Original Research Article

Assessment of Quality of Life, Self-Esteem and Psychiatric Morbidity in Patients of Pulmonary and Extra-Pulmonary Tuberculosis

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Abstract:

Introduction: Tuberculosis being a highly infectious disease due to aerosol transmission is associated social stigma, marginalization and discrimination which lead to psychiatric burden, low self-esteem and poor quality of life. Psychiatric illnesses such as anxiety or depression can occur as co-morbidities in TB patients and may negatively influence quality of life and therapeutic results. However, the magnitudes of distress and psychological interventions and their effect on treatment outcomes are often undervalued and have not been adequately evaluated. Hence, besides routine clinical, microbiological and radiological assessment, a broader evaluation of the patient's overall health profile is necessary.

Material & Methods: A hospital based, single observer, cross-sectional study, after clearance from institutional ethical board conducted over a period of 3 months involving 100 patients of Tuberculosis attending the Pulmonary Medicine OPD. Demographic profile i.e. age, gender, occupation, education, socio-economic status (according to kuppuswamy scale), housing, any past/family history TB, Clinical type of Tuberculosis (PTB/EPTB) and drug resistance(MDR/non-MDR TB) were noted in case record sheet. The QoL, self-worth and psychiatric morbidity were assessed using WHOQoL-BREF index, Rosenberg Self-Esteem Scale and Brief Psychiatric Rating Scale at the start of treatment, at 2 month follow-up and at the end of DOTS treatment.

Result: 68% patients had extremely severe to very severe negative impact on quality of life whereas 32% subjects had moderate to mild impairment of quality of life. 43% subjects had low self-esteem and 5% had marked psychiatric burden, 40% had moderate, 35% had mild and 20% had very mild psychiatric illness due to tuberculosis. Clinico-demographic factors that significantly affected the psycho-social burden were positive family history of tuberculosis and drug resistant TB.

Conclusion: Treatment should not only target clinical and microbiological cure but instead a holistic approach with counselling and patient support should adopted for better outcome.

Keywords: Tuberculosis, Health Related Quality of Life Index, Rosenberg Self-Esteem Scale, Brief Psychiatric Rating Scale.

Introduction

Tuberculosis is a chronic infectious granulomatous disease caused by Mycobacterium tuberculosis**.** It primarily affects lung but can involve extra-pulmonary sites also like lymph-nodes, skin, mucosa, serosa and other visceral organs.[1] Affection of extra-pulmonary sites can be secondary to spread from primary pulmonary foci or may occur de-novo due to direct implantation of mycobacterium tuberculosis. Tuberculosis is a great menace to mankind since ancient times. Approximately 10.6 million people were affected with TB in 2021, an increase of 4.5% from 10.1 million in 2020, the 30 countries with high TB burden accounted for 86% globally detected new TB cases. Out of 30 high burden

countries, eight countries account for two thirds of the total, with India leading the count.[2]The World Health Organization (WHO) considers TB as one of "the top 10 causes of death worldwide and the leading cause of death from a single infectious agent.[3]" Also WHO Global Tuberculosis Report 2020 describes TB as "a disease of poverty, economic distress, vulnerability and marginalization.[4]" Tuberculosis being a highly infectious disease due to aerosol transmission is associated social stigma, marginalization and discrimination which lead to psychiatric burden, low self-esteem and poor quality of life.[5]Psychiatric illnesses such as anxiety or depression can occur as co-morbidities in TB patients and may negatively influence quality of life and therapeutic results.[6,7]However, the magnitudes of distress and psychological interventions and their effect on treatment outcomes are often undervalued and have not been adequately evaluated. Hence, besides routine clinical, microbiological and radiological assessment, a broader evaluation of the patient's overall health profile is necessary.[8]

Objectives

- To study the effect of Tuberculosis on of quality of life of patients.
- To screen Psychiatric Morbidity, low self-esteem and Quality of Life in patients with Pulmonary and Extra-Pulmonary Tuberculosis.
- To study the socio-demographic profile and various factors that determine the severity of psycho-social implications of tuberculosis.

Material & Methods

A hospital based, single observer, cross-sectional study, after obtaining clearance from institutional ethical board was conducted over a period of 3 months involving 100 patients of Tuberculosis attending the Pulmonary Medicine OPD of a tertiary health care centre India.

Patients not willing to give informed consent and patients having prior psychiatric illness were excluded from study; remaining patients with confirmed diagnosis of pulmonary and/or extra-

pulmonary tuberculosis, above 18 years of age, of both the gender who were to be started on ATT or were on ATT for less than a month were included in the study. Demographic profile i.e. age, gender, occupation, education, socio-economic status (according to kuppuswamy scale), housing, H/O smoking or alcohol intake, any past/family history TB, Clinical type of Tuberculosis (PTB/EPTB) and drug resistance(MDR/non-MDR TB) were noted in case record sheet.

The QoL, effect on self-worth and psychiatric morbidity were assessed using WHOQoL-BREF index, Rosenberg Self-Esteem Scale and Brief Psychiatric Rating Scale at the start of treatment, at 2 month follow-up and at the end of DOTS treatment.

For the calculation of sample size, we assumed a 40% prevalence of depression at baseline and expected a reduction in its prevalence by at least 20% at the end of 6 months.

To detect a 20% difference in the prevalence of depression with 0.1 intra-class correlation, 5% level of significance and 80% power, the sample size needed was 77. With an anticipated 10% attrition rate, the modified sample size needed was 86.

Data analysis

Frequency and percentage were used to depict categorical data. Mean and standard deviation were used in order to sum up the continuous data. Data were analyzed using SPSS Statistics for Windows, version 16.0 (SPSS Inc., Chicago, Ill., USA).

Results

115 patients were screened out of which 5 patients did not agree to give informed consent for enrollment in study, 4 patient failed to follow-up at 2nd month follow-up visit and 6 patient failed to follow-up at end of study, thus the study group comprised of 100 patients. Out of 100 recruited patients 68% were males and 32% were females, median age of study population was 40 years, ranging from 18 to 75 years of age. Other demographic details are recorded below.

Table 1: Baseline Characterstics

Gender	Education	Employment	Socio-Economic Status	Housing	Family History	Clinical Type	Drug Resistance
Male-68% Female-32%	Illiterate – 40 Primary - 22 Matriculation-15 High school - 10 Graduate - 13	Student - 20 Unemployed-50 Employed- 30	Upper – 10 Upper Middle - 15 Lower middle - 25 Upper lower- 27 Lower – 23	Thatched house- 35 Tiled house 30 Concrete house 20 Two-storey house 15	Positive 20 Negative 80	PTB – 70 EPTB - 30	Non- 78 MDR- 20 XDR - 2

Out of 30 patients who had extra-pulmonary tuberculosis, 23.3% (7 patients) had pleural tuberculosis, 23.3% (7 patients) had abdominal TB, 16.6% (5 patients) had cervical lymphadenitis, 16.6% (5 patients) had skeletal TB, and 10% (3patients) had Cutaneous TB and genital TB each.

Table 2: WHOQoL- BREF

Domain	1st Visit	2nd Visit	3rd Visit
Physical health	11.1+-3.2	12+- 2.8	13+- 3.5
Psychological health	11.01+-2.6	12.7+-1.1	13.26+-2.2
Social health	12.26+-1.1	13.3+-1.0	14.3+-1.1
Environmental Health	12.2+-1.2	13.0+-1	14.2+=1.3
Question 1	3.30+-1.15	3.60+-1.15	3.89+-1.15
Question 2	3.15+-1.12	3.35+- 1.03	3.72+- 1.03
Mean RSES	16.4+-2.9	78.35+-2.0	19.0+-2.3
Mean BRPS	28.47+-2.8	27.33+-2.0	25.5+-1.5

At the time of diagnosis patients' quality of life was significantly affected, with physical and psychological domain being most adversely affected. With adequate treatment and counseling psychiatric burden reduced and quality of life, self-esteem improved subsequently.

Table 3: Effect Tuberculosis on Quality of Life

- **WHOQoL-BREF**

Score	Mean	SD	Very Small	Moderate	Very Large	Extremely Large
QoL	12.38	4.5	12 (12%)	20 (20%)	55 (55%)	13 (13%)

Out of 100 subjects 68% patients had extremely severe to very severe negative impact on quality of life due to tuberculosis whereas 32% subjects had moderate to mild impairment of quality of life.

Table 4: Effect of On Self-Esteem

- **RSES (Self-esteem assessment)**

Score	Mean	SD	Low Self-Esteem	Noramal Self-Esteem	High Self-Esteem
RSES	16.4	2.9	43(43%)	57(57%)	0(0%)

43% subjects had low self esteem

Table 5: Psychiatric Burden Caused by Vitiligo

- **BPRS (Psychiatric burden assessment)**

Score	Mean	SD	Very Mild Ill	Mild Ill	Moderately Ill	Markedly Ill
BRPS	28.47	4.8	20	35	40	5

5% had marked psychiatric burden, 40% had moderate, 35% had mild and 20% had very mild psychiatric illness due to tuberculosis.

Table 6: Effect of Variables on Qol, Self-Esteem and Psychiatric Morbidity

		HRQoL	P-Value	RSES	P-value	BPRS	P-value
Gender	Male	12.20	0.60	15.20	0.40	28.05	0.09
	Female	12.70		14.70		29.73	
Education	Educated	12.16	0.28	16.15	0.20	28.22	0.24
	Uneducated	13.32		15.82		29.56	
Occupation	Student	11.1	0.30	13.11	0.15	28.98	0.24
	Unemployed	11.60		13.98		28.55	
	Employed	12.20		14.12		27.06	
Socio-economic status	Upper	12.06	0.28	11.7	0.20	29.22	0.10
	Upper middle	11.01		11.1		28.90	
	Lower middle	10.0		13.07		28.0	
	Upper Lower	9.10		12.68		27.80	
	Lower	8.00		12.98		26.98	
Family Histo-	Positive	10.06	**0.01**	10.07	**0.02**	30.06	**0.003**

ry	Negative	13.06		13.05		26.13	
Clinical Type	PTB	12.24	0.50	11.09	0.15	27.56	0.10
	EPTB	12.68		11.98		29.01	
Drug Re-sistance	Non	13.06	**0.01**	12.98	**0.001**	25.78	**0.02**
	MDR	10.06		9.0		28.98	
	XDR	8.07		6.7		32.0	

The variables that significantly had a negative effect on QoL, self-esteem and psychiatric morbidity were positive family history of tuberculosis and presence of drug resistance, rest other demographic factors did not significantly affect the psycho-social domains of patient's life.

Discussion

Tuberculosis is a leading cause of death from single infectious agent according to World Health Organization and due its contagious nature it is associated with social stigma, marginalization, psychiatric morbidity like anxiety, depression, low self-esteem and poor quality of life. Demographic data obtained in our study was consistent with other studies. In our study majority of patients were makes which is consistent with WHO report of 56% affected individuals being male.[9]

 Majority of patients were residing in thatched or tiled houses, poor hygiene, inadequate per capita space and water supply, no education or only primary education and one-fourth being unemployed, this was consistent with previous studies that showed low socio-economic status and poor living conditions are a risk factor for tuberculosis.[10, 11] TB eradication programs have focused on treating the infectious agents and symptoms caused by it.[12,13] Patients and care givers had less satisfaction with self, with patients have high guilt. Fear of exclusion or blame for infecting others and being marginalized by family and society may lead to patients feeling guilty, having poor self-esteem, anticipated stigma, poor quality of life and psychiatric illness.[14] In our study we found patients diagnosed with tuberculosis have significantly poor quality of life, low self-esteem and psychiatric illness like depression, anxiety and even suicidal ideation consistent with previous studies.[15,16] Also the patient and disease factors which negatively affected psycho-social burden were positive family history of TB and presence of drug resistance. It was also seen that with adequate treatment and counseling the quality of life and self-worth improved and psychiatric burden was reduced on subsequent visits. Thus, treatment of tuberculosis should not merely be restricted to anti tubercular drug, but proper counseling and patient support is essential to improve the overall outcome.

Conclusion

Treatment should not only target clinical and microbiological cure but instead a holistic approach with counseling and patient support should adopted for better outcome.

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