



ORIGINAL ARTICLE

SOCIOECONOMIC-CULTURAL BARRIERS DELAYING THE TUBERCULOSIS DIAGNOSIS

BARREIRAS SOCIOECONÔMICO-CULTURAIS QUE RETARDAM O DIAGNÓSTICO DA TUBERCULOSE

BARRERAS SOCIOECONÓMICAS-CULTURALES QUE RETARDAN EL DIAGNÓSTICO DE LA TUBERCULOSIS

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ABSTRACT

Objective: to identify the socioeconomic and cultural barriers delaying the diagnosis of tuberculosis. **Method:** this is a descriptive, exploratory study with a quantitative approach developed with 42 professionals of the Family Health Strategy in Parnamirim/RN. The collection was based on The Primary Care Assessment Tool using the Likert Scale. **Results:** search for the nearest service home “Always” (47.6%); burden of the patient by the transportation to the health service and difficulty shifting “Never” and “Sometimes” (28.6%); difficulties in convincing the patient to reap sputum smear microscopy to “usually” (33.3%). **Conclusion:** the resistance to the practice of examination and acceptance of the disease before signs and symptoms are social and cultural factors to delay the diagnosis of tuberculosis, essential in treating the disease. **Descriptors:** Tuberculosis; Primary Health Care; Diagnosis.

RESUMO

Objetivo: identificar barreiras socioeconômico-culturais que retardam o diagnóstico da tuberculose. **Método:** estudo descritivo-exploratório, com abordagem quantitativa, desenvolvido com 42 profissionais da Estratégia Saúde da Família, em Parnamirim/RN. O instrumento de coleta foi baseado no The Primary Care Assessment Tool, utilizando-se a Escala de Likert. **Resultados:** procura pelo serviço mais próximo de casa “Sempre” (47,6%); gasto por parte do usuário com transporte até o serviço de saúde e dificuldade de deslocamento “Nunca” e “Às vezes” (28,6%); dificuldades em convencer o usuário a colher escarro para baciloscopia “Quase sempre” (33,3%). **Conclusão:** a resistência quanto à prática de exames e aceitação da doença diante dos sinais e sintomas são fatores sociais e culturais para retardar o diagnóstico da tuberculose, fundamental no tratamento da doença. **Descritores:** Tuberculose; Atenção Primária à Saúde; Diagnóstico.

RESUMEN

Objetivo: identificar barreras socioeconómicas-culturales que retardan el diagnóstico de la tuberculosis. **Método:** estudio descriptivo-exploratorio, con enfoque cuantitativo, desarrollado con 42 profesionales de la Estrategia Salud de la Familia en Parnamirim/RN. El instrumento de recolección fue basado en The Primary Care Assessment Tool utilizándose la Escala de Likert. **Resultados:** búsqueda por el servicio más próximo de casa “Siempre” (47,6%); gasto por parte del usuario con transporte hasta el servicio de salud y dificultad de desplazamiento “Nunca” y “A veces” (28,6%); dificultades en convencer al usuario a recoger esputo para baciloscopia “Casi siempre” (33,3%). **Conclusión:** la resistencia a la práctica de exámenes y aceptar la enfermedad frente a los señales y síntomas son factores sociales y culturales para retardar el diagnóstico de la tuberculosis, fundamental en el tratamiento de la enfermedad. **Descriptors:** Tuberculosis; Atención Primaria a la Salud; Diagnóstico.

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INTRODUCTION

Tuberculosis (TB) is an infectious disease that emerged thousands of years ago with severe health problems in different locations and significant harm to the social context because it is directly related to backwardness and inequality in socioeconomic development of a country. It was controlled in developed countries in 1980, but the information did not match the reality as new cases continued to emerge.¹

According to estimates, the new cases index fell throughout the world seen that 8.6 million people came to develop this disease. Decrease in the incidence rate is the main objective of the World Health Organization (WHO) aiming to achieve a 50% reduction in mortality in the world by 2015. So far, there was 45% reduction still missing 5% to be achieved. In 2011, Brazil was in 22th position among the worst countries in the world in the number of cases of TB per sample of 100 thousand inhabitants. In the total cases and in absolute numbers, the country went to 17th position with 83,000 cases in 2011.²

In the state of Rio Grande do Norte (RN), there were 934 new cases of TB reported in 2010 with an incidence of 29.5/100,000. The rate of the state resembled the Brazilian by having considerable drop in the number of cases in the last 10 years. When assessing the state mortality rate, it is shown 1.7/100,000 in 2009, and in the same period the cured cases were 67.5% and 8.5% among new abandoned treatments.³ In the municipality of Parnamirim/RN, the incidence rate of TB per 100,000 population was 31.18% in 2011 and 82.50% of them were cured smear positive, with 0.00% mortality rate.⁴

To diagnose TB, it is essential to have contact with the health system starting with collecting and evaluating data to enable diagnosis of the disease since when it is diagnosed as early as possible, the results are satisfactory and treatment, most often successful.⁵

Coughing is one of the main among the symptoms suggestive of TB. When it lasts for three weeks or more, the individual starts having respiratory symptoms and the Basic Health Units (UBS) should have the discovery of these cases as soon as possible in their routine in the diagnostic process of the disease. Sputum smear microscopy is the method for this diagnosis to allow discovery of the sources of infection confirming the presence of bacillus.⁶

There are other means to confirm the disease as the Kock bacillus culture, achieved

in suspected cases of TB and presenting negative result of sputum test, as well as the radiological examination in suspected cases and tuberculin test. However, both must be confirmed by bacilloscopy.⁷

More new cases could be discovered if there are not social, economic and cultural barriers that hinder rapid access to accurate diagnosis of the disease. Treatment of TB assigns significant costs both for the family and for the sick person and every expense that arises is a barrier to care.⁸

Early diagnosis is considered a challenge to health institutions even being essential with factors related to the service organization and different ways of spreading the disease. Moreover, not only depends on the available professional and service, but also the interest of the population to seek appropriate care.⁹

Even though it is severe disease, it is treatable in most cases, especially when treatment is initiated immediately and carefully monitored. When dealing with active tuberculosis the disease spreading is quickly prevented, since after days of starting treatment, the power to infect is lower and it is not necessary to be removed from contact with the family or the community.⁷

In the new model of the Unified Health System (SUS) that favors a participatory practice linked to the whole community for the health of paid-form, there is the Family Health Strategy (ESF) essential for early diagnosis and user treatment with TB concluded with effectiveness and local staff through consultation, assessing and referring the individual to treatment and, if necessary, also referring to the specialties. Thus, the monitoring is started at low complexity and can be expanded to the discharge according to the need of the patient.³

Aiming to avoid abandoning treatment before healing, the Directly Observed Treatment (DOTS), was created. This type of strategy has been applied in all parts of the world establishing five effective steps to control these human beings: government commitment to the basic control activities; case detection by sputum smear microscopy; standardized treatment of six to eight months; uninterrupted regular supply of standard drugs with registration and notification system for cases that allow dynamic monitoring of treatment outcomes for each patient and Control Program Tuberculosis (PCT). The DOTS is the ESF nurses' responsibility as well as all staff trained to encourage the patient adoption and end treatment in search of healing. Nurses of the UBS against the organization of services

are responsible for supervised work satisfactorily in TB control.¹⁰

Studies show benefits of DOTS in the success of the ESF, though missing evaluations of this strategy in certain municipalities which indicate a high incidence of the disease, and it is necessary for research on the spot as the practice of DOTS and not only records of the information system. With evaluation of DOTS in these municipalities by the ESF professionals, impacts the effectiveness of the program will be possible to measure.¹¹⁻¹³

Given these observations, the researchers were motivated to develop this research by living with people with TB during treatment obtained in stages areas in the academic period, and graduation courses that addressed the public health awakening interest in this theme, but also to realize that most patients already came to the clinic with the disease in a frank evolution. Therefore, the question is what leads the individual to look so late the professional help and ESF professionals fail to identify these citizens still in respiratory symptomatic phase.

This study is justified by identifying barriers that hinder or delay the diagnosis of TB enabling healthcare professionals to get information to help them knowing the importance of early diagnosis to better treatment and cure of these individuals. It is relevant because it could contribute in some way to other research that addresses the theme in evidence. Thus, this study aims to identify the socioeconomic and cultural barriers that delay the diagnosis of tuberculosis.

MÉTHOD

This is a descriptive study with a quantitative approach, developed in the city of Parnamirim (RN). The subjects were professionals of ESF belongings to the metropolitan region of Natal/RN, and the data collection was accomplished from March to November 2014.

Among the 42 ESF teams of the city, there were 14% (n=06) of teams randomly selected to participate. Inclusion criteria were: professionals hired by the municipality of Parnamirim/RN to work in the ESF, be a doctor, nurse, practical nurse or community health worker and available to participate, totaling 42 professionals. The exclusion criteria were: not active professionals in the period of data collection.

The instrument in the study was The Primary Care Assessment Tool (PCAT) in the version directed to health professionals, formulated and validated for rapid assessment

of primary care services and adapted to program actions and control of TB. The variables contained in the instrument are related to socio-economic and cultural barriers that influence the delay in the diagnosis of TB, in addition to the characteristics of the organization of health services and the possible factors that hinder health professionals to identify a case of TB.

The interview consisted of scales of varying ratings as dichotomous and Likert scale where zero would have the “do not know and does not apply” and the values of one to five recording the degree of preference relation or agreement of the statements. The data were processed using the Statistical Package for Social Sciences (SPSS) 20.0. For the descriptive analysis of data, the frequency distribution of variables and calculation of indicators were used. The incidence rates were expressed according to their distribution per 100,000 population and cure rates and drop in percentage. The research project was approved by the Ethics Committee in Research of the Potiguar University in Natal (UNP) in compliance with Resolution 466/12 of the National Health Council (CNS) with CAAE nº 07073712.6.0000.5296.

RESULTS AND DISCUSSION

The research found that 76.2% of the 42 health professionals were female and 23.8% were male, 14.3% of them were doctors, 14.3% were nurses, 14.3% were nursing technicians and 57.1% were community health workers; 23.8% had other employments, and in relation to satisfaction with pay 9.5% classified it as Very Good; 35.7% as Good and 45.2% as Regular; regarding the satisfaction in working in the ESF, 30.9% said it was Very Good; 47.6% said it was Good and for 16.7% it was Regular.

When asked about the first place people look when they need health care, the professional answered that 71.4% UBS; 19.1% the Emergency Unit (APU) and 9.5% the hospital. None of the professionals believe that patients search other sites such as pharmacy, religious site and home of healers.

When the patient knows the workings of the health institution, he searches this service by feeling the need to care to reconcile the social, religious, personal or physical, and can help to develop measures for a timely and efficient treatment.¹⁴

Being the UBS the gateway to health care, these are preferably chosen by patients when they need assistance. Therefore, the ESF is essential in TB control characterizing the public policy model of primary care whose

work ranges from assistance in the UBS the home link facilitating the process of promotion and prevention through the reception offered by the team.¹⁵ These results are similar to current research when the professionals were asked what place the patient search when they need health care accounting 71.4% for the UBS.

The patients feeling helpless, unprotected and damaged in their health search for the UBS as the host is critical to creating bonds. They meet the professional approach work and have the opportunity to assess the history of collaborating for the activemonitoring.³

As for the search for alternative therapies, it was identified that 38.1% of patients who are treated at the health service only "sometimes" look for alternative therapies such as prayer, teas and other and look for the nearest service, 47.6% said that "always" look for the nearest service of their residence.

It is up to the ESF provide assistance creating a link to the patient considering the context in which he is inserted along with the entire multidisciplinary team. It is known that the host, the link, and accountability for the whole practice are essential to the individual incentive adherence to TB treatment.¹⁶

It is identified that the severity of symptoms is "Always" the reason that leads the patient to go to the health service and this is the opinion of 40.5% of the professionals. The encouragement of family and friends in 42.9% and trust that the patient has with professionals who assist them 52.4% "usually" is why they seek the service.

The literature states that the importance of the patient through the first symptoms is to understand that he is ill and it is an initial form of contact with the disease and that always when looking for help in the health service will be based on the signs and symptoms they start to affect the daily lives of these individuals directly. There are determining factors to cope with the disease and search for early diagnosis and treatment as perception that friends and family have to live together directly with this patient and have freedom to alert them the seriousness of the situation especially when it begins to show symptoms, life that the patient has with the health professionals and the bond that is created are fundamental and should be rapidly established.¹⁷

The bond is a principle of care that promotes trust between the patient and the health professional, valuing treatment guidelines and minimizing abandonment.¹⁸ This study identified a link relationship of the

patient when showing symptoms of TB with the UBS when professionals health reported that 40.5% "always" and 52.4% "usually" seek the unit giving a reasonable margin of access of this population to UBS when feeling sick.

When asked if the patient financially bears transport and has difficulty moving to the UBS, 23.8% reported that they "sometimes" have this difficulty, but it was found that 28.6% of users "never" need to pay the transport to travel to the health service.

Geographical access, means of transport and financial conditions are part of the health services searching. Despite the treatment of TB is free, it generates expense to the patient and family having to pay for transportation, lost days of work and the difficult location of the UBS is often listed as major economic barriers to seeking treatment,¹⁹ even observing in this study that 28.6% of those TB patients "never" have expenses for getting to UBS.

It was identified in 33.3% that professionals "usually" have difficulty convincing the patient to collect the sputum for examination of smear.

This difficulty is related to the trust that the individual has with the professional as well as be able to explain the procedure correctly, passing security in his words, guiding, taking his questions, reducing fears that the patient is exposed. This difficulty is not always connected only to the patient but much more to the training of the professional who must have specific and technical skills that also involves the psychological and nurses for being ahead of UBS and treatment of disease, must together with the professionals of the ESF be aware of the support and assistance that the individual needs at the moment of resignation so later they do not feel responsible for the diagnosis delay.²⁰

As for the process of work, especially in the performance of health professionals for suspected cases of TB and patients already diagnosed, the results may have been directly influenced by the social, economic and cultural barriers that still interfere in the search for care and therefore in delaying the diagnosis and treatment of this disease. Good working conditions, both at the structural level and the level of training is essential to achieve good results in assisting TB patients. However, attitudes related to job involvement are considered essential.²¹

Researchers showed that the favorable factor in adherence to TB treatment is a team of doctor, nurse, social worker, and visitor, in which an outcome expected to more or less than 85%. In this investigated scenario, there

is not a visitor for an active search, reducing the adherence of these patients to treatment and search for the UBS.²²

CONCLUSION

Given the results found, it was noted that currently the social, economic and cultural barriers still interfere in the pursuit of service and consequently delay the diagnosis and treatment of TB. However, the fact of having access to the units within their district without the need for spending to move around from the place of residence to the UBS and the support they receive from health professionals and mainly because they have free medicine for all the treatment of disease, the only unit to decrease favors the other aforementioned barriers.

Accessibility is not only related to reaching the service, but all the professionals do for the patient to remain him in the unit from diagnosis to the end of treatment since the accessibility shows the idea of something of easy access and within reach of all.

TB control is linked to the improvement of the factors included health services, such as reliable information system, expansion of decentralized care that allow implementation of supervised treatment, training of professionals, strengthening teamwork and optimization of reference and counter-reference.

The results of the study say that the late diagnosis of TB occurs mainly as a result of cultural factors to the first demand for medical attention. For professionals, patients choose the search for UBS as a gateway to present any symptoms, but there is a little demand that prefers alternative therapies.

Most of the time what determines the search for the UBS is how the patients face the disease. Thus, for a contact with these units, it is necessary to be trust and responsibility of the health professional to interact with this individual, since there is often resistance in treatment adherence and it will be up to the professional offer providing a qualified assistance.

TB treatment assigns significant costs both for the family and for the sick person, and every expense that arises is access barrier linked to social and economic factors. In fact, the patient has not always been able to pay for additional expenses such as transportation from seeking a UBS that is close to his house this fact presented the results at the low percentage of the number of patients who pay for transportation to get to this unit.

It was observed that the economic factor tends minimally influence the early diagnosis of TB, considering that over the years improvements have been achieved to help the patient of the disease facing expenses that may arise and difficulties related most often to excessive journey work or any other factor that does not allow them to attend the unit. Cultural and social factors are more decisive given that the patient refuses to submit to the basic tests to detect the disease as smear microscopy for lack of knowledge resulting from few health education actions.

Based on the results obtained, it is suggested the practice workshops with ESF professionals to discuss the theme of this study so that goals are outlined that allow breaking the barriers encountered during the research, emphasizing the active search for respiratory symptoms.

REFERENCES

1. Barreira D, Grangeiro A. Avaliação das estratégias de controle da tuberculose no Brasil. Rev Saúde Públ [Internet]. 2007 [cited 2016 Mar 28];41(Supl. 1):4-8. Available from: <http://www.scielo.br/pdf/rsp/v41s1/apresentacao.pdf>
2. Who. Global Health Observatory: Tuberculosis [Internet]. 2011 [cited 2016 Mar 28]; Available from: <http://www.who.int/gho/tb/en/>
3. Brasil. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Vigilância Epidemiológica. Tratamento diretamente observado (TDO) da tuberculose na atenção básica: protocolo de enfermagem. Brasília: Ministério da Saúde [Internet] 2011 [cited 2016 June 25]; Available from: http://bvsmis.saude.gov.br/bvs/publicacoes/tratamento_diretamente_observado_tuberculose.pdf
4. Brasil. Ministério da Saúde. Sala de Apoio à Gestão Estratégica. Situação de saúde, indicadores de morbidade. Tuberculose. Brasília: Ministério da Saúde [Internet] 2012 [cited 2016 June 25]; Available from: http://189.28.128.178/sage/paineis/morbidade/corpao.php?uf_origem=24-167-3373960&cidade_origem=240325-214199&uf_cidade=RN%20-%20Parnamirim&no_estado=RN%20-%20Rio%20Grande%20do%20Norte&co_agravo=9&no_agravo=Tuberculose&no_agravo1=Tuberculose%20-%20Taxa%20por%20100.000%20%20hab/ano&no_agravo2=Tuberculose%20-%20Percentual%20entre%20casos%20novos&tip_o_agravo=morbidade

5. Oliveira MF, Arcênio RA, Ruffino-Neto A, Scatena LM, Palha PF, Villa TCS. A porta de entrada para o diagnóstico da tuberculose no sistema de saúde de Ribeirão Preto/SP. *Rev Esc Enferm USP* [Internet]. 2011 [cited 2016 June 25];4(45):895-904. Available from: <http://www.scielo.br/pdf/reeusp/v45n4/v45n4a15.pdf>
6. Rodrigues ILA, Cardoso NC. Detecção de sintomáticos respiratórios em serviços de saúde da rede pública de Belém, Pará, Brasil. *Rev Pan/Amaz Saúde*. [Internet]. 2010 [cited 2016 June 23];1(1):67-71. Available from: <http://scielo.iec.pa.gov.br/pdf/rpas/v1n1/v1n1a10.pdf>
7. Brasil. Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica. Vigilância em Saúde. Cadernos de Atenção Básica. Dengue, Esquistossomose, Hanseníase, Malária, Tracoma e Tuberculose. Brasília: Ministério da Saúde [Internet] 2008 [cited 2016 June 25]; Available from: http://bvsms.saude.gov.br/bvs/publicacoes/cab_n21_vigilancia_saude_2ed_p1.pdf
8. Jackson S, Sleigh AC, Wang GJ, Liu XL. Poverty and the economic effects of TB in rural China. *Int J Tuberc Lung Dis* [Internet]. 2006 [cited 2016 July 12];10(10):1104-10. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/17044202>
9. Augustinus HA, Ten AAH, Bijlsma MW, Malla P, Shrestha B, Delnoij DM. The road to tuberculosis treatment in rural Nepal: A qualitative assessment of 26 journeys. *BMC Health Serv Res* [Internet]. 2008 [cited July 2016 12]; 8(7):1-7. Available from: <http://bmchealthservres.biomedcentral.com/articles/10.1186/1472-6963-8-7.pdf>
10. Silva ACO, Sousa MCM, Nogueira JA, Motta MCS. Tratamento supervisionado no controle da tuberculose: potencialidades e fragilidades na percepção do enfermeiro. *Rev eletrônica enferm* [Internet]. 2007 [cited 2016 July 15]; 9(2): 402-16. Available from: https://www.fen.ufg.br/fen_revista/v9/n2/pdf/v9n2a09.pdf
11. El Kamel A, Joobeur S, Skhiri N, Mhamed SC, Mribah H, Rouatbi N. Fight against tuberculosis in the world. *Rev Pneumol Clin*. [Internet]. 2015 [cited 2016 July 15]; 71(2-3):181-7. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/24878188>
12. Reis-Santos B, Pellacani-Posses I, Macedo LR, Golub JE, Riley LW, Maciel EL. Directly observed therapy of tuberculosis in Brazil: associated determinates and impacto in

- treatment outcome. *Int J Tubercul Lung Dis* [Internet]. 2015 [cited 2016 July 15]; 19(10):1188-93. Available from: <http://www.ncbi.nlm.nih.gov/pubmed/26459531>
13. Huynh GH, Klein DJ, Chin DP, Wagner BG, Eckhoff PA, et al. Tuberculosis control strategies to reach the 2035 global targets in China: the role of changing demographics and reactivation disease. *BMC Medicine* [Internet]. 2015 [cited 2016 July 15]; 13:88. Available from: <https://bmcmmedicine.biomedcentral.com/articles/10.1186/s12916-015-0341-4>
14. Beraldo AA, Arakawa T, Pinto ESG, Andrade RLP, Wysocki AD, Silva Sobrinho RA, et al. Atraso na busca por serviço de saúde para o diagnóstico da Tuberculose em Ribeirão Preto (SP). *Ciênc saúde coletiva* [Internet]. 2012 [cited 2016 July 14];17(11):3079-86. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-81232012001100024
15. Marquieviz J, Alves IS, Neves LU. A Estratégia de Saúde da Família no controle da tuberculose em Curitiba (PR). *Ciênc saúde coletiva* [Internet]. 2013 [cited July 2016 12]; 18(1):265-71. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S1413-81232013000100027
16. Gomes ALC, Sá LD. As concepções de vínculo e a relação com o controle da tuberculose. *Rev Esc Enferm USP* [Internet]. 2009 [cited 2016 July 12];43(2):365-72. Available from: http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0080-62342009000200016
17. Paula HC, Aguiar AC. Abandono do tratamento da tuberculose na estratégia saúde da família: estudo qualitativo em uma área programática do Rio de Janeiro. *Rev baiana saúde públ* [Internet]. 2013 [cited July 13];37(1):192-204. Available from: <http://inseer.ibict.br/rbsp/index.php/rbsp/article/viewFile/356/363>
18. Sá LD, Souza KMJ, Nunes MG, Palha PF, Nogueira JA, Villa CS. Tratamento da tuberculose em Unidades de Saúde da Família: histórias de abandono. *Texto contexto-enferm* [Internet]. 2007 [cited 2016 July 15]; 16(4):712-8. Available from: <http://www.scielo.br/pdf/tce/v16n4/a16v16n4.pdf>
19. Arcênio RA, Arakawa T, Oliveira MF, Carsozo-Gonzales RI, Scatena LM, Ruffino-Neto A, et al. Barreiras econômicas na acessibilidade ao tratamento da tuberculose em Ribeirão Preto - São Paulo. *Rev Esc Enferm USP* [Internet]. 2011 [cited 2016 July

12];45(5):1121-7. Available from:
<http://www.scielo.br/pdf/reeusp/v45n5/v45n5a13.pdf>

20. Nogueira JA, Ruffino-Neto A, Monroe AA, Cardozo-Gonzales I, Villa TCS. Busca ativa de sintomáticos respiratórios no controle da tuberculose na percepção do Agente Comunitário de Saúde. Rev eletrônica enferm [Internet]. 2007 [cited July 12]:9(1):106-18. Available from:
https://www.fen.ufg.br/fen_revista/v9/n1/pdf/v9n1a08.pdf

21. Andrade HS, Amaral JL, Fonseca DF, Oliveira VC, Gontijo TL, Guimarães EAA. Clinical epidemiological features of new tuberculosis cases. J Nurs UFPE on line [Internet]. 2016 [cited 2016 July 10]; 10(7):2528-36. Available from:
http://www.revista.ufpe.br/revistaenfermage/index.php/revista/article/view/8979/pdf_10590

22. Brasil. Ministério da Saúde. Secretaria de Vigilância em Saúde. Departamento de Vigilância Epidemiológica. Manual de Recomendações para o Controle da Tuberculose no Brasil. Brasília: Ministério da Saúde [Internet] 2011 [cited 2016 July 13]; Available from:
http://bvsms.saude.gov.br/bvs/publicacoes/manual_recomendacoes_controle_tuberculose_brasil.pdf

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