



Health Related Quality of Life among Tuberculosis Patients

Muhammad Awais Waheed¹, Iqra Rehman¹, Bareera Saeed^{1*} Ruhamah Yousaf¹ and Sonia Aslam¹

¹Department of Health Professional Technologies, Faculty of Allied Health Sciences, the University of Lahore, Lahore, Pakistan.

Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information

DOI: 10.9734/JPRI/2021/v33i42A32407

Editor(s):

(1) Dr. R. Deveswaran, M.S.Ramaiah University of Applied Sciences, India.

Reviewers:

(1) W.A.N. Warnasuriya, National Hospital-Kandy, Sri Lanka.

(2) Ozkan Gorgulu, Kirsehir Ahi Evran University, Turkey.

Complete Peer review History: <https://www.sdiarticle4.com/review-history/73505>

Original Research Article

Received 22 June 2021
Accepted 27 August 2021
Published 28 August 2021

ABSTRACT

Aims: To find out health related quality of life among patients being treated for tuberculosis in the hospital of Lahore, Pakistan.

Study Design: Cross sectional survey is used as research design in this study.

Place and Duration of Study: Farooq Hospital west wood branch Lahore, Gulab Davi Hospital Lahore, Social Security Hospital Lahore between June 2020 and July 2021.

Methodology: Sample (N=150) was drawn through purposive sampling technique from various hospitals of Lahore with age range of 18 – 65 years of 56.7% male and 43.3% female patients of Tuberculosis. Standardized questionnaire (SF-36) was used to determine the health related quality of Life. This questionnaire determines the effect of TB on physical activities, social activities, emotional activities and limitation in routinely work. Data was analyzed through SPSS with descriptive statistic of frequency and percentages.

Results: On the basis of total scores of general health category 53.3% patients considers their health as good when taking antituberculosis medicine. Total scores of Limitations of activities 70.7% patients considers their social activities limited a lot. On the basis of total score of physical health problem category 81.3% considered their physical health were not affected. On the basis of total score of social activities 70.0% patients considered their emotional health problems interfered with normal social activities affected.

*Corresponding author: E-mail: bareerasaeedwarraich@gmail.com, bareera.saeed@dhpt.uol.edu.pk;

Conclusion: It was concluded that limitations of physical activity and compromised psychological status impacted the HRQOL in patient with pulmonary TB. Tuberculosis effect on patient's physical, psychological and social activities of daily routine. Patient become bed bound due dyspnea and unable complete their task to fulfill the needs of life.

Keywords: Tuberculosis; Quality of life; pulmonary rehabilitation; social activities; Health Status; Lahore; Pakistan; Health Relate Quality of Life.

1. INTRODUCTION

Tuberculosis is considered as one of the top reason for mortality and morbidity all around the globe contaminating species. Tuberculosis is an airborne disease brought about by microorganism *Mycobacterium tuberculosis* and in the provisional it is a significant reason for morbidity and mortality, all the more explicitly in non-industrial nations. As per human overview 8.8 million folks created active TB and death rate because of this irresistible illness were 1.6 million [1]. At the point when a patient needed to active tuberculosis, early signs and indications are vague. Indications regularly include exhaustion, weight reduction, anorexia, low grade fever with night sweats. An exemplary part of tuberculosis is because of the absence of hunger and the modified digestion related with the provocative and insusceptible reactions. Squandering includes the deficiency of both fat and slender tissue; the diminished bulk adds to the exhaustion. Finger clubbing, a late indication of oxygen therapy may happen. A hack in the long run creates in many patients. The sputum may likewise be streaked with blood. The aggravated parenchymal changes may cause pleuritic chest torment. Broad infection may prompt dyspnea or orthopnea [2].

The need to quantify health related personal satisfaction as of late got significant. Because of an expanding idea of estimating wellbeing status past conventional markers for example mortality and bleakness. HRQoL estimates the effect of an infection on a patient's day by day exercises, conduct, seen wellbeing and utilitarian state. The SF-36 poll is utilized for endless wellbeing result examines, including tuberculosis [3]. TB is measured a main disease, which harms the daily life events of the patient. The outcome of TB on a patient's well-being is measured crucial because, it can result to deviations in the somatic and rational states of the patient, and can consequently disturb the treatment outcome. Furthermore, even less care is given to HQOL in emerging countries as an predominant aspect, exclusively in TB disease [4].

(TB) is the world's vigorous reason for death because of irresistible sickness. The Domain Health Society (WHO) reports that 64% of an expected 10 million TB cases are identified and salted every year, exit 3.6 million cases with each no consideration by any stretch of the imagination, imperfect consideration for which the nature of administrations is unclear, or satisfactory consideration yet not answered to National TB Programs. In this regard, tuberculosis is considered as one of the diseases that can genuinely subvert quality of life [5,6]. The elements that have been referred to as generally significant in affecting QOL in patients influenced with TB, have been long treatment, multi-drug treatment, harmful responses and symptoms of diseases, adherence to treatment routine, social effects, family changes in way of life, patients' marital status, degree of admittance to medical care administrations; financial status, patients' and their family's information on the ailment therapies just as complexities of tuberculosis. Personal satisfaction observing is the best technique for accomplishing this objective [7]. There have only been a few studies conducted that have focused on the quality of life of tuberculosis patients. There is a paucity of information available on the health-related quality of life of tuberculosis patients in developing countries, particularly Pakistan. TB control and eradication were not achieved in Pakistan despite the introduction of directly observed therapy (DOT) as well as the availability of free medicines. This raises concerns about the effectiveness of TB DOTS in the country. As a result, the purpose of this study is to evaluate health-related quality of life among tuberculosis patients in Pakistan, including general health, limitations of activities, physical health problems, and participation in social activities.

2. LITERATURE REVIEW

Tuberculosis is an airborne irresistible infection brought about by *Mycobacterium tuberculosis* and is a significant reason for morbidity and mortality particularly in creating countries. Tuberculosis is an issue of overall importance.

Among irresistible illnesses, TB is the subsequent important reason for death around the world, demise almost 2 million individuals every year. In Nigeria, tuberculosis is normal; a consensus of 9.2% has been accounted for in one investigation and a case passing pace of 12% in a second. Although useful chemotherapy is accessible, overall tuberculosis (TB) continues a significant public health Problem with indirect 33% of the total populace tainted. In North America, since death because of TB is uncommon, the shirking of grimness and protection of patients 'personal satisfaction has become the objective of TB management. Actuality that tuberculosis in the United States verifiably has been a sickness for the most part of more seasoned age gatherings, it is rapidly turning into an infection of youthful grownups ages particularly among modest number a populaces. This move toward people in the childbearing years has, to a limited extent, added to the expanding pace of youth tuberculosis in this country. In 1991, 1656 instances of tuberculosis were portray in youngsters <15 years old, an increment of 39% more than 1987 and 24% more than 1989. True to form, 59% of cases occur in babies and kids <5 years old, the gathering at most noteworthy danger for illness. Since 1992, TB case rates in the United States have decline, due to some degree to build general wellbeing measures. Notwithstanding, numerous individuals are as yet overripe, with 16,377 cases in 2000, and an expansion on the off chance that rates in distinct subgroups. While all individuals are defenseless to disease with TB, most of cases in the US happen in men, minorities, and the socially disadvantaged [8]. Bacteria which are present in mucociliary system and reach the alveoli are quickly enclosed and engulfed by alveolar macrophages, which result in the buildup and activation of T lymphocytes and macrophages [9].

2.1 Effect of Tuberculosis on Patient Health

TB patients frequently experience negative effects on their physical, social, and psychological well-being as a result of their illness. Tuberculosis is a disease that affects the most creative age group as well as malnourished individuals. Despite the fact that some studies have attempted to quantify the economic cost of tuberculosis, little has been written about the differences in the disease's impact on men and on women. Researchers have noted that, in developed countries, men die at a younger age

than women, but women report being in worse health than men. Women are increasingly being reported to be receiving inadequate health care, according to recent reports. Women use qualified health facilities at a lower rate than men, which is likely due to the fact that women do not distinguish their own needs or find it difficult to overcome social and cultural barriers in the process of seeking health care. In addition, women in developing countries frequently have a lower socio-economic status and summary access to economic resources, as well as a lower level of education and less evidence, than men in similar conditions [10].

2.2 Pulmonary Rehabilitation

A multidisciplinary and comprehensive intervention for patients with chronic lung complaints who are symptomatic and have some functional limitations, pulmonary rehabilitation is a research-based, multidisciplinary and comprehensive intervention. When systemic manifestations of the disease are stabilized or retreated, the goal of pulmonary rehabilitation is to reduce symptoms, optimize functional state, increase contribution, and reduce health-care costs.

2.3 Important of Pulmonary Rehabilitation

The authors of the Appraisal undertook the one of a kind version of this Cochrane review in 2001 in response to the widespread acceptance of pulmonary rehabilitation as an integral part of the management of tuberculosis and the lack of clear evidence regarding the impact of these programmes on HRQOL and the ability to exercise broad-mindedness. According to the authors of the review, which included 23 randomised controlled trials, pulmonary rehabilitation (exercise training for at least four weeks with or without education and/or psychological support) resulted in a statistically significant improvement in HRQOL and an uncertain improvement in exercise capacity. They also concluded that pulmonary rehabilitation was associated with a statistically significant improvement in HRQOL and an uncertain improvement in exercise capacity.

2.4 Effect of Pulmonary Rehabilitation Pulmonary TB

Pulmonary Rehabilitation is now considered a main component of TB treatment, particularly in the long-term management of the disease.

Multiple randomized controlled studies have confirmed the effectiveness of pulmonary rehabilitation in improving exercise tolerance and shortness of breath in these patients, A significant improvement was observed in all TB patients [11].

3. MATERIALS AND METHODS

This research was conducted in University of Lahore. It is an observational cross sectional study. The data was collected from Farooq hospital west wood branch Lahore. Duration of study was between June 2020 and July 2021. Non probability (convenient) sampling technique was used. Sample size was 150 patients. Inclusion Criteria: Patient aged 18-65 years of both gender. The mean age of TB patient was 45.3067 and standard deviation was 17.46596. There were 85 male which were 56.6% of total population and there are 65 female participants which were 43.3% of population. Patient having active and inactive tuberculosis taking antituberculosis treatment. Patients diagnosed with extra-pulmonary tuberculosis. Patient with any associated pulmonary disease were excluded. A standardize questionnaire SF-36 was used to measure the health related quality of life of patients treated for tuberculosis and to investigate the health impact of tuberculosis. Which will slightly modified objectives according to study. The value of Cronbach's alpha of SF36 questionnaire is greater than 0.85 [12]. Data was analyzed through SPSS. Descriptive statistic was used. Frequency and percentages were presented in table.

4. RESULTS AND DISCUSSION

Table 1 shows that on the basis of total scores of general health category 53.3% patients considers their health as good due to taking antituberculosis medicine while only 2% patients still consider their health as poor not to take medicine properly. On the basis of total scores of Limitations of activities 70.7% patients considers their health fall in yes limited a lot category while only 29.3% patients still consider their health as no limited at all. On the basis of total scores of physical health problem category 81.3% patients considers their health as no while only 18.7% patients still consider their health as yes. On the basis of total scores of emotional health problem category. 81.3% patients considers their health as no while only 18.7% patients still consider their health as No.

Out of 150 patients, 19 patients (12.7%) were not at all, 105 patients (70.0%) were slightly, 16 patients (10.7% were moderately, 5 patients (3.3%) were severe and 5 patients (3.3%) were extremely suffering from physical health interference with social activities. Out of 150 patient, 5 Patients (3.3%) were none, 95 patients (63.3%) were very mild, 28 patients (18.7%) were mild, 18 patients (12.0%) were moderate, 4 patients (2.7%) were severe, who felt bodily pain during last four weeks. on the basis of total scores of energy and emotions problem category 18.7 % patients considers their health as most time depressed and anxious while only 12.7% patients still consider their health emotions depressed and anxious as all of the time. Out of 150 patients, 8 patients (5.3%) were most of time, 53 patients (35.3%) were some of time, and 87 patients (58.0%) were little a time had physical health interference with social activities. on the basis of total scores of general health category 44.0% patients considers their health as mostly false while only 4.0% patients still consider their health as definitely false.

The result of current study shows that the tuberculosis patients consider their general health category, 53.3% majority of patients considers their health as good. The previous study done by Sartika in 2019 which shows large number of participants felt dissatisfied with their general health [13]. The result of current study shows that the tuberculosis patients in limitations of activities shows 70.7% patients considers their health as yes limited a lot. While the previous study done by TanjaKastien-Hilka in 2017 which shows the similar result as in my study the limitation of activities yes limited a lot [14].

The result of current study shows that the tuberculosis patients consider their physical health problem category, 81.3% majority of patients considers their health compromised. The previous study done by T Kienene in 2017 the results of this study are the similar. The result of current study shows that the tuberculosis patients consider their emotional health problem category 81.3% majority of patients considers their health as affected. The previous study done by APC Dos Santos in 2017 which shows similar results [15].

The result of current study shows that the tuberculosis patients consider their Energy and

Emotion problem category 18.7 % majority patients consider general health category 44.0% patients considers their health not good as most majority patients considers their health is mostly of the time. The previous study done by AN affected all the time. The previous studies done by Aggarwal in 2016 are the similar results. The B Rosenkranz in 2018 which shows the similar result of current study shows that the tuberculosis results [16].

Table 1. Health related quality of life among tuberculosis patients (N=150)

Questionnaire Categories	Questions	Responses	Frequency (f)	Percent (%)
1	Total Scores of General Health category	Poor	3	2.0
		Fair	6	4.0
		Good	80	53.3
		Very good	42	28.0
		Excellent	19	12.7
2	Limitations of activities	Yes limited a lot	106	70.7
		Not limited at all	44	29.3
3	Physical health problem category	Yes	28	18.7
		No	122	81.3
4	Emotional health problem category	Yes	28	18.7
		No	122	81.3
5	Social Activities	Not at all	19	12.7
		Slightly	105	70.0
		Moderately	16	10.7
		Severe	5	3.3
		Very Severe	5	3.3
6	Pain	None	5	3.3
		Very mild	95	63.3
		Mild	28	18.7
		Moderate	18	12.0
		Severe	4	2.7
7	Total score of energy and emotions category	None of time	24	16.0
		A little bit of time	24	16.0
		Some of the time	28	18.7
		A good bit of the time	26	17.3
		Most of the time	28	18.7
8	Emotional problems interfered with your normal social activities	All of the time	19	12.7
		Not at all	19	12.7
		Slightly	106	70.0
		Moderately	16	10.7
		Severe	5	3.3
9	General Health	Very severe	6	3.3
		Definitely false	6	4.0
		Mostly false	66	44.0
		Don't know	35	23.3
		Mostly true	22	14.7
		Definitely true	21	14.0

The result of current study shows that the tuberculosis patients consider their social activities (70.0%) were slightly affected. The previous study done by A Javaid in 2016 the results of this study show the similar as in this study tuberculosis patients slightly slightly affected by tuberculosis and feel dyspnea due to tuberculosis and cannot continue their social life activities [17].

The result of current study shows that the tuberculosis patients were feel mild pain due to tuberculosis in their daily life. The previous study which is done by M Sharma in 2017 show the results are similar as shown in this study. In their daily life activity tuberculosis patients feel mild generalized body pain and chest pain due to disease [18].

The result of current study shows that the tuberculosis patients consider their energy and emotions problem category 18.7 % patients considers their health as most time well. The previous study which is done by M Mabaso in 2016 shows the different result as in this study due to the drug resistant. In current study patient taking medicine regular basis which shows the result that patient feeling batter then when he was not taking medicine [19].

The result of current study shows that the tuberculosis patients consider their general health category 44.0% patients considers their health as mostly better because the patients taking medicine at time on daily basis. The previous study which is done by B Ibrahim in 2019 shows the similar results as in this study because the patients in the previous study were taking medicine at time and the body respond on medicine were very good and patients daily life activity were good [20].

5. CONCLUSION

It was concluded that physical activity limitations and compromised psychological status impacted the HRQL in patient with pulmonary TB. Tuberculosis impact on patient's physical, emotional, social activities of daily routine. Patient become bed bound due to shortness of breath and unable complete their task to fulfill the needs of life.

CONSENT AND ETHICAL APPROVAL

As per international standard or university standard guideline Patient's consent and ethical

approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

REFERENCES

1. Atif M, Sulaiman SAS, Shafie AA, Asif M, Sarfraz MK, Low HC. Impact of tuberculosis treatment on health-related quality of life of pulmonary tuberculosis patients: a follow-up study. *Health and quality of life outcomes*. 2014;12(1):1-11.
2. Ahmad N, Javaid A, Syed Sulaiman SA, Basit A, Afridi AK, Jaber AAS, et al. Effects of multidrug resistant tuberculosis treatment on patients' health related quality of life: results from a follow up study. *PLoS one*. 2016;11(7):e0159560.
3. Jaber AAS, Khan AH, Syed Sulaiman SA, Ahmad N, Anaam MS. Evaluation of health-related quality of life among tuberculosis patients in two cities in Yemen. *PLoS one*. 2016;11(6):e0156258.
4. Peddireddy V. Quality of life, psychological interventions and treatment outcome in tuberculosis patients: the indian scenario. *Frontiers in psychology*. 2016;7:1664.
5. Laxmeshwar C, Stewart A, Dalal A, Kumar A, Kalaiselvi S, Das M, et al. Beyond 'cure'and 'treatment success': quality of life of patients with multidrug-resistant tuberculosis. *The International Journal of Tuberculosis and Lung Disease*. 2019;23(1):73-81.
6. Kastien-Hilka T, Rosenkranz B, Sinanovic E, Bennett B, Schwenkglenks M. Health-related quality of life in South African patients with pulmonary tuberculosis. *PLoS one*. 2017;12(4):e0174605.
7. Gong Y, Yan S, Qiu L, Zhang S, Lu Z, Tong Y, et al. Prevalence of depressive symptoms and related risk factors among patients with tuberculosis in China: a multistage cross-sectional study. *The American journal of tropical medicine and hygiene*. 2018;98(6):1624-8.
8. Zarova C, Chiharidzo M, Tadyanemhandu C, Machando D, Dambi JM. The impact of social support on the health-related quality of life of adult patients with tuberculosis in Harare, Zimbabwe: a cross-sectional survey. *BMC research notes*. 2018;11(1):1-7.

9. Malik M, Nasir R, Hussain A. Health related quality of life among TB patients: question mark on performance of TB DOTS in Pakistan. *Journal of tropical medicine*. 2018;2018.
10. Saleem S, Malik AA, Ghulam A, Ahmed J, Hussain H. Health-related quality of life among pulmonary tuberculosis patients in Pakistan. *Quality of Life Research*. 2018;27(12):3137-43.
11. Dujaili JA, Sulaiman SAS, Hassali MA, Awaisu A, Blebil AQ, Bredle JM. Health-related quality of life as a predictor of tuberculosis treatment outcomes in Iraq. *International Journal of Infectious Diseases*. 2015;31:4-8.
12. Bunevicius A. Reliability and validity of the SF-36 Health Survey Questionnaire in patients with brain tumors: a cross-sectional study. *Health and quality of life outcomes*. 2017;15(1):1-7.
13. Sartika I, Insani WN, Abdulah R. Assessment of health-related quality of life among tuberculosis patients in a public primary care facility in Indonesia. *Journal of global infectious diseases*. 2019;11(3):102.
14. Li CT, Chu KH, Reiher B, Kienene T, Chien LY. Evaluation of health-related quality of life in patients with tuberculosis who completed treatment in Kiribati. *Journal of international medical research*. 2017;45(2):610-20.
15. Louw JS, Mabaso M, Peltzer K. Change in health-related quality of life among pulmonary tuberculosis patients at primary health care settings in South Africa: a prospective cohort study. *PloS one*. 2016;11(5):e0151892.
16. Jaber AAS, Ibrahim B. Health-related quality of life of patients with multidrug-resistant tuberculosis in Yemen: prospective study. *Health and quality of life outcomes*. 2019;17(1):1-14.
17. Alene KA, Clements AC, McBryde ES, Jaramillo E, Lönnroth K, Shaweno D, et al. Mental health disorders, social stressors, and health-related quality of life in patients with multidrug-resistant tuberculosis: A systematic review and meta-analysis. *Journal of Infection*. 2018;77(5):357-67.
18. Sineke T, Evans D, Schnippel K, van Aswegen H, Berhanu R, Musakwa N, et al. The impact of adverse events on health-related quality of life among patients receiving treatment for drug-resistant tuberculosis in Johannesburg, South Africa. *Health and quality of life outcomes*. 2019;17(1):1-15.
19. Hanekom S, Pharaoh H, Irusen E, Daniels KJ. Post-tuberculosis health-related quality of life, lung function and exercise capacity in a cured pulmonary tuberculosis population in the Breede Valley District, South Africa. *South African Journal of Physiotherapy*. 2019;75(1):1-8.
20. Aggarwal AN. Quality of life with tuberculosis. *Journal of clinical tuberculosis and other mycobacterial diseases*. 2019;17:100121.

© 2021 Waheed et al.; This is an Open Access article distributed under the terms of the Creative Commons Attribution License (<http://creativecommons.org/licenses/by/4.0>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Peer-review history:

The peer review history for this paper can be accessed here:
<https://www.sdiarticle4.com/review-history/73505>