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Impact of Community-Level Stigma on Mental Health Outcomes in TB-Affected Individuals

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ABSTRACT

Objective: To evaluate mental health outcomes among TB affected individuals

Material & Methods: Patients with tuberculosis who visited the TB Health Care Center in Lahore between September 2024 and May 2025 participated in a cross-sectional survey. Ethical approval for this study was obtained from the Ethical Review Committee. All procedures performed were in accordance with institutional guidelines, and informed consent was obtained from all participants prior to data collection. Convenient sampling was used to choose the respondents. Before the survey began, each patient's informed permission was also obtained

Result: 200 patients in all, with a mean age of 45 ± 17.4 years, participated; 77% of them were men and 55% were married. A household income of between 26,000 and 50,000 PKR was earned by almost half, and 56% were enrolled in continuing therapy. 50% reported moderate illness severity, and 35% smoked and had co-morbidities. Anxiety (53%), depression (61.5%), and a lack of social support (44.5%) were prevalent. Gender, education, the severity and length of the condition, and the stage of therapy were all substantially correlated with perceived stigma. The length and severity of the condition, low income, and education were all associated with poor social support. Patients who had been with the condition longer, had less education, and felt stigmatized were more likely to experience depression and anxiety.

Conclusion: The severity and length of the disease, together with social and demographic variables, exacerbate the psychological misery and shame that TB patients frequently endure. To tackle these issues, specific public awareness campaigns and protection from marginalization are necessary. Such initiatives can enhance the quality of life for patients and advance a society that is more inclusive and caring

Keywords: Tuberculosis , Stigma , Mental Health, Community...

1. INTRODUCTION:

TB is a socially stigmatized illness that frequently results in isolation and discrimination in addition to being a physical ailment. Significant psychological suffering may result from this stigma, which may discourage patients from getting treatment on time, sticking with their therapy, or using healthcare facilities to the fullest extent possible. Comprehending these psychosocial aspects is crucial for creating comprehensive TB treatment plans that promote patients' mental and emotional health in addition to treating the disease (1). Even with improvements in treatment, policymakers continue to face significant obstacles due to the social and psychological aspects of tuberculosis. Patients frequently experience social rejection and isolation, which exacerbates their suffering and lowers their quality of life. Developing interventions to address these mental health concerns requires analyzing the relationship between perceived stigma and psychological discomfort (2). The social factor of delayed health seeking behavior is stigma, which stems from the subjective experience of victimization and devaluation (3). It is a societal issue associated with power disparities and dominance. Perceived stigma is a belief in prejudice that makes people feel very unworthy and unwilling to discuss their experiences. (4).

As a societal issue that requires attention, TB-related stigma is a difficult obstacle to TB prevention and control (5). Among the most often reported stigmas associated with tuberculosis are perceived or anticipated discrimination toward people with the disease, experiencing discrimination, and feeling ashamed (6). The stigma also contributes to poor adherence to anti-tuberculosis therapy (7). Seventy-three percent of TB patients in 30 Indian regions reported feeling stigmatized, according to a community-based poll. According to the study, delaying seeking medical attention might make this problem worse, increasing the number of infectious TB cases and raising the risk of transmission both inside the home and the greater community (8). While medical institutions in China also found that depression and anxiety were closely linked to stigma, a third of the stigmatized patients at a Malaysian tertiary care clinic had depression, with the majority being classified as severe (9,10). According to Lahore's public and private hospitals, the biggest predictor of stigma among TB patients is a lack of social support. (11) Similarly, stigma was shown to be the primary factor of illness in a cross-sectional study conducted in Peshawar to look at the reasons of anxiety and sadness in patients with multiple drug-resistant tuberculosis. (12)

Every year, 10.6 million people worldwide contract tuberculosis (TB) (13). Pakistan, which ranks fifth, is among the 30 nations with a high burden of tuberculosis (14). One significant factor influencing how a person reacts to a sickness is a lack of knowledge particular to that condition (15). Common misunderstandings regarding tuberculosis result in stigmatization, aversion, and social discrimination. A sense of devaluation brought on by stigma leads to self-isolation, sadness, psychological tension, and withdrawal from social interactions (16). Disparities in gender, ethnicity, class, and religion are sometimes used as a means of further marginalizing those who are already stigmatized, which exacerbates the impacts of stigma (17). As a result, tackling stigma is essential to TB prevention, transmission, and control. Research indicates that better treatment results and more control over the spread of TB are associated with increased knowledge of the disease (18). The current study emphasizes the significant effects that psychological anguish and stigma have on Pakistani TB patients. Gaining an understanding of these elements is crucial for increasing patient well-being, decreasing transmission, and improving treatment adherence—all of which eventually lead to more successful TB control and improved public health outcomes. In order to provide health planners with up-to-date information for essential action, the study's objectives were to quantify the psychological distress and stigma associated with tuberculosis in patients with the disease and to determine the relevant clinical and sociodemographic aspects.

2. METHODOLOGY

Patients with tuberculosis who visited the TB Health Care Center in Lahore between September 2024 and May 2025 participated in a cross-sectional survey. Ethical approval for this study was obtained from the Ethical Review Committee of Al-Razi Institute, Lahore. All procedures performed were in accordance with institutional guidelines, and informed consent was obtained from all participants prior to data collection. Convenient sampling was used to choose the respondents. Using the Sample Size Population Proportion Formula with a 95% CI and a 3% prevalence rate, the sample size was determined to be 200. Critically sick patients were not included in the study, but all male and female patients over the age of 15 who visited the clinic during that time were included in the survey. Al-Razi Institute IRB and the TB Health Care Center's management provided their consent. Before the survey began, each patient's informed permission was also obtained.

A self-administered instrument modified from the UNOPS Tuberculosis Stigma Data Collection Instrument was used to gather data (19). To ensure the best response rate, data was gathered from the Tuberculosis Center's medical staff. To make it easier for the researcher to understand, the questionnaire was translated into Urdu. In addition to the sociodemographic profile, the data contained details about the disease's severity and duration, treatment phase, history of drug addiction, and comorbidities. A five-point Likert scale was used to gauge perceived stigma related to tuberculosis. Oslo 3 for Social Support (20) and PHQ 9 and GAD 7 for Depression and Anxiety (21) were used to measure psychological distress. Data

analysis was done using SPSS Version 23. For categorical variables, percentages and frequencies were computed. By summing the scores of each individual question and dividing by the total number of questions, the overall mean score for Perceived Tuberculosis Related Stigma and Psychological Distress was determined. Psychological distress and perceived stigma were deemed to be present in respondents who scored higher than the mean. When necessary, the $\chi 2$-test was used in inferential analysis to verify the connection of categorical data. Statistical significance was defined as a p value of less than 0.05.

3. RESULTS

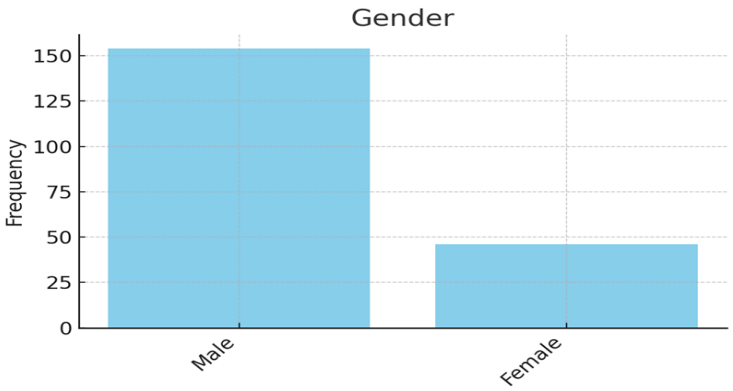
200 patients with a mean age of 45 years (SD ± 17.4, range 15–95 years) had their data gathered. There were 154 (77%) men and 110 (55%) married people among the participants. 98, (49%) of respondents said their family's monthly income was between 26,000 and 50,000 PKR.In terms of clinical history, 112 patients (56%) were undergoing continuous therapy, and 94 patients (47%%) had suffered from the disease for less than six months. 100 of them (50%) also said that their disease was moderately . Out of all the respondents, 70 (35%) had a history of co-morbidities, and 70 (35%) smoked cigarettes (Table 1).

Table 1: Socio-demographic Profile and Clinical Presentation (n=200)

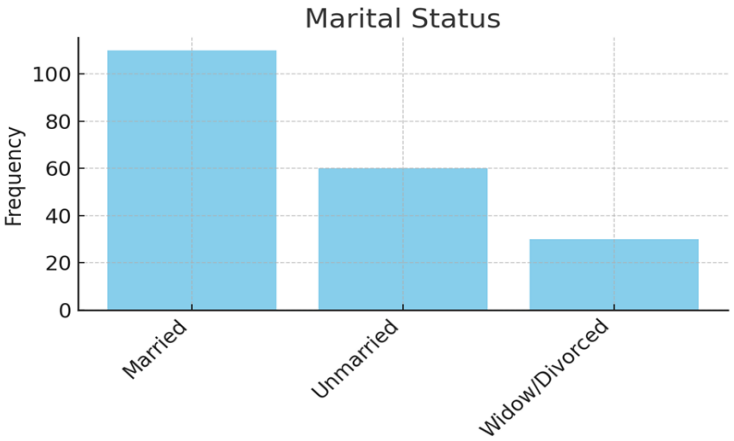
Variables		Frequency	Percentage (%)
Gender	Male	154	77%
	Female	46	23%
Marital Status	Married	110	55%
	Unmarried	60	30%
	Widow/Divorced	30	15%
Education	Illiterate	11	5.5%
	Primary	49	24.5%
	Matric	60	30%
	Graduation/Post Grad	80	40%
Family incom	25000 or less	49	24.5%
	26000-50000	98	49%
	51000-99000	42	21%
	100000-above	11	5.5%
Duration of Disease	6 months or less	94	47%
	6 months – 1 year	76	38%
	More than 1 year	30	15%
Phase of Treatment	Intensive	88	44%
	Continous	112	56%
Severity	Mild	40	20%
	Moderate	100	50%
	Severe	60	30%
History of Abuse Substance	Cigarette	70	35%
	Huqa	45	22.5%
	None	85	42.5
Comorbidities	Diabetes	35	17.5%

	Hypertension	23	11.5%
	HIV/AIDS	5	2.5%
	Cancers	7	3.5%
	None	130	65%

1-Gender



2-Marital Status



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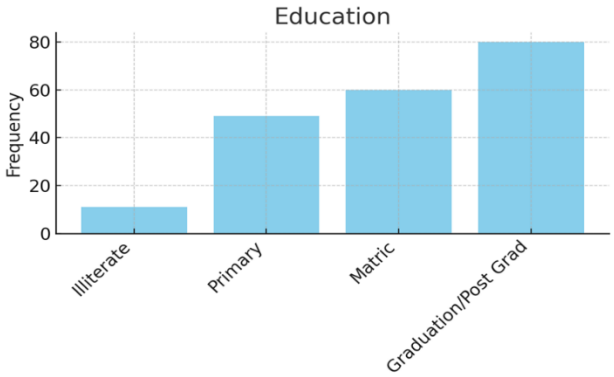
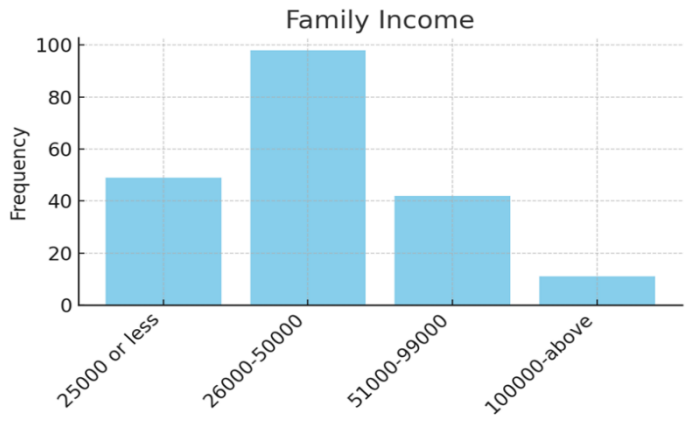
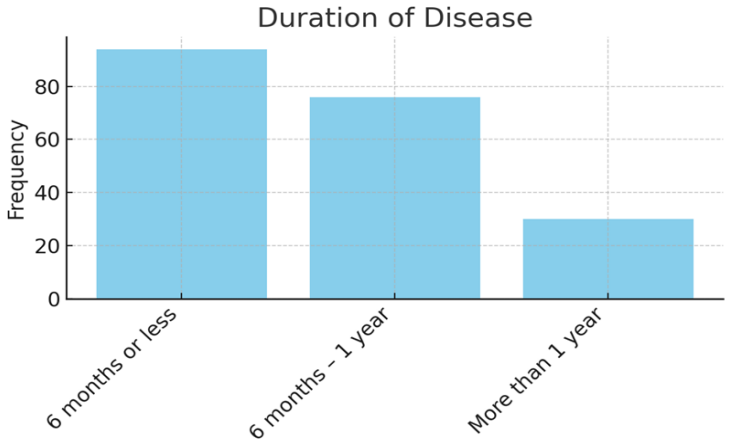


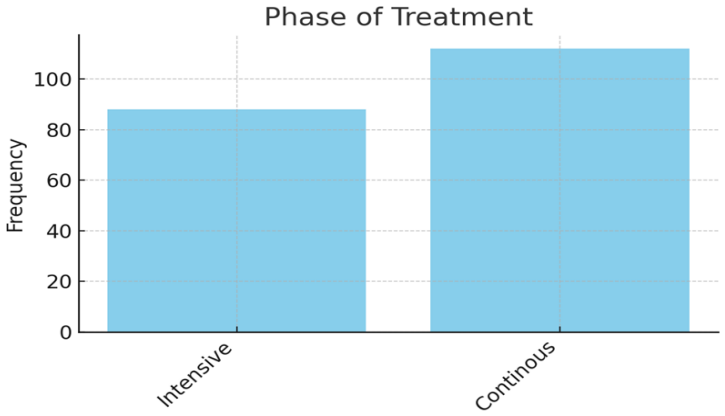
4-Family Incom



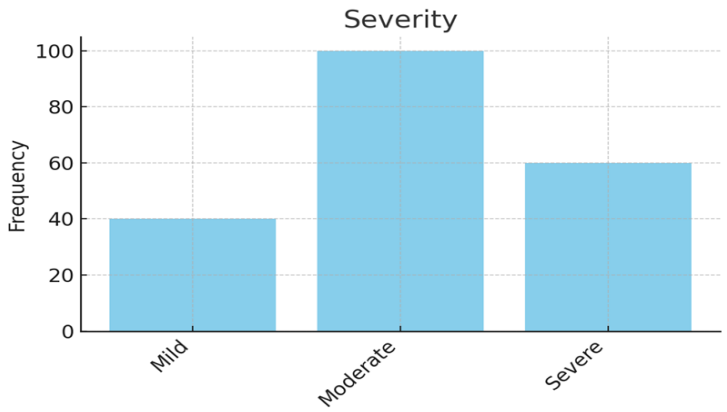
5-Duration of Disease



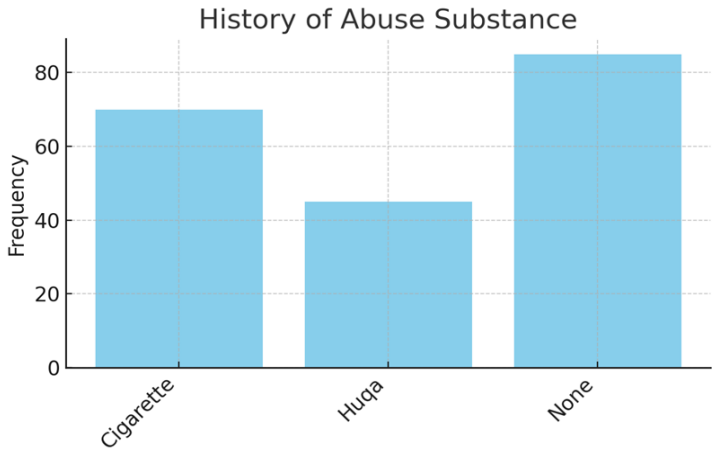
6-Phase of Treatment



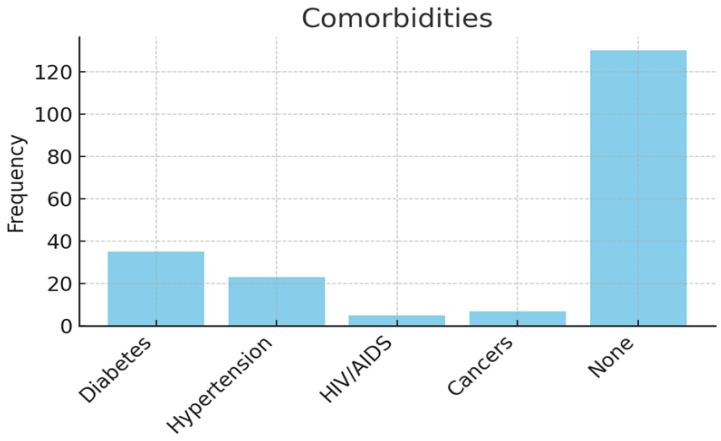
7-Severity



8-History of Abuse Substance



9-Comorbidities



123 (61.5%) respondents reported having mild to moderate depression, while 89 (44.5%) respondents reported having inadequate social support. Additionally, within the previous two weeks, nearly half of the patients 106, or 53% were experiencing moderate to severely severe anxiety episodes. (Table 2).

Table 2: Frequency of Psychological distress (n=200)

Variables		Grades	Frequency	Percentage (%)
Social Support		Poor	89	44.5%
		Moderate	66	33%

	Strong	45	22.5%
Depression	Minimal	30	15%
	Moderate	123	61.5%
	Severe	47	23.5%
Anxiety	Mild	45	22.55
	Moderate	106	53%
	Severe	49	24.5%

In respect to the relationship between perceived stigma and clinical presentation and sociodemographic characteristics, there was a strong link with educational standards (p value = 0.01), disease length (p value = 0.0001), and disease severity (p value = 0.0001) (Table 3).

Poor social support was shown to be strongly associated with psychological distress in relation to family income (p value = 0.03) and educational levels (p value = 0.001). Furthermore, a significant link was noted with the disease's length (p value = 0.001) and severity (p value = 0.001). Depression was shown to be more common in single, widowed, and divorced patients than in married patients (p value=0.004), as well as in respondents with lower educational attainment (p value=0.003). Additionally, depressive attacks were reported by patients with more severe forms of the condition (p value=0.0001) and those with a disease duration of more than six months (p value=0.0001). There was a significant correlation between anxiety and both treatment phase (p value = 0.004) and length (p value = 0.0001). Additionally, it was determined that patients who experience perceived stigma are more likely to experience anxiety and despair as well as a lack of social support (Table 4).

Perceived stigma was substantially correlated with gender (p = 0.02), suggesting that men experienced higher levels of stigma than women. Perceived stigma was significantly correlated with education level (p = 0.02). Compared to those with greater levels of education, individuals with lower educational status (primary or illiterate) were more likely to experience stigma. There was no statistically significant correlation between perceived stigma and family income (p = 0.44), indicating that income level may not have an impact on stigma perception in this population. Stigma and disease duration were extremely significantly correlated ($p < 0.001$), with patients who had the illness for more than six months experiencing higher stigma. Perceived stigma and illness severity were also substantially correlated ($p < 0.001$), with people reporting more severe sickness feeling greater stigma. Perceived stigma was strongly correlated with treatment phase ($p < 0.001$), with continuous treatment phase participants reporting higher levels of stigma than intensive phase participants.

Table 3:Association of Perceived Stigma with Socio-demographic factors and Clinical Presentation

Variables		Perceived Stigma			p-Value
		Yes	No	Total	
Gender	Male	100	54	154	0.02
	Female	46	10	56	
Education	Illiterate/Primary	45	15	60	0.02
	Matric	40	20	60	
	Graduate/Post Graduate	42	38	80	
Family income	25000 or less	30	19	49	0.44
	26000-50,000	65	33	98	
	More than 50,000	31	11	42	
Duration of Disease	Less than 6 months	26	68	94	0.000
	More than 6 months	70	36	106	
Severity	Mild	15	35	40	0.000
	Moderate	80	20	100	

	Severe	51	9	60	
Phase of Treatment	Intensive	35	53	88	0.000
	Continous	81	31	112	

The variables of social support, anxiety, and depression were shown to be significantly correlated with perceived stigma: People who had low levels of social support were more likely to feel stigmatized (p = 0.0001). Perceived stigma was much greater among depressed people (p = 0.0001). Likewise, there was a higher likelihood of stigma perception among those who experienced anxiety (p = 0.0001).(Table 4).

Table 4: Association of Perceived Stigma with Psychological Distress

Variables		Perceived Stigma			p-Value
		Yes	No	Total	
Social Support	Poor	50	39	89	0.0001
	Good	30	81	111	
Depression	Present	60	10	70	0.0001
	Absent	30	100	130	
Anxiety	Present	78	29	107	0.0001
	Absent	37	56	93	

4. DISCUSSION

TB is not only a disease; it is a sickness because, in addition to the suffering caused by disease, TB sufferers also have to deal with social dysfunction and emotional trauma as a result of the extremely discriminatory actions of those around them. The present investigation clearly shows that over half of TB patients experience psychological anguish and stigma. According to a Chinese research, 42% of patients experienced the agony of stigma (22). Because patients experienced fear and separation from their family members, stigma was also linked to anxiety and social support. Additionally, the results of a Chinese study indicated that stigma was more common among women, while the current study found no such link, which may be because there were less female participants. Another study carried out in rural China found that 62.5% of patients had perceived stigma, and psychological distress was closely linked to this as well (23). Furthermore, a strong correlation with illness severity was also discovered (p value 0.0001). The findings here are similar to those of our study, which indicated a robust relationship between psychological distress and stigma, with stigma being higher among patients who had been ill for more than a year. Additionally, 51% of TB patients in Cambodia reported experiencing perceived stigma, according to a mixed methods research (24). Perceived and experienced stigma were found in 208 Kenyan tuberculosis patients in another mixed-method investigation (25). According to the findings of an Indian study, 50.57% of patients experienced stigma (24). In this case, there was a strong link with socioeconomic class (p value 0.001) and education (p value 0.0001), but not with gender (p value 0.07), age (p value 0.26), or married status (p value 0.45). Out of 208 patients, 51.2% had stigma, according to another research done in India's Karnataka District (27). Once more, there was no correlation between education and marital status, income, employment, or gender. Both studies' findings are similar to the current study's, showing that over half of the patients experience stigma that is closely related to educational standards, most likely due to comparable sociocultural factors. Our research's findings on the incidence of anxiety and depression linked to tuberculosis are also consistent with a regional study carried out in Pakistan that found that 76.5% of tuberculosis patients had depression (28). According to a different research done in Karachi, 65% of patients had moderate to severe anxiety and 56% had moderate to severe depression (29). 844 patients participated in a statewide survey in Ethiopia, and the mean stigma score was 21.3. Once more, stigma was lower for those with education levels beyond secondary school (30). 42.4% of patients in a cross-sectional survey of 417 Ethiopian patients reported feeling stigmatized, whereas a strong correlation between treatment phase and a lack of social support was found using binary logistic regression analysis (31). With a frequency and a favorable correlation with education and social support, our study's findings are comparable to those of the other research; however, no correlation was found with the treatment phase. The current study's findings are consistent with an institutional-based survey (32) that revealed a 57% prevalence with an association to low social support , the presence of depression , and the length of dsisease.

5. CONCLUSION

Psychological suffering, such as sadness, anxiety, and a lack of social support, exacerbates the situation, and perceived stigma is frequently prevalent among TB patients. In addition, sociodemographic variables together with the degree and length of

the discomfort are exacerbating the condition. Implementing measures that shield TB patients from marginalization and make sure they don't become a burden on society is crucial to addressing these problems. Fostering a more sympathetic and encouraging attitude toward the illness and individuals who experience it requires creating and promoting initiatives to raise public awareness. In addition to raising the standard of living for individuals impacted, these initiatives will foster a more accepting and compassionate society.

Conflict of Interest: None

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