

***Self-care and relevant factors shaping quality of life among the elderly
with and without chronic disease***

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Abstract

Background: As world's population is growing, quality of life (QOL) and related factors such as self-care keep gaining mounting attention as they may affect the lives of the elderly significantly. The majority of the elderly people suffer from at least one chronic illness which plays an important role in elderly QOL.

Objectives: This study was conducted to investigate self-care and related factors to QOL among elderly clients with and without chronic disease who are protected by healthcare centers in Karaj, Iran .

Methods: In this cross-sectional study 400 elderly people were selected. A randomized multistage sampling method has been used. The data were collected using a standardized QOL and the Self-Care Assessment questionnaires. Pearson correlation was used to analyze the relationship between QOL and self-care factors. Additionally, Linear regression was run to identify the association between QOL domains and the independent variables through SPSS ($p < 0.05$).

Results: The average age of the participants was 69.25 ± 6.31 . The majority of the participants were married and 48.5% were illiterate. The results related to the average dimensions of QOL were found to be as follows: physical health: 12.98 ± 4.36 ; psychological health: 12.81 ± 3.86 ; social relationship: 14.81 ± 25.25 ; environment: 12.83 ± 3.0 ; and total QOL: 19.33 ± 4.63 . The results also revealed that QOL decreased significantly among the surveyed elderly, while it increased in the case of married and educated without chronic diseases. Finally, there was a significant positive relationship between all dimensions of SC (except for professional dimension) and dimensions of QOL ($P < 0.05$).

Conclusion: Chronic disease, physical SC, and emotional SC can act as significant predictors of QOL among the elderly.

Keywords: *quality of life, self-care, chronic disease, elderly*

Introduction

Broadly speaking, there has recently been a substantial grow in the size of ageing population, and this will possibly continue in the upcoming decades. The contributory roles of the elderly people (>60 years) in different areas have increased from 9.2% in 1990 to 11.7% in 2013. It is generally believed that these values will reach

to 21.1% by 2050. Currently, approximately, two thirds of the world's elderly people live in developing countries [1]. At the same time, in Iran, according to the governmental figures, growth rate of the elderly is hypothesized to be nearly 26% from 2011 to 2050. Specifically, it is expected that by 2050, 33% of the population will be composed of elderly people (>60 years).

It is inevitable that the fact of longevity is accompanied by numerous health problems and social challenges. According to previous studies, the majority of the elderly people suffer from at least one chronic illness which typically has a long-term treatment [2-4].

The Quality of life (QOL), which is considered as one of the critical indicators of health in case of elderly people, plays a pivotal role in implementing the essential medical and social care needs for them [5]. The World Health Organization (WHO) argues that QOL is a multi-layered concept involving different aspects concerning people's health. These aspects, in general, determine QOL for a person and include physical, emotional, psychological, and social health [6]. One reasonable way to deal with QOL issues can be the active engagement of both public health centers and people in institutionalizing health-related and self-care (SC) activities within societies. SC is interpreted as a person's different activities with the aim of taking care of himself [7]. Conversely, lack of attention to various aspects of health can lead to lower QOL which, in turn, can be dealt with through self-care support groups [8].

Heidari and Shahbazi studied the effects of SC training programs on QOL among the elderly and highlighted their determining roles in promoting practices of sufficient and appropriate nutrition, exercise, relaxation, and medication. The researchers suggested that these programs can decrease their problems in the process of senescence and help them promote their QOL [5]. Similarly, another study in an Iranian setting confirms the importance of self-care education in improving QOL among the senile [9].

Nevertheless, the aforementioned studies failed to employ valid and reliable tools in exploring SC and offer no solid evidence relevant to this underlying factor. Those studies investigated SC and QOL among older adults who suffer from one or more chronic diseases (rheumatoid arthritis, hypertension, high blood lipids, back ache, osteoporosis, cardiovascular disease, type II diabetes, depression, gastro-intestinal diseases, chronic respiratory diseases, heart attack, and cancer). However, as far as elderly people suffering from chronic diseases are concerned, SC

and QOL are rarely touched upon in the literature. Hence, considering the great number of recent population resettlement in Karaj, a metropolis in Iran, and the emergence of different patterns of lifestyles, this study was conducted to investigate the impacts of SC and other influential factors on QOL of senile people with and without chronic diseases in the healthcare centers in Karaj, Iran.

Methods

This cross-sectional study recruited 400 elderly participants (>60) in 2015, in Karaj, Iran. The size of the sample was determined using the QOL mean reported by the previous studies [10] and was calculated based on the following formula:

$$n = \frac{Z^2 (1-\alpha/2) P(1-P)}{d^2}$$

According to this criterion, any study that uses a sample of 382 elderly participants would be capable of (80%) detecting the difference that is significant at 0.05. To ensure the suitability and sufficiency, 400 participants were selected to fulfill the objective of the study.

A randomized multistage sampling method has been used in order to obtain more variability. For this purpose Karaj city was divided into the five regions of North, South, East, West, and Centre for all of which various health centers in each region were identified. The samples were weighted according to the population covered by each health center. A simple stratified random proportional technique was used to choose the samples consisting of 142 men and 258 women (married, divorced, and widows) whose age range varied between 60 and above. The characteristics of the subjects included: both gender, with or without chronic disease, mobility, able to communicate verbally, not having Alzheimer's disease or other cognitive disorder that did not have the ability to answer the questions or take part in the interview.

The participants signed consent forms in which the aim and methodology of the study were elaborated, and confidentiality was ensured. The questions were read and orally asked from those with no literacy. The health department managers also expressed their willingness to participate in the study.

At the data collection phase, first, expert interviewers were asked to conduct face-to-face interviews each of which lasted approximately 30 minutes. Furthermore, complementary data were collected using WHO's Quality of Life Report (BRIEF-WHOQOL), which is a valid tool in Iranian context [6]. Besides, the Self-Care assessment questionnaire was administered in order to assess participants' self-care capabilities. Finally, participants' demographic and background information were gathered through interviews.

BREEF-WHOQOL instrument has been developed in order to provide a shorter way for assessing QOL. This questionnaire has already been validated in Iranian contexts and has been used to determine QOL in elderly population. The questionnaire appears to be less comprehensive, but it has been in use in different fields extensively. It is culturally sensitive and includes questions of physical health, psychological health, social relationships and physical environment. The BREEF-WHOQOL includes questions about religion, spirituality, and personal beliefs in psychological domains among other things [11]. This truncated questionnaire has been translated and used in many countries all over the world including Iran [6].

The questionnaire consists of 26 items which measure four major domains: the physical and mental component, social and environmental relationships, health, physical health, daily activities, drug dependence and medical aids, energy and exhaustion, dynamism, pain and suffering, sleep and rest, ability to work, psychological health (body image and appearance, negative feelings, positive feelings, self-esteem spirituality/religion/personal beliefs, thinking, learning, memory and concentration), social relationships (personal relationships, social support, sexual activity), and environment (financial resources, freedom, physical safety and security, health and social care: accessibility and quality, home environment, opportunities for acquiring new information and skills, participation in and opportunities for recreation/leisure activities, and physical environment, transport). There were two items that were examined separately: question one that concerns

the patient's overall perception of QOL and question two that targets patient's overall perception of their health. The scores of the four domains denote the patient's perception of QOL in each particular domain. The scores were scaled in a positive direction (i.e., higher scores denote higher QOL) and converted to reflect 0-100 for each domain [11].

In this study the Self-Care assessment questionnaire adapted by Lisa D. Butler (2010) was used to measure the SC aspects [12]. After forward-backward translation, the validity and reliability of the questionnaire were established drawing insights from previous studies. The questions underwent expert validation in order to ensure the appropriateness of the content. In reliability analysis, the Cronbach Alpha was found to be 0.8.

The SC questionnaire consists of seven domains which participants rate themselves on how often and how well they take care of themselves in recent days. Those domains include: 1. Physical SC, which consists of 13 domains (eating, regular medical care, rest, appearance, fun physical activity, positive thoughts, exercise, vacations, artistic activities); 2. Psychological SC, which consists of 13 domains (day trips, personal psychotherapy, being unfamiliar with technology, reading, attitudes, recreational activities, self-reflection, life stress, responsibilities); 3. Emotional SC, which consists of 9 domains (staying in contact, rereading favorite books, relaxing activities, behavior); 4. Spiritual SC, which consists of 15 domains (spiritual connections, hope, spending time for pray or praise, reading and listening to something inspirational, experiences); 5. Relationship SC which consists of 11 domains (having communication inside and outside the family, asking for help, personal correspondence); 6. Workplace and professional SC, encompassing 11 domains (chatting, work space, consultation, supporting the needs); and 7. Overall balance, covering 5 domains (balance within working life and work day, among family and friends, between fun and rest, between work and personal time and balance in looking forward and acknowledging the moment).

Each item is rated on a five-point Likert scale: 5=frequently, 4=occasionally, 3=rarely, 2=never, 1=It never occurred to me. The alpha coefficient for the scales was analyzed to be 0.85. For this questionnaire, the domain scores were scaled in a positive direction as well (i.e., higher scores denoted higher SC) and were calculated using the mean score of the items. After the scoring process, the data were subjected to statistical analysis. The data were analyzed by means of both descriptive and analytic statistics using SPSS, version 19. The mean values of QOL and SC were determined according to the characteristics of the sample. To compare the mean scores of QOL among different subgroups, an independent samples t-test and one-way ANOVA were used to compare two or more independent mean values, respectively. In addition, Pearson Product correlation was used to assess the correlation between the independent variables (age, gender, education, marital status, and self-reported chronic diseases) and the QOL domains. At the final stage, Multivariate linear regression was run to identify the magnitude of the association between QOL domains and the independent variables. This study was approved by the Ethics Committee of the Alborz University of Medical Sciences.

Results

In total, 400 elderly individuals (258 men and 142 women) took part in this study. The mean age of participants was found to be 69.25 (SD=6.31) (age range 60-89). Most participants were married (83.25%) and illiterate (48.5%). Table 1 shows the characteristics of the participants. physical health, psychological health, social relationships, personal beliefs, and physical environment.

The mean values for different dimensions of QOL were analyzed to be as follows: physical health: 12.98 ± 4.36 ; psychological health: 12.81 ± 3.86 ; social relationship: 14.81 ± 25.25 ; environment: 12.83 ± 3.0 , and total QOL: 19.33 ± 4.63 . The impacts of gender, age, education, financial and marital status, and chronic disease on the mean scores of four subscales of QOL were analyzed using one-way ANOVA. The findings disclosed that the mean value for QOL was significantly lower in the case of older participants ($P < 0.001$). Additionally, in the case of the participants with higher levels of education, the mean value of QOL showed a substantial increase ($P < 0.001$). Also, the statistical analysis showed that, in the married subjects, the mean of QOL was significantly higher ($P < 0.001$) and for the elderly without chronic diseases as well (Table 1).

Table 1: The demographic characteristics QOL in the participants (n=400)

Variable	Category	N (%)	Mean (SD)	P
Gender	Male	258(64.5)	19.67 \pm 4.59	0.04
	Female	142(35.5)	18.71 \pm 4.77	
Age	60-69	233(58.25)	20.35 \pm 4.39	<0.001
	70-79	148(37)	18.44 \pm 4.59	
	≥ 80	19(4.75)	16.08 \pm 4.28	
Education	Illiterate	194(48.5)	17.45 \pm 4.45	<0.001
	Elementary	54(13.5)	19.73 \pm 3.43	
	Diploma	84(21)	20.95 \pm 3.90	
	Above diploma	68(17)	22.37 \pm 4.41	
Marital Status	Single/divorced/widow	67(16.75)	17.26 \pm 4.02	<0.001
	Married	333(83.25)	19.74 \pm 4.64	
Chronic Disease	Yes	233(58.25)	16.99 \pm 4.06	<0.001
	No	177(44.25)	22.28 \pm 3.49	
Physical Self Care	Good	128(32)	22.17 \pm 3.62	<0.001
	Fair	227(56.75)	11.59 \pm 4.40	
	Week	45(11.25)	14.98 \pm 3.32	
Psychological Self Care	Good	34(8.5)	22.51 \pm 3.83	<0.001
	Fair	314(78.5)	19.39 \pm 4.56	
	Week	52(13)	16.88 \pm 4.20	
Emotional Self Care	Good	80(20)	21.61 \pm 4.14	<0.001
	Fair	305(76.25)	18.86 \pm 4.59	
	Week	15(3.75)	16.68 \pm 3.70	

Spiritual Self Care	Good	211(52.75)	20.87±4.26	<0.001
	Fair	174(43.5)	17.61±4.41	
	Week	15(3.75)	17.55±4.65	
Relationship Self Care	Good	154(38.5)	21.32±3.80	<0.001
	Fair	241(60.25)	18.09±4.66	
	Week	5(1.25)	17.5±5.72	
Professional Self Care	Good	2(0.5)	18.37±11.36	0.825
	Fair	7(1.75)	19.03±3.31	
	Week	391(97.75)	19.34±4.63	
Balance	Good	203(50.75)	20.49±4.32	0.974
	Fair	189(47.25)	18.08±4.12	
	Week	8(2)	19.21±5.17	

P Value is significant at the 0.05 level.

The results of correlation analysis indicated a statistically significant positive correlation among all areas of the self-care except for professional

and QOL dimensions. Conversely, a negative correlation was found among the fields of professional SC and QOL dimensions (Table 2).

Table 2: Correlation among QOL dimensions and SC fields

	Physical QoL	Psycho QoL	Social QoL	Enviro QoL	Physical SC	Psycho SC	Emotion SC	spiritual SC	Relation SC	Profe SC	Balance SC
Physical QoL	1										
Psycho QoL	0.69**	1									
Social QoL	0.46**	0.44**	1								
Enviro QoL	0.58**	0.53**	0.51**	1							
Physical SC	0.55**	0.51**	0.31**	0.40**	1						
Psycho SC	0.47**	0.39**	0.32**	0.30**	0.54**	1					
Emotional SC	0.27**	0.36**	0.31**	0.28**	0.32**	0.26**	1				
Spiritual SC	0.27**	0.23**	0.32**	0.37**	0.38**	0.31**	0.22**	1			
Relation	0.23**	0.30**	0.32**	0.24**	0.33**	0.41**	0.37**	0.29**	1		
Profe SC	0.04**	-0.04**	-0.09**	-0.04**	-0.05**	-0.03	-0.01	-0.01	-0.00**	1	
Balance SC	0.12*	0.20**	-0.03	-0.01*	0.10*	0.15**	0.03	0.08	0.21**	0.05	1

Note: Psycho: Psychological; Enviro: Environment; Relat: Relationship; Profe: Professional

*The correlation is significant at the 0.05 level.

**The correlation is significant at the 0.01 level

Multiple regression analyses were carried out to probe into the predictive power of independent variables (gender, age, education, marital status, status of health and dimensions of SC including physical, psychological, emotional, spiritual,

relationship, professional and balance) in case of QOL. The results demonstrated that the chronic disease, physical SC, emotional SC and spiritual SC can significantly predict QOL among the elderly (Table 3).

Table 3: The predictive factors of HRQL among elderly samples (n=400) through multivariate linear regression analyses

Factor	B	Beta	t	P value
Age	-0.028	-0.038	-0.879	0.38
Gender	-0.278	0.005	0.127	0.89
Education	0.261	0.066	1.393	0.16
Marital Status	0.065	.005	0.127	0.86
Chronic disease	-3.469	-.372	-7.715	<0.001
Physical Self care	1.762	.238	5.566	<0.001
Psychological Self care	0.354	.035	0.882	0.37
Emotional Self Care	1.679	0.167	4.317	<0.001
Spiritual Self care	0.795	.098	2.420	0.01
Relationship Self care	0.357	.039	0.931	0.35
Professional Self care	-0.283	-.012	-0.314	0.75
Balance	0.605	.070	1.821	0.06

R²=0.485, P value was significant at 0.05

Discussion

The aim of this study was to determine the level of SC and some of the factors affecting QOL in elderly people with and without chronic diseases in health centers in Karaj. The findings indicated that the QOL considerably declines as the age range enhanced. These results are congruent with those reported in Maghsoudi and Shahbazi [2,5]. It can be suggested that the process of aging raises the level of dependence on others and, as a result, it may lead to a decline in QOL [13].

In sum, considering the roles of education, it was found that participants with higher levels of educational experiences showed fewer rates of chronic illnesses compared to those with lower levels of education. This finding is in line with those of Maghsoudi and Salehi t [2,14]. It can be postulated that education can be an effective indicator of QOL that involves other aspects of life such as social class and income [15].

With regard to the connections between marital status and QOL, The findings of the present study showed that QOL was significantly higher in married individuals. This can be attributed to the negative effects of losing one's spouse or a family member on older people which leads to lower levels of QOL. More specifically, the loss of a spouse or beloved one can account for pathological responses in older people which may lead to depression in the elderly. In fact, these results indicate that single elderly people experience a depressing life more often than their

normal counterparts, as suggested by previous researchers [2,16].

In line with other studies, in the elderly with chronic diseases, QOL considerably reduced. Obviously, in such situations, the lifestyle behavior is modified due to disability leading to a decreased QOL [2,3].

Moreover, this study revealed significant discrepancies among males and females with regard to their QOL. Indeed, male participants illustrated higher QOL since they had less health-related problems. This fact holds true in Iranian contexts as well as in other developing countries [2,17]. According to Unsar et al., it may be ascribable to cultural aspects in which men exercise more dominance in traditional family structures, enjoy better social life, fewer responsibilities, and more economic freedom [17]. Nonetheless, in a study conducted in 2016, no difference was found between females and males regarding QOL [4]. The reason for this contradiction may be due to the differences in socioeconomic characteristics.

Another interesting finding of the current study was the positive correlation among all areas of SC and QOL dimensions and the negative correlation between professional SC area and QOL dimensions. Numerous studies have confirmed the correlation between SC and QOL [18,19].

Our findings showed that physical SC and emotional SC are significant predictors of QOL in the elderly. Similarly, Halaweh et al. reported that

physical activity was associated with higher QOL among the elderly [20]. Additionally, recent research in the USA suggests that social support from friends acts as an important predictor of perceived health among older adults, particularly when compared with the young for whom family support can be more important [21].

Based on the data, it was found that spiritual SC acted as another important predictor of QOL in the sample. Like Cardoso's study, spiritual behavior and life satisfaction are considerably interconnected. In fact, spiritual SC seems to make life more meaningful and can culminate in a better QOL [22]. Furthermore, in several studies, professional, emotional, and spiritual SCs were reported as notable predictors of professional QOL [23,24].

Similar to the previous studies, the results of the current study indicated that demographic and SC-relevant factors explained 48.5% of variance in health-oriented QOL. In Korea, through using EQ-5D, it was found that the socio-demographic factors and the health factors acted as possible explanations for 43% of variance in health related factors of QOL, whereas the opposite was true in the case of EQ-VAS in that the above-mentioned factors explained about 34% variance in health related factors of QOL [25].

Considering the fact that all our respondents have moved to Karaj from other cities, the findings of this study can be generalized to other similar samples and contexts. The only point of difference can be socioeconomic status, family cohesion, social support, and social networks. Hence, one direction for further research can address the above-mentioned aspects and their relationship with QOL. Furthermore, this study underscored this point that QOL depends heavily on age, gender, education, marital, health status, physical, psychological, emotional and spiritual self care status. In addition, the results indicated that health status, physical, emotional and spiritual SC were significant predictors of QOL in among Iranian elderly. Accordingly, effective SC programs can promote healthy aging and enhance the sense of well-being QOL.

To summarize, in recent years, the SC and its possible roles in different areas have been an under-investigated issue. While addressing this

gap, the findings of the present study may contribute to the improvement of innovative policies as well as public services for the elderly. Therefore, a great deal of attention needs to be devoted to educational and health-related planning in order to generate a quality and decent life for the elderly in Iran.

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