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RESEARCH ARTICLE

HEALTH-SEEKING BEHAVIOR AND ASSOCIATED FACTORS AMONG PTB PATIENTS IN JARAMOGI OGINGA ODINGA TEACHING AND REFERRAL HOSPITAL (JOOTRH), KENYA, 2022

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ABSTRACT

The study aimed to assess the health-seeking behavior (HSB) of pulmonary tuberculosis (PTB) patients and its associated factors, which significantly impact disease management in countries with a high incidence of tuberculosis (TB), such as Kenya. **Problem Statement**: The PTB burden in Kenya has increased significantly in recent years due to poor health-seeking behavior among PTB patients. Despite the implementation of free PTB testing and treatment, inadequate HSB contributes to high morbidity and mortality rates and increases the spread of PTB. **Objectives**: The primary objective was to assess the health-seeking behavior and associated factors among PTB patients at the Jaramogi Oginga Odinga Teaching and Referral Hospital (JOOTRH) in Kenya. **Methodology**: The research was conducted in the TB clinic at JOOTRH, utilizing a cross-sectional descriptive research design. Participants were sampled through purposive and convenience sampling methods. Data collection was performed using semi-structured questionnaires, with analysis conducted through descriptive statistics and Microsoft Excel. **Benefits of the Study**: The findings will guide key interventions to improve health-seeking behavior, informing policy formulation and health education initiatives. **Results**: A total of 58 respondents participated in the study. The majority were aged 26-35 years (62.1%) and male (65.5%). Financial constraints were identified as a common barrier to seeking TB treatment (79.3%). While knowledge about TB was generally high, stigmatization remained prevalent. Health-seeking behavior was significantly influenced by factors such as distance to health facilities, financial constraints, and community perceptions of TB. **Conclusion**: This study highlights that TB health-seeking behavior and access to care are greatly hindered by unemployment and low income. Misconceptions about TB's incurability and transmission contribute to stigma and delayed care. Recommendations include enhancing health education, improving healthcare access, and addressing financial barriers through community outreach to destigmatize TB and promote early healthcare-seeking behavior, particularly among vulnerable populations, to reduce transmission rates and improve outcomes.

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INTRODUCTION

Tuberculosis (TB) is a chronic infection caused by the bacterium Mycobacterium tuberculosis, which primarily attacks the lungs but can also affect other organs. Currently, one-third of the global population is infected with TB, with most cases found in poor urban regions of industrialized nations and resource-limited countries.

TB is an infectious disease responsible for the death of approximately 1.2 million individuals annually (Chakaya et al., 2021). TB is the leading cause of death among HIV (Human Immunodeficiency Virus)-positive patients, accounting for 13 percent of AIDS-related mortality worldwide. Since the onset of the HIV/AIDS pandemic in the 1980s, the two diseases have been closely linked. TB-HIV co-infection is common, with HIV-positive individuals being ten times more likely to be infected with TB than HIV-negative individuals.

HIV weakens the immune system, making individuals more susceptible to infections such as TB. It is estimated that 11 million people are co-infected with TB and HIV (Letang et al., 2020). To reduce the spread of HIV/AIDS, decrease mortality and morbidity rates, and limit the transmission of TB, there is a need for aggressive TB screening and effective prophylactic therapy for all TB-HIV co-infected patients. In Kenya, TB is a major public health issue. As one of the 30 highly endemic countries, Kenya is estimated to detect 72 percent of bacteriologically confirmed TB cases and 80 percent of all TB cases (WHO, 2020). The prevalence of tuberculosis in 2015 was reported to be 233 per 100,000 people, with a mortality rate of 20 per 100,000 people (WHO, 2020). TB is the fourth leading cause of death in Kenya, placing a significant economic burden on the country and negatively impacting the lives of its citizens. Despite substantial investments in tuberculosis control over the past two decades, the true burden of the disease has remained uncertain. Health-seeking behavior (HSB) refers to the personal or collective actions individuals take to maintain or regain their health (Musinguzi et al., 2018). People's therapeutic approaches can include home remedies, consulting neighbors or friends, seeking traditional healers or priests, or visiting healthcare professionals. These approaches vary in how they describe and treat diseases, and HSB plays a crucial role in TB patient outcomes.

Studies indicate that the average patient delay in seeking care ranges from 25 to 120 days, during which time patients may consult various healthcare providers before being diagnosed and starting TB treatment (Abdu et al., 2020). HSB among PTB patients and delays—whether patient-related or due to the healthcare system—can have severe consequences, such as the progression of manageable TB cases into multidrug-resistant (MDR) or extensively drug-resistant (XDR) forms(Noman et al., 2024). This leads to increased TB transmission and higher out-of-pocket healthcare costs. In Kisumu County, a study conducted in the Obunga slums by Kawili (2007) revealed that poor HSB among PTB patients was linked to factors such as inadequate knowledge of TB, unawareness of free TB treatment available in public hospitals, perceived treatment costs, distance to healthcare facilities, long hospital queues, waiting times, misconceptions about TB causes, and misdiagnosis.

Moreover, many individuals perceive TB as "kahera," a chest cough that is incurable, deterring them from seeking hospital treatment. Studies have also found that alternative care options, such as self-care, traditional healers, herbalists, and pastors, further delayed patients from seeking hospital treatment, often leading them to visit hospitals only after their symptoms worsened, unknowingly spreading the infection (Kawili, 2007). An essential requirement for positive HSB is the recognition and understanding of symptoms by both the infected individuals and those around them. Once symptoms are identified, the decision on who to consult is often influenced by existing perceptions of the significance of the symptoms and the accessibility of various sources of help (complementary medicine, spiritual healers, traditional practices). Several factors, including stigma, a lack of awareness of TB symptoms, and issues related to access and cost, can lead to significant delays in TB diagnosis and treatment.

PROBLEM STATEMENT

The prevalence of pulmonary tuberculosis (PTB) has surged recently, primarily due to the increasing incidence of HIV/AIDS. According to the WHO (2020), the global TB burden is highest in Asia (44%) and Africa (25%), with PTB prevalence in Kenya reported at 558 per 100,000 adults (Enos et al., 2018). Regions like Nyanza and Nairobi experience disproportionately high burdens of PTB (MOH-Kenya, 2016). Despite free TB screening, diagnostic, counseling, and treatment programs, TB prevalence, morbidity, and mortality rates continue to rise in Kenya and globally.

The Kenya Demographic Survey (2014) attributes this trend to poor health-seeking behavior among affected individuals (KDHS, 2015). Research shows that stigmatization drives poor health-seeking behavior in North Ethiopia (Girma et al., 2022), while sociodemographic factors, such as poverty and inadequate healthcare services, worsen this issue (Mbuthia et al., 2018). The COVID-19 pandemic further exacerbated these challenges, as seen in a decline of PTB clinic attendance from 1,110 patients in 2020 to 275 in 2021.

JUSTIFICATION

The rising rates of TB, particularly in low-resource settings such as Nyanza Province, have raised widespread concerns in the healthcare sector. This study aims to highlight the disparity between TB control efforts and the increasing number of TB cases, especially in Nyanza Province, as recorded in the National Leprosy and Tuberculosis Program (NLTP) Survey (2022).

Despite the availability of adequate anti-TB medications, many people in the community do not seek healthcare services for various reasons, including long queues at hospitals, the distance to healthcare facilities, and negative attitudes from healthcare providers.

Furthermore, many PTB patients in Kenya lack adequate knowledge about TB and hold misconceptions about its transmission. This study will investigate and describe the health-seeking behavior (HSB) among TB patients at JOOTRH, Kenya, as well as the patients' knowledge, perceptions, and attitudes about TB. Ultimately, the findings can be used to improve and enhance existing national TB programs.

RESEARCH QUESTIONS

- What sociodemographic characteristics are associated with health-seeking behavior among PTB patients at JOOTRH?
- What is the knowledge, perceptions, and attitudes about TB among PTB patients at JOOTRH?
- What health system-related factors influence health-seeking behavior among PTB patients at JOOTRH?

OBJECTIVES

BROAD OBJECTIVE: To assess the health-seeking behavior and associated factors among PTB patients at JOOTRH, Kenya.

SPECIFIC OBJECTIVES

- To describe the sociodemographic characteristics associated with health-seeking behavior among PTB patients at JOOTRH.
- To assess knowledge, perceptions, and attitudes about TB among PTB patients at JOOTRH.
- To describe the health system-related factors influencing health-seeking behavior among PTB patients at JOOTRH.

METHODOLOGY

This study was conducted in Kisumu County at the JOOTRH facility, the largest in the region, which has both a TB clinic and a comprehensive care clinic managing patients with TB and HIV/AIDS, providing integrated follow-up plans. The facility serves the Nyanza region, known for high prevalence rates of TB and HIV/AIDS according to MOH data from 2015 and 2018. A descriptive cross-sectional study design was utilized to assess health-seeking behavior (HSB) and associated factors among pulmonary TB (PTB) patients, allowing for the examination of disease prevalence in a defined population at a specific time without inferring broader conclusions.

A convenience sampling method collected data from patients who came for follow-up during the study period. Individuals aged 18 to 65 who consented to participate were included, resulting in a total of 58 patients enrolled. Data collection involved open-ended and closed-ended questions, focusing on socio-demographic factors, attitudes, knowledge, and perceptions about PTB, as well as identifying health system-related factors influencing HSB. Informed consent was obtained, and ethical review questionnaires were administered in English or Kiswahili, depending on patient preference.

Data analysis utilized Microsoft Excel with descriptive and inferential statistical techniques, including ANOVA. Limitations included a lack of previous research on the topic, restricted data access, time, and financial constraints. Potential risks encompassed differing patient perspectives on TB due to educational background and treatment program engagement.

Ethical clearance was granted from Maseno University Ethical and Research Committee, JOOTRH Ethical Research Committee, and administrative clearance from the hospital's CEO and the in-charge of the TB clinic. Participation was voluntary, with the option to withdraw at any time. Anonymity and confidentiality were maintained, ensuring that participant names were not recorded. Participants were informed about the study's purpose, benefits, and processes. Dignity, rights, and comfort of participants were prioritized throughout the study, which allowed for voluntary participation and withdrawal. To safeguard researchers from TB exposure during data collection, activities occurred in a well-ventilated room with KN95 masks. Patients were instructed on effective coughing and sneezing techniques, and those not adhering to safety measures were excluded, as were PTB patients with uncontrolled coughing. After completion, findings and recommendations were shared with the TB clinic, medical wards, healthcare providers at JOOTRH, the JOOTRH community, the Ministry of Health, and the scientific community.

RESULTS

Sociodemographic characteristics of the study respondents: A univariate analysis was conducted on the socio-demographic characteristics of the study respondents and the results are presented on Table 4.1.

Table 4.1. Socio-demographic characteristics of the study respondents

Characteristic	n = 58 n (%)
Age	
18-25 years	2 (3.4%)
26-35 years	36 (62.1%)
36-45 yeas	10 (17.2%)
46-55 years	8 (13.8%)
56-65 years	2 (3.4%)
Gender	
Male	38 (65.5%)
Female	20 (34.5%)
Average monthly expenditure (Ksh.)	
Below 5000	23 (39.7%)
5000-9999	22 (37.9%)
10000-15000	6 (10.3%)
Above 15000	7 (12.1%)
Religion	
Christian	56 (96.6%)
Muslim	2 3.4%)
Marital status	
Married	33 (56.9%)
Single	22 (37.9%)
Separated	1 (1.7%)
Widowed	2 (3.4%)
Level of education	
Primary	7 (12.1%)
Secondary	37 (63.8%)
Tertiary	14 (24.1%)
Employment status	
Formal employment	15 (25.9%)
Informal employment	27 (46.6%)
Unemployed	16 (27.6%)

Majority of the respondents were Christians (96.6%), males (65.6%), had secondary education (63.8%), early adults (26-35 years) (62.1%), and married (56.9%).

Table 4.2a. Knowledge, perception and attitude about TB the study respondents

Characteristics	n = 58 n (%)
When did you first hear about TB?	
Before diagnosis	54 (93.1%)
After diagnosis	4 (6.9%)
Pulmonary TB affects which of the following organs?	
Lungs	57 (98.3%)
Stomach	1 (1.7%)
How is pulmonary TB spread?	
Through blood transfusion	6 (10.3%)
Through contaminated air	58 (100.0%)
Through sharing utensils	3 (5.2%)
Pulmonary TB is curable	
True	50 (86.2%)
False	7 (12.1%)
Not sure/I don't know	1 (1.7%)
When were you diagnosed with TB?	
Less than 6 months ago	50 (86.2%)
6-12 months ago	5 (8.6%)
more than 12 months ago	3 (5.2%)
Which of the following symptoms did you	

experience? (select all that apply)	
Cough	58 (100.0%)
chest pain	58 (100.0%)
fever	58 (100.0%)
loss of weight	50 (86.2%)
night sweats	55 94.8%)
For how long did you experience them before seeking healthcare?	
Less than 1 month	52 (89.7%)
1-3 months	6 (10.3%)
In the event of an illness, who/where do you seek health care?	
Herbalist	7 (12.1%)
Health center	58 (100.0%)
Religious leader	11 (19.0%)
If health facility is not the answer above, who referred you to hospital?	
Parent	6 (10.3%)
Spouse	6 (10.3%)
Self	5 (8.6%)

Knowledge, perception and attitude about TB the study respondents: The knowledge, perception, and attitude about TB among study respondents is presented in Table 4.2a-b. Most respondents first heard about the disease before diagnosis (93.1%) and believed pulmonary TB mainly affects the lungs (98.3%). All respondents (100%) thought TB spreads through air. Most were diagnosed with TB less than 6 months ago (86.2%) and experienced cough (100%), chest pain (100%), and fever (100%).

Most respondents cited financial constraints (79.3%) and distance from health facilities (70.7%) as key challenges in seeking TB treatment. A majority had a family member with TB (81.0%), and over three-quarters (86.2%) viewed TB as dangerous. Most were HIV positive (84.5%) and never diagnosed with TB (75.9%). Among those diagnosed, 85.7% took drugs for six months and faced complications. COVID-19 affected 89.2% due to fear of contracting the virus at health centers (89.2%) and access restrictions (69.0%). A *Chi*-square test of association was performed to test the null hypothesis regarding health-seeking behaviors as the dependent variable. Results showed that health-seeking behaviors were significantly dependent on the distance to the nearest health facility ($X^2 = 0.824$, $p = 0.035$), financial constraints ($X^2 = 0.756$, $p = 0.033$), family history ($X^2 = 0.984$, $p = 0.045$), HIV status ($X^2 = 1.229$, $p = 0.026$), community perception ($X^2 = 1.071$, $p = 0.036$), and effects of COVID-19 ($X^2 = 1.334$, $p = 0.021$).

Table 4.3. Knowledge, perception and attitude about TB the study respondents

Determinants	X^2	p*
Financial Constraints	0.756	0.033
Family History	0.984	0.845
Status of HIV	1.229	0.026
Community perception of TB	1.071	0.036
COVID-19 Effects	1.334	0.021

* Significance level at $p < 0.05$

Health system-related factors associated with health-seeking behaviour among PTB patients at JOOTRH: A univariate analysis was conducted on the health system-related factors associated with health-seeking behaviors among the respondents and the result is presented in Table 4.3a-b. Over half (56.9%) of the respondents lived 6-10 kilometers from the nearest health facility. All visited monthly, with 86.2% waiting 10-30 minutes and 69.0% rating their experience as excellent.

Table 4.3a. Health system-related factors associated with health-seeking behavior among respondents

Health-seeking Behaviours	n = 58 n (%)
How far is the nearest Health facility from your home?	
100-500 meters	2 (3.4%)
1-5 kilometers	7 (12.1%)
6-10 kilometers	33 (56.9%)
11-20 kilometers	11 (19.0%)
Above 21 kilometers	5 (8.6%)
How frequently do you visit the facility?	
Monthly	58 (100.0%)
For how long does one wait to be served at the facility?	
10-30 minutes	50 (86.2%)
30 minutes-1 hours	7 (12.1%)
1hour-2 hours	1 (1.7%)
Does one get all the prescribed medication in the facility?	
Sometimes/occasionally	2 (3.4%)
Always	56 (96.6%)
Do you pay for the health services?	
No	58 (100.0%)
If yes, is it affordable?	
Ksh 50-100	53(91.4%)
How would you rate your overall experience when you last visited the facility?	
Excellent	40 (69.0%)
Good	12 (20.7%)
Fair	6 (10.3%)

Table 4.3b. Health system-related factors associated with health-seeking behavior among respondents

Health-seeking Behaviours	n = 58 n (%)
Are there any door-to-door services or outreach services conducted by the health facility within your community?	
Yes	4 (6.9%)
No	54 (93.1%)
If yes, how often do you get the services in a month?	
Once	4 (100.0%)
Rank the quality of service at the nearest health facility of your choice.	
Excellent	8 (13.8%)
Good	46 (79.3%)
Fair	4 (6.9%)
What type of remedies do you use to relieve symptoms?	
Herbs	2 (3.4%)
Others (specify)	56 (96.6%)
How was the attitude of the service provider who attended to you?	
Excellent	6 (10.3%)
Fairly good	52 (89.7%)
Were you able to get the prescribed medication at the hospital	
Sometimes	2 (3.4%)
Always	56 (96.6%)

Most respondents (93.1%) reported no door-to-door or outreach services from the health facility. Over three-quarters (79.3%) rated the services as good, and 89.7% rated the providers' attitudes as fairly good, with 96.6% receiving prescribed medication%) (Table 4b).

DISCUSSION

Sociodemographic characteristics of the study respondents

Age and gender: This study, conducted at JOOTRH, found that males are more affected by TB (65.5%) than females, with

the condition being most prevalent in the 26-35 age group (62.1%). WHO (2020) reports that TB is more common among young males aged 25-34, aligning with these findings. Similarly, Mbuthia et al. (2018) noted a higher TB prevalence in males, who also demonstrated better healthcare-seeking behavior. However, contrasting studies, such as those by Ehsanul Huq et al. (2018), found better healthcare-seeking among males, while Latunji& Akinyemi (2018)highlighted better health-seeking behavior among females. The high male prevalence in this sample could suggest relatively better healthcare-seeking among men, but this may not reflect the general population. Broad-based health education is crucial to improving health-seeking behavior across the population.

Financial status: 39.7% of respondents spent below Ksh 5,000 monthly, while approximately 27.6% were unemployed. Findings indicated that unemployment ($X^2 = 3.062$, $p = 0.016$) significantly correlated with poor health-seeking behavior, as did low monthly expenditure ($X^2 = 5.205$, $p = 0.037$) among TB patients. According to André et al. (2020) TB prevalence is notably high among individuals of lower socioeconomic status. Poverty not only increases the risk of contracting TB but also exacerbates its prevalence by limiting access to healthcare services. A study by Kawili (2007) in Kisumu slums highlighted that poor health-seeking behavior persisted despite free TB care implementation. Unemployment and low income led respondents to prioritize revenue-generating activities over health. Additionally, the public's lack of awareness about their TB diagnosis and the availability of free care hampers health-seeking behaviors, as individuals often view medical consultations for moderate symptoms as time-consuming and non-essential.

Marital status: The study found that 56.9% of respondents were married, while the rest were either widowed (3.4%), separated (1.7%), or single (37.9%). The findings indicated that these individuals had better health-seeking habits compared to those who were separated, widowed, or single. This finding is comparable to Pandey et al. (2019), who found that married individuals had better health-seeking behavior than those who were widowed, separated, or single. Partner involvement in care could promote good health-seeking behavior, as partners can make informed decisions regarding seeking healthcare when one experiences symptoms such as a persistent cough. They could also remind their partner to take anti-TB medication daily by setting phone alarms at specific times, which can enhance drug adherence (Kessler et al., 2018).

Level of education and Religion: Among the respondents, 63.8% had completed secondary school, 24.1% had completed tertiary education, and 12.1% had only completed primary education. The level of education was statistically significant in influencing health-seeking behavior. According to our findings, a low education level is associated with poor health-seeking behavior. Ehsanul Huq et al. (2018) indicate that a low education level is the greatest risk for poor health-seeking behavior and delays in detecting TB infections. Ahmed et al. (2023) and Mbuthia et al. (2018) showed that people with low education delay seeking healthcare services, often turning to traditional medicine, religious prayers, and interventions before resorting to medical care. Incorporation of education on TB in the Kenyan curriculum could improve the general population's knowledge about TB, enhancing health-seeking behavior. A higher education level is associated with better disease knowledge, health-seeking behavior, and adherence to management plans.

Knowledge, perception and attitude about TB the study respondents

Knowledge before diagnosis: The study found that the community was well-versed in tuberculosis, with 93.1% of the sampled population aware of TB prior to diagnosis. These findings are consistent with the Kenya Demographic Health Survey, which revealed that many Kenyans are aware of tuberculosis and its symptoms (KDHS, 2014). KDHS (2022) indicates that general TB awareness in the population is 97% in females and 98% in males. As TB education is incorporated into the Kenya education curriculum, patients' knowledge of the disease is strongly linked to their educational levels. Those who did not complete primary and secondary school had little knowledge of tuberculosis.

Curable disease: Community knowledge of TB is, however, limited. 12% of the sample population indicated that TB is an incurable disease. Despite treatment, factors such as TB recurrence make the community view TB as an untreatable chronic disease. The study, however, showed that 86% of patients correctly identified that the disease is treatable.

Symptomology understanding: The patients' understanding of TB's effects on their bodies is greatly related to symptomatic awareness. 98.3% indicated that TB affects the lungs, based on their symptom awareness. All respondents reported experiencing fever, chest pain, and cough when infected with TB. TB mainly affects the lungs, leading to pulmonary tuberculosis (PTB). TB's propensity to affect the pulmonary system is due to its entry mechanism, as TB pathogens are inhaled and deposited in the lungs, leading to inflammation. Although tuberculosis also presents with constitutional symptoms such as night sweats and weight loss, some patients did not associate these symptoms with TB, leading to delays in seeking healthcare.

Transmission understanding: All the respondents indicated that TB is spread through the air, showing high community knowledge of TB transmission. However, 5.2% of the sampled population believed that sharing utensils can spread TB. This myth can lead to stigmatization within the community. According to Kigozi et al. (2017), myths and misconceptions about TB transmission contribute to high levels of family and community stigmatization, with TB-infected individuals being segregated. Such stigmatization often leads to psychological distress among patients

Treatment knowledge and attitude: In the sampled population, 86.2% had recently been diagnosed and were either in the intensive or continuation phase of TB treatment, while 8% were diagnosed between six and twelve months ago, and only 5% had been diagnosed for over twelve months. Treatment duration varies based on the type of TB; pulmonary tuberculosis (PTB) is typically treated for six months, whereas meningeal TB may require up to one year. Most patients had PTB, but some with meningeal tuberculosis faced longer treatment durations.

Among those diagnosed over twelve months ago, medication non-compliance led to recurrent infections and the emergence of multidrug-resistant (MDR) and extensively drug-resistant (XDR) TB variants. Factors like side effects, a high pill burden, and difficulty in attending check-ups contributed to non-compliance. The implementation of Directly Observed Therapy (DOT) and monthly medical reviews enhanced adherence. Only 5% of the sample were treated for recurrent TB infections, indicating high-quality initial care. However, patients with immunosuppressive conditions, such as HIV/AIDS, experienced higher rates of TB recurrence due to non-adherence to HAART medication.

Health-seeking behavior: The sampled population demonstrated positive health-seeking behavior, with 90% visiting a health facility within one month of symptom onset. This high turnover rate indicates a proactive approach to health; however, 10% initially sought assistance from herbalists, religious leaders, or resorted to self-medication with cough syrups and analgesics. Sociocultural and personal values significantly influence these behaviors, with patients often delaying care until symptoms become unbearable (Mbuthia et al., 2018). Low income restricts access to medical services and drugs, leading many to seek alternative treatments despite free TB care. Additionally, a lack of awareness about their diagnosis contributes to fewer hospital visits. This pattern, exacerbated by the high prevalence of HIV in the region, delays timely treatment, increases PTB transmission, and can result in complications from herbal medications (Enos et al., 2018). Ultimately, patients often transition to healthcare services only as their symptoms worsen.

Challenges while seeking treatment: The study identified financial constraints (79.3%, $X^2 = 0.756$, $p = 0.033$) and distance from healthcare facilities (70.7%, $X^2 = 0.824$, $p = 0.035$) as primary challenges faced by respondents in seeking TB treatment. These findings align with previous studies indicating that 20% of the population lacks the financial means for TB services (Latunji& Akinyemi, 2018). Many individuals struggle to afford necessary lab tests and imaging, compounded by high transportation costs due to living far from healthcare facilities, especially as most are unemployed and uninsured. Proximity to healthcare significantly influences motivation to seek treatment; Jang et al. (2020) highlight that transportation costs and unfamiliarity with medical environments deter timely healthcare-seeking behavior. Consequently, individuals often delay seeking care until the disease severely affects their health. Authorities should focus on decentralizing TB treatment services to enhance accessibility for underserved populations.

Family history of TB: Most of the respondents had a family member suffering from TB (81.0%, ($X^2 = 0.984$, $p = 0.045$). These findings correspond with a study done by Laghari et al. (2019), where with a median of five connections per home, there was a net of 2397 household contacts staying with the 443 initial diagnoses, and contact tracing of the family of active TB children enabled for the discovery of an additional 35 cases of TB among family members. TB frequently spreads within families. Family members of PTB patients have a significant chance of contracting the illness and could be a source of disease transmission in the community.

Community perception of TB: Over three-quarters (86.2%, $X^2 = 1.071$, $p = 0.036$) of their community members perceived that TB is a hazardous disease that needs isolation and specialized treatment for the infected. The findings correspond to a study by Nyasulu et al. (2018) where one of the key themes that emerged from the survey done in Ntcheu district, Malawi, was that participants believed TB to be a severe disease before diagnosis in individuals who already exhibit the signs and symptoms. Lack of awareness of TB results in heightened dread of being near or close to TB patients even when they are not contagious, which causes physical and social isolation. Given this stigma, many patients would be hesitant to seek medical attention leading to an increased spread of TB.

HIV status and Prior TB diagnosis: The study found that 84.5% of respondents were HIV positive, with 75.9% having never been diagnosed with TB. According to WHO estimates, individuals with HIV are 20 times more likely to develop TB than those without the virus (Qi et al., 2023). Stigma associated with HIV leads many in the community to believe that all TB patients are HIV positive, discouraging individuals from seeking healthcare due to fear and discrimination. This stigma negatively impacts health-seeking behaviors, contributing to a greater spread of illness (KDHS, 2022). Among those diagnosed with TB, 85.7% underwent six months of treatment, all experiencing complications. Ngari et al. (2023) found that HIV-positive patients in rural Kenya were 3.8 times more likely to experience severe drug-related side effects, complicating treatment adherence due to interactions between antiretroviral and anti-tuberculosis medications.

Effects of COVID-19 in seeking healthcare: COVID-19 affected the ability of the majority of the respondents (89.2%) as they feared contracting the disease at health centres (89.2%) and restrictions on health facilities (69.0%). These findings concur with Mwamba et al. (2020), where participants in Zambia reported how the lockdowns had impacted their hospital trips negatively, and several voiced concern about contracting COVID-19 during clinic appointments. The COVID-19 pandemic disturbed and delayed TB treatment and prevention strategies. Consequently, poorer healthcare-seeking behaviours lead to fewer TB cases being diagnosed and worse consequences.

Health system-related factors associated with health-seeking behavior among PTB patients at JOOTRH

Distance from health facility: Over half (56.9%) of respondents lived 6-10 kilometers from the nearest health facility, with 27.6% residing over 10 kilometers away. Many reported walking for two hours to reach care, compounded by poor roads and transportation costs. Distance significantly affects TB treatment initiation, leading clients to delay seeking care until health deteriorates. Findings from Oluyede et al. (2022) and Arakelyan et al. (2021) emphasize that transportation costs and unfamiliarity with the hospital environment impact health-seeking behavior, highlighting geographic access as a crucial determinant in seeking healthcare services.

Attitude of health care services: The quality of healthcare significantly influenced health-seeking behavior among respondents. Most clients (89.7%) rated service providers' attitudes as fairly good, indicating a strong therapeutic relationship. Such relationships foster trust and respect, allowing practitioners to better understand patient issues and develop effective management plans. According to Harris & Panozzo (2019), a solid nurse-patient relationship addresses physical, emotional, and spiritual needs. This aligns with findings from Purohit et al. (2019), which emphasize that positive provider-patient interactions encourage early diagnosis and treatment of pulmonary tuberculosis (PTB). Participants highlighted that effective communication and active involvement in treatment empower them to manage their health better, underscoring the need for continuous improvements in TB care.

Quality of health care service and drug availability: The study revealed that over three-quarters (79.3%) of respondents rated the services at their nearest health facility as good, with 69.0% rating their overall experience during their last visit as excellent. Additionally, most participants reported waiting 10-30 minutes for service (86.2%), aligning with findings from Opon et al. (2021) regarding average waiting times in Kenyan hospitals and Marx et al. (2018), which indicate high patient satisfaction correlating with quality care. Overall satisfaction positively impacts client motivation to seek care in the future, as long waiting times often lead to dissatisfaction and perceived barriers to care. Notably, 96.6% of respondents received their medications at the hospital, highlighting the importance of drug availability in ensuring efficient care and better treatment outcomes, consistent with Louw et al. (2016), which links medication availability to improved quality of life and reduced PTB cases in South Africa.

Affordability of health care services: The study revealed that while 100% of respondents did not pay for health services, 91.4% faced a registration fee of Ksh 50-100. Many struggled to afford this fee due to unemployment and lack of medical coverage, prioritizing basic needs. These findings align with Latunji&Akiyemi (2018), which indicated that up to 20% of the population cannot financially access TB services despite government subsidies.

CONCLUSION

- Pulmonary TB in JOOTRH is more common among young males between 26-35 years. Its prevalence is highest among patients with low socio-economic status and HIV positive patients.
- The community knowledge of PTB, its symptomology, transmission, and treatment is overall good, with some myths and misconceptions. Transmission misconception such as PTB being transmitted through sharing utensil and chronicity of the diseases increases community and family stigmatization of PTB patients.Knowledge, attitude and perception of PTB affect community health seeking behavior.
- Implementation of DOT, CHEW, and monthly reviews of PTB patients improve patients' adherence to medication. TB recurrence is commonly associated with immunosuppression following default on HAART among HIV-positive patients.
- The community records good health-seeking behaviors, with a small percentage having poor health-seeking behavior. Poor health-seeking behavior is mainly due to the high cost of care, poverty, and sociocultural and personal values. Poor health-seeking behavior leads to increased community PTB prevalence, a surge in TB incidences, and increased patient morbidity and mortalities. Most of the PTB defaulters cited long distance from health facility as bigger hindrance toward monthly visit and health seeking.
- Community stigma on PTB is highly related to poor KAP and correlation of PTB with HIV.
- COVID-19 pandemic reduced health seeking behavior among many patients they feared contracting COVID-19 in hospitals and strict COVID-19 mitigation measures such as lockdown and curfews.

RECOMMENDATION

To the Ministry of Health and Healthcare Community: Increasing community awareness through enhanced education programs and health campaigns is essential. Additionally, reducing the cost of care by improving health insurance options will be beneficial.

To JOOTRH: Regular community education and health campaign programs should be conducted to promote better knowledge, attitudes, and practices regarding health-seeking behavior. Patient follow-ups and mass community screening for tuberculosis are necessary to address the prevalence of pulmonary tuberculosis in the community.

To the community and general population: It is crucial to reduce stigmatization surrounding tuberculosis and HIV, encouraging individuals to seek healthcare services for any symptoms.

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