

Quality of Life of Patients with Tuberculosis a Case Control Study

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ABSTRACT

Aim: To know quality of life of tuberculosis patients as compare controls.

Methods: A case control study of total 268 subjects was conducted at Gulab Devi Chest hospital and Medical unit-IV services hospital Lahore. A total of 134 patients (cases) with tuberculosis and 134 (controls) without tuberculosis [attendants or drivers] were included in the study. Patients who had known respiratory co-morbidity other than TB or any known and diagnosed chronic illness, which may affect QoL, were excluded from the study. Controls were selected from general population after matching for age, gender and socio-economic status (was assessed only subjectively). All cases and controls were interviewed using a pre-tested questionnaire (adopted from SF-36) regarding socio-demographic data, perception about QoL. Four domains such as: physical health, psychological health, social relationships and environment were focused.

Results: Out of total 134 patients (cases) with TB, 50.7% were males and 49.3% were females. Majority of the patients i.e. 79.1% were married and 67.8% of the patients were illiterate. The socio-demographic profile of the controls was comparable to that of the cases with significant differences ($p < 0.05$). TB patients had significantly lower mean scores than the controls for overall QoL and its domains. The mean difference in scores for the cases and the controls was highly significant for all the domains. Over all scores for controls and cases were 15.33 ± 2.50 ($p\text{-value} \leq 0.001$) & 24.49 ± 1.73 ($p\text{-value} \leq 0.001$) for physical, 15.83 ± 3.07 ($p\text{-value} \leq 0.001$) & 26.01 ± 1.87 ($p\text{-value} \leq 0.001$) for psychological and 2.72 ± 1.19 ($p\text{-value} \leq 0.001$) & 3.13 ± 0.90 ($p\text{-value} \leq 0.001$) for social relationship.

Conclusion: There has been relatively little research on TB QOL and even less in developing countries. A better understanding may help to improve treatment regimens, adherence to treatment, functioning and psychological well-being of people with TB.

Keywords: Tuberculosis, Morbidity, Quality of life, Public health issue

INTRODUCTION

Tuberculosis (TB) is a chronic infectious multisystemic disease caused by mycobacterium tuberculosis.¹ Being a major public health problem globally² it is considered as one of the leading causes of mortality worldwide.³ The World Health Organization (WHO) has estimated that 2 billion people, almost a third of the world's population, have latent TB⁴. Every year about eight million people develop this disease, and some three million die of it, over 95% of these from developing countries⁵. Pakistan ranks 8th amongst the countries with highest burden of TB in the world and contributes about 44%

of tuberculosis burden in the Eastern Mediterranean Region⁶.

With the development of effective treatment strategies, the focus of TB management has shifted from prevention of mortality to the avoidance of morbidity. Its treatment which significantly affects on the patient's life has not been well described, as treatment period of the disease ranges from months to years. But it still carries social stigma due to perceived consequences of infection.⁷ There are numerous aspects of active TB that may lead to a reduction in quality of life (QoL). QoL is defined as a person's perception of his/her physical and mental health and covers broad domains including physical, psychological, economic, spiritual and social well being⁸. TB not only affects the patient's physical health but also social, economical and psychological well-being⁹. As such, there is increased interest in the quality of life (QoL) experienced by individuals being treated for TB¹⁰. Meager studies have been carried out to focus on quality of life of TB patients so this study will provide greater scientific evidence to identify and improve QoL of TB patients. The objective of this study was to know quality of life of tuberculosis patients as compare controls.

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MATERIALS AND METHODS

This was a case control study of total 268 subjects (134 cases and 134 controls) at Gulab Devi Chest hospital and Medical unit-IV services hospital. Data was collected in 3 months. 134 patients (cases) with tuberculosis were included in the study. Patients who had known respiratory co-morbidity other than TB or any known and diagnosed chronic illness, which may affect QoL, were excluded from the study. Controls were selected from general population after matching for age, gender and socio-economic status. After taking verbal consent a total of 134 cases who met the inclusion criteria were interviewed by researcher himself using direct personal investigation. Social functioning -36 (SF-36) pre-tested questionnaire was used regarding socio-demographic data, perception about his/her QoL. Four domains viz: physical health, psychological health, social relationships and environment were focused. Patients were also inquired about any history of contact with TB patients. Likewise data were also collected from the control group.

Data were entered and analyzed using SPSS software version 20. Qualitative data is presented in form of f(%) and quantitative data was presented in form of mean±S.D. The overall QoL was assessed using specific questions. The mean scores for different domains were used in the analysis. Chi-square test / Fisher's exact test was applied to compare qualitative data. For comparison between mean scores of both groups, independent sample *t*-test / Mann Whitney U test was used. *p*-value ≤ 0.05 was considered as significant.

RESULTS

Table 1: Sociodemographic characteristics

	Control	Case	P value
Male	68 (50.74%)	68 (50.74%)	1.00
Female	66 (49.25%)	66 (49.25%)	
Employed	101 (75.37%)	36 (26.87%)	≤ 0.001
Unemployed	33 (24.63%)	98 (73.13%)	
Married	63 (47.01%)	106 (79.10%)	≤ 0.001
Unmarried	70 (55.24%)	26 (19.40%)	
Divorced	01(0.74%)	01 (0.74%)	
Widow	00(0%)	01 (0.74%)	
Illiterate	00(0%)	91 (67.91%)	≤ 0.001
Primary	00(0%)	22 (16.41%)	
Secondary	06 (4.48%)	21 (15.67%)	
Higher	128 (95.52%)	00 (0%)	
Early contact with TB patient			
Yes	11 (8.21%)	131 (97.76%)	≤ 0.001
No	123 (91.79%)	03 (2.24%)	
Living in the same house as T.B patient			
Yes	11 (8.21%)	116 (86.57%)	≤ 0.001
No	123 (91.79%)	18 (13.43%)	

Table 2: Clinical findings

	Control	Case	P value
Weight loss			
No	134(100%)	00(0%)	≤0.001
Yes	00(0%)	134(100%)	
Weakness			
Yes	134(100%)	00(0%)	≤ 0.001
No	00 (0%)	134(100%)	
Hepatitis			
No	134(100%)	124(92.53%)	0.001
Yes	00 (0%)	10(7.46%)	
Loss of appetite			
No	134(100%)	93(69.40%)	≤ 0.001
Yes	00 (0%)	41(30.60%)	

Table 3: Quality of life (qol) scores

	Control	Case	p-value
Age	27.98±6.71	38.90±15.44	≤ 0.001
BMI	23.20±4.76	20.05±4.58	≤ 0.001
Physical health	15.33±2.50	24.49±1.73	≤ 0.001
Psychological health	15.83±3.07	26.01± 1.87	≤ 0.001
Social Relationship	2.72±1.19	3.13±0.90	≤ 0.001
Environmental relationship	0.00±0.00	2.00± 0.00	≤ 0.001

DISCUSSIONS

The study has revealed that TB has a large impact on affected individuals' QoL through issues related to its diagnosis, treatment, social support and functioning, and health behavior. Specifically, we found that the domains of QoL that were affected by TB included those that are typically affected by most illnesses such as physical functioning, psychological, social relationship and environmental well-being. Majority of our patients i.e. 79% were married, 19.4% were unmarried while 0.7% were divorced. The high incidence of T.B in the married alarm the concerns about the spreading consequences in the population these findings are consistent with the findings of Masood et al⁹ 67.9% of cases had never attended the school i.e., in terms they were supposed to be illiterate, a high prevalence of disease among illiterate might be due to low level of awareness regarding the preventive aspects of disease. Regarding clinical findings viz weight loss, weakness/fatigue, loss of appetite there exist significant differences between cases and control i.e., these findings are more prevalent in T.B patients. In socio-demographic characteristics early contact with T.B patients was found statistically significant. Similarly living in the same house as that of T.B patient was also found significant. These findings compelled to think that there is some association between disease spread related to its exposure/contact. So one should avoid or be cautious when living in an environment where T.B prevails or there is an exposure to the diseased

subject. However, TB patients' social functioning can be affected through isolation, variable social support by family and friends, and the ability to continue with social and leisure activities.

TB patients had significantly lower mean scores than the controls for overall QoL and its domains. The mean difference in scores for the cases and the controls was highly significant for all the domains. These results are coherent with the previous literature^{11,12,13} in their respective aspects.

The overall results suggest that TB disease has a negative and encompassing impact on active TB patients' self-perceived health status in physical, psychological, and social aspects. Overall, the anti-TB treatment showed positive effect on improving patients' health related quality of life (HRQL). It appeared that physical health seemed to be more affected by the disease but improved more quickly after the treatment, while the impairment on mental well-being tended to persist for a longer term.¹¹ However, even after the active TB patients successfully completed the treatment and were considered microbiologically 'cured', their HRQL remained poor as compared to the general population^{11,14,15}.

CONCLUSION

Tuberculosis control requires not only case finding and treatment, but understanding the contributing factors of social conditions. To manage the increasing burden of TB in the country it is essential to implement the NTD program. Such studies should be conducted to make people more aware of this problem regarding its control and prevention and ensuring a better quality of life in such patients.

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