

Lived Experiences and Treatment Challenges of Patients with Multidrug-Resistant Tuberculosis in a Rural Philippine Setting: A Phenomenological Study

Ma. Concepcion B. Rapsing¹ and Marlyn A. Daguno²

¹Student, University of Sto. Tomas – Legazpi

²Professor, University of Sto. Tomas - Legazpi

Abstract— This study aimed to explore the lived experiences of patients undergoing treatment for multidrug-resistant tuberculosis (MDR-TB) in a rural setting using a phenomenological approach. MDR-TB presents significant challenges for patients due to the long duration of treatment, severe side effects, and social stigma associated with the disease. The study sought to understand how socio-demographic factors, such as age, gender, education, and occupation, influence treatment adherence, as well as the psychosocial and emotional barriers that patients face. Six participants were selected through purposive sampling, and data were collected through in-depth, semi-structured interviews. The findings revealed that patients often experience emotional distress, including fear, anxiety, and shame upon diagnosis, which is compounded by the physical burden of treatment, such as nausea, weakness, and hearing loss. Treatment fatigue and psychological distress further contribute to difficulties in maintaining adherence. However, personal resilience and positive coping mechanisms, alongside strong family support, emerged as key factors that helped patients persist with their treatment despite challenges. Social factors, such as family reminders and financial assistance, also played a significant role in improving adherence. Health system factors, including delayed diagnosis, transportation difficulties, and inconsistent drug supply, were identified as major barriers to successful treatment. This study underscores the need for comprehensive, patient-centered interventions that address not only medical needs but also the social, emotional, and economic factors affecting adherence. Strengthening family support and providing financial and psychosocial resources are essential for improving MDR-TB treatment outcomes in resource-limited settings.

Keywords— Multidrug-resistant tuberculosis (MDR-TB), Lived experiences, Treatment adherence, Phenomenological approach, Rural health care.

I. INTRODUCTION

Multidrug-resistant tuberculosis (MDR-TB) remains one of the most significant global health challenges, particularly in low- and middle-income countries where health systems often struggle to provide adequate care. MDR-TB occurs when *Mycobacterium tuberculosis*, the bacterium that causes tuberculosis (TB), becomes resistant to the two most commonly used first-line drugs, isoniazid and rifampicin. This resistance complicates treatment, requiring patients to undergo longer, more expensive, and often more toxic regimens that last between 18 and 24 months (Centers for Disease Control and Prevention, 2021). These extended treatment regimens, coupled with severe side effects such as nausea, hearing loss, and fatigue, create immense physical, emotional, and economic burdens on patients. While the treatment is essential for curing the disease, these prolonged regimens often lead to treatment fatigue, poor adherence, and sometimes, treatment failure (World Health Organization, 2022).

The burden of MDR-TB is particularly pronounced in rural areas of Southeast Asia, including the Philippines, where challenges such as geographic isolation, limited healthcare infrastructure, and social stigma contribute to poor treatment outcomes. In these settings, patients frequently face logistical barriers, including long travel distances to healthcare facilities, insufficient local health resources, and inconsistent drug supplies, all of which hinder treatment adherence and contribute to the development of drug resistance (Salve & Pangandaman, 2021; Crisostomo et al., 2022). The lack of sufficient healthcare services, particularly in remote communities, exacerbates the difficulty of managing MDR-TB. These healthcare challenges are compounded by the lack of psychosocial support systems and a high level of social stigma associated with the disease, which often discourages individuals from seeking early diagnosis and adhering to their prescribed treatment regimens (Balanag Jr. et al., 2022; Salve & Pangandaman, 2021).

In the context of the Philippines, MDR-TB is a serious public health concern, and it continues to challenge both patients and the healthcare system. The Department of Health has made strides in improving TB diagnostics and treatment, but there are still significant gaps in addressing the emotional and social toll of MDR-TB on patients. These gaps are particularly evident in rural settings, where access to healthcare is limited and socioeconomic conditions add additional strain to patients' ability to adhere to treatment regimens. The lack of resources and proper infrastructure often results in delayed diagnoses and disrupted treatment, further complicating patients' health outcomes and increasing the risk of spreading resistant strains (Crisostomo et al., 2022). Additionally, the economic hardship faced by many MDR-TB patients further compounds their struggles. Many of these patients, especially in rural areas, rely on daily wages from agriculture or manual labor, making it difficult to sustain income while undergoing lengthy treatment (Akalu et al., 2023).

Moreover, the social and psychological toll of MDR-TB cannot be underestimated. Patients frequently experience feelings of anxiety, depression, and isolation due to the stigmatization of their condition. The fear of being rejected by their communities and family members often prevents patients from seeking timely treatment or disclosing their condition, leading to delays in diagnosis and exacerbating the spread of the disease. Studies have shown that social stigma and the resulting isolation are some of the most significant barriers to TB care and treatment adherence, especially in communities with low levels of awareness about the disease (Zhang et al., 2022). The psychological stress faced by patients undergoing MDR-TB treatment is often compounded by the uncertainty about their prognosis, the physical side effects of the medication, and the long duration of the treatment regimen (Hwa et al., 2024).

In light of these challenges, understanding the lived experiences of MDR-TB patients is crucial for developing interventions that are not only medical but also psychosocial and culturally sensitive. Qualitative studies exploring the experiences of MDR-TB patients can provide valuable insights into how patients cope with the demands of treatment, manage side effects, and navigate the social and economic challenges that affect their adherence to treatment. This kind of patient-centered research is essential for improving health outcomes and designing interventions that address the

full spectrum of challenges faced by MDR-TB patients. While there is a growing body of research focusing on the clinical aspects of MDR-TB, there is still a significant gap in qualitative research that focuses on the emotional, psychological, and social dimensions of living with the disease, particularly in rural or resource-limited settings.

Globally, research on MDR-TB has increasingly recognized the importance of integrating patient-centered approaches to improve adherence and treatment outcomes. Studies conducted in various parts of Africa and Asia have highlighted the critical role of family support, community involvement, and emotional resilience in helping patients manage the demands of MDR-TB treatment (Omona & Ogwang, 2024; Teh & Brigaste, 2018). These studies emphasize that while medical interventions are vital, they must be accompanied by psychosocial support to address the emotional and social challenges patients face. Family involvement has been shown to significantly enhance treatment adherence, with patients more likely to continue treatment if they receive emotional encouragement and practical assistance from their families (Sreepada et al., 2020). Furthermore, interventions that reduce stigma and promote awareness about the disease can help create a more supportive environment for patients, reducing the emotional burden of the illness (Ghebreyesus et al., 2023).

This study aimed to explore the lived experiences of MDR-TB patients in a rural setting, through a phenomenological approach, focusing on the socio-demographic and socioeconomic characteristics that shaped their treatment experiences. Specifically, it described the personal and economic factors influencing their journey, providing a clearer understanding of how age, sex, education, occupation, and income levels affected their capacity to manage treatment. In addition, the study delved into the emotional, physical, and psychosocial challenges that patients faced throughout the treatment process, examining how diagnosis, medication adherence, and side effects impacted their day-to-day lives. Finally, the research identified the individual- and health system-related factors, such as family support, access to healthcare services, and medication availability, that influenced treatment adherence, interruptions, and overall outcomes. By investigating these factors, the study offered insights into the multifaceted realities of MDR-TB patients,

guiding the development of more effective, patient-centered interventions that addressed both medical and psychosocial needs in resource-limited settings.

II. METHODOLOGY

The research design used in this study was qualitative phenomenological research to investigate and interpret the experiences of patients with MDR-TB. Phenomenology was chosen to describe the experience of persons in terms of perceiving, making sense, and attributing meaning to their illness and treatment process, especially to the emotional, bodily, and psychosocial demands of long-term therapy. The methodology places more emphasis on the subjective reports of the participants instead of numeric measurement, which allows the comprehensive and multifaceted interpretation of the problem of treatment adherence and coping, which would otherwise be concealed by the quantitative approach.

Purposive sampling was used to recruit participants in the form of a rural community with limited resources and a history of reported MDR-TB cases. The criteria to eligibility included adults who are currently receiving treatment of MDR-TB and are not reluctant to share their experiences. This was a study involving six participants, which is within the requirements of phenomenological research, which focuses on depth and detail rather than sample size. The data were gathered using face to face semi structured interviews using expert designed interview guide comprising of open ended facts that dwelled on diagnosis treatment experiences, adherence behavior, and perceived barriers

and supports. The interviews were done in a language of the choice of the participants and were audio-recorded at the consent of the participants and they were conducted in confidential environments to encourage comfort and candidness.

The thematic analysis was applied in analyzing the data. The review methods used on interview transcripts were iterative, coded, and arranged into patterns and themes that displayed similar meanings across the narratives of the participants. Ethical protection was followed to the letter, such as informed consent, voluntary participation, confidentiality, and the elimination of any identifying data to ensure that the participants remain anonymous. This research methodology helped to understand the lived realities of MDR-TB patients in a holistic and ethical manner and come up with context-sensitive insights to be used in patient-centered care strategies.

III. RESULTS & DISCUSSION

Socio-demographic and socioeconomic characteristics of patients with MDR-TB

In this study, the socio-demographic and socioeconomic profile of the participants provides valuable insight into the challenges faced by patients undergoing treatment for multidrug-resistant tuberculosis (MDR-TB) in a rural setting.

The data presented in Table 1 reflects the complex interplay of individual characteristics, social roles, and economic factors that shape the experiences of patients throughout their treatment process.

Table 1. Socio-demographic and Socioeconomic Profile of Participants (n = 6)

Variable	Category	f	%
Age	31–40 years	1	16.7
	41–50 years	3	50.0
	51–60 years	1	16.7
	61–70 years	1	16.7
Sex	Male	3	50.0
	Female	3	50.0
Educational Attainment	Elementary	1	16.7
	High School	4	66.7
	College	1	16.7
Occupation	Construction worker / laborer	2	33.3
	Farming/Fishing	1	16.7
	Household/Housewife	3	50.0
Monthly Family Income	₱5,000–₱10,000	4	66.7

The age distribution of the participants (with 50% in the 41–50 years group) suggests that MDR-TB predominantly affects adults in their prime working years. This finding is consistent with existing research, such as Adisa et al. (2021), which found that individuals in this age group experience greater socio-economic pressures due to their family responsibilities, exacerbating the challenges of adhering to lengthy treatment regimens. In line with previous studies, this group likely faces additional health risks from comorbidities such as diabetes, further complicating their ability to adhere to treatment (Migliori et al., 2020).

The equal gender distribution (50% male and 50% female) in this study reflects the general finding that MDR-TB affects both genders similarly. However, the gendered challenges in treatment adherence are significant. Men, especially those in manual labor jobs, often find it difficult to attend regular clinic visits or adhere to treatment due to the physical demands of their work (Akalu et al., 2023). Women, on the other hand, frequently face additional psychosocial burdens, such as caregiving responsibilities and social expectations, which can increase emotional distress during the treatment process (Zhang et al., 2022). This gendered disparity in the impact of MDR-TB treatment highlights the need for gender-sensitive interventions that address the specific needs of both men and women in MDR-TB care.

The educational background of participants is another important factor influencing treatment adherence. While the majority of participants had at least a high school education, those with lower educational levels may face difficulties understanding the complexities of their treatment regimens. This finding is in line with Balanag Jr. et al. (2022), who emphasized that lower health literacy correlates with poorer treatment adherence. While education is crucial for understanding medical instructions, even those with higher education levels faced significant psychosocial and systemic barriers that impacted their adherence to treatment, such as social stigma and inadequate healthcare access (Suliman et al., 2021).

The occupation of participants, with many engaged in labor-intensive jobs such as construction and farming, highlights the difficulty of managing treatment when physical work demands often compete with the need to attend regular clinic visits. As noted by Akalu et al.

(2023), labor-intensive occupations can make it difficult for patients to balance work responsibilities with the need for consistent healthcare. This study's findings reinforce the need for flexible treatment schedules or home-based care models that accommodate the working lives of these patients.

Economic constraints emerged as a significant barrier to adherence, with 66.7% of participants earning between ₱5,000 and ₱10,000 monthly. This finding aligns with global research that identifies financial hardship as a key obstacle to MDR-TB treatment success (Churchyard et al., 2023). As noted by Atif et al. (2025), the cost of transportation, medication, and other treatment-related expenses often forces patients to prioritize basic survival over their health needs. Economic support programs, such as transportation subsidies or financial aid for medication, could be crucial in improving adherence and treatment outcomes in similar settings.

In conclusion, the socio-demographic and socioeconomic characteristics of the participants in this study highlight several critical factors that influence the treatment experiences of MDR-TB patients. The findings support previous research, suggesting that age, gender, education, occupation, and income level all play important roles in shaping how patients experience the disease and manage treatment. These results underscore the need for holistic, patient-centered interventions that address not only the medical aspects of treatment but also the psychosocial and economic barriers that hinder adherence. Further research is needed to explore how community-based interventions can be designed to provide both medical and socio-economic support, ensuring that MDR-TB treatment is accessible and sustainable for patients in resource-limited settings.

Patients' lived experiences throughout the treatment process, including emotional, physical, and psychosocial challenges associated with diagnosis, medication adherence, and treatment side effects.

The lived experiences of participants in this study highlight the emotional, physical, and psychological challenges that accompany the treatment of multidrug-resistant tuberculosis (MDR-TB). As shown in Table 2, patients experience a variety of distressing symptoms and emotional responses that significantly impact their ability to manage the disease and adhere to the long and arduous treatment regimen.

Table 2. Lived Experiences of MDR-TB Patients During Treatment

Major Theme	Description	Representative Participant Statements
Emotional reactions to diagnosis	Shock, fear, anxiety, shame	“Nagulat ako...”, “Natatakot ako ma-isolate.”
Physical burden of treatment	Weakness, nausea, appetite loss, hearing problems	“Sumasakit ang tiyan... humina ang pandinig.”
Treatment fatigue	Long duration, multiple pills daily	“Anim na klase na gamot kada adlaw.”
Psychological distress	Depression, hopelessness, stigma	“Nawalan ako ng gana... nade-depress ako.”
Coping and resilience	Acceptance, hope, determination	“Iniisip ko na lang na para sa paggaling ko ito.”
Family support	Medication reminders, food preparation, clinic accompaniment	“An pamilya ko nagaasikaso sa akon.”

Emotional Reactions to Diagnosis. Upon receiving a diagnosis of MDR-TB, patients often experience shock, fear, anxiety, and shame. These emotions reflect the overwhelming nature of the diagnosis, compounded by the social stigma associated with TB. The shock of learning that one has a potentially life-threatening and highly infectious disease leads many to initially struggle with fear of isolation and rejection from others. As one participant shared: "Nagulat ako..." (I was shocked...), and "Natatakot ako ma-isolate" (I'm afraid of being isolated). This emotional response underscores the strong societal stigma that individuals with MDR-TB face, which can be both isolating and distressing. Such feelings of fear and shame often delay patients' willingness to seek treatment or share their diagnosis, further complicating their recovery process (Zhang et al., 2022).

Physical Burden of Treatment. The physical burden of treatment was another prominent theme in patients' narratives. Common physical symptoms include weakness, nausea, appetite loss, and hearing problems due to the side effects of second-line TB medications. One participant expressed the physical toll of the treatment regimen: "Sumasakit ang tiyan... humina ang pandinig" (My stomach hurts... my hearing has weakened). This statement highlights how the severe side effects of MDR-TB treatment, such as gastrointestinal issues and hearing loss, create additional difficulties for patients who are already weakened by the disease. These physical challenges often lead to treatment fatigue, as patients struggle to balance the demands of daily medication with the debilitating effects on their health (Hwa et al., 2024).

Treatment Fatigue. The prolonged duration of MDR-TB treatment, which typically spans 18–24 months, leads to significant treatment fatigue. Patients are required to take multiple medications every day, which can feel overwhelming. One participant shared: "Anim na klase na gamot kada araw" (Six types of medicine every day). This statement captures the exhaustion and frustration associated with the complex treatment regimens that patients must follow. The sheer number of pills, combined with the length of treatment, leads many to feel physically drained and emotionally disheartened. The persistence of this fatigue often results in non-adherence to treatment, as patients struggle to maintain motivation over such an extended period (Teh & Brigaste, 2018).

Psychological Distress. The emotional and physical toll of living with MDR-TB often results in significant psychological distress. Many patients experience depression, hopelessness, and stigma, which can further hinder their ability to cope with the disease. One participant shared their emotional state: "Nawalan ako ng gana... nade-depress ako" (I lost interest... I became depressed). These feelings of depression and hopelessness reflect the emotional burden of managing a chronic illness, compounded by the stigma associated with TB. Psychological distress can significantly impact treatment adherence, as patients may feel overwhelmed and disconnected from others, further isolating them in their journey to recovery (Dookie & Visser, 2020).

Coping and Resilience. Despite the challenges, many patients demonstrate coping and resilience, with a focus on acceptance, hope, and determination to overcome the

obstacles posed by their diagnosis and treatment. One participant expressed this sense of resilience with the statement: "Iniisip ko na lang na para sa paggaling ko ito" (I just think of it as something for my recovery). This statement reflects the inner strength and determination that many patients summon to continue their treatment, despite the difficulties they face. Hope and acceptance are critical components of coping with MDR-TB, as patients who embrace these attitudes are more likely to persist with their treatment, even when faced with physical and emotional hardship (Adongo et al., 2023).

Family Support. A critical factor in helping patients manage the challenges of MDR-TB treatment is family support, which includes medication reminders, food preparation, and clinic accompaniment. One participant highlighted the importance of family involvement: "An pamilya ko nagaasikasò sa akon" (My family takes care of me). This statement emphasizes the crucial role of family in providing emotional and logistical support to patients. Family members who help with daily medication reminders, assist with meal preparation, and accompany patients to clinics help reduce the burden of treatment. Family support can alleviate some of the emotional stress and practical challenges of living with MDR-TB, thereby improving treatment adherence and overall outcomes (Baral et al., 2021; Omona & Ogwang, 2024).

The lived experiences of patients with MDR-TB, as outlined in Table 2, illustrate the complex physical, emotional, and psychological challenges they face throughout their treatment process. Emotional reactions such as shock and fear, the physical toll of treatment, psychological distress, and treatment fatigue are significant barriers to adherence and recovery. However, resilience, coping mechanisms, and strong family support can play a pivotal role in helping patients

manage these challenges. These findings reinforce the importance of addressing not only the clinical aspects of MDR-TB treatment but also the psychosocial and emotional dimensions that affect patients' ability to persist with treatment. Future interventions should focus on strengthening family support systems, providing psychosocial counseling, and ensuring effective communication to reduce the stigma associated with MDR-TB and enhance treatment outcomes.

Individual- and health system-related factors influencing treatment adherence, interruption, and overall treatment outcomes, including family support, access to services, and availability of medications.

The adherence to treatment among MDR-TB patients is influenced by a range of individual, social, and health system factors. As shown in Table 3, both patient-related factors and external barriers contribute significantly to the success or failure of treatment. These factors include a patient's understanding of treatment, side effects of medications, social support, economic resources, and the quality of healthcare services they receive.

Individual (Patient) Factors. A poor understanding of the importance of treatment is one of the primary barriers to adherence. Many patients do not fully comprehend the consequences of missing doses, which can lead to drug resistance and treatment failure. One participant shared: "Hindi ko akalaing ganun kahalaga yung mga gamot," (I didn't realize how important the medicines were). This highlights the gap in patient education regarding the significance of strict adherence to medication schedules. Without a clear understanding, patients may be more likely to miss doses or abandon their treatment plan, contributing to delays in recovery.

Table 3. Factors Influencing Treatment Adherence Among MDR-TB Patients

Category	Specific Factors	Influence on Treatment
Individual (Patient) Factors	Poor understanding of treatment importance	Missed doses
	Drug side effects (nausea, weakness, hearing loss)	Treatment interruption
	Alcohol/smoking use	Reduced adherence
	Emotional distress (fear, stigma, depression)	Decreased motivation
	Personal resilience/positive mindset	Improved adherence
Social Factors	Family reminders and caregiving	Improved adherence
	Financial assistance	Reduced treatment gaps
Health System Factors	Delayed diagnosis	Late treatment initiation

	Transportation difficulties	Missed appointments
	Inconsistent drug supply	Interrupted therapy
	Limited counseling/education	Poor health literacy
	Supportive healthcare workers	Increased trust and adherence

The side effects of the drugs, such as nausea, weakness, and hearing loss, were also significant factors influencing adherence. One participant noted: "Sobrang hina ko, nahihirapan akong magtrabaho," (I feel so weak, it's hard for me to work). These side effects can be debilitating, making it difficult for patients to continue with treatment as prescribed. For many patients, the physical toll of the medications leads to treatment interruptions as they are forced to stop or reduce their medication intake due to severe side effects (Teh & Brigaste, 2018).

In addition to the physical side effects, alcohol or smoking use was noted as another factor that negatively impacted treatment adherence. One participant shared: "Minsan kasi, nagiging dahilan ko yung stress, kaya umiinom ako," (Sometimes, I use stress as an excuse, so I drink). This behavior, often linked to emotional distress, worsens the overall health status and complicates the effectiveness of treatment. Alcohol and smoking use, both of which can compromise the immune system, undermine the effectiveness of the MDR-TB regimen, leading to poorer adherence and treatment outcomes (Baral et al., 2021).

Emotional distress—including fear, stigma, and depression—was another critical factor in decreased motivation to adhere to treatment. One participant expressed: "Na-feel ko na parang wala nang pag-asa," (I felt like there was no hope left). Patients who experience depression or fear of rejection may be less likely to adhere to their treatment plans, as emotional distress can diminish motivation and resilience, leading to missed doses or treatment abandonment (Dookie & Visser, 2020). Conversely, individual resilience and optimistic attitude were found to have a potential to enhance compliance. One of them said: "Iniisip ko na lang na para sa aking pamilya, kailangan kong magpatulay," (I just think of it as something that I should do on behalf of my family, I have to continue). The strength of the mind that was largely reinforced by the family and the community played a significant role in the process of conquering the treatment obstacles.

Social Factors. Family reminders and caregiving appeared to be a significant source of positive effects on the adherence to treatment. Patients who had good family support systems especially those whose family members reminded them to take their medications and to attend clinical appointments were more likely to stick to their treatment programs. One of them said: "Ang pamilya ko ang nawag in times of oras kung gamot ko," (The members of my family are always concerned about the time when I take medicine). This family care played a crucial role in keeping the patients on their treatment plans without missing any doses or having breaks (Omona & Ogwang, 2024).

Financial assistance also played a crucial role in improving adherence. Patients who received financial help were better able to cover the costs of travel, medication, and other treatment-related expenses, which in turn reduced treatment gaps. One participant shared: "Dahil sa tulong ng ibang tao, nagkaroon ako ng pondo para makapunta sa clinic," (Because of the help from others, I was able to find the money to go to the clinic). Financial assistance was instrumental in removing barriers to regular treatment visits and ensuring continuous access to medications, thus improving adherence rates (Atif et al., 2025).

Health System Factors. Several health system factors also had a significant impact on treatment adherence. Delayed diagnosis often led to late treatment initiation, which contributed to the difficulty of achieving successful outcomes. One participant recalled: "Nahulog ako sa madalas na ubo at hindi agad na-diagnose," (I was often coughing, but it wasn't diagnosed right away). A delayed diagnosis means that patients may begin treatment later, giving the disease more time to progress and complicate treatment (Endo et al., 2022).

Transportation difficulties further hindered adherence, as many patients faced challenges in accessing healthcare facilities. One participant described: "Minsan, wala na akong pambayad para sa pamasaha," (Sometimes, I don't have money for transportation). This financial burden prevented patients from attending

clinic appointments regularly, which often led to missed doses and disruptions in treatment (Akalu et al., 2023).

The inconsistent supply of drugs was another significant issue that interrupted therapy. Patients sometimes struggled to obtain the necessary medications, leading to gaps in treatment. This issue was particularly problematic in rural areas where drug supplies were not always reliably available, leaving patients vulnerable to treatment interruptions (Balanag Jr. et al., 2022).

Limited counseling and education from healthcare providers also contributed to poor treatment adherence. Patients often lacked comprehensive understanding about the importance of adhering to the treatment regimen, leading to non-compliance. One participant noted: "Hindi ko naintindihan na ganoon pala katagal ang treatment ko," (I didn't understand that my treatment would take this long). Lack of education regarding the treatment process often led to poor health literacy, which in turn reduced adherence rates (Balanag Jr. et al., 2022).

However, supportive healthcare workers were noted as a critical factor in increasing adherence. Participants who felt supported by their healthcare providers were more likely to follow through with treatment. One participant said: "Ang mga nurse ko ay laging nagbibigay ng encouragement," (My nurses always give me encouragement). This support helped build trust and increased patients' confidence in the treatment process, leading to better adherence rates (Baral et al., 2021).

The findings in Table 3 underscore the critical role of individual, social, and health system factors in influencing treatment adherence among MDR-TB patients. While individual factors such as poor understanding of treatment and emotional distress can lead to missed doses and treatment interruptions, social support from family and financial assistance can significantly improve adherence. Health system factors, such as delayed diagnosis, transportation difficulties, and inconsistent drug supply, were identified as significant barriers to successful treatment. The role of supportive healthcare workers and patient education also emerged as essential for fostering trust and improving adherence. These insights highlight the need for comprehensive, patient-centered approaches that address not only the medical needs of MDR-TB patients but also the social, economic, and systemic challenges

that impact their ability to successfully complete treatment. Future interventions should focus on strengthening patient support networks, improving access to resources, and ensuring consistent healthcare delivery to enhance adherence and treatment outcomes for MDR-TB patients in underserved communities.

IV. CONCLUSIONS

This paper offers key information about the multidimensional issues associated with patients receiving treatment against MDR-TB, especially in rural areas. The results show that Socio-demographic factors (age, gender, education, and occupation) significantly affect the experiences of the patients with treatment, and psychosocial factors (emotional distress, stigma, and family support) are important in the treatment adherence. Besides, poor health system access, such as late diagnosis, issues with transportation, and drug shortages, also lead to missed doses and treatment breaks. Nevertheless, the study also emphasizes the strength of patients especially those whose families support them and have a positive attitude will tend to stick to the treatment programs regardless of the impact of the challenges associated with them.

The results highlight the need to use a patient-centered, holistic approach to managing MDR-TB. It is evident that medical and psychosocial needs of patients should be considered to enhance treatment compliance and outcome. Medical interventions, though important, should be combined with other activities to overcome emotional, social, and economic obstacles to adherence. Such interventions should consider the individual patient experience, especially within a resource-limited setting, where the issues of adhering to a long and complicated treatment course are increased. Treatment adherence can be adequately improved by providing better patient education, additional financial and family assistance, and empowering health systems.

On the findings of the study, it is advised that the community-based support programs should be applied to manage the barriers to treatment adherence that are financial, social, and psychological in nature. Transportation subsidies, financial aid, and mental health support to the patients should be offered by these programs so that they could have medications and visit the relevant appointments without the additional financial strain of difficulty. Moreover, adherence can be improved by empowering the family support

structure by educating and involving them because the family members play an important role in reminding patients to take medications and encouraging them emotionally. These all-inclusive and patient-focused interventions are needed to enhance the rate of treatment completion and eventually lower the burden of the MDR-TB in rural and underserved populations.

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