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Understanding and attitudes of relatives of inmates regarding tuberculosis: a descriptive study

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ABSTRACT

Aim: to evaluate the understanding, the attitudes, and the practices of relatives of inmates regarding tuberculosis, and to evaluate the association between their understanding and the socio-demographical characteristics of this population. **Method:** this is a transversal descriptive study involving 95 family members of inmates. Data collection took place between June and July 2015, in a civil police station in the state of Paraná. **Results:** the majority of the interviewees (86%) reported that they had heard about the illness, and 71% showed little understanding regarding tuberculosis. No association was found between understanding the illness and socio-demographical and health conditions. Participants reported feelings of fear and shame in the case of contamination, and a desire to learn more about tuberculosis. **Conclusion:** the results reinforce the need for educational interventions for the evaluated population.

Descriptors: Tuberculosis; Education in Health; Prisons; Family; Public Health Nursing; Primary Health Care.

INTRODUCTION

Tuberculosis (TB) represents a serious problem in public health worldwide. It is responsible for approximately four thousand deaths per year in Brazil. It is important to note that, despite the technological developments and strategic policies in health, which aim to reduce and control the number of cases, there has been no decrease in the incidence rate of the illness in closed, dark, and poorly ventilated environments, characteristics typical of prison facilities in Brazil and around the world, which are susceptible places for TB infection⁽¹⁻²⁾.

At the end of 2014, the prison population of Brazil was 607,731 inmates for a total capacity of 376,669 places, an occupation rate of 161%. In Paraná, the number of detainees was 28,702, an occupation rate of 149%⁽³⁾. It is notable that the number of detainees for each prison unit is considerably higher than the existing and available accommodation. Additionally, the association of poor ventilation and hygiene, ineffective lighting, and inadequate health care services creates a favorable environment for the spread of TB. This draws attention to the importance of an early diagnosis, and a discussion regarding the means of TB infection, especially in this context⁽²⁾.

Based on such information, it is necessary to consider the exposition of the inmates and their family members who visit them on a regular basis. Therefore, it is important to evaluate the understanding and the behavior of relatives regarding TB, how this knowledge about the illness is spread through the community, identifying elements that affect how each individual searches for support and healthcare, and how these individuals adhere to the health actions proposed by the public health programs^(2,4).

The Brazilian National Policy for Integral Health Care to the People Deprived of Liberty

under the Prison System (PNAISP, in Portuguese) is regulated by objectives similar to those found in the Brazilian Unified Health System (SUS, in Portuguese). It considers the reduction and the management of aggravations to inmates' health through the development of actions aimed to promote, treat, and prevent illnesses, as well as full access to the primary health care network available. PNAISP proposes the expansion of these actions to the workers within the prison system, the family members and other people that have a bond with the inmates. Notwithstanding, a study shows the continuous incidence of new cases of TB in penitentiaries, which elevates the chances of propagation and transmission of the illness for the whole population⁽¹⁻⁵⁾.

In this sense, it is understood that an evaluation of the understanding, the attitudes, and the practices of relatives of inmates can enable the recognition of this portion of the population, who are not assisted by the healthcare professionals in the prison system, who are involved directly with the care of the detainees. Once the presence of relatives of inmates becomes a part of the weekly routine in prison units, this population also needs to be considered in the actions and professional conduct to be adopted.

Based on these arguments, the objective of this research was defined to be: to identify the understanding, the attitudes, and the practices of relatives of inmates regarding TB, and to evaluate the association between their knowledge and the socio-demographical characteristics of this population. Hence, the goal was to find possible gaps in their understanding about TB. Thus, the research makes a contribution to the planning of action and conduct to be created and improved for the control of the illness and reduction of new cases.

METHOD

This is a transversal study, with a descriptive nature, performed with relatives of inmates of the Civil Police Station in Sarandi, in the state of Paraná. The municipality of around 80 thousand inhabitants is located in the northwest portion of the State. It is the most populous city of the Metropolitan Region of Maringá, and also has the highest rates of violence⁽²¹⁾. The station studied has capacity for 49 people, but during data collection, it housed 150 inmates. The selection of this location was based on the fact that at various times TB had been found among the detainees.

Visits to the inmates take place once every week, during the morning; this is limited to one visit to each inmate per turn. On the visiting days, relatives and friends arrive before sunrise and wait in a line, organized by arrival, for the inspection schedule that starts at 08:30 AM.

In order to define the sample size, the following criteria were considered: the number of inmates (150), the prevalence of understanding about TB of 50%, an estimated error margin of 5%, and sample reliability of 95%, adding 10% for other possible losses, thus arriving in a minimal sample of 91 participants. The criteria of inclusion adopted were: having a familiar bond with an inmate, and being at least 18 years old. No criteria of exclusion were used.

The data were collected in the months of June and July 2015, while visitors were waiting prior to the beginning of visiting hours. The study participants were approached from 05:00AM to 08:30AM, they were informed about the aims of the study, and invited to participate. In the case of agreement, the interview took place outdoors, within a certain distance from the line, in order to ensure some privacy.

The data collection method used an instrument called CAP (for "Understanding, Attitudes, and Practices", in Portuguese). This

is used country-wide in Brazil, with inmates and professionals⁽⁶⁾. It comprises 40 questions divided into five thematic sections: I – Socio-demographical characteristics; II – Knowledge about TB; III – Attitudes and behavior towards TB; IV – Consciousness and information about TB; and V – Understanding about HIV/AIDS.

This instrument was adapted for the present study as follows: questions regarding the socio-demographical characteristics were changed so that they were more appropriate to the relatives; questions from the last segment were excluded and five questions were added to observe whether the relatives had any awareness regarding TB cases among inmates, whether they were informed about the necessary care to prevent the illness, as a whole and during visits, and whether they had received any materials or protective equipment to be used during the visits. It is important to note that not all the questions in the adapted instrument were used in the communications.

The data was double tabulated using the *Microsoft Office Excel* 2013 software, followed by corrections to avoid the inconsistency of data. The processing and analysis of data was through the SPSS software, version 20.0.

The understanding regarding the illness was measured by the evaluation of the answers to the questions from section II, which dealt with the signs and symptoms of the illness, and prevention methods, transmission, and cure of TB. These questions permitted more than one correct answer. The evaluation of the answers was undertaken by comparing with the information available in the Manual of Vigilance in Health, from the Brazilian Ministry of Health⁽⁷⁾. The level of understanding was established based on the sum of the number of correct answers. It was considered that the individual presented some understanding with 60% or more correct responses; and when the result was lower than

60%, it was considered that the person had little understanding of the topic, as these parameters were used by another study⁽⁴⁾.

An association between understanding and socio-demographical and health information was considered to be the preferable means to learn more information regarding the illness. The variables were analyzed through a chi-square test. The Mann-Whitney test was performed to analyze the variance between attitudes and behaviors, and the level of understanding regarding TB. For all tests, it was considered that there was a significant association when $p < 0.05$.

The development of the study followed the standards of the Resolution #466/2012, and the project was approved by the Permanent Committee of Ethics and Research in Human Beings of Maringá State University (UEM), under protocol #1.113.764, in the city of Maringá, state of Paraná. All participants of this research signed the Free and Clear Consent Agreement, in two ways.

RESULTS

Ninety-five relatives participated in the study. The majority were females (97.9%), white-skinned (77.9%), with ages varying from 19 to 39 years old (61.1%), and had no more than eight years of schooling (61%). The majority reported that they had learned something about TB (86.3%), and in more than half of cases this information had been given to them by health professionals (56%).

None of the interviewees reported having had TB treatment, however, some mentioned coughing with phlegm for more than two weeks (26.2%). With regard to their knowledge regarding TB, the majority reported some symptoms that are generally not characteristics of the illness. However, the classic symptoms of TB,

such as coughing for more than two weeks and a dry cough, were mentioned by a small portion of the sample (Chart 1).

Chart 1: Understanding of relatives of inmates about TB. Sarandi Police Station, Brazil, 2015.

Opinion about TB		
	n	%
Serious	44	46.3
Very serious	38	40.0
Do not know	10	10.5
Not serious	3	3.2
Symptoms of TB[†]		
Tiredness	66	69.5
Loss of appetite *	62	65.3
Chest pain	60	63.2
Fever*	59	62.1
Weight loss *	58	61.1
Shortness of breath	58	61.1
Unprovoked fever for more than seven days *	53	55.8
Headache	44	46.3
Coughing with bleeding *	39	41.1
Coughing with phlegm*	37	38.9
Night sweat*	32	33.7
More than two-week long coughing*	28	29.5
Nausea	19	20.0
Dry cough*	15	15.8

*Correct answers.

[†]Questions that permitted more than one correct answer.

The answers related to transmission methods and illness prevention demonstrated that a considerable part of the sample had an idea how transmission occurs and how it can be avoided. However, the number of individuals who selected incorrect answers was also considerably high, as seen on Chart 2.

Chart 2: Understanding of relatives of inmates about TB. Sarandi Police Station, Brazil, 2015.

	n	%
How to get infected by TB[†]		
Contact with the ill *	80	84.2
Through the air*	79	83.2
Sharing plates/utensils	63	66.3
Eating in the same plate	63	66.3

Through saliva	56	58.9	Praying	47	49,5
Cold showers/cold flooring	55	57.9	Covering mouth when coughing/ breathing *	46	48,4
Sharing cigarettes	47	49.5	Avoid sharing plates/utensils	39	41,1
Touching door handlers	24	25.3	Avoid shaking hands	18	18,9
Hand shaking	8	8.4	Close windows	17	17,9
How to prevent from TB[†]					
Avoiding closed/poorly ventilated places *	68	71.6	<i>*Correct answers.</i>		
Avoid contact with the person with TB*	62	65.3	<i>† Questions that permit more than one answer.</i>		
Isolate the ill/use mask *	61	64,2	With regard to the susceptibility to infection, more than half of the respondents declared that any person (65.3%) can be infected with the illness. However, the majority said that smokers (83.2%) and inmates (66.3%) are more vulnera-		
Medication	57	60,0			
Avoiding sharing cigarettes	54	56,8			
Washing hands, good hygiene *	54	56,8			
Avoid cold	53	55,8			
Good nutrition *	47	49,5			

Table 3: Attitudes and behavior declared as possible by relatives of inmates in the case of TB infection. Sarandi Police Station, Brazil, 2015

Attitudes and Behavior	Little Understanding	Understanding	p
	Average±SD (n= 72)	Average±SD (n = 23)	
Feelings of fear	2.26±1.35	2.48±1.47	0.517
Feelings of shame	1.61±0.74	1.48±0.84	0.471
Search for BCU	0.89±0.31	1.0±0.37	0.975
Self-treatment/pharmacy	1.54±0.58	1.74±0.81	0.284
Religious support	1.61±0.49	1.83±0.38	0.589

Mann-Whitney U test
SD: standard deviation.

Table 4: Association between socio-demographical characteristics and guidelines provided to relatives of inmates about TB. Sarandi Police Station, Brazil, 2015.

	Understanding				p
	Yes	%	Little	%	
Age					
18-39 years old	13	13.7	45	47.4	0.546
≥ 40 years old	10	10.5	27	28.4	
Race/Color					
White	17	17.9	57	60	0.79
Non-white	6	6.3	15	15.8	
Gender					
Female	23	24.2	70	73.7	0.442
Male	0		2	2.1	
Years of School					
From 0 to 8 years	14	14.7	44	46.3	0.156
≥ 9 years	9	9.5	28	29.5	
Had previous orientation about TB					
Yes	23	24.2	59	62.1	0.014
No	0		13	13.7	

Chi-square test.

ble. In a general evaluation of the understanding about TB, it was found that 75.8% have little understanding on the topic.

When referring to health behavior, 91.6% of the interviewees declared that they would search for a Basic Care Unit (BCU) for a consultation in the situation where they presented signs and symptoms of TB, and 59% declared they would find simple solutions in pharmacies and self-treatment procedures, with known medications and medicinal plants. There was no significant statistical difference between the attitudes and the behavior associated with the level of understanding regarding TB (Table 3).

In Table 4, it can be observed that there was no significant statistical association between the understanding about TB and the socio-demographical characteristics. However, a significant association between the lack of information about the illness and having little understanding about it is apparent.

More than half of the participants (54.7%) considered that they had enough information about TB. However, all reported that they would like to obtain more information, especially from health professionals (100%), followed by pamph-

lets, banners, and other printed material (57.9%), from newspapers and magazines (49.5%), and through the internet (32.6%).

In Table 5, it can be seen that there is a significant statistical association between having little understanding about TB and the desire to learn more from conversations with relatives, friends, and in religious places ($p < 0.05$).

DISCUSSION

The majority of the interviewees demonstrated having little understanding about TB regarding its infectious process, the signs and symptoms, preventive measures, and treatment. Therefore, these facts corroborate with the results found in national and international studies of the prison system workers and workers in the health care support system for incarcerated individuals⁽⁶⁾, relatives of people under TB treatment⁽⁸⁾, and the community as a whole^(9,11), which reinforces the necessity for health education. Furthermore, this indicates the need for intervention that is capable of changing the epidemiological profile of the illness, in particu-

Table 5: Consciousness of relatives of inmates and information provided about TB. Sarandi, police Station, Brazil, 2015.

Sources of information about TB	Total		Little Understanding		Understanding		p
	n	%	n	%	n	%	
Health professionals	95	100	72	75.8	23	24.2	-
Pamphlets, banners, and other printed material	55	57.9	45	14.7	10	13.3	0.100
Newspapers and magazines	47	49.5	36	35.6	11	11.4	0.850
Internet	31	32.6	22	23.5	9	7.5	0.440
Schools	23	24.2	16	16.8	7	7.3	0.420
Conversations with relatives and friends	23	24.2	22	23.5	1	1.0	0.028
Radio	23	24.2	18	17.4	5	5.6	0.750
TV	23	24.2	18	17.4	5	5.6	0.750
Religious spaces	15	11.4	15	11.4	-	-	0.012

Chi-square test.

lar those that are easily transmissible. Adequate information about TB must be shared and acknowledged by the population as a whole.

The findings demonstrate that 86% of the interviewees have already received some information about the illness, however, the results of this study demonstrate that 75.8% have little understanding about TB. It is important to highlight that 61% of the population studied have a maximum of eight years of schooling. The social gap constitutes a major issue for public health, as many diseases, and in particular TB, have causes, treatment, and prognoses related to life conditions, both based on the social and economic spectrum of the population⁽¹²⁻¹⁴⁾.

It is notable that, although an association between the understanding about the illness and the socio-demographical characteristics of the respondents was not identified, the existence of an association between not being informed of any aspect of the illness and having little understanding about it was apparent.

In this regard, it was noted that 61% of the interviewees reported the existence of persistent coughing for more than two weeks, a characteristic symptom of TB, and 60% of those had little understanding about the illness. It is acknowledged that a late diagnosis of TB is still a problem to be faced, once the behavior of the individuals and the demand for health services establish a period for searching for proper healthcare support⁽¹³⁻¹⁴⁾.

The period to diagnose TB was demonstrated by a study performed in Ribeirão Preto, Brazil⁽¹²⁾, in which it was shown that the delay in searching for healthcare services to diagnose TB was directly related to a proper understanding about the illness. In the same study, it was evident that 58% of its participants would search for healthcare services once the signs and symptoms related to TB arose, and a large number of the interviewees had little understanding

about the illness. These differences between the results of the study performed in Ribeirão Preto and this present study can justify the results of the analysis of understanding and the socio-demographical characteristics of this research, in which there were no statistically significant differences.

The fact that the majority of the participants signaled that they felt fear and shame in the case of a TB infection constitutes an important aspect to be considered by health professionals, as these feelings are a challenge to ensuring that patients adhere to the treatment. This is due to an apprehension about discrimination from friends and relatives, and also a lack of awareness regarding the illness and its significant likelihood of cure, when treatment is done correctly. The stigma of the illness arising from the lack of proper understanding of it can be changed by health professionals providing adequate information, associated with an offer of, and an improvement in, the access to healthcare services^(4,6,15).

The search for religious support was mentioned by the participants as means to avoid infection, and also to find a cure for the illness. A study⁽¹⁶⁾ performed in the state of São Paulo, Brazil, revealed that religious support was justified, based on the feeling of incapacity of people too ill to perform everyday life tasks, which were common to them before they became ill.

With regard to their attitudes, the interviewees affirmed that they would proceed with their treatment by themselves, using medication and medicinal plants. This attitude would be related, not only to falling ill from TB, but also in the case of infection by any other illness. This demonstrates that the process of falling ill and the means to search for healthcare are directly influenced by distinct factors, such as culture, religion, and socio-economic conditions, showing the necessity for healthcare services to provide

a more holistic assistance to the population, besides guaranteeing access to the healthcare support actions available^(14,15).

It is necessary to highlight that the interviewees declared that any person can have TB, however, they believed that smokers and incarcerated individuals are more susceptible to the illness, due to their social and health vulnerability. In a study⁽¹⁸⁾ performed in the interior of São Paulo state, Brazil, the results drew attention to the possibility of misconceptions between TB symptoms and other illnesses, in the situations where there could be external aggravation. This occurred because smokers are more susceptible to the same symptomologies of TB, such as coughing and shortness of breath. The study emphasized that it is essential to provide rigorous assistance from health professionals to detect the suspected symptoms and to speed up the process of evaluation of the clinical condition and treatment procedures⁽¹⁸⁾.

The fact that the sample studied identified that incarcerated individuals are more susceptible to illnesses is probably linked to constant disclosures of suspect and confirmed cases of TB by the administrative staff of the police station where the study was performed, from the end of 2014 to the beginning of 2015. On a national level, the probability of contamination by the illness in a prison environment is, on average, 27 times higher than in other environments⁽²⁾.

Even if the prison system works to contribute to a higher chance of infection, there is also the opportunity for diagnosis and treatment. This will bring benefits to health, not only of the inmate, but also for the professionals of this system, the relatives, and the community to which this inmate will later be released⁽³⁻¹⁹⁾. However, for actions to be considered successful, life conditions, structural limitations of the prisons, and the fragilities of healthcare services must be revised and improved⁽²⁻²⁰⁾.

Another study⁽²⁾, performed in five prisons of the penitentiary system of two municipalities in the Brazilian state of Pará, emphasized that the imprisoned person is capable of understanding his condition and overcoming the challenges to finding a cure for the illness. Researchers revealed that despite the health services located in the prisons, the treatment received in the prison units was of lower quality than that provided to the people out of confinement. Although the majority of the respondents had already heard of TB, it is important to highlight that all of them wished to have more information about the illness. The means of communication that were preferred by the respondents include: pamphlets, newspapers, magazines, TV news, radio, and the internet, as well as lectures and training, especially when performed by health professionals.

In this sense, the people's needs and their capacity to search for healthcare are composed of their individual behavior, influenced by culture, by beliefs, and by religions, thus, health professionals should establish an improved practice. The healthcare service provided, most of the time, is not satisfactory because the expectations of the patients goes beyond the biological dimension of the illness. There is a primordial need to build bonds, but the study has revealed that there is discrimination on the part of the interviewees against TB. That denotes the importance of the professionals' qualifications when establishing a compromise between people as inmates and the relationship with them as patients⁽¹⁵⁾. Therefore, the evaluation of their health and the recognition of their needs transforms the communication between the health professional and the patient. In a strategy of shared information, when the safety of people who are ill becomes really relevant, and questions and information are shared favorably, building a process of education and promoting

self-care practices builds their knowledge of certain topics. The printed material, recommended by the interviewees, is an educational method based on the intention to resolve known problems through the actions of the health team, and supports the development of the ability to be involved in the decision-making process⁽²⁰⁾.

Studies^(9,17,20) highlight that health education can be used as a yardstick to measure knowledge sharing, the development of self-care practices, and the autonomous position of the population. A critical and participative consciousness regarding the life and health conditions of the community they belong to are attributes of the professionals in primary care services, where there is an increasing struggle for a better quality of life.

CONCLUSION

The results show that the relatives of inmates studied have little understanding about tuberculosis and there is no association between their understanding of the illness and the socio-demographical conditions of health, attitudes, and behavior. An association was only found between this minimal understanding and the fact that people were not informed about the illness. Although the majority already had information regarding TB, a significant number of individuals declared that they would like to have more information, in particular from health professionals. They would like to see the creation of strategies and actions, mainly in health education, the creation of educational materials in an adequate format, and according to the needs of the population, and a guarantee of healthcare services.

It is important to mention the care provided by the professionals, especially the nursing teams, in caring for patients in a sensitive manner,

emphasizing the relationship and the bond between the participants. With this in mind, it would be possible to establish a real understanding of the issues, supported by the results of this research, and how discrimination against the illness and inadequate understanding of TB can interfere with an early diagnosis and a more effective treatment.

The instrument used was demonstrated to be effective in evaluating the previous understanding of TB among relatives of inmates. However, it was limited in establishing the veracity of the answers, as the plurality of the terminology 'understanding' implies. On the other hand, the study demonstrated its importance in showing the need for preventive care, especially due to the vulnerability of the environment in which the interviewees live.

Furthermore, it drew attention to the importance of recognizing the educational needs of the population, in which the management of actions are performed first by listening, by defining the problem, and the design of a plan of action, as a group. Education in health is a preventive and interventionist strategy, which reinforces knowledge, autonomy, self-care, and the understanding of the process of ill-health and quality of life in the different levels of care.

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Anderson da Silva Rêgo: effective scientific and intellectual contribution; concept; data acquisition; data interpretation; preparation of the manuscript; writing the manuscript.

Elza Monteiro da Silva: effective scientific and intellectual contribution; concept; data acquisition; data interpretation; preparation of the manuscript; writing the manuscript.

Sonia Silva Marcon: effective scientific and intellectual contribution; concept and design; data acquisition; data interpretation; preparation of the manuscript; writing the manuscript; critical review of the manuscript; final approval.

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