

## An Investigation into the Life Quality of Pulmonary Tuberculosis Patients Referring to Rural and Urban Health Centers Affiliated to Kurdistan University of Medical Sciences and its Relation with their Individual Characteristics in 2009-2010

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**Abstract:** Tuberculosis is one of the oldest known diseases. Despite of modern therapies against the disease, it is still one of the biggest health problems of the world. One-third of the world's population are infected with tuberculosis mycobacterium which is the agent of tuberculosis. In some Asian and African countries, this rate is more than 50 percent. Therefore, tuberculosis is the cause of human beings' death more than any other infectious disease. In the past, it was believed that by utilizing effective treatments and controlling the disease symptoms, the physician could provide the patient with desirable conditions. Evidence; however, has showed that is not just related to controlling the symptoms because the first step in improving tuberculosis patients is to figure out their life quality and its related factors. In this regard, the present study was aimed at determining life quality of pulmonary tuberculosis patients and its relation with individuals' characteristics so that the results can be utilized in programs to enhance the life quality of patients suffering from tuberculosis. **Method:** The study is a descriptive-analytic research. Participants are consisted of all pulmonary tuberculosis patients who have referred to the study milieu, i.e. medical centers in Kurdistan province. To conduct the study, first based on census, purpose, and accessibility researchers selected research environments. Then researchers were explained about the research and they attended the assigned places. Afterwards, permission and consent were gained from the centers and necessary explanations were given and participants were chosen and require data were collected through a purpose-based questionnaire and interviewing with 122 individuals. Instruments like the standard questionnaire of QOL-SF 36 and a 12-question questionnaire of individual characteristics were utilized to collect the data. Collected data were analyzed using SPSS 14.5 software. **Results:** Findings of the study showed that 44.3 percent of patients lived in the town, 61.5 percent were female, 38.5 percent aged 41-60, 70.5 percent were married, 50.8 percent were housekeeper, 71.3 percent were illiterate, 34.4 percent had only one child, 90.2 percent lived in the town, and 81.1 percent smoked. The results showed that there was a significant relation between mental health and education ( $P=0.034$ ) so that individuals with higher education had higher level of mental health. In the table of correlation between age and physical performance criteria, it is presented that general health, energy, and liveliness have inverse correlation with age so that as age rises, these criteria drop. Comparing mean scores, it could be concluded there is a significant relation ( $P=0.008$ ) between life quality and living in town. **Discussion:** Assessing life quality in clinical psychology can lead to a closer relationship between the physician, the patient, and the health practitioners. Access to information on life quality can enhance health plans, care programs, and rehabilitation; and increase the patients' awareness about their disease and health status. The present study included 122 pulmonary tuberculosis patients. The results of the study showed that pulmonary tuberculosis can influence life quality indices. This finding has been reported by other scholars. Due to the significant difference between mean scores of life quality of pulmonary tuberculosis patients in rural and urban areas, the disease can affect various aspects of the individual's life. Therefore, life quality as one of the effective factors of patients' health care should be given special attention because it can be a key to efficient treatment and an important factor in improving supportive plans and rehabilitation undertakings.

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## 1. Introduction

Tuberculosis is one of the oldest known diseases [1]. Despite of modern therapies against the disease, it is still one of the biggest health problems of the world [2]. At the moment, about 8.4 million people get infected to pulmonary tuberculosis annually. Every year, 1.9 million deaths are caused by pulmonary tuberculosis. Ninety-eight percent of all pulmonary tuberculosis cases and 98 percent of deaths out of pulmonary tuberculosis are observed in poor countries [3]. Therefore, pulmonary tuberculosis more than any other infectious diseases causes human beings to die [4]. Pulmonary tuberculosis associate with atypical symptoms in older people. These symptoms include unusual behavior, change in mental state, fever, anorexia, and weight loss. Mental health is not an issue merely pertinent to individuals' relationship; it is also their relation with the society and the community in which they find their social role. In addition, mental health is concerned with social centers that direct a part of human beings' life, determines lifestyle, occupation, and the way of happiness, stability, and society [5]. In the past, it was believed that by utilizing effective treatments and controlling the disease symptoms, the physician could provide the patient with desirable conditions. Evidence; however, has showed that is not just related to controlling the symptoms [6]. Life quality is defined as a group of characteristics which are valuable for the patient and resulted from feeling of comfort or wellbeing. It is aimed at developing logically keeping physical, exciting, and mental performance so that the individuals could save their ability in invaluable life activities [7]. Recently, scholars have focused on health-care plans that promote life quality of tuberculosis patients and improvement of these patients' life quality [8]. Because the first step in improving tuberculosis patients is to figure out their life quality and its related factors. In this regard, the present study was aimed at determining life quality of pulmonary tuberculosis patients and its relation with individuals' characteristics so that the results can be utilized in programs to enhance the life quality of patients suffering from tuberculosis.

## 2. Method

The study is a descriptive-analytic research. Participants are consisted of all pulmonary tuberculosis patients who have referred to the medical centers affiliated to Kurdistan University of Medical Sciences. In order to conduct the investigation scholars of Kurdistan province were instructed over several sessions. Then they attended

the assigned places, gained pulmonary tuberculosis patients' consent, and collected required data through a questionnaire and interviewing. The study was consisted of 122 patients. The questionnaire was composed of 2 sections. The first section contained 12 questions about patients' demographic information. The second part included 36 items about life quality. QOL scale in form of SF\_36 assesses life from 8 dimensions. Validity and reliability of the Persian version of this scale were proved in previous studies [9]. In this scale, each item is given a value from 1 to 100 and each criterion in measured by adding and computing mean of the individual scores. The more the score was close to 100, the more the quality of life would be [10]. Reliability of the instrument was confirmed through retesting (آزمون مجدد). The results of this test showed a reliability of 82%. Afterwards, collected data were inserted into SPSS software by the computer operator and analysis process was conducted. Then information gained from SPSS 14.5 software was recorded in a computer. After frequency distribution of variables was computed and distribution factors were measured. Pearson correlation coefficient, variance analysis tests, and کروسکال والیس test were utilized in order to compare means and standard deviation. Significance value was assigned at  $P < 0.05$  for all of the tests.

## 3. Results

Results presented in this table(1) showed that there is an inverse correlation between age and physical performance. In other words, as age increases, physical performance drops. Moreover, there is correlation between age and criterion of energy and liveliness, so that as age increases, energy and liveliness decrease. Regarding the criterion of mental health, the results showed that there is a significant relation between age and mental health, so that as age grows, mental health of pulmonary tuberculosis patients decreases.

**Table 1.** Correlation between Age and Life Quality in Pulmonary Tuberculosis Patients

Life Quality Criterion	r	p
Physical Performance	0.2	0.024
Playing Physical Role	0.08	0.36
Playing Emotional Role	0.13	0.14
Energy and Liveliness	.02	0.02
Mental Health	0.11	0.2
Social Performance	0.14	0.1
Body Pain	0.11	0.2
General Health	- 0.18	0.038

**Table 2.** Comparing Mean Score of Life Quality in Patients Who Smoke and Those Who did not

Smoking	N	Mean and SD	Difference average on level 95%	t	p
Yes	23	60±22.2	3.4 (-6.1: 13)	0.7	0.4
No	99	56±20.5			

**Table 3.** Comparing Mean Score of Social Performance Criteria in Terms of the pulmonary tuberculosis patients' Gender

Life Quality Criteria	Gen	N	Mean and SD	Difference average on level 95%	t	p
Social Performance	F	75	59±22.4	-5.8 (-15: 3.3)	1.2	0.2
	M	47	64.8±26			

#### 4. Discussion

Life quality is a fundamental index and since it included several dimensions like physiological aspects of performance, it should be given special attention [11]. Measuring life quality in clinical studies creates a closer relationship between patients, physicians, and health practitioners. Assessing life quality in clinical psychology can lead to a closer relationship between the physician, the patient, and the health practitioners. Access to information on life quality can be enhance health plans, care programs, and rehabilitation; and increase the patients' awareness about their disease and health status [12]. In the past, it was believed that by utilizing effective treatments and controlling the disease symptoms, the physician could provide the patient with desirable conditions. Evidence; however, has showed that is not just related to controlling the symptoms [6].

The present study was conducted on 122 pulmonary tuberculosis patients. The results showed that pulmonary tuberculosis could affect life quality indices. Other studies have also proved the same finding [13]. There has been a growing interest in studies of life quality since 20 years ago [14]. In the present study, the results showed that 61.5 percent of the patients were female and 38.5 percent were male. In Monjamed's study, most participants were also female. This hypothesis can be derived that women are more prone to tuberculosis in the lower lung due to costal type breathing [15]. WHO has reported that higher chance of pulmonary tuberculosis in women compared to men has been observed only in some Eastern Mediterranean countries such as Iran, Afghanistan, and Pakistan. In other countries, men are more prone to the disease. This point is interesting and needs to be considered in future research [16]. Regarding the patients' age, the results showed that 38.5 percent of the patients aged 41-60 and 33.6 percent were over 61, so that standard deviation for participants' age was 51.71±18.13 years. In Mortazavi Moghadam's study, mean age was 55.15±19.349 [17]. Moradi writes: mean age of pulmonary tuberculosis patients was reported to be 47.1 and in Semnan the maximum age was 65. This

figure was 39.6 in Shiraz. In the years 1997-1998, in Arak mean age of male and female patients were respectively 56.6 and 54 (64.6% in rural regions and 47.6 % among urban residents.) and the maximum age was reported to be 50 [16]. In other studies, most cases of disease have been observed in age group of over 60 and then in 31-45 [18]. In Ayatollahi's study, most cases of the disease were observed among age group of over 60 and then in 31-45 [19]. Other studies have also reported the same findings [20 & 21]. In the past, tuberculosis among young individuals formed most cases of the disease. With improvement in health status, nowadays mean age of the patients is higher. The disease is observable among individuals with immunosuppression in some countries [22].

The study showed that 70.5 percent of the patients were married, 50.8 percent were housekeepers, 71.3 percent were illiterate, 34.4 percent had one child, and 35.3 percent had 3-4 members in their family. Some of the effective factors in tuberculosis occurrence in society are unawareness, illiteracy, and as a result indocility of the individuals [23]. Most pulmonary tuberculosis patients, i.e. 90.2 percent, lived in towns. In a study conducted in Shiraz in 1999-2000, rate of tuberculosis occurrence in rural and urban regions was reported to respectively be 11.1 and 5.6 individuals per every 1000 people [24]. In his study, Moradi concluded that in most developed countries and some developing ones, tuberculosis occurrence has a higher rate in rural areas. High rate of tuberculosis in towns of Kurdistan province seems to be as a result of reasons such as active provision health care to rural residents, early diagnosis of tuberculosis cases in the past, relative improvement of rural people's economic status compared to the past, unfavorable condition of the outskirts, density and heterogeneity of population in towns and higher possibility of contact with infected individuals. It can also be as a result of inefficiency of urban health systems in diagnosing new tuberculosis cases [16].

The present study showed that a maximum of 81.1% of pulmonary tuberculosis patients did not

smoke. The results showed that the maximum duration of infection was less than 6 months and medicine consumption duration was less than 6 months in 82.6% of the cases. In their study conducted on myocardial infarction patients, Bagheri *et al.* showed that there is a significant relation between infection duration and life quality, so that patients with longer infection duration had higher life quality [25].

The results showed that 15.6 percent of pulmonary tuberculosis patients' family members are also infected with the disease. According to the statistical results and tables of comparison between mean scores of life quality in terms of the individuals' education, it was concluded that there is a significant relation between mental health and education level. In other words, individuals with a higher education had more favorable mental health. Monjamed's study also proved a significant relation between life quality and education level; as education level increases, life quality enhances. This is due to awareness of the importance of the treatment methods, correct consumption of medicine, and control of other factors affecting the disease [26]. In other studies, statistical Kruskal-Wallis test was applied to show a significant difference between education level and physical performance, physical role play, body pains, energy and liveliness, and mental health [13]. The results of Taylor's study also showed that literate people's life quality is higher than that of the illiterate [27]. In addition, non-parametric Kruskal-Wallis test showed no significant relation between marriage status and life quality indices. Monjamed's study; however, showed that there is a significant relation between marriage and life quality since couples can affect each other's health, diet, and treatment. In the present study, all divorced patients had unfavorable life quality and a significant relation between life quality and marriage was observed [26].

Moreover, the results presented in Table 1 showed that there was an inverted relation between age and physical performance index. In other words, physical performance decreases with age. It also showed that there is correlation between age and energy and liveliness; i.e. energy and liveliness decreases with age. There was a significant relation between general health and age, i.e. general health drops with age, which is in agreement with Monjamed's study. She has stated that age could influence life quality [26]. Therefore, life quality of Patients with chronic diseases drops with age. Moreover, in a study it was showed that older patients had lower life quality [28]. In Taylor's study, a significant statistical relation was reported between age and life quality, so that as the patient is younger,

his/her life quality is higher [27]. The results presented in Table 1 proved no significant relation between life quality and family traits. According to the results, there was no significant relation between gender and life quality. This finding is in line with that of Monjamed's study [26].

In addition, according to Table 2 there was no significant relation between life quality and smoking. However, in another study, Kruskal-Wallis test proved a significant relation between smoking and physical performance, so that smoking patients had lower physical performance compared to those who smoked [13]. Smoking has harmful effects of the individuals' health, especially their physical health in short and long runs and it leads to low life quality [29]. Lee *et al.* believe that smoking and alcohol consumption among older people are not because of health promoting plans in society. However, it is due to the fact that present health state is low [30]. According to the table of comparing mean scores of life quality, a significant relation ( $P=0.008$ ) was observed between life quality of residents of rural and urban areas. Moreover, there was a significant relation between place of residence and life quality ( $P=0.031$ ) and body pain ( $P=0.008$ ). In Pourkakhaki's study, statistical Mann-Whitney test proved a significant difference between pulmonary tuberculosis patients residing in rural and urban region in terms of all dimensions of life, so that pulmonary tuberculosis patients living in rural areas had lower scores of life quality [13]. Since there is a significant difference between mean scores of patients living in rural and urban regions, pulmonary tuberculosis can affect various aspects of the individual's life. Therefore, life quality should be given special attention as one of the most effective factors in patients' treatment because it is a key to effective treatment and an effective element to improve supportive plans and rehabilitation undertakings.

## 5. Conclusion

WHO considers life quality as a multi-dimension concept and defines it as, "the individuals' understands of their life status according to the culture, value systems, and their relation with purposes, expectations, interests, standards and life experiences." This definition has various dimensions that affect physical health status, mental state, independence, social relationships, and individual believes [31]. Access to information on life quality can also be effective in health plans, care programs, and rehabilitation [12]. Pulmonary tuberculosis is one of the two known mycobacterium diseases. According to the statistics provided by WHO, there are 8 million new cases of pulmonary tuberculosis

every year [32 & 33]. Rate of pulmonary tuberculosis occurrence has increased in developed countries in the last two decades; and in developing countries it has had a high occurrence [34]. Iran ranked the 17<sup>th</sup> country regarding infection to pulmonary tuberculosis in 1998. Due to importance of pulmonary tuberculosis, WHO has introduced it as a health emergency [35]. Since the first step in improving tuberculosis patients is to figure out their life quality and its related factors. In this regard, the present study was aimed at determining life quality of pulmonary tuberculosis patients and its relation with individuals' characteristics so that the results can be utilized in programs to enhance the life quality of patients suffering from tuberculosis.

### References

- 1- Ravignion M.C, obrien R. J. Tuberculosis in: Braunwald Engene, et al. Harison's principles of Intrenal medicine. New York. 16<sup>th</sup> ed. MC Grave hill, 2005: 953-966
- 2- Spradling P. Nemtsova E, Aptekar T. Anti tuberculosis drug resistance in community and prison patients. *Int J tubere dis.* 2002.. SEP 6 (9): 757- 62
- 3- World health organization. Global tuberculosis control surreillance, planning financing. W.H.O. Report 2002/cdc2
- 4- Hass D W. Mycobacterial disease: In Mandell G L, Beneett. J E. Dolin R, eds. Principles and practice of infectious disease. 5<sup>th</sup> ed. New York: Churchill living stone. 2000. p: 2575- 608
- 5 – Smeltzer, Suzanne C. Bare, Brenda.G. Text books of medical surgical nursing. Lipincott. Philadelphia. New York. 2008.
- 6 - Nocon. A. Social and emotional impact of childhood asthma. *Arch Dis child.* 1991. 66: 458-460
- 7- Bobes J, Gonzalez MP, Bascaran MT, Arango C, Saiz PA., Bousono M. Quality of life and disability in patients with obsessive – compulsive disorder. *European psychiatry.* 2001;16(4):239-242
- 8- Rajeswari R, Muniyandi M, Balasubamanian R, Narayanan PR. Perceptions of tuberculosis patients about their physical, mental and social wellbeing: a field report from south India *SOC SCI Med.* 2005; 60: 1845- 1853
- 9- Montazeri A, Goshtasebi A, Vahdaninia M, Gandek B. The short form health survey ( SF-36): translation and validation study of the Iranian version. *Quality of Life Research* 2005; 14: 875-82.
- 10- Albokurdi, M.; Ramezani, M. A.; Arizi, F. S. Life quality of the elderly in Shahin Shahr in 2004-2005. *Isfahan Medical-Scientific Journal* 2005; 5 (4): 702-707.
- 11 - Conger S. A, More K.D, Chronic illness and quality of life: the social works role. TSAO foundation. 2002. P: 10
- 12 - Klippel. I, Dwynt.A. primary on the rheumatic diseases. philadelphia: W.B. Saunders company. 2000. pp: 1125.
13. Pourkakhaki, A. D.; Eta'ati, Z.; Mirsaeedi, M.; Masjedi, M. R.; Velayati, A. A. Life quality of pulmonary tuberculosis patients who referred to the Hospital of Masih Daneshvari in 2004-2005. *Journal of Tropical and Infectious Diseases* 2004, 11: 49-53.
- 14 - Testa MA, Simonson DC. Assessment of Quality of Life Assessment: Introducing the Mother Generated index. *Birth* 2002;29(1): 40-45
- 15- Pandya L, AL- sharif N, Maraey M A. Lower lung field tuberculosis in Saudi Arabia. *An saud Med.* 1990;4:374-7
- 16- Moradi, Gh.; Eftekhari Ardabili, H.; Rahimi, A.; Esmaeel Nasab, N.; Ghaderi, E. Investigating diagnosed pulmonary tuberculosis diseases in Kurdistan province in 2000-2002. *Journal of Tropical and Infectious Diseases* 2006, 11 (34): 53-49.
- 17- Mortazavi Moghadam, Gh. R.; Hosseini, B. M. Life quality in asthma patients in their own view. *Journal of Birjand University of Medical Sciences* 2003, 10 (1): 20-24.
- 18 - Tripathy SN, Nanda CN. Lower lung field tuberculosis in adults. *J Assoc physicians India.* 1970; 18(2):991- 1008.
19. Ayyatollahi, J. Radiographic examination of pulmonary tuberculosis patients. *Journal of Rafsanjan University of Medical Sciences* 2006, 5 (3): 187-192.
- 20- Tavanayi Sani, A.; Nouri, M. Strategic success of Dos and estimation of the level of medicine-resistant tuberculosis in Mashhad in 2000-2003. *Journal of Tropical and Infectious Diseases* 2006, 11 (33): 21-25.
- 21 -Ramach andra, j.A garwal G N, srivastava V K, mukorji pk. Lower lung field tuberculosis. *Ind J Tub,* 1982;29:158-72.
- 22- Afzali, H.; Nikdokht, T. Clinical and laboratory symptoms and side-effects in pulmonary tuberculosis patients. *Feiz Journal* 2002, 20: 86-96.
- 23 – Masjedi MR, Cheragvandi A, Hadian m, velayati A A. Reasons for delay in the management of patients with pulmonary tuberculosis. *Easternn Mediterranean health journal.* 2002. 8 (2, 3).

- 24- Sotude Maram, E.; Fararuyi, M. Rate of pulmonary tuberculosis occurrence in Fars province. *The Journal of Qazvin University of Medical Sciences and Health Services* 1999, 11: 67-74.
25. Bagheri, H.; Me'mariyan, R.; Alhani, F. The effect of group counseling on the myocardial infarction patients' life quality who referred to Imam Khomeini and Shari'ati Hospitals of Tehran. *Hakim Research Journal* 2003, 6 (4): 89-95.
- 26- Monjamed, Z.; Vara'i, Sh.; Kazemnezhad, A.; Razaviyan, F. Life quality in patients suffering from rheumatoid arthritis. *Hayat: Journal of Nursing and Midwifery, Tehran University of Medical Sciences* 2007, 13 (3): 57-66.
- 27 -Taylor W J, Myers J, Simpson RT, MC Pherson KM, Weatherall M. Quality of life of people with rheumatoid arthritis as measured by the World Health Organization quality of life Instrument, short form (WHOQOL-BREF): score distributions and psychometric properties. *Arthritis Rheum.* 2004. Jun 15; 51 ( 31): 350 – 7.
- 28- Jakobsson U, Hallberg IR. pain and quality of life among older people with rheumatoid arthritis and / or osteoarthritis:a literature review. *J Clin Nurs.* 2002 Jul;11(4): 430-43.
- 29- Mulder I, Tjihuis M, Smit HA, Kromhout D. Smoking cessation and quality of life: the effect of amount of smoking and time since quitting. *prev Med.* 2001; 33:653-660.
- 30 - Lee T. W, KOIS, lee,, kj. Health promotion behaviors and quality of life among community –dwellind elderly in korea. *International journal of nursing studies.* 2005; 49(2):129-137.
- 31 - Cadena J, Vinaccia S, perezA, Rico M I, Hinojosa R, Anaya J M. The impact of disease activity on nthe quality of life, mental health status, and familiy dysfunction in Colombian patients with rheumatoid arthritis. *J clin Rheumatol.* 2003. Jun;9(3):142-50
- 32- Black House. 2005. Nurse – Surgical. Second volume, Respiratory diseases, cancer, immune. Translators: A group of lay members of the Board of Nursing and Midwifery, Isfahan University of Medical Sciences. Isfahan: Isfahan Medical University Press, 2006-2007.
- 33- Dye C. Scheele S, Doline P, consensus statement Global burden of tuberculosis: Estimated incidence prevalence, and mortality by country. *Who Global surveillance and monitoring project: JAMA.* 1999. 282:677-686.
- 34- Shafi', A.; Siyadati, S. Plumonary TB and valor in Shahid Beheshti Hospital during 14 years. *Journal of Gorgan University of Medical Sciences* 2004, 6: 61-65.
- 35 - velayati A.A. Mohraz.M. Textbook of infections diseases. first edition. 2002, volume 2: (967-997).

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