



CHARACTERISTICS OF LEPROSY CASES DIAGNOSED THROUGH THE EXAM CONTACT

CARACTERIZAÇÃO DOS CASOS DE HANSENÍASE DIAGNOSTICADOS ATRAVÉS DO EXAME DE CONTATO

CARACTERIZACIÓN DE LOS CASOS DE HANSENIASIS DIAGNOSTICADOS A TRAVÉS DEL EXAMEN DE CONTACTO

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ABSTRACT

Objective: to analyze the cases of leprosy reported in Paraíba state from 2001 to 2011, considering the detection mode and the sociodemographic and clinical variables of the disease. **Method:** an epidemiological study of temporal series, retrospective and documentary base, held from leprosy cases reported by the Notifiable Diseases Information System in Paraíba State from 2001 to 2011. The 9375 reported cases were submitted to the application of Chi-square test and Fisher's exact test. The data were condensed and presented in tables. **Results:** cases diagnosed through examination contacts represent 3.4% of the total diagnostics. Comparing the ways of detection, low education and the presence of disabilities were significantly associated. **Conclusion:** it is suggested the importance of contact exam in reducing cases of leprosy, as well as the most severe forms of the disease. **Descriptors:** Leprosy; Epidemiology; Health Profile; Nursing.

RESUMO

Objetivo: analisar os casos de hanseníase notificados na Paraíba, no período de 2001 a 2011, considerando o modo de detecção e as variáveis sociodemográficas e clínicas da doença. **Método:** estudo epidemiológico de série temporal, retrospectivo e de base documental, realizado a partir dos casos de hanseníase notificados pelo Sistema de Informação de Agravos de Notificação no estado da Paraíba, no período de 2001 a 2011. Os 9.375 casos notificados foram submetido à aplicação de teste Qui-quadrado e teste Exato de Fisher. Os dados foram condensados e apresentados em tabelas. **Resultados:** os casos diagnosticados através do exame de contatos representam 3,4% do total de diagnósticos. Comparando-se as formas de detecção, a baixa escolaridade e presença de incapacidades estiveram significativamente associadas. **Conclusão:** sugere-se a importância do exame de contato na diminuição dos casos de hanseníase, bem como das formas mais graves da doença. **Descritores:** Hanseníase; Epidemiologia; Perfil de Saúde; Enfermagem.

RESUMEN

Objetivo: analizar los casos de hanseníasis notificados en Paraíba, en el período de 2001 a 2011, considerando el modo de detección y las variables socio-demográficas y clínicas de la enfermedad. **Método:** estudio epidemiológico de serie temporal, retrospectivo y base documental, realizado a partir de los casos de hanseníasis notificados por el Sistema de Información de Problemas de Notificación en el Estado de Paraíba en el período de 2001 a 2011. Los 9.375 casos notificados fueron sometidos a la aplicación de test Chi-cuadrado y test Exacto de Fisher. Los datos fueron condensados y presentados en tablas. **Resultados:** los casos diagnosticados a través del examen de contactos representan 3,4% del total de diagnósticos. Comparándose las formas de detección, la baja escolaridad y presencia de incapacidades estuvieron significativamente asociadas. **Conclusión:** se sugiere la importancia del examen de contacto en la disminución de los casos de hanseníasis, así como de las formas más graves de la enfermedad. **Descriptores:** Hanseníasis; Epidemiología; Perfil de Salud; Enfermería.

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INTRODUCTION

Leprosy considered as an early disease is still a challenge to public health. The last update of the World Health Organization (WHO) showed that about 33,000 new cases diagnosed each year in Brazil, describing as a strategy to reduce this number, the professional qualifications for early diagnosis of people affected by the disease.¹

In this context, the examination of contacts constitutes a healthy strategy for detecting contamination cycle of leprosy among people living with affected individuals. The same household contacts should be examined by trained professionals, meeting the health surveillance actions taken in national context.² Such actions also involve health guidelines that should be strengthened to each meeting to facilitate the detection of the individual.³

The Ministry of Health establishes that for every diagnosed case, prophylactic measures for four household contacts should be adopted. However, Pan American Health Organization data show that only 59.8% of individuals affected by leprosy have had their contacts investigated, hindering early detection of the disease, and may increase the contamination cycle and generate endemic in some locations.⁴

Some Brazilian regions still have a pattern of high endemic. The North, Midwest and Northeast concentrated areas of major maintenance of the transmission. In the Northeast region, considering the overall detection rate of leprosy/100,000 inhabitants, between 2003-2012, Paraíba state occupied the fifth place among the Northeast States.⁵

The importance of contact exams to reduce the spread of leprosy was emphasized in a study conducted in Rio de Janeiro between 2006 and 2010, who diagnosed 16% of new cases through this surveillance, facilitating the implementation of disease control measures.² Also, early diagnosis by contact examination allows the strengthening of comprehensive health services, while encouraging the active surveillance activities, improving the ability to access these services and contributing to the reduction of the endemic.

Given the above, the household contacts constitute risk groups, which can configure hidden focuses, propagators of leprosy endemic, negatively contributing to its expansion. Also in this perspective, the socio-demographic and clinical characteristics may represent a justification that contributes to

monitoring the disease and the strengthening of epidemiological surveillance since it characterized the trend of the affected population and therefore its vulnerability or not.

Facing the challenge of the National Program for Leprosy Control (PNCH/MS) to monitor and carry out the contact exam and the scarcity of research on the subject, this study aims to:

- Analyze cases of leprosy reported in Paraíba, in the period from 2001 to 2011, considering the detection mode and the socio-demographic and clinical variables of the disease.

METHOD

This is an article from dissertation <<Epidemiological and temporal analysis of leprosy in Paraíba>> presented to the Graduate Program in Nursing at the Federal University of Paraíba, by the student Karen Krystine Gonçalves de Brito in 2014.

Epidemiological study of temporal retrospective series of the documentary base held from the records of leprosy cases from the 223 municipalities of Paraíba. Information was collected in September 2013, and all confirmed and reported cases of leprosy in the Notifiable Diseases Information System database (Sinan, from the State Department of Health (SES-PB), between January 2001 to December 2011 were included.

There were 10,476 Individual Records of Notification (FIN) identified, consolidated by the Problems Information System and Notification (Sinan) of the Department of Health (SES) of the State of Paraíba, of which 1,101 were excluded for not reporting the detection mode. Of the 9,375 cases selected, the categorization into two groups proceeded: 1) "Contacts Exams" - cases diagnosed based on the evaluation of the contact; 2) "Other forms" - referrals, spontaneous demand, collective examination and other modes.

Sequentially, a bank refinement was performed to identify the variables of interest: age; gender; race and education level, the number of affected nerves, clinical signs, operational classification, the degree of disability in the diagnosis and outcome of smear. These variables were decoded according to the data dictionary Sinan Net (version 4.0) and typed into Excel spreadsheet. Finished typing and checked for consistency, data were recorded for statistical analysis in IBM SPSS (Statistical Package for Social Sciences), version 20.0.

For data analysis, technical analysis of statistical test Chi-square and Fisher's exact test were used, with a significance level of 5% (p <0.05).

This study met the provisions of the National Health Council⁶ Resolution 466/12 and was approved by the Research Ethics Committee of the Health Sciences Center of the Federal University of Paraíba (UFPB) as a sub-project of a broader research entitled “Epidemiology profile of leprosy patients in Paraíba: 2001 - 2011”, under protocol 203485, CAAE 11076312.1.0000.5188. Anonymity and confidentiality of information obtained have been ensured, as well as all other prerogatives.

Table 1. Distribution of detection modes of leprosy cases in Paraíba for the period 2001-2011, according to socio-demographic variables. João Pessoa, PB, 2014.

Profile	Detection mode				Significance (p-value)
	Contact exam (n=335)		Other forms (n=9.040)		
	n°	%	n°	%	
Age group					
< 15 years old	29	8.66	678	7.50	p ⁽¹⁾ = 0.1479
Between 15 and 19 years old	34	10.15	665	7.36	
Between 20 and 29 years old	54	16.12	1619	17.91	
Between 30 and 39 years old	67	20.00	1446	16.00	
Between 40 and 49 years old	45	13.43	1453	16.07	
50 years old or +	106	31.64	3179	35.17	
Gender					
Male	164	48.96	4461	49.35	p ⁽¹⁾ = 0.9114
Female	171	51.04	4579	50.65	
Race					
White	73	21.79	2390	26.44	p ⁽²⁾ = 0.1651
Black	31	9.25	840	9.29	
Yellow	8	2.39	144	1.59	
Brown	160	47.76	3947	43.66	
Indigenous	1	0.30	17	0.19	
Without identification/Ignored ^(*)	62	18.51	1702	18.83	
Education					
Illiterate	6	1.79	400	4.42	p ⁽²⁾ = 0.0341
Elementary School	136	70,45	6085	67,31	
High School	29	8,66	859	9,50	
Higher Education	2	0,60	127	1,40	
Without identification/Ignored ^(*)	62	18,51	1569	17,36	

Source: Sinan Data, 2014
(1)Associated Chi-square tests
(2) Exact test of Fisher
(*) The statistical test did not consider this information

Modes of detection of leprosy cases for contact exams and passive forms did not show statistically significant differences in the variables of the affected nerves, clinical form, operational classification and smear (Table 2). Regarding the degree of disability, the form of detection “contact exam” presented

RESULTS

Of the 9,375 cases of leprosy diagnosed in Paraíba, between 2001 and 2011, 335 (3.6%) were by contact exam and 9,040 (96.4%) of the forms of passive detection (referrals, spontaneous demand, collective examination, other modes).

Table 1 shows the results of the bivariate analysis of the socio-economic characteristics of the cases of leprosy evaluated. Only the variable of the level of education showed statistically significant levels (p-value <0.0341), where it is observed less education among individuals detected through contacts exam.

the highest number of cases with disability grade (GIF 1 + GIF 2). This difference was statistically significant (p-value = 0.002), however, investigated in isolation, grade 2 has a lower percentage of occurrence.

Table 2. Distribution of detected modes of leprosy cases in Paraíba from 2001 -2011, according to clinical variables. João Pessoa, PB, 2015.

Variables	Detection mode				Significance (p-value)
	Contact exam (n=335)		Other forms (n=9040)		
	n°	%	n°	%	
Number of affected nerves					
None	187	55.82	5034	55.69	p ⁽¹⁾ = 0.1822
One	39	11.64	712	7.88	
Between 2 and 3	28	8.36	652	7.21	
4 or +	9	2.69	238	2.63	
Without identification/Ignored ^(*)	72	21.49	2404	26.59	
Clinical form					
Indetermined	74	22.09	1830	20.24	p ⁽¹⁾ = 0.8694
Tuberculoid	93	27.76	2544	28.14	
Dimorphic	85	25.37	2369	26.21	
Virchowian	50	14.93	1405	15.54	
Without identification/Ignored ^(*)	33	9.85	892	9.87	
Disability evaluation					
Degree zero	44	13.13	1534	16.97	p ⁽²⁾ = 0.0002
Degree 1	117	34.93	2562	28.34	
Degree 2	4	1.19	403	4.46	
Without identification/Ignored ^(*)	170	50.75	4541	50.23	
Operational classification					
Paucibacillar	178	53.13	4674	51.70	p ⁽¹⁾ = 0.6565
Multibacillar	157	46.87	4335	47.95	
Without identification/Ignored ^(*)	-	-	31	0.34	
Smear					
Positive	42	12.54	1131	12.51	p ⁽¹⁾ = 0.6979
Negative	74	22.09	1833	20.28	
Without identification/Ignored ^(*)	219	65.37	6076	67.21	

Source: Sinan Data, 2014
(1)Associated Chi-square tests
(2) Exact test of Fisher
(*) The statistical test did not consider this information

DISCUSSION

The data show that the number of cases diagnosed through the contact examination (335 cases) represents 3.4% of total diagnoses, being below those found in other Brazilian places.^{2,7} There was the significant prevalence of leprosy diagnosis in the state through referral, spontaneous demand, collective examination and other forms, to the detriment of contacts exam.

A smaller proportion of cases detected by contact examination suggests passivity and/or neglect of health services due to the low investment by UBS teams in active case finding, or we could assume that is occurring less transmission of the disease in this population due to immunological factors that make individuals more or less susceptible to the pathogenic virus. However, the chances become impaired since 1,101 cases have not been evaluated or ignored as the detection mode.

According to the Epidemiological Bulletin⁵ data, with data analysis in 2003 to 2012 in Brazil, there are on average 74.5% of contacts recorded, that is those that should have been examined. Of all the Federative Units, whether endemic or not, Paraíba occupies the penultimate position in the percentage of contacts investigated among the reported cases with 55.4%, according to indicators

showing good standing, that is a percentage between 50.0 to 74 9%.

With the implementation of decentralization of leprosy control activities, it is observed that 74% of treatment cases are assisted in primary health care.⁸ This finding reinforces the contact examination as a priority of the Basic Health Units, Territoriality that guides the Unified Health System points to primary care as the main responsible for the promotion of health and prevention of injuries. The expansion of the active search for contacts as effectiveness of control measures and early diagnosis can also be observed in other endemic areas of the world.⁹

Analyzing the association between sociodemographic and clinical variables and the detection mode “contact exam”, this study shows, except for the level of education and the GIF, that the other variables have no statistical association (p> 0 05) (Table 1 and 2).

Concerning education, it is possible to see that the diagnosed individuals in the active form, have a lower educational level (more cases adding to the illiterate, and elementary school), with significant p-value = 0.0341, positive factor when considering that this population is more vulnerable to the disease, since they have less access to information and, therefore, its recognition.

The socioeconomic characteristics of leprosy are widely known in the current literature. The little education interferes directly in the difficulty to understand the disclosures about leprosy, even reflecting in large numbers of unemployed and self-employed, resulting in lower monthly income, which are factors associated with abandonment and lack multidrug therapy.¹⁰

A study describing leprosy control activities in the Vale do Jequitinhonha¹¹ emphasized that the frequent holding of awareness campaigns contributes to the voluntary attendance at health facilities in the presence of dermatological signs and symptoms, leading to the performance of early diagnosis. It is assumed that awareness should occur legitimately, clear and simple, to reach all levels and social classes effectively.

Quantitatively the presence of disability was significantly associated with the contact exams. However, qualitatively, the cases had minor injuries, reporting to a tacitly health teams acting, as the early detection of new cases enables the reduction of injuries. That is, the presence of disabilities (1 or 2) at diagnosis were more prevalent in cases detected by contact examination. However, the grade-2 disabilities had lower occurrence. A survey of similar data¹³ emphasizes that the occurrence of early diagnosis lead to the less severe clinical presentation of the disease.

Leprosy in passively detected cases tends to be much more serious, leading to higher levels of disability and demanding greater investment in financial and human resources. Also, it directly compromises the well-being, quality of life, work and social life of affected individuals.¹²

Thus, the appropriate investigation of contacts contributes to interrupt the transmission of leprosy chain, as is early diagnosed cases, avoiding the spread of *Bacillus* and impairments installation.

In the field of health surveillance, monitoring may constitute a particularly valuable tool to enable decision-making at times when it is still possible to avoid or reduce the impact of processes, even for short periods may result in significant health damage.¹³

Proper investigation of contacts contributes to the interruption of transmission of leprosy chain, preventing the spread of the bacillus and the installation of disabilities.¹⁴ Therefore, strategic actions implemented under the state act as inducing mechanism of decentralization and qualification of health surveillance actions at the local.¹⁵

It is emphasized that the study limitation focused on the process of passive data collection, whose considerable contingent variable information had not been evaluated/faulty/ignored. Similar studies¹⁶⁻¹⁷ point this issue, though for trying to official data, this limitation does not corrupt the results of analyzes.

CONCLUSION

For the current study, there was the significant prevalence of leprosy diagnosis in the State through referral, spontaneous demand, collective examination and other forms, to the detriment of contacts exam.

Compared with the forms of detection, it can be inferred that low educational level and the presence of disability were significantly associated with the contacts exams. This reveals in a tacit way, the investment of managers and health staff working in primary care, searching for active cases of the disease since early detection of new cases allows an accurate diagnosis in actions aimed at controlling the disease. In this way, it enables the reduction of problems and underreporting of endemic, as well as the social and financial burden of the disease.

Despite the importance of monitoring contacts to be recognized as a target of MS, the activity related to this control has been undervalued by the health services, or although unlikely, it has new immunological settings to the state. In both situations, it becomes imperative to discuss, reset and plan strategies to improve access and coverage of the contacts exams of people with leprosy in Paraíba.

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