

A Comparative study to understand the psychological distress and its associated factors among TB Patients receiving treatment from Government and Private facility

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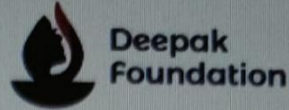
DECLARATION BY STUDENT

I therefore certify that the dissertation below, with the title "**A Comparative Study to Understand the Psychological Distress and its Associated Factors Among TB Patients Receiving Treatment from Government and Private Facility**," is a true and accurate representation of my original research. I certify that it has not been applied for a degree or diploma from any other university or institution. Information that was taken from other people's published or unpublished work has been properly acknowledged in the text.

Dr. Shubham Mishra

Date

COMPLETION CERTIFICATE (From organization)



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Internship Certificate

This is to certify that *Dr. Shubham Mishra* has successfully completed project on "A Comparative study to understand the psychological distress and its associated factors among TB Patients receiving treatment from Government and Private facility" at Jabalpur - Division (Chhindwara - District) location under the guidance of *Dr. Akashkumar Lal* from 22/03/2022 to 19/06/2022.

We wish him success in future endeavor.

Dr. Akashkumar Lal
Deputy Director (PH & N)

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ABBREVIATIONS

TB	Tuberculosis
PD	Psychological distress
HIV	Human immunodeficiency virus
AIDS	Acquired immunodeficiency syndrome
PHQ	Patient health questionnaire
CI	Confidence interval

1. ABSTRACT

1.1 Introduction

The most prevalent infectious agent-related cause of death and one of the top 10 global causes of death is tuberculosis (TB), a contagious disease that is a prominent source of vulnerability. As a chronic condition, tuberculosis always affects people physically, psychologically, and financially. Studies show that sadness is common in TB patients and may negatively affect their adherence to medication. Depression may develop in TB patients over time for several reasons. The main objectives of the study are to compare the doctor-patient relationship in relation to TB treatment between government and private facilities, to understand the factors that contribute to psychological distress, and to find out how common psychological distress is among tuberculosis patients.

1.2 Methodology

A quantitative schedule was used to create a cross-sectional study design. This research is being carried out in two Madhya Pradesh districts: Jabalpur and Chhindwara. The quota sampling method was used to collect 170 samples for this analysis. Telephonic interviews and face-to-face interviews are used to collect data. The study collected information on TB patients' socio demographic characteristics, co-morbidities, medical data, drug use, previous TB experience, patient-doctor relationships, disease stigma, and patient perceptions of disease seriousness, physical accessibility, and financial status.

1.3 Results

From total of 170 patients 143 patients were facing psychological distress i.e., 84.12% patients were suffering from PD. Also, the analysis show, patient doctor relationship in both government and private facility was good.

1.4 Conclusion

Nearly two thirds of the patients in this study experienced psychological disturbance. Psychological distress was linked to low socioeconomic status, substance abuse, co-morbidities, and the patient's own assessment of the severity of the illness. The mental health of TB patients needs to be taken into consideration. To decrease the effects of the sickness, consideration should be paid to psychological distress and linking mild to severe versions of the condition to psychiatric clinics.

2. INTRODUCTION

The most prevalent infectious agent-related cause of death and one of the top ten global causes of mortality is tuberculosis (TB), a highly contagious infectious illness. 10 million people worldwide had tuberculosis in 2019, and 1.4 million people died from it. Mycobacterium tuberculosis is the bacillus that causes tuberculosis, which is spread when infected individuals cough or otherwise release the bacteria into the air. Although the condition (pulmonary tuberculosis) often impacts the lungs, it may potentially impact

different body parts (extra pulmonary TB). Tuberculosis can strike anyone, anywhere. Adults have a high prevalence of tuberculosis (90 percent), with men having a higher prevalence than women. People affected by tuberculosis (TB) frequently face economic hardship, insecurity, marginalization, stigma, and prejudice as a result of the disease. M. tuberculosis infects around a fifth of the world's population (Sataloff et al., n.d.)

In India, the prevalence of tuberculosis cases was 21.5 lakh in 2018, with 25% of cases recorded from the private sector. The working-age population is extremely endemic for tuberculosis. The age group of 15-69 years accounts for 89 percent of TB cases (RNTCP, 2018)

Numerous people succumb to tuberculosis. The tenth leading cause of death worldwide is TB, and its mortality is associated with co-morbidities including HIV and diabetes mellitus. An estimated 1.21 million HIV-negative individuals passed away from tuberculosis in 2019. The prevalence of TB mortality among patients with HIV as a co-morbidity was 20,800. As a result, 1,418,000 TB-related deaths are anticipated to occur overall in 2019. (Deaths from TB - 2018 Deaths, 2021)

In poorer nations, tuberculosis is more common due to poor sanitation and hygiene, overcrowding, low levels of education, hunger, and inadequate diagnosis and treatment services. Since tuberculosis is a chronic illness, it has an impact on a person's physical, mental health, and financial situation. It can result in unemployment, extended hospital stays with work absences, loneliness, a sick feeling, severe weight loss, diminished libido, hopelessness, and less social interaction. In India, there is still a societal shame attached to disease. In 2016 (Kumar et al.) Significant barriers to tuberculosis prevention and treatment exist in many nations due to stigma associated with both mental illness and the disease. This comprises a combination of the co-morbidities of psychological anguish and the stigmatizing consequences of TB. (In 2021, Review et al)

Psychological distress (PD), a general term, is a painful subjective state of despondency or anxiety that manifests in both emotional and physiological ways and interferes with day-to-day activities. It is characterized by depressive and anxiety symptoms, as well as somatic symptoms. Psychological disorder is described as mood swings in people who are normally functioning. Negative attitudes toward the world, oneself, and others may result from psychological distress. Many patients experience psychological difficulties as a result of their disease. One of the disorders that causes psychological anguish is tuberculosis. The stigma associated with tuberculosis and a lack of family and community support are also risk factors for psychological distress. Many individuals who are experiencing severe psychological distress do not seek help from specialist mental health facilities. When they are under psychological distress, many of these people do not seek some kind of structured counselling, even though they may turn to general practitioners, psychologists, and support groups for aid.

The magnitude of PD is determined by the condition and one's perception of it. No two people have the same reaction to the same incident. An individual's psychological, social, and occupational functioning can be affected by psychological disorders, including mental illness, in both a direct and indirect manner. This can have an impact

on a range of life areas, such as relationships, employment, and health (Ayana et al., 2019)

Many factors may contribute to psychological distress, including a history of tuberculosis, drug abuse, physical accessibility, economic accessibility, disease stigma, care provider attitude, self-reported illness severity, and physical distress. The magnitude of PD is determined by the condition and one's perception of it. A person's psychological, social, and professional functioning may be directly or indirectly impacted by a psychological problem, including mental illness. This can have an impact on a range of life areas, such as relationships, employment, and health (Ayana et al., 2019)

A major economic burden would result from the combination of chronic medical conditions and depression. Outpatients' mental states can impact the doctor–patient relationship and patient satisfaction with medical care, so it's important for healthcare professionals to recognize changes in mental status.(Wang et al., 2017)

The doctor-patient partnership is critical to the quality of health care. This connection, which was first made more than 5000 years ago between a healer and a patient, has since changed to one between a caretaker and a service recipient. Many appointments and decisions in the outpatient clinic are based on the doctor's relationship with the family members.(Harbishettar et al., 2021)

Tuberculosis patients and their families should be counseled wherever possible to fill in knowledge gaps and allow informed decision-making. Healthcare, physical, financial, psychosocial, and nutritional needs should all be addressed during counseling. Counseling's goal is to satisfy the patient's needs and protect his or her interests. The aim is also to assist the patient in overcoming any obstacles to effective treatment. Patients should be educated about tuberculosis (TB), including its causes, symptoms, risks of not following treatment guidelines, reasons why treatment takes a long time and why it is important to finish it, potential side effects while undergoing treatment, the cost of treatment, and what free or publicly funded services are available to them. It is important to let patients know that tuberculosis is a perfectly curable disease. All TB patients should receive a minimum package of holistic TB care services, including therapy and support in addition to diagnosis and pharmacological treatment, according to patient-centered approaches that we must adopt. Psychiatric disorders, especially depression, are common among tuberculosis (TB) patients, according to studies, and may compromise treatment adherence. A person with tuberculosis (TB) may experience depression over time for several reasons. Depression shows up as melancholy, a loss of interest or enjoyment, guilt or low self-worth sentiments, disrupted eating or sleeping patterns, exhaustion, and lack of concentration. Depression is common among tuberculosis (TB) patients. Depression impairs psychosocial well-being and leads to poor treatment outcomes in tuberculosis patients. It can also have a detrimental impact on TB patients' health-related quality of life. Furthermore, TB patients with depressive symptoms reduce social interaction and neglect social responsibilities, particularly while coughing, resulting in low self-esteem and hopelessness.(Dasa et al., 2019)

Numerous detrimental health outcomes, such as functional disability, higher treatment costs, the emergence of multidrug-resistant tuberculosis, and a poor quality of life in terms of health, are associated with the co-occurrence of tuberculosis and depression. According to certain studies, TB patients are more likely to have depression and other mental co-morbidities, psychological reactions, and studies revealing psychiatric difficulties as side effects of anti-TB medicine. The patient's age, gender, marital status, income, occupation, perceived social support, perceived stigma associated with physical conditions, TB-HIV co-infection, risky alcohol use, and physical symptoms are just a few of the sociodemographic and economic factors that can affect depression in TB patients. In order to fully comprehend how the disease affects the patient's mental health, depression in TB patients must be measured.(Yohannes et al., 2020)

2.2 Aim

To comprehend the psychological anguish that TB patients who are receiving treatment from public and private facilities are experiencing, as well as the variables that contribute to it.

2.2 Objectives

- To assess the prevalence of psychological distress among patients with tuberculosis.
- To understand the associated factors leading to psychological distress.
- To compare the doctor-patient relationship amongst government and private facilities in relation to TB care.

3. REVIEW OF LITERATURE

Tegegn Mulatu Ayana, Kedir Teji Roba, and Myrta Obejero Mabalhin found that 63.3 percent of tuberculosis patients in the study population experienced psychological discomfort. Rural residence, TB-HIV co-infection, at least one chronic illness, stigmatisation, pulmonary and MDR infections, and cigarette smoking were all associated with psychological distress.

This study used a cross-sectional institution-based study design. Four hospitals and six health clinics were chosen from the cities of Dire Dawa and Harar based on the TB load. In-person interviews were used to get information on sociodemographic parameters, psychological distress, experiences with TB-associated stigma, and alcohol use, while TB registration books were used to gather information on variables related to TB and HIV. From January to February 2018, trained data collectors questioned every TB patient from the start of their therapy until month six. Epi Data version 3.1 software was used to enter the acquired data before exporting it to SPSS window version 20 for analysis. Binary logistic regression on two and more variables was performed. In the multivariate model, all variables with P-values of less than 0.25 were included. As significant predictors of psychological distress, factors in the final model with a P-value

of less than 0.05 were considered. Crude and adjusted odds ratios with a 95 percent confidence interval were computed.

In this study, there were about two thirds of tuberculosis patients who reported psychological anguish. Chronic disease morbidity, HIV-TB co-infection, and TB-related stigma were all associated with psychological distress. To prevent detrimental impacts on mental health, chronic disorders such as HIV/AIDS diagnosis and referral to chronic disease units should receive specific attention. Consideration should be paid to psychological discomfort and linking mild to severe illness forms to psychiatric clinics in order to lessen the disease's symptoms. 2019 (Ayana et al.)

Researchers Tamirat Tesfaye Dasa, Aklilu Abrham Roba, Fitsum Weldegebrea, Frehiwot Mesfin, Abiyot Asfaw, Habtamu Mitiku, Zelalem Teklemariam, Bahubali Jinnappa Gedduogol, Mahantash Naganuri, and Hilina Befikadu included 403 tuberculosis patients in their study.

51.9 percent of tuberculosis patients had depression, with 34.2 percent having moderate cases. According to this study's logistic regression, patients with tuberculosis under the age of 25 had a 50% lower risk of getting depression, whereas those with monthly incomes in the 25th percentile had a fourfold higher risk.

In this study, 403 tuberculosis patients attending eleven tuberculosis treatment facilities in eastern Ethiopia from February to July 2017 participated in an institutionally based cross-sectional study. Utilizing the Patient Health Questionnaire, depression was quantified. Up until the needed sample size was attained, data were gathered in a sequential manner. Patients with tuberculosis who had been receiving anti-tuberculosis medications for more than a month were included. Version 20 of the Statistical Package for Social Sciences (SPSS) was used to analyse the data. P-values 0.05 were regarded as statistically significant when bivariate and multivariate logistic regression models were used to find independent determinants for the dependent variable depression.

This study discovered a significant prevalence of depression. Depression in tuberculosis patients was associated with old age, poor monthly income, being a "new tuberculosis care" patient, and the first three months of therapy. It's crucial to integrate mental health services with TB clinics, especially for diagnosing and treating depression in TB patients. 2019 (Dasa et al.)

According to a study conducted by Kalkidan Yohannes, Hirbaye Mokona, Lulu Abebe, Mohammed Feyisso, Adane Tesfaye, Getachew Tesfaw, and Getinet Ayano, 45.5 percent of tuberculosis patients have depressive symptoms; 33.3 percent have mild depression, 9.8 percent have moderately extreme depression, and 2.4 percent have severe depression. After controlling for potential confounders, being on re-treatment for tuberculosis at the age of 45, providing insufficient social support, and co-infection with the Human Immunodeficiency Virus (HIV) were all linked to depressive symptoms in TB patients.

An institution-based cross-sectional analysis of 415 tuberculosis patients who were

enrolled in public health institutions in the Gede'o zone of South Ethiopia was undertaken in this study from November 1 to December 30, 2018, among a randomly selected sample. The PHQ-9 Patient Health Questionnaire was utilised to evaluate depressed symptoms. To find the possible causes of depression symptoms, logistic regression was utilised. Crude odds and adjusted odds ratios with their associated 95% confidence intervals (CI) were used to illustrate the association's strength. Finally, $p < 0.05$ was chosen as the statistical significance level. (Yohannes and others, 2020)

In a 2016 study by Kunal Kumar, Abhinit Kumar, Prakash Chandra, and Hari Mohan Kansal, it was discovered that 74 out of 100 individuals had mental symptoms, with 35 instances suffering from depression and 39 cases from anxiety. In 2016 (Kumar et al.)

4. METHODOLOGY

4.1 Study design

This study's population-based survey to gauge the psychological distress of TB patients employed a cross-sectional study design. This research is entirely descriptive and observational. Here, the data from the population i.e., representative subset is analyzed at a specific point in time. The outcomes and exposures were measured at a same point of time. The prevalence of psychological discomfort among TB patients was assessed in this study.

A quantitative schedule was designed for data collection, which consisted of all the close ended questions with framed options for the answers. The data collected is in quantifiable form.

The variables measured in this study are Co-morbidities, diagnostic details, instance of substance use, history of TB, patient-doctor relationship, stigma related to disease, patient's perception for severity of disease, physical accessibility and financial status and socio demographic details.

4.2 Study site

This study was conducted with the TB patients of Jabalpur and Chhindwara districts of Madhya Pradesh. District for the study were selected conveniently, as organization had more reach at these two districts. The total population of Jabalpur and Chhindwara is 24,60,714 and 17,01,156 respectively. There are total five TUs in Jabalpur district; located at Shahpura, Patan, Panagar, Sihora and Bundam. In Chhindwara, there are total eleven TUs; located at Chhindwara, Chandameta, Tamia, Junnardeo, Harrai, Amarwara, Pandhurna, Sausar, Bichua, Mohkhed, Chourai.

4.3 Eligibility criteria

TB patients in the intensive phase (IP), DSTB patients suffering from pulmonary and extra pulmonary TB, patients notified on NIKSHAY Portal are included in this study. Patients not diagnosed with TB, patients in continuous phase (CP), patients not notified on NIKSHAY Portal and DRTB, MDRTB, and XDRTB patients are not included in this study. The participants were interviewed for this study after obtaining the verbal consent.

4.4 Sample size

Total population of TB notified cases in Jabalpur and Chhindwara was 304. According to this population, by using open epi software sample size was calculated. By taking confidence interval of 95% and frequency of psychological distress among TB patients of 46% (Peddireddy, 2016) sample size was calculated 170. Samples were selected by using quota sampling. Interviews were taken till the sample size was achieved.

4.5 Data collection

Data was collected through telephonic interviews. The dependent variables of the data were Co-morbidities, diagnostic details, instance of substance use, past history of TB, patient-doctor relationship, stigma related to disease, patient's perception for severity of disease, physical accessibility and financial status. The independent variables of the data were the socio demographic details. A 5-point Likert scale was used to assess the level of psychological distress among TB patients, doctor-patient relationship and perceived stigma. Participants were allowed to express how much they agree or disagree with the questions asked. Socio economic class of the participant was measured by using Kuppuswamy scale. According to the scoring of education, occupation and income, participant are classified in particular category. Severity perceived by patient was assessed through a close ended question with 3 categories, severe, moderate and mild. Instance of substance use was measured by asking a close ended question with two categories; yes and no. Use of alcohol, tobacco and cigarette were considered as instance of substance use.

5. Data Analysis

Study topic	Primary outcome	Measurement of outcome	Secondary outcome	Measurement of outcome
A Comparative study to understand the psychological distress and its associated factors among TB Patients receiving treatment from Government and Private facility in selected districts of Madhya Pradesh during the year 2020-2021.	Prevalence of psychological distress among TB patients	To gauge the degree of psychological suffering among TB patients, a 5-point Likert scale is used. Participants were allowed to express how much they agree or disagree with the questions asked. The mean is calculated of the scores and accordingly the participants are kept in a particular category; very high, high, moderately high, low and very low	Socio economic class of patient	Socio economic class of the participant is measured by using Kuppuswamy scale. According to the scoring of education, occupation and income, participant is kept in particular category; upper class, upper middle class, lower middle class, upper lower class and lower class.
			Patient doctor relationship	5 point likert scale is used to assess the relationship between doctor and patient. According to the mean score, participants are placed under a particular category; very good, good, normal, poor, and very poor.
			Perceived stigma	5 point likert scale is used to assess the stigma faced by the participant. As per the mean scores the patient are kept in a particular category; very high, high, moderately high, low

				and very low
			Severity of disease perceived by participant	severity perceived by patient is assessed through a close ended question with 3 categories, severe, moderate and mild
			Instance of substance use	Instance of substance use is measured by asking a close ended question with two categories; yes and no. Use of alcohol, tobacco and cigarette is considered as instance of substance use.

The analysis of data was done using SPSS software. To compare the doctor- patient relationship amongst government and private facilities in relation to TB care Mann Whitney U test was used as we had ordinal and categorical data. To understand the associated factors leading to psychological distress ordinal logistic regression was used. Multinomial regression was performed to determine the prevalence of psychological distress among TB patients.

6. Results

6.1 Table 1: Socio-demographic characteristics of patients

Characteristics	Categories	Cases	%
		n=170	
Age	0-14	11	6.5
	15-24	5	2.9
	25-64	45	26.5
	>64	109	64.2
Gender	Male	83	48.8
	Female	87	51.2
Economic Class	Lower Class	160	94.1
	Upper Class	10	5.9

A total of 170 TB patients were interviewed in which proportion of male (48.8%) and female (51.2%) was almost equal. Almost all the patients belong to lower socio-economic class (94.11%).

6.2 Table 2: Health characteristics of TB patients

Characteristics	Categories	Cases	%
		n=170	
Type of TB	Extra Pulmonary	60	35.3
	Pulmonary	110	64.7
New case or Relapse	New Case	147	86.5
	Relapse Case	23	13.5
From which facility are you taking treatment	Government	144	84.7
	Private	26	15.3
How far is the health facility from your house?	>100 kms	10	5.9
	1-50 kms	154	90.6
	51-100 kms	6	3.5
Diabetes Status	Negative	153	90
	Positive	17	10
How do you rate the severity of your illness?	Mild	25	14.7
	Moderate	52	30.6
	Severe	93	54.7
degree of doctor patient relationship	High satisfaction	145	85.3
	Low satisfaction	25	14.7
Stress Level	High stress	143	84.1
	Low stress	27	15.9
Degree of Stigma	High stigma	74	43.5
	Low stigma	96	56.5

In the study, 60 (35.3%) of the individuals had extra-pulmonary TB, whereas nearly two-thirds, or 110, had pulmonary TB. The bulk of research participants, 147 (86.5%), were in the new TB treatment category. Most participants are receiving care at government hospital 144. (84.7 percent). Nearly of study participants do not have diabetes 153 (90 percent). 52 (30.6 percent) of the study's participants reported having a mild form of TB, whereas 93 (54.7 percent) reported having a severe form. 145 of the participants, or 85.3%, expressed excellent satisfaction with the doctor. 143 participants in the study—or 84.1%—had high stress levels. Low Degree of Stigma was experienced by more than half of the subjects (56.5 percent).

Objective:

To compare the doctor- patient relationship amongst government and private facilities in relation to TB care.

Methodology:

Since we had ordinal (doctor-patient relationship) and categorical data (facility), so non-parametric Mann-Whitney U test was used to compare doctor patient relationship amongst government and private facilities in relation to TB care.

H0: There is no significant effect on doctor patient relationship based on type of facility.

H1: There is significant effect on doctor patient relationship based on type of facility.

6.3 TABLE 3: Assessment of doctor patient relationship

	Facility	N	Mann-Whitney Test Statistic	P value
Order of relationship	Government	144	1566.5	0.168
	Private	26		

Conclusion:

Mann-Whitney U test revealed that patients are satisfied with doctors in both private and government facilities.

Objective:

To understand the associated factors leading to psychological distress.

Methodology:

Since we had ordinal data, we used ordinal logistic regression to understand the associated factors leading to psychological distress.

	Variables	Score	Sig.	
<u>on:</u> nal tic	Economic class	0.107	0.048	<u>Co</u> <u>ncl</u> <u>usi</u> Ordi Logis Regr
	substance used	1.438	0.045	
	new case or relapse	1.028	0.311	
	Facility	0.006	0.94	
	distance	0.227	0.634	
	travelling cost	10.719	0.057	
	diabetes status	9.046	0.003	
	severity of illness	3.812	0.049	
	degree of doctor patient relationship	5.534	0.067	
	Degree of stigma	2.523	0.112	

Regression Analysis revealed that Economic class, substance used, diabetes status, severity of illness were the associated factors leading to psychological distress. While new case or relapse, facility taking treatment, physical accessibility, travelling cost, degree of doctor patient relationship and degree of stigma were not associated factors leading to psychological distress.

Objective:

To assess the prevalence of psychological distress among patients with TB.

Methodology:

Here we used Multinomial Regression to assess the prevalence of psychological

distress among patients with TB.

Variables	Psychological distress (%)		AOR	COR
	Low Stress	High Stress		
Economic Class				
Lower Class	8 (4.70)	38(22.35)	1	1
Upper Class	19(11.17)	105(61.76)	0.848(0.294,2.448)	0.966(0.551,1.683)
Substance Used				
No	19(11.17)	83(48.82)	1	1
Tobacco/Alcohol/Cigarette	8(4.70)	60(85.71)	1.718(0.594,4.968)	0.773(0.457,1.315)
New Case or Relapse				
New Case	25(14.70)	122(71.76)	2.135(0.431,10.576)	1.507(0.811,2.799)
Relapse Case	2(1.17)	21(12.35)	1	1
Facility				
Government	23(13.52)	121(71.17)	0.724(0.173,3.026)	1.450(0.786,2.676)
Private	4(2.35)	22(12.94)	1	1
How far is the health facility from your house?				
1-50kms	25(14.70)	129(75.88)	6.787(3.098,9.453)	5.401(2.012,14.495)
51-100kms	1(0.58)	5(2.94)	1.548(0.889,3.673)	0.662(0.099,3.992)
>100kms	1(0.58)	9(5.29)	1	1
Travelling Cost				
1-100	25(14.70)	143(84.11)	0.0056(0.0023,1.456)	0.0003(0.0001,1.34)
>2000	2(1.17)	0	1	1
Diabetes Status				
Negative	20(11.76)	133(78.23)	0.277(0.075,1.021)	1.22(0.855,1.356)
Positive	7(4.11)	10(5.88)	1	1
Severity of illness				
Severe	11(6.47)	82(48.23)	2.047(0.719,5.832)	0.709(0.389,1.290)
Moderate	9(5.29)	43(25.29)	1.709(0.485,6.019)	1.261(0.579,5.746)
Mild	7(4.11)	18(10.59)	1	1
Degree of doctor-patient relationship				
Low Satisfaction	0	25(14.70)	0.775(0.551,2.111)	1.309(0.721,2.375)
High Satisfaction	27(15.88)	118(69.41)	1	1
Degree of Stigma				
Low Stigma	19(11.17)	77(45.29)	2.082(0.767,5.652)	1.759(0.449,1.286)
High Stigma	8(4.70)	66(38.82)	1	1

Conclusion:

Patients from higher socioeconomic classes are 15% less likely than those from lower classes to experience psychological anguish. (AOR: 0.848, 95% Confidence Interval: 0.294-0.248)

Compared to their counterparts, patients who used tobacco, alcohol, or cigarettes had a 1.718 percent higher likelihood of experiencing psychological discomfort. (AOR:0.1.718, C.I.:0.594, 4.968).

Compared to their peers, patients who tested negative for diabetes had a 72% lower likelihood of experiencing psychological discomfort. (AOR: 0.277, 95% Confidence Interval: 0.075, 1.021)

When compared to individuals with mild symptoms, those who had a severe perception of the severity of their illness were twice as likely to experience psychological distress. (AOR: 2.047,95%; C.I.: 0.71, 5.832). In contrast, individuals who perceived their condition as being moderately severe had 1.7 times the likelihood of being psychologically upset.

7. DISCUSSIONS

In all, 170 samples that complied with inclusion/exclusion requirements and were recommended by the Deepak foundation under the National Tuberculosis Elimination Program in the Madhya Pradesh districts of Chhindwara and Jabalpur were included in the study. The results of data analysis showed that tuberculosis patients had signs of psychological discomfort. It was due to poor economic class, substance used, diabetes status, and severity of illness. While new case or relapse, facility taking treatment, physical accessibility, travelling cost, degree of doctor patient relationship and degree of stigma were not associated factors leading to psychological distress. The disease's physical weakness might cause frequent absences from the workplace, which increases financial hardship. Prior to the diagnosis, the patients' anxiety, insomnia, irritability, and restlessness were detected during the interview. Due to the complexities of the condition and the ambiguity of diagnosis, they experienced a fear of death, poor sleep, and food, as well as a diminished interest in social engagement. Patients first feel relieved and comfortable after receiving a diagnosis, but they quickly become nervous, irritated, and sad as they worry about the nature of the disease, its complications, and prognosis. No significant effect on doctor patient relationship based on type of facility was seen. Psychological distress was found in diagnosed tuberculosis individuals, and it should be studied further in a larger population. Psycho education, prompt intervention in the form of correct diagnosis, and targeted treatment are all necessary. Due to a lack of social and family support, as well as the stigma connected with the condition, poor treatment compliance is most typically found when treating these cases. To manage tuberculosis, it is necessary to prevent and cure tuberculosis patients. For a better prognosis and management of the condition, co morbid sickness should be recognized. If a patient with tuberculosis has a concomitant ailment, the appropriate referral should be made.

8. Conclusion

Nearly one in four tuberculosis patients experience depression, making it a common consequence. When assessing TB patients, doctors and DOTS providers should have a high index of suspicion for depression. People with lower socioeconomic status are more likely to experience depression. It is recommended that all TB patients have a psychological examination at least once while undergoing treatment and that those who require it have access to the proper counselling and care. The staff at the DOTS center and the patient's caretakers should be made aware of the symptoms of depression, and if the patient displays any, they should refer them to a counsellor or psychiatrist. Prospective research with repeated assessments is advised to monitor the development of depressed symptoms over time in TB patients, starting on the day of the diagnosis itself.

9. Recommendations

- ✓ Proper training of doctors and other workers should be given.
- ✓ Both public and private workers should be given instruction of maintaining and monitoring patient records, reminders, side effects of medication and follow-ups.
- ✓ Guidelines and gaps in this organization can be revised.
- ✓ Policy upgradation.

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Annexure 1: Questionnaire

Questionnaire

Sr no.	Socio demographic details	
1	Name of District	
2	What is your age?	0-14 years
		15-24 years
		25-64 years
		>64 years
3	What is your gender?	Male
		Female
4	Education of head of the family	Professional degree
		Graduate
		Intermediate/ Diploma
		High school
		Middle school
		Primary school
		Illiterate
5	Occupation of head of the family	Professional
		Semi professional
		Clerical/shop /farm
		Skilled worker
		Semiskilled

		Unskilled worker
		Unemployed
6	Total per capita family income per month	47348 and above
		23674-47347
		17756-23673
		11837-17755
		7102-11836
		2391-7101
		less than 2390
7	Marital status	Married
		Unmarried
		Divorced
		Widow
	Diagnostic details	
8	Type of TB	Pulmonary
		Extra pulmonary
9	Is this a new case or relapse?	New case
		Relapse case
10	From which facility are you taking treatment	Private facility
		Government facility
11	Is any cost incurred by you for medicines and other treatment?	Yes
		No
12	If yes, how much cost is incurred?	1-5000
		5001-10,000
		10,001-15,000
		15,001-20,000
		>20,000

	Physical accessibility details	
13	How far is the health facility from your house?	1-50 kms
		51-100 kms
		>100 kms
14	Which mode of transport do you use for visiting health facility?	Walking
		Cycle
		Motorcycle
		Car
		Public transport
15	What is the cost incurred during travelling?	1-5000
		5001-10,000
		10,001-15,000
		15,001-20,000
		>20,000
	Co-morbidity details	
16	HIV status	Positive
		Negative
17	Diabetes status	Positive
		Negative
	Self rated illness severity details	
18	How serious is your sickness, in your opinion?	Mild
		Moderate
		Severe
	Assessment of Doctor Patient relationship	
19	My doctor helps me	Strongly agree
		Agree
		Moderately agree
		Disagree
		Strongly disagree
20	My doctor has enough time for you	Strongly agree
		Agree
		Moderately agree
		Disagree
		Strongly

	make you upset?	
		Almost never
		Sometimes
		Fairly often
		Very often
27	How many times over the past month have you felt powerless to influence the significant events in your life?	Never
		Almost never
		Sometimes
		Fairly often
		Very often
28	How often did you feel anxious and "stressed" in the past month?	Never
		Almost never
		Sometimes
		Fairly often
		Very often
29	How frequently did you feel assured in your capacity to manage your personal issues in the past month?	Never
		Almost never
		Sometimes
		Fairly often
		Very often
30	How frequently did it feel like things were going your way over the past month?	Never
		Almost never
		Sometimes
		Fairly often
		Very often
31	How frequently did you feel you couldn't handle everything you had to do in the past month?	Never
		Almost never
		Sometimes
		Fairly often
		Very often
32	How frequently have you been able to manage irritants in your life over the past month?	Never
		Almost never
		Sometimes
		Fairly often
		Very often
33	How frequently did you feel in control of the situation in the past month?	Never

		Almost never
		Sometimes
		Fairly often
		Very often
34	How many times in the past month have you become enraged over circumstances that were out of your control?	Never
		Almost never
		Sometimes
		Fairly often
		Very often
35	How often did you feel in the past month that your problems were getting so bad you couldn't handle them?	Never
		Almost never
		Sometimes
		Fairly often
		Very often
Assessment of stigma		
36	I've received unfair <u>treatment</u> ?	Strongly agree
		Agree
		Moderately agree
		Disagree
		Strongly disagree
37	I have been treated unfairly by the people in your neighborhood?	Strongly agree
		Agree
		Moderately agree
		Disagree
		Strongly disagree
38	I have been treated unfairly in your education?	Strongly agree
		Agree
		Moderately agree
		Disagree
		Strongly disagree
39	I have been treated unfairly in marriage?	Strongly agree
		Agree

		Moderately agree
		Disagree
		Strongly disagree
40	I have been treated unfairly by your family?	Strongly agree
		Agree
		Moderately agree
		Disagree
		Strongly disagree
41	I have been treated unfairly in a job?	Strongly agree
		Agree
		Moderately agree
		Disagree
		Strongly disagree
42	I have been treated unfairly when using public transport?	Strongly agree
		Agree
		Moderately agree
		Disagree
		Strongly disagree
43	I have been treated unfairly in your religious practices?	Strongly agree
		Agree
		Moderately agree
		Disagree
		Strongly disagree