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Mapping the Sociocultural Implication on Tuberculosis Management and Control Programs

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Abstract

The effectiveness of tuberculosis (TB) management and control programs is influenced by several factors, including sociocultural problems that affect delays in diagnosis and treatment and increased transmission risk in the community. How people viewed diseases and seeking behavior was socially constructed. The scoping review aimed to understand the extent and type of evidence about the sociocultural implications of TB management and control programs. To address the research questions, a scoping review was conducted following PRISMA ScR as a guideline. Articles were searched in PubMed, Scopus, Science Direct, and Google Scholar databases. Searches were conducted in October 2022. The CASP checklist was used to measure the article's quality before being reviewed. A total of 15 articles were included, nine (9) studies conducted in Africa, two (2) studies in Papua New Guinea, one (1) study in India, one (1) study in Brazil, one (1) study in Yemen, and one (1) study in Nepal. Most studies were based on individual interviews (7), and three (3) studies included traditional/faith healer perspectives. Three main themes had been identified; sociocultural factors affected TB prevention, sociocultural factors affected TB-seeking behavior, and sociocultural factors affected treatment adherence. The review discovered that community practices, norms, and attitudes regarding perceived sickness impact TB care and control. To be effective and meaningful for the target population, the intervention must be attentive to cultural differences.

Introduction

Tuberculosis is a disease caused by Mycobacterium tuberculosis, commonly infected lungs. According to WHO, TB infects more than 10 million people yearly, and 1.5 million people die caused of TB. It is also considered the disease of poverty that mostly affects adults in their most productive years. Globally, the largest number of TB cases is located in Southeast Asia (43%) where two-thirds of the cases are contributed by Indonesia and the Philippines (World Health Organization, 2022). To end the global TB epidemic WHO released the 2015 End TB program as a guideline for countries to combat TB infection (World Health Organization, 2015). The target is to decrease TB incidence by 80% and TB-related death by 90% in 2030 (Merk *et al*., 2019).

Research reveals that TB management and control face challenges, and the main challenge remains in delayed TB detection and treatment, especially in developing countries (Chiang *et al*., 2013; Wynne *et al*., 2014; Adebisi *et al*., 2019). Based on Global TB Report 2021, the number of case notifications of newly diagnosed in Southeast Asia significantly dropped with the largest contribution the shortfall by India (41%) and Indonesia (14%). At the same time, the number of deaths caused

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by TB in the regions is rising (World Health Organization, 2021). That might be the result of delaying seeking treatment among patients (Cheng *et al*., 2013).

A study has identified that diagnostic delays among TB patients were for 37 days. The delay is associated with inadequate knowledge about TB and self-medicated symptoms (Paramasivam *et al*., 2017). Self-medication was found to be common among people with TB diagnosis delay and become a factor prolonging the delay (Rabin *et al*., 2013; Paramasivam *et al*., 2017; Dantas *et al*., 2018). While access to traditional healers also influences TB's delay in diagnosis and treatment (Verhagen *et al*., 2010). The practice of traditional healers is common in developing countries (Shankar *et al*., 2012; Huff, 2020; Chali *et al*., 2021). A study found that 76% of the respondents strongly believe in their culture and religion and prefer to visit traditional healers for health seeking (Matakanye *et al*., 2021). It indicates that TB management and control need to deeply understand the sociocultural context of a targeted community.

Sociocultural factors affect how people perceive health and seeking behavior. To complete the biomedical model intervention for TB, a deep understanding of how social factors in the community affect how people perceive their health, their illnesses, and their behavior while seeking health is required (Mason *et al*., 2015). The recent study aims to evaluate, analyze, and document existing evidence about the sociocultural factors on their implication on tuberculosis management and control programs.

Method

Arksey and O'Malley's approach was chosen for the planned review (Daudt *et al*., 2013). Briefly, the framework involves (i) identifying the research question, (ii) identifying relevant studies, (iii) study selection, (iv) charting the data, and (v) collating, summarizing, and reporting the results. The scoping review question was "What is the available evidence of sociocultural factors affecting tuberculosis management and control?" The research sub-questions were:

1. Is there evidence that shows how sociocultural factors affect tuberculosis prevention?
2. Is there evidence of sociocultural practices affecting tuberculosis-seeking behavior?
3. Is there evidence of types of sociocultural practices affecting tuberculosis treatment adherence?

Searches for a peer-reviewed journal were done in October 2022. The first step was a preliminary search in four databases (PubMed, Scopus, Google Scholar, and Science Direct). The search terms included "socio-cultural" OR "sociocultural" AND "tuberculosis". All 2585 studies found were downloaded and exported to Mendeley and identified duplicate studies. The study used inclusion criteria based on PCC (Population, Concept, Context) recommended by the Joanna Briggs Institute for scoping reviews (Aromataris & Munn, 2020). The inclusion criteria were as follows:

1. Population: human participants, all ages, all sex.
2. Concept: any socio-cultural and tuberculosis research carried out between 2012 and 2022.
3. Context: Research articles are limited to original research (any methods), all settings considered, and published in the English language.

The study involved other diseases and lacked discussion of the implication of sociocultural factors and TB was excluded. The inclusion and exclusion criteria were consistently applied throughout the search and analysis stages (Swift & Wampold, 2018). The papers extracted from the four databases (PubMed, Scopus, Science Direct, and Google Scholar) were checked for duplicates. After duplications were eliminated, the articles' titles were examined to establish whether the study qualified under the inclusion criteria. Studies that didn't answer the research questions were all eliminated. The steps were recorded in Fig. 1. A total of 1598 studies were after removed duplication included in initial screening by title and abstract. The first screening resulted in 37 articles for full paper review. After checking the eligibility for the next step based on inclusion and exclusion criteria, 15 studies met eligibility for synthesis.

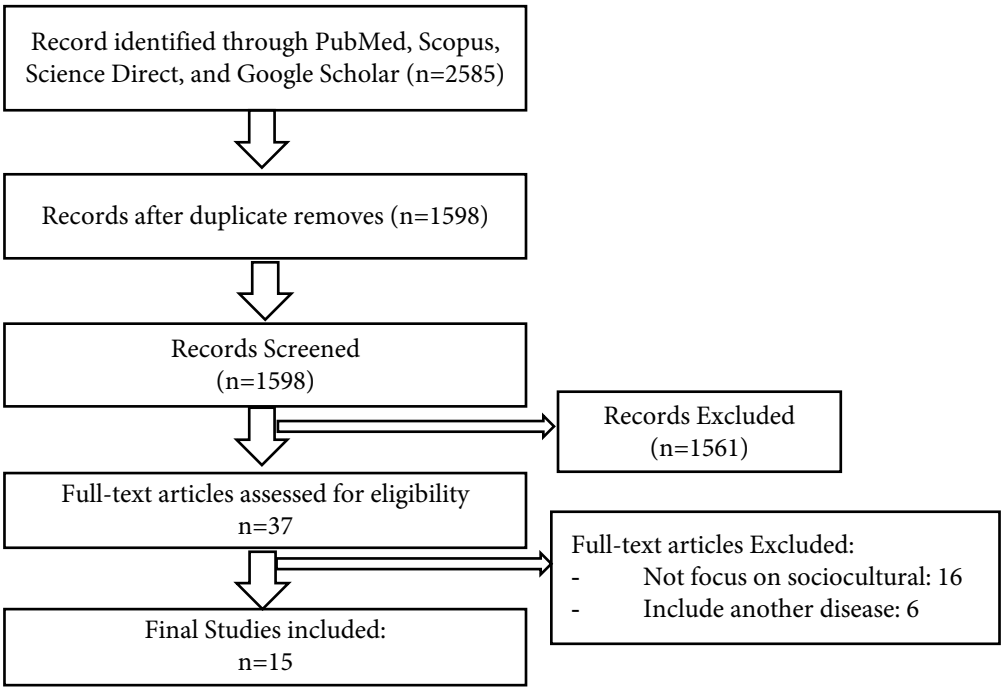

Figure 1. PRISMA

The charting process aimed to generate a descriptive summary of the results that correspond to the aims and research questions of the scoping review. Bibliography information: article title, year, authors

1. Aims and method: study aims, method,
2. CASP checklist (appendix 1)
3. A prior theme: sociocultural and TB prevention, sociocultural and TB-seeking behavior, and sociocultural and TB treatment adherence.

The three themes were identified during the analysis process. The theme was considered relevant to the research questions of this scoping review. The strategy for reporting these results followed PRISMA ScR provided by the Joanna Briggs Institute for scoping reviews (Aromataris & Munn, 2020). The central section of the review comprised a thematic summary of the findings that relate the a priori and emergent categories extracted from the included studies to the research questions stated above. The table of data extraction results is shown in Appendix 2.

Results and Discussion

Fifteen papers have been reviewed; there were nine (9) studies conducted in Africa, two (2) studies in Papua New Guinea, one (1) study in India, one (1) study in Brazil, one (1) study in Yemen, and one (1) study in Nepal. Most studies were based on individual interviews (7), and three (3) studies included traditional/faith healer perspectives. Most of the studies focus on TB patients. The latest article was published in 2021 (2 articles) and the oldest article was published in 2013 (1 article).

Theme 1: The impact of sociocultural on TB prevention

Three (3) studies showed how sociocultural impacted TB prevention in the community. A study in Africa showed that wearing a mask refers to something wrong with someone who comes to them and leads to social stigma. People will not come close to people who wear a mask, and this condition makes the health provider not wear a mask during the practice (Adu *et al.*, 2021). The *wantok* cultural system in which health staff respect and are concerned about patients' feelings influences TB prevention, patients with TB symptoms and other patients were not separated in the health facility's practices, in particular (Marme, 2018). In Papua New Guinea, the mask has become part of the culture and has a different meaning. Each mask reflects the region of origin. Masks are predominantly worn by men

after being initiated by traditional leaders who produce the masks. These masks are kept secret from women when not used. Others showed that wearing a mask led to social exclusion behavior by family and relatives (Marme, 2018). This culture has the opposite practice of TB prevention which requires wearing masks to prevent transmission. Another study stated that the community culture did not absorb the concept of prevention. It affects patients who access the medication directly to the hospital when they develop severe symptoms (de Paula *et al*., 2014).

Theme 2: The impact of sociocultural on tuberculosis-seeking behavior

Over half of the reviewed studies (13) showed how sociocultural beliefs and practices affected TB-seeking behavior. The belief among patients is that TB caused by witchcraft, sorcery, curses, and misbehaving will not be cured by biomedical treatment; only traditional healers can heal. This belief leads to patients accessing traditional/faith healers when they develop TB first symptoms (Oshi *et al*., 2016; Diefenbach-Elstob *et al*., 2017; Tabong *et al*., 2021). When the health staff informs the patients of positive TB, they will refuse treatment and seek help from a traditional healer (Marme, 2018). The use of home remedies to relieve the discomfort the symptoms impacted patients going to a health facility in severe condition and directly going to a hospital, not primary care (de Paula *et al*., 2014).

Commonly the first symptom of TB is cough, which is often misleading by a community based on their local belief of cough. A study in Ghana showed the local name of cough *"kɔrongkpong", "kɔrongpilah", "kusibine", and "Kaaki"*. The community believed herbs are highly beneficial in treating long-lasting, productive coughs, which can cause chest pain and weight loss (Tabong *et al*., 2021). A study in Nigeria also found that the local language of cough is *"ukwaranta"* which means prolonged coughing, loss of weight, loss of appetite/ emaciation, and weakness, and cannot be cured with medications bought from the patient's medicine vendor. The condition is caused by witchcraft, punishment for breaking a taboo, poisoning of food or drink by an enemy, and a germ (Oshi *et al*., 2016). Research also showed that communities divide TB into two kinds, white TB and Black TB. This means if patients detect negative results on blood samples caused by black TB, they only can get better from a traditional healer (Cremers *et al*., 2013).

The practice of self-medication is commonly found in the community (Mhalu *et al*., 2019). The study revealed that to treat their cough, community members did not go to a clinic but instead used locally available herbal treatments in the *"Kanyama"* local market. If the treatment was ineffective, the second step was going to a market or *"Kantemba"*, a cheap unlicensed pharmacy (Cremers *et al*., 2016). The community also mentions that the traditional healing system was thought to be effective, took a shorter treatment period, was supportive, kept the patient away from evil spirits, and could be obtained at a low cost. Patients also stated that traditional healing systems were preferable to health facilities because they were more accessible (Gugssa Boru *et al*., 2017). Also, the community believes that clinics are only for females and children, whereas the men are considered as strong and never contacted by female diseases (Miller *et al*., 2017; Adu *et al*., 2021).

Community practice on arranged marriage also becomes a burden, especially for female patients. Positive TB impacted them cannot participate in household chores. As a result, the neighborhood will see her as a lazy female, which affects her marriage prospects. Because marriage has become one of the ways the family to increase their economic status, they commonly disclose TB and access treatment from a traditional healer that is considered safer (Anderson De Cuevas *et al*., 2014; Oshi *et al*., 2016). Since the community believes TB is inherited and will not disappear from the family history, the family will disclose and refuse the visit by a health provider (Miller *et al*., 2017). Females also found more delay in seeking behavior and treatment due to the need for permission from husbands or extended family to seek treatment (Kumar *et al*., 2014).

TB has a strong impact on social life. A study showed that TB patients would lose their status in the community and could not be elected as elders (Miller *et al*. 2017). Religious gathering

practices in Ghana required people to sit close to each other. People with TB will disclose their status and choose to use the traditional herb to treat the symptoms (Tabong *et al*., 2021). Patients are afraid of being recognized as TB patients because of the social impact following (de Paula *et al*., 2014). Another study found that TB patients often avoid social gatherings and visit traditional healers to treat the symptoms to avoid social exclusion. The patients do not trust health providers because they feel to have a better understanding of the illness based on their cultural beliefs (Asemahagn *et al*., 2020).

Theme 3: The impact of sociocultural on tuberculosis treatment adherence

Four (4) studies indicated the impact of sociocultural beliefs and practices on tuberculosis treatment adherence. Multiple treatments are commonly used to treat illness in Papuan New Guinea. The use of herbal or natural remedies was reported before, during, and after TB treatment. The practice is resulting in TB patients non adhering to their treatment due to multiple medications (Diefenbach-Elstob *et al*., 2017). Research also found the conflict between their cultural tradition of vegetarianism and the recommendation to consume eggs and milk under directly observed treatment (DOT). Also, patients traditionally observed fasting but were encouraged to eat while taking medicines (Shiotani & Hennink 2014). Others showed that patients believe insufficient food during treatment will increase the chance of side effects and that the medication will be useless. As a result, they will prioritize the basic need for food before adhering to the medication (Gugssa Boru *et al*., 2017). Other findings showed TB stigma results in the patients refusing to access treatment in a short period, which they ask to get more medication and leads to a loss of follow-up treatment (Kumar *et al*., 2014).

We found there are three major themes on how sociocultural affected TB management and control: (i) affected TB prevention, (ii) affected TB-seeking behavior, and (iii) affected TB treatment adherence. This study is in line with a study conducted by Gibson among immigrants in Canada (Gibson *et al*., 2005).

In terms of TB prevention, infection control was found as the direct and effective way to prevent TB transmission. The use of personal protective equipment (mask) plays an important role in preventing airborne disease transmission, including TB (Li *et al*., 2017). This scoping research found that the prevention principle does not exist in cultures (de Paula *et al*., 2014) where the practice of prevention may be considered unnecessary in daily life. To create a prevention culture, people and society are encouraged to think differently about prevention and its importance to society's health (Petras *et al*., 2021). Other cultures see wearing masks as prevention is quite difficult due to the cultural belief that a mask is an identity of origin and cannot be worn by women (Marme, 2018). The cultural practice challenge in prevention is also found in a study during the Ebola outbreak in Sierra Leone, in which the practice of African traditional burial presents a potential danger in Ebola transmission (Lal, 2021). From this finding, we can assume that culture has a strong impact on the success of TB prevention in the community. A study similarly found that culture has impacted health practice (Levesque & Li, 2014). This finding implies that TB prevention programs should consider the sociocultural of the targeted community. This finding is supported by a publication in which the model program of one size fits all is not matched for the TB prevention program (Bhargava *et al*., 2019).

This scoping study also found that to respect and be concerned about patients' feelings; the health facility did not separate patients with TB symptoms and other patients. Also, they did not wear masks during services (Adu *et al*., 2021). This practice can accelerate TB transmission in healthcare settings. This demonstrated the importance of developing and delivering culturally safe services that are safe and acceptable to community members if health inequities are to be reduced. (Latif, 2020).

In terms of health-seeking behavior, misconceptions of TB causation were found to commonly mislead health-seeking behavior in this study (Cremers *et al*., 2013; Oshi *et al*., 2016; Diefenbach-Elstob *et al*., 2017; Marme, 2018; Tabong *et al*., 2021). The belief in supernatural causes is also found in HIV (Seid & Ahmed, 2020). A study in rural Nort-Eastern

Ethiopia revealed that illness is perceived to have supernatural causation, including the will of God, spirit, and human supernatural agent (Kahissay *et al*., 2017). This belief leads to seeking treatment from traditional/faith healers. The cough is often seen as a common and not severe illness that can be treated by self-medication. A study also found that the perception of their illness will improve over time, preventing patients from seeking health treatment immediately (Taber *et al*., 2015). This misconception of illness is commonly found in the community. The misconception affected patients in seeking health treatment, which the use of traditional herbs and visiting traditional healer practices are commonly found. The strong belief that disobeying the community rule will affect their health also becomes a major challenge in changing health-seeking behavior in the community (Juhannis *et al*., 2021). This indicated that primary health care needs to integrate with the cultural system to meet the community's needs. Also, develop culturally sensitive language for an education program to minimize the misconception of TB.

The transmission in the community will remain high; this study found that high stigma led patients to disclose TB status and access traditional healers that are considered safer. The chance to meet neighbors during treatment is small compared to health care services (Mhalu *et al*., 2019). Stigma led the patient to refuse to be supervised by health staff or a community cadre which was considered easy to notice (Shiotani & Hennink, 2014). A study found stigma affected people's to decide the seeking treatment resulting in a negative impact on treatment (Corrigan *et al*., 2014; Cerully *et al*., 2018). This study revealed that stigma occurred both from the community and the patients themselves. The stigma arises because the cultural belief exists in the community. Gender norms were also found to influence delay-seeking behavior. This review found women find difficulties in seeking healthcare because of the masculinity norm that women cannot make decisions without men's approval (Kumar *et al*., 2014). This condition is resulting in a barrier to early detection of TB, especially among women. However, in Western culture, women are more likely to make decisions about their health (Acharya *et al*., 2010). This indicated that the TB program needs to integrate the prevention system with the cultural system, such as empowering traditional/faith healers that are commonly used by patients to seek services immediately as part of active case finding in the community.

The failure to detect TB in the early stage will reduce transmission through prompt treatment. At the same time, TB treatment requires a long time, with a minimum of six (6) months of treatment (Centers for Disease Control and Prevention, 2023). The treatment commonly recommends that patients take good food intake (Lönnroth, 2013). This research found the diet required during treatment has opposite beliefs and practices in some cultures. A study in India showed that patients face challenges due to vegetarianism and fasting practices. This resulted in conflict among patients and led to non-adherence to treatment (Shiotani & Hennink, 2014). This finding is similar to research among diabetes patients on how they face difficulty in changing their diet (Vanstone *et al*., 2013). Health staff must understand food available in the community that can be considered as food recommended during the treatment to minimize treatment loss follow-up due to the reason. This study has several limitations which only included published articles in the English language, which may exclude relevant literature in other languages. The queries used in the study were limited to socio-cultural, and other studies may use different terms that were not identified.

Conclusion

The socio-cultural aspects of tuberculosis have a significant impact on community health behavior. This scoping review demonstrates how the sociocultural context influences tuberculosis management and control. This review provides evidence that policymakers must consider local beliefs when promoting TB programs, particularly prevention and treatment. The prevention and behavior change approach should consider how sociocultural factors are embedded in the community's daily life and their impact on how illness is perceived and related behavior is practiced.

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