy patients should be seen as an important action, but not the only one to be performed as a strategy to eradicate the disease in Brazil and around the world. Regional, cultural, educational, socioeconomic, geographical, and political factors should be taken into consideration.⁹

In the light of the need of leprosy control in the entire territory of Pará and the difficulties in providing healthcare to riverside populations, the question is: What is the prevalence of leprosy in the riverside population of Combú? To better conduct the present study, the goal was to identify cases of leprosy in three micro-areas of Combú Archipelago and associate the occurrence of the disease with the history of contact and sociodemographic factors.

METHOD

This is a cross-sectional and descriptive study with a quantitative approach. It was conducted in the micro-areas 2, 3 and 5 of Combú Archipelago, located 1 Km south of Belém, at the mouth of the Guamá River. It has an area of 15 km² and is covered by dense forests.¹⁰ According to a survey conducted by the team of the Family Health Unit (FHU) of Combú in 2012, there were 2093 inhabitants. In this archipelago, the FHU divided the territory into six micro-areas and decided to carry out the research in three of them, taking into consideration the difficult access to the other micro-areas.

Most inhabitants of the island lived on marketing of fruits and animals of the region and they did not have a fixed income. They faced great difficulty in commuting to the FHU, because they had to work in the urban center of Belém during the day to market the products. The need of subsistence made the search for healthcare difficult.

The distance between the houses and from them to the FHU made conducting home visits difficult. This was due to the fact that there was no transport available for the health team, nor for the inhabitants of the island who depended on free transport by third-party vehicles to go to the FHU.

Due to the complex logistics of access to the island, we decided to conduct the present study using two distinct approaches. The strategic actions for obtaining the data were carried out from August to November 2013.

In the first stage, we performed an educational action in the micro-areas with the purpose of informing the inhabitants in a collective way about leprosy, essentially clinical manifestations, transmissibility, means of diagnosis, and treatment. The goal of this initiative was to inform about the disease in order to help the inhabitants identify possible signs/symptoms of leprosy and seek health service, in addition to demystify possible myths about the disease. Still, at this stage, by means of individualized care, we collected sociodemographic data and information about possible contact with leprosy. We used a structured form with closed questions.

These actions were carried out in spaces of collective use available in the micro-areas, such as churches and community centers. The strategy to carry out the educational activities made it possible to clarify doubts regarding leprosy and favored the integration of the research team with the local community. Actions were carried out in each of the three

micro-areas previously selected. In terms of population coverage, we reached 49.6% of the inhabitants of the island. At the end of the activity, the individuals were invited to undergo dermato-neurological examination at the same place.

The second step consisted in tracking cases by means of dermato-neurological examination in all the individuals that had attended the educational action. The purpose was to identify possible changes compatible with leprosy in the skin and/or nerves. To that end, we provided a space to ensure the privacy of the inhabitants, as well as safety and comfort for the team. All the material used was obtained at the FHU of the island.

The research team was composed of nursing students and a professional team of Combú FHU (community health agents, nurses, and physicians) who participated in the two stages. The sample of the study was composed of 88 riverside inhabitants, corresponding to 100% of the individuals who participated in the educational activities. The management of data took place in a database, using Microsoft Excel 2010 software. The data were analyzed through descriptive statistics analysis and presented in tables.

The present study was conducted in compliance with ethical principles of Resolution No. 196/96, of the National Health Council and approved by the Research Ethics Committee of the Nursing Program of the State University of Pará, Protocol No. 19079113.3.0000.5170.

RESULTS

The profile of the participants was characterized by 59% (52) of women and 41% (36) of men, with a predominance of the age group under 15 years (56%). Regarding race, 69% (61) declared themselves as being mixed race. With respect to education, 68% (60) had studied up to the last year of primary education, 18% (16) reported they had not attended school, and only 12% (11) reported that they had complete secondary education. The type of housing was predominantly wooden houses. Three to five individuals lived in 64% (57) of the houses, more than five individuals in 31% (27) of the houses, and less than three individuals in only 5% (4%) of the houses. The predominant income was low, with 80% (71) living on up to a minimum wage (Table 1).

Table 1. Distribution of interviewees according to education, type of housing, number of individuals per house, and family income. Belém, PA, 2013.

Variable	n	%
Education		
Adult literacy	1	1.14
Primary education	60	68.18
Secondary education	11	12.5
No schooling	16	18.18
Type of housing		
Wooden	88	100
Number		
< 3 individuals	4	4.55
3 to 5 individuals	57	64.77
> 5 individuals	27	30.68
Family income (Minimum wage)		
Up to 1	71	80.68
1 to 2	16	18.18
> 2	1	1.14

With respect to the history of contact, of the 88 respondents, 51% (45) reported that they had already been in contact with any individual affected by the disease, and 49% (43) denied any contact. Regarding the number of leprous individuals with whom they had had contact, 86% (39) had lived only with one individual, whereas 13% (6) had lived with two or more individuals affected by the

disease. With respect to the time of contact, 72% (32) had lived with leprous individuals for more than two years (Table 2).

Table 2. Distribution of interviewees according to contact with the disease, number and time of contacts. Belém, PA, 2013.

Variable	n	%
Has or already had contact with the disease		
Yes	45	51.14
No	43	48.86
How many individuals		
1 individual	39	86.7
2 or more	6	13.3
Time of contact		
Up to 6 months	6	13.3
6 months to 1 year	1	2.2
1 to 2 years	6	13.3
> 2 years	32	71.2

During the performance of dermatoneurological examinations, we identified three new cases of leprosy, characterizing a prevalence of 28.9/10,000 inhabitants. Two cases were diagnosed at the time of the actions and another, regarded as suspicious, was referred to the specialized center to perform additional tests, which allowed the confirmation of the diagnosis after seven days. The clinical forms were dimorphous, undetermined, and pure neural leprosy in the same proportion and all of them were found in the micro-area 2.

The diagnosed cases were referred to the local FHU in order to be registered and start treatment with multidrug therapy. The participants identified with other dermatological lesions received the care required during the medical consultation.

DISCUSSION

The data found in the studied population are significant considering the prevalence coefficients of the disease in the Northern region and in the State of Pará with 3.28/10,000 and 3.92/10,000 inhabitants, respectively.¹¹ This way, the three new cases identified demonstrate the high incidence of the disease in this population characterizing hyperendemic leprosy in the region.

The low educational level found resulted in the lack of information about leprosy and the risk for developing disabling forms of the disease due to late diagnosis. A study conducted with individuals affected by leprosy found an association between self-perception of the need of treatment and the education of patients, i.e., a higher level of education favors the individuals' perception regarding the need of treatment.¹²

Associated with the education level, low family income contributes to the persistence of leprosy as a disease that afflicts mostly endemic populations with lower socioeconomic status. These individuals are more likely to develop physical disabilities, because they have precarious conditions of housing, nutrition, hygiene, and access to health services.¹³

It was possible to observe the precarious housing conditions in which the riverside population of Combú lived. The houses were built of wood, most bathrooms were outside the houses, and the water used was taken from the river and it was not always properly treated. Therefore, these sociodemographic characteristics are directly linked to the risk of acquiring not only leprosy, but several other diseases.

These factors related to the disease can be minimized by means of the decentralization and/or strengthening of leprosy control actions in basic healthcare, incorporating educational activities with information regarding signs and symptoms, diagnosis, multidrug therapy, assessment and prevention of disabilities, active search, and control of individuals already affected by the disease.¹⁴ Active search proves to be an important strategy for early diagnosis, and the participation of health professionals was decisive for the identification of suspected cases.¹⁵

Coexistence with individuals affected by leprosy increases the risk of acquiring the disease, since coexistence with individuals without treatment contributes to increase its transmission.¹⁶ Control of contacts is an activity of utmost importance among leprosy control actions and should be taken into consideration by the basic healthcare team, especially in areas of high endemicity. For these reasons, the present research is of utmost importance for health teams, especially in hard-to-reach populations such as Combú.

The contacts with leprosy deserve more attention, not only for the risk they represent, but also for the biological, social, and economic repercussions that this disease causes.¹⁷ This way, the incessant search for affected individuals is an effective method for early diagnosis of the disease and, consequently, to decrease the sources of infection and interrupt the chain of transmission.¹⁸

During the performance of health actions, some riverside inhabitants were reluctant to collaborate and had difficulty in interacting with the team of researchers, both on the

occasion of educational activities and at the moment of the dermato-neurological examinations. These attitudes were also identified by the FHU professionals of the island, who considered the non-attendance to the health service as a consequence of those attitudes. The main reason why most individuals did not undergo the dermato-neurological examination in cases of active search was the lack of information about the disease, which can aggravate its high prevalence in the region.¹⁹

In this context, the regional aspects in which these riverside populations are inserted and the multiplicity of cultural, socioeconomic, and geographical factors that determine the habits and behavior related to health-disease process will ultimately determine the health practices of this population. This component should be understood by health teams that provide healthcare to communities with differentiated characteristics of life.²⁰

The precarious health conditions in which the population of Combú lived was also a factor related to the disease. This fact was aggravated by the difficulties faced by the local health team due to the lack of transport to carry out home visits, a practice that could not only identify possible cases of the disease, but also inform the community about the problem, contact examination, correct use of medicines, and self-care activities. It is understood that leprosy should be regarded as a priority, not only by healthcare professionals, but also by public authorities in order to achieve better control of the disease in the region. Therefore, effective combat against leprosy will only be possible by means of actions targeted at health prevention and promotion.²¹

Some limitations can be highlighted in the present study. One of them was the eventual loss of cases of the disease among the riverside inhabitants that did not attend the health actions. In addition, the reduced sample size—mainly due to the reluctance of the riverside inhabitants to participate in the activities—may have interfered with the data found. In turn, the expressive number of participants under the age of 15 years may be a limiting factor, since children may have difficulty in reporting dermato-neurological changes and decreased sensitivity.

CONCLUSION

The findings of the present study characterizes leprosy as a serious public health problem in the State of Pará, in particular in the population of Combú

Archipelago. The high rate of leprosy detection associated with the precarious conditions of housing, income, education, lack of information about the disease, reluctance to participate in preventive activities, and the difficulties experienced by the local health team are relevant factors that should guide the development of control activities in Combú, since there may be hidden cases of the disease that can intensify its transmission.

On the basis of the data found, it is worth stressing the importance of municipal management to provide epidemiological surveillance of the disease in this region. The necessary conditions for the development of control actions, activities of active search, and thorough examination of all contacts of patients with leprosy should be provided. This type of actions can identify the disease in its early forms, thereby minimizing the possible disabilities it can cause. It is necessary to invest in training and permanent updates for professionals working in basic healthcare in Combú. In addition, the logistics for the performance of the work, as for example river transport, should be assured, given that the rivers are the "streets" in this region.

The present study made it possible to identify various forms of expression with respect to the way of living of the riverside population relating to risky situations and diseases. If the culture of these populations—mainly observed in their practices and popular knowledge in everyday life—is not recognized by the health teams, it may significantly influence the health indicators in this populations, sometimes in a negative way.

The perception that there are situations in the health-disease process that cannot have a biological explanation is necessary to understand the cultural diversity present in riverside populations. Despite the reluctance of many riverside inhabitants to participate in the activities, this type of actions can provide information to the populations and, in the specific case of leprosy, promote the detection of cases, particularly in early forms of the disease. This way, the risk of the disease will be reduced, as well as its consequences for the riverside territory.

REFERENCES

1. World Health Organization. Weekly Epidemiological Record. Global Leprosy: update on the 2012 situation [Internet]. 2013 [cited 2014 May 10];88(35):365-80. Available from: <http://www.who.int/wer/2013/wer8835.pdf>
2. Brasil. Ministério da Saúde. Secretaria de Vigilância em Saúde do Brasil. Boletim Epidemiológico nº 11. Brasília: Ministério da Saúde; 2013.
3. Organização Mundial da Saúde. Estratégia global aprimorada para redução adicional da carga da hanseníase: período do plano: 2011-2015 [Internet]. 2010 [cited 2014 2013 Mar 20]. Available from: http://aew.org.br/wp-content/uploads/2013/01/EstrategiaGlobalAprioramentoHanseníase_MS.pdf
4. Corrêa RGCF, Aquino DMC, Caldas AJM, Amaral DKCR, França FS, Mesquita ERBOL. Epidemiological, clinical, and operational aspects of leprosy patients assisted at a referral service in the state of Maranhão, Brazil. Rev Soc Bras Med Trop [Internet]. 2012 [cited 2013 Jan 15];45(1):89-94. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0037-86822012000100017
5. Brasil. Ministério da Saúde. Secretaria de Vigilância Sanitária. Registro ativo: número e percentual. Brasília: Ministério da Saúde; 2011.
6. Brasil. Ministério da Saúde. Secretaria Executiva. Departamento de Informática do SUS - DATASUS. Informações de Saúde [Internet]. 2013 [cited 2014 2013 Jul 15]. Available from: <http://www.datasus.gov.br>
7. Brasil. Ministério Da Saúde. Secretaria de Vigilância em Saúde. Sistema Nacional de Vigilância em Saúde. Relatório de situação: Pará. Brasília: Ministério da Saúde; 2011.
8. Silva AS, Moura EC. Determinantes do estado de saúde de crianças ribeirinhas menores de dois anos de idade do Estado do Pará, Brasil: um estudo transversal. Cad Saúde Pública [Internet] 2010 [cited 2014 2013 Mar 10];26(2):273-85. Available from: http://www.scielo.br/scielo.php?pid=S0102-311X2010000200007&script=sci_arttext
9. Arantes CK, Garcia MLR, Filipe MS, Nardi SMT, Paschoal VD. Avaliação dos serviços de saúde em relação ao diagnóstico precoce da hanseníase. Epidemiol Serv Saúde [Internet]. 2010 [cited 2014fev 20];19(2):155-64. Available from: <http://scielo.iec.pa.gov.br/pdf/ess/v19n2/v19n2a08.pdf>
10. Gomes VLB, Carvalho RSC. Trabalho extrativista e condições de vida de trabalhadores: Famílias da Ilha do Combú (Pará). Argumentum [Internet]. 2012 [cited 2014jan 5];4(2):208-24.
11. Brasil. Ministério da Saúde. Secretaria de Vigilância Sanitária. Registro ativo: número e percentual, casos novos de hanseníase. Brasília: Ministério da Saúde; 2012.

12. Almeida JRS, Alencar CH, Barbosa JC, Dias AA, Almeida MEL. Autopercepção de pessoas acometidas pela hanseníase sobre sua saúde bucal e necessidade de tratamento. Cien Saude Colet [Internet]. 2013 [cited 2014 Jan 5];18(3):817-26. Available from: <http://www.scielo.org/pdf/csc/v18n3/27.pdf>

13. Lustosa AA, Nogueira LT, Pedrosa JIS, Teles JBM, Campelo V. The impact of leprosy on health-related quality of life. Rev Soc Bras Med Trop [Internet]. 2011 [cited 2014 2013 Nov 13];44(5):621-6. Available from: http://www.scielo.br/scielo.php?pid=S0037-86822011000500019&script=sci_arttext

14. Lana FCF, Carvalho APM, Davi RFL. Perfil epidemiológico da hanseníase na microrregião de Araçuaí e sua relação com as ações de controle. Esc. Anna Nery [Internet] 2011 [cited 2013 June 13];15(1):62-7. Available from:

http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1414-81452011000100009

15. Silva AR, Matos WB, Silva CCB, Gonçalves EGR. Hanseníase no município de Buriticupu, Estado do Maranhão: busca ativa de casos na população adulta. Rev Soc Bras Med Trop [Internet]. 2011 [cited 2014 Sept 24];43(6):691-4. Available from:

<http://www.scielo.br/pdf/rsbmt/v43n6/18.pdf>

16. Durães SMB, Cunha MD, Oliveira MLWDR, Guedes LS, Magnanini MMF. Estudo epidemiológico de 107 focos familiares de hanseníase no município de Duque de Caxias - Rio de Janeiro, Brasil. Ana Bras Dermatol [Internet] 2010 [cited 2014 May 10];85(3):339-45. Available from:

http://www.scielo.br/scielo.php?pid=S0365-05962010000300007&script=sci_arttext

17. Peixoto BKS, Figueiredo IA, Caldas AJM, Correa RGCF, Aquino DMC. Aspectos epidemiológicos dos contatos de hanseníase no município de São Luís-MA. Hansen Int [Internet]. 2011 [cited 2014 Mar 20];36(1):23-30. Available from:

http://www.ilsl.br/revista/detalhe_artigo.php?id=11559

18. Pires CAA, Malcher CMSR, Abreu Júnior JMC, Albuquerque TG, Corrêa IRS, Daxbacher ELR. Hanseníase em menores de 15 anos: a importância do exame de contato. Rev Paul Pediatr [Internet] 2012 [cited 2014 May 20];30(2):292-5. Available from:

<http://www.scielo.br/pdf/rpp/v30n2/22.pdf>

19. Faria DR, Ribeiro HS, Amaral KVA, Moura WCN. Avaliação de contatos de hanseníase. Revista Panorâmica On-Line [Internet]. 2013 [cited 2014 Sept 27];14:35-46. Available from:

<http://revistas.cua.ufmt.br/index.php/revistapanoramica/article/viewFile/299/133>

20. Ensino médico e extensão em áreas ribeirinhas da amazônia. Rev bras educ med [Internet]. 2013 [cited 2014 Oct 20];37(4):566-72. Available from:

<http://www.scielo.br/pdf/rbem/v37n4/a12v37n4.pdf>

21. Silva AMP, Santos ALS, Silva RAA, Silva SPC. Relação de contágio entre contatos intradomiciliares e portadores de hanseníase no município de Petrolina-PE, Brasil. J Nurs UFPE on line [Internet]. 2011 Aug [cited 2014 Jan 20];5(5):1345-352. Available from:

http://www.revista.ufpe.br/revistaenfermagem/index.php/revista/article/view/1557/pdf_601

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