

Original Research Article

Patient experience with pulmonary tuberculosis and its Treatment in Metztitlán, Hidalgo, Mexico, 2023

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Article Information:

Received: 20 April 2026 | Revised: 23 May 2026 | Accepted: 24 June 2026 | Published: July 22, 2026

Cite this article:

Duran Valerio A, Martínez Hernández M, Santillán Escamilla Y, León Alvarado SM, Flores Chávez OR, Negrete Rivera P, Pérez Becker D, Reynoso Vázquez J, Arias Rico J and Ruvalcaba Ledezma JC (2026). Patient experience with pulmonary tuberculosis and its Treatment in Metztitlán, Hidalgo, Mexico, 2023. *Public Health Open Journal*. 11(1):758–769. 10.17140/PHOJ-11-758

Abstract

Introduction: Pulmonary tuberculosis is the second leading cause of death among adults worldwide due to infectious diseases. The 2019 pandemic and socioeconomic inequalities have reversed years of progress in the fight against tuberculosis and have further increased the burden on those affected, especially the most vulnerable.

Objective: To understand the experiences and knowledge of patients with pulmonary tuberculosis regarding their condition and treatment.

Methodology: A qualitative study using in-depth interviews with an ethnomethodological approach was conducted with four patients with pulmonary tuberculosis who were treated through the Strictly Supervised Short-Course Treatment program in the municipality of Metztitlán, Hidalgo. The analysis was performed using grounded theory. The categories analyzed were: knowledge of the disease, access to the health services network, patient attitudes, patient self-care practices, perceptions of healthcare providers' actions, and community participation.

Results. Their understanding of their illness is very limited, health care services are inaccessible, and their accounts express sadness and fear of infecting their loved ones. Among the patients interviewed, two are health care workers and report adverse drug reactions.

Conclusions. Conducting a qualitative analysis of the experiences of patients who have been diagnosed and are receiving drug treatment is of the utmost importance, as it allows us to identify strengths and weaknesses to design intervention strategies that will have a positive impact on this vulnerable population, which lacks knowledge, has limited access to health services, and experiences adverse treatment effects.

Keywords: TB patients, pharmacological diagnosis, patients diagnosed with TB, social inequalities and TB, Qualitative analysis of TB

Introduction

Tuberculosis is a disease that affects not only the patient's physical health but also their mental health; patients' understanding of their illness and how they experience tuberculosis significantly affect their treatment adherence. It is estimated that between 2000 and 2021, 74 million lives were saved thanks to the diagnosis and treatment of tuberculosis [1].

More people worldwide die from tuberculosis than from any other curable infectious disease. Ninety-eight percent of deaths from this disease occur in developing countries. Mortality and morbidity rates are higher among adults, and men are the most affected. Morbidity rates are much higher among disadvantaged population groups and are generally higher in cities than in rural areas [2].

In 2022, Hidalgo reported 205 new cases of TB in all forms, with an incidence rate of 6.6, a mortality rate for all forms of TB of 0.7, and a mortality rate for pulmonary tuberculosis of 0.5. The municipality with the highest incidence in 2022 was Metztitlán at 35.8, followed by Zacualtipán at 15.9 and Jacala at 14.2, while Huejutla reported 13.5 [3].

Two categories were identified: "Care Network for People with Tuberculosis and Public Policies" and "Challenges in Nursing Care for People with Tuberculosis," which highlight the challenges in establishing a bond between the patient and the nursing staff, the length of treatment, vulnerability as a factor that hinders adherence, and the side effects of medication from the start of treatment. The challenges faced by nurses in caring for people with tuberculosis range from patient recruitment and engagement to treatment adherence, as well as a lack of initiatives aimed at prevention and health promotion [4].

The nursing consultation is considered a private activity of the nurse, and the nurse's actions enable the implementation of the Nursing Process, which comprises five stages: assessment or data collection, nursing diagnosis, planning, implementation, and evaluation of care. The objective of this study is to evaluate the records from follow-up consultations with people with tuberculosis (TB) conducted by nurses at primary health care units under the Community Health Management system in 2017 and to identify nurses' perceptions of their practice in caring for these patients [5].

Diabetes mellitus (DM) increases the risk of active tuberculosis (TB) and worsens TB outcomes, jeopardizing TB control, especially in TB-endemic countries with rising DM prevalence rates. "This study shows that the prevalence of DM and the clinical characteristics of TB-

DM vary across settings. Diabetes is largely undiagnosed and untreated, hyperglycemia is often severe, and many patients with TB-DM are at significant risk for cardiovascular disease and severe TB. This underscores the need to improve strategies for better clinical management of comorbid TB and DM." [6].

According to the article "A Social Phenomenological Approach to the Daily Lives of People with Tuberculosis" by Wilfredo Carcausto et al. (2020), one of the main fears is infecting loved ones and being discriminated against by society because of the disease. These feelings of guilt and helplessness among people with this disease make treatment difficult, as they may even become depressed [7].

"This study evaluated treatment outcomes among patients with pulmonary TB (PTB) and identified predictors of treatment failure. The treatment success rate among patients with PTB was lower than the recommended success rate of 85%. Patients with TB who are at higher risk of treatment failure should receive enhanced supervision and treatment follow-up to improve the success rate of TB management in Pakistan." [8].

This study included 138 patients with suspected pulmonary tuberculosis. The results showed a significant increase in the number of samples containing purulent particles and a volume greater than 5 mL, as well as an increase in the proportion of patients diagnosed with tuberculosis following the educational intervention. It was demonstrated that, following the educational intervention, higher-quality sputum samples were observed, with appearance and volume suitable for effective smear microscopy [9].

In the case study conducted by the author, Serra et al. (2015) emphasize that pulmonary tuberculosis has been a true scourge for humanity, as 20 million cases of tuberculosis were detected worldwide, with 9 million new cases diagnosed each year. It poses a threat to global public health, despite existing programs and effective treatments, there are still shortcomings in the implementation of the national program [10].

Tuberculosis treatment adherence can be defined as the extent to which a patient's medication intake aligns with the prescribed treatment. The combined number of cured patients and those who complete treatment are pragmatic indicators of treatment adherence (WHO) in the article "Factors Related to Treatment Adherence in Patients with Tuberculosis," Pereira, Colombia. Dueñes M et al. (2013) conducted a cross-sectional study of 174 patient records from the tuberculosis control program. The results showed that treatment adherence among patients with pulmonary tuberculosis

was 94.8% and was higher among patients in the contributory health insurance plan ($p = 0.035$). Treatment nonadherence was 5.2%. Drug intolerance was higher in the group that did not adhere to treatment. Lack of family support, loss of employment, economic impact, and dissatisfaction with the timeliness of care at the health facility were important factors contributing to nonadherence. Based on these findings, it is concluded that enrollment in the health system and drug tolerance were the objective factors associated with treatment adherence [11].

In the article “Alterations in Functional Patterns in People with Pulmonary Tuberculosis, Villavicencio, Colombia,” written by Aponte Garzón et al. (2011), it was concluded that the most significantly altered functional patterns were activity and exercise, nutrition and metabolism, the cognitive-perceptual pattern, and the self-perception and self-concept pattern. Fatigue and shortness of breath make it difficult to travel to the healthcare facility, and reduced energy makes it hard to hold down a job, which affects family income. There is a lack of awareness regarding aspects relevant to disease management. Manifestations of sadness and isolation are present, associated with negative social perceptions of the disease. The study emphasizes the crucial role that nursing plays in ensuring completion of TB treatment, suggesting that once these patterns are identified, individualized interventions should be implemented using care guidelines to improve the information provided, treatment, strategies, and transmission control [12].

Vinaccia, et al. (2007), in their article “Health-Related Quality of Life and Perceived Social Support in Patients Diagnosed with Pulmonary Tuberculosis,” emphasize that the progression of the disease significantly alters the patient’s quality of life, noting that, in general, chronic diseases affect important aspects of life, starting from the initial acute phase, when patients experience a period of crisis characterized by physical, social, and psychological imbalance accompanied by anxiety, fear, and disorientation, as well as changes in physical, occupational, and social activity and this condition can last a lifetime [13].

The treatment of pulmonary tuberculosis is of great importance. Boldu et al. (2007) emphasize the importance of treatment adherence and the importance of urging patients to strictly follow their prescriptions by involving family members or support networks [14].

Health services are a key determinant, as are access to medical care and medications.

Another article related to the research topic is “Treatment Nonadherence for Tuberculosis in Nicaragua”:

results of a comparative study conducted by Soza, et al. (2005), which identifies the main factors related to treatment discontinuation for pulmonary tuberculosis. To gather this information, the authors conducted a case-control study with age-matched controls and found that males are more likely to discontinue treatment than females. Other factors include unstable housing, a change of address during treatment, alcohol consumption, illicit drug use, difficulty accessing health services, and their perception of the care received. It is concluded that it is essential to establish measures within health services that help reduce the risk of treatment discontinuation and restore the health sector’s social participation through community-based actions [15].

Zavala et al. (2004), in their article “Perceptions Related to Pulmonary Tuberculosis,” mention that in the municipalities of southern Nuevo León, Mexico, patients with TB claim that the causes of the disease are that they did not receive their full course of vaccinations, excessive work, smoking, alcoholism, and poor nutrition have led to their contracting the disease, furthermore, a lack of awareness of the symptoms contributes to the spread of the disease, as they do not take precautions regarding where to cough and spit up phlegm [16].

According to Romero, (2004), in his article “Gender Differences in Social Support Networks Among Patients with Pulmonary Tuberculosis”: A Qualitative Study in Two Towns in the State of Veracruz, Mexico, it was found that gender inequality exists in the relationship between support networks and the treatment of the disease; although there are more cases of TB among men, mortality rates among women are even higher, reaching levels comparable to maternal mortality; The main reason is that women lack social, moral, and economic support networks from family members and/or friends to continue treatment; out of fear of being rejected by their husbands, they hide their illness. In contrast, men are primarily supported by their wives or ex-wives, sisters, etc., which leads to successful treatment and results in lower mortality rates [17].

Álvarez, et al. (2000), in their article “Perceptions and Practices Related to Tuberculosis and Treatment Adherence in Chiapas, Mexico,” note that a lack of knowledge about the disease leads people to seek alternative forms of care. They highlight the importance of a proper doctor-patient relationship to ensure timely diagnosis and adherence to the prescribed treatment; as a recommendation, they emphasize the need to create outreach programs on the basic aspects of the disease and its treatment [18].

According to Romero, (1999), in his article “Beliefs and Social Consequences of Pulmonary Tuberculosis in Two Indigenous Communities in the State of Oaxaca,” we observed a complete rejection of the disease; people with tuberculosis do not accept it and prefer to attribute it to “witchcraft,” and the fear of social rejection leads to treatment non-adherence and contributes to further transmission, this is due to a lack of knowledge about the disease [19].

In the article “Strictly Supervised Short-Course Treatment for Pulmonary Tuberculosis in the City of Chiapas” by Álvarez, et al. (1998), the authors note that treatment nonadherence for pulmonary tuberculosis is one of the main risk factors for drug-resistant tuberculosis. It suggests that healthcare personnel should be more accessible to patients, regardless of which institution they belong to, and should verify daily medication intake throughout the entire course of treatment [20].

We realize that knowledge is essential to the success of treatment; that is why we must not only provide medication but also educate patients about the disease, address their concerns, build trust, and involve support networks so that patients do not fall into depression and abandon treatment [21].

The importance of understanding how a person with tuberculosis lives stems from the fact that it remains a public health problem even in our century due to its multiple causes, with marginalized population groups identified as the most severely affected; controlling the disease depends on improvements in the general living conditions of the population [22].

Objective

To understand the experiences and knowledge of patients with pulmonary tuberculosis and their treatment.

General research question

What has been the experience of people with pulmonary tuberculosis and its treatment?

Methodology

A qualitative study was conducted using in-depth thematic interviews with an ethnomethodological approach among four patients with pulmonary tuberculosis who were treated through the Strictly Supervised Short-Course Treatment program in the municipality of Metztlán, Hidalgo. The analysis was based on grounded theory. The categories analyzed were: knowledge of the disease, access to the health services network, user attitudes, user self-care practices, perceptions of health care providers' actions, and community participation.

Data collection procedure

An in-depth interview was conducted to gather information about the factors that influence non-adherence to treatment.

Participants

Four patients with pulmonary tuberculosis enrolled in the Strictly Supervised Short-Course Treatment program in the municipality of Metztlán, Hidalgo, were recruited. Data will be analyzed using grounded theory, employing the following keywords: tuberculosis, treatment discontinuation, re-emerging disease, knowledge.

Assessment Instrument

Comprising two sections, Section A contains personal information, and Section B contains 14 questions in six categories: knowledge of the disease, access to the health services network, attitude, practices, perception of healthcare personnel's actions, and community participation.

Results

The knowledge reflected in the participants' discourse reveals a very poor understanding of how the disease is transmitted.

“I think someone passed it on to me, because I was fine—I don't even go out.”

“I'd been coughing for a long time; they say that's how you catch it. I was getting desperate from all that coughing.”

“It spreads from person to person when someone expels particles” (See Table 1).

Her account of her attitude even suggests a certain acceptance of the illness, as she notes that they came to visit her every day, that she was afraid of not knowing anything, and that she doesn't believe she caught it.

“When I did have that illness, I actually felt good because people came to see me every day.”

“Fear because we don't know anything, and even at the end they told us that the good news is that it's curable.”

“I felt bad about myself because I couldn't believe I'd gotten infected.” (See Table 2)

When asked about how to take their medication, we found in their discourse, which reflected a reluctance to take so many pills, the following responses regarding their medical consultation:

Table 1. Discourse Analysis from the Perspective of Understanding the Disease.

CATEGORIES	QUESTIONING	DISCOURSE	ANALYSIS
Understanding the disease	How do you think pulmonary tuberculosis is transmitted?	E1. P1. I think someone passed it on to me, because I was fine, I don't even go out. E2. P2. The thing is, I'd been coughing for a long time. They say that's how you catch it. I was getting desperate from all that coughing, especially because I'm going up north with my daughter, and with that damn cough, I thought they wouldn't even let me board the plane, they'd say I had the disease that's going around right now. E3. P3. Well, I don't know, because no one ever told me I had it. I went to see a lot of doctors, and none of them said anything to me. E4. P4. It spreads from person to person when someone expels particles.	Álvarez Gordillo G. C. et al. (2000), in their article "Perceptions and Practices Related to Tuberculosis and Treatment Adherence in Chiapas, Mexico," note that a lack of knowledge about the disease leads people to seek alternative forms of care. They highlight the importance of a proper doctor-patient relationship to ensure timely diagnosis and adherence to the prescribed treatment; as a recommendation, they emphasize the need to create outreach programs on the basic aspects of the disease and its treatment [21].

"They told me I have to take those darn pills every day."

"Take the four maintenance pills on an empty stomach from Monday through Saturday." (See Table 3)

Regarding their perception of healthcare workers' actions, as described in their narrative, they perceive these actions as:

"Poor, because no one tells you where to go; they send you from one person to another. The worst part is that the wait times are very long, and it drives you crazy."

"Pretty good, all things considered, since I was diagnosed because one of my fellow nurses at work tested positive for TB, and they performed smear tests on all staff members because we were direct contacts. Well, I tested positive too, and since I'm not from there, they gave me my treatment here at the Pachuquilla health center."

"I'd say it's fine; I'm not complaining." (See Table 4)

Access to the health care system suggests that:

"We go to the clinic to see the doctor."

"There's no health center where we live; we go to the one that's just down the road."

"There's a health center, but we hardly ever go because they ask for letters stating you're not covered by another plan, and my husband enrolled us in the IMSS, so the closest one is in Pachuca and appointments take a long time."

"Well, since I'm in an urban area, I have access to the health centers in my municipality, and as a student doing community service, the school kept an eye on us."

"Well, I can't complain, although it is very different from the towns I've been to, since the care there is much more personal—or maybe because I'm a doctor, they assume I'd always take my medication. 'Which, if that was the case, it's because I was the one most interested in getting through this, but anyway' (See Table 5).

The narrative regarding activities carried out within the family and by the community highlights the search for medical care.

"When I was diagnosed, the people I was most worried about were my family, so I didn't hesitate to have them undergo the necessary tests, and they supported me a lot throughout the entire process since they followed all the instructions we were given. And I can say that, since we were

Table 2. Discourse Analysis from the Perspective of Attitude.

CATEGORIES	QUESTIONING	DISCOURSE	ANALYSIS
Attitude	How does the illness make you feel?	E1. P1. No, I'm not sick with that anymore, not anymore. My bones hurt, but that's just from walking so much. Back when I had that illness, I actually felt good because people came to see me every day. E2. P2. It just makes me worry because then I can't sleep, my "sugar" must be going up. E3. P3. Fear, since we don't know anything, and in the end they even told you that the good news is that it's curable. E4. P4. I felt bad about myself because I couldn't believe I'd gotten infected.	According to the article "A Social Phenomenological Approach to the Daily Lives of People with Tuberculosis" by Wilfredo Carcausto et al. (2020), one of the main fears is infecting loved ones and facing discrimination from society because of the disease. These feelings of guilt and helplessness among people with this disease make treatment difficult, as they may even become depressed [7].
	How much has your life changed because of this condition?	E1. P1. Well, I keep doing my little things, I go out to pasture. The nurses tell me I have to take my pills and wear a mask, but I don't feel sick. Then I go to the mill. E2. P2. A lot, because I couldn't go see my daughter, and if I didn't go, my dad certainly wouldn't either. E3. P3. My whole life changed; I couldn't do anything because of the cough, it got to the point of despair. E4. P4. Well, it turned everything upside down because I had to put part of my community service on hold and, at the time, take action to make sure I didn't infect my family.	Vinaccia Stefano et al. (2007), in the article "Health-Related Quality of Life and Perceived Social Support in Patients Diagnosed with Pulmonary Tuberculosis," emphasize that the progression of the disease significantly alters the patient's quality of life, noting that, in general, chronic diseases affect important aspects of life, starting from the initial acute phase, when patients experience a period of crisis characterized by physical, social, and psychological imbalance accompanied by anxiety, fear, and disorientation, as well as changes in physical, occupational, and social activity, and this condition can last a lifetime [13].
	How have you felt while on treatment?	E1. P1. When I took it, I kind of lost my appetite, but that was all. Now that I'm no longer taking it, I'm fine. E2. P2. It seems to be helping a little, but then I'd get really anxious, and my stomach just won't let me be. E3. P3. I'm just about to start it; they just told me I have to take 4 pills a day. E4. P4. At first I got hives, and then gastritis; I had to take a stomach protector.	In the article "Factors Related to Treatment Adherence in Patients with Tuberculosis, Pereira, Colombia," Dueñes M. et al. (2013) conducted a cross-sectional study of 174 patient records from the tuberculosis control program. The results showed that treatment adherence among patients with pulmonary tuberculosis was 94.8% and was higher among patients in the contributory health insurance plan ($p = 0.035$). Treatment nonadherence was 5.2%. Drug intolerance was higher in the group that did not adhere to treatment. Lack of family support, loss of employment, economic impact, and dissatisfaction with the timeliness of care at the health facility were important factors contributing to nonadherence. Based on these findings, it was concluded that enrollment in the health system and drug tolerance were the objective factors associated with treatment adherence [11].

in the midst of the COVID-19 pandemic, it was very normal for everyone to wear a mask" (See Table 6).

Discussion

Although tuberculosis represents a persistent public health problem and an indicator of poverty that also signifies a vulnerable population with low educational attainment wherever it occurs in the state of Hidalgo,

one of the areas most severely affected is Metztitlán, Hidalgo, Mexico. The disease has a higher incidence among men [1] [4]. Although the mortality rate is higher among women since men appear to have greater access to support to continue treatment [19], this health problem is typically found in developing countries. This means that Mexico, in addition to remaining a developing country with no alternative solutions to the shortage of medications, supplies, equipment, and hospital infrastructure, will continue to face serious difficulties

Table 3. Discourse Analysis from the Perspective of Practice.

CATEGORIES	QUESTIONING	DISCOURSE	ANALYSIS
PRACTICE	Please explain to me: How do I take this medication?	E1. P1. I didn't want to take so many pills. E2. P2. The girls from the clinic would come to see me; I only went when it was my turn for an appointment. E3. P3. They told me I have to take those darn pills every day. E4. P4. Take the four maintenance pills on an empty stomach, Monday through Saturday.	The treatment of pulmonary tuberculosis is of great importance. Boldu, J., et al. (2007) emphasize the importance of treatment adherence and the importance of urging patients to strictly follow their prescriptions by involving family members or support networks [14].
	What protective measures would you take to avoid infecting your family or friends?	E1. P1. Well, I'm just with my wife, and she's fine; then my daughter comes to see me, but since the other doctor told me I don't have anything, we don't need to wear those darn masks. E2. P2. Just wearing face masks. E3. P3. No, they told me to stay away from my family, but to wear a face mask, especially around my children. E4. P4. The main precautions are handwashing and wearing face masks.	Occupational exposure to infections is a serious problem; due to the nature of their work, healthcare workers are considered to be at high risk for contracting infections such as tuberculosis. To prevent nosocomial transmission of tuberculosis, it is essential to comply with the biosafety measures established for its infectious agent, to periodically monitor the health status of workers at occupational risk, and to provide health training to healthcare personnel in general [25].
	If you discontinued treatment, what was the reason you stopped taking your medication?	E1. P1. Because my son took me to see a doctor in Pachuca, and he told us that if I had taken pills before and was told I no longer had the disease, I didn't have to take them again because I'm already well. E2. P2. They did not discontinue treatment, so this question was not asked. E3. P3. They did not discontinue treatment, so this question was not asked. E4. P4. They did not discontinue treatment, so this question was not asked.	In the article "Strictly Supervised Short-Course Treatment for Pulmonary Tuberculosis in the City of Chiapas" by Álvarez Gordillo G. C. et al. (1998), the authors note that treatment discontinuation for pulmonary tuberculosis is one of the main risk factors for drug-resistant tuberculosis. It suggests that healthcare personnel should be more accessible to patients—regardless of which institution they belong to—and should verify daily medication intake throughout the entire course of treatment [20].

in its local health systems and, consequently, will have a more vulnerable population due to low educational attainment, poverty, and re-emerging diseases such as pulmonary tuberculosis and other forms of this disease.

One of the towns in the state of Hidalgo most severely affected by tuberculosis is Metztitlán (4). Although it is known that treatment non-adherence, educational attainment, poverty, and other risk factors influence the persistence of this disease, and despite efforts and research in this area, pulmonary tuberculosis continues to be present in vulnerable populations [18] [19] [20] [23] this was confirmed in the present study, and it is concerning that this issue is not being addressed in

terms of health education, improving living conditions and lifestyles, and the definitive fight against poverty. Otherwise, it will not be possible to eradicate this disease one day.

This research supports the recommendation to adopt the principle of shared responsibility in public health; this means that both the government and society have an obligation to contribute to the common good. In the face of this disease, there is no choice but to accept and fulfill the government's commitments and responsibilities to work toward improving lifestyles and effectively reducing poverty, not through empty rhetoric or failed whims. In society, healthcare workers must learn, through academic training, to work with patients in a

Table 4. Discourse Analysis from the Perspective of Perceptions of Healthcare Workers' Actions.

CATEGORIES	QUESTIONING	DISCOURSE	ANALYSIS
Perceptions of Healthcare Workers' Actions	Tell me What is the care like from healthcare workers when you see them?	E1. P1. Well, they used to come see me every day and talk to me, but now nobody comes anymore. E2. P2. I'd say it's fine; I'm not complaining. E3. P3. It's bad because no one tells you where to go, they send you from one person to another. The worst part is that the appointments take forever, and it drives you crazy. E4. P4. It's okay, all things considered, since I was diagnosed because one of my fellow nurses at work tested positive for TB, and they performed smear tests on all the staff because we were direct contacts. Well, I tested positive too, and since I'm not from there, they gave me my treatment here at the Pachuquilla health center.	According to PAHO/WHO, health promotion is a comprehensive political and social process that encompasses actions aimed at modifying social, environmental, and economic conditions in order to foster their positive impact on individual and collective health. [1] [2].

manner consistent with health education, and patients must adhere to their treatment; this means that everyone must fulfill their obligations and/or participate for the common good. [24].

Conclusions

Their understanding of their illness is very limited, it depends on their level of education. They have access to health services, although these are not easily accessible. Some travel to Pachuca to the IMSS because they are beneficiaries and report that they receive care only after very long wait times for appointments. Additionally, people with pulmonary tuberculosis receive support from their families; however, they feel sad knowing that they can infect their family members.

They gradually learn about the transmission mechanism as they progress through treatment; they also mention in their narratives that it is transmitted by coughing or sneezing in front of others. They often went to see a doctor, but the doctor did not tell them what they had; they feared infecting their neighbors and family.

The person in E4 mentions that they are a doctor; perhaps they suggest that the patient will take all the pills. Another case involves a nurse who tested positive at work, perhaps from one of her coworkers but it could also be due to contact with patients who are unaware they have this health issue. Some perceive the care they receive as somewhat poor, feeling they aren't be-

ing attended to, so they seek private care. There is a lack of information about the disease, but they know it is curable, and their attitude is to continue taking the medication, even though it appears to be quite difficult to tolerate due to side effects. One person mentions a case where they developed hives, followed by gastritis, and now must take another medication as well.

Conflict of interest. The authors declare that there is no conflict of interest regarding the publication of this article.

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Table 5. Discourse Analysis from the Perspective of Access to the Health Care Network.

CATEGORIES	QUESTIONING	DISCOURSE	ANALYSIS
Access to the Health Care Network	Could you help me by telling me	E1. P1. We go to the clinic to see the doctor.	Rivera-Lozano (2020) states in his article that the health of a population is strongly linked to human development and drives economic growth. Therefore, Ruvalcaba et al. state that the fundamental role of a health system is to respond to the needs of the population, which requires developing and maintaining high-quality structural, organizational, and financing mechanisms that lead to comprehensive, effective, universal, accessible, and equitable service delivery [25]. Accessibility is a matter of rights and responsibilities, from the perspective of the service provider, but also from that of the patients who constitute the demand, and these are important factors for understanding the utilization of health services, as well as their performance and quality [27], [28]. A lack of effective access to health services discourages their use and leads to consequences such as disease complications, lack of adherence to or abandonment of treatments, and further deterioration of health, in addition to a sense of frustration among users [25]–[29].
	What health care services are available in your community?	E2. P2. There's no health clinic where we live; we go to the one that's just down the road. E3. P3. There is a health clinic, but we hardly ever go because they ask for letters stating you're not covered by another insurance plan, and my husband enrolled us in the IMSS, so the closest one is in Pachuca and appointments take a long time. E4. P4. Well, since I live in an urban area, I have access to the health centers in my municipality, and as a student doing community service, the school kept an eye on us.	
	Which health care service do you use?	E1. P1. When I'm here at the clinic, and when my son takes me, we go see the doctor in Pachuca. E2. P2. To the clinic. E3. P3. To Clinic 1 in Pachuca, and well, when they don't see us or just give us the runaround, we go to Atotonilco to see a doctor. E4. P4. I usually went to the health center in Pachuquilla. And my follow-up was done over the phone.	
	Tell me, how do they treat you there?	E1. P1. Well, at the clinic, it's okay, but we have to leave really early to make it to our appointment—otherwise, we won't make it. Also, sometimes there aren't any medicines, and the doctors have to order them. E2. P2. Well, not any more than lately, there aren't even any medicines. E3. P3. I'm telling you, appointments take forever, who knows when they'll be available. E4. P4. Well, I can't complain, although it is very different from the towns I've been to before, since the care is much more personal, or maybe because I'm a doctor, they assume I'd always take the medication. "Well, if that were the case, it's because I was the one most interested in getting through this, but anyway."	
	After the consultation and based on the recommendations, please tell me about his treatment.	E1. P1. I didn't want to take the medicine they were going to give me anymore. I'm grateful to the nurses and doctors, but I had already taken it before, and as far as I was concerned, I was already well. So my son took me to another doctor, and he told us I shouldn't take it anymore because I was already cured. And well, I believe that doctor, because I don't feel sick, I don't have a cough or anything. E2. P2. All I know is that they give me four pills; you could say I don't limit myself in any way. The only thing that bothers me is that darn heartburn. They wouldn't let me take a bus up north, and my daughter kept telling me to finish the treatment so I could go visit them. E3. P3. All I know is that I have to go if I feel sick, even if it's a month from now, and keep doing so until I reach 6 months. E4. P4. It's a long treatment with favorable results, good for most cases like mine, where I don't have any comorbidities.	From the perspective of the rights holder, we can define the right to consultation as the right of peoples and communities to have States carry out consultation processes with their representative bodies, in which any development project or measure likely to significantly affect them is submitted for their consideration [25]–[29]. In the article "Strictly Supervised Short-Course Treatment for Pulmonary Tuberculosis," conducted in the city of Chiapas by Álvarez Gordillo G. C. et al. (1998), it is mentioned that treatment nonadherence for pulmonary tuberculosis is one of the main risk factors for drug-resistant tuberculosis. It suggests that healthcare personnel should be more accessible to patients, regardless of which institution they belong to, and should verify daily medication intake throughout the entire course of treatment [19], [21]. Adherence to tuberculosis treatment can be defined as the extent to which a patient's medication intake aligns with the prescribed treatment. The combined number of cured patients and those who complete treatment are pragmatic indicators of treatment adherence (WHO). In the article "Factors Relate to Treatment Adherence in Patients with Tuberculosis," Pereira, Colombia, Dueñas M. et al. (2013) conducted a cross-sectional study of 174 patient records from the tuberculosis control program. The results showed that treatment adherence among patients with pulmonary tuberculosis was 94.8% and was higher among patients in the contributory health insurance scheme ($p = 0.035$). Treatment nonadherence was 5.2%. Drug intolerance was higher in the group that did not adhere to treatment. Lack of family support, loss of employment, economic impact, and dissatisfaction with the timeliness of care at the health facility were important factors contributing to nonadherence. Based on these findings, it was concluded that enrollment in the health system and drug tolerance were the objective factors associated with treatment adherence [11].

Table 6. Discourse Analysis from the Perspective of Community Participation.

CATEGORY	QUESTIONING	DISCOURSE	ANALYSIS
Community participation	Tell Me What activities do your family and community carry out to prevent and control pulmonary tuberculosis?	E1. P1. I don't think they do anything because I'm already well. E2. P2. My siblings used to come visit me; they weren't afraid of this disease. And since we don't go out, except to Metztitlán to run errands, people still find out about everything, especially because the nurses and doctors came every day. Some people wouldn't even come near us, but others didn't even notice. E3. P3. My husband takes care of me and has taken me to see many doctors so they can treat me, and well, in town, people don't know I have this disease. E4. P4. When I was diagnosed, I was most worried about my family, so I didn't hesitate to have them undergo the necessary tests, and they supported me a lot throughout the whole process since they followed all the instructions we were given. And since we were right in the middle of the COVID-19 pandemic, it was very normal for everyone to wear a face mask.	The relationship with the family is one of the emerging factors when analyzing adherence to TB treatment. Constant monitoring of treatment compliance by family members is associated with better adherence to treatment. A negative attitude on the part of the family significantly influences poor adherence to TB treatment. Furthermore, patients fear that their TB treatment might affect their family members, which acts as a deterrent to developing adequate adherence. Therefore, a negative societal attitude toward TB patients has also been linked to nonadherence. Llanos et al. point out that tuberculosis is a social disease associated with poverty and stigmatization that affects the most disadvantaged populations. To ensure adherence, disease control programs implement activities related to prevention, screening, diagnosis, and treatment. However, certain key elements are often overlooked when developing a strategy to promote treatment adherence, such as consultations with specialists and diagnostic tests, among others. Nonadherence to treatment is one of the main factors influencing treatment outcomes and is related to social vulnerability, lack of personal motivation, lack of knowledge about the disease, lack of family and social support, unhealthy lifestyles, and insufficient access to health services [19].

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