



LEPROSY: SURVEILLANCE OF CONTACTS
HANSENIASE: VIGILÂNCIA DOS COMUNICANTES
LEPRA: VIGILANCIA DE LOS CONTACTOS

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ABSTRACT

Objective: characterize the contacts of leprosy patients in a public hospital. **Method:** this is a descriptive, observational, and retrospective study carried out in a referral hospital in João Pessoa, Paraíba, Brazil. Data collection was conducted by means of a pre-structured instrument with contact's identification data (sex and age), as well as information on registration of the BCG (Bacillus Calmette-Guérin) vaccine, i.e. vaccine against tuberculosis, and indication for treatment with multidrug therapy, collected through contact monitoring forms from the medical records of the Notifiable Disease Information System (SINAN). Data were analyzed with the software *Epi-Info*, version 7.0. The study was approved by the Research Ethics Committee of Faculdade de Ciências Médicas da Paraíba (FCMPB), under the Opinion 204.045 and the CAAE 11416612.0.0000.5178. **Results:** we observed an influence of the factor consanguinity in transmission, besides deficiency in contacts' dermatological and neurological evaluation. **Conclusion:** we found out weakness in contact monitoring and need for further researches addressing the theme. **Descriptors:** Leprosy; Search for Contact; Epidemiological Surveillance.

RESUMO

Objetivo: caracterizar os comunicantes dos pacientes de hanseníase em um hospital público. **Método:** trata-se de estudo descritivo, observacional e retrospectivo realizado em um hospital de referência em João Pessoa (PB). A coleta de dados foi realizada por meio de um instrumento pré-estruturado com dados de identificação do contato (sexo e idade), assim como informações sobre o registro da vacina BCG (Bacilo de Calmette e Guérin), isto é, vacina contra a tuberculose, e indicação de tratamento com poliquimioterapia, coletadas por meio de fichas de controle dos comunicantes dos prontuários do Sistema de Informação de Agravos de Notificação (Sinan). Os dados foram analisados com o programa *Epi-Info*, versão 7.0. O estudo foi aprovado pelo Comitê de Ética em Pesquisa da Faculdade de Ciências Médicas da Paraíba (FCMPB), sob o Parecer n. 204.045 e o CAAE n. 11416612.0.0000.5178. **Resultados:** observou-se influência do fator consanguinidade na transmissão, além de deficiência na avaliação dermatoneurológica dos comunicantes. **Conclusão:** constatou-se fragilidade no controle dos comunicantes e necessidade de novas pesquisas que abordem a temática. **Descritores:** Hanseníase; Busca de Comunicante; Vigilância Epidemiológica.

RESUMEN

Objetivo: caracterizar los contactos de enfermos de lepra en un hospital público. **Método:** esto es un estudio descriptivo, observacional y retrospectivo realizado en un hospital de referencia en João Pessoa, Paraíba, Brasil. La recogida de datos se realizó mediante un instrumento pre-estructurado con datos de identificación del contacto (sexo y edad), así como informaciones acerca del registro de la vacuna BCG (Bacillus Calmette-Guérin), es decir, vacuna contra la tuberculosis, e indicación de tratamiento con poliquimioterapia, recogidas a través de fichas de control de los contactos de los prontuarios del Sistema de Información de Enfermedades de Notificación (Sinan). Los datos fueron analizados con el *software Epi-Info*, versión 7.0. El estudio fue aprobado por el Comité de Ética en Investigación de la Faculdade de Ciências Médicas da Paraíba (FCMPB), bajo la Opinión 204.045 y el CAAE 11416612.0.0000.5178. **Resultados:** se observó influencia del factor consanguinidad en la transmisión, además de deficiencia en la evaluación dermatológica y neurológica de los contactos. **Conclusión:** se constató fragilidad en el control de los contactos y necesidad de nuevas investigaciones que aborden el tema. **Descriptores:** Lepra; Búsqueda de Contacto; Vigilancia Epidemiológica.

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INTRODUCTION

In Brazil, over the past century, much was researched and published on leprosy and, unfortunately, despite significant progresses, this disease still constitutes a significant public health problem, since the country has failed to comply with the agreement signed with the World Health Organization (WHO) in 1991 to eliminate it by 2000.¹

Leprosy has a higher incidence in East Asia, and India is the country with the highest number of cases worldwide, with 126,800 records in 2010. There are also endemic areas in Africa and in the Americas. Brazil ranks second in the world with regard to the absolute number of cases, diagnosing about 92.5% of cases in the Americas.²

The Brazilian Ministry of Health is committed to eliminate leprosy as a public health problem by 2015, aiming to reach less than 1 case per 10,000 inhabitants. In 2010, Brazil had 1.56 cases per 10,000 inhabitants, corresponding to 29,761 cases undergoing treatment. That same year, Brazil detected 34,894 new leprosy cases, corresponding to an overall detection coefficient of 18.2 per 100,000 inhabitants. A 35.1% decrease in the detection coefficient was observed within the period from 2001 to 2010. Although Brazil registers continued decreases in the prevalence and detection coefficient of new cases of leprosy, the North, Northeast, and Central-West regions are regarded as the most endemic, having areas with major transmission maintenance.³

There is a need to emphasize that household contact is defined as “any individual who lives or has lived with the ill patient within the last five years”. Thus, epidemiological surveillance emerges as a conducting wire, in order to adopt prophylactic measures with regard to patients.⁴ From this perspective, in the network of public health services performing the actions of the Programme for Eliminating Leprosy, the control of contacts has been poorly appreciated, because the focus lies on controlling the disease and ill patient, relegating to second place contact control actions.⁵

It is worthy highlighting that the poor appreciation of contact control reflects on the low number of studies carried out in recent decades on the epidemiological participation of these individuals in the leprosy endemic in the country and on the social researches concerning these subjects. Moreover, the approach to the theme “contact control” in courses, training workshops, handbooks, and

texts is just superficial and, generally, named “surveillance of contacts”.⁶ In this sense, a study⁷ points out the relevance of contact control to improve aspects such as early detection, treatment, and disability prevention.

Given these considerations, there is a need to bring contacts to be examined and provide prophylaxis by means of vaccination with *Bacillus Calmette-Guérin* (BCG). According to the current standards of the Ministry of Health, prevention consists in early diagnosis of cases and in using BCG intradermally. For this, dermatological and neurological examination of all household contacts of a diagnosed case within the past five years is recommended.

From this perspective, a study⁸ demonstrates the effectiveness of the BCG vaccine with regard to leprosy contact control. Contacts without previous scars receive 2 doses of vaccine, with an interval of 6 months between them. Those with a scar receive only 1 dose.⁹ In this context, we find out the relevance of this study, since its results can contribute to health organizations in terms of planning and implementing actions to control this situation, in order to break its transmission chain and, thus, eradicate leprosy.

Given the above, this study aims to characterize leprosy patients' contacts in a public hospital; data refer to 2011.

METHOD

This is a descriptive, observational, and retrospective study carried out with data collection in the database of a public hospital in João Pessoa, Paraíba, Brazil. This institution is regarded as a reference in the state, aimed at the treatment of individuals with infectious diseases.

The population focused on the survey consisted of people with leprosy notified by the epidemiological surveillance of the hospital concerned. Data collection was conducted in March and April 2013, through the contact monitoring forms, contained in the medical records from the Notifiable Disease Information System (SINAN), of patients diagnosed with leprosy assisted at the referral service. We used a pre-structured instrument, containing contact's identification data (sex and age), as well as information on registration of the BCG vaccine and indication for treatment with multidrug therapy.

The steps for collecting data were this: we identified the patients who were investigated in the Epidemiological Surveillance Center of the hospital, in 2011, using SINAN NET; by

means of this identification, we asked to the Statistical Medical Archive Service (SAME) the medical records of these patients; with a pre-structured instrument, we collected from medical records the following contact's data: sex, age, degree of kinship, and dermatological and neurological evaluation. These data were descriptively tabulated into graphs and tables. Data obtained with the proposed instrument was analyzed using the software *Epi-Info*, version 7.0, and organized into figures and tables.

This study was conducted complying with the ethical precepts of Resolution 196/96, from the National Health Council. It was

approved by the Research Ethics Committee of Faculdade de Ciências Médicas da Paraíba (FCMPB), under the Opinion 204.045 and the CAAE 11416612.0.0000.5178.

RESULTS

Regarding the degree of kinship of leprosy contacts identified in data analysis, this study demonstrated that 94 contacts (41%) were children, 49 (21%) were spouse, and 86 (38%) were not specified in contact's forms. These data can be seen in Figure 1.

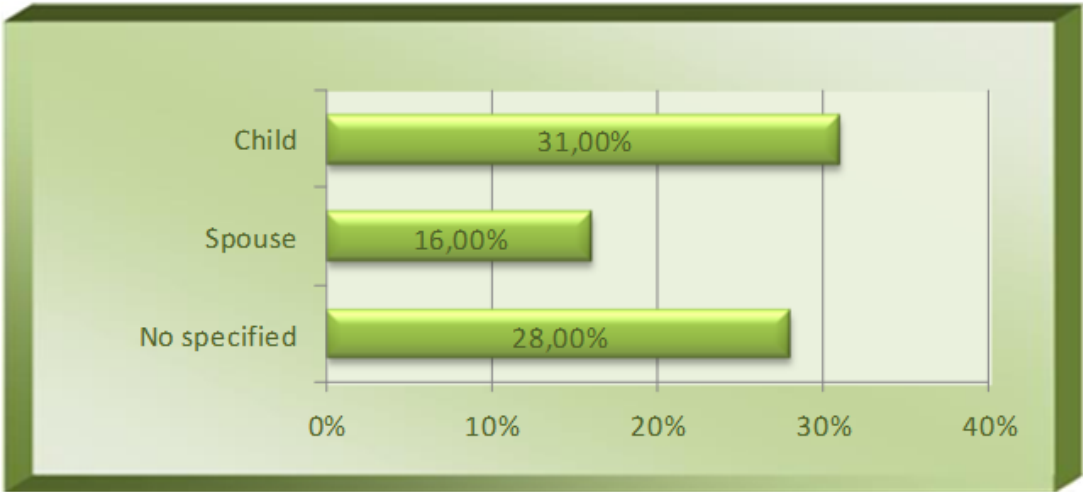


Figure 1. Data distribution according to contacts' degree of kinship.

Concerning data related to contacts, 37 patients (30%) do not have data on contacts and 81 (70%) have their evaluation form, as shown in Figure 2.

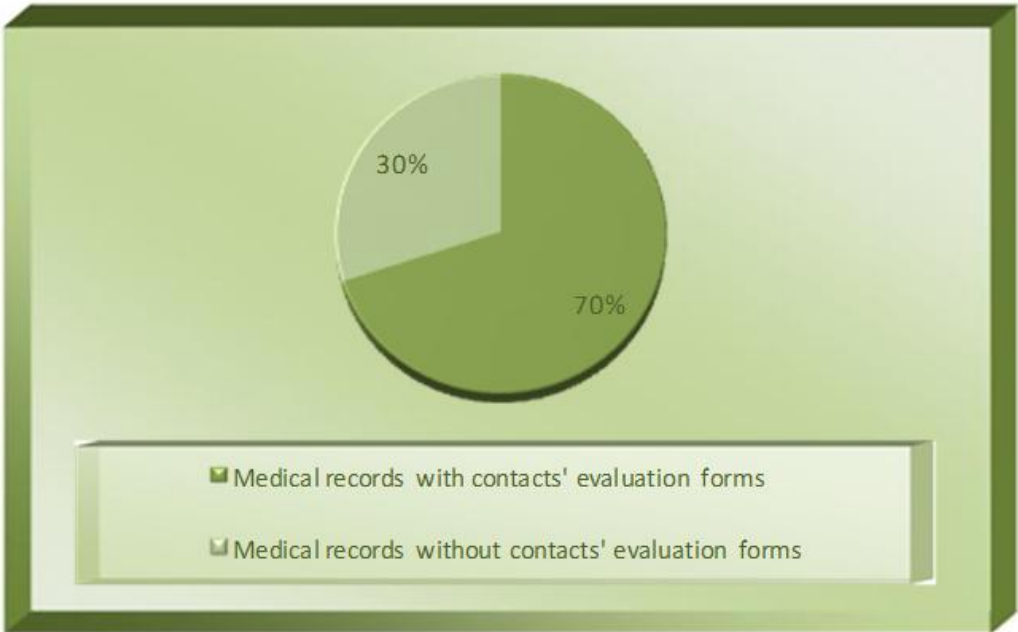


Figure 2. Data distribution according to contacts' evaluation form.

As for leprosy contacts' dermatological and neurological evaluation, it was found out that 146 contacts (57%) were not examined, 107 (41%) underwent evaluation by the physician or nurse, and only 5 (2%) were diagnosed with leprosy.

Table 1. Data distribution according to dermatological and neurological examination.

| Examination | N | % |
|-----------------------|-----|------|
| Non-evaluated contact | 146 | 57% |
| Evaluated contact | 107 | 41% |
| New case of leprosy | 5 | 2% |
| Total | 258 | 100% |

Vaccination status, regarding BCG, is among the recommendations by the Ministry of Health to control contacts. In the 81 medical records (70%) having contact evaluation forms, there were records of 179 contacts, with 45 (25%) having evidence of the 1st dose of BCG and 18 (10%) demonstrating

the 2nd dose. However, 116 (65%) of these contacts had no evidence of this vaccine.

Table 2 shows the percentage of those who received the 1st and 2nd doses of the BCG vaccine, according to notes found in contacts' records.

Table 2. Data distribution according to the BCG vaccine.

| BCG | N | % |
|----------------------|-----|------|
| 1 st dose | 45 | 25% |
| 2 nd dose | 18 | 10% |
| Not reported | 116 | 65% |
| Total | 179 | 100% |

DISCUSSION

Leprosy is a disease that has a family characteristic, with a long incubation period. Therefore, there is a need to conduct frequent queries and for a long period with contacts of leprosy patients to search for signs of the disease, since a patient diagnosed with leprosy today maybe has already transmitted the disease to other people in her/his family or to the contact, within the period when the disease had not been diagnosed, thus making the examination of these contacts crucial to control and early diagnosis of the disease, and this examination is defined as a leprosy control action.^{10,11}

This study demonstrates the influence of the aspect degree of kinship in the transmissibility of leprosy. A study has revealed an inference of the factor consanguinity among those who had the disease and that the possibility of getting ill was 2.8 times higher than among those who had not a biological tie.¹² The transmission of leprosy within a family environment, concerning current cases in family, increases in 2.9 times the risk for contracting the disease, and it was stressed that for the old cases of disease in the family, the risk increases to 5.0 times more chance of developing the disease.¹¹ Another important aspect that must be highlighted is the effective evaluation of household contacts. From this perspective, a study⁵ is in line with this research, since it pointed out that leprosy contacts' control must constitute one of the

pillars of actions for eradicating the disease concerned.

As for dermatological and neurological evaluation, the results of this study showed that more than half of contacts were not examined. In this sense, authors¹³ claim that the lack of contacts' adherence to dermatological and neurological examination is regarded as a maintenance factor of the endemic. Another study¹⁴ also described the difficulty to evaluate leprosy contacts due to non-attendance to consultation; most contacts justify by saying they have forgotten, and they also report lack of time and embarrassment.

Thus, late diagnosis keeps inserted into the community sources of infection and the prevalence of new cases at the multibacillary stage¹⁵, besides the presence of disabilities, including among individuals under 15 years of age, leaving veiled underreporting in many of the selected articles.^{10,16} This way, the transmission chain maintenance and the hidden prevalence of leprosy emerge, also known as epidemiological icebergs.^{15,16}

The results shown in Table 2 confirmed the lack of adequate prophylaxis with BCG, something which reveals a deficit with regard to leprosy contact control. The results of this study are in line with those of another one¹⁰ mentioning the evaluation of leprosy contacts, about the indication and effectuation of the BCG vaccine, especially with regard to the monitoring and control of these individuals, by the service, are still incipient; besides, other studies^{15,16} demonstrated that for a large number of contacts there was no information

about the administration of the 1st and 2nd doses. However, we cannot state whether these individuals received the BCG vaccine, but the lack of control by the service on this data became clear.

Given these considerations, a study¹⁷ carried out in order to identify the infection relation between contacts and leprosy patients emphasizes the relevance of contacts control, by means of an effective participation of health professionals.

Analyzing the data shown in this study, we found out the frailty of the health service aimed at controlling contacts, both in terms of monitoring to new evaluations and in the effectuation of the BCG vaccine.

CONCLUSION

The leprosy contact, when detected and evaluated, emerges as a conducting wire to break the epidemiological transmission chain, having in mind her/his crucial role to detect new cases of this disease.

This study demonstrated an incipient evaluation of contacts, observed by means of the contact evaluation forms, contained in patients' medical records, something which, concomitantly, makes controlling this disease more difficult. In this sense, 146 contacts (57%) did not undergo dermatological and neurological evaluation. Due to this, the diagnosis of this disease becomes late, increasing the risk for physical disabilities and the epidemiological transmission chain.

Regarding coverage of the BCG vaccine, a low number of doses administered to contacts was observed, due to non-attendance of them to the health service to undergo dermatological and neurological examination, something which has as a likely consequence failing to control the source of infection.

Given these considerations, it is of crucial importance continuing this work, with an emphasis on the implementation of an active search for leprosy contacts. It is expected that the results of this study serve as a knowledge source, stimulating the emergence of further researches on the theme.

REFERENCES

1. Pinto Neto JM, Villa TCS, Oliveira MHP, Barbeira CBS. O controle dos comunicantes de hanseníase no Brasil: uma revisão da literatura. *Hansen Int* [Internet]. 2000 [cited 2013 July 20];25(2):163-76. Available from: http://www.ilsl.br/revista/detalhe_artigo.php?id=10586.
2. World Health Organization. Weekly epidemiological record Relevé Épidémiologique Hebdomadaire. Année [Internet]. 2011 May [cited 2013 July 20];86(36):389-400. Available from: <http://www.who.int/wer/2011/wer8636.pdf>.
4. Brasil, Ministério da Saúde. Secretaria de Políticas de Saúde. Departamento de Atenção Básica. Guia para o controle da hanseníase. Brasília: Ministério da Saúde; 2002.
5. Pinto Neto JM, Villa TCS, Mencaroni DA, Gonzales RC, Gazeta CE. Considerações epidemiológicas referentes ao controle dos comunicantes de hanseníase. *Hansen Int* [Internet]. 2002 [cited 2013 July 20];27(1):23-8. Available from: http://www.ilsl.br/revista/detalhe_artigo.php?id=10618.
6. Carrasco MA, Pedrazzani ES. The epidemiological situation of Hansen's disease and its contacts in Campinas. *Rev Esc Enferm USP* [Internet]. 1993 [cited 2013 July 23];27(2):214-28. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/8159851>.
7. Msyamboza KP, Mawaya LR, Kubwalo HW, Ng'oma D, Liabunya M, Manjolo S, et al. Burden of leprosy in Malawi: community camp-based cross-sectional study. *BMC Int Health Hum Rights* [Internet]. 2012 Aug [cited 2013 July 23];1(12):12. Available from: <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3492035/?tool=pubmed>.
8. Sarno EN, Duppre NC, Sales AM, Hacker MA, Nery JA, Matos HJ. Leprosy exposure, infection and disease: a 25-year surveillance study of leprosy patient contacts. *Mem Inst Oswaldo Cruz* [Internet]. 2012 Dec [cited 2013 July 23];107(8):1054-109. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S007402762012000800015&lng=en&nrm=iso&tlng=en
9. Brasil, Ministério da Saúde. Secretaria de Vigilância em Saúde. Guia de vigilância epidemiológica. [Série A. Normas e Manuais Técnicos]. 7th ed. Brasília: Ministério da Saúde; 2009.
10. Alencar CHM, Barbosa JC, Ramos Júnior NA, Alencar MJF, Pontes RJS, Castro CGJ, et al. Hanseníase no município de Fortaleza, CE, Brasil: aspectos epidemiológicos e operacionais em menores de 15 anos (1995-2006). *Rev Bras Enferm* [Internet]. 2008 [cited 2013 July 23];61:694-700. Available from: http://www.producao.usp.br/bitstream/handle/B DPI/12890/art_CASTRO_Hanseníase_no_municipio_de_Fortaleza_CE_Brasil_2008.pdf?sequence=1.
11. Santos AS, Castro DS, Falqueto A. Fatores de risco para transmissão da Hanseníase. *Rev Bras Enferm* [Internet]. 2008 [cited 2013 July

23];61(esp):738-43. Available from: <http://www.scielo.br/pdf/reben/v61nspe/a14v61esp.pdf>.

12. Durães SMB, Guedes LS, Cunha MD, Cavaliere FAM, Oliveira MLWDR. Estudos de 20 focos familiares de hanseníase no município de Duque de Caxias, Rio de Janeiro. *An Bras Dermatol* [Internet]. 2005 [cited 2013 July 21];80(3):295-300. Available from: <http://www.scielo.br/pdf/abd/v80s3/3v80a06.pdf>.

13. Dessunti EM, Soubhia Z, Alves E, Aranda CM, Barro MPAA. Hanseníase: o controle dos contatos no município de Londrina-PR em um período de dez anos. *Rev Bras Enferm* [Internet]. 2008 Nov [cited 2013 July 21];61(esp):689-93. Available from: http://www.scielo.br/scielo.php?pid=S0034-71672008000700006&script=sci_arttext.

14. Vieira CSCA, Soares MT, Ribeiro CTSX, Silva LFG. Avaliação e controle de contatos faltosos de doentes com Hanseníase. *Rev Bras Enferm* [Internet]. 2008 [cited 2013 July 23];61(esp):682-8. Available from: http://www.scielo.br/scielo.php?pid=S003471672008000700005&script=sci_arttext.

15. Pereira DL, Brito LM, Nascimento AH, Ribeiro EL, Lemos KRM, Alves JN, et al. Estudo da prevalência das formas clínicas da hanseníase na cidade de Anápolis-GO. *Ensaio e Ciência: Ciências Biológicas, Agrárias e da Saúde* [Internet]. 2012 Oct [cited 2013 July 23];16(1):55-67. Available from: <http://sare.anhanguera.com/index.php/rencs/article/view/3639/1463>.

16. Lana FCF, Amaral EP, Franco MS, Lanza FM. Detecção da hanseníase no Vale do Jequitinhonha - Minas Gerais: redução da tendência epidemiológica ou problemas operacionais para o diagnóstico? *Hansen Int* [Internet]. 2004 [cited 2013 July 24];29(2):118-23. Available from: http://www.ilsl.br/revista/detalhe_artigo.php?id=10687.

17. Silva AMP, Santos ALS, Silva RAL, Silva SPC. Relação de contágio entre os contatos intradomiciliares e portadores de hanseníase no município de Petrolina-PE, Brasil. *J Nurs UFPE on line* [Internet]. 2011 Aug [cited 2013 July 24];5(5):1345-352. Available from: http://www.revista.ufpe.br/revistaenfermage/index.php/revista/article/view/1557/pdf_601.

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