International Journal of Multidisciplinary Research and Development
www.allsubjectjournal.com
ISSN Online: 2349-4182
Received: 02-12-2025, Accepted: 01-01-2026, Published: 15-01-2026
Volume 13, Issue 1, 2026, Page No. 52-60

Determinants of the recurrence of Tuberculosis in Bouake (Cote d'Ivoire)

Dr. Lath Mel Fernand[1], AKMEL Meless Simeon[2]
[1] Department of Anthropology and Sociology, Alassane Ouattara University, Bouake, Côte d'Ivoire
[2] Professor, Teacher-Researcher, Department of Anthropology and Sociology, Alassane Ouattara University, Bouake, Côte d'Ivoire

Abstract
Tuberculosis remains a major public health challenge in Côte d'Ivoire. The objective of this research is to analyze the sociocultural, economic, and institutional factors that contribute to the recurrence of tuberculosis in the Bouaké department. The research employs a qualitative, phenomenological approach focused on data collection techniques and tools such as direct observation, participant observation, document review, focus groups, semi-structured interviews, and observation grids. Theories of social representations and social behavior change were used to further analyze the field data. The research yielded results. First, it examined socioeconomic and institutional factors. Second, it explored the sociocultural determinants and treatment pathways associated with the disease. Finally, in response to this challenging situation, the research facilitated the implementation of strategies for disease control and prevention.

Keywords: Determinants, recurrence, tuberculosis, control and prevention strategies, Bouake

Introduction

Tuberculosis is an infectious and contagious disease caused by Mycobacterium tuberculosis and transmitted from person to person. It spreads through the air (Girard Pierre-Marie *et al*., 2004) [6]. Humans are the only reservoir of tuberculosis, allowing transmission from an infected individual to an uninfected one (Toujani Sonia *et al*., 2015) [22]. It is a disease that can affect all organs except the skin and hair (Halverson Jennifer *et al*., 2014; Long Richard and Schwartzman Kevin, 2014) [8]. The most common form is pulmonary tuberculosis, which is also the only contagious form of the disease (Halverson Jennifer *et al*., 2014; Toujani Sonia *et al*., 2015) [8, 22]. Tuberculosis remains a significant public health problem for a large portion of the world's population despite numerous tuberculosis control strategies (WHO, 2017). Indeed, more than a third of the world's population is infected with Mycobacterium tuberculosis (MTB) (Toujani Sonia *et al*., 2015) [22]. One of the main factors fueling the tuberculosis epidemic is the emergence and spread of drug-resistant strains of Mycobacterium tuberculosis, both in new and previously treated cases, creating a threatening and challenging situation for tuberculosis prevention and control (Welekidan Zelalem *et al*., 2020) [24].

As with countries worldwide, Africa remains the continent most affected by tuberculosis (60%) (Hentze Wilhelm *et al*., 2010) [9]. The incidence of TB is estimated at over 300 cases per 100,000 inhabitants, and the prevalence of TB-HIV coinfection varies between 20% and 49%, according to the 2009 WHO report (WHO, 2009). Furthermore, patients' susceptibility to infectious diseases also varies according to their haptoglobin phenotype (Hp phenotype). For example, it has been shown that patients with the Hp2-2 phenotype who have tuberculosis have an increased risk of mortality and a greater susceptibility to developing severe renal tuberculosis compared to patients with other phenotypes (Kasvosve Innocent *et al*., 2000; Khazaei Mahmoud *et al*., 2014) [15]. Indeed, since iron is necessary for bacterial growth, its binding by the Hp-Hb complex reduces its extra-erythrocyte availability. This slows the growth of Mycobacterium tuberculosis (Olakanmi *et al*., 2007; Nairz *et al*., 2010) [19, 20]. This demonstrates that Africa faces numerous public health challenges related to infectious diseases due to several factors, including poverty, limited access to healthcare, conflict, migration, underdeveloped health infrastructure, climate, and others (Hidoub Islam and Achouri Mounir, 2024) [11].

Even today, tuberculosis remains a diagnostic challenge. This is partly due to the nonspecificity of its symptoms, which are often overlooked by patients and insufficiently analyzed by clinicians. The diagnosis of pulmonary tuberculosis relies on the isolation of acid-fast bacilli (AFB) through direct examination of sputum or on the isolation of Mycobacterium tuberculosis complex bacteria in culture. The diagnosis of extrapulmonary tuberculosis is more difficult, depending, in part, on the challenge of obtaining samples through invasive procedures (bone biopsy, cerebrospinal fluid biopsy, liver biopsy) (Guillet-Caruba *et al*., 2014) [7].

In Cote d'Ivoire, managing tuberculosis remains a significant challenge for policymakers. According to the National Tuberculosis Control Program (PNLP), Côte d'Ivoire recorded over 21,676 cases of tuberculosis in 2016. This epidemiological burden led to the creation of 140 diagnostic and treatment centers (CDTs). Among these are 16 tuberculosis treatment centers (CATs) with 1,642 healthcare professionals trained to identify suspected cases and monitor patients undergoing treatment. Despite medical advances and prevention efforts, the disease persists. According to the World Health Organization, one-third of tuberculosis cases remain undiagnosed or unreported. Unfortunately, the Bouaké department, located in central Côte d'Ivoire, is not spared from this tuberculosis crisis. In 2018, the coordination zone (CAT) for this department estimated over 1,038 cases of tuberculosis of all forms.

From this observation arises the following main question:

"How can we explain the recurrence of tuberculosis despite institutional control efforts in the Bouake department?" Related to this main question are the following specific questions:

1. What socio-economic and institutional factors contribute to the recurrence of tuberculosis in the Bouaké department?
2. How do socio-cultural determinants and treatment pathways relate to the disease influence patients' behavior?
3. What control and prevention strategies can be implemented to effectively reduce the recurrence of tuberculosis in Bouaké?

The objective of this study is to analyze the socio-cultural, economic, and institutional factors that contribute to the persistence of tuberculosis in the Bouaké department.
However, to achieve this, methodological rigor is essential.

Methodology

Study Site

This research took place in the Bouake department, in central Côte d'Ivoire. This department comprises three (3) sub-prefectures:

1. The Bouake Sub-prefecture, inhabited by the Foufouè;
2. The Brobo Sub-prefecture, inhabited by the Ahari or Ahli;
3. The Djebonoua Sub-prefecture, inhabited by the Sah.

These three (3) tribes constitute subgroups of the larger Baoulé group.
With an area of 4,803 km², the Bouake department has a population of 832,371, according to the 2021 General Population and Housing Census (RGPH). The research focused on urban areas (Bouake, Brobo, and Djebonoua), peri-urban areas (Tollatanoukro, Tollakouadiokro, Diezoukouamekro, and Broukro), and rural areas (Lengbré, Kanoua, Takikro, Mamini, and Ayabo). The populations visited included indigenous peoples (Baoulé), non-indigenous groups (Senoufo, Malinké, and Koyaka), and non-nationals. These sites were chosen due to the high prevalence of tuberculosis recorded in the CAT and CDT registers of the department.

Inclusion Criteria

The following were included in the study:

- Technical staff from the sectoral directorates of the Ministry of Health, as they are responsible for policy development;
- Modern religious leaders (Christian churches and Islam);
- Local authorities;
- Sociodemographic characteristics;
- Individuals who had heard of tuberculosis and freely agreed to answer questions;
- Level of education; social and serological status;
- Relationship to the patient, medical staff, and the patient's social network;
- Territorial and social inequalities; high poverty rates;
- Incidence and prevalence of tuberculosis;
- The living conditions of the population, including their place of residence;
- Ethnic and religious affiliation;
- The patient's experience as a key player in the tuberculosis disease;
- Sources of information on tuberculosis (e.g., the tuberculosis case reporting register).

Data Collection and Analysis

Data Collection

We conducted a qualitative study using a phenomenological approach to epidemiological observation in the Bouake department from February 2023 to July 2023. In this qualitative approach, four (4) data collection techniques were employed: direct observation, focus groups, semi-structured interviews, and document review. An interview guide and an observation grid were used as data collection tools. These tools focused on: the prevalence of tuberculosis, socio-cultural factors, behaviors, and practices related to the management of the disease. Furthermore, the study drew upon the cognitive perspective of the anthropology of health to analyze the various social representations associated with tuberculosis. Therefore, key informants were chosen judiciously. In reality, we did not interview all stakeholders, but rather resource persons likely to provide us with relevant information on the phenomenon under study. However, we ended the interviews when the same information was repeatedly gathered, indicating that the data collection had reached its limit.

Target Population

Seven key stakeholders were selected for this research:

1. **Healthcare providers:** to analyze the therapeutic management of tuberculosis patients;
2. **Community health workers (CHWs):** to understand their role and influence within the community;
3. **Technical staff of the sectoral directorates of the Ministry of Health:** because they are the ones who develop tuberculosis control policies. They also represent modern medicine. They are best positioned to inform us about risk behaviors;
4. **Modern religious leaders (Christian and Islamic churches):** because they have treatment centers for various types of patients;
5. **Administrative and village authorities:** to analyze perceptions of tuberculosis. Because all the targeted sites have reported cases of tuberculosis;
6. **Traditional healers:** because of their influence on the treatment pathway of patients.
7. **Tuberculosis patients:** because of their state of health.

In total, we note 24 interviews conducted (20 semi-structured interviews and 4 focus groups of 8 people each). With a total of 54 informants participating in this research, we can distribute them as follows:

Key informants	Number
Healthcare Providers	15
Community Health Workers	5
Technical Staff	6
Administrative Authorities	6
Religious Leaders	10
Traditional Healers	6
Tuberculosis patients	6
Total	54

Source: Field data, Lath, M.F., & Akmel, M.S., July 2023

Data Analysis

In this qualitative approach, thematic analysis was conducted manually using Word. The analysis considered the recordings of the interviews (individual and focus

groups). In accordance with the ethical and professional standards of social science research, we coded all the recordings of the various interviews. We also assigned fictitious first names to all participants to ensure anonymity. Their telephone numbers were also omitted from the document. All respondents' names and phone numbers remain confidential. Following the anonymization of the raw data, we transcribed the recorded interviews. Subsequently, we entered all the notes taken during the unrecorded interviews. All transcribed interviews and notes were corrected before proceeding to the tri-thematic analysis phase. This data was sorted and organized according to the different themes addressed in this research.

However, the theory of social representations and the theory of social behavior change were used in the data analysis. The theory of social representations allowed us to understand and identify the factors explaining the persistence of tuberculosis. As for the theory of social behavior change, it highlighted communication strategies for behavior change.

Ethical Considerations of Research

All socio-anthropological studies inevitably raise ethical questions and adhere to the research ethic of the social sciences. Anthropology and sociology, therefore, respectively study humankind and social phenomena. However, society is governed by norms, social values, and beliefs that must be fully respected. Our aim was to take these ethical norms and principles into account. First, we submitted a letter requesting research authorization. Then, we sent further letters to the chiefs of the villages or cantons of: Lengbre; Kanouan; Tollatanoukro; Ayabo; Takikro; Mamini; Tollakouadiokro; Broukro; and Diezoukouamekro. Finally, we obtained free and informed consent from each informant before conducting any interviews.

The fieldwork results have been obtained.

Results

The results of this research focused on three (3) major chapters. First, the research examined the socio-economic factors affecting the population. Second, it explained the socio-cultural factors related to the disease. Finally, in response to this challenging situation, the research enabled the implementation of strategies for combating and preventing the disease.

Socio-Economic and Institutional Factors

This first chapter aims to identify and analyze the socio-economic and institutional factors that contribute to the recurrence of tuberculosis in the Bouake department.

Living Conditions of Affected Populations

Field research reveals that structural poverty in Bouake promotes the spread of tuberculosis. Indeed, some populations living in impoverished neighborhoods such as Kôkô Aboliba, Odiénninkrouani, Dar-es-Salam, etc., suffer from overcrowding, unsanitary housing, and malnutrition. Consequently, poverty, unemployment, and food insecurity constitute a set of factors that weaken the immune system, thus facilitating transmission. Let us analyze this oral testimony together.

Malnutrition is also one of the key factors that lead to the development of tuberculosis. Take the example of people who are unable to eat properly, or at least three times a day, and who also lack access to medical treatment. These individuals are required to swallow a certain number of pills every single day. However, the body must be able to tolerate the dosage of the medication for it to be effective. The problem is that they have nothing to eat, so how can they possibly receive proper treatment? It is certain that they will develop other health problems. People will say that tuberculosis is the root cause, but even before the tuberculosis develops, they were already suffering from or weakened by other illnesses without even realizing it. [N.M., individual interview, CAT Bouake, February 10, 2023]

This verbatim account clearly illustrates that the precarious living conditions of populations in disadvantaged areas also contribute to the resurgence of the disease. This allows us to briefly address the issue of social inequalities.

Social Inequalities

The realities on the ground have shown that populations in rural areas are often far from diagnostic and treatment centers. In fact, in these disadvantaged areas, transportation costs and indirect costs such as lost income and additional tests discourage patients, thus hindering their access to care. This highlights financial and geographical disparities between urban and rural areas. This is illustrated by the following verbatim quote:

On the issue of access to healthcare for the population, it must be said that several factors come into play. When you ask someone why they've been coughing for over a week and haven't been to a health center, they'll tell you they don't have the means to travel. Very often, I understand them because the CDTs (Community Health Teams) lack certain equipment. They have to go to the CSRs (Regional Health Centers), collect vital signs, and then transport them to the CAT (Community Health Center). So, there are many problems at this level [M.D., individual interview, CAT Bouake, February 10, 2023].

This shows that the geographical accessibility of populations to diagnostic centers remains a problem of both economy and time. However, there are beliefs surrounding the disease.

Dysfunction of the Health System

First, the dysfunction of the health system is explained by the lack of state-of-the-art medical equipment for patient care. Indeed, the CDTs (Community Health Teams) lack adequate diagnostic equipment (microscopes, GeneXpert tests, etc.). Second, there is the insufficient number of community health workers (CHWs). These CHWs not only have very limited numbers in terms of patient coverage per geographic area, but they also lack the necessary equipment to carry out their duties. Finally, their fixed-term contract status is a demotivating factor in patient care. This demonstrates the absence of a formal status or one not recognized by the Ministry of Health. Furthermore, there is a shortage of qualified personnel, stockouts of medications, and irregular monitoring in patient care management.

My brother, we're very motivated to work because we agreed to save lives. Unfortunately, we don't have any special status as workers. It's discouraging. If we could be recognized like nursing assistants, we'd be so grateful. We work on fixed-term contracts. And thanks to our manager's good faith, we do our jobs well. It's not easy at all. No protective equipment, no means of transportation, nothing

like that. Yet we have to travel miles to find patients. We're really suffering. Also, there aren't many of us to follow up with the patients. It's very difficult for us. They need to recruit people to support us. Emphasize the importance of training healthcare staff. Why do I say this? It's very, very important because healthcare staff sometimes find themselves in rather complex situations. They don't always have a firm grasp of their work. This is a worrying problem. They don't even know how to conduct a consultation, what equipment to use, how to direct the patient, the patient's pathway, or how to manage the patient's care. We must start thinking about capacity building for these staff members in our various health centers. It's truly crucial to do this so that we know what to do when faced with someone who has been coughing for more than a week. [M.P., individual interview, CAT/Bouake, February 15, 2023].

This verbatim account paints a picture of the difficult living conditions faced by community health workers in the performance of their duties, as well as the serious problems they raise. This leads to limited access to healthcare.

Limited Access to Healthcare for the Population

National tuberculosis control programs are sometimes out of touch with local realities. This indicates that the management of the health system is experiencing a difficult period of development, which now needs to be addressed.

Governance of the Health System

This governance, in terms of public policy, is experiencing difficulties due to certain inappropriate actions. In this study, most of the populations visited mentioned its seriousness. This shows that public policy sometimes struggles to adapt to the realities of the population. Here are the key findings on this issue:

We are led to believe that everything is free in hospitals and schools in Côte d'Ivoire. In reality, this isn't true. Today, if you go to a health center, whatever the reason or your ailment, you will end up paying a fee. You might even spend as much as expected or necessary. When our women go to the hospital, they are always prescribed something during their appointments. Where is the "free" healthcare we talk about? What is free in Côte d'Ivoire isn't truly free. We are also told that malaria treatment is free. And yet, not everyone is covered by this free service. It only applies to children from 0 to 5 years old. And what about the others? Aren't they affected by malaria? Even for children, it's not 100% free. [Focus group, Takikro/Brobo, June 17, 2023].

This oral account strongly denounces the dysfunction of the healthcare system in Côte d'Ivoire, and more specifically in the Bouake department. Through this verbatim testimony, it becomes clear that what is "said" and what is "done" are two different realities. This creates constraints for most of the population. It also shows that corruption is one of the factors preventing the healthcare system from functioning properly. This leads to a situation of concern and health insecurity. Given this, what about communication about the disease?

The weak influence of communication

The observation is that there is a complete absence of signs or posters advertising tuberculosis in the streets of Bouake, extending even to the most remote rural areas visited. Yet, several deaths have been recorded in these tuberculosis diagnosis and treatment centers. This situation is all the more concerning given the widespread awareness of its seriousness. Let's analyze these statements below:

It's true, on the one hand, we are also partly responsible for the fact that the disease is receding, but only with difficulty, because our habits and behaviors haven't changed. We continue to use the same cups, the same glasses, the same plates, and even the same homes. On the other hand, the responsibility lies with the Ivorian state. Why do I say this? We all saw it here in Côte d'Ivoire when the coronavirus was out in 2019-2020. It was advertised every single day on television and even on the radio. Everyone knew something was happening in the country. Everyone in the villages and camps knew about this disease called coronavirus. Because it's so dangerous, we talked about it every day. And yet, tuberculosis, which is also a very dangerous and deadly disease, just like COVID-19, is not being discussed. That is why I say that the State is also partly responsible for the persistence of tuberculosis. [Focus group, Brobo, June 17, 2023]

This verbatim account shows that behavioral change is sometimes possible. Unfortunately, old practices still persist. This makes managing tuberculosis difficult. However, cultural dynamics associated with tuberculosis are observed.

Socio-Cultural Determinants and Therapeutic Pathways Related to the Disease

This second chapter aims to understand the impact of cultural representations, beliefs, and local practices on the care pathways of people with tuberculosis. Indeed, because tuberculosis is perceived as a shameful disease, associated with poverty or HIV, this stigma leads patients to conceal their serological status.

Tuberculosis as a shameful disease

Tuberculosis remains a shameful disease. Because it is considered shameful, people cough for more than two weeks but do not seek medical attention at a health center for diagnosis because the community will say it's tuberculosis, and they will be stigmatized, rejected, or even excluded. Lack of awareness about this disease leads people to avoid health centers because today, people even prefer HIV, which is incurable, to tuberculosis (statement reported by a community health worker [TB, individual interview, CAT Bouake, February 15, 2023].

This verbatim account highlights the shameful nature of tuberculosis. Indeed, this shameful aspect of tuberculosis becomes a refusal to accept oneself. This justifies the community's rejection of the disease. This explains why the disease is not welcome in the community. The way it is perceived by the community is also how it is rejected. To further illustrate this point, here are the comments of another informant on the matter.

Tuberculosis is an opportunistic disease linked to HIV/AIDS. This is why HIV and TB are also diagnosed when tuberculosis is present. However, diabetes is one of the diseases that weaken the immune system. Because once the immune system is weakened, certain diseases (like chickenpox) can emerge. Tuberculosis is a deadly, contagious disease. This is why people are afraid of those who have it. In fact, people are afraid of becoming infected within their own circle, which is why they avoid contact. Because in their understanding, tuberculosis is incurable

[M.D., individual interview, CAT Bouake, February 15, 2023].

Based on this verbatim account, tuberculosis is attributed to HIV according to the statements gathered by this informant. This demonstrates that tuberculosis is a disease that is both biological and cultural. In other words, the causes of tuberculosis are diverse, which is why it is interpreted in various ways.

Tuberculosis as a Disease of Rejection

Given that societies think differently, social representations of tuberculosis vary from one individual to another, from one group to another, and from one society to another, across time and space. Indeed, this demonstrates the variability of social representations surrounding this disease, depending on individual experiences, education level, and level of knowledge within the community. To illustrate this point, here is a collection of opinions gathered in the field.

For me, tuberculosis represents the refusal of certain social classes to accept the existence of this disease. It's not about saying that this disease is only reserved for a certain category of people. But it is important to know that several factors (living conditions, standard of living, diet) contribute to this disease. Tuberculosis remains deadly and contagious. Today, many young people engage in these practices by using drugs. In my opinion, tuberculosis is a disease that is very poorly understood by everyone. [M.K., individual interview, CAT Bouaké, February 15, 2023].

The informant's statements reveal that tuberculosis is a disease denied or rejected by certain social groups (the wealthy). This implies that tuberculosis is seen as something reserved for, or affecting, the poor. This is evident in the informant's remarks. According to him, only the poor are affected by tuberculosis, not the rich. One senses a kind of judgmental bias in his ways of thinking and feeling.

Tuberculosis as a Social Imbalance

Tuberculosis, as presented by our informants, is seen as a disease that negatively impacts social order. In other words, this highly contagious disease disrupts the social balance. It is from this perspective that some of our informants share their opinions on the subject.

Hey!!! Hey!!! Hey!!! Damn. It's very dangerous. This disease is really bad. In Baoulé, we call it "Tangô-oufoué." Because it has a characteristic appearance, like the milk from Bonnet Rouge. That is to say, when the person coughs, the sputum that comes out of their mouth is bright red, like blood. And as far as I know, there are two types of this disease. There's one that gradually crushes the bones, and there's also the lung form. These two forms are very dangerous. And I haven't even told you: there's even an old man, our neighbor. He currently has bone tuberculosis. But when we tell him not to be around people, he doesn't care. He thinks we don't like him. [S.A., individual interview, CAT Bouaké, February 15, 2023].

This informant's comments show that tuberculosis is a disease that sows discord and disorder within the community. Following this same line of reasoning, another person gives their opinion on the matter:

Among us Malinke, we call it Sôkô-sôkôgbê. Why? Because it's domestic animals like cats that give this disease. When you have it, you cough a lot. And then you have a lot of chest pain. We say it's people who smoke a lot who get it too easily. And then people who drink alcohol, we say it gets it too. That it makes you lose weight and you don't eat well. Especially at night, you cough a lot. Otherwise, during the day it's not so bad [B.K, individual interview, Brobo, April 16, 2023].

Based on these opinions, illness, in addition to being a physical and psychological burden for those who suffer from it, also causes a rift in their social environment, as illness is seen as a transgression, and the sick person is blamed because the unfortunate occurrence of illness threatens the social equilibrium (Herzlich, Claudine, 1984). In this cultural approach, the main causes of illness are notably linked to witchcraft, soul loss, the violation of a taboo, the intrusion of a disease-object, and the intrusion of a spirit (Forret, Edward, 1932). For these two authors, illness is perceived as a punishment. At this level, it can result in sin and the violation of moral principles or a totem.

We live in a society governed by rules such as totems, prohibitions, taboos, and translations, and it is these variables that allow society to regulate itself. These rules are an integral part of the law of nature. Whoever sins against one is in reality guilty of all. Therefore, one can contract tuberculosis through omission or through action [K.K., individual interview, Djebonoua, May 10, 2023].

Through these various accounts from authors who have contributed to this topic, tuberculosis is perceived as a divine punishment, malevolent, or even a harmful act linked to sociocultural and religious values. In fact, tuberculosis is treated and prevented according to the social perceptions that populations hold about this disease. Clearly, this pathology, in the minds of these populations, is the source of several social meanings related to the origin of its occurrence.

Tuberculosis as a hereditary disease

According to these informants, tuberculosis is a hereditary condition that can be passed down from one generation to the next. Here are some comments on this issue:

In a family, when you have close ancestors who have already had tuberculosis-that is, a father or an uncle—whether in the short or long term, a family member is bound to contract tuberculosis sooner or later. I say this because in our family, someone already had it. But a few years later, another person also contracted tuberculosis. It's a disease that can infect an entire family if nothing is done [Focus group, Djebonoua, May 10, 2023].

This verbatim account reveals that tuberculosis is a disease that transcends time and space. Indeed, its history stretches back many years. Through the diverse experiences of our informants, the disease is perceived as a social and cultural phenomenon, that is, a form of social reality. Furthermore, it is considered one of the most frequent and dramatic events in human life. This demonstrates that it is not merely a collection of symptoms or a physical phenomenon. In reality, it is seen as a misfortune that disrupts the lives of individuals.

Tuberculosis as a foreign disease

I don't even know how I got this illness. To this day, I still can't understand how it's possible. This illness is not simple. I even wonder if it's some kind of curse that's been placed on me. Now what am I going to do? I wonder if I'll ever be able to go back to the way things were before. This illness has weakened me greatly. I don't even have the strength I used to have. It's complicated for me. And yet I have to find

money to meet my family's needs. Every day, it's really not easy at all, dear brother, even though we lack resources and things keep getting more complicated. Well, there's nothing we can do about it; it's life. I think about my situation every single day. It's a real burden for me and my little family. [Focus group, Djebonoua, May 10, 2023].

Analyzing these verbatim accounts from both sides, it is important to note that tuberculosis is perceived as a sudden event that disrupted the patient's life. This calls into question the role of work as a driver of social and economic development. Here, tuberculosis is seen as an obstacle or halt to this development. In short, cultural perceptions of tuberculosis among populations influence their behavior.

Traditional Knowledge and Local Interpretations of the Disease

Tuberculosis is sometimes interpreted as a mystical illness or a family curse. Indeed, all these beliefs associated with tuberculosis influence the patient's decision-making and lead them to seek out traditional healers.

Therapeutic Practices and Medical Syncretism

In managing their illness, many patients combine medical and traditional treatments. Others take decoctions made from neem leaves or roots, alongside their anti-tuberculosis treatment. This temporal and trajectory-based approach to care means that patients often go through several stages: self-diagnosis, traditional healer, then hospital. This fragmented path delays effective treatment. The following verbatim quote provides further details:

We had encountered these kinds of cases or situations. It must be acknowledged that we learn these things firsthand, because it's what happened to us with an illness that was diagnosed. The mistake we make, as in this case, is when the patient says they will turn to prayer to cope with other practices called traditional medicine. But as we always say, modern traditional medicine has always proven itself. It's difficult when someone engages in these kinds of practices [I.M., individual interview, CAT Bouake, April 4, 2023].

This oral account reveals the influence of local resources on the care of tuberculosis patients. This explains why patients often resort to modern, traditional, or modern-traditional treatments. Throughout this therapeutic journey, patients experience the effectiveness of the administered care, leading to informed choices regarding treatment.

Rituals, beliefs, and taboos related to the illness

During this investigation, it was revealed to us that some patients are subject to dietary restrictions (no fresh meat, palm oil, or salt), or to ritual isolation practices. These rituals can delay medical care. This idea is contained in the following verbatim transcript:

This disease, as we know it according to what the parents say, is that in the past, people suffering from it were isolated until they were fully cured. Because it's a disease of totems. You'll be told not to consume oil, palm nut sauce, peanuts, fresh fish, and many other forbidden foods. Unfortunately, some people respect these rules, while others don't. Today, all of this is practically nonexistent. The sick are left to their own devices. There's no isolation. All of this complicates treatment. [Focus group, Brobo, June 17, 2023].

This testimony shows that tuberculosis is perceived as a disease shrouded in taboos and prohibitions. In its management, adherence to these sacred principles lends it absolute effectiveness in terms of treatment. This implies that social norms hold significant weight in this matter. This hypothesis demonstrates that, in both traditional and medical settings, the disease is managed according to certain medical and cultural elements, thus raising questions about the relationship to the body and to suffering.

Relationship to the Body and Suffering

The patient's pain is often internalized or attributed to spiritual causes. Clearly, the way pain is expressed or concealed shows a rejection of the medical diagnosis. This is particularly common among the elderly. This underscores the influence of religion in the patient's care.

Religious Influence on Treatment

This influence of religion on tuberculosis stems from individual and collective beliefs. In short, the religious community positions itself as a primary therapeutic center, encouraging patients to embrace it. Some prefer religious therapies to biomedical ones. Others, however, prefer two or more therapies.

I reiterate that the influence of religion, and also the influence of narcotics, is always present in religion and in societies. Those under the influence of drugs and affected by tuberculosis, after receiving anti-tuberculosis treatment, sometimes end up in undesirable places, frequenting smoking dens. They abandon prayer camps and health centers to return to their social environment. We must reach out to them to reintegrate them, or rather, to reintegrate them into healthcare. Let's say that these two aspects create difficulties for us in providing care [M.P., individual interview, CAT Bouake, April 17, 2023].

From this verbatim account, we can note that the patient, wherever they find themselves (in their new situation), not only feels nostalgia for their former routines but also hopes to one day return to their familiar home. Indeed, this nostalgic influence on the patient in their treatment center sometimes leads them to abandon their therapeutic care. In other words, remembering, or at least recalling, their usual environment can cause them to stop their anti-tuberculosis treatment in a CAT (Center for Tuberculosis Treatment) or CDT (Center for Tuberculosis Treatment). For the patient, this evokes memories of going about their daily activities, being with other members of the community (friends, acquaintances, etc.). In their individual perspective, it is difficult for them to return to their previous state.

Strategies for Controlling and Preventing Tuberculosis

This third and final chapter discusses the implementation of control strategies to effectively combat tuberculosis.

Awareness and Community Engagement

Strengthen awareness by organizing outreach campaigns (door-to-door), community forums in working-class neighborhoods of Bouake, with community liaisons (public griots) explaining modes of transmission and the importance of adhering to treatment. In addition to these traditional methods, utilize new communication channels (WhatsApp, Facebook, local or community radio stations, television channels). television, etc.). Essentially, integrate a chapter on tuberculosis and its socio-economic impact into the private and public education system (primary, secondary, and higher education). Strengthen the number of Community Health Workers (CHWs) by providing them

with the necessary resources and granting them a special status recognized by the Ministry of Health. This can contribute to improved knowledge of the disease, reduced stigma, and increased voluntary screening.

Socio-economic support for patients

In order to encourage patients and achieve zero dropouts or loss to follow-up, we propose the distribution of food kits and partial coverage of transportation costs for patients followed at the Bouake Tuberculosis Center. This will reduce treatment dropouts due to poverty and improve treatment adherence.

Institutional Strengthening and Health Coordination

Bringing communities closer to tuberculosis treatment centers, including diagnostic and treatment facilities. Equipping these centers with state-of-the-art equipment. Strengthening the capacity of staff and healthcare workers in the management of multidrug-resistant tuberculosis and implementing a digital patient monitoring system. This action can lead to improved quality of care, case traceability, and a reduction in relapses due to poor treatment management.

However, the results were debated.

Discussion

Socio-economic and institutional factors

The recurrence of tuberculosis is due to a combination of factors. Poor living conditions are a significant factor. Tuberculosis particularly affects populations living in precarious and impoverished situations. Indeed, these precarious living conditions leave people with no chance of surviving without epidemics (Traore Kassoum, 1997). According to him, these populations live in neighborhoods that are currently experiencing socioeconomic underdevelopment, meaning neighborhoods lacking quality infrastructure (poor, destitute, neglected, disadvantaged, and miserable neighborhoods). In reality, these neighborhoods constitute a breeding ground for microbes and even a source of diseases such as tuberculosis, malaria, typhoid fever, chickenpox, diabetes, cholera, and dysentery (Anne Hublin, 1988). This also raises the issue of the degradation of the living environment and poor management. The environment has a direct and negative impact on the living conditions of populations. Clearly, the various problems related to the management of natural resources and waste, the development of physical infrastructure, land-use planning policies, and land rights in peri-urban areas must be addressed rigorously, with measures adopted at all levels of government. For example, many Ivorians have settled in precarious or disadvantaged neighborhoods. Very often, they live near garbage dumps, along railway lines, or in peripheral areas. This also demonstrates that housing is one of the factors affecting the health of residents (Evans Gary *et al*., 1999) [4]. Despite this, cultural beliefs influence the management of illnesses.

Sociocultural Determinants and Treatment Pathways Related to the Disease

Cultural beliefs and individual behaviors also influence the fight against tuberculosis. In some communities, the stigma associated with the disease can discourage individuals from seeking treatment. Furthermore, a lack of awareness and education about tuberculosis can lead to risky behaviors, such as self-medication or premature discontinuation of treatment. Traditional practices and beliefs can also interfere with adherence to modern treatment protocols. At this stage, cultural representations associated with tuberculosis portray it as a formidable disease within the community. This has prompted numerous research projects aimed at fully understanding it. In his study entitled "Medicine, Magic and Religion," William Rivers demonstrates that the concept of illness varies from one culture to another. It is not simply a collection of symptoms or a physical phenomenon. In reality, it is seen as a misfortune that disrupts the lives of individuals (Rivers, William, 1924) [21]. Edward Forret (1932), in his monograph "Primitive Concepts of Disease," indicates that five main causes are linked to illness: witchcraft, loss of the soul, violation of a taboo, the intrusion of a disease-object, and the intrusion of a spirit. Claudine Herzlich (1984) argues that illness, in addition to being a physical and psychological burden for those who suffer from it, also causes fractures in their social environment, because illness is seen as a fault, and the sick person is blamed because the unfortunate occurrence of illness threatens social equilibrium. In reality, tuberculosis patients and their social networks are not immune to these "elementary forms" of the disease. Many cases of tuberculosis are thus socially interpreted as a consequence of a disharmony (imbalance) between the individual and the sphere of the "microcosm," the "mesocosm," or the "macrocosm." Ancestors, sorcerers, and the social environment are considered potential causes of the disease. As Laplantine François (1986) points out, when "family," "society," "spirits," "ancestors," and "spells" are perceived as morbid entities, the disease no longer appears as a matter of alteration, but as one of otherness; of invasion, intrusion (...). Therefore, tuberculosis can be a sign, a sign that a taboo has been violated or a rule forgotten. It is a call to order, a message signaling that something abnormal has occurred within the dynamics of the family or social group, that a rupture has taken place (Hountondji Jidenu, 1994) [12]. However, several factors contribute to the resurgence of tuberculosis.

Tuberculosis Control and Prevention Strategies

Tuberculosis control and prevention strategies are based on three essential pillars: community engagement, socio-economic support, and institutional strengthening and health coordination. These approaches are well documented by recent work from researchers and international organizations.

First, community participation is recognized as a major lever in the fight against tuberculosis. According to Kumah and Augustine (2025) [16], the effectiveness of TB case management depends on strong community networks capable of reducing stigma and improving access to care. Similarly, the World Health Organization (2023) [27] emphasizes that the involvement of communities and civil society is essential to achieving the goal of tuberculosis elimination. Finally, Mwansa and Chanda (2025) [18] (PLOS Global Public Health) stress the role of affected individuals as key partners in research and prevention. Community engagement promotes adherence to treatment, reduces stigma, and improves early detection.

Secondly, tuberculosis is strongly linked to social determinants. Hudson, Mollie *et al*. (2025) [14] show that social protection interventions (cash transfers, food support)

significantly improve treatment adherence and reduce the economic consequences for households. Furthermore, Ferreira, Melisane Regina Lima *et al*. (2023) [5] emphasize that social protection should be considered a right of those affected. Socioeconomic support is crucial to breaking the poverty-disease cycle and ensuring continuity of care.

Thirdly, health systems must be strengthened to ensure a coordinated response. Atun, Rifat *et al*. (2010) [1] explain that institutional strengthening is essential for integrating tuberculosis control into public health policies. More recently, da Silva, Rosiane Davina *et al*. (2025) highlight intersectoral actions as a driver of effective health coordination. Institutional coordination allows for better resource allocation, enhanced surveillance, and a multisectoral response.

Conclusion

This research was conducted in the Bouake department of Côte d'Ivoire. It addressed the following theme: "The Determinants of Tuberculosis Recurrence in Bouaké (Côte d'Ivoire)." The objective of this study was to analyze the sociocultural, economic, and institutional factors that contribute to the recurrence of tuberculosis in the Bouaké department. In short, all these multifaceted factors play a determining role in the prevalence of tuberculosis. However, it appears essential to adopt a multidimensional approach that takes these different aspects into account. This requires not only efforts to improve access to care aimed at reducing stigma, raising awareness among the population, and strengthening health systems, but also efforts to integrate these elements into control and prevention strategies. This will make it possible to reduce the impact of tuberculosis and progress towards its elimination.

References

1. Atun R, Weil DEC, Tan Eang M, David M. Health-system strengthening and tuberculosis control. The Lancet,2010:375(9732):2169–2178. https://doi.org/10.1016/S0140-6736(10)60493-X
2. Clements FE. Primitive concepts of disease. Berkeley: University of California Press, 1932.
3. Da Silva RD, de Farias ERG, Bezerra da Graça JM, Pinheiro EMN, Cavalcante EFO. Approaches and results of intersectoral actions for tuberculosis control in the world: A scoping review. PLOS One, 2025. https://doi.org/10.1371/journal.pone.0326784
4. Evans G, Wells N, Moch A. Habitat and health. Villes en parallèle, 1999, 28–29, 196–213.
5. Ferreira MRL, Bonfim RO, Bossonario PA, Maurin VP, Valença ABM, de Abreu PD, *et al*. Social protection as a right of people affected by tuberculosis: A scoping review and conceptual framework. Infectious Diseases of Poverty, 2023, 12(103). https://doi.org/10.1186/s40249-023-01157-1
6. Girard PM, Katlama C, Pialoux G. HIV. Paris: Doin, 2004.
7. Guillet-Caruba C, Martinez V, Doucet-Populaire F. New microbiological diagnostic tools for tuberculosis disease. La Revue de Médecine Interne,2014:35(12):794–800.
8. Halverson J, Ellis E, Peter C. Epidemiology of tuberculosis in Canada. In Menzies D, editor. Canadian tuberculosis standards. Ottawa: Public Health Agency of Canada, 2014, 7–24.
9. Hentze MW, Muckenthaler MU, Andrews N. Balancing acts: Molecular control of mammalian iron metabolism. Cell,2010:142(1):24–38.
10. Herzlich C. Modern medicine and the quest for meaning: Illness as social significance. In Augé M, Herzlich C, editors. The meaning of illness: Anthropology, history, sociology of disease. Paris: Éditions des Archives contemporaines, 1983, 198–215.
11. Hidoub I, Achouri M. Epidemiological profiles of different infectious diseases managed at the Department of Infectious Diseases of EPH Mohamed Boudhiaf-Ouargla between 2019–2023. Doctoral thesis in medicine. Kasdi Merbah University, Algeria, 2024.
12. Hountondji PJ. Endogenous knowledge: Paths for research. Dakar: Codesria/Karthala, 1994.
13. Hublin A. Spontaneous habitats in the French Caribbean. Spontaneous neighborhoods in the French Antilles. Social and spatial typology of a Creole space. Final research report 1986–1989. Paris: Ministry of Housing, Equipment, and Transport, 1991, 3.
14. Hudson M, Todd H, Nalugwa T, Schraufnagel A, Christian C, Boccia D, *et al*. The impact of social protection interventions on treatment and socioeconomic outcomes of tuberculosis-affected people and households in low-income, high-burden settings: A systematic review and meta-analysis. medRxiv, 2025. https://doi.org/10.1101/2025.03.04.25323276
15. Kasvosve I, Gomo ZAR, Mvundura E, Moyo VM, Saungweme T, Khumalo H, *et al*. Haptoglobin polymorphism and mortality in patients with tuberculosis. International Journal of Tuberculosis and Lung Disease,2000:4(8):771–775.
16. Kumah A. Building community networks and engagement for effective TB case management. Frontiers in Public Health, 2025, 13. https://doi.org/10.3389/fpubh.2025.1576875
17. Laplantine F. Ethnographic description. Paris: Nathan, 1996.
18. Mwansa C. Fighting tuberculosis hand in hand: A call to engage communities affected by TB as essential partners in research. PLOS Global Public Health, 2025. https://doi.org/10.1371/journal.pgph.0004437
19. Nairz M, Schroll A, Sonnweber T, Weiss G. The struggle for iron – A metal at the host–pathogen interface. Cellular Microbiology,2010:12(12):1691–1702.
20. Olakanmi O, Britigan BE, Schleisinger LS, Heinecke H. The role of iron in the growth of Mycobacterium tuberculosis: Implications for host–pathogen interactions. Journal of Clinical Investigation,2007:117(4):877–888.
21. Rivers WHR. Medicine, magic and religion. London: Routledge, 1924.
22. Toujani S, Ben Salah N, Cherif J, Mjid M, Ouahchy Y, Mehiri-Ben Rhouma N, *et al*. Primary infection and pulmonary tuberculosis. Revue de Pneumologie Clinique,2015:71(2–3):73–82.
23. Traoré K. Living conditions of populations and health risks in precarious neighborhoods of Abidjan. Master's thesis. Université d'Abobo-Adjamé, Côte d'Ivoire, 1997.
24. Welekidan Z, Adane K, Gebremariam T, Gebreegziabher T. Drug resistance patterns of

Mycobacterium tuberculosis isolates from pulmonary tuberculosis patients in Eastern Ethiopia. Infection and Drug Resistance,2020:13:2131–2138.
25. World Health Organization. Global tuberculosis control: Epidemiology, strategy, financing: WHO report 2009. Geneva: World Health Organization, 2009.
26. World Health Organization. Global tuberculosis report 2017. Geneva: World Health Organization, 2017.
27. World Health Organization. Guidance on engagement of communities and civil society to end tuberculosis. Geneva: World Health Organization, 2023. https://iris.who.int/handle/10665/373321.