Tuberculosis screening indicators in indigenous population in Colombia: a mixed methods research

Indicadores de tamizaje de tuberculosis en población indígena de Colombia: una investigación de métodos mixtos

Indicadores de triagem para tuberculose numa população indígena na Colômbia: uma pesquisa com métodos mistos

Iader Rodríguez-Márquez [1]
Kelly Yoana Tello-Hoyos [2]
Pilar Torres-Pereda [3]
Bertha Leonor Guzmán-Salazar [2]
Freddy Pérez [4]
Jhon Edwin Polanco-Pasaje [1]

Abstract

This study aims to evaluate, via a mixed methods study, the implementation of the screening process for pulmonary tuberculosis (PTB) within indigenous population of the Department of Cauca, Colombia, during the 2016-2018 period. Indicators assessing the PTB screening process were elaborated and estimated. Subsequently, an evaluation of the indicators were performed based on a sampling process from health care providers of the municipalities with the highest and lowest PTB incidence and from key agents' perspective. Screening indicators were estimated and thematic analysis was performed based on the interviews conducted with key agents. Finally, a triangulation of quantitative and qualitative findings was performed. From the total population expected to have respiratory symptomatics (n = 16,711), the health care providers were able to identify 42.3% of them. Out of the individuals identified as respiratory symptomatics (n = 7,064), they were able to examine 93.2% (n = 6,585) with at least one acid-fast bacilli smear test. The reported positivity index from acid-fast bacilli smear test was 1.87%. The explanations from key agents revolved around the possibility of an overestimated targeted amount of respiratory symptomatics; insufficient personnel for the search of symptomatic individuals; high costs for the search in areas of difficult access; the need to request permissions from indigenous authorities; culturally ingrained stigma; use of traditional medicine and self-medication; and patient's personal beliefs. This study revealed barriers in the implementation of the screening process for PTB within the indigenous population from the Department of Cauca, mainly in the identifying process of the respiratory symptomatics.

Pulmonary Tuberculosis; Indigenous Health Services; Quality of Health Care; Health Care Quality Indicators; Health Care Quality Assurance

Correspondence
I. Rodríguez-Márquez
Facultad Nacional de Salud Pública, Universidad de Antioquia.
Calle 62 #52-59, Medellín / Antioquia – 050010, Colombia.
irodriguez73@unab.edu.co

[1] *Facultad Nacional de Salud Pública, Universidad de Antioquia, Medellín, Colombia.*
[2] *Secretaria Departamental de Salud del Cauca, Popayán, Colombia.*
[3] *Instituto Nacional de Salud Pública, Cuernavaca, México.*
[4] *Department of Communicable Diseases and Environmental Determinants of Health, Pan American Health Organization, Washington DC, U.S.A.*

Background

Tuberculosis (TB) continues to be an important public health issue and is still considered the main cause of death by an infectious agent in the world. In 2018, approximately 10 million people around the world became ill and a total of 1.4 million deaths was registered due to TB [1]. In response to this, the World Health Organization (WHO) adopted the End TB Strategy which sets challenging objectives – including the early diagnosis of the disease in high risk groups – to eliminate the epidemic worldwide [2]. Among the high risk groups, the Indigenous population presents the highest prevalence of TB [3]. This could be explained by accelerated social and cultural changes, higher malnutrition prevalence, and the deficient health care services provided for this high-risk group [4].

In 2019, Colombia registered 14,684 TB cases and the national incidence rate was 27.3 cases per 100,000 inhabitants. Nationwide, 4.9% of the cases occurred among the indigenous population [5]. Cauca is the Colombian department with the second highest proportion of indigenous people; in 2018, this population represented 26.4% of the diagnosed TB cases [6]. The Department of Cauca has, as part of a TB control program, a policy of searching for the respiratory symptomatics (RS), such as persistent cough and sputum production for more than 15 days; the objective is to identify the affected people in the early stages, and provide them with treatment [7]. These operational activities are conducted by the health care providers of the Colombian Health System [8].

The screening activities for TB include searching for the RS (through sample collection) and conducting the necessary laboratory studies for diagnoses. The active search for the RS has been promoted as one of the main strategies for the detection of new TB cases in different countries of the Americas; this is done by establishing an indicator based on a targeted number of samples to be collect from RS each year [9]. It is estimated that RS are prevalent in 5% of the population aged over 15 years who are attended by the health care providers in their outpatient clinics; thus the same number is established as the targeted amount of samples to be collected each year [7,10,11]. The prevalence of RS, however, greatly varies, ranging from 2% to 10% in Colombia, as well as in other countries under similar conditions [12,13,14].

Colombia has yet to achieve its established goals. Only a maximum of 42% of the expected identification of RS has been reached [13,15]. Additionally, the percentage of positive RS cases for acid-fast bacilli (AFB), collected via smear test, has been decreasing from 3.1%, in 2001, to 1.8%, in 2015 [16].

In the indigenous population, the amount of RS is conditioned by factors such as housing conditions, public utilities, access to drinking water, and means of transportation [17]. Moreover, the different meanings attributed to TB, by the indigenous populations, may influence their knowledge, attitudes, and practices toward the disease; possibly affecting the early detection of this disease [18]. Brazilian health services have documented operational weaknesses associated to the way that local health services are organized for the implementation of systematic routines in the search of RS within indigenous populations [19].

Thus, it is necessary to prioritize search campaigns within vulnerable populations, such as the indigenous groups, in order to improve the indicators [15]. This implies the need for effective, culturally-adapted screening strategies, allowing an increase in the number of identified TB cases [20].

This study aimed to evaluate the implementation process and the screening for pulmonary tuberculosis (PTB) within the Indigenous population of the Department of Cauca, from 2016 to 2018, to identify possible barriers in the implementation of the identifying strategies of new PTB cases.

Methods

Study design

A mixed methodology was used with a sequential explanatory design. In the first phase, screening indicators for PTB within the Department of Cauca's indigenous population were estimated and created. In the second phase, with a qualitative approach, we attempted to explain the findings of the first phase, based on the health care providers perspective [21].

Study location

The study was conducted within the Department of Cauca, located in the Southwestern Colombia. In this region, 21% of its inhabitants are self-reported indigenous people. The department also has the second highest number of indigenous population in Colombia [22]. Within this population some tribes are highly acknowledge, such as the Nasa tribe, located in the Northern, the Northeastern, and the Eastern area of the department. Other noteworthy tribe within the department are the Misak tribe, located in the Eastern area; the Yanaconas tribe, towards the South; the Kokonucos tribe, towards the central part of the department; the Ingas, in the Southern end; the Totoroes in the Eastern; and the Eperara-Siapidara people, in the Western area [23].

Participants

In the first phase, the indigenous population from the Department of Cauca who tested positive for PTB, during 2016-2018, were included. In the second phase, an extreme case sampling process was conducted. In this sample, the health care providers with the highest (n = 4) and lowest (n = 5) incidence of PTB in the indigenous population during the timeframe of the study were included [24]. For each healthcare institution, the coordinators and assistants of the TB program were selected. Nine program coordinators and 11 nursing assistants from eight selected municipalities, which included both state-managed health care providers and indigenous-managed health care providers, were interviewed. These types of health care providers institutions differ on administrative aspects and on the services provided. The state-managed health care providers institutions are public, whereas the indigenous-managed health care providers institutions belong to the indigenous tribes. Additionally, in the latter, some elements of traditional medicine, such as provision of plant-based medicines and rituals performed by traditional healers, are included in their health care service model.

Variables and data collection

Three indicators were elaborated to assess the PTB screening process conducted by the Department of Cauca within its indigenous population: (i) percentage of RS identified by health services; (ii) percentage of RS examined by health services; and (iii) positivity index of the AFB smear test. The percentage of RS identified by the health services was defined as the number of people categorized as RS (via active and passive search) over the total amount of RS expected. The percentage of RS that were examined was calculated as the number of identified patients with at least one AFB smear divided by the total amount of RS identified. Finally, the positivity index of the AFB smear test was defined as the amount of RS and at least one positive AFB smear test divided by the total of RS that were examined by the health services [25].

The expected amount of RS corresponds to the overall prevalence of RS for this population, estimated through population projections by calculating 2.5% of the total indigenous population over 15 years of age, according to the guidelines of the TB national program [10]. The RS identified by the health services were estimated by applying the percentage of the indigenous population to the total of identified RS in the general population. The RS who were examined by the health services were estimated by applying the proportion of indigenous population to the total of RS examined in the general population.

The type of health insurance of the patients diagnosed with PTB was registered. The subsidized, contributive, and special insurance correspond to people who are insured by the state or with their own resources, respectively. Those uninsured are people who are not covered by the health insurance system; diagnostic and treatment activities, however, are covered by the state.

All indicators were estimated with aggregate data from the Colombian National Administrative Statistics Department [22], and the records from the TB control program of the Department of Cauca. All the consulted databases were unified in a single spreadsheet on Microsoft Excel (https://products.office.com/).

For the second phase, the perceptions of key agents on the implementation of the screening process of RS were explored by semi-structured interviews [24]. Field work was carried out by staff

trained in Social Sciences who were knowledgeable about the screening process and external to the TB program in the region.

Analysis of the information

Absolute and percentage frequencies of the social and demographical characteristics were reported (sex, age at diagnosis, corresponding case municipality, and health insurance), as well as related program (HIV coinfection, notification period, program entering conditions, and AFB smear result) of the indigenous RS who had a positive AFB smear test during the study period. The cases in which the AFB smear test was positive for PTB were geographically referenced to the corresponding municipality and the belonging indigenous tribe. The screening indicators within the indigenous population were estimated and reported in percentages. For the analysis of the data, Microsoft Excel and statistical package Stata 14 (https://www.stata.com) were used.

In the qualitative phase a thematic analysis was performed [26]. The audio recordings were transcribed verbatim in Microsoft Word (https://products.office.com/). Then, the transcriptions were coded and analyzed through the Atlas.ti program, version 8 (http://atlasti.com/). A previously defined code book was created according to prior identified categories for the RS screening and were included in the semi-structured interviews guide. The codes used for the current analysis are: contact with health services, planning of the search, and implementation of the planned strategies. The creation of emerging codes was allowed [27]. Finally, the integration and triangulation between the results of the indicators and the qualitative findings were performed [21].

To report the qualitative results and to maintain confidentiality, the letter "C" was assigned to the personnel who coordinates the program, letter "A" to the assistant personnel, followed by letter "S" or "I" depending on the type of health care providers ("S" for State-managed health care providers and "I" for an indigenous-managed health care providers). The letters "H" or "L" were then assigned if there was a high incidence or low incidence within the municipality, and finally a corresponding consecutive number was assigned in the order in which the key agents were interviewed.

Ethical considerations

The study was approved by the Research Ethics Committee of the National Faculty of Public Health of the University of Antioquia and exonerated of revision by the Ethics Revision Committee of the Pan-American Health Organization (PAHOERC).

Results

During the study period, 123 cases tested positive for PTB in the AFB smear test within the indigenous population of the Department of Cauca. In total, 34 cases of PTB, not confirmed by the AFB smear test, were excluded. According to the indigenous people, 71.5% (n = 88) acknowledged themselves as Nasa people.

In total, 61% (n = 75) were men and the median age was 40 years (IQR: 25-61). The highest amount of cases were diagnosed in 2017 (n = 52); 93.5% (n = 115) of patients were covered by the subsidized insurance; and 92.7% (n = 114) were new cases. In 30.1% (n = 37) of the cases, the diagnosis by AFB smear test was observed with more than 10 bacillus (Table 1).

Figure 1 shows the geographical distribution of the cases in the indigenous population. The cases were mostly distributed in the Northeastern area of the department, predominantly by the Nasa indigenous tribe. Toward the West, cases were registered in the Eperara-Siapidara tribe.

From the total of expected RS in indigenous population (n = 16,711), the health care providers were able to identify 42.3%, and from these identified RS (n = 7,064), they were able to examine 93.2% with at least one AFB smear diagnosis. The positivity index for the AFB smear test reported for the indigenous population during the study period was 1.87% (Table 2).

Table 1

Cases of pulmonary tuberculosis with positive acid-fast bacilli (AFB) smear test in indigenous population. Department of Cauca, Colombia, 2016-2018.

Characteristics	Total (n = 123)		Nasa (n = 88)		Eperara-Siapidara (n = 13)		Misak (n = 11)		Others * (n = 11)	
	n	%	n	%	n	%	n	%	n	%
Sex										
Male	75	61.0	57	64.8	6	46.2	6	54.6	6	54.6
Female	48	39.0	31	35.2	7	53.9	5	45.5	5	45.5
Age at diagnosis (years) **	40	25-61	41	27-62	24	14-42	32	18-35	59	42-78
Notification period										
2016	32	26.0	20	22.7	3	23.1	4	36.4	5	45.5
2017	52	42.3	37	42.1	8	61.5	3	27.3	4	36.4
2018	39	31.7	31	35.2	2	15.4	4	36.4	2	18.2
Health insurance ***										
Subsidized	115	93.5	80	90.9	13	100.0	11	100.0	11	100.0
Contributive	4	3.3	4	4.6	0	0.0	0	0.0	0	0.0
Uninsured	3	2.4	3	3.4	0	0.0	0	0.0	0	0.0
Special	1	0.8	1	1.1	0	0.0	0	0.0	0	0.0
HIV coinfection	3	2.4	2	2.3	1	7.7	0	0.0	0	0.0
Program entering condition										
New	114	92.7	86	97.7	9	69.2	11	100.0	8	72.7
Readmitted after relapse	9	7.3	2	2.3	4	30.8	0	0.0	3	27.3
AFB smear result (bacillus observed) #										
< 1	54	43.9	38	43.2	7	53.9	3	27.3	6	54.6
1-10	32	26.0	23	26.1	2	15.4	4	36.4	3	27.3
> 10	37	30.1	27	30.7	4	30.8	4	36.4	2	18.2

AFB: acid fast bacilli.

* 10 belonged to Yanacona people and 1 to Inga people;

** Median and interquartile range;

*** In Colombia, corresponds to the way people are admitted to the health social security system;

Observed by field in average in 100 observed fields.

Explanations of the results of the implementation of the screening process in PTB

- **Indicator 1: percentage of RS identified**

Goal of RS perceived as overestimated: among most interviewees there is a perception that the targeted amount for RS is overestimated, making it difficult to comply with the established goals.

"...here we have never been able to reach the goal, at least since I've been working here, we have never been able to (...) actually yes; the goal is a bit too high for the population and that is also why we haven't been able to reach it" (ASH03).

Insufficient personnel for search: the effective personnel of health care providers institution are insufficient to complete all the activities that are assigned to them, resulting in a perceived work overload. This leads them to prioritize other activities, such as vaccination and follow-ups of pregnant women and children. Thus, the search for RS is delayed or is passively carried out.

"...the biggest difficulty is that one, who supports us to do the search?, because we have cases, we know who, we know where we can go, we also did a study, we know which are the areas where there have been more cases that we can go visit, but we don't have anybody to do the visit, nobody to do what needs to be done, that's what we are missing" (CSH01).

Figure 1

Geographical distribution of cases in which the acid fast bacilli (AFB) smear test was positive for pulmonary tuberculosis to AFB smear in the indigenous population within the Department of Cauca, Colombia, 2016-2018.

Note: in the municipality of Piendamó five cases were reported in the Nasa tribe and one in the Misak tribe; in the municipality of Silvia, three cases were identified in the Nasa tribe and five cases in the Misak tribe; in the municipality of Sotará, one case was found in the Yanacona tribe and another case in the Nasa tribe.

Table 2

Screening indicators for pulmonary tuberculosis in indigenous population. Department of Cauca, Colombia, 2016-2018.

Indicator	Description	Numerator	Denominator	Result	Qualitative analysis explanations
Percentage of RS identified	RS identified by health services in indigenous population / RS expected in the indigenous population x 100	7,064	16,711	42.3%	Goal of RS perceived as overestimated; Insufficient personnel for search; High search costs in areas of difficult geographical access; Requesting permissions from the indigenous authorities; Stigma and fear of TB diagnosis; Traditional medicine, self-medication, and beliefs
Percentage of examined RS	RS examined with AFB smear test by the health services in the indigenous population / RS identified by the health services in the indigenous population x 100	6,585	7,064	93.2%	Aversion to sputum collection; Mistrust towards non-indigenous health staff
Positivity index	Total of RS with at least one positive AFB smear test / Total of RS examined with AFB smear test by the health services x 100	123	6,585	1.87%	Incorrect identification of the RS; Failures in the collection and transportation of smears

AFB: acid fast bacilli; RS: respiratory symptomatics.

High search costs in areas of difficult geographical access: in some cases, the interviewed coordinating personnel stated that the costs generated in the search of RS exceed the perceived economic return on the health insurance's part. This occurs more frequently in municipalities where roads are scarce or in which the access is by river.

"...*generally, there are more than 300 people who live in that zone and is the place with the most tuberculosis cases, we've even had deaths due to tuberculosis, even though it's true that the cost is equivalent to land transportation, by river you also have to walk and that takes an entire day*" (CSH09).

Requesting permissions from the indigenous authorities: in order to search for RS, it is necessary to have consent from the indigenous authorities, hampering some State-managed health care providers actions, sometimes not been able to obtain permission or taking too long to obtain it.

"...*it's there where we can't cross their paths, because there is an Indigenous reservation (...) and it's there where most of the cases are, but it's also there where we are not allowed to cross*" (CSL02).

Stigma and fear of TB diagnosis: among the testimonies it is mentioned that on some occasions, people are used to denying symptoms when inquired about them. This is due to the TB stigma that remains among the indigenous tribes. The fear of being rejected by their peers makes people afraid of being diagnosed with TB.

"...*they* [people with TB] *may mistrust us, no! If this staff member* [program assistant] *found out that I have the disease, she is going to tell, since she is going to visit such village, she is going to tell the neighbors, and like this, so they have the doubt as to how are they going to receive me, are they going to set me aside? Are they going to discriminate against me? Anyhow!*" (AIL01).

Traditional medicine, self-medication, and beliefs: for most interviewees, practices that hinders the identification of RS includes the manufacturing of homemade remedies, infusions from plants, and the potential visit to the traditional healers. In the indigenous health care providers this kind of practices are reinforced by their health providing model. Self-medication is also an easily accessible first resort, before consulting a physician.

"...*the farther the area is from the downtown, the more they believe on ancestral wisdom, they prefer using plants and all that, is only when they continue feeling sick that they seek a medical consultation*" (CIL04).

- **Indicator 2: percentage of examined RS**

Aversion to sputum collection: according to what the key agents said, the collection of the three sputum smears to be examined poses a challenge. This is due to the dislike or disgust provoked by the collection of sputum and the containers meant for doing so.

"*...they* [people with TB] *feel embarrassed to collect the sputum because they have always told me that they don't want to collect that ugly sputum, they've always told me that*" (ASH08).

Mistrust towards non-indigenous health staff: despite language not being a barrier for communication among the interviewees, it's easier for the indigenous individual to trust and to express everything they want or feel with someone who speaks their own language. When the information is laid out by an indigenous person, it is better received and better accepted than when it is laid out by a health worker who does not belong to their communities.

"*...they express better in their language, then they do speak out their minds but for them to do the same with the physician, they can't express themselves the same and say everything that is happening to them*" (AIH02).

- **Indicator 3: positivity index**

Incorrect identification of RS: in the interviews we identified that the assistants take smears from people who do not meet the RS criteria, regarding cough and expectoration for more than 15 days. This situation might be motivated by the necessity to meet the monthly goals that are imposed by the health care providers institution. Consequently, resources are lost, some smears are of poor quality, and there is fatigue among the personnel in charge of analyzing the AFB smear.

"*...if the person has some symptoms, cough for more than three days, the phlegm, then we do the collection. And the same goes for the other people who are symptomatic, those who we can see are coughing a lot, for more than three days, then we ask them for the smear*" (AIL04).

"*...they* [nursing assistants] *generally – to comply with the goals – and I emphasize to them, they bring me a lot of saliva and I tell them that we have to get the ones who truly are symptomatic, not just to comply with the goal, I am going to capture anybody and they are going to bring me smears that are not going to be worth and I'll waste supplies and time*" (CIL04).

Failures in the collection and transportation of smears: the staff coordinating the program acknowledges flaws in the technique used for fixation and extensions of the smears in the slides, thus making it difficult to process them. Besides, the conditions under which the smears are transported do not guarantee clear readings by the health care providers labs.

"*The transportation of the smears is done in an archaic fashion, we do not have a special container set to certain temperature. It has happened to us that the assistant did collect the smears, arrived at the hospital and they were tipped over, so they were worthless*" (CSL02).

No differences were found in the testimonies of the interviewees from municipalities with high and low incidence of TB or between the State-managed and indigenous-managed health care providers.

Discussion

This study made us aware of the possible barriers in the strategies used for the screening process of the TB control program, within the indigenous population of the Department of Cauca, during 2016-2018. The percentage of identified RS and the positivity index of the AFB smear test were the indicators with the lowest performance. The low percentage of identified RS might be explained by the stipulation of overestimated goals; insufficient personnel to conduct active searches; high costs to reach areas of difficult access; need for permissions from Indigenous authorities; culturally ingrained stigma; use of traditional medicine and self-medication; and the patients' personal beliefs. While the low positivity index of the AFB smear test may be explained by other barriers, such as incorrect RS identification and failures in the collection and transportation of smears.

A study conducted in Paraguay [17], in 19 indigenous communities, reported a RS prevalence of 5.7%. Another study, conducted in the Department of Vaupés (Colombia) [28], reported a RS prevalence of 4.4% (95%CI: 2.9-6.7) within their indigenous population. Our findings suggest that the percent-

age of expected RS within the indigenous population in Colombia would be underestimated (2.5%). However, operational staffs think otherwise. In 2020, the program guidelines were updated to contemplate the idea of adjusting the RS identification goal, considering the sample collection history of the regions [10]. This might contribute to readjusting the goal of the RS indicator according to each context. Furthermore, community-wide active search strategies must be strengthened and continued. In countries like India, the active search strategies, by community health care workers, have proven successful within indigenous population [20]. These models are similar to the ones in which nursing assistants remain on field and is usually the model adopted by the health care providers that are run by indigenous tribes in the Department of Cauca.

It is known that scarcity of health providing personnel or their lack of continuity in the program often affects the activities associated to the TB control programs; all of which influences the perception that users have regarding the quality of the health services that they receive [29]. Additionally, we also have to consider the lack of financial resources, facilities, and supplies that health providers usually face [30]. Keeping all of this in mind, the scarcity of financial resources, which may be due to the high expenses associated with conducting the search in areas of difficult access, was identified as a possible explanation for the low percentage of RS identified. This coincides with the geographical distribution observed in our findings in which indigenous people, such as the Eperara-Siapidara and the Inga, find themselves in zones of difficult access within the Department of Cauca. Moreover, most cases diagnosed with TB are covered by an insurance that is subsidized by the State, reflecting the indigenous population's limited ability to pay.

Stigma and fear of being diagnosed with TB are important factors that restrict the ability to comply with the program activities. In Uganda, 30.6% of the patients were found to hide their diagnosis from their families and that up to 12.3% of them suffered negative experiences due to severe stigmatization [31]. Fear of TB diagnosis in indigenous people is influenced by negative experiences lived within the activities of TB control program and by beliefs on the origin of the disease [29]. In the local context, the authorities of the Arhuaco tribe in Sierra Nevada of Santa Marta report fear of TB diagnosis, since they perceive the activities of TB control program as a threat to their culture [32]. Additionally, fear of TB infection can affect relationships between health workers, patients and their families, and the community [33]. These factors request for the health system agents to work harder in order to implement strategies to reduce stigmatization around TB since, as shown in this study, it becomes a barrier for RS identification. These strategies should be directed not only at the community but also at the health care providers, minimizing attitudes that may generate stigma. The staff should include those who speak the native language, since communication in their own language generates more confidence, in agreement with what was reported by the interviewees.

Usually, the first option is looking for relief of TB symptoms in traditional medicine before doing so in Western medicine [29,34]. Traditional healers are people who are acknowledge as such by their community and their knowledge in the treatment of diseases is based on the oral tradition from generation to generation, without formal training in medicine. Evidence shows that 80% of the patients visit indigenous traditional healers before reaching out to a hospital [35]. Beliefs around the disease may include abstract explanations, such as a form of punishment or a disease of the spirit [34]. In this study, the use of traditional medicine, self-medication, and belief practices were also identified in the testimonies of the people interviewed. Not only does these practices hinder the rate of RS identification but they also become risk factors due to the delay in diagnosis [36].

One study, conducted in regions with a high risk of transmission in Peru, has reported that 99.3% of the total RS identified are examined with AFB smear test and the diagnostics performance of the test reaches 1.5% [37]; similar to our results. Note that, for the indicator of RS examined, at least one AFB smear test was considered (out of the three that are usually performed). On the other hand, a RS prevalence of 4.8% has been observed in indigenous communities from Brazil; however, the positivity index of the AFB smear test from RS was 3.7% [25]. This reduction in the positivity index of the AFB smear test might be explained by the findings associated with the incorrect identification of the RS and the failures in the collection and transportation of the smears. Our study found that in some cases the criterion for cough with expectoration for more than 15 days was not met for sample collection. This factor negatively affect the quality of the collected samples and their positivity rate. According to the quantitative findings, a lower bacillary index is observed in the Eperara-Siapidara

tribe, whose cases were located in the most remote regions and with greater difficulties of access and means of transportation.

The control program for TB does not categorize by ethnicity, those who were RS identified by the health services. That is the reason why we used data from the general population and the estimated proportion of indigenous people in the Department of Cauca [22]. This represents a limitation on the estimation of the indicators.

Conclusion

This study presented the barriers in the implementation of TB diagnosis programs within the indigenous population, in Cauca, as well as the results of three key indicators for TB detection in the area. The possible overestimation of the TB program goals; the lack of personnel; the lack of resources to reach geographically distant regions; cultural elements, such as the language barrier, stigma, self-medication, use of traditional medicine; and lack of adherence to official norms for samples collection were reported as barriers to the process of search and detection of active cases.

Based on this study we highlight the following recommendations to improve the implementation of the search and detection process for TB in indigenous populations of Colombia: adjust the goals for the identification of RS and diagnosis of TB based on the epidemiological findings reported; include additional data on sample characteristics, such as the indigenous tribe the patient belongs to, to identify risk and vulnerability factors when identifying RS; and improve and strengthen search and detection teams, by implementing interventions that have been successful in similar populations, such as the inclusion of indigenous social promoters, as well as providing culturally acceptable health services, as aspects related to the practice of traditional medicine.

Contributors

I. Rodríguez-Márquez, K. Y. Tello-Hoyos, and J. E. Polanco-Pasaje contributed to the original idea and protocol, data analysis and interpretation, writing, and review. P. Torres-Pereda and B. L. Guzmán-Salazar contributed to the data analysis and interpretation, writing, and review. F. Pérez contributed to the data interpretation, writing, and review. All authors approved the final version.

Additional informations

ORCID: Iader Rodríguez-Márquez (0000-0002-2270-7088); Kelly Yoana Tello-Hoyos (0000-0001-9976-442X); Pilar Torres-Pereda (0000-0003-1869-2044); Bertha Leonor Guzmán-Salazar (0000-0002-7345-5204); Freddy Pérez (0000-0003-2001-0057); Jhon Edwin Polanco-Pasaje (0000-0002-7497-5607).

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Resumen

El objetivo fue evaluar la implementación del proceso y los indicadores en las pruebas para detectar tuberculosis pulmonar (TBP) en población indígena del Departamento de Cauca, Colombia, durante el periodo de 2016-2018, a través de un estudio de métodos mixtos. Fueron elaborados y estimados indicadores para el tamizaje de TBP. Posteriormente, a través de un proceso de muestreo de los proveedores de cuidados de salud de las municipalidades con las incidencias más altas y más bajas de TBP, y desde la perspectiva de actores clave, se intentó encontrar una explicación para los resultados de la primera fase. Se estimaron los indicadores de las pruebas y se realizó un análisis temático de las entrevistas dirigidas a los actores clave. Finalmente, se realizó la triangulación de los hallazgos cuantitativos y cualitativos. Del total de sintomáticos respiratorios esperados (n = 16.711), los proveedores de servicios de salud fueron capaces de identificar a un 42,3% de ellos, y de estos sintomáticos respiratorios identificados (n = 7.064) fueron capaces de examinar un 93,2% (n = 6.585) con al menos una prueba de frotis de bacilos ácidorresistentes. El índice de positividad informado en la prueba de la flema analizada en el microscopio, mediante la prueba de frotis de bacilos ácidorresistentes, fue 1.87%. Las explicaciones de los actores clave giraron alrededor de la percepción de un objetivo posiblemente sobreestimado de sintomáticos respiratorios; insuficiente personal para la consulta; altos costes para las consultas en áreas geográficas de difícil acceso; solicitud de permisos a las autoridades indígenas; estigma; medicina tradicional, automedicación y creencias. Este estudio reveló barreras en la implementación de las pruebas para la TBP en la población indígena del Departamento de Cauca, principalmente en el proceso de identificación de sintomáticos respiratorios.

Tuberculosis Pulmonar; Servicios de Salud del Indígena; Calidad de la Atención de Salud; Indicadores de Calidad de la Atención de Salud; Garantía de la Calidad de Atención de Salud

Resumo

O estudo teve como objetivo avaliar a implementação do processo e os indicadores de triagem para tuberculose pulmonar (TBP) numa população indígena do Departamento de Cauca, Colômbia, no período 2016-2018. Foi realizado um estudo com métodos mistos. Foram elaborados e estimados os indicadores para triagem da TBP. Em seguida, procurou-se explicar os achados da primeira fase, com base em um processo de amostragem de provedores de saúde dos municípios com os coeficientes mais altos e mais baixos de incidência de TBP, e da perspectiva dos atores-chave. Os indicadores de triagem foram estimados e a análise foi realizada das entrevistas com os atores-chave. Finalmente, foi feita a triangulação dos achados quantitativos e qualitativos. Do total de sintomáticos respiratórios esperados (n = 16.711), o provedor de saúde conseguiu identificar 42,3%, e destes sintomáticos respiratórios identificados (n = 7.064) conseguiram examinar 93,2% (n = 6.585) com pelo menos um exame de escarro (teste de BAAR). O índice de positividade do teste de BAAR foi de 1,87%. As explicações dos atores chave giraram em torno da percepção de uma proporção possivelmente superestimada de sintomáticos respiratórios, pessoal insuficiente para a busca, custos elevados da busca em áreas de difícil acesso geográfico, solicitação de autorização pelas autoridades indígenas, estigma, medicina tradicional, automedicação e crenças. O estudo revelou barreiras para a implementação da triagem para TBP na população indígena do Departamento de Cauca, principalmente no processo de identificação de sintomáticos respiratórios.

Tuberculose Pulmonar; Serviços de Saúde do Indígena; Qualidade da Assistência à Saúde; Indicadores de Qualidade em Assistência à Saúde; Garantia da Qualidade dos Cuidados de Saúde