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BEYOND THE DISEASE: PSYCHOLOGICAL EFFECTS AND COPING MECHANISMS AMONG TUBERCULOSIS PATIENTS IN MARDAN

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Abstract
Tuberculosis (TB) is a severe communicable disease that can impact patients' physical, social and mental health. The current study aims to explore the psychological effects and coping strategies of Mardan's tuberculosis patients through a qualitative approach. The study used purposive sampling to select a sample of 10 males and 5 females being treated for tuberculosis in TB Hospital Baghdada and Mardan Medical Complex (MMC). In-depth interviews were conducted to gather information. Thematic analysis, as described by Braun and Clarke (2006), was used for data analysis. The results revealed several themes including initial feelings of fear and shock to the diagnosis, depression and anxiety, fear of death and negative thinking, and social isolation and loneliness. The analysis also identified patients' coping mechanisms, such as religious and spiritual practices, positive thoughts about recovery, and motivation to undergo treatment. External support from family and friends and encouragement were important in coping, whereas stigma and family attitudes were shown to have a negative impact on patients' emotional and social well-being and their identity. This research builds on the Theory of Stigma of Erving Goffman (1963) and the Stress and Coping Theory of Richard Lazarus and Susan Folkman (1984) to understand stigma's influence on identity, and the coping strategies used by patients. This research underscores the need for psychological and social support in tuberculosis treatment programs to enhance patients' well-being and treatment outcomes.

INTRODUCTION
Tuberculosis (TB), an infectious disease caused by the bacterium Mycobacterium tuberculosis, is one of the most common infectious diseases and commonly affects the lungs, but can also affect other parts of the body, such as the brain and kidneys. Air-borne, symptoms include fever, night sweats, cough, weight loss and fatigue. TB is a

preventable disease that can be cured, but it's still a significant global burden, with 10.8 million people diagnosed and 1.25 million people dying from the disease in 2023 (World Health Organization, 2024). TB affects mental and social health. Research has indicated high levels of psychological distress, depression and anxiety during TB treatment, which may be further complicated by the duration of treatment, fear of death and uncertainty over the outcome of the disease (Ayana et al., 2019). Social stigma is also linked with TB, resulting in social exclusion, health care seeking and adherence, especially among at-risk populations (Craig et al., 2017; Ayana et al., 2019). In Pakistan, TB is associated with the social determinants of health, including poverty, access to health care and health literacy. Patients also often experience financial, social and family difficulties, which contribute to poor psychological health and adherence. Women are also vulnerable to TB because of gender inequities, which are linked to their lack of autonomy, freedom and accessibility to health care (Habib et al., 2021).

Theories of Stigma by Erving Goffman and Stress and Coping by Richard Lazarus and Susan Folkman can help to understand the sociological issues of TB, including acknowledging the threat to social identity caused by illness and coping strategies in response to illness. These highlight the need to address TB as a medical and psychosocial issue of stigma, social issues and coping strategies. To address these problems, it's important to consider the lived experience, psychological effects and coping strategies of TB patients to guide person-centred treatment. Tuberculosis (TB) is a major public health concern in developing nations like Pakistan, not only because of its medical complications, but because of the profound psychological and social effects it has on patients. Commonly reported issues include depression, anxiety, stigma and isolation, which may have an adverse impact on treatment outcomes. Despite these difficulties, most of the research in Pakistan has focused on the biomedical side of TB rather than the patient's experience and coping, particularly at grassroots level (such as in Mardan). Our research adds to this body of literature by examining the psychological distress, coping and social support of patients. This is important given the impact of family and community responses and socio-economic conditions on patients' psychological health and well-being. This study will guide medical professionals, social workers and policy makers in designing strategies to deal with patients suffering from TB, which consist of psychological and social support, as well as treatment. This work contributes to the medical sociological literature by emphasising the link between illness, stigma and psychological health at the micro level and offers a base for research and activities in Pakistan.

REVIEW OF LITERATURE

Current research has shown that tuberculosis (TB) is not only a physical disease, but can be a psychological and social challenge for the patients, impacting their mental health, coping and social identity. Research consistently finds that fear, anxiety, depression and isolation are common among patients during the diagnosis, treatment, and recovery period of the disease (Agbeko et al., 2022). Such mental health issues are further compounded by the long treatment period, financial constraints and stigma. Internationally, evidence indicates that mental health issues are prevalent among TB patients. For example, qualitative evidence from Zambia shows that most TB patients experienced mental health problems, which ranged from anxiety to depression (Mainga et al., 2022). Likewise, research from Indonesia and elsewhere demonstrates that stigma greatly limits social contact and leads to emotional distress and isolation (Nasir et al., 2024). In Pakistan, stigma, anxiety and depression have also been found to be significant barriers to treatment adherence, highlighting the importance of incorporating mental health care into TB programs (Sanauddin et al., 2025).

Coping strategies among patients with TB vary, but often involve problem-focused, emotion-focused, social support, and spiritual coping. Research indicates problem-focused coping (e.g., treatment adherence and symptom management)

is linked with improved mental health, while emotion-focused coping helps regulate distress (Papava et al., 2025). Family and community support are essential in alleviating psychological distress and enhancing adherence to treatment, but may be limited by socio-economic and cultural influences (Chen et al., 2021; Adejumo et al., 2025). Stigma is a key factor affecting the psychological and identity of TB patients. Stigma can result in ostracism, concealment of illness and health seeking delays (Courtwright & Turner, 2010). Additionally, studies show that patients' identities are compromised by TB, mainly through role disturbances, loss of self-worth, and feelings of shame and isolation (Addo et al., 2022; Karat et al., 2021). These factors are also influenced by gender and socio-economic inequality, particularly in resource-limited settings. Although there is growing evidence worldwide, there is a lack of qualitative research into the psychological effects, coping mechanisms and social connections of TB patients in the local context, such as Mardan, Pakistan. This calls for local research drawing on sociological theories like Erving Goffman's Theory of Stigma and Richard Lazarus and Susan Folkman's (1984) Stress and Coping Theory, which provides a broad framework of stress and coping to explain illness experiences.

THEORETICAL FRAMEWORK

This study draws on the Theory of Stigma (Erving Goffman) and the Stress and Coping Theory (Richard Lazarus and Susan Folkman, 1984). In Goffman's Theory of Stigma people with socially devalued characteristics are stigmatised, devalued and perceived as "less normal" and experience a spoiled identity. In this study, tuberculosis (TB) is often associated with being poor, infectious and weak in Mardan's culture. As a result, men with TB may be stigmatised and ostracised, and experience a spoiled identity, affecting their mental health, family life and social interactions.

Stress and Coping

theory outlines how individuals cope with stressors, starting with the appraisal of the threat, and then coping strategies. These can be problem-focused coping (e.g., taking medication and social support) or emotion-focused coping (e.g., religious practices, hope or emotion regulation). In the present study, TB patients adopt positive and negative coping strategies to manage their psychological distress, stigma and treatment problems. These theories can help us understand the impact of TB on patients' psychological health and well-being, social identities and their coping strategies in the socio-cultural context of Mardan.

METHODOLOGY

A qualitative research approach was adopted for this study to understand the psychological effects and coping strategies of tuberculosis (TB) patients in District Mardan, Khyber Pakhtunkhwa, Pakistan. The study used a phenomenological design to explore the lived experiences of people receiving treatment for TB, specifically their emotional, psychological and social experiences. Data collection took place in two major hospitals: TB Hospital Baghdada and Mardan Medical Complex (MMC), where a large number of TB patients are treated. The population of the study included all TB patients living in District Mardan and the sample included the patients who were in the treatment of selected hospitals. A sample of 15 patients (10 men and 5 women) was recruited from this population. This research followed the guidelines of qualitative research, where the aim is to explore and gain in-depth, valuable, and meaningful data rather than sample size. The sample size was considered adequate based on recommendations for phenomenological studies (Creswell, 2013), which suggests a smaller sample size to examine a phenomenon can be successful. Purposive sampling was used to select people who had TB, were on treatment, were aged 18 years or more, and consented to take part in the study. Those younger than 18 years, not receiving treatment, not able to participate (due to physical or mental illness) or unwilling to sign the informed consent form were excluded. This technique ensured that the participants were likely to provide relevant and useful information about the study aims. The study used in-depth, semi-structured interviews, an appropriate method for phenomenological studies. This

approach enabled participants to freely share their thoughts, feelings and coping strategies in their own words, thus offering insights into their life-worlds. Interviews took place in a comfortable, private and quiet space to facilitate ease and confidentiality. The interviews took about 30 minutes and were recorded with the participants' permission. These were transcribed for analysis. Data were analysed through thematic analysis in accordance with the six phases outlined by Braun and Clarke (2006). This involved reading and re-reading the data to become familiar, generating initial codes from statements deemed important and identifying themes by searching for patterns in the data. The themes were then reviewed, refined and defined to fit the data. Lastly, a narrative analysis was composed which linked the themes to the research questions and theory. This enabled an in-depth examination of the psychological responses and coping strategies of TB patients in the socio-cultural milieu. Ethical considerations were adhered to. Participants were informed about the study and their consent was obtained prior to the interviews. Confidentiality and anonymity of the participants was ensured and the data were used for research purposes only. Care was taken by the researcher to avoid causing any psychological damage. In culturally sensitive situations (like interviews with women), measures (e.g. presence of a family member) were taken to respect and ensure comfort of the participant.

RESULTS

Sample Demographics

Int No	Gender	Age	Marital Status	Education Level	Duration Tb Diagnoses
1	Male	35	Married	Illiterate	4 Months
2	Female	22	Unmarried	Matric	3 months
3	Female	60	Married	Illiterate	2 Months
4	Male	60	Married	Illiterate	1 Months
5	Female	20	Unmarried	F.sc	6 Months
6	Male	40	Married	Illiterate	7 Months
7	Female	19	Unmarried	Primary	3 months
8	Female	23	Married	Illiterate	4 Months
9	Male	28	Married	Matric	5 Months
10	Male	45	Married	Illiterate	8 Months
11	Male	33	Unmarried	F.A	2 Months
12	Male	50	Married	Illiterate	6 Months
13	Male	27	Unmarried	Middle	3 Months
14	Male	38	Married	Illiterate	4 Months
15	Male	41	Married	Matric	7 Months

The demographics of the 15 tuberculosis (TB) patients in terms of age, sex, status, education level and the duration of the disease are revealing. There are more males (10 out of 15) than females (5 out of 15). The age of the participants ranges from 19 to 60 years, with the majority (8 out of 15) in the 20-45 year age group that is the productive age group. The majority are married (11 out of 15), which suggests that the illness might not only impact the patients, but also their families and roles in the community. The level of education of the participants is low, with majority (9 out of 15) being illiterate, and the remaining participants having primary to intermediate levels of education. This might be a factor in low health literacy and difficulties following treatment instructions. When it comes to the length of illness, the participants have been diagnosed with TB for between 1 to 8 months, with the majority in the early to middle stages of

treatment (3-7 months). Overall, this suggests that TB among this group is more prevalent among married, adult men with low literacy. This highlights the socio-economic disparities and the need for health education, awareness and supportive services to enhance the treatment of the disease.

QUALITATIVE ANALYSIS

Thematic Analysis

Themes identified in our thematic analysis highlight the psychological, social and coping issues of TB. Our results are supported by previous research that shows high psychological, social and identity effects of TB.

1. Shock and Fear on Diagnosis

Feeling frightened, shocked and upset occurred on initial diagnosis. This is consistent with other studies which report diagnosis is perceived to be a life-threatening and stigmatizing event (Mainga et al., 2022). One person commented, *"I was very frightened when I was diagnosed because I have had this disease before" and another person said, "I was very depressed and worried when I learnt that I have TB."*

2. Anxiousness and Depression

People were anxious, depressed and frustrated, mainly because of the long duration of treatment and feeling weak. This is consistent with other reports of high levels of psychological distress among TB patients worldwide (Agbeko et al., 2022). One participant reported, *"It was very bad for my mind; I was always afraid" and another participant said, "I was always depressed and disturbed".*

3. Fear of Death and Negative Thoughts

Participants had negative thoughts and fear of death, especially those who experienced the loss of a loved one of TB. We know chronic life-threatening illness can cause existential fears and uncertainties (Addo et al., 2022). One person said, *"I fear because my brother has died of this disease" and another, "I fear for my health and my child's health".*

4. Social isolation and loneliness

Many felt stigmatized and ostracized by society as a result of social isolation and fear of infection. This is in line with other research which indicates that TB stigma results in social isolation and avoidance (Courtwright & Turner, 2010). One participant said *"People avoid me" and another, "I feel lonely as people started avoiding me".*

5. Coping through Prayer

Religious practices were a coping mechanism to stress and emotions. Prayers and rituals have been found to be a coping strategy for other health conditions (Papava et al., 2025). One participant commented, *"I pray and recite Quran; it makes me feel better" and another commented, "I cope with stress by remembering Allah and praying".*

6. Positive Thinking

Positive thinking and hope were a key component to treatment adherence and mental well-being. Positive thinking is important for mental health and motivation to recover (Chen et al., 2021). Participants expressed *"I take my medicines on time because I want to recover" and "I think I will recover if I keep on with my treatment."*

7. Motivation for Finishing Treatment

Personal responsibility and motivation were key to finishing treatment. This is consistent with research that identified active coping strategies are related to medication adherence and recovery (Papava et al., 2025). One person said, *"I take medicine regularly because I did not finish my treatment" and another said, "I monitor my progress by blood tests and X-rays".*

8. Family Support

Mental health and adherence were supported by family. Social support reduces stress and enhances health in people with TB (Adejumo et al., 2025). One person said, *"My wife helps me and encourages me; another said, "My family supports me".*

9. Community Stigma and Attitudes

There were bad community attitudes which led to stigma and ostracism. This is consistent with the literature that stigma is related to poor mental health and health care services (Courtwright & Turner, 2010). One participant felt, *"I don't have any friends after they knew about my disease" and another had a sense of "I felt outcasted".*

10. Identity and Personality

TB affected the participants' identity as they felt weak and a shift in their identity. This is consistent with the notion of "spoiled identity", illness has impact on identity and relationships (Addo et al., 2022). One participant described, *"I was strong but now I feel weak" and another, "I feel different after illness".*

DISCUSSION

This study demonstrates that tuberculosis (TB) affects the psychological and social functioning of patients. Among the prominent issues in the study is the initial fear and shock response. Most of the participants experienced fear, confusion and emotional distress at diagnosis. This could be due to the perceived seriousness of the disease, its long treatment and even death. Our result is consistent with those of Addo et al. (2022) who reported TB patients frequently experienced fear and confusion at the time of diagnosis due to the perceived health risks and the long treatment course. The other important finding of this study is the existence of psychological distress, including depression, anxiety, sadness and emotional instability. They reported feelings of weakness and inconvenience from taking medication exacerbated their emotional distress. This is consistent with Agbeko et al. (2022) who emphasized that TB patients are at risk of depression and anxiety, which may adversely impact adherence and patient outcomes. In addition, our study recognizes TB patients fear of death, rumination and social isolation. The study participants expressed fears for their health and well-being, particularly those from families affected by TB. In addition, stigma and social distancing contributed to the isolation and social withdrawal of patients. Likewise, Mainga et al. (2022) discovered that fear of transmission and TB stigma can lead to feelings of distress and isolation. In terms of coping strategies, the study highlighted that patients practiced psychological and religious coping strategies to alleviate the psychological burden of the disease. Participants often used religious coping mechanisms such as prayers, remembering Allah and meditating to reduce stress and achieve emotional well-being. Furthermore, hope and optimism were found to be a treatment motivator. These findings are supported by Nasir et al. (2024), who found religious beliefs and resilience to be important in reducing psychological distress and stigma in TB patients. In addition, Timire et al. (2023) found that family and community support are important coping mechanisms for patients to deal with the social and economic burden of TB. Finally, the study found family and social support is vital for patients. For instance, patients reported family support and encouragement motivated them to feel positive and to adhere to treatment. However, social stigma at times undermined patients' self-esteem and self-confidence. This finding is in line with Saqib et al. (2019) who found that family and community support is associated with good adherence to treatment and good health of the patient. Similarly, Chen et al. (2021) reported that higher social support is a key factor in enhancing quality of life for patients with TB, whereas stigma and mental health problems are negative for patients' health.

CONCLUSION

Based on the findings, it is concluded that tuberculosis in Mardan is a biomedical, psychological and social burden for patients. Our findings reveal that most patients feel afraid, surprised, sad and distressed at the time of diagnosis, which often results in anxiety, depression and long-term psychological distress during treatment. In addition to being weak and having a long-term treatment, they also feel a fear of death, hopelessness and isolation. The study also shows that stigma enhance patient's distress, as they feel socially excluded and lack confidence. Despite these problems, there are coping

mechanisms. Religious practices, such as praying and reciting the Quran, are crucial for spiritual and emotional support and hope. They also rely heavily on support from family and self-motivation to keep a positive outlook and adhere to treatment. Overall, this study confirms that tuberculosis patients face psychological and social issues but good coping strategies, namely spiritual belief, family and self-motivation, help them deal with the disease. This highlights the need to address not only the physical, but also the psychological and social issues related to tuberculosis.

CRITICAL SUGGESTIONS

1. Inclusion of Mental Health Care

Psychosocial support and mental health screening should be incorporated in the TB treatment programs because of the high prevalence of untreated emotional distress, depression and anxiety.

2. Strengthening Anti-Stigma Interventions

Public awareness programs should be enhanced to reduce stigma, fear of infection and discrimination, which affect patients' self-worth and social relationships.

3. Family-Centered Support Approaches

Families need to be included in TB control programs via counselling and education to support patients with ongoing emotional, social and adherence support.

4. Culturally Relevant Spiritual Support

As faith is an important coping strategy, health care professionals should identify and use positive spiritual support mechanisms in treatment programs.

5. Improved Communication

It is essential to educate patients about TB, length of treatment and recovery in order to reduce fear, increase compliance and enhance self-esteem.

6. Social Support and Peer Support

Establishing TB communities can remove a sense of isolation, encourage peer support and improve patients' well-being.

7. Policy to Improve Psychosocial Care

Health policies should view TB as a medical and psychosocial problem, and encourage holistic health care.

8. Research to Address Long-Term Psychosocial Effects

Health researchers should study the long term effects of psychological distress and strategies to enhance psychological well-being of TB patients during and after treatment.

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