

UDK: 616.24-008.331:616.89-008.64

**MENTAL AND EMOTIONAL DISORDERS IN PATIENTS WITH TUBERCULOSIS:
PREVALENCE, CLINICAL CHARACTERISTICS, AND OUTPATIENT
MANAGEMENT**

*Mavlyanov I.K., Assistant
Department of Phthysiology and Pulmonology
Andijan State Medical Institute, Andijan, Uzbekistan*

Abstract: Tuberculosis (TB) is a chronic infectious disease associated not only with physical health complications but also with significant mental and emotional disorders. This study aimed to investigate the prevalence, clinical characteristics, and risk factors for anxiety, depression, and other emotional disturbances in patients with tuberculosis attending outpatient clinics. A total of 150 TB patients were assessed using validated psychological scales, including the Hospital Anxiety and Depression Scale (HADS) and the Patient Health Questionnaire (PHQ-9). The results revealed that 78 patients (52%) exhibited moderate to severe emotional disturbances, with anxiety present in 44% and depression in 37% of patients. Patients with multidrug-resistant TB (MDR-TB) and prolonged treatment durations had significantly higher rates of mental-emotional disorders ($p < 0.01$). Early detection, psychological counseling, and supportive outpatient care led to improved emotional well-being and adherence to TB treatment over a 3-month follow-up. These findings highlight the need for routine mental health screening and integrated psychosocial care in TB management to improve overall clinical outcomes.

Keywords: Tuberculosis; Mental health; Anxiety; Depression; Emotional disorders; Outpatient care; Psychosocial support; MDR-TB

Introduction. Tuberculosis (TB) remains one of the most pressing global public health challenges, affecting millions of individuals across diverse geographic regions every year. Despite extensive efforts in diagnosis, prevention, and treatment, TB continues to exert a heavy burden on healthcare systems, particularly in low- and middle-income countries. While the physical health implications of TB, including chronic respiratory compromise, systemic weakness, and organ-specific complications, are well documented, its profound impact on patients' mental and emotional well-being is often underrecognized. The chronic nature of the disease, extended treatment regimens, frequent hospital visits, and prolonged periods of isolation contribute cumulatively to psychological distress among affected individuals. In addition, the stigma associated with TB, which may be rooted in societal misconceptions, fear of contagion, or negative attitudes toward patients, significantly exacerbates feelings of social exclusion, shame, and helplessness. Patients may experience heightened anxiety regarding the progression of their illness, concerns over infecting family members, and fear of social rejection, all of which compound the mental health burden.

Mental and emotional disorders, including anxiety, depression, sleep disturbances, irritability, and decreased cognitive functioning, are frequently observed in TB patients. These disorders do not arise in isolation; rather, they are often the result of a complex interplay between biological factors, such as chronic inflammation and immunological stress responses, and psychosocial stressors, including financial hardships, employment instability, and familial pressures. The persistence of these disorders has important clinical consequences. Studies have demonstrated that TB patients experiencing significant psychological distress are more likely to exhibit poor treatment adherence, skip doses, or discontinue therapy altogether. Such non-adherence not only diminishes the likelihood of successful cure but also contributes to the development of drug-



resistant TB strains, which are significantly harder to treat and associated with higher morbidity and mortality. Moreover, the presence of untreated anxiety or depression can delay physiological recovery, exacerbate fatigue, impair appetite and nutritional status, and reduce patients' capacity to engage in essential self-care practices.

The challenges are particularly pronounced among patients with multidrug-resistant tuberculosis (MDR-TB), who face longer treatment durations, complex multidrug regimens, and more severe side effects. The extended treatment period, often exceeding 18–24 months, requires sustained motivation and resilience, yet patients frequently experience demoralization, hopelessness, and emotional exhaustion over time. The side effects of second-line antitubercular drugs, which can include neuropathy, hearing impairment, nausea, and other systemic reactions, further compound the psychological burden. In addition, MDR-TB patients often endure repeated hospitalizations, more intensive monitoring, and stricter isolation protocols, all of which can amplify feelings of loneliness, depression, and anxiety. This population is thus particularly vulnerable to the cyclical relationship between physical illness and mental-emotional distress, in which poor mental health exacerbates disease progression and vice versa.

Despite the critical importance of mental health in TB management, assessment and intervention for psychological disorders are frequently overlooked in outpatient care settings. Many primary care and polyclinic facilities focus predominantly on the biomedical aspects of TB—sputum conversion, radiological changes, and laboratory indices—while psychosocial assessment remains underdeveloped or entirely absent. Consequently, emotional and mental health problems often go undiagnosed, leaving patients without appropriate support. This gap in care represents a significant barrier to achieving optimal treatment outcomes and undermines global TB control efforts.

Given this context, the present study was designed to provide a comprehensive evaluation of mental and emotional disorders in patients with tuberculosis attending outpatient clinics. Specifically, the study aimed to quantify the prevalence of anxiety, depression, and related emotional disturbances; to examine the severity of these disorders using validated psychometric instruments; and to identify sociodemographic, clinical, and treatment-related risk factors associated with increased psychological burden. Furthermore, the study sought to evaluate the effectiveness of integrated outpatient psychological support interventions, including counseling, stress management techniques, and social support mechanisms, in alleviating mental-emotional symptoms and improving treatment adherence. By systematically investigating these aspects, the study intends to underscore the essential role of mental health assessment and support in TB care and to inform evidence-based strategies for holistic patient management.

Materials and Methods.

Study Design and Participants: A cross-sectional observational study was conducted in outpatient TB clinics. A total of 150 adult TB patients, aged 18–65 years, were included. **Exclusion criteria:** known psychiatric disorders prior to TB diagnosis, cognitive impairment, or severe comorbid conditions affecting participation.

Psychological Assessment:

- Hospital Anxiety and Depression Scale (HADS): to assess anxiety and depression severity
- Patient Health Questionnaire (PHQ-9): to quantify depressive symptoms
- Clinical interview: evaluation of emotional well-being, stress, and social support

Clinical and Demographic Data:

- TB type: pulmonary, extrapulmonary, MDR-TB
- Duration of TB therapy
- Socio-demographic characteristics: age, gender, education, employment status



- Physical health status: BMI, comorbidities

Interventions:

Patients identified with moderate to severe mental-emotional disturbances received outpatient psychological counseling, stress management sessions, and support from TB social workers.

Statistical Analysis: SPSS v26. Continuous variables: mean ± SD; categorical: number and percentage. Comparisons: t-test and chi-square test. Logistic regression to identify risk factors. Significance set at $p < 0.05$; OR and 95% CI calculated.

Results.

Prevalence of Mental-Emotional Disorders:

- Overall, 78 patients (52%) had moderate to severe mental-emotional disturbances.
- Anxiety: 44% (66 patients)
- Depression: 37% (56 patients)
- Combined anxiety and depression: 29%

Risk Factors:

Risk Factor	Patients with Disorders (n=78)	Patients without Disorders (n=72)	OR (95% CI)	p-value
MDR-TB	34%	11%	4.0 (1.7–9.4)	0.002
Treatment duration >6 months	41%	19%	3.0 (1.4–6.4)	0.003
Social isolation	46%	21%	3.1 (1.5–6.5)	0.001
Low education	33%	17%	2.5 (1.1–5.5)	0.02

Severity Assessment (HADS/PHQ-9 Scores):

- Mean HADS-Anxiety score: 11.2 ± 3.4
- Mean HADS-Depression score: 10.5 ± 3.1
- PHQ-9 score: 12.3 ± 4.0

Impact of Outpatient Psychological Support:

After 3 months:

- Anxiety scores decreased by 3.5 ± 1.2 points ($p < 0.01$)
- Depression scores decreased by 3.1 ± 1.0 points ($p < 0.01$)
- Treatment adherence improved from 78% to 91%
- Patient-reported quality of life improved in 68% of participants

Figures:

- Figure 1: Prevalence of anxiety and depression among TB patients
- Figure 2: Distribution by TB type (MDR vs. non-MDR) and mental-emotional disorders
- Figure 3: Improvement in HADS and PHQ-9 scores after outpatient intervention

Discussion. The present study confirms that mental-emotional disorders are highly prevalent among patients with tuberculosis (TB), with more than half of the participants exhibiting clinically significant levels of anxiety, depression, or combined emotional disturbances. These findings align with previous research indicating that chronic infectious diseases, such as TB, have a profound psychosocial impact that is often underestimated in routine clinical practice. The observed prevalence of anxiety and depression underscores the necessity of viewing TB not solely as a biomedical condition but as a multifaceted health challenge encompassing psychological and social dimensions.

Multidrug-resistant TB (MDR-TB) emerged as a significant risk factor for mental-emotional disorders. Patients with MDR-TB face prolonged treatment durations, complex drug regimens with heightened adverse effects, frequent hospital visits, and the potential for repeated treatment



failures. These factors collectively contribute to psychological strain, demoralization, and heightened vulnerability to depressive and anxious symptomatology. Prolonged therapy itself, even in non-MDR TB cases, was associated with increased psychological burden, highlighting that the duration of illness and continuous treatment monitoring can independently affect mental health outcomes.

Social isolation and low education levels were also significantly associated with increased risk of mental-emotional disorders. Isolation, whether due to infection control measures, social stigma, or reduced mobility, can exacerbate feelings of loneliness, hopelessness, and stress, thereby magnifying the severity of anxiety and depression. Lower educational attainment may limit patients' understanding of the disease, reduce coping mechanisms, and hinder adherence to treatment recommendations, further amplifying psychological distress.

Importantly, the study demonstrates that early identification of mental-emotional disorders and the provision of outpatient psychological support can substantially improve both emotional well-being and treatment adherence. Structured interventions—including counseling sessions, stress management techniques, and social support facilitation—were effective in reducing HADS and PHQ-9 scores, enhancing patient engagement, and improving adherence to TB treatment regimens. These findings highlight that addressing mental health in TB patients is not merely supportive but also clinically essential, as improved psychological status contributes to more consistent therapy completion and reduces the risk of treatment default or relapse.

The study's results underscore the need for routine integration of mental health screening and psychosocial care into TB management protocols, particularly in outpatient settings where most patients are monitored and treated. Mental health assessment should be standardized, using validated instruments such as HADS or PHQ-9, with clear referral pathways to psychological counseling, social services, and psychiatric care when indicated. Furthermore, training healthcare providers in recognizing early signs of anxiety, depression, and other emotional disturbances is critical for timely intervention and improving patient-centered care.

Addressing mental-emotional health in TB patients has broader implications for public health and healthcare systems. Psychological well-being influences treatment adherence, disease outcomes, and quality of life, while unaddressed mental health issues can lead to prolonged infectious periods, higher relapse rates, and increased healthcare costs. Holistic TB care, encompassing both physical and psychological health, is therefore vital to achieving optimal clinical outcomes and supporting patients through the complex and often protracted treatment journey.

In conclusion, the study emphasizes that mental-emotional disorders are common, clinically significant, and modifiable among TB patients. Effective outpatient interventions can mitigate psychological distress, enhance treatment adherence, and improve overall prognosis. Future TB management strategies should incorporate mental health assessment, psychosocial support, and educational initiatives as integral components of comprehensive care.

Conclusion. Mental-emotional disorders are common and clinically significant among patients with tuberculosis. Outpatient screening and integrated psychological support are essential components of comprehensive TB care, improving emotional well-being, treatment adherence, and overall clinical outcomes. Healthcare providers should routinely assess and manage psychological health alongside TB treatment.

References

1. Pachi A., et al. Psychiatric morbidity and TB treatment adherence: A systematic review. *PLoS One*. 2013;8:e62208.
2. Sweetland A.C., et al. Addressing mental health needs in TB care. *Int J Tuberc Lung Dis*. 2014;18:3–10.



3. World Health Organization. Global Tuberculosis Report 2023. Geneva: WHO; 2023.
4. Gautam S., et al. Depression and anxiety in TB patients: Prevalence and associated factors. *BMC Psychiatry*. 2020;20:366.
5. American Psychiatric Association. DSM-5: Diagnostic and Statistical Manual of Mental Disorders. 5th edition; 2013.
6. Karim F., et al. Mental health and TB outcomes in outpatient settings. *Int J Tuberc Lung Dis*. 2021;25:610–618.

