Quality of life and economic variables in Ilam province

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Abstract

Introduction: Higher quality of life is the main desire of modern society. Therefore, paying attention to quality of life (QOF) and influential elements especially economic variables has turned into a necessity. This study was aimed at determining the relationship between QOF and economic variables, which was performed in the counties of Ilam province in Iran in 2013.
Materials and methods: In this cross-sectional research, 918 households were selected among ten counties of Ilam province by using multiple stages clustering sampling. Data were collected through macroeconomics questionnaires and 36-SF QOF questionnaire. The collected data were analyzed using SPSS software version 21 through t-test, Pearson's correlation coefficient (PCC), and multiple regressions.
Results: The mean ± SD of QOF was 61.74 ± 12.31. The correlations between monthly income and physical function scopes were (r=0.11, P<0.05), mental health (r=0.16, P<0.01), exhilaration (r=0.17, P<0.01), social function (r=0.16, P<0.01), physical pain (r=0.14, P<0.01), public health (r=0.12, P<0.05), and the total score of the QOF was (r=0.13, P<0.01). Based on the outcome of multiple regressions, the mean of QOF increased 2.45 units per mean which indicated increased unit of satisfaction regarding their living.
Conclusion: The biggest barriers to safety and security among society's individual life include social deprivation and poverty. Therefore, the general improvement in QOF can be influenced by increasing social cooperation, improving health care services, and providing consulting services about obtained policies by health care.

Keywords: Quality of life, Economic variables, Ilam

Introduction

Although survival was considered a main challenge of the twentieth centenary, living with better QOF is the main desire of modern society; therefore, paying attention to QOF has turned into a necessity (1). World health organization defines QOF as "an individual's perception of his living situation due to the valuable systems and culture which he lives and his relationship with favorable goals, expectation, standards and priorities". This definition involves a broad concept which is effected by individuals' mental and physical health condition, the level of independence, social communications, and personal ideas (2).
Economic deprivation and poverty may not only influence people's health but also their QOF; therefore, socio – economically deprived people evidently have a lower QOF (3, 4). In addition, the mortality rate among people with incomes below the poverty line is twice more than those with incomes above the poverty line (5). The investigations of these evidences showed

that social factors determining people's health have a considerable role in their health condition and QOF and meanwhile the economic variables are introduced as one of the important factors in this regard (6). The concept of the QOF was initiated after World War II by conducting some researches on patients with diabetes and AIDS (7).

In recent years, many studies have been conducted regarding the QOF and its subjective components reflecting method, which an individual has realized about his ordinary life and health and react to it (8). We can use QOF measurement for evaluation of chronic diseases, the improvement of relationship between physician and patient, evaluation of effectiveness and relative advantage of different treatment, the evaluation of health services, researching the policies of medicinal health, the evaluation of economic factors, and the distribution of resources (9).

The measurement of health level is one of the most important issues in the field of health and clinical sciences. In recent decades, health has been assumed as a broad concept. Therefore, considering the multiple dimensions of health, QOF is more expressed nowadays for the measurement of health than before. Its measurement, as a consequence of health level, is widely used in the area of health sciences. In the present time, using the measurements of health condition and QOF is highly emphasized. More recently, such tools have been increasingly applied in epidemiologic research and demographic studies (10).

The interaction between health and some kind of poverty forms is a major concern in health sciences for policy makers and social planners. Accordingly, these authorities may require enough information about different aspects of deprived groups' QOF to promote their health level. Therefore, the present research was performed for studying the relationship between QOF and economic variables in counties of Ilam province in 2013.

Materials and methods

In this cross-sectional study, 918 participants were selected among different (COIP) by multiple stages cluster sampling in 2013, and then related families were determined and the householder was asked questions using clustering method each household, the head of the family completed the questioner. In case s/he was illiterate, a literate family member helped him/her complete the questions. Important variables such as income, cost of living, job, and quality of life were matured through self-report. The questionnaire clarified the respondents that this was just a research and the researchers never used information for other purposes. The questionnaire was anonymous. Sample size was computed with $\alpha = 0.05$, $\beta = 0.10$, $r = 0.09$ (correlation coefficient between quality life score and average monthly income).

The participants' economic and general conditions were determined. The questionnaire included questions about demographic and job conditions, income, and living costs. Its range was based on Likert scale format. The 36-SF questionnaire was used for the measurement of people's QOF related to their health, which its validity and consistency among different communities had been investigated (11, 12). Also, the validity test regarding the Persian copy had been performed in Iran (13, 14). The coefficient Cronbach- α of the

questionnaire in this present research was obtained to be 0.81. This questionnaire is one of most important questionnaires applied for evaluating health-related QOF among healthy individuals and patients. It is evaluated as the QOF related to health in 8 scopes, which included 3 questions as follows: 10 questions on physical function, 4 questions about limitation due to physical problems, 3 questions about limitation due to emotional problems, 2 question about physical pain and its effect on daily activity, 5 questions about people's perception of their public health, 2 question about their social function, 4 questions about exhilaration, and 5 questions concerning people's mental health. This tool involves two abbreviated components which are obtained by scales combining as following; the abbreviation of physical health evaluation including physical function, physical pain, limitation due to physical problems and public health, the abbreviation of people's mental health including: social function, mental health, exhilaration, and limitation due to emotional problems. To score the questionnaire in each dimension, first, each question was scored by questionnaire direction and then the samples' score was summed up and ranged from a scale factor of zero (bad situation) to 100 (best situation). This means that the earn score of 100 has been calculated in any scale. The study was approved by the ethical committee of Ilam University of medical sciences.

Statistical analysis

Mean ±SD was used to compare QOF score in males and females. The relationship between aspects of QOF and income was checked using Pearson correlation and Epanechniko kernel smoothing. Multiple linear regression was used to find best prediction model for QOF. In multiple linear regression, step-wise method was used to choose final model. We checked the normality of data using Kolmogorov-Smirnov test and normal curve. Independent T-test was used to compare the average score of QOF in males and females. The data was analyzed using SPSS software version 21 and P value <0.05 was significant.

Results

In this study, 918 householders with the mean ± SD age 32.97 ± 9.5 years and the age range of 18-70 years were evaluated. The majority of the individuals were studied in respect to sex indicating that 56.1% of those were women, 78.8% were married, and 81% were living in a city. The other population was based on table 2, mean ± SD characteristics are listed in (Table 1). As epanechniko kernel smoothing showed that the correlation between monthly income and happiness did not have liner relationship and it was increasing for incomes below 286$. Then, it had a little fluctuation till 428$ after that it has had an increasing trend. The results of T-test showed that there were significant differences between mean small evaluations of limitation due to physical problems, limitation due to emotional problems, exhilaration, physical pain, public health, and mental health in males and females (P <0.05) (Table 2).

Table 1. Demographic characteristics of the subjects in the study.

Variable		Percent
Sex	Male	56.1
	Female	43.9
Marital status	Single	21.2
	Married	78.8
	Unemployed	47.7
Job	Employed	49.8
	Retired	2.5
	Less than 500	19.8
Income (Thousands of toman)	750-500	35.9
	One million - 750	20.7
	More than a million	23.7
	Under diploma	12.2
	Diploma	19.6
Education	Associate degree	19.3
	Bachelor	41.1
	Masters and more	7.8
Palace residence	City	81
	Village	19

Table 2. Descriptive statistics of variables estimated in the study.

Variable	Male	Female	P value
Physical functioning	73.97 ± 28.32	72.87 ± 27.83	0.581
Limitations due to physical problems	44.88 ± 35.82	58.19 ± 34.66	*<0.001
Limitations due to emotional problems	43.52 ± 38.43	56.55 ± 38.69	*<0.001
Mental health	56.47 ± 11.82	53.4 ± 10.15	*<0.001
Exhilaration	53.31 ± 11.65	51.5 ±10.89	* 0.022
Social functioning	70.34 ± 20.75	67.61 ±19.78	0.065
Physical pain	73.8 ± 22.13	67.34 ± 20.23	*<0.001
Public health	63 ± 18.35	58.37 ±16.72	*<0.001
Total score of quality of life	61.44 ± 12.38	61.97 ± 12.26	0.547

Data are shown as mean ± SD.
*Significant using T-test.

The total mean of quality of life score in males and females was not significant (Table 2). Epanechniko kernel smoothing in Figure 1 showed a correlation between monthly income with physical function happiness and exhilaration. Between the studied householder's middle monthly income rate and physical function scopes, mental health, exhilaration, social functions, physical pain, public health, and the total score of the QOF ($P < 0.05$) (Figure 1).

Whereas, it showed an indirect correlation with scopes of limitation due to physical problems and limitation due to emotional problems, there was no statistically significant correlation (Table 3) (Figure 2).

To find predictive factors of the QOF related to health, seven variables were entered into multivariate regression model and the stepwise method was used. People's satisfaction of their living was the most important predictive factor in the QOF related to health (table 4, model). Adjusted R^2 of this model was $R^2=.11$. ($P<0.001$) (Table 4). Adjusted R^2 showed 11% of variation in the QOF related to health explained by people's satisfaction of their living. In the second multiple regression model (model 2), economic conditions and household dimensions were the most important predictive factors in the QOF related to health R^2 adjusted= 8%). (Table 4). In the third regression model, correlation between the QOF related to

health and eight small evaluations of the QOF were also investigated in which there was statistically significant correlations between all scopes (P <0.001) (Table 5).

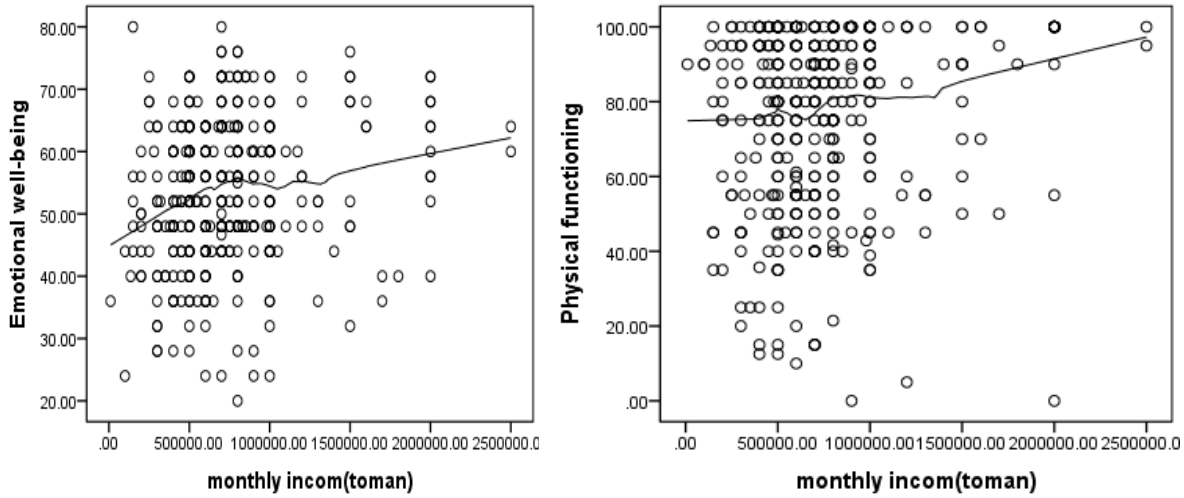

Figure 1. Correlation between emotional well-being, physical functioning and monthly income in subjects under study.

Table 3. The correlation matrix between income and quality of life in subscales.

	Income	Physical function	Physical problems	Emotional problems	Mental health	Exhilaration	Social function	Physical pain	Public health
Income	1								
Physical function	*0.11	1							
Physical problems	-0.06	*- 0.08	1						
Emotional problems	-0.07	- 0.01	**0.49	1					
Mental health	**0.16	**0. 3	**- 0.16	**- 0.11	1				
Exhilaration	**0.17	**0.2	**- 0.19	**-0.17	**0.52	1			
Social function	**0.16	**0.3	**- 0.2	**- 0.15	**0.44	**0.47	1		
Physical pain	**0.14	**0.2	**- 0.22	**- 0.12	**0.48	**0.37	**0.52	1	
Public Health	*0.12	**0.3	**- 0.2	**- 0.12	**0.53	**0.44	**0.45	**0.58	1
Total score	**0.13	**0.7	**0.2	**0.32	**0.48	**0.41	**0.48	**0.43	**0.54

* Significant at a level of less than 0.05
** Significant at a level of less than 0.01

Table 4. Multivariate regression results of quality of life, life satisfaction, economic situation and family size.

		B	**SD**	P value
Model 1	Life satisfaction	2.45	0.44	<0.001
Model 2	Economic situation	2.27	0.51	<0.001
	Family size	- 0.92	0.44	0.041

Table 5. The confections of quality of life (QOF) subscales multivariate regression.

QOF subscales	**B**	**SD**	P value
Physical functioning	0.27	0.001	<0.001
Limitations due to physical problems	0.11	0.001	<0.001
Public health	0.15	0.002	<0.001
Limitations due to emotional problems	0.08	0.001	<0.001
Exhilaration	0.13	0.003	<0.001
Physical pain	0.06	0.002	<0.001
Mental health	0.11	0.003	<0.001
Social functioning	0.05	0.002	<0.001

Discussion

With respect to the longevity and life expectancy index which has increased nowadays, the most important issue as how to spend living or in other words QOF has been expressed, and some scientists and officials have been taking this subject into consideration (15). The QOF is considered a basic index for individuals and it involves different dimensions such as people's performances and physiologic aspects, which has special importance considering QOF (16). In the present study, the mean ± SD score obtained regarding the QOF was 61.74 ± 12.31 and the mean QOF among women was found to be more than men. There were significant statistical correlations between sex and limitation due to physical problems, limitation due to emotional problems, exhilaration, physical pain, public health, and mental health ($P<0.05$). In studies conducted by Mir and et al, the QOF among men was better than women in physical dimensions significantly and it was not significant in mental dimensions (17). Whereas, in studies by Heydarnia and et al (6) and Hadi and et al (18), they presented that sex does not have an influence on those studied individual's QOF and it was lower among men in our country than women because of their responsibility to supply costs of living and encounter mental and physical problems.

In the present study, there were significant and positive correlations between middle monthly income rates of householder and their physical function scopes, mental health, exhilaration, social functions, physical pain, public health, and the total score of the QOF ($P<0.05$).

In 8 aspects of QOF, income had significance correlation with 6 of them. However, it did not have correlation with Physical problems and Emotional problems. Pearson correlation showed that there was nonlinear correlation between these aspects of QOF with monthly income. There was a significant correlation between QOF and income in the study conducted by Abaszadeh and et al. (19). The result of this study was similar to the studies performed by McKee and et al (20). In addition, the results of this study, which was performed in England, showed that low economic level and social situations were associated with low health functions (21). In addition, based on the study conducted by Grocer and et al, the significant and positive correlation between people's monthly income and QOF was shown using Pearson test (22), while this correlation was not observed in the study conducted by Mir and et al (17). The results performed by studies indicated that money measurement's simple criterions can be used for studding people's health and QOF in the researches. In the study conducted by Cubbin and et al, correlations between money and health and the QOF were investigated and data analysis showed that money measurement's simple criterions are as complex as the measurement criterions of people's economic conditions and can be shown as a correlation between people's economic conditions and their health and quality of life (23). Hajat and et al in their studies investigated long period effects of income and money on people's mortality in which the results showed that low income individuals compared with rich people experience more death (24).

In the present research, there was a significant statistical correlation between people's QOF related to health and their satisfaction of living ($P<0.001$). Meanwhile, the mean quality of life related to health among individuals increased 2.45

units per mean and increased the unit of their satisfaction of living. Therefore, in the study conducted by Abaszadeh and et al, there was significant correlation between the two factors. The chance of people who were dissatisfied their living was 2.15 times more for having low QOF (19). The significant correlation between two factors is indicated that people's positive attitude to living can be an effective way to increase their QOF.

Also in the present study, there was a significant statistical correlation between people's QOF and their economic conditions and household dimension ($P<0.001$), and the mean QOF had decreased 0.92 on the scale and had increased 2.27 unit per each increased unit of household dimension and economic conditions. In the study conducted by Heydarnia and et al (6), based on logistic regression test, deprived QOF was 10 time more than ordinary people by economic conditions and there was a statistical significant correlation between the two variables. Also, such correlations had been indicated in studies by Zillich and et al (25). In addition, Tabari and et al did not study the mean QOF in the physical dimension which showed an improvement with increasing numbers of children and it showed that there was a significant correlation between Pearson correlation coefficient and liner regression (26). Table 3 shows that there are positive correlations between the monthly income and some subscales of the QOF, but not all of them, for example, there was not a correlation between physical problems and emotional problems and income as well as correlation contentions between subscales of the QOF and the incomes that were less than 17.

Conclusion

The results of this research indicated that households had an average mean of QOF and household's attention regarding the income rate has an influence on their health and QOF. Thus, the biggest barriers of safety and security among society's individual life include economic problems, living problems, social deprivation, and poverty. Therefore, the general improvement of QOF can be influenced by increasing social cooperation, improving health care services, and providing counseling services about obtained policies by health cares.

To improve QOF, we should pay attention to people income's especially groups that have income lower than 286$. So government and social security organization should increase minimum payment to workers and jobless families. Size of family was an independent predictive variable for QOF. Hence, policy makers must pay attention to this important variable to improve QOF.

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References

1. Yen CF, Kuo CY, Tsai PT, Ko CH, Yen JY, Chen TT. Correlations of quality of life with adverse effects of medication, social support, course of illness, psychopathology, and demographic characteristics in patients with panic

disorder. Dep Anxiety. 2007;24(8):563-70. DOI: 10.1002/da.20239.
2. Isikhan V, Güner P, Kömürcü S, Ozet A, Arpaci F, Oztürk B. The relationship between disease features and quality of life in patients with cancer. Cancer Nurs. 2006;24(6):490-5. doi: 10.1097/00002820-200112000-00012.
3. Geyer S, Hemstrom O, Peter R, Vagero D. Education, income, and occupational class cannot be used interchangeably in social epidemiology.Empirical evidence against a common practice. J Epidemiol and Communi Health. 2006;60(4): 804-10. doi: 10.1136/jech.2005.041319.
4. Zack MM, Moriarty DG, Stroup DF, Ford ES, Mokdad AH. Worsening trends in adult health-related quality of life and self-rated health-United States,1993-2001. Pub Health. 2004;119(54):493-505. doi: 10.1016/j.phr.2004.07.007.
5. Metzler M. Social determinants of health: what, how, why, and now. Prev Chronic Dis. 2007;4(2):1-4.
6. Heidarnia MA, Ghaemian T, Abadi A, Fathian S, Montazeri A. [Relationship between deprivation and health-related quality of life]. Payesh 2011;11(4):495-1. doi: 10.7860/JCDR/2016/18349.8189. (Article in Persian)
7. Giovagholi AR, Meneses RF, Silva AM. The contribution of spirituality to quality of life in focal epilepsy. Epilepsy Behav. 2006;9(4):129-43. doi: 10.1016/j.yebeh.2006.04.002.
8. Ansarin H, Kabir A, Miri Shekarab AA. Comparison of dermatologic patients quality of life with healthy people. J Iran U Med Sci. 2003;9(32):649-58.
9. Syari A, Gary D, Asadi Lary M. Evaluation Quality of Life International experiences and necessary action in Iran. Medic Purific. 2001;1(41):30-6.
10. Ware JE. The status of health assessment 1994. Annual Rev Pub Health. 1995;16(6): 327-54.
11. Ware JE, Gandek B. Overview of the SF-36 health survey and the international Quality of life assessment (IQOLA) project. J Clini Epidemiol. 1998;51(8): 903-12. doi: 10.1016/s0895-4356(98)00081-x.
12. Burstram K, Johannesson M, Diderichsen F. health-related quality of life by disease and socio-economic group in the general population in Sweden. Health Poli. 2001;55(11): 51-69. doi: 10.1016/S0168-8510(00)00111-1.
13. Montazeri A, Goshtasebi A, Vahdaninia M, Gandek B. The Short Form Health Survey (SF-36): Translation and Validation Study of Iranian Version. Qual Life Res. 2005;14(2): 875-82. doi: 10.1007/s11136-004-1014-5.
14. Montazeri A, Goshtasebi A, Vahdaninia MS. [The Short Form Health Survey (SF-36): Translation and validation study of the Iranian version]. Payesh. 2006;5(3): 49-56. doi:10.1007/s11136-004-1014-5. (Article in Persian)
15. Ahmadi F, Salar AR, Faghihzadeh S. [The survey of quality of life in elderly of Zahedan city]. Hayat. 2004;22(13): 61-7. (Article in Persian)
16. Orfila F, Montserrant F. Gender differences in health related quality of life among elderly. Sociol Sci Med. 2006;63(11): 2367-80. doi: 10.1016/j.socscimed.2006.06.017.
17. Mir M, Safavi M, Fesharaki M, Farhadi SM. Determine of association quality of life and stress coping method among the caregiver of patient with multiple sclerosis; MS Society,Ahvaz 2008. J Med. 2011;10(5) 34-41.
18. Hadi N, Montazeri A, Behbody E. [Health-related quality of life in chronic kidney disease]. Payesh 2010;9(2):172-65. doi: 10.5812/ircmj.23781. (Article in Persian)
19. Abbaszadeh F, Baghery A, Mehran N. [Quality of life among pregnant

women]. Hayat 2009;15(1) 102-113. (Article in Persian)
20. Mckee MD, Cunningham M, Jankowski KR, Zayas L. Health-related functional status in pregnancy: relationship to depression and social support in a multi-ethnic population. Obstet Gyn. 2001 97(6):988-93. doi: 10.1016/s0029-7844(01)01377-1.
21. Hemingway H, Nicholson A, Stafford M, Roberts R, Marmot M. The impact of socioeconomic status on health functioning as assessed by the SF-36 questionnaire: the Whitehall II Study. Am J Publ Health. 1997 87(9):1484-90. doi: 10.2105/ajph.87.9.1484.
22. Garousi S, Safizadeh H, Samadian F. The Study of Relationship between Social Support and Quality of Life among Elderly People in Kerman. Jundish Sci Med J. 2012;11(3):303-15.
23. Cubbin C, Pollack C, Flaherty B, Hayward M, Sania A, Vallone D, et al. Assessing alternative measures of wealth in health research. Amer J Pub Health. 2011;101(41):939-47. doi: 10.2105/AJPH.2010.194175
24. Hajat A, Kaufman JS, Rose KM, Siddiqi A, Thomas JC. Long-term effects of wealth on mortality and self-rated health status. Amer J Epidemiol. 2011;173:192-200.
25. Zillich AJ, Blumenschein K, Johannesson M, Freeman P. Assessment of the relation between measures of disease severity, quality of life, and willingness to pay in asthma. Pharm Econom. 2002;20(4): 257-65. doi: 10.2165/00019053-200220040-00004.
26. Tabari F, Zakeri moghadam M, Bohrani N, Monjamed Z. [Quality of life in newly diagnosed cancer patients]. Hayat. 2007;13(2)56-71. (Article in Persian)