

Health-related quality of life and its related factors in HIV⁺ patients referred to Shiraz Behavioral Counseling Center, Iran in 2012

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Abstract

Background: HIV/AIDS is known to affect an individual not only physically but also mentally, socially, and financially. It is a syndrome that builds a vacuum in a person affecting his/her life as a whole. Nowadays, using anti-viral medication delays the onset of the disease cycle and increases the patients' life time. From the psychological point of view, however, such patients are faced with a great number of social and cultural limitations which affect various dimensions of their health as well as quality of life. Therefore, the present study aimed to investigate the quality of life and its related factors in HIV patients in Shiraz Behavioral Counseling Center.

Methods: The present analytical cross-sectional study was conducted on 129 HIV patients in Shiraz Behavioral Counseling Center who were selected through convenience sampling. The data were gathered using demographic as well as SF-36 questionnaires and analyzed through T-test, ANOVA, X², and Schiff's post hoc test.

Results: In this study, the patients' mean score of quality of life was 48.8±14. In addition, the mean scores of males' and females' life quality were 47.7±16.2 and 59.5±20.4, respectively and the difference was statistically significant (p<0.05). The mean difference of the patients' quality of life was also found to be significant based on employment status, marital status, and history of drug abuse (p<0.05), while it was not significant regarding age, level of education, length of disease, and the distance between the house and the service providing center.

Conclusion: In comparison to the physical dimension, the HIV-positive individuals' quality of life mean score was lower in the mental dimension. In addition, the mean difference revealed to be significant based on marital as well as employment status. These findings show such patients' needs for psychological support, more psychological interventions, and creation of appropriate job opportunities.

Keywords: HIV, AIDS, Quality of life, SF-36, Behavioral counseling center.

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Introduction

AIDS is a fatal disease that can affect human immune system and makes patients vulnerable to opportunistic infections. It is still one of the most important diseases in the world, which not only causes health problems, but also affects the political, so-

cial, and cultural aspects (1).

The use of effective anti-viral therapy in the patients with delayed onset of AIDS and the increase of life expectancy and well-being of HIV-infected individuals reveal the need for effective prevention methods in this population (2). Advances improved the survival rates of the HIV-infected individuals,

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but not always with a good quality of life (QOL) (3). Various studies conducted around the world have reported that as the HIV infection progresses, it affects the individuals' QOL (4 - 6).

According to the latest report by Iran's Ministry of Health, by the end of February 2013, 26125 people will be identified with HIV in Iran. Overall, the disease was transmitted by intravenous drug injection, sexual intercourse, and mother to child in 52.1%, 33.6%, and 3.2% of the cases, respectively. However, the transmission route is unknown in 11.1% of the patients (7).

In Iran, the first wave of AIDS occurred in 1987 due to transmission of agent is through blood as well as blood products and its second wave occurred in 1996-1997 because of intravenous drug abusers' sharing needles. Now, at the third wave of AIDS, is through sexual relationships because of perversion which threatens several parts of the society (8). Health-related quality of life (HRQOL) outcomes are of importance in study of persons with the relapsing and remitting disease and the need to evaluate effects of newer treatments on improving their health status (9).

Moreover, effective anti-viral medication have delayed the onset of AIDS cycle and increased the patients' life time. Nevertheless, from the psychological perspective, AIDS patients are faced with a large number of social and cultural limitations which affect different dimensions of their health and quality of life. In general, quality of life is defined as the individuals' understanding of

their life status in cultural as well as value systems fields, which is related to their goals, hopes, and standards. Thus, quality of life can be considered as the sum of physical, mental, and social welfare, including happiness, satisfaction, dignity, health, and economic status, perceived by the individuals (10). Meanwhile, the people's QOL is affected by various factors, such as individual, economic, and social factors (sex, age, employment, marital status, etc.), with stronger effects on those suffering from chronic disease.

Therefore, the present study aims to investigate the QOL based on some individual factors, such as age, sex, history of drug abuse, employment status, length of disease, marital status, transmission route, and the distance between the house and the service providers, in HIV-positive patients of Shiraz Behavioral Counseling Center, Iran.

Methods

The present study was a cross-sectional type in which the HIV-positive patients of Shiraz behavioral counseling center with active profile were examined. According to the previous studies and the sample size formula, 129 subjects were selected through convenience sampling. The study data were collected through 2 questionnaires, the first included the demographic information, such as age, sex, marital status, employment status, length of disease, level of education, history of drug abuse, and the distance between the house and the service providing center. The second questionnaire was SF-36,

Table1. Mean \pm SD quality of life in HIV+ patients in Shiraz behavioral counseling center in each subscale of SF-36 questionnaire

HRQOL Scales	Mean \pm SD
Physical function	58 \pm 27.2
Role limitation caused by physical problem	33.6 \pm 32.6
Pain	53.8 \pm 25.7
General Health perception	47.5 \pm 19.9
Energy/fatigue	49.7 \pm 21
Emotional well being	49.5 \pm 20.5
Role limitation caused by emotional problem	33.3 \pm 31.9
Social functioning	50.4 \pm 24.4
Physical Health	50.4 \pm 18.9
Mental Health	46.3 \pm 17.8
Overall HRQOL score	48.8 \pm 17

Table 2. QOL mean scores of HIV+ patients in Shiraz Behavioral Counseling Center based on age group

	Age			p value
	24-35	35-45	45-59	
Physical function	59.4±2.7	57.2±2.8	58.2±3.7	0.9
Role limitation caused by physical problem	36.3±27.5	33±30	32.9±33.4	0.6
Pain	55.7±2.5	52.3±2.5	53.7±2.5	0.7
General health perception	47±21.5	46.1±19.1	47.8±19.9	0.2
Emotional well being	48±17.5	48.4±21.5	49.5±20.5	0.5
Energy/fatigue	30±31	33.2±31.8	33.8±32.1	0.4
Role limitation caused by emotional problem	48.5±22	51.4±21.5	50.5±24.5	0.8
Social functioning	48.5±17	49.9±20.9	50.2±20.8	0.6
Physical health	51.7±17.2	49.8±20	50.6±19	0.8
Mental health	44.4±13.1	46.1±18.4	46.5±17.8	0.4
Overall HRQOL score	48.9±23.8	48.4±18.1	49±17	0.7

which is a 36-item self administered or interviewer-administered instrument with eight scales: physical functioning, role limitations caused by physical health problems, pain, general health perceptions, emotional well-being, role limitation caused by emotional problems, social functioning, and energy/fatigue. Reliability estimates for these eight scales was favorable in both general population and chronic diseases samples (11-19). A survey conducted in Iran confirmed that, the Persian version of this questionnaire was a reliable and valid instrument (20). Though the SF-36 has eight separate scales, factor analyses in previous studies have shown that these scales represent two underlying dimensions: physical and mental healths (16, 21 and 22).

Statistical Analysis

According to RAND scoring system, the items of the questionnaire are scored from 0 to 100; and the closer to 100, indicates higher QOL. After all, descriptive results are presented through tables. Moreover, Chi-square, t-test, and ANOVA were used to determine the relationship between the variables and mean differences, and, $p < 0.05$ considered statistically significant.

Results

Of the 129 patients studied, 115 (89.8%) were male and 13 (10.2%) female. The patients age ranged of 25-58 years (mean + SD= 38.9+6.7). In addition, the mean age of the male and female subjects were 39.3+6.8 and 35.2+4.5 years, respectively and the

highest frequency related to 35-44 years age group.

In this study, 77 (61.1%), 26 (20.6%), and 23 (18.3%) patients were single, married, and widowed or divorced, respectively. In addition, 27 patients (21.3%) employed, while 99 (78.7%) were unemployed. Finally, 85.2% of the patients had a history of drug abuse, while 14.8% did not. 76 (61.8%), 26 (21.1%) and 21(17.1%) of the patients were infected through needle use, sexual and other route of transmission, respectively.

The overall HRQOL score in these patients was 48.8+17, and the mean for QOL in physical and mental dimensions were 50.4+18.9 and 46.3+17.8, respectively with a statistically significant base on difference ($p < 0.05$). The mean scores of the patients' QOL in each of the scales of SF-36 questionnaire are presented in Table 1.

The mean scores QOL based on the age groups are presented in Table 2. The difference between different age groups' mean scores quality of life was not statistically significant ($p > 0.05$).

Investigation of the patients' QOL with regard to sex, employment status, history of drug abuse, age, level of education, length of disease, and the distance between the house and the service providing center revealed that this parameter for, female, employed, and non-addicted patients was significantly higher than that of the male, unemployed, and addicted ones, respectively ($p < 0.05$). However, no significant relationship was found between the QOL and age, level of education, length of disease, and the

Table 3. Mean \pm SD quality of life scores and the relationship between the demographic variables and the QOL mean scores of HIV⁺ patients in Shiraz behavioral counseling center

variable	subgroup	Physical health	Mental health	Overall HRQOL
Sex	Male	49.3 \pm 18.3	45.3 \pm 16.6	47.7 \pm 16.2
	Female	61 \pm 21.9	57.2 \pm 23.4	59.5 \pm 20.4
	P Value	0.03	0.02	0.01
Marital status	Single	47.7 \pm 16.7	43.4 \pm 13.7	46 \pm 13.7
	Married	60.1 \pm 22.4	55.1 \pm 24.5	58.1 \pm 22.2
	Divorced/Widowed	48 \pm 20	44.6 \pm 18	46.7 \pm 17.5
	p Value	0.01	0.01	0.006
Level of education	Under Diploma	49.6 \pm 18.3	45.5 \pm 17.4	48 \pm 16.3
	Diploma	48.6 \pm 18.7	43.3 \pm 12	46.6 \pm 14.8
	Academic	64.3 \pm 25	61.3 \pm 24.9	24.8 \pm 12.4
	p Value	0.2	0.16	0.18
Employment status	Employed	63.1 \pm 15.6	58 \pm 17.7	61.1 \pm 15.4
	Unemployed	47.6 \pm 18.4	43.2 \pm 16.7	45.8 \pm 16.1
	p value	< 0.001	< 0.001	< 0.001
History of drug abuse	Yes	49 \pm 17.5	44.3 \pm 16.9	47.2 \pm 15.7
	No	59.6 \pm 24	57.1 \pm 19.7	58.7 \pm 12.1
	p value	0.02	0.004	0.006
Transmission route	Injection drug user	46.6 \pm 17.2	42.1 \pm 15.6	44.9 \pm 15.2
	Sexual	57.3 \pm 20	55.6 \pm 16.9	56.7 \pm 16.8
	Other	53.1 \pm 19	45.8 \pm 18.3	50.2 \pm 17.8
	p value	0.02	0.002	0.005
Length of infectious	Under 5 year	53.7 \pm 19.3	46.9 \pm 18	51.1 \pm 17.4
	More than 5 year	47.7 \pm 17.9	45.2 \pm 16.7	46.7 \pm 15.8
	p value	0.07	0.5	0.14
Distance between center to patient 's house	Under 1 hour	53.6 \pm 19	47.1 \pm 19.6	51.1 \pm 17.6
	More than 1 hour	46.8 \pm 18.7	45.8 \pm 15.2	46.4 \pm 16.2
	p value	0.04	0.6	0.1

distance between the house and the service providing center ($p > 0.05$).

Finally, after obtaining significant results in ANOVA regarding marital status and transmission routes, the Schiff's post hoc test was used to determine the significant difference of QOL in different levels of the above-mentioned variables. The results revealed significant relationships between married, single, and other groups of patients as well as intravenous drug abuse and other transmission routes ($p < 0.05$) (Table 3).

Discussion

The present study aimed to investigate the QOL and its related factors in HIV patients of Shiraz behavioral counseling center. In this study, the patients' mean score of QOL was 48.8 ± 17 which was comparable with the study done by Nojoumi et al. reported the mean score of quality of life as 47 ± 6.2 (23). Moreover, the mean scores of physical and mental dimensions were 50.4 ± 18.9 and 46.3 ± 17.8 , respectively that was consistent

with a great number of studies conducted in other countries, including Imam's study in Bangladesh and Hay in the U.S., as well as those performed in Iran which have all revealed the HIV patients' low QOL in all the dimensions of SF-36 questionnaire, particularly in mental and social dimensions, compared to normal individuals and even those with chronic diseases (10, 24-29).

The low QOL in the mental dimension shows the necessity for more mental interventions. In fact, biological treatments are not enough for treating such patients and, at the same time, getting familiar with and eliminating their mental problems can be a good prognosis for their treatment.

Investigation of mean differences of QOL relative to different levels of the variables revealed that women had a higher QOL in comparison to men. Moreover, the HIV infection was mostly transmitted through intravenous drug abuse (61.8%) and sexual route (21.1%). Nevertheless, in comparison to the individuals infected through sexual

relationships, those who infected by intravenous drug abuse had a lower QOL. This is in contrast with the findings of the study conducted by Hasanah in Malaysia which reported a higher QOL for the individuals who had been infected through intravenous drug abuse compared to those through sexual relationships (27).

According to the study findings, QOL of married subjects was significantly higher than that of the other participants, which might be due to the families and particularly the spouse's psychological supports which play a major role in improving the patients' QOL. Employed subjects had also a better QOL compared to the jobless ones. In the studies conducted by Nojomi in Iran and Eriksson in Sweden, a significant relationship was found between the quality of life and sex, marital, and employment status which are in line with the findings of the present study (23, 30).

Conclusion

Application of the results in this study showed that the effects of different factors on the QOL. Interventions, including resource allocation, better care for the patients, improving the relationship between the physicians and the patients, and increasing the trainings as well as consultations, can all be carried out.

Creating appropriate job opportunities and employing the patients by the health system as well as the behavioral counseling centers are among the major supportive measures for these patients. In fact, employment are the most important concerns of such patients; therefore, a large number of financial and, consequently, psychological problems of the patients could be resolved by providing job opportunities. Finally, it is hoped that using the findings of this research, steps will be taken toward improving the HIV patients' QOL.

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References

1. Kazerooni A, Amini Lari M, Joolaei H, Parsa N. Knowledge and attitude of male intravenous Drug Users on HIV/AIDS associated high risk behaviors in Shiraz Pir-Banon Jail, Fars Province, Southern, Iran. *Iranian Red Crescent Medical Journal* 2010; 12(3): 334-336.
2. Schwarcz Sandra K, Yea-Hung Chen, Murphy Jessie L, Paul Jay P, Skinta Matthew D, Scheer Susan and et al. Randomized control trial of personalized cognitive counseling to reduce sexual risk among HIV-infected men who have sex with men. *AIDS Care* 2013; 25(1): 1-10.
3. da Silva J, Bunn K, Bertoni Rochele F, Neves Oromar A, Traebert J. Quality of life of people living with HIV. *AIDS Care* 2013; 25(1): 71-76.
4. Paton NI, Chapman CA, Chan SP, Tan KM, Leo YS, Aboulhab J, et al. Validation of the medical outcomes study HIV health survey as a measure of quality of life in HIV-infected patients in Singapore. *Int J STD AIDS* 2002; 13:456-61.
5. Bourgoyne RW, Saunders DS. Quality of life among Canadian HIV/AIDS clinic outpatients. *Int J STD AIDS* 2001; 12:505-12.
6. Kempainen J K. Predictors of quality of life in AIDS patients. *J Assoc Nurses AIDS Care* 2001; 12:61-70.
7. Ministry of Health in Iran, Center for Disease Control report, winter 2013; 1-6.
8. CDC statement on HIV/AIDS and Risky behaviors .Hidden Damage.[in Persian].Iran :summer 2007.
9. O'Keefe EA, Wood R. The impact of human immunodeficiency virus (HIV) infection on quality of life in a multi-cultural South African population. *Qual Life Res* 1996; 5:275±280.
10. Katibaei J, Hamidi H, Yarian S, Ghanbari S, Seyed Mousavi PS. Comparison of quality of life, stress and mental health of addicts and non-addicts affected by HIV and healthy individuals. [in Persian]. *Journal of Behavioral Sciences*. 2010; 4(2):135-139.
11. McHorney CA, Kosinski M, Ware JE. Comparisons of the costs and quality of norms for the SF-36 Health Survey collected by mail versus telephone interview: Results from a national survey. *Med Care* 1994; 32: 551-567.
12. Johnson PA, Goldman L, Orav EJ, Garcia T, Pearson SD, Lee TH. Comparison of the Medical Outcomes Study Short-Form 36-item health survey

in black patients and white patients with acute chest pain. *Med Care* 1995; 33: 145-160.

13. Wells KB, Burnam MA, Rogers W, Hays RD, Camp P. The course of depression in adult outpatients: Results from the Medical Outcomes Study. *Arch Gen Psychiatry* 1992; 49: 788-794.

14. Nernez DR, Repasky DP, Whitehouse FW, Kahkonen DM. Ongoing assessment of health status in patients with diabetes mellitus. *Med Care* 1992; 30: MS112-MS124.

15. Hays RD, Kallick JD, Mapes DL, Coons SJ, Carter WB. Development of the Kidney Disease Quality of Life (KDQOL) instrument. *Qual Life Res* 1994; 3: 329-338.

16. Hays RD, Sherbourne CD, Mazel RM. The RAND 36- item health survey 1.0. *Health Econ* 1993; 2: 217-227.

17. Kantz ME, Harris WJ, Levitsky K, Ware JEJ, Davies JR. Methods for assessing condition-specific and generic function status outcomes after total knee replacement. *Med Care* 1992; 30: MS240-MS252.

18. McHorney CA, Ware JE, Lu JF, Sherbourne CD. The MOS 36-item short form health survey (SF-36): III. Tests of the data quality, scaling assumptions, and reliability across patient groups. *Med Care* 1994; 32: 40-66.

19. Wagner AK, Keller SD, Kosinski M, Baker GA, Jacoby A, Hsu MA, et al. Advances in methods for assessing the impact of epilepsy and antiepileptic drug therapy on patients' health-related quality of life. *Qual Life Res* 1995; 4: 115-134.

20. Montazeri A, Goshtasebi A, Vahdaninia M, Gondek B. The short form health survey (SF36): Translation and validation study of Iranian version. *Quality of research*.2005; 14:875-882.

21. Hays RD, Marshall GN, Wang EYI, Sherbourne CD. Four-year cross-lagged associations between physical and mental health in the Medical Outcomes Study. *J Counseling Clin Psychol* 1994; 62: 441-449.

22. Ware JE, Kosinski M, Bayliss MS, McHorney

CA, Rogers WH, Raczek A. Comparison of methods for the scoring and statistical analysis of SF-36 health profile and summary measures: Summary of results from the Medical Outcomes Study. *Med Care* 1995; 33: AS264-AS279.

23. Nojomi M, Anbary Kh, Ranjbar M. Health-related Quality of life in patients with HIV. *Arch Iranian Medicine*.2003;11(6):608-612.

24. Emamipour S, Shamsesfandabad H, Sadralasdat SJ, Nezhadnadery S. Comparison of Mental disorders and quality of life in four groups of HIV + addicts, non-addicts affected by HIV, HIV- addicts and healthy individuals. [in Persian]. *J SKUMS*.2008; 10(1):69-77.

25. Imam MH, K.M, Ferdous C, Akhter S, Health related quality of life among the people living with HIV. *Bangladesh Med Res Counc Bull*. 2011; 37: 1-6.

26. Hays RD, Cunningham WE, Sherbourne CD, Wilson IB, Wu AW, Cleary PD, et al. Health-related Quality of life in patients with Human Immunodeficiency Virus Infection in the United State: Results from the HIV Cost and Services Utilization Study. *The American Journal of Medicine*.2000; 108:714-722.

27. Hasanah CI, Zaliha AB, Miran M. Factors influencing the quality of life in patients with HIV In Malaysia *Qual life res*. 2011;1:91-100.

28. Bing EG, Hays RD, Jacobson LP, Chen B, Gange SJ, Kass NE, et al. Health-Related quality of life among people with HIV disease: results from the Multicenter AIDS Cohort Study. *Qual life res*. 2000; 9:55-63.

29. Grierson J, Pitts M, Whyte M, Misson S, Hughes A, Saxton P, et al. Living with HIV in New Zeland: Balancing health and quality of life. *New Zeland Medical Journal*. 2004; 20:117.

30. Eriksson LE, Nordstrom G, Brrglund T, Sandstrom E. The health-related quality of life in Swedish sample of HIV-infected persons. *J adv Nurs*. 2000; 32:1213-1223.