

**Impact of educational action on leprosy communicants in a municipal health unit****Impacto da ação educativa nos comunicantes de hanseníase em uma unidade municipal de saúde****Impacto de la acción educativa sobre los comunicantes de la enfermedad de Hansen en una unidad municipal de salud****Received: 13/05/2020****Approved: 26/11/2020****Published: 19/02/2021****Jean Vitor Silva Ferreira<sup>1</sup>****Taís dos Passos Sagica<sup>2</sup>****Risângela Patrícia de Freitas Pantoja da Silva<sup>3</sup>****Julliana Santos Ribeiro Lima<sup>4</sup>****Maria Heliana Chaves Monteiro da Cunha<sup>5</sup>****Aline Maria Pereira Cruz Ramos<sup>6</sup>**

This is a prospective, cross-sectional, descriptive study with a quantitative approach, developed from 2017 to 2018, in a municipal health unit in the city of Belém, in the state of Pará; and that aims to assess the knowledge about leprosy communicators, signs and symptoms of the disease, the risks of illness and methods of prevention before and after an educational action. The study included 93 contacts, of which 48% believed that the disease was transmitted by household tools, as well as 54% said it was a lethal pathology. There were significant gaps in knowledge about leprosy by the household contacts. A positive impact of the educational action was identified, with an increase in the level of knowledge about leprosy among communicators.

**Descriptors:** Leprosy; Health education; Primary Health Care; Risk factors; Public Health.

Este é um estudo prospectivo, transversal, descritivo com abordagem quantitativa, desenvolvido de 2017 a 2018, numa unidade municipal de saúde de Belém-PA; e que tem como objetivo avaliar o conhecimento de comunicantes de hanseníase antes e após uma ação educativa, acerca dos sinais e sintomas da doença, os riscos de adoecimento e as formas de prevenção. Fizeram parte da pesquisa 93 comunicantes, das quais 48% acreditava que a doença era transmitida por utensílios, assim como 54% afirmava ser uma patologia letal. Existiam lacunas significativas de conhecimento sobre a hanseníase por parte dos contatos intradomiciliares contactados. Identificou-se impacto positivo da ação educativa, com aumento do nível de conhecimento sobre a hanseníase entre os comunicantes.

**Descritores:** Hanseníase; Educação em saúde; Atenção Primária à Saúde; Fatores de risco; Saúde Pública.

Este es un estudio prospectivo, transversal y descriptivo con enfoque cuantitativo, desarrollado entre 2017 y 2018 en una unidad municipal de salud de Belém-PA; su objetivo es evaluar el conocimiento de los comunicantes de la enfermedad de Hansen antes y después de una acción educativa, sobre los signos y síntomas de la enfermedad, los riesgos y las formas de prevención. En la encuesta participaron 93 comunicantes, el 48% de los cuales creía que la enfermedad se transmitía por medio de utensilios, así como el 54% que afirmaba que era una patología letal. Había importantes lagunas en el conocimiento de la enfermedad de Hansen por parte de los contactos intradomiciliarios contactados. Se identificó un impacto positivo de la acción educativa, con un aumento en el nivel de conocimiento sobre la enfermedad de Hansen entre los comunicantes.

**Descriptores:** Lepra; Educación en salud; Atención Primaria de Salud; Factores de riesgo; Salud Pública.

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## INTRODUCTION

**L**eprosy is an infectious and chronic pathology caused by the etiologic agent *Mycobacterium leprae* and transmitted through the respiratory tract in close and prolonged contact with a sick individual. The bacterium has tropism for superficial skin nerves and peripheral nerve trunks, and can also affect the eyes and internal organs and, in the absence of treatment, leads to irreversible physical disabilities<sup>1</sup>.

Worldwide, 208,619 new cases of the disease were reported to the World Health Organization (WHO) in 2018. Of these, 30,957 occurred in the Americas and 28,660 (92.6% of the Americas) were reported in Brazil<sup>2</sup>. Given this scenario, Brazil is classified as a country with a high burden for the disease, occupying the second place in the list of countries with the highest number of cases in the world, after India<sup>2,3</sup>.

Coping with leprosy is a priority for the Ministry of Health, with the main action strategies being the early detection of cases and the examination of contacts (intradomiciliar contacts), in order to prevent physical disabilities and favor the breaking of the transmission chain<sup>2</sup>. Contacts are individuals who live or have lived with a leprosy patient in the past five years and should be investigated according to the degree and type of living together<sup>4</sup>.

The likelihood of illness among communicants is higher, especially if the leprosy index case is multibacillary. Thus, public health policies reinforce the control of patients and especially their communicators, as they are a strong link in the epidemiological chain<sup>5</sup>.

Health education is a fundamental strategy of nursing practice aimed at controlling communicants, through an interactive/participatory way, allowing individuals to understand and absorb in an easier way the contents addressed on the theme<sup>6</sup>.

Preventive measures, such as health education and monitoring of leprosy control actions, imply an increase in the level of education and clarification about the disease, providing more effective self-care<sup>7</sup>.

The practice of health education effectively requires a multifaceted and appropriate approach. For that, active and stimulating methodologies of critical thinking are the best choice, considering that it allows the possibility of transforming what would simply be the transmission of knowledge, at a time when the health service user will have the opportunity to show their previous knowledge, associate it with daily information and weave a relationship between knowledge and experiences, thus allowing questions to arise<sup>8</sup>. This study aims to evaluate the knowledge of leprosy communicants before and after an educational action about the signs and symptoms of the disease, the risks of illness and the ways of prevention.

## METHOD

This is a prospective, cross-sectional, descriptive study with a quantitative approach. This was developed between August of 2017 and July of 2018, at the Municipal Health Unit of Guamá (UMS-GUAMÁ), located on the outskirts of the municipality of Belém-PA.

Participants in the study were those communicating over 7 years of age, with the intention of screening children under 15 years old (being authorized children under 18 years old, by the guardians, via declaration), not infected (with dermatoneurological exam and anti-PGL1 serological test. negative) and who agreed to participate in the study. Infected communicants and those who missed more than four consecutive educational action schedules were excluded.

Initially, a survey of medical records was carried out on the leprosy index cases treated or under treatment at the unit between 2016 and 2017 and their respective addresses. Then, the household contacts were contacted by phone to schedule the home visit and, in person, the study was explained and the educational action was invited to those eligible.

The educational action took place twice a week with up to 6 communicants per index case directed by nurses and assisted by academics. Upon arriving at the unit, the participants received a questionnaire with 10 multiple-choice questions (yes, no and I don't know), divided

into three blocks: means of transmission; Signs and symptoms; leprosy treatment and sequelae. This form was created and submitted to the Delphy<sup>9</sup> technique for content evaluation by 5 experts.

The completion of the questionnaire lasted an average of 5 minutes and the application of the just in time teaching method<sup>8</sup> directed the dynamics of a conversation wheel focused on the main doubts presented, with an approximate duration of 15 minutes.

Atlas with illustrative figures on the clinical forms of the disease and epidemiological control was also used. And, at the end of the educational action, the same questionnaire was applied to assess the participants' learning process. The closing took place with the distribution of a folder with information on the disease addressed to communicants.

The frequency data of the answers were tabulated in a spreadsheet of the Excel Office 2013<sup>®</sup> program, proceeding to the descriptive statistics of the values of percentages, absolute and relative frequency. For the inferential analysis, the Chi-square test of adherence was used to assess intra-group distribution and the Chi-square test of independence for evaluation before and after the educational action by the BioEstat 5.4 software. The 95% confidence interval (CI) and  $p$ -value  $\leq 0.05$  were considered.

For structuring the article, the STROBE<sup>10</sup> tool was followed, and the recommendations of the regulatory standards for research in Human and Social Sciences that are contained in Resolution No. 510/201611. This study was approved with opinion number 2,531,617 by the Research Ethics Committee of the Universidade Federal do Pará.

## RESULTS

135 communicators of the 54 index cases identified during the study period were estimated. However, seven (7) index cases were excluded due to incorrect addresses. Resulting a sample of 93 communicants from 47 residences of index cases.

The sociodemographic characteristics of the 93 household contacts show that the majority are female (65.62%), the predominant age group was 31 to 50 years (37.49%), followed by the age group 16 to 30 years (23.96%). Regarding education, there was a predominance of elementary education (54.17%), the occupations that stood out most were student and employee, both with 26.04% respectively, most said they were single (56.25%), as shown in Table 1.

Table 2 shows the communicators' knowledge about the mode of transmission, before the educational action and after the action. It is observed that half of the group of communicants (50.53%) claimed to be the disease transmitted by air, a proportion of 48.38% believed that the contamination could be due to sharing utensils, and a smaller but considerable percentage did not know inform (27.96%), this, before the educational action. After the action, the vast majority (98.92%) stated that transmission occurred over the air, a result with statistical significance ( $p$ -value  $< 0.0001$ ).

As shown in Table 3, it was identified that before the educational action, most of the communicators already had the perception that leprosy is not any spotting on the skin (68.81%), that leprosy spots have altered sensitivity (74.19%) and that the disease can lead to deformities (76.34%).

Alternatively, after the educational action, the percentages of correct answers to the same questions reached high percentages (all above 90%), a level of statistical significance of positive impact of the educational action was pointed out ( $p$ -value  $< 0.0001$ ).

According to Table 4, before the educational action, most participants described leprosy as a deadly disease (54.84%), whose availability of effective treatment (95.70%) offers specific medications (87.09%) and cure of disease (89.24%). After the educational action, there was a significant increase in the high mortality of the disease (92.47%) and the availability of effective treatment (100%), with a high potential for cure (98.92%), a result with statistical significance ( $p$ -value  $< 0.0037$ ).

**Table 1.** Sociodemographic characteristics of household contacts of leprosy patients treated at a Basic Health Unit, Belém - Pará, 2017 to 2018.

Sociodemographic characteristics	n	%	p-value
<b>Gender</b>			
Male	31	34.38	0,0031
Female	62	65.62	
Total	93	100.00	
<b>Age (years)</b>			
0 to 15	17	17.71	<0,0001
16 to 30	22	23.96	
31 to 50	36	37.49	
51 to 64	9	10.42	
≥65	9	10.42	
Total	93	100.00	
<b>Educational level</b>			
Elementary	51	54.17	<0,0001
High school	37	39.58	
Higher education	5	6.25	
Total	93	100.00	
<b>Occupation</b>			
Retired	15	15.63	0,1930
Student	24	26.04	
Self-employed	14	14.58	
Employed	24	26.04	
Unemployed	16	17.71	
Total	93	100.00	
<b>Marital status</b>			
Single	53	56.25	<0,0001
Married/Civil union	36	38.54	
Divorced	3	4.17	
Widowed	1	1.04	
Total	93	100.00	

**Table 2.** Knowledge of communicants about how leprosy is contaminated. UMS-Guamá, 2016 to 2017. Belém –Pará.

	n	%	N	%	p-value
<b>1 - IS LEPROSY AIRBORNE?</b>					
	BEFORE		AFTER		
YES	47	50.53	92	98.92	<0,0001 <sup>a</sup>
NO	20	21.51	1	1.08	
DO NOT KNOW	26	27.96	-	-	
Total	93	100.00	93	100.00	
<b>2 - IS LEPROSY TRANSMITTED BY SHARING UTENSILS?</b>					
	BEFORE		AFTER		
YES	45	48.38	6	6.45	<0,0001 <sup>a</sup>
NO	26	27.96	86	92.47	
DO NOT KNOW	22	23.66	1	1.08	
Total	93	100.00	93	100.00	
<b>3 - IS LEPROSY SEXUALLY TRANSMITTED?</b>					
	BEFORE		AFTER		
YES	17	18.28	7	7.53	<0,0001 <sup>a</sup>
NO	34	36.56	86	92.47	
DO NOT KNOW	42	45.16	-	-	
Total	93	100.00	93	100.00	

Test a: chi-square; b: G test

**Table 3.** Knowledge about the clinical characteristics of leprosy on the part of household contacts. UMS-Guamá, 2016 to 2017. Belém - Pará.

<b>4 - IS ANY SPOTTING ON THE SKIN LEPROSY?</b>					
	BEFORE		AFTER		
YES	7	7.53	5	5.38	
NO	64	68.81	87	93.54	<0,0001 <sup>a</sup>
DO NOT KNOW	22	23.66	1	1.08	
Total	93	100.00	93	100.00	
<b>5 - CAN LEPROSY SPOTTING HAVE LOSS OF SENSIBILITY</b>					
	BEFORE		AFTER		
YES	69	74.19	90	96.77	
NO	7	7.53	2	2.15	<0,0001 <sup>b</sup>
DO NOT KNOW	17	18.28	1	1.08	
Total	93	100.00	93	100.00	
<b>6 - CAN I HAVE DEFORMITIES DUE TO LEPROSY?</b>					
	BEFORE		AFTER		
YES	71	76.34	88	94.62	
NO	5	5.38	4	4.30	0,0001 <sup>a</sup>
DO NOT KNOW	17	18.28	1	1.08	
Total	93	100.00	93	100.00	

Test a: chi-square; b: G test

**Table 4.** Knowledge about the treatment of leprosy, by household contacts, UMS-Guamá, 2016 to 2017. Belém - Pará.

	N	%	n	%	p-value
<b>7 - DOES LEPROSY KILL?</b>					
	BEFORE		AFTER		
YES	51	54.84	6	6.45	
NO	23	24.73	86	92.47	<0,0001 <sup>a</sup>
DO NOT KNOW	19	20.43	1	1.08	
Total	93	100.00	93	100.00	
<b>8 - DOES LEPROSY HAVE A TREATMENT?</b>					
	BEFORE		AFTER		
YES	89	95.70	93	100.00	
NO	-	-	-	-	1,0000 <sup>b</sup>
DO NOT KNOW	4	4.30	-	-	
Total	93	100.00	93	100.00	
<b>9 - IS ANY MEDICATION CAPABLE OF TREATING LEPROSY?</b>					
	BEFORE		AFTER		
YES	3	3.23	4	4.30	
NO	81	87.09	87	93.55	0,0868 <sup>b</sup>
DO NOT KNOW	9	9.68	2	2.15	
Total	93	100.00	93	100.00	
<b>10 - DOES LEPROSY HAVE A CURE?</b>					
	BEFORE		AFTER		
YES	83	89.24	92	98.92	
NO	1	1.08	1	1.08	0,0037 <sup>b</sup>
DO NOT KNOW	9	9.68	-	-	
Total	93	100.00	93	100.00	

Test a: chi-square; b: G test

## DISCUSSION

Among the global commitments, leprosy is included in the United Nations (UN) Sustainable Development Goal 3 (SDG), which aims to promote well-being and a healthy life, with the goal of fighting AIDS epidemics, tuberculosis, malaria and other communicable and tropical diseases neglected until the year 2030<sup>12</sup>.

In addition, WHO brings the Global Strategy for Leprosy 2016-2020, which aims to reduce the rate of new cases with grade 2 physical disability to less than 1 case per 1,000,000 inhabitants and zero the number of cases with grade 2 in children<sup>13</sup>.

Such goals can be achieved through health education. To this end, there are educational practices, which comprise the activities of health teams and, through a constructivist praxis, with a focus on developing participants' reflection on their social environment and their living and health conditions, sharing knowledge resulting from their experiences and the improvement of collective processes to plan and carry out change actions<sup>14</sup>.

Law No. 7,498, of June 25, 1986, which regulates the professional practice of nursing, provides that educational practices are activities intrinsic to the professional nurse, aiming at improving the health of the individual, the family and the population in general. In this sense, nursing professionals should use educational actions as an instrument of their work, both individually and collectively, in order to empower individuals about the health and disease process and preventive measures, as well as therapeutic ones, promoting well-being and improvement of quality of life, emphasizing self-care<sup>6</sup>.

The present study demonstrated that there are still significant knowledge gaps in relation to leprosy by the household contacts contacted. This is a worrying fact, since the lack of knowledge can make it difficult to identify new cases, and lead to a late diagnosis, disabilities and sequelae.

The WHO states that health education enables participants to acquire knowledge about the general aspects of the disease, to collaborate in the detection of new cases and for timely treatment, as well as to help raise awareness by deconstructing false concepts, stigmas and related prejudices. to the disease<sup>13</sup>.

The profile of the individuals in this study highlighted the low level of education, this is an important factor to be taken into account in the elaboration of preventive measures, since these must be adequate to the socioeconomic level of the target population. Accordingly, the distribution and spread of leprosy has a close relationship with socioeconomic and cultural conditions, including low education. Several studies point to schooling as one of the factors that leverage socioeconomic difficulties and these in turn collaborate favorably for the maintenance of leprosy at the level of a public health problem<sup>15-18</sup>.

This fact, which coincides with the national epidemiological data referring to the proportion of new leprosy cases according to schooling, from 2014 to 2018, in which there was a predominance of new leprosy cases in individuals with incomplete elementary education 43.3%, in the Northern region this rate is almost 50%. When analyzing schooling by region, it is observed that the proportion of new cases with incomplete elementary education is higher in all regions of the country<sup>2</sup>.

Thus, the analysis of knowledge, carried out in the pre-test, was fundamental to understand the previous knowledge about the pathology, as well as to identify the weaknesses and thus shape the conversation wheel in order to enhance the learning space. As such, the post-action assessment was valid to capture which characteristics needed to be reinforced.

With regard to the way of leprosy contamination before health education, more than 48% believed that the disease was transmitted by sharing objects. This mistaken correlation is aggravating the social life of people with leprosy, who are often isolated by the lack of knowledge of family members. It is worth mentioning that pathology has always carried a load of prejudice and stigma that compromises early diagnosis, as well as hindering the quality of life of infected individuals<sup>19</sup>. There was a significant increase in the percentage of statements after the educational action.

As for contamination by the sexual act, most of the participants chose to point out that they did not know the answer. Thus, the lack of knowledge was highlighted, since even living with an individual who has or had treatment for leprosy, many contacts presented mistaken knowledge about the form of transmission. A similar finding was found in a study with 105

participants, 19% of whom were wrong or unaware of issues related to physical contact, use of collective environments and the sharing of personal objects by the person who has leprosy<sup>20</sup>.

Regarding previous knowledge about the clinical characteristics of leprosy, the percentage of correct answers was higher, which can be associated with living with individuals who manifest the disease. In this way, an alignment was made with those who were unaware, as well as a deepening of the signs and symptoms of the pathology, always with appropriate language for the public. Related to treatment, the biggest gap refers to the belief that the disease is deadly. However, the vast majority in advance already identified the existence of treatment, as well as the specificity of the drugs and the possibility of cure.

However, it was observed that after the educational action and the new filling of the forms, the percentages of correct answers reached high percentages, all above 90%. Thus, these actions showed a positive gain in knowledge about relevant information that aims to prevent the occurrence of new cases of the disease.

It is extremely important the commitment of health professionals to carry out preventive, promotional and educational measures in order to expand the knowledge of the general population<sup>21</sup>. Therefore, educational action for society presents itself as a device of great relevance to ensure autonomy and independence for health at the individual and collective level<sup>22</sup>. In this way, health education becomes a dynamic process whose objective is to empower individuals and/or groups in search of improving health and work conditions, in modifying the determinants and conditions of the health-disease process, considering its broad sense (employment, income, education, culture, leisure and life habits), seeking to stimulate inquiry, dialogue, critical reflection and shared action<sup>23</sup>.

The health professional must realize how relevant it is to develop arguments, before individuals, seeking to insert them in their health situation and sensitize them about the issues that guide health-disease, individually or collectively, directly impacting on effectiveness of self-care<sup>24</sup>.

In the role of nurses in terms of health education, there is an important tool for action to promote health and prevent injuries, providing self-perception, knowledge related to the severity of the disease and the possible effects on the body, in addition to personal empowerment to the formation of an emotional and motivational basis for self-care practices, in favor of health and the community<sup>25</sup>.

## CONCLUSION

The present brought the analysis of the knowledge about leprosy focused on the group of communicants, a group that was not much addressed in the studies. Here, the protagonism of educational action was identified as responsible for increasing the level of education about the disease, as well as the opportunity to clarify doubts and taboos about the disease. As demonstrated in the study, there were positive results after the educational action, showing its effectiveness. It is noteworthy that such actions must take place in an interactive and dynamic way, appropriate to regionalism and type of clientele, based on knowledge and experience

It is believed that the limitation of this study, guides the actions of attracting communicants for evaluation and control, which were hampered by several reasons, such as missing or outdated telephone contacts, addresses with deficient records (without number or without perimeter). difficult-to-access residence, inexistence of the list of contacts in the medical records, and also due to failure to attend the appointment. In addition to the application of a questionnaire created by the authors, instead of being validated. In turn, there is a scarcity of research that addresses the assessment of knowledge of leprosy communicants, which contributed to this study.

As a suggestion for the Health Unit, the construction of a plan, involving all professionals and the expansion of health education actions to contribute to the reduction of communicable diseases such as leprosy.

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### CONTRIBUTIONS

**Jean Vitor Silva Ferreira** and **Taís dos Passos Sagica** contributed to the collection, analysis and interpretation of data, writing and review. **Risângela Patrícia de Freitas Pantoja da Silva** and **Julliana Santos Ribeiro Lima** participated in the collection and analysis and interpretation of the data. **Maria Heliana Chaves Monteiro da Cunha** worked in the construction of the project, collection, analysis and interpretation of data, writing and review. **Aline Maria Pereira Cruz Ramos** participated in the writing and review.

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