



## Access to health care and diagnosis of tuberculosis

Acesso ao atendimento à saúde e diagnóstico da tuberculose

Acceso a la atención de salud y diagnóstico de la tuberculosis

Dândara Nayara Azevêdo Dantas<sup>1</sup>, Bertha Cruz Enders<sup>1</sup>, Rosemary Álvares de Medeiros<sup>1</sup>, Rudhere Judson Fernandes dos Santos<sup>1</sup>, Caroline Evelin Nascimento Kluczynik Vieira<sup>1</sup>, Ana Angélica Rêgo de Queiroz<sup>2</sup>

The objective was to know the evaluation of patients with tuberculosis regarding the access to health care and the diagnosis of the disease. It is a cross-sectional quantitative study made in Natal, RN, Brazil, from February to September 2012, with 60 patients diagnosed with tuberculosis. Data were collected using a questionnaire and analyzed using descriptive statistics. Access to health care was considered easy by 80% of patients. Of those, 35% considered it easy because of the short time to get a doctor's appointment and 21.7% because of their relationship with the health professionals. The access to the diagnosis of the disease was also evaluated as easy (85%). Of this total, 33.3% rated it as easy, once the exams were made in the health service and 13.3% due to the short time to get immediate doctor's appointment. It is concluded that the organization of the services was crucial for the good or bad evaluation of the access to the assistance to health and diagnosis of the disease.

**Descriptors:** Tuberculosis, Pulmonary; Patient Satisfaction; Health Services Accessibility; Diagnosis.

Objetivou-se conhecer a avaliação dos pacientes com tuberculose quanto ao acesso ao atendimento à saúde e diagnóstico da doença. Estudo transversal, quantitativo, realizado em Natal, RN, Brasil, entre fevereiro/setembro de 2012, com 60 indivíduos diagnosticados com tuberculose pulmonar. Os dados foram coletados por questionário e analisados através de estatística descritiva. O acesso ao atendimento à saúde foi considerado fácil por 80% dos pacientes. Destes, 35% o consideraram fácil devido a rapidez para obter consulta e 21,7% por ter vínculo com profissionais. O acesso ao diagnóstico da doença também foi avaliado como fácil (85%). Desse total, 33,3% avaliaram a facilidade devido os exames terem sido realizados no local do atendimento e 13,3% pela aquisição de consulta imediata. Conclui-se que a organização dos serviços foi determinante para classificação da facilidade ou dificuldade do acesso ao atendimento à saúde e diagnóstico da doença.

**Descritores:** Tuberculose Pulmonar; Satisfação do Paciente; Acesso aos Serviços de Saúde; Diagnóstico.

El objetivo fue conocer la evaluación de pacientes con tuberculosis cuanto el acceso a la atención de salud y al diagnóstico de la enfermedad. Estudio transversal, cuantitativo, realizado en Natal, RN, Brasil entre febrero/septiembre de 2012, con 60 personas con diagnóstico de tuberculosis. Los datos fueron analizados por cuestionario y analizados por estadística descriptiva. El acceso a la atención de salud fue considerada fácil por 80% de los pacientes. De éstos, 35% consideraron fácil debido a la rapidez para consulta y 21,7% por tener relación con los profesionales. El acceso al diagnóstico también fue evaluado como fácil (85%). Del total, 33,3% evaluaron la facilidad de realización de los exámenes en el local de atención y 13,3% la adquisición de consulta imediata. En conclusión, la organización de los servicios fue crucial para clasificación de facilidad o dificultad del acceso a la atención de salud y diagnóstico de la enfermedad.

**Descritores:** Tuberculosis Pulmonar; Satisfacción del Paciente; Accesibilidad a los Servicios de Salud; Diagnóstico.

<sup>1</sup>Universidade Federal do Rio Grande do Norte. Natal, RN, Brazil.

<sup>2</sup>Hospital Walfredo Gurgel. Natal, RN, Brazil.

Corresponding author: Bertha Cruz Enders

Rua Pedro Fonsra Filho, 9041, Ponta Negra, CEP: 59090-080. Natal, RN, Brazil. E-mail: bertha@ufrnet.br

## Introduction

The attention to health as a right of everyone and a duty of the State was guaranteed by the Brazilian Constitution in 1988 through the elaboration of social and economic policies with the purpose to provide universal and equalitarian access to the actions and services for the promotion, protection and recovery of health<sup>(1)</sup>. Although such access, as a right, is a complex concept, involving, among other attributes, the relation among the use of the health services available and the need of those who search assistance<sup>(2)</sup>, whether for the first time or for the treatment of the disease.

In order to provide a better access of the users to the assistance, the Unified Health System was organized through a net of care to integrated health, regionalized and hierarchical in increasing levels of complexity, in which, the entrance door corresponds to the first health service searched by the user. Among the services referred to as an entrance door, the following ones should be highlighted: the primary attention to health, urgency and emergency attention, psychosocial attention and special services of open access<sup>(3)</sup>.

Concerning the assistance of the respiratory symptoms and diagnosis of tuberculosis, the emergency rooms and hospitals are, currently, the main entrance door to the health system<sup>(4)</sup>. The search of these services for diagnosis purposes is against to what is preconized by the hierarchical organization of the assistance to health in the Unified Health System which establishes the taking of this action to the units of primary attention to health as a priority<sup>(5)</sup>.

It is supposed that, in the case of the search of diagnosis of tuberculosis, this alteration of the flow can happen due to the difficulty of access of the patient to the assistance in the service of primary attention to health<sup>(6)</sup>. Such event can be a problem for the control of the disease, once, the access to the assistance to health is the main step for the early diagnosis, for the effective treatment, the reach of the cure of the patient with tuberculosis and the breaking of the transmission chain of the disease.

When considering that the search of the service involves a behavioral decision by the patient who experiences the need of attention, his perspective on such experience of access to the health institutions for the solution of his infirmity, becomes an important source for the evaluation of this situation.

It should also be highlighted that the access is an important indicator of impact of the primary attention and a valuable instrument to improve the Unified Health System<sup>(7)</sup> and, for such, it is important to develop the studies on the access to those services, under the perspective of the users, in order to contribute for the deepening and widening in the approach of the theme.

In this study, the access is considered as the admission of the user through the entrance door at the moment of expressing his need<sup>(8)</sup>. Backed by those considerations the following question arises: What is the evaluation of the patients with tuberculosis concerning the access to the assistance to health and diagnosis of the disease? The guiding reference will be used in the present investigation, the theoretical contributions on the primary attention to health, an instance for the solution of most health problems, which establishes the access to the way the patient experiences such characteristic of his health service<sup>(9)</sup>.

It is believed that the exposition of the evaluation of the users concerning the access to assistance and diagnosis of the tuberculosis can contribute to the transformation of practices and reorganization of the health services aiming at providing and improving the quality of assistance and admission of such clientele. So, the aim of this study was to know the evaluation of the patients with tuberculosis concerning the access to the health assistance and diagnosis of tuberculosis.

## Method

It is a cross-sectional study of quantitative approach, made from February to September, 2012, in Natal, RN, Brazil. It was developed in the health units of the county, during the monthly appointments

of the nurses for the assistance of the treatment of tuberculosis, or in the patients' homes, through home visits.

The population of the study consisted of people diagnosed with lung tuberculosis. The sample calculation was used for the finite population for the quantification of the size of the sample. For such, 304 diagnosed patients with lung tuberculosis notified in the System of Information of Diseases and Notification were considered in 2010, with a margin of error of 0.05, which resulted in a sample of 60 patients.

Subjects older than 18 years of age and who were after the second month of treatment of the lung tuberculosis in a county health unit of Natal, RN, Brazil, were included in this research. The patients who were in jail or had a diagnosis for mental disorder were excluded.

The selection of the subject was made accidentally until reaching the number specified for the sampling. For such, two nursing students and a master's degree student of the Program of Post-graduation in Nursing, dully trained to recruit the participants and to apply the instrument used, went to all health units of Natal and identified the subjects who attended the criteria of illegibility of the study from the book of register for tuberculosis.

Afterwards, the nurse who was responsible for the assistance of the treatment of those patients was asked about the date and time of the next nursing appointment at the health unit or about the feasibility of having a home visit made with the Health Communitarian Agent. In one of these occasions, the patients under treatment of tuberculosis were invited to participate in the study, and in case they accepted the invitation, they answered the questions of the instrument used for data collection.

The data collection was made through a structured questionnaire, elaborated from the discussion in a group or research, previously tested

and validated by nurses with expertise, subdivided into seven parts and formed by closed questions.

For this study, some social variables will be considered (sex, ethnic group, time of study, marital status); concerning the access to the assistance in the health service (first venue for health assistance, time to have the first appointment, classification concerning easiness/difficulty of access to the appointment, aspects which make the access to health assistance easy or difficult) and concerning the access to the diagnosis of tuberculosis (venue of diagnosis of tuberculosis, examination of the diagnosis, classification concerning easiness/difficulty of access to the diagnosis examination, and aspects which make the access to the examination easy or difficult).

It is highlighted that the social variables were displayed in a dichotomy manner, the time variable was organized in days and the other ones had multiple choice answers.

The data were implanted in an electronic data bank through the free version of the *Statistical Package for the Social Sciences* 15.0 and analyzed through the descriptive statistics using frequencies, percentages, average and standard deviation.

The study was approved by the Committee of Ethics in Research of the Universidade Federal do Rio Grande do Norte - CAAE No. 0246.0.051.000-11 and according to Resolution 196/96 of the Health National Counsel in effect for the researches involving human beings and the participants were asked to read and sign the Free Informed Consent Form.

## Results

It was identified that 55% (n=33) of the patients with tuberculosis were male, 58.3% (n=35) were non-white and 58.3% (n=35) did not have a partner. As to the time of education, 61.7% (n=37) had from 0 to 9 years of study.

### Access of the patient with tuberculosis to the health assistance

It was observed that 48.3% (n=29) of the patients with tuberculosis searched for hospitals as the first venue for health assistance; 26.7% (n=16) searched for health units and 25% (n=15) searched for the services of ambulatory care or emergency rooms.

Concerning the waiting time to have the assistance, the patients who searched for the health unit waited an average of 5.75 days to be assisted ( $\sigma=8.82$ ). The ones who searched for ambulatory care or emergency rooms waited an average of nine days

( $\sigma=23.679$ ) and the one who searched for hospitals had assistance on the same day ( $\sigma=1.3$ ).

Concerning the access to assistance/appointment, 80% (n=48) of the total number of users considered the access as easy and 20% (n=12) as difficult. The evaluation as to the aspects which made the access to assistance/appointment easy or difficult in the health services is described in Table 1.

It is highlighted that the short time to get an appointment was mentioned among the other items evaluated concerning the easiness of access to the assistance (35%/n=21) and the delay to be assisted was predominant among the other items of difficulty of access (6.7%/n=4).

**Table 1** - Aspects which made easy or difficult the access to assistance/appointment at the health service searched for in the evaluation of the patients with tuberculosis

Aspects	First health service searched			
	Health unit	Ambulatory/ emergency room	Hospital	Total
	n(%)	n(%)	n(%)	n(%)
<b>Facilitators</b>				
Short time to be assisted	3 (5.0)	6 (10.0)	12 (20.0)	21 (35.0)
Link with the professional	3 (5.0)	4 (6.7)	6 (10.0)	13 (21.7)
Near home	3 (5.0)	2 (3.3)	-	5 (8.3)
Health plan/paid appointment	-	2 (3.3)	2 (3.3)	4 (6.7)
Organization of the service	2 (3.3)	-	-	2 (3.3)
Presence of a professional to assist	1 (1.7)	-	-	1 (1.7)
Quality in the assistance	-	-	1 (1.7)	1 (1.7)
Stratification of risk (priority)	-	-	1 (1.7)	1 (1.7)
<b>Difficulty</b>				
Delay to be assisted	1 (1.7)	1 (1.7)	2 (3.3)	4 (6.7)
Line up early to get an assistance number	3 (5.0)	-	-	3 (5.0)
High demand of patients in the service	-	-	2 (3.3)	2 (3.3)
Sending patients to another venue	-	-	1 (1.7)	1 (1.7)
Health service closed	-	-	1 (1.7)	1 (1.7)
Long distance between the health service and home	-	-	1 (1.7)	1 (1.7)

## Access of the patients to the diagnosis of tuberculosis

In 55% of the cases (n=33), the obtainment of the diagnosis of tuberculosis did not occur in the first health service searched. Among the exams which diagnosed the disease, the chest radiography predominated in 41.7% (n=25) of the cases; the sputum examination in 40% (n=24); the tomography in 11.7% (n=7) of the cases; tuberculin skin test in 5% (n=3) and the signs and symptoms in 1.7% (n=1).

The access to the exam which diagnosed the disease was considered easy by 85% (n=51) of the

total number of the users and by 15% (n=9) as being difficult. The evaluation of the patient as to the aspects which made easy or difficult the access to these examinations in the services that diagnosed tuberculosis is described in Table 2.

According to the patients, the fact that the examination was made in the same venue of the assistance to health is highlighted among the other aspects evaluated as facilitators (33.3%/ n=20). The delay to have access to exam of diagnosis prevailed among the other aspects considered as a difficulty to the access to the exam of diagnosis (11.7%/ n=7).

**Table 2** - Aspects which made easy or difficult the access to the exam of diagnosis of tuberculosis which diagnosed the disease, under the evaluation of the patients

Aspects	Venue of diagnosis of tuberculosis			
	Health unit	Ambulatory/ emergency room	Hospital	Total
	n(%)	n(%)	n(%)	n(%)
<b>Facilitators</b>				
Exams of diagnosis made in the same venue of assistance	2 (3.3)	1 (1.7)	17 (28.3)	20 (33.3)
Short time to be assisted	3 (5.0)	2 (3.3)	3 (5.0)	8 (13.3)
Link with the professional	-	2 (3.3)	5 (8.3)	7 (11.7)
Quick access to examination	1 (1.7)	1 (1.7)	3 (5.0)	5 (8.3)
Health plan/paid examination	-	3 (5.0)	1 (1.7)	4 (6.7)
Professional orientation	1 (1.7)	-	2 (3.3)	3 (5.0)
Medical request	-	1 (1.7)	2 (3.3)	3 (5.0)
Near health service	-	1 (1.7)	-	1 (1.7)
<b>Difficulty</b>				
Delay to access the examination	1 (1.7)	2 (3.3)	4 (6.7)	7 (11.7)
Pay for the examination	-	1 (1.7)	-	1 (1.7)
Difficulty to obtain the examination request	-	-	1 (1.7)	1 (1.7)

## Discussion

The study revealed a greater predominance of patients with tuberculosis of the male sex, non-white, without partners and with short time of study. Such findings confirm with researchers made in different regions of the country<sup>(10-11)</sup>.

The main entrance door of these patients to the health assistance was the hospital, a service of tertiary level of attention. This fact is equally shared by another study developed in Brazil which identified that this service of attention to health corresponded to the search of 40% of the patients of tuberculosis<sup>(11)</sup>. On the other hand, other studies showed a greater

search for primary attention to health as the entrance door for the access to the diagnosis of the disease<sup>(4,12)</sup>.

The low search for the service of primary attention to health, identified in the present investigation, can have happened due to the low coverage of the Family Health Strategy in the county of Natal, which at the time of the data collection was 31.13%<sup>(13)</sup>. Besides that, it can be related to the difficulty of access, supposition of the incapacity and mistrust that this service cannot provide solution facing the need of health presented and it does not have available beds for the assistance to health<sup>(10)</sup>.

It is believed that a great part of the patients with tuberculosis, discovered by the Family Health Strategy, searched for the service of the network of attention which they considered more accessible to admit them and provide solution to the health problem they presented.

The data presented as to the waiting time to get an appointment shows the incapacity of the services of primary and secondary attention to admit this clientele quickly. In this sense, it is highlighted that the short time to obtain the access to assistance in health, by part of these patients is indispensable, once they have the disease already established and therefore need immediate assistance in order to prevent the worsening of the clinical condition and a greater dissemination of the bacillus in the community.

Besides that, it is possible to identify that, independently of the venue searched, a great part of the patients with tuberculosis evaluated the access to the assistance/appointment as being easy. For such, several organizational geographical and economical/financial factors contributed positively for such evaluation, and the short time to get assistance and the link with the health professionals were the main factors which contributed for this perspective. This result was similar<sup>(14)</sup> to the one found in a study made in Ribeirão Preto, São Paulo, Brazil.

The proximity of the house to the health service was also a factor considered as facilitating to the

access to the assistance to health, especially regarding the people who searched the health unit. However, it is highlighted that this geographical aspect must not be seen isolated, once the search to the health services does not depend only on the geographical distance, or on geographical barriers, but the way the users are admitted and solved their problems in the service searched<sup>(15)</sup>.

On the other hand, the satisfaction of the user concerning the access to assistance can be due to the simple fact of having been assisted, independently of the efforts to get it<sup>(16)</sup>.

The delay in obtaining the appointment and the need to line up early in the morning to guarantee the assistance were the main factors evaluated as difficult to the access to the health assistance. And the latter, was identified only in the services of primary attention to health. They are obstacles originated from the manner of organization of the services which were also described in a qualitative researched developed with the patients with tuberculosis in Natal<sup>(15)</sup>.

Therefore, it is highlighted that both the time to obtain assistance/appointment as well as the distance of the house were important factors for the evaluation of the classification of the patients regarding that easiness or difficulty of the access to the assistance to health, therefore, they can be the target of actions of the county managers and health professionals, aiming at strengthening the primary attention to health as a priority venue of the search of the patients with tuberculosis for the assistance to health.

It can also be observed the difficulty of access of the patient to have the diagnosis of tuberculosis, once most of them did not get it in the first health service searched. Such fact was also identified in another study developed in Brazil, which registered that 71.4% of the patients could not have the diagnosis in the first health service searched<sup>(17)</sup>.

Besides that, the lack of effectiveness of the primary attention to health is also analyzed in order to control the disease, once it was the venue responsible

for the smaller number of diagnosis of tuberculosis. Such deficiency at this level of attention has also been observed in other investigation<sup>(4,18-19)</sup>.

The predominance of diagnoses in the services of the tertiary levels of the attention shows the incapacity and unsatisfactory performance of the primary attention to health to control tuberculosis. And therefore, the network of attention to health in the context of the Unified Health System must be better studied with the purpose to analyze the capacity of this service to perform the decentralizing role of the actions to control tuberculosis.

Among the diagnoses available, the chest radiography was used as the main option to confirm tuberculosis. This result was expected, once among the services of the network of attention to health, the tertiary level was the one which had the largest number of diagnosis of the disease and it is the venue which presents the highest technologic density and availability for this examination.

Besides that, studies show that some professionals of those venues, among them the nurse, do not require sputum smear which contributes for the permanence of the diagnosis of tuberculosis centered on the medical doctor and on the use of resources of higher technological density, for example, the X-ray<sup>(20)</sup>.

Most patients, independently of the venues of the diagnosis of the disease, evaluated the access of these examinations as easy. For such, organizational, geographical and economical/financial aspects contributed for this positive evaluation, and the organizational factors of health service were: having the examination at the same venue of the assistance, having immediate and free medical appointment, link with professionals which made the access to the examination easy and short time to do the examination; those were the most relevant and determining aspects for such classification.

From this analysis, it is observed that the satisfaction of the users concerning the access to the diagnosis examinations is related to organizational factors, which, in turn, need to be intensified and

strengthened in the scope of primary attention to health, aiming at enhancing the effectiveness of this service for the diagnosis of tuberculosis.

As a predominant factor which made difficult the access of the patient to the diagnosis examination of the disease, the delay to obtain this attention to health is highlighted. Such aspect can be related to the following issues: managerial, concerning the organization of the services of health, the lack of material, or the incapacity of the health professionals to be aware of tuberculosis; those phenomena were not analyzed in the present study and must be better investigated in other researches so that new strategies can be created in order to decrease the presence of this limiting factor of the diagnosis of the disease.

At last, the way the patients with tuberculosis see and experience the access to the services of health they need contributed for the construction of their own concepts and strategies of access, and says much about the capacity of the system to correspond to their expectation and needs as well as the guarantee of the right to be healthy<sup>(2)</sup>.

## Conclusion

With this study, it can be noticed that the patients undergoing treatment of tuberculosis evaluated the access to the assistance to health and the diagnosis of the disease as easy. Among the most determinant aspects for this evaluation, some organization of factors of the health institutions are highlighted which, in turn, also showed to be peremptory for the negative evaluation regarding the access to these services.

The fact that the investigation occurred under a quantitative perspective limits the understanding of the contextualization and the meaning of the phenomenon investigated. So, the development of qualitative studies is suggested in order to complement the results present in the current research.

At last, it is believed that the manner of organization of the service must be better analyzed

by the local managers and health professionals aiming at reorganizing them in order to provide a greater access of the assistance and diagnosis of the tuberculosis for the patients and consequently, to decrease the worsening of clinical symptoms and greater community infectivity.

## Collaborations

Dantas DNA and Enders BC contributed for the conception, field data collection, analysis, interpretation of the data, writing of the article, writing of the article and final approval of the version to be published. Medeiros RA, Santos RJF and Vieira CENK contributed for the analysis, interpretation of the data, writing of the article and final approval of the version to be published. Queiroz AAR contributed for the field data collection, writing of the article and final approval of the version to be published.

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