

## “Socio-Demographical Factors, Psychiatric Comorbidities In MDR Tuberculosis Patients”

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### ABSTRACT:-

**Aims-** To study the co-relation between socio-demographical factors and psychiatric comorbidities in MDR tuberculosis patients.

**Materials And Methods-** Descriptive study was done in department of psychiatry & pulmonary medicine in NMCH kota, after obtaining permission from ethics committee. Study group consisted of 30 participants who were assessed using a semi structured proforma. A detailed history, complete general & systemic examination was noted. All the study participants were screened by GHQ-12 & positive cases were diagnosed for psychiatric morbidity by using MINI version 6.0.0 (Mini International Neuropsychiatric Interview)

**Results-** MINI scale was applied for GHQ-12 positive patients in which 33.3% were positive for depression, 23.3% were positive for depression with suicidality, 13.3% were positive for depression with anxiety, 10% were positive for anxiety, 6.7% were positive for depression with medical comorbidity, 3.3% were positive for psychotic disorder. The socio- demographic data collected from the patients were age, gender, domicile, education, marital status, monthly income, occupation, religion, family type and family size. Only family size was found to be statistically significant for the GHQ-12 scale.

**Conclusion-** Socio demographic variables do not significantly affect the profiles of psychiatric comorbidity in MDR Tuberculosis patients. So, MDR tuberculosis is the only robust factor which is associated with psychiatric illnesses while other variables like gender, occupation, marital status are not of much importance.

### I. INTRODUCTION

Tuberculosis (TB) is a chronic infectious multisystem disease caused by mycobacterium tuberculosis and is one of the leading causes of mortality worldwide.

The World Health Organization (WHO) has estimated that 2 billion people, almost a third of the world's population, have latent TB.

Every year about eight million people develop this disease, and some three million die of it, over 95% of these from developing countries, drug-resistant strains are contributing increasingly to a global public health disaster.

India has the highest TB burden of any country in the world, accounting for an estimated one-fifth of global TB cases worldwide.

It has an estimated prevalence of 3 million TB cases, with 2 million new cases occurring each year. About 280,000 people die from TB in India annually.

**MDR-TB** is a form of tuberculosis (TB) infection caused by bacteria that are resistant to treatment with at least two of the most powerful first-line anti-TB medications (drugs), isoniazid and rifampin. Some strains of the TB bacteria developed resistance to the standard drugs through genetic changes. Currently the majority of multidrug-resistant cases of TB are due to one strain of TB bacteria called the Beijing lineage.

MDR-TB caused an estimated 480,000 new TB cases and 250,000 deaths in 2015. MDR-TB accounts for 3.3% of all new TB cases worldwide.

Drug resistance surveys in several states have indicated that the prevalence of MDR TB in India is 2–3 % among new cases and 12–17 % among reinfection cases.

High rates of depression and anxiety among TB patients relate to physiological disturbances, social stigma, and inadequate social support. Additionally, several anti-tuberculosis medications, such as cycloserine, isoniazid, ethambutol may precipitate more severe forms of mental illness - including major depression, anxiety or psychosis. TB and mental illness share common risk factors including poverty, substance abuse and homelessness.

Several authors found frequent comorbidity of TB and common mental disorders. Few studies have investigated common mental disorders in TB patients in low and middle income countries (LMICs) and have

found high rates of CMDs in Pakistan 46.3 %-80 %, Nigeria 27.7 %-30 %, Ethiopia 64 % , India 76 % , South Africa 46 % and Turkey 19 %-26 %. Factors associated with CMDs in TB patients included: male gender, old age groups, the young and the elderly, low educational attainment, financial status, no source of income.

### **Aim and objectives**

To study prevalence of psychiatric comorbidity in MDR tuberculosis patients.

## **II. MATERIAL AND METHODS**

This cross-sectional study was carried out on patients of Department of respiratory medicine at New Hospital Medical College, Kota, Rajasthan from August 2017 to September 2017. A total 30 adult subjects (both male and females) of age  $\geq 18$ , years were chosen for this study.

### **Inclusion Criteria:-**

1. Patients diagnosed as having case of MDR tuberculosis by consultant respiratory medicine physician.
2. Both sexes.
3. Patients able to understand the questionnaire.
4. Patients aged more than 18 years.
5. Willing to give consent.

### **Exclusion Criteria:-**

1. Not willing to give valid consent.
2. Patients aged less than 18 years.

### **TOOLS OF STUDY**

1. Semi structured Proforma designed especially for the study
2. Goldberg's Health Questionnaire-12 (GHQ-12)
3. MINI (MINI INTERNATIONAL NEUROPSYCHIATRIC INTERVIEW) 6.0.0.0 for psychiatric comorbidity assessment.

### **Procedure methodology**

All the patients of MDR TB who fulfilled the inclusion and exclusion criteria were evaluated in semi structured proforma specially design for the purpose to find out socio demographic profile. All the patients than were administrated GHQ-12 to find out psychiatric comorbidity and the patients who were GHQ-12 positive administered MINI to find out psychiatric comorbidity.

### **Statistical analysis**

Data was analyzed using SPSS version 20. We found co-relation of socio demographic profile of patients with psychiatric comorbidity in MDR Tuberculosis patients.

## **III. RESULTS**

**Table 1-**Distribution of socio demographic profile of patients

		N=30	N %
Age Group	30 & Less Than 30	6	20%
	31-40	7	23%
	41-50	9	30%
	More Than 50	8	27%
Gender	Male	22	73.3%
	Female	8	26.7%
Religion	Hindu	23	76.7%
	Muslim	7	23.3%
Marital status	Married	26	86.7%

	Unmarried	4	13.3%
	Divorced	0	0.0%
Education	Illiterate	12	40.0%
	Primary	9	30.0%
	Middle	4	13.3%
	Secondary	3	10.0%
	Sr. Secondary	1	3.3%
	Graduate	1	3.3%
Occupation	Unemployed	5	17.2%
	Self Employed	6	20.7%
	Farmer	9	31.0%
	Retired	1	3.4%
	House Wife	8	27.6%
Monthly Income	<3000	3	10.0%
	3000- 5000	10	33.3%
	5001-10000	14	46.7%
	>10000	3	10.0%
Family type	Joint	6	20.0%
	Nuclear	15	50.0%
	Extended Nuclear	9	30.0%
	Living Alone	0	0.0%
Family size	Less Than 5	9	30.0%
	5-10	20	66.7%
	More Than 10	1	3.3%

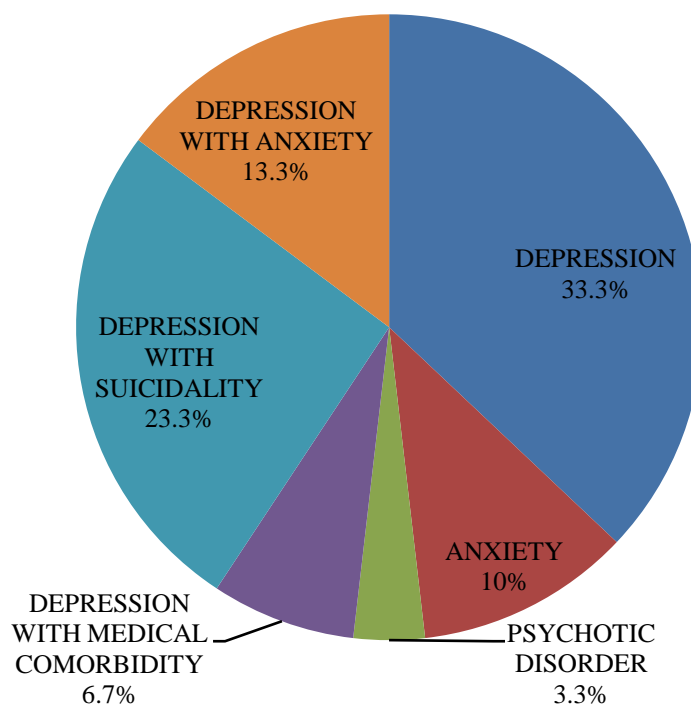
**Table 2-**Distribution of patients according to GHQ-12

		N	N %
GHQ12	Positive	27	90.0%
	Negative	3	10.0%

**Table 3-**Distribution of patients according to MINI Score

MINI score	Depression	10	33.3%
	Anxiety	3	10.0%
	Psychotic Disorder	1	3.3%
	Depression With Medical Comorbidity	2	6.7%
	Depression With Suicidality	7	23.3%
	Depression With Anxiety	4	13.3%
	NAD	3	10.0%

### DISTRIBUTION OF PATIENTS ACCORDING TO PSYCHIATRIC ILLNESS



**Table 4-**Correlations between socio-demographic factors of patients and MINI SCORE

<b>Correlations</b>		<b>GHQ12</b>	<b>MINISCORE</b>
<b>AGE</b>	Pearson Correlation	-.055	-.246
	Sig. (2-tailed)	.774	.191
	N	30	30
<b>Age_GP</b>	Pearson Correlation	-.093	-.261
	Sig. (2-tailed)	.626	.164
	N	30	30
<b>SEX</b>	Pearson Correlation	-.201	.003
	Sig. (2-tailed)	.287	.987
	N	30	30
<b>RELIGION</b>	Pearson Correlation	-.184	-.129
	Sig. (2-tailed)	.331	.498
	N	30	30
<b>DOMICILE</b>	Pearson Correlation	-.111	-.156
	Sig. (2-tailed)	.559	.410
	N	30	30
<b>MARITAL STATUS</b>	Pearson Correlation	.196	.168
	Sig. (2-tailed)	.299	.375
	N	30	30
<b>EDUCATION</b>	Pearson Correlation	-.126	.030
	Sig. (2-tailed)	.506	.874
	N	30	30
<b>OCCUPATION</b>	Pearson Correlation	-.146	-.116
	Sig. (2-tailed)	.442	.540
	N	30	30
<b>MONTHLY INCOME</b>	Pearson Correlation	-.097	-.026
	Sig. (2-tailed)	.611	.890
	N	30	30
<b>FAMILY TYPE</b>	Pearson Correlation	-.365*	-.283
	Sig. (2-tailed)	.047	.130
	N	30	30
<b>FAMILY SIZE</b>	Pearson Correlation	-.043	-.197
	Sig. (2-tailed)	.820	.296
	N	30	30
<b>**.</b> Correlation is significant at the 0.01 level (2-tailed).			
<b>*.</b> Correlation is significant at the 0.05 level (2-tailed).			

Out of 30 MDR tuberculosis patients, 22 were male and 8 were female.  
 Out of 30 patients, 6 were belonging from urban area and 24 were from rural background.  
 Out of 30 patients, 23 were Hindu and 7 Muslim communities.  
 Around 60% patients were educated and 40% were illiterate.  
 On applying GHQ-12, 90% patients were positive.

MINI scale was applied for GHQ-12 positive patients in which 33.3% were positive for depression, 23.3% were positive for depression with suicidality, 13.3% were positive for depression with anxiety, 10% were positive for anxiety, 6.7% were positive for depression with medical comorbidity, 3.3% were positive for psychotic disorder. The socio-demographic data collected from the patients were age, gender, domicile, education, marital status, monthly income, occupation, religion, family type and family size. Only family size was found to be statistically significant for the GHQ-12 scale.

#### **IV. DISSCUSSION**

The psychological aspects of tuberculosis have always been a topic of research in India. A high overall prevalence of psychiatric illness (90% according to GHQ-12 scale) was found in the patients admitted in the Department of Pulmonary Medicine, NHMC, Kota.

In our study, Majority of MDR tubercular patients were Hindu married illiterate males, in the age group of 41-50 years, belonging to rural background, farmer by occupation, in the income group Rs 5001- Rs 10000, living in nuclear family.

MINI scale was applied for GHQ-12 positive patients in which 33.3% were positive for depression, 23.3% were positive for depression with suicidal tendency, 13.3% were positive for depression with anxiety, 10% were positive for anxiety, 6.7% were positive for depression with medical comorbidity, 3.3% were positive for psychotic disorder.

Eram et al (2006) in this context, our studies in line with Eram et al who studied 100 patients attending tuberculosis clinic under Rural and Urban Health Training Centre in Aligarh. They observed that 30% had anxiety or tension while 26% had loss of interest for life or depression. 6% of patients denied the diagnosis while 20% of them could not explain how they felt.

Bansal et al (2010) evaluated 214 outpatients registered at DOTS Centre in Kanpur, India. They assessed patients by using Cornell Medical Index and 16 PF Test FORM-A. They found 82.2% had psychiatric comorbidity; out of which 85.2% had anxiety neurosis, and 14.8% had depression. On personality assessment, 54.1% were anxious, 26% introverts, 15.8% extroverts, and 4.1% had other personality traits.

Panchal et al (2011) screened 600 patients of pulmonary TB admitted in Hospital for Chest Diseases and Tuberculosis, Jaipur. They assessed patients using Beck depressive inventory scale. Depression was present in 82% female tuberculous inpatients and in 52.6% males immediately after the diagnosis.

Chandrashekar et al (2012) observed 100 patients hospitalized for pulmonary tuberculosis in Bangalore. They used MINI International Neuro Psychiatric Interview Scale and found 46% of psychiatric morbidity, majority were depressive disorders (36%) followed by anxiety disorders (24%) comorbidity of depressive and anxiety disorders in 16% of patients.

#### **V. CONCLUSION**

Socio demographic variables do not significantly affect the profiles of psychiatric comorbidity in MDR Tuberculosis patients. So, MDR tuberculosis is the only robust factor which is associated with psychiatric illnesses while other variables like gender, occupation, marital status are not of much importance.

##### **Limitationsofstudy:-**

- The sample size is relatively small in our study as compared to estimated burden of MDR Tuberculosis in India.
- Due to lack of time and resources, study could not be longitudinal.
- Control group was not taken.
- Under diagnosed psychiatric illness due to lack of awareness and lack of referral by physician.
- Data from the RNTCP from 2007 to 2010 indicate that the majority of MDR TB cases were undiagnosed in India.

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