Research Article

Health Related Quality of Life, Anxiety and Depression among Tuberculosis Patients in Kathmandu, Nepal

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ABSTRACT

Background and Objectives: Tuberculosis remains one of the major public health problems in Nepal. This study was carried out to assess the Health related Quality of life and Anxiety- Depression level of Tuberculosis patients in Kathmandu.

Material and Methods: A cross-sectional study was conducted at Urban Direct Observation Treatment Short Course center using 150 study populations. Questionnaires containing socio-demographic characteristics, Self Reporting Questionnaire, Short Forms Health Survey, Hamilton Anxiety Rating Scale, and Hamilton Depression Rating Scale. SPSS 20, SF-36 Scoring Software were used for data management.

Results: Majority of respondents (57.3%) were male, age group of 21-25 years. Majority of respondents suffered from Extra Pulmonary Tuberculosis, gland TB was in higher prevalence (31.3%). Most of the respondents found to poor HRQoL score where only 1.4% female and 1.7% male's had above average HRQoL. There was no correlation between anxiety, depression, Mental Component Summary and Physical Component Summary score in pulmonary Tuberculosis patients unlike Extra pulmonary Tuberculosis patients, where there was strong correlation between anxiety and depression (r=0.721, p=0.000). There was negative correlation between PCS and MCS (r= -0.232, p= 0.037). There was no association between gender and PCS score on both types of TB patients. At majority of domain of HRQoL male had higher score than female.

Conclusion: Co-morbidities of anxiety and depression in tuberculosis patients impact on health-related quality of life.

Key Words: Anxiety; Depression; Health Related Quality of Life

INTRODUCTION

Tuberculosis a chronic infectious disease and is one of the leading causes of coherent mortality in globe. Approximately one third of world population are infected from tuberculosis, low socio economy nations of globe contribute a highest account [1]. Quality of Life (QoL) relatively the new

concept to health measurement. QoL measure the health apart from the clinical and functional measurement. Clinical as well as radiological and other investigation cannot quantify the impairment of QoL in TB patient.

Therefore, for the comprehensive assessment of patient under TB, certain questions need to be asked in term of patient's perceptions on physical functioning (PF), role limitations due to physical health, role limitations due to emotional problems, energy/fatigue, emotional well-being, social functioning (SF), pain and general health. This parameter gives the Health Related Quality of Life (HRQoL) score and scoring in tuberculosis. Therefore, this study was carried out to assess the Health related Quality of life and Anxiety-Depression level of Tuberculosis patients in Kathmandu.

MATERIAL AND METHODS

A cross-sectional study was conducted at Urban Direct Observation Treatment Short Course (DOTS) center using 150 study populations during July to December 2013, in eight urban DOTS facility of urban health clinic of Kathmandu Metropolitan City, one urban health center of Kirtipur municipality, two health posts of urban location in Lalitpur. Questionnaires containing socio-demographic characteristics, Self-Reporting Questionnaire (SRQ-20) was developed by WHO as an instrument designed to screen for psychiatric disturbances in developing countries. The SRQ consists of 20 yes and no questions were an interview-administered questionnaire [3].

Following tools were used for data management; Short Forms Health Survey (SF-36v2) [4], Hamilton Anxiety Rating Scale (HAM-A) [5], Hamilton Depression Rating Scale (HAM-D) [6], SPSS 20 and SF-36 Scoring Software.

SF-36v2 has its own data entry and scoring software the registered version was used for processing analysis of SF-36v2 data whereas other data were entered in the Epi -Info 7, and transferred to SPSS 20 for the analysis.

Three tools are internationally recognized and widely used standard tools. Semi structured questionnaire was pretested in 10% of total sample and necessary modification was done. During analysis for reliability test Cronbach's Alpha was calculated on SPSS 20 for HAM-A, obtained value was 0.832 (17 items). HAM-D Cronbach's Alpha value was 0.748 (14 items) and SF-36v2 scale Cronbach's Alpha value was 0.752 (36 items) which are highly reliable.

RESULTS

Total 150 respondents who had been regularly taking DOTS form UDOTS of Kathmandu valley were interviewed. Among them 64 (42.7%) female and 86 (57.3%) were male. According to respondents occupations 38 (25.3%) were students, office worker and labor each were 34 (22.7%), followed by 24 (16.0%) household worker, 13 (8.7%) hotel worker and 7 (4.7%) agriculture worker.

Table 1: Sex distribution of respondents according to type of TB

S.No	Types of Tuberculosis	Female		Male	
		(n)	(%)	(n)	(%)
1.	Pulmonary	30	46.8	39	45.3
2.	Extra pulmonary (Gland)	19	29.7	28	32.6
3.	Extra pulmonary (Others)	12	18.8	18	20.9
4.	MDR	3	4.7	1	1.2
	Total	**64**	**100**	**86**	**100**

In this study patients suffered from PTB, EPTB (Gland), MDR TB and EPTB other than gland TB were categorized, in both male and female the PTB was highest and followed by EPTB (Gland) (Table 1).

In relation to HRQoL of Tuberculosis patients, (both sex); Physical Component Summary (PCS) score was just above the average (i.e 51.41, 51.79) whereas Mental Component Summary (MCS) was below the average score (i.e 46.01, 46.66). At majority of domains of HRQoL, males had better score than females. The Role of emotion (RE) domain was highest than other domains followed by PF (Figure 1).
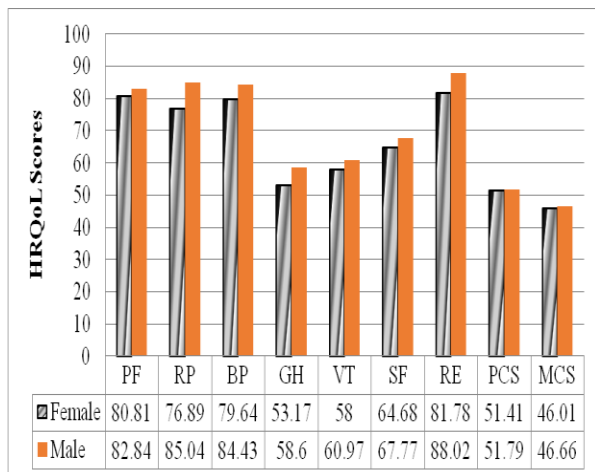

Figure 1: Domains of HRQoL results

Anxiety level rated with the HAM-A scale showed that most of the respondents had normal score and not needed immediate treatment but should be followed up. Mild and Moderate anxiety was reported on less number of respondents 6 (4%) who needed appropriate treatments (Table 2).

Table 2: Anxiety classification according to HAM-A

S. No	Anxiety	Frequency	Percent
1.	Normal	144	96.0
2.	Mild Anxiety	2	1.0
3.	Moderate Anxiety	4	3.0
	Total	150	100.0

Likewise there were 123 (82%) respondents had normal score in HAM-D, who did not need medical attention, whereas very few respondents were suffered from mild depression (i.e 11%), moderate depression 6 (4%), severe depression 3 (2%) and only 2 (1%) were in very severe level. Except normal score, all other level of depression required medical attention (Table 3).

Table 3: Depression classification according HAM-D

S. No	Depression	Frequency	Percent
1.	Normal	123	82.0
2.	Mild Depression	16	11.0
3.	Moderate Depression	6	4.0
4.	Severe Depression	3	2.0
5.	Very Severe Depression	2	1.0
	Total	150	100.0

From this study there was not significant association and relationship found in gender and HRQoL, TB, anxiety, depression applying Chi square Tests as shown in Table 4. Negative correlation was seen between MCS and PCS components of HRQoL (r=-0.199), (p=0.015) as shown in Table 5. There was strong positive correlation between anxiety and depression (r=0.721, p=0.000) and There was weak negative correlation between PCS and MCS (r= -0.232, p= 0.037) as shown in table 6.

DISCUSSION

In this study majority of the respondents were male. National Tuberculosis Program Nepal 2011 reported also had 69% male [7]. Majority of respondent were educated up to grade ten or higher. Office worker and labor higher followed students. Very few were

agriculture workers. Study of TB research center Indian Council Resource showed that demographic variables are dependent on associated in TB patients, and suggest significant association between economic and social wellbeing [8]. But in this study, majority of respondents were students who

were economically and socially sound.
SF 36 was most commonly used tool for QoL study. Over all anti-TB treatment had a positive betterment of patient's QoL where physical health recovery became more quickly than the mental well being. Although after the completion of treatment with anti-

Table 4: Chi square Tests gender and HRQoL, TB, anxiety, depression

S.No	Pearson Chi-Square	Chi-Square Value	P value	OR for Gender (F / M)	Upper	Lower
1.	Gender * PCS	0.053	.817	1.082	.556	2.105
2.	Gender * MCS	0.034	.854	.937	.469	1.873
3.	Gender * Anxiety	0.193	.661	1.329	.372	4.749
4.	Gender * Depression	0.137	.711	.735	.143	3.766

Table 5: Correlation results Tuberculosis, Anxiety, Depression, PCS and MCS

S. No			TB	Anxiety	Depression	PCS	MCS
1.	Tuberculosis	Pearson Correlation	1				
		Sig. (2-tailed)					
		N	150				
2.	Anxiety	Pearson Correlation	.157				
		Sig. (2-tailed)	.055				
		N	150				
3.	Depression	Pearson Correlation	.052	.465**			
		Sig. (2-tailed)	.528	.000			
		N	150	150	150		
4.	PCS	Pearson Correlation	-.061	-.043	.020		
		Sig. (2-tailed)	.457	.600	.812		
		N	150	150	150		
5.	MCS	Pearson Correlation	-.055	-.029	.079	-.199*	1
		Sig. (2-tailed)	.503	.729	.338	.015	
		N	150	150	150	150	150

Table 6: Correlations results Anxiety, Depression, PCS and MCS

S.No	Correlations		Anxiety	Depression	PCS	MCS
1.	Anxiety	Pearson Correlation	1			
		Sig. (2-tailed)				
		N	81			
2.	Depression	Pearson Correlation	**.721****	1		
		Sig. (2-tailed)	**.000**			
		N	**81**	81		
3.	PCS	Pearson Correlation	-.114	-.074	1	
		Sig. (2-tailed)	.313	.513		
		N	81	81	81	
4.	MCS	Pearson Correlation	.078	-.005	**-.232***	1
		Sig. (2-tailed)	.488	.964	**.037**	
		N	81	81	**81**	81
	**. Correlation is significant at the 0.01 level (2-tailed).					
	*. Correlation is significant at the 0.05 level (2-tailed).					

TB and microbiologically cured the QoL still remain worse significantly compared to general population [8]. According to SFv2-36 scoring manual suggest 50 is the average score, where above 50 is better health and below 50 is worse health in respective domain. This result shows overall QoL is poor in all types TB patients. In this study PCS and MCS scale was not good. Where PCS was just above average scale and MCS was below average. Study of Uganda shows older men had lower HRQoL score where as women had higher HRQoL as similar to this study [9]. The health-related quality of life (HRQoL) of Tuberculosis (TB) patients of Yemen was similar to this study, HRQoL of measurement by SF-36 of 197 found that the mean PCS and MCS scores at the early treatment were low this is the poor health condition [10].

On HAM-A, though majority of respondents 144 (96%) were within normal level which had not clinical attention but need to follow up whereas 6 (4%) needed clinical attention/treatment. Likewise, on HAM-D, depression was on normal level in majority of respondents, which need not clinical attention but need to follow up where 18% required clinical attention. Majority of respondents diagnosed EPTB were belonging to anxiety than PTB. Depression was found as like to anxiety same on higher on EPTB diagnosed respondents. Study conducted in University College Hospital Ibadan center Nigeria showed higher prevalence of depression than this findings i. e 45.5% among TB patients [11]. A study done in Pakistan District TB Control Office and TB Centre study shows higher prevalence (72%) out of 47 of 65 patients diagnose severe/moderate level of anxiety and depression using Hospital Anxiety and Depression Scale (HADS) alike in our study[12]. Study in India shows prevalence of

depression and anxiety in patients suffering from tuberculosis was out of hundred cases, seventy cases found the psychiatric symptoms further quantification of the psychiatry symptoms by Beck Depression Inventory (BDI-II) and Hamilton Anxiety rating scale thirty five cases suffered from depression and thirty nine suffered from anxiety. In this study we conclude that majority of the patients exhibit the co morbidity of anxiety and depression [13]. TB patients had psychiatric co morbidity of anxiety and depression. Similarly, in this study, all patients have anxiety and depression co morbidity but very few needed clinical attention.

CONCLUSION

Any literatures on tuberculosis have not been yet published on HRQoL and anxiety depression in Nepalese population. This study highlights the poor HRQol and co-morbidity of anxiety and depression in patients suffered from TB. This study reveals most of the respondents were rating normal anxiety and depression not necessary of medical treatment but needed continued follow up. All respondents in this study were diagnosing psychotic co-morbidity. Similarly HRQoL shows MCS score in below average in majority of respondents. Over all conclusion of this study was poor HRQoL although very few patients need immediate medical attention on treating anxiety and depression.

collection and other administrative procedure.

AUTHOR'S CONTRIBUTION

JD- Study concept and design, data analysis, interpretation and manuscript preparation; **ND-** Anxiety and depression measuring and quantifying tools efficiently using techniques; Manuscript critically revised; **SPL-** Study concept and design, critically reviewed and revised manuscript, final manuscript approved**.**

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REFERENCES

1. WHO. Global tuberculosis report 2013.
2. Pachi A, Bratis D, Moussas G, Tselebis A. Psychiatric morbidity and other factors affecting treatment adherence in pulmonary tuberculosis patients. Tuberculosis Res Treat 2013;1-37
3. Beusenberg M & Orley J. A user's guide to the Self Reporting Questionnaire (SRQ). Geneva: World Health Organization 1994.
4. Maruish ME. User's manual for the SF-36v2 Health Survey: Quality Metric Incorporated 2011.
5. Hamilton M. The assesment of anxiety states by rating Br J Med Psychol 1959; 32: 50-5.
6. Hamilton M. A rating scale for depression. J of neurology, neurosurgery, psychiatry 1960; 23: 56-62.
7. National Tuberculosis Program Nepal. In: Services DoH, editor. Thimi, Bhaktapur National Tuberculosis Center; 2011/2012. pp 4-6.
8. Muniyandi M, Rajeswari R, Balasubramanian R, Nirupa C, Gopi PG, Jaggarajamma K, et al. Evaluation of post-treatment health-related quality of life (HRQoL) among tuberculosis patients. The international journal of tuberculosis and lung disease : the official journal of the International Union against Tuberculosis and Lung Disease 2007; 11(8): 887-92.
9. Babikako HM, Neuhauser D, Katamba A & Mupere E. Feasibility, reliability and validity of health-related quality of life questionnaire among adult pulmonary tuberculosis patients in urban Uganda: cross-sectional study. Health and quality of life outcomes 2010; 8(93): 1-8.
10. 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.
11. Ige OM & Lasebikan VO. Prevalence of depression in tuberculosis patients in comparison with non-tuberculosis family contacts visiting the DOTS clinic in a Nigerian tertiary care hospital and its correlation with disease pattern. Mental health in family Med 2011; 8(4): 235.
12. Aamir S, Aisha. Co-morbid anxiety and depression among pulmonary tuberculosis patients. Journal of the College of Physicians and Surgeons--Pakistan : JCPSP 2010;20(10):703-4.
13. Kumar K, Kumar A, Chandra P, Kansal HM. A study of prevalence of depression and anxiety in patients suffering from tuberculosis. J Family Med Prim Care 2016;5: 150-3.

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