THE COMMUNITY HEALTH AGENT IN THE DETECTION OF TUBERCULOSIS CASES

Erika Simone Galvão Pinto*
Beatriz Estuque Scatolin**
Aline Ale Beraldo***
Rúbia Laine de Paula Andrade****
Reinaldo Antonio Silva-Sobrinho*****
Tereza Cristina Scatena Villa******

ABSTRACT

This descriptive cross-sectional study aimed to describe the structure of the primary health care services and the care provided by community health agents for the detection of tuberculosis in Natal. A total of 108 community agents were interviewed between September and December 2009 using a structured questionnaire with a Likert (1-5) scale to create indicators of *Structure* and *Care Provided* classified as: unsatisfactory, regular and satisfactory. Regarding *Structure*, the community agents evaluated the receive training in tuberculosis indicator as regular. Concerning the *Care Provided,* the indicators teaches how to collect, store and forward sputum sample were evaluated as regular, with the requests baciloscopy during home visits, and discussion and partnership with the community to identify respiratory symptomatic individuals indicators considered unsatisfactory. It is concluded that none of the indicators were evaluated as satisfactory and that the action of the Community Health Agent is complex, as it involves their training, and the structure and organization of the healthcare services, requiring the supervision of a nurse concerning activities from home visits to community activities.

Keywords: Health Service Evaluation. Primary Health Care. Community Health Agents. Tuberculosis.

INTRODUCTION

In 1999, the National Tuberculosis Control Plan introduced new possibilities for intervention with the tuberculosis (TB) patient, recommending the expansion of actions to control the disease to 100% of the municipalities, in the Primary Health Care (PHC) context. The Community Health Agent Program (PACS) and the Family Health Strategy (FHS) had special consideration, in order to increase patient access to diagnostic and treatment actions in all healthcare services[1].

Despite efforts directed toward decentralization of TB control actions in Brazil, the detection of cases in the PHC still represents one of the technical aspects that challenge the effective control of the disease. This challenge has been found in Natal, the focus municipality of this study, where, in 2009, 70% of the TB diagnoses were performed in the hospital network[2]. In this context, the Community Health Agents (CHAs) stand out as important actors to seek and identify suspected cases of the disease, because they act in the community as mediators between the health service and the users and between the scientific-medical knowledge and popular knowledge[3], and may contribute to the timely diagnosis of TB. Accordingly, institutional support is an important proposal that modifies the work modes[4], with regard to the preparation of these professionals and the teamwork.

In a survey of national and international literature conducted in PubMed, CINAHL, Medline, Lilacs, Embase and Scopus, covering the period 1990-2009, 15 articles were found that addressed the role of the CHA in TB control, of these only three approached their practice in case detection, focusing on the actions of searching for respiratory symptomatic individuals. Regarding TB, the studies reveal that obstacles are still faced in the actions

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*Enfermeira. Doutora em Ciências da Saúde Professora da Universidade Federal do Rio Grande do Norte (UFRN). E-mail: erikasgp@gmail.com
**Enfermeira. Doutoranda em Ciências da Saúde Na Escola de Enfermagem de Ribeirão Preto – Universidade de São Paulo(EERP/USP). Professora da Faculdade de Ciências da Saúde de Barretos Dr. Paulo Prata. E-mail: scatolin@eerp.usp.br
***Enfermeira. Doutoranda em Ciências da saúde na EERP/USP. E-mail: li_aab@yahoo.com.br
****Enfermeira. Doutora em Ciências da saúde. Professora da EERP/USP. E-mail: rubia@eerp.usp.br
*****Enfermeiro. Doutor em Ciências da Saúde . Professor da Universidade Estadual do Oeste do Paraná. E-mail: reisobrinho@unioeste.br
******Professor Titular da EERP/USP. E-mail:tite@eerp.usp.br

developed by the healthcare professionals, in the search for respiratory symptomatic individuals (SRSI), and in the way the healthcare services are organized[5].

In addition to the necessary training of the CHAs in the area of TB, monitoring the supervised treatment and consequently their cooperation in reducing rates of this disease in the community are essential to their contribution in the active search for TB. For this, ananalysis framework was established that allows the comprehension of the work of the CHA in the territory. Thus, this study is based on the concept of health surveillance as a technological and structural mode of the work process in the territory. This concept is based on the redefinition of the practices and of the organization of the work processes in healthcare, which, in the form of operations, aims to address the problems requiring attention and continuous monitoring .In this work logic, the intervention of the team is in the health problems of the territory, linked to intersectoral practice(mobilization and management of the social facilities)and giving the CHA the important role of social actor in the reorganization of the healthcare practices.

The structure of the PHC units that includes investments, infrastructure and training, contributing to the demand of the user in the healthcare service[6], will also be considered. These elements help to understand the work of these professionals. Few studies address the issue in question, therefore the aim of describing the structure of the PHC services and the care provided by PHC to detect TB cases in Natal becomes appropriate.

METHODOLOGY

This descriptive, cross-sectional study was performed in the municipality of Natal/RN, the population of which was estimated at 806,203 inhabitants in 2009, with its territory geographically divided into four Health Districts (HDs): North, South, East and West. The municipal PHC network is composed of 37 Family Health Units (FHUs) with 115 teams covering 33.7% of the municipal population and 23 Primary Health Units (PHUs) with nine PACS teams. The CHA coverage in the

municipality is 42.7%.The FHU teams are constituted by CHAs, nurses, auxiliary nurses or nursing technicians, and physicians. The work of the CHAs in the FHUs is supervised by one supervising nurse for every six CHAs (1:6), and in the PHUs this ratio is one nurse for every fifteen CHAs (1:15), which is consistent with the regulation of the Ministry of Health[7] which advocates, respectively, 1:12 and 1:30.

The study population consisted of 646 CHAs who worked in PHUs or FHUs, with the sample size calculated using the equation[8] $n = S_d^2 \cdot (Z_\alpha)^2 / B^2$, assuming the mean variance of the strata ($S_d^2 = 1$), the value proposed in the literature by Almeida and Macinko (2006)[9]; the difference between the simple sample mean of the strata and the mean of the population (B=0.2),with the probability of type I error equal to ($Z_\alpha = 1,96$) [8] and predicting a response rate of approximately 10%, n = 108 ACS was calculated. The sampling was carried out in two stages: proportional share according to the number of CHAs per HD and simple random sampling.

Data collection was conducted from September to December 2009, through interviews with the CHAs using a structured questionnaire developed based on the healthcare component evaluation framework *Structure-Process-Outcome* proposed by Donabedian (1980)[10] and Starfield (2002)[11].In this study, the components *Structure*, based on manuals of the Ministry of Health (availability of inputs, laboratory support and preparation of the CHA to develop TB case detection actions) and *Process* (care provided by the CHAs for TB cases detection) were considered.

The structured questionnaire was composed of 23questions, divided into three sections: **I - Characterization of CHAs:** gender, education, workplace, number of TB patients monitored, and length of practice. **II - Data regarding the structure of the PHC units for TB case detection:** baciloscopy request form; jar to collect sputum; refrigerator or cool box to store the baciloscopy; provision of training in TB; preparation to identify TB suspects; preparation to provide guidance regarding TB; preparation to give guidance on the collection of sputum; support from other healthcare professional faced with a suspected TB case.**III - Data related to care provided by the CHAs for TB case**

detection: identifies respiratory symptomatic individuals (RSIs) in the community; questions the presence of a cough during the home visit; notifies the nurse when finding any RSIs; takes sputum exam request to the users; teaches how to collect the material for the sputum exam and how to store and forward the sputum sample; questions the presence of a cough in TB transmitters; participates in community meetings to discuss the problem of TB; provides guidance for the community regarding TB; performs healthcare actions with community partners to identify RSIs.

The questions related to the characterization of the CHAs had scales of dichotomous responses and multiple choice responses with single answers. Sections II and III of the instrument contained a Likert type response scale, with a value between "one"and"five"; the most favorable responses receiving the highest value of the scale. The instrument was developed and tested based on similar previous studies, which provided support for the development of indicators related to the SRSI of TB in the practice of the CHA.

The sociodemographic data related to the CHAs were analyzed using descriptive analysis, presented through the frequency. For the structure and care provided variables, indicators were created from the mean value of the responses of the CHAs to each item of the instrument, with the respective confidence intervals (95%).The mean values between 1 and 3 were classified as unsatisfactory, values between 3 and 4, regular, and between 4 and 5, satisfactory. The project was approved by the Research Ethics Committee of the Federal University of Rio Grande do Norte, protocol No. 123-09.

RESULTS AND DISCUSSION

It was found that the majority of the CHAs were female (88.0%), with an average level of schooling (56.5%), worked in FHUs (88.9%),had monitored more than one TB patient (59.3%) during the period of their work as CHAs (Table 1), and had a mean length of practice of 10 years.

Table 1 - Distribution of the sociodemographic data of the Community Health Agents in Natal, 2009.

VARIABLES		n	%
Gender	Female	95	88.0
	Male	13	12.0
Schooling	Elementary Level	9	8.3
	Mid Level	61	56.5
	Technical Level	27	25.0
	Higher Level	11	10.2
Workplace	Family Health Unit	96	88.9
	Primary Health Unit	12	11.1
Number of TB patients monitored	None	25	23.1
	One	19	17.6
	More than one	64	59.3

Regarding the structures of the primary healthcare units for TB case detection (Table 2), the healthcare units had the baciloscopy form and pot to collect sputum (102; 94%) and refrigerators for the storage of the sputum samples (71; 66%).Faced with TB cases, the CHAs were supported by other healthcare professionals (105; 97%).

Table 2 - Frequency distribution of the variables in the structure of the healthcare services for the Search for Respiratory Symptomatic Individuals from the perception of the Community Health Agents, Natal, 2009.

VARIABLES	Yes	
	n	%
Baciloscopy form	102	94
Sputum collection pot	102	94
Refrigerator for storage of the sputum samples	71	66
Support from other professionals faced with a TB situation	105	97

Evaluating the means and confidence intervals related to the structure of the healthcare units (Figure 1), the availability of the baciloscopy application form and sputum pot were highlighted as satisfactory indicators. The place for storage of the collected material was evaluated as regular. The CHAs reported having satisfactory preparation to perform the SRSI and receiving support from other healthcare professionals faced with a suspected TB case, although the 'received TB training' indicator was classified as regular.
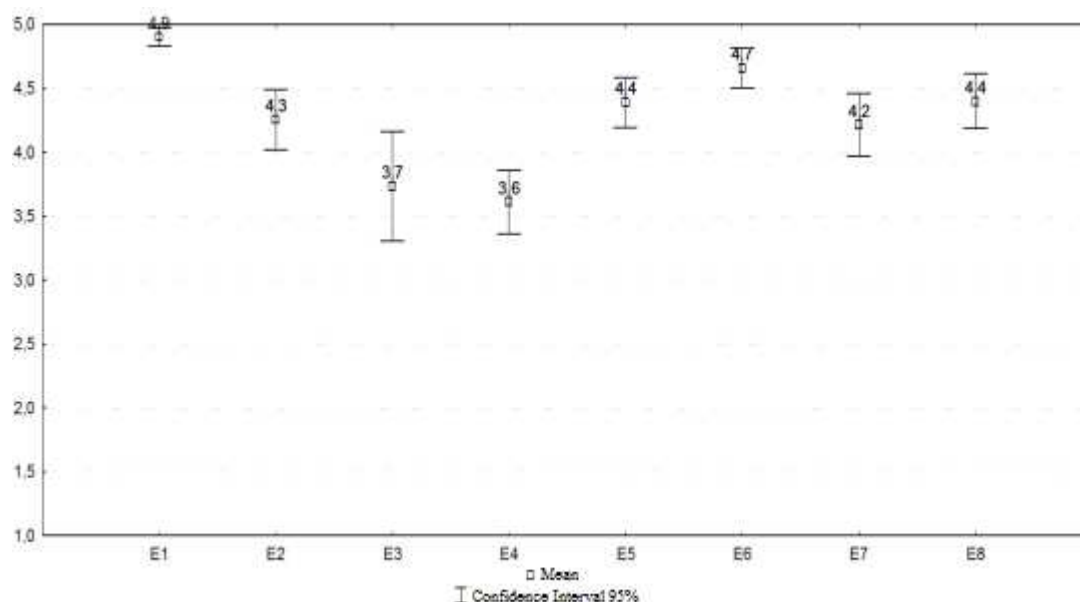

Figure 1 - Distribution of means and confidence intervals relating to the structure indicators of the Health Units for tuberculosis case detection in Natal, from the perception of the Community Health Agent, 2009. Key: E1 –Presence of sputum baciloscopy request form; E2 - Presence of sputum collection pot; E3 - Presence of refrigerator or cool box for storing biological material (sputum); E4 - Received tuberculosis training; E5 - Feel prepared to identify tuberculosis suspects; E6 - Feel prepared to provide tuberculosis guidance; E7 – Feel prepared to provide guidance on sputum collection; E8 - Feel supported by other healthcare professionals of the service faced with a suspected tuberculosis situation.

The majority of the results of the study showed favorable conditions for TB case detection by the CHA; however, the context of the municipality studied does not confirm this result, because in 2009, the PHC presented an insignificant performance of sputum baciloscopy for suspected RSIs(11.2%), with the majority of the diagnoses being performed in a hospital context (70% of notified cases)[2].This context leads to the reflection on the weaknesses found in the structure of the healthcare services, which include the provision of regular training in TB and the location for storing sputum baciloscopy. This result is even more worrying because the municipality presents inadequate laboratory support, with delays in generating the exam results and weaknesses in the collection of the baciloscopy samples in the PHC. Such deficiencies could lead to a lack of commitment on behalf of the healthcare team to incorporate case detection actions in to their routine, and constitute an obstacle in the motivation of the CHAs to investigate the RSIs in the territory.

The weaknesses can compromise the integrality of the care and burden the users with considerable economic and social costs, as they are responsible for the delivery of the baciloscopy to the laboratory of reference, distant from their home and PHC unit, endangering the planed actions[12].Given these limitations, many users may choose other points of entry into the healthcare system, such as emergency units of hospitals[13], where access to testing is facilitated.

In the care of the community health agent for tuberculosis case detection (Figure 2) the following indicators were classified as satisfactory: questions the presence of a cough

during home visits; notifies the nurse when any RSIs are found; questions the presence of a cough in TB transmitters, and provides guidance for people in the community regarding TB. The following indicators were classified as regular: identification of RSIs in the community; teaches how to collect the sputum exam, and stores and forwards the sputum sample. The indicators evaluated as unsatisfactory were: delivers the sputum baciloscopy request form during home visits, participates in community meetings to discuss the problem of TB, and performs health actions with community partners to identify RSIs.
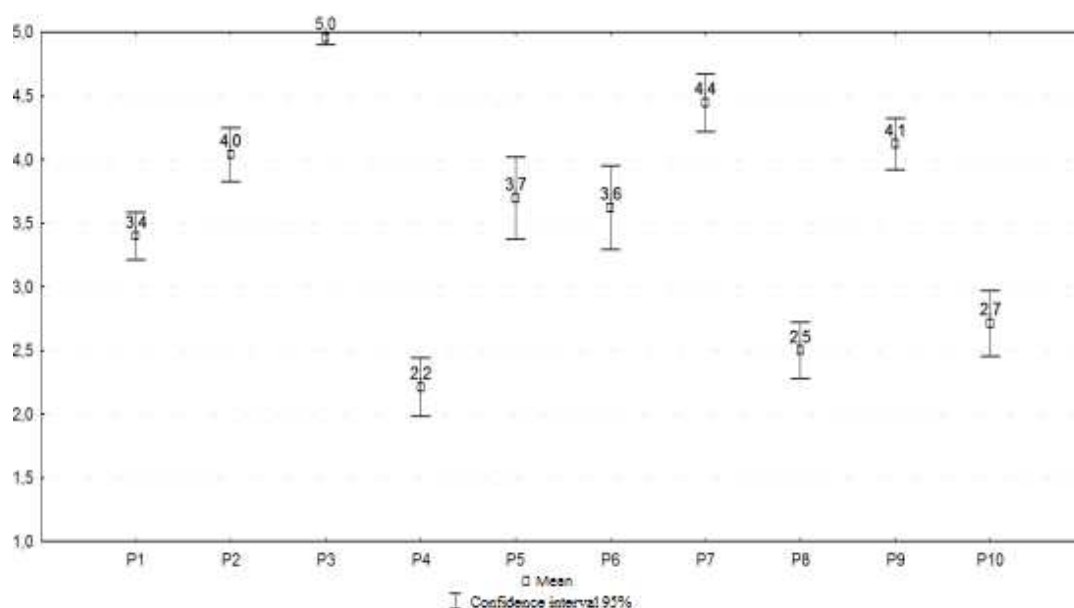

Figure 2: Distribution of the means and confidence intervals related to the variables of care provided by the Community Health Agents for tuberculosis case detection in Natal, 2009. Key: P1 - Identification of respiratory symptomatic individuals in the community; P2 - Questions presence of cough when making home visits; P3 - Notifies the nurses when encountering any respiratory symptomatic individuals; P4 - Takes sputum exam request to the users; P5 - Teaches how to collect the sputum exam; P6 - Teaches how to store and forward the sputum sample; P7 - Questions presence of cough in tuberculosis transmitters; P8 - Participates in meetings with the community to discuss the problem of tuberculosis; P9 - Provides guidance for people in the community regarding tuberculosis; P10 - Performs healthcare actions together with community partners to identify respiratory symptomatic individuals.

It should be noted that even with 'received training in TB' having a regular evaluation, the CHAs reported being prepared for the identification of RSIs and to provide guidance regarding the disease/sputum collection. However, they did not feel prepared to identify a RSI, even when questioning a cough in the community, nor to provide guidance on the performance of the baciloscopy. Given the above, even with the length of practice of over 2 years and experience in monitoring TB patients, it is believed that the CHA is not considering the cough as a possible sign of TB, a weakness already observed in other studies[14]. Such discussion is important and highlights the organization of the healthcare services, which may or may not be inspired by the real health needs of the territory. For effective TB control, it is important that the healthcare workers are more open to the epidemiological and social reality of the territory, breaking with the programmatic logic of establishment of needs. It is appropriate to emphasize that, in Natal, the practice of the CHA ends up reflecting the practice of PHC teams divorced from the reality of the municipality, where the incidence of TB in 2009 was higher than that of the country (38.1 cases per 100,000 inhabitants)[2]. This could be related to the fact that the municipality of Natal present gaps in the healthcare services, such as the delay receiving the baciloscopy results, the absence of the SRSI as a work routine, and the lack of investigation of TB transmitters, as well as the turnover of the professionals.

The results of the study showed limitations in the practice of the CHAs to establish partnerships with the community to discuss the problem of TB and to carry out the SRSI. In the work routine of these healthcare professionals, actions with a collective scope should be prioritized in order to reduce the lack of information of the population regarding health conditions and their determinants. Among the flawed points in their daily activities, the bureaucratic part stands out, as does the practice within the health unit, such as the reception, at the expense of more frequent home visits, indicating the need to reorganize their work in the community[15].

This discussion refers to the questioning of the form of supervision of the work of CHAs, where there are moments of tension and conflict in their daily work, such as sometimes being placed in an ambiguous situation, with technical and institutional poles prevailing[16], when the aim is the construction of political and community poles. However, due to the absence of a specific area of knowledge, which would provide a condition of autonomy for their work process, these actors are limited to the health-disease concept of their supervisors, often replicating the current healthcare model in their work context, focusing on the care for acute events and on the curative practice.

In the municipality studied, it appears that the difficulties in TB case detection in the PHC are more related to the team work process, showing that the challenge is more specifically the qualification of human resources that actually operate the inputs. Regarding the qualification of human resources, in Natal the TB training actions are promptly providedin a way that meets only the needs of the healthcare services. Generally, this training is provided by the coordination of the State and Municipal Health Departments for the PHC physicians and nurses, who are responsible for passing information to the CHAs in the health unit, which does not always occur. Furthermore, the focus of this training is on the clinical aspects of the disease (transmission, symptomology, supervision of medication) to the detriment of the epidemiological data and the political, economic, cultural and social components that involve TB and the detection of cases. However, the training

actions provided with this focus are insufficient to change the biomedical model. It is necessary to extend them to all the teams, with the positive results of confronting this condition appearing when different healthcare professionals become aware of the seriousness of the problem in question and incorporate daily actions to effectively address it. Thus, it becomes necessary to incorporate permanent education into the practice of the professionals of the PHC, which involves updating knowledge and skills, having the problems and challenges present in the work process as the initial point. With this type of education, the professionals would be qualified and able to analyze and intervene, as well as having the autonomy to establish transforming practices[17]. It is important to comprehend the subjective aspects of the CHAs, such as working and residing within the community, a fact that exposes them to the environment, placing them as transforming agents with their home visits, a moment in which they start to meet local needs, making them a link to unite the community with the healthcare team and system[18].

CONCLUSION

In seeking to fulfill the aims of this study –to describe the structure of the PHC services and the care provided by CHAs for TB case detection- the need was identified to improve the structure of the healthcare services, to train the entire healthcare team, and to assign a place for storing sputum baciloscopy, aiming to detect TB cases in the territory. Even with the training activities provided, the CHAs feel unprepared to identify the RSI (even when questioning a cough in the community) and to provide guidance related to the baciloscopy. It is important that the entire healthcare team and the community are aware of the need to develop the search for active cases, which requires integrated actions among its members to discuss the problem of TB.

Contextualized and ongoing training of CHAs that encompasses the technical, political, cultural and social aspects is recommended for an intersectoral practice. Furthermore, the valorization and systematic supervision of the

work of CHAs by the nurse are important in order to recognize them as singular members, due to the fact that they work and reside within the community.

It should be remembered that the study has limitations due to not capturing the subjectivity of the relationships between the CHAs and the healthcare team, therefore, there may be an information bias, as the results are limited to the perception of CHAs. In further studies, it is suggested that the subjectivity of the CHAs based on the SRSI is evaluated through quantitative or qualitative methodologies, which would enable the results of this study to be extended.

O AGENTE COMUNITÁRIO DE SAÚDE NA DETECÇÃO DE CASOS DE TUBERCULOSE

RESUMO

Estudo descritivo de corte transversal que buscou descrever a estrutura dos serviços de atenção primária à saúde e a atenção proporcionada pelo agente comunitário de saúde para detecção da tuberculose em Natal. Foram entrevistados 108 Agentes Comunitários no período de setembro a dezembro de 2009, utilizando instrumento estruturado com escala Likert (1 a 5) para criar indicadores de Estrutura e Atenção Proporcionada, classificados em: insatisfatório, regular e satisfatório. Quanto à *Estrutura*, os agentes comunitários avaliaram como regular o recebimento de capacitação em tuberculose. Na *Atenção Proporcionada*, foram considerados regulares os indicadores ensinar como coletar, armazenar e encaminhar a amostra de escarro e como insatisfatória a solicitação de baciloscopia durante as visitas domiciliares, bem como a discussão e parceria com a comunidade para identificar sintomáticos respiratórios.Conclui-se que nenhum indicador foi considerado satisfatório e que a ação do Agente Comunitário de Saúde é complexa, por envolver a sua formação, a estrutura e a organização do serviço de saúde,exigindo a supervisão do enfermeiro desde as visitas domiciliares até as atividades comunitárias.

Palavras-chave: Avaliação de Serviços de Saúde. Atenção Primária à Saúde. Agentes Comunitários de Saúde. Tuberculose.

ELAGENTE COMUNITARIO DE SALUDEN LA DETECCIÓN DECASOS DE TUBERCULOSIS

RESUMEN

Estudio transversal descriptivo que tuvo como objetivo describir la estructura de la atención primaria de salud y la atención proporcionada por el agente comunitario de salud para la detección de la tuberculosis en los servicios de Navidad. Entrevistamos a 108 agentes comunitarios en el período septiembre-diciembre, 2009 mediante cuestionario estructurado con Likert (1-5) escala para crear indicadores de la estructura y proporcionado Atención clasifican en: insatisfactorio, regular y satisfactorio. En cuanto a la estructura, los agentes comunitarios evalúan como recibir entrenamiento regular en la tuberculosis. Proporcionada en la Atención , se consideran indicadores regulares enseñan cómo recolectar , almacenar y enviar una muestra de esputo y la solicitud como frotis insatisfactoria durante las visitas domiciliarias , así como la discusión y colaboración con la comunidad para identificar los síntomas respiratorios . Se llegó a la conclusión de que ningún indicador fue satisfactorio y que la acción del Agente Comunitario de Salud es complejo porque implica su formación, estructura y organización de los servicios de salud es importante, ya que la supervisión de una enfermera las visitas domiciliarias a las actividades comunitarias.

Palabras clave: Evaluación de Servicios de Salud. Atención Primaria de Salud. Agentes Comunitarios de Salud. Tuberculosis.

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Corresponding author: Erika Simone Galvão Pinto - Universidade Federal do Rio Grande do Norte – UFRN - Campus Universitário Lagoa Nova. Natal, RN – CEP - 59078-970. E-mail: erikasgp@gmail.com.