Factors influencing quality of life in patients with active tuberculosis in Pakistan

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Abstract

Evidently Tuberculosis remains a major threat to public health globally. Latterly academia with exertion dedication has tried to extract the health related quality of life of the people with active tuberculosis. Meager studies in Pakistan have tried to explore the factors that influences patient's health related quality of life besides the disease. The intentions of this study were to scrutinize the factors that influences patient's quality of life with active tuberculosis in Pakistan. By using SF-36, 120 patients of tuberculosis were interviewed at TB hospital Sargodha. Results reveals that female patients are enjoying better quality of life as compared to male and rural patient's quality of life scores are better than urban patients. Multiple regression results show that disease severity, use of drugs and death threat are the factors that negatively affect the patients HRQOL.

Keywords: HRQOL, TB, Pakistan.

1. Introduction

Among all bacterium's "TB bacilli" the microbes that causes Tuberculosis' is still a destructive bacterium across the world affecting more than 2 billion people, equal to one-third of the world's population and one in ten people infected with TB bacilli will become sick with active Tuberculosis in their lifetime. Despite the discovery of the first TB drug over 50 years ago, it continues to be an importunate issue for universal wellbeing. Tuberculosis is an epidemic on the civilization, from ages unknown and has killed many people and has left many indigent. Tuberculosis is a highly patchy infectious disease of humans and some vertebrates that affects particularly the lungs but may widen to others areas (as the kidneys and spinal column) and that is characterized by fever, cough, difficulty in breathing pleural effusion and fibrosis. In the year 2003, World Health Organization, (WHO) confirmed Tuberculosis (TB) as an inauspicious

disease for mankind throughout the world because it is the second common cause of death, annually killing almost two millions people. The vast majority of TB deaths are in the developing world, and more than half of all deaths occur in Asia.

Tuberculosis is a disease of poverty affecting the people found in remote areas with difficult access to health services. Poverty and difficult access to medication makes patient vulnerable to shocks caused by disease and this condition ultimately leads towards death. Universal impacts of TB on humanity had been well recognized and policies and programmes were formulated as well as implemented to secure humanity from these, but its treatment affects on the patient's life has not been well described as treatment period of the disease ranges from months to years. It still carries social stigma due to perceived consequences of infection. TB not only affects the patient's physical health but also social, economical and psychological well-being. Traditional medical ethics focuses on laboratory tests and clinical trails for patient's health status assessment where as other domains of life which were affected due to disease or its treatment are neglected. As discussed above the patient with active TB encounters various problems which are social as well as economic in nature.

Keeping in view these dimensions, TB compel health professionals to make a comprehensive assessment of patient's health and this can be made by measuring the quality of life of the patient because it's too difficult to split the disease form patient's quality of life. According to the (WHO) health is defined as "a state of complete physical, mental and social well-being and not a mere absence of disease or infirmity". Life, as we say, is quality, not quantity.

It is usually believed that diseases leave their impacts on different domains of life like, disturbance in daily activities, psychological quarrel as well as fear, anxiety and social dis-functioning. The measurement of all these domains of life with special reference to any disease is known as Health Related Quality of Life (HRQOL). The need to quantify Health Related Quality of Life now becomes more imperative and significant area of conversation in Public Health Issue, which moves the consideration of researchers from customary indicators such as mortality and morbidity. Some recent studies shows vulnerability of the patients to socio-economic and psychological domains can be studied by measuring

the HRQOL of the patients [1-2-3-4-5-6]. The study seeks to find out health related quality of life in patients with active TB in district Sargodha. The study also highlights the factors that distress the HRQOL of active TB patients. Data was collected from district TB hospital Sargodha and Sf-36 questionnaire is used. 120 indoor and outdoor active TB patients are randomly interviewed.

The study is organized in the following sections. Section 2 includes data collection and methodology used in the study. The results are discussed in section 3 and section 4 concludes the study.

2. Data Sources and Methodology

120 patients of TB are interviewed from Sargodha Division. For this intention Divisional TB hospital of Sargodha is visited and patients were randomly selected. SF-36 questionnaire is used along with data on age, disease severity, gender, education, vaccination, income, region and drug addiction. Age of disease is used as a proxy of disease severity. Multiple regression analysis is performed to explore the factors that affect HRQOL of TB patients. In the following equation dependant variable is health related quality of life instrument (hrqol), while independent variables are gender of the patient (gender), region (region), age of the patient (age), disease severity (disev), use of drugs (druse), log of income (lnincome) and death threat (dethreat).

$$\text{hrqol} = \alpha_0 + \alpha_1 \text{gender} + \alpha_2\ \text{region} + \alpha_3\ \text{age} + \alpha_4 \text{disev} + \alpha_5 \text{druse} + \alpha_6 \text{lnincome} + \alpha_7 \text{deathreat} + u$$

3. Results & Discussions

Socio demographic characteristics of the study shows that 59.2% are males and 40.8% are females and the majority i.e. 57.5% of them belongs to rural areas while 42.5% are from urban sector. Significant number of patients from rural areas enlightens the fact T.B occurs more frequently in poor rural population than urban population. Patients are categorically divided in two forms namely “Indoor and Outdoor”. A person visiting the Physician for checkup is known as outdoor patients while the person admitted in the hospital due to disease severity is said to be indoor patient. 62.5% are out door while 32.5% are indoor patients. Four types of T.B are found during the study namely pulmonary, bones, lungs and throat. The prevalence of Pulmonary T.B is found higher rather than all its other type i.e. 57.5% while

the incidence of Bone T.B is 18.3%. Moreover 23.3% of the patients are bearing the burden of Lungs T.B. a very nominal number of the patients are found who are ling with Throat T.B.80.8% of patients are living in airy houses while only 19.2 are living in the closed houses. Majority of the patients i.e. 78.3% are married and 20% are unmarried while 8% are divorced as well as separated. The high incidence of T.B in the married alarm the concerns about the spreading consequences in the population.65.8% patients are those who ever never attend the school while 12.5% are those who completed their primary level, 10.8% patients completed their middle level, 6.7% completed their matriculation, 2.5% completed their intermediate and 0.8% are those who have completed their bachelors as well as masters level education. Majority of the population i.e. 55.8% never uses the drug while 42.5% of the patients are indulging in smoking and 1.7% is involved in drinking. A very significant number of the patients i.e. 71.7% have open sewage system while 22.5% have underground sewerage system and 5.8% have no sewerage system. Just because of T.B 74.2% of patients feels bodily pain and 76.7% are living under depression. 74.2% of the patients feel death threat due to T.B and 60.8% of the patients enjoy the opportunity of leisure (see table 1).

Domains are scored through collective scaling. Each item has an equal share to the domain score. Scaling is in the direction of the domain, determined by whether the domain is positively or negatively framed. Some domains holds questions which need to be reverse scored and some contains negatively structured constituent questions. HRQOL instrument contains collective share of each domain.

To investigate the range of HRQOL instrument we convert the score of HRQOL instrument in 0-100 ranges. Zero means that patient is living with poorest quality of life along with disease, as he moves towards 100 his quality of life improves.

HRQOL score depicts that TB patients enjoy poor quality of life, where there mean score is below 50%. Domains scores explores the fact that TB patients have some what better score in some domains like energy fatigue, emotional well being, social functioning and pain. Whereas, patients physical health is the at worst condition (see table 2).

Female patients are enjoying better HRQOL as compared to male. In all domains female have better scores except two domains, which are emotional well being and general health. This is might be due to the fact that female are sensitive as compare to male that's why female patients have poor emotional well -being score (see table 3).

Rural patients HRQOL score is better than urban patients, which might be due to the fact that rural areas are full of fresh atmosphere and strong social relations among people. Moreover, the domains scores also explores that rural patients are enjoying better HRQOL (see table 4).

In order to find out the factors that affect the TB patient's quality of life, multiple regression analysis was performed. Results showed that disease severity, use of drugs, death threat decrease the patent's quality of life. The rural patient enjoyed better quality of life than urban patient. Male patient have better quality of life than female patient.

4. Conclusions

The rationale of this study was to measure the quality of life scores of patients with active T.B. It was also in the purposes to dig out the factors that affect the quality of life of patients with active T.B of Sargodha district. Analysis reveals that female patients are enjoying better HRQOL as compared to male and rural patients HRQOL scores are better than urban patients. Disease severity, use of drugs and death threat were the factors that negatively affect the patients HRQOL. The study gives several suggestions on the basis of present analysis. With the advancement of medical technologies the treatment also should focus on those aspects that increase patients HRQOL, like by giving the opportunity of leisure to patients. Financial assistance from government will also help in removing their financial hindrances. Government and concerning authorities should focus on controlling drugs among the people. Death threat and depression may be control by teaching the patients and by giving them cognitive behavioral therapy.

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Table 1: Socio-demographic and medical Characteristics in percentage.

Socio-demographic and medical Characteristics	Percentage
Gender	**100**
Male	59.2
Female	40.8
Region	**100**
Rural	57.5
Urban	42.5
Patient type	**100**
Indoor	37.5
Outdoor	62.5
Type of T.B	**100**
Pulmonary	57.5
Bones	18.3
Lungs	23.3
Throat	0.8
Type of houses	**100**
Airy	80.8
Closed	19.2
Marital status	**100**
Married	78.3
Unmarried	20.0
Divorced	0.8
Separated	0.8
Education	**100**
Never attended school	65.8
Primary level	12.5
Middle level	10.8
Metric level	6.7
Inter level	2.5
Bachelor level	0.8
Masters and above	0.8
Type of drugs	**100**
Smoking	42.5
Drinking	1.7
Use no drugs	55.8
Sewerage system	**100**
Underground	22.5
Open system	71.7
No sewerage system	5.8
Bodily pain	74.2
Depression	76.7
Death threat	74.2
Opportunity of leisure	60.8

Table 2: Health Related Quality of Life Scores.

Health Related Quality of Life Scores				
	N	Minimum	Maximum	Mean
Physical Functioning	120	2.50	50.00	20.47
Limitation due to Physical Health	120	8.33	42.00	10.84
Limitation due to Emotional Problem	120	.00	34.00	12.48
Energy Fatigue	120	.00	93.75	54.80
Emotional well being	120	15.00	95.00	59.98
Social Functioning	120	12.50	98.00	56.16
Pain	120	0.00	98.00	54.97
General Health	120	6.25	93.75	40.41
HRQOL	120	17.66	73.07	39.18

Table 3: Health Related Quality of Life Scores by Gender.

Health Related Quality of Life Scores by Gender								
	N	Minimum	Maximum	Mean	N	Minimum	Maximum	Mean
Physical Functioning	71	2.50	50.00	17.95	49	2.50	45.00	24.13
Limitation due to Physical Health	71	8.33	40.00	10.11	49	8.33	42.00	11.90
Limitation due to Emotional Problem	71	.00	34.00	11.59	49	8.33	34.00	13.78
Energy Fatigue	71	.00	93.75	54.97	49	12.50	93.75	54.55
Emotional well being	71	20.00	95.00	60.80	49	15.00	95.00	58.79
Social Functioning	71	12.50	98.00	55.21	49	25.00	97.00	57.54
Pain	71	.00	98.00	54.02	49	12.50	91.00	56.34
General Health	71	6.25	81.25	40.75	49	6.25	93.75	39.92
HRQOL	71	17.66	73.07	38.88	49	23.13	68.91	39.62

Table 4: Health Related Quality of Life Scores by Region.

Health Related Quality of Life Scores by Region								
	N	Minimum	Maximum	Mean	N	Minimum	Maximum	Mean
Physical Functioning	69	2.50	50.00	21.41	51	2.50	50.00	19.21
Limitation due to Physical Health	69	8.33	42.00	10.60	51	8.33	40.00	11.16
Limitation due to Emotional Problem	69	8.33	34.00	12.45	51	.00	30.00	12.53
Energy Fatigue	69	.00	93.75	55.32	51	12.50	93.75	54.09
Emotional well being	69	15.00	95.00	60.05	51	20.00	95.00	59.88
Social Functioning	69	12.50	87.50	54.38	51	12.50	98.00	58.57
Pain	69	.00	95.00	57.56	51	12.50	98.00	51.47
General Health	69	6.25	81.25	41.21	51	6.25	93.75	39.33
HRQOL	69	22.40	60.00	39.78	51	17.66	73.07	38.38

Table 5: Results of Multiple regression analysis.

Constant	23.26**
Gender Male=1, Female=0	2.36*
Region Urban=1, Rural=0	-1.31*
Age of the patient	-0.06
Disease severity	-1.06
Use of drug Yes=1, No=0	-3.16*
Log of income	3.13*
Death threat Yes=1, No=0	-7.43*
R^2 **SER** **F-Statistics**	0.26 8.33 5.88
**=1% significance level *= 5% significance level	