Review Article

Performance of nurses on tuberculosis in Primary Health Care: a literature review

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ABSTRACT

Background and Objectives: considering the role of nurses in assisting Tuberculosis (TB) patients from the perspective of the derivative aspects of Primary Health Care (PHC) and their importance in controlling the disease, the aim was to analyze the role of PHC professionals in the dimensions "focus on the family" and "community guidelines on TB". **Content**: this is a literature review carried out at Nursing Database (*Base de Dados em Enfermagem*, abbreviated BDENF), Latin American & Caribbean Literature in Health Sciences (LILACS), Medical Literature Analysis and Retrieval System Online (MEDLINE), Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Scopus, based on articles published between 2013 and 2018. We have found 1,363 articles, and 1,347 were excluded for not meeting the established criteria, resulting in 16 articles, which were grouped into thematic axes, namely: *health care network organization for TB*; *the role of nurses in TB care*; *nurses' knowledge on TB*, and *health education and guidelines for the community*. **Conclusion**: this review points out the need for nurses to act in TB control actions, mainly in the training and insertion of Community Health Agents for early identification of TB cases in the community as well as enabling health education activities to reduce stigmas and (re)build concepts about the disease.
Descriptors: Nurses; Family; Health Education; Tuberculosis.

INTRODUCTION

Political prioritization for TB control started with the Directly Observed Treatment Short-Course (DOTS) (1994-2005), followed by The Stop TB Strategy (2006-2015), which culminated in The End TB Strategy (2015-2035). With the advances obtained, the incidence of the disease started to decrease 2% per year. However, to reach the goal established by the current strategy (incidence rate less than 10/100,000 inhabitants by 2035), TB incidence must fall between 4% and 5% per year until 2020. This percentage will be achieved through

improvements in diagnosis and treatment of active and latent TB diseases and social determinants of health, especially of vulnerable populations.[1-3]

In 2017, it was estimated that 10 million people fell ill from Mycobacterium tuberculosis, and 1.6 million died from the disease. Tuberculosis is one of the top 10 causes of death in the world, being the first among diseases caused by a single infectious agent.[2]

In line with the World Health Organization (WHO) and because it is one of the 30 countries that make up the lists of high burden of TB and TB/HIV co-infection, i.e., a priority for tackling these, the Ministry of Health (MoH) launched, in 2017, the End TB Strategy as a public health concern in Brazil.[4]

That year, the country had 69,569 new cases of TB and 4,534 deaths, which generated coefficients of incidence and mortality equal to 33.5/100,000 and 2.2/100,000 inhabitants, respectively. Regarding operational indicators, there was a low cure rate (71.4%) and a high dropout rate (10.8%), when compared to the WHO goals of at least 85% and at most 5%, respectively.[5-7]

TB patients have physical, emotional and social vulnerabilities, due to the social determinants of health to which they are exposed. Thus, it is necessary to know the environment in which they are inserted in order to address each case individually, mitigating the gaps in the patient care process.[8]

To this end, Primary Health Care (PHC) has essential and derivative attributes. PHC is responsible for resolving up to 85% of community health problems, including TB control. As part of the derivative aspects, the focus on the family and the orientation to the community demand a greater relationship between professionals with this level of care; in addition to knowledge about health problems that pervade the biopsychosocial scope that individuals are inserted, aiming at the identification of their vulnerabilities.[9,10]

Attention to the social determinants of health of individuals is a fundamental strategy to ensure comprehensive and resolutive assistance for strengthening the health promotion model, early diagnosis and adherence to treatment. However, there is a need to adopt a system that chooses to monitor individuals/families/communities, mainly by strengthening the intra and intersectoral preventive actions carried out by nurses, aiming at controlling the disease. For this reason, this review aimed to analyze the work of PHC nurses in the dimensions “focus on the family” and “community guidelines on TB”, according to national and international literature.

METHODS

This is a literature review conducted at the Nursing Database (*Base de Dados em Enfermagem*, abbreviated BDENF), Latin American and Caribbean Literature in Health Sciences (LILACS), Medical Literature Analysis and Retrieval System Online (MEDLINE), Cumulative Index to Nursing and Allied Health Literature (CINAHL), and Scopus. It was carried out in December 2018 from the guiding question: how does PHC nurses act in the dimensions "focus on the family" and "community guidelines on TB"?

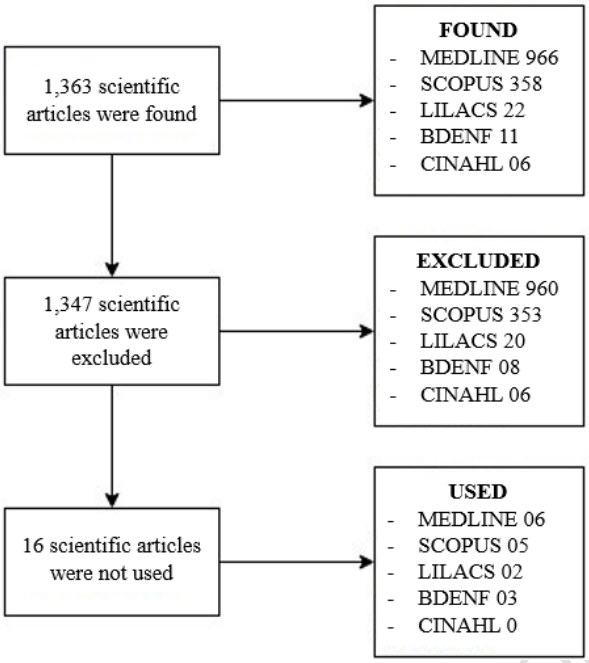
To that end, descriptors were selected from the health terminology indexed at Health Sciences Descriptors (DeCS) and Medical Subject Headings (MeSH), which constituted the search expressions with the Boolean operator AND: ("Nurses" AND "Family" AND "Health Education" AND "Tuberculosis"), ("Nurses" AND "Family" AND "Tuberculosis"), and ("Nurses" AND "Health Education" AND "Tuberculosis").

Complete scientific articles, available in full, published from 2013 to 2018, in national and international journals, in Brazilian Portuguese, English or Spanish were included. Theses, dissertations, monographs, review and editorial articles, as well as duplicate articles or articles that did not meet the objective of the study were excluded.

RESULTS

From the search in the databases, 1,363 scientific articles were found, of which 1,347 were excluded. Of these, 277 were not available in full; 687 did not meet the previously selected period; 4 were duplicated; and 1 was written in German. After analyzing the title and summary of the remaining articles, 378 were excluded because they did not present results that met the objective of the study in this review. Most of them focused on TB/HIV co-infection, malaria, leprosy and hepatitis; maternal and child care; nurse training; DOTS; and Directly Observed Treatment (DOT) (Figure 1).

Figure 1 – Flowchart for the selection of articles from the literature review of this study



Caption: BDENF – Nursing Database (*Base de Dados em Enfermagem*); LILACS – Latin American & Caribbean Literature on Health Sciences; MEDLINE - Medical Literature Analysis and Retrieval System Online; CINAHL - Cumulative Index to Nursing and Allied Health Literature.

Thus, 16 articles were presented in this review (Chart 1). Most articles were written in English (62.5%), published in 2014 (37.5%), and made in Brazil (44.0%). In this scenario, studies were found in the states of Paraná, Piauí, Pará, and São Paulo. In a complementary way, other scientific articles were published in journals that were not found during the review, but that were relevant to the topic.

Chart 1 – Distribution of articles included in TB literature review according to author, title, year of publication, language, and country

AUTHOR	TITLE	YEAR	LANGUAGE	COUNTRY
Campos et al.	*Controle da Tuberculose em município fronteiriço: Análise da capacidade institucional dos serviços de saúde*	2018	Brazilian Portuguese	Brazil
Gebreweld et al.	Factors influencing adherence to tuberculosis treatment in Asmara, Eritrea: a qualitative study	2018	English	Eastern Africa

Kigozi et al.	Tuberculosis knowledge, attitudes and practices of patients at primary health care facilities in a South African metropolitan: research towards improved health education	2017	English	South Africa
Negandhi et al.	Rapid assessment of facilitators and barriers related to the acceptance, challenges and community perception of daily regimen for treating tuberculosis in India	2017	English	India
Silva-Sobrinho et al.	Assessment of Primary Health Care in the Treatment of Tuberculosis in a Brazilian Locality of the International Triple Frontier	2017	English	Brazil
Wingfield et al.	A randomized controlled study of socioeconomic support to enhance tuberculosis prevention and treatment, Peru	2017	English	Peru
Costa et al.	*Monitoramento de ações de prevenção e controle da tuberculose em unidades básicas de saúde*	2016	Brazilian Portuguese	Brazil
Mabunda et al.	Needs assessment for adapting TB directly observed treatment intervention programme in Limpopo Province, South Africa: A community-based participatory research approach	2016	English	South Africa

Soares et al.	*Avaliação dos contatos de tuberculose na estratégia saúde da família pelos enfermeiros*	2016	Brazilian Portuguese	Brazil
Cardozo-Gonzales et al.	*Avaliação das ações de detecção de casos de tuberculose na atenção primária*	2015	Brazilian Portuguese	Brazil
Craig; Joly; Zumla	'Complex' but coping: experience of symptoms of tuberculosis and health care seeking behaviours - a qualitative interview study of urban risk groups, London, UK	2014	English	England
Ekwueme; Omotowo; Agwuna	Strengthening contact tracing capacity of pulmonary tuberculosis patients in Enugu, southeast Nigeria: a targeted and focused health education intervention study	2014	English	Nigeria
Maswanganyi et al.	Views of professional nurses regarding low tuberculosis cure rate in Greater Giyani Municipality, Limpopo Province	2014a	English	South Africa
Maswanganyi et al.	Patient-perceived factors contributing to low tuberculosis cure rate at Greater Giyani healthcare facilities	2014b	English	South Africa
Silva-Sobrinho et al.	*Conhecimento de Enfermeiros de unidades de Atenção básica acerca da Tuberculose*	2014	Brazilian Portuguese	Brazil
Souza et al.	*Atuação da Enfermagem na transferência da política do tratamento diretamente observado da tuberculose*	2014	Brazilian Portuguese	Brazil

DISCUSSION

After reading the articles in full, the results were organized into four sections, considering that 43.75% of the studies addressed Health Care Network (*Rede de Atenção à Saúde*, abbreviated RAS) organization for TB; 56.25% addressed the role of nurses in TB care; 43.75% addressed the nurses' knowledge about TB; and 43.75% addressed health education and guidelines for the community. In this sense, the same article may have been framed and, consequently, was mentioned in more than one section.

RAS organization for TB

In order to expand the population's access to health services, it is recommended the decentralization of TB control actions for PHC. This action is responsible for all care management that involves promotion, prevention, diagnosis and treatment, which includes monthly monitoring and control through sputum smear microscopy, DOT, contact assessment, investigation of Latent Tuberculosis Infection (LTBI) and, when necessary, refer patients to referral services through RAS.[11,12]

It is noteworthy that the ability to organize TB care is better in Family Health Units (FHU), compared to Basic Health Units (BHU). In the first context, there is greater interaction with individuals, families and communities through the work of Community Health Agents (CHA). However, complete teams and the involvement of all actors in care planning are necessary for the successful outcome of cases and disease control.[13,14]

As professionals underestimate the TB rates in their field, it allows for delayed diagnosis, worsening of signs and symptoms and maintenance of the transmission chain, resulting in diagnoses in secondary care. This level is responsible for the diagnosis and treatment of patients with special regimens, extrapulmonary clinical form, drug intolerance and comorbidities.[7, 15,16] As a result, there is overcrowding at the tertiary level, a service that should concentrate only serious cases of the disease, such as resistance and complications during treatment.[12,15]

For the flow of patients between these levels of care to be adequate, it is necessary to have a referral and counter referral system in the HCN, which is characterized by referring the user to a service within the network. Currently, this system is considered deficient by nurses, due to the way users are conducted.[17]

Another point to consider is the nurses' knowledge regarding integrating programs, services, and health professionals. A study observed that, when referral to a specialized service occurs, there are no meetings to discuss cases, opposing the TB Control Program (TBCP)

recommendations. The TBCP recommends shared management, which consists of co-responsibility and exchange of information and conduct among professionals of different levels of care, such as discussion of cases in monthly meetings.[18]

The role of nurses in TB care

Nurses have been included in TB control actions in Brazil since the 1960s, when there was a need to incorporate qualified professionals into the service. Considering this, they are responsible for all the care supported by the law of professional practice, as well as for the search for respiratory symptomatic subjects (RS); notification of cases; monthly monitoring; permanent education activities with the team and health education. They aim to promote the strengthening of PHC, autonomy and active, political and social participation of patients, family and community.[18-22]

It is worth mentioning the role of nurses, when trained to apply and read the Purified Protein Derivative (PPD) in PHC, considering that in the absence of these professionals, this activity is performed in the reference services. This practice delays adherence to preventive therapy, which reduces the risk of TB progression by between 60 and 90%.[23,24]

However, the difficulties in inserting nurses in the family to perform an active search for the absent ones can reflect on treatment abandonment, drug resistance, maintenance of the epidemiological chain of the disease and death. Furthermore, poor record of assessment of contacts in the Notifiable Diseases Information System (*Sistema de Informação de Agravos de Notificação,* abbreviated SINAN) reinforces the individual-centered view, which does not cover the family and community, and consequently, hinders the surveillance and control of the disease.[25,26]

Although nurses' roles in relation to TB in PHC are defined, there is a lack of definition of the interprofessional work process; exclusive responsibility of CHA for active search for RS; ignorance of the importance of actions such as DOT; fragmented assistance; and work overload. Which makes it the responsibility, mainly of nurses, to monthly monitor TB cases and the responsibility for the preparation, recording and analysis of epidemiological data, which are the responsibility of the team, which, even when informed of its roles, does not exercise it.[14,18,27]

Knowledge of nurses on TB

Considering the responsibilities of nurses in PHC in relation to TB control, it was observed that the knowledge of these professionals about transmission, signs, symptoms and guidelines is not sufficient to develop their role in comprehensive care. Contradictory result in

a study that indicates that in recent years, nurses have been the most favored professionals for training on disease management.[19, 14, 28] Associated with unpreparedness in the identification of TB, the main factors for delayed diagnosis are socioeconomic and cultural barriers, absence of SR search and difficulties in performing sputum smear microscopy.[28]

In relation to DOT, research indicates that nurses do not know its objectives and importance, periodicity and the professional responsible for offering the medication. This fact contributes to unfavorable outcomes, since assisted medication comprises one of the measures recommended by WHO to ensure adherence and continuity of treatment. On the other hand, professionals with satisfactory knowledge have a positive impact on adherence to therapy.[14,24,29] In a complementary way, it is through DOT that surveillance actions are effective, such as monitoring the evolution of the disease, in addition to the development and strengthening of bonds with users, families and the community.[18,28]

Nursing literature indicated that the importance of cross-sectional training for nurses, aiming at the promotion of care, is not based only on the clinic and mechanistic practices. This approach is not sufficient to offer quality care, to act in promoting and preventing TB and LTBI, and to help reduce the incidence of the disease[24,30] to meet the goals of The End TB Strategy.

However, reports by FHS nurses showed that during graduation there was a predominance of the theme in the hospital environment. This favors assistance focused on the disease clinic, reflecting the lack of recognition of the importance of educational practices and the absence of actions to prevent the spread of the disease.[30,31]

It is worth mentioning that, to ensure quality care, nurses need knowledge about the technical-scientific, administrative and political scope to perform transformations and guarantee TB control. Moreover, it is through complementary training that we seek to overcome gaps in training as well as updating concepts and best practices. [32,33]

In this perspective, training can help in using the skills of professionals and enhance their knowledge about management and control of a given situation. In TB, it consists of ensuring understanding the actions of surveillance, prevention, diagnosis of cases and their conditions.[33]

Health education and community guidelines

In practice, patient health education in Nigeria, for instance, is far below adequate and, when done, an informal approach is used, i.e., an unplanned and sporadic way to disseminate health information to patients. However, in 2010, the country achieved 84% success in

treatment through the DOTS strategy associated with health education, contact tracking, screening and active search for absenteeism.[34]

In Brazil, educational activities are integrated into PHC and professionals are responsible for the dissemination of information and support to patients through consultations, campaigns, social mobilization and distribution of materials. However, the absence of territorialization makes it difficult to carry out such activities, as well as discussions with community leaders. The factors that lead to this are related to FHS absence and barriers to access health services, such as the opening hours, weaknesses in the reception and prolonged waiting time for consultation.[13,30,35]

Obstacles such as lack of physical structure, professional training and lack of specific materials for activities, constitute weaknesses for the effectiveness and quality of educational activities. However, actions in community spaces are effective, as they bring health services closer to the community. It should also be noted that health education practices are not made unfeasible as a result of these factors; however, its professional development and user participation become more arduous.[13,36]

Likewise, discussions with community leaders are still pointed out as difficulties due to the lack of social participation in the health sector, even with legal support (Laws 8.080 and 8.142/1990).[35]

At national level, educational activities are restricted to lectures in waiting rooms and formation of operative groups, with no activities aimed specifically at TB control. Moreover, the performance of practices that are limited to the time of campaign or increase in TB cases, are of low impact and do little to change the reality of users or the community.[36-37]

For health education to be effective, professionals must be sensitive to the patients' culture. They must take into account their beliefs, which, associated with lack of knowledge about the disease and treatment, imply a delay in the demand for health services, reflecting in the late diagnosis[30,38,39]; tracking for investigation of contacts; family participation; and adherence to treatment.[34,38]

It is worth mentioning that the community approach in groups is a way to minimize misinformation, mistakes and reduction of stigma[39]. At the same time, it requires the need for a clear form, outlining the responsibilities of each member[38,40] and a focus on health promotion for families and communities.[40]

CONCLUSION

This review points to the need for nurses to act in TB surveillance and control actions in PHC; especially with regard to training and insertion of CHA for early identification of TB cases in the community as well as rethinking practices and enabling health education activities to reduce stigmas and (re)build concepts about the disease.

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MGM, TCS, GLNT, and NHO contributed to the planning, outlining, design, analysis and interpretation of data, writing, review and final approval of the article. All authors approved the

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