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Quality of Life Among Nursing Home Residents Compared With the Elderly at Home

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Background: On the 21st century, due to advances in treatment and medical care, significant increases in life expectancy and decrease of birth rate, most countries including Iran have faced with the population aging problem.
Objectives: Due to the increasing elderly population phenomenon and its physical and social impacts on seniors' health, further research is necessary to improve the quality of life (QOL) for elderly. In this regard, the aim of the present study was to compare the QOL between two groups of elderly who were residents of nursing homes as well as those who live with their families.
Patients and Methods: A cross-sectional study was conducted, in which 110 home-resident elderly people and 110 residents of three nursing homes in Shiraz, Iran, were selected by convenient sampling. In this study, two questionnaires were used. Demographic information of participant was recorded by the first questionnaire and their QOLs were assessed by SF-36 QOL questionnaire, which had been standardized in Iran (its validity and reliability had been confirmed for the Iranian population) by the second questionnaire. SPSS 15 was used and $P < 0.05$ was considered as a significance level for data analysis. Data were analyzed using the Kolmogorov-Smirnov test, t-test, chi-squared and correlation test.
Results: The mean scores of the elderly QOL in all the scales for elderlies living with families were significantly higher than those of the nursing home residents. Furthermore, with the increase in the level of education, the scores of QOL in all the scales were higher. Furthermore, in all the eight scales, the highest QOL belonged to single or widowed elderlies and the lowest to divorced or spouse-died ones.
Conclusions: This study suggested that keeping elderly at home rather than nursing homes could be helpful to increase the QOL by providing chances for marriage, education and more social activities.

Keywords: Quality of Life; Elderly; Nursing Home; Family

1. Background

Although the definition of elderly is associated with society status and there is no standard numerical criteria for elderly, most developed countries have accepted the chronological age of 60 years as the definition of elderly, which was proposed by the World Health Organization (WHO) defines.

The WHO defines the elderly age range as follows (1):
Youth elderly: 60-74
Elderly: 74-90
Old elderly: 90 and above

Currently 590 million elderlies are living in the world, approximately 300 million of which live in developing countries (2). The world population is increasing 1.7% annually, whilst the growth rate of the elderly population is 2.5%. According to the Unite Nation definition, whenever the over 60 population constitutes more than 7% of the society, it is called an elderly society (3). Iran with about 7.3% over 60 population is considered an elderly country. The concept of quality of life (QOL) is one of the indices to determine the necessities and health problems for elderlies. The SF-36 questionnaire is a tool for assessing the QOL, which has been applied in different populations to assess elderlies' QOL (4). Today, many people for various reasons prefer to use nursing homes (NH) for taking care of their elderly family members. Some reasons include lack of sufficient time, lack of capability, and the professional care provided in nursing homes by qualified and expert personnel, which also increases the chance of elderlies to contact with many people in the same age range (5). Although the some people believe that nursing homes could be the best choice for the elderlies, some studies have reported some disadvantages for nursing homes care. According to the available evidence, the question is that can the NH structure alone improve the QOL for residents? (6) One study indicated that older adults with dementia who were living at home experienced higher

QOL compared with those living in care institutions (7). Another study showed that the scores of QOL for nursing home residents in all domains except social functioning were lower than those of elderlies living with family (8). Another study reported that the mental health scores of QOL in diabetic patients who were living at home were higher than those of the nursing home residents. On the contrary, scores of physical and social domains were the opposite (9). Scores in the scales of physical, mental and social functioning in another study were higher among elderlies living at home and there was no significant difference in other scales (10). One study emphasized that elderlies living at home had higher scores in the scales of physical, social, life satisfaction and self-care functioning, compared with residents of public or private nursing homes (11). Certainly, considering the greater vulnerability in elderly, their increasing number has led to increased demand for medical care and assistance. For this reason, further research is necessary to improve the QOL for elderlies. In this regard, for macroeconomic policy settings and future planning, the need for comparison of QOL between two groups of nursing home residents and elderlies who live with their families was felt.

2. Objectives

According to the few studies in this area in Iran and their particular limitations and problems, the present study with the aim of comparing the QOL between elderlies residing in home and nursing home regarding their gender, marital status, education level and chronic diseases was conducted in Shiraz, Iran.

3. Materials and Methods

The present study was conducted as a cross-sectional study on two groups of elderlies who were living in nursing homes and their personal homes during 2011-2012. Three nursing homes out of six in Shiraz were randomly selected for this study, in which the elderlies were being taken care of in the form of boarding. The sample size was determined based on previous studies as well as by using the following formula with confidence coefficient of 0.95 and power of 90%, so that it was estimated as 110 persons.

$$n = ((Z_{1-\alpha/2} + Z_{1-\beta})^2 (\sigma_1^2 + \sigma_2^2))/(\mu_1 - \mu_2)^2$$

In this regard, 110 elderlies living in nursing homes and 110 living with families in the same age groups who had the study inclusion criteria were selected by convenient sampling method. Since people's cooperation with the investigators was weak, the elderlies who lived at home were selected by referring to citizens' home deliveries, retirement centers, public transportation stations, mosques, parks and cultural centers. We attempted to cover all of the areas; thus, data gathering was conducted in all the regions of Shiraz. The inclusion criteria for both study groups were age ≥ 60, lack of perceptual and cognitive problems, and willingness to. People who did not meet the criteria (e.g. the elderly with cognitive and perceptual problems or severe chronic diseases or not willing to participate) were excluded. The normality of data was confirmed by one sample Kolmogorov-Smirnov test and for homogeneity-of-variance; Levene's statistic test was used. Two questionnaires including demographic and SF-36 questionnaires were used for data gathering. The demographic questionnaire included basic information, such as age, gender, education level and marital status. The education levels of the elderlies were recorded in four categories, including illiterate, primary school, high school, and diploma and above. In addition, the participants' marital statuses were classified in four groups including single (who has never been married), married (whose spouse is alive), widowed (whose spouse has died and he/she is single now) and divorced (who has got divorced and is now single). The SF-36 questionnaire which is a tool for QOL measurement in eight scales was used to measure the health status. This questionnaire contains both positive and negative scales in health, including physical functioning (PF), role-physical (RP), bodily pain (BP), general health (GH), vitality (VT), social functioning (SF), role-emotional (RE), and mental health (MH). The scores for each item were added together and a range of scores from zero (worst health status) to 100 (best health status) as an overall scale were used for data analysis. The SF-36 questionnaire includes 36 questions and has been standardized in Iran (its validity and reliability had been confirmed in Farsi for the Iranian population) (12). The internal consistencies of all eight SF-36 scales (to test the reliability) had the minimum reliability standards and the ranges of Cronbach's alpha coefficient were from 0.77 to 0.90. A number of elderlies completed the questionnaires by themselves. In case of illiteracy or disability, the researcher completed the questionnaires by face-to-face interviews with them. Verbal informed consents were obtained before starting the research. All the ethical considerations were considered. In this regard, after signing a letter of introduction by the university, negotiating with relevant authorities and obtaining the approval of nursing home facilities, the samples were obtained. Data analysis was performed by SPSS-15 and the one way ANOVA statistical test. $P < 0.05$ was considered statically significant.

4. Results

This study was conducted on 220 elderlies with mean ± SD age of 66.35 ± 6.6, ranging from 60 to 88 years old. For data gathering, 62 males and 47 females from home inhabitants, and 63 males and 48 females from nursing home residents were included. Both groups were equal in terms of gender ($P \approx 1$). The age range of about 40% of home-resident elderlies was 70-79, while that of about 60% of elderly nursing home residents was 70-79, indicating that elderly households were younger compared with elderly nursing home residents. Demographic characteristics of the samples in both groups were similar, except for marital status. Baseline characteristics of the

Table 1. Distribution and Frequency of Participant [a]

Variable	Group I[b]	Group II[c]
Gender		
Male	62 (56.36)	63 (57.27)
Female	48 (43.63)	47 (42.72)
Educational level		
Illiterate	44 (40.00)	29 (26.36)
Primary school	38 (34.54)	47 (42.72)
High school	16 (14.56)	30 (27.27)
Diploma and above	12 (10.90)	4 (3.63)
Marital status		
Spouse was alive	5 (4.54)	78 (70.90)
Widowed	68 (61.81)	28 (25.45)
Divorced	7 (6.36)	2 (1.81)
Single	30 (27.27)	2 (1.81)

[a] Data are presented as No. (%).
[b] Elderlies living in nursing homes.
[c] Elderlies living with families.

Table 2. Comparison of Quality of Life Domains in the Studied Elderly Groups[a]

Scale of QOL	Mean ± SD	P Value
PF		0.000
I[b]	45 ± 26.64	
II[c]	64.39 ± 31.4	
RP		0.000
I	37.95 ± 45.65	
II	59.09 ± 41.71	
BP		0.000
I	44.36 ± 21.00	
II	58.14 ± 24.84	
GH		0.000
I	37.73 ± 19.33	
II	54.02 ± 21.53	
VT		0.000
I	41.20 ± 17.03	
II	54.77 ± 23.83	
SF		0.000
I	50.34 ± 24.68	
II	67.15 ± 25.78	
RE		0.000
I	26.91 ± 41.19	
II	59.09 ± 41.05	
MH		0.000
I	50.95 ± 14.44	
II	61.23 ± 22.13	

[a] Abbreviations: QOL, quality of life; PF, physical functioning; RP, role-physical; BP, bodily pain; GH, general health; VT, vitality; SF, social functioning; RE, role-emotional; MH, mental health; SD, standard deviation.
[b] I, Elderlies living in nursing homes.
[c] II, Elderlies living with families.

participants are shown in Table 1. Table 2 demonstrates that the QOL of elderlies living in nursing homes (group I) in all of the scales was significantly lower than the elderlies who were living with family at home (group II). Our results showed that the QOL in all of the scales among females who were living in nursing homes (group I) was significantly lower than those living with family at home (group II). Nevertheless, among males, there was no significant difference between group I and group II accepted in the role-emotional scale (Table 3). The results (visible in Table 4) showed that with increase of educational level, the QOL in all the scales enhanced. Regarding the marital status, the results indicated that PF, GH, BP, and MH scores decreased among groups 1 (spouse is alive), 4 (single), 2 (widowed), and 3 (divorced), respectively. In other words, group 1 had the highest scores in these scales and group 3 had the lowest; groups 4 and 2 were in the second and third places, respectively. Furthermore, role-physical (RP), social functioning (SF) and role-emotional (RE) scores decreased among groups 4 (single), 1 (spouse is alive), 2 (widowed), and 3 (divorced), respectively. In other words, group 4 had the highest scores in these scales and group 3 the lowest; groups 1 and 2 were in the second and third places (Table 5).

Table 3. Comparison of Quality of Life Domains Based on Gender in the Studied Elderly Groups [a]

Scale of QOL	Male		Female	
	Mean ± SD	P Value	Mean ± SD	P Value
PF		0.19		0.000
I[b]	48.72 ± 25.88		42.08 ± 27.07	
II[c]	56.48 ± 81.53		70.49 ± 30.16	
RP		0.32		0.000
I	42.70 ± 45.82		34.27 ± 45.54	
II	51.59 ± 42.15		64.68 ± 40.81	
BP		0.88		0.000
I	50.00 ± 20.42		40.00 ± 20.56	
II	50.63 ± 24.08		63.93 ± 24.03	
GH		0.19		0.000
I	42.72 ± 20.78		33.87 ± 17.33	
II	48.48 ± 21.28		58.15 ± 20.47	
VT		0.7		0.000
I	46.48 ± 17.06		37.13 ± 15.98	
II	48.04 ± 22.29		59.68 ± 23.89	
SF		0.07		0.000
I	55.98 ± 20.62		45.96 ± 26.75	
II	65.15 ± 29.13		68.65 ± 23.10	
RE		0.02		0.000
I	34.04 ± 45.30		21.50 ± 37.25	
II	55.31 ± 43.00		61.90 ± 39.64	
MH		0.74		0.000
I	55.66 ± 13.32		47.11 ± 14.28	
II	56.93 ± 23.02		64.44 ± 21.05	

[a] Abbreviations: QOL, quality of life; PF, physical functioning; RP, role-physical; BP, bodily pain; GH, general health; VT, vitality; SF, social functioning; RE, role-emotional; MH, mental health; SD, standard deviation.
[b] I, Elderly who living in nursing home
[c] II, Elderly who living with family

Table 4. Comparison of Quality of Life Domains Based on Educational Level in the Studied Elderly Groups [a]

Scale of QOL	Mean ± SD	P Value
PF		0.000
Illiterate	38.63 ± 29.09	
Primary school	55.36 ± 28.69	
High school	73.11 ± 22.11	
Diploma and above	76.07 ± 28.36	
RP		0.000
Illiterate	28.42 ± 41.52	
Primary school	49.41 ± 44.65	
High school	66.84 ± 38.74	
Diploma and above	82.81 ± 35.02	
BP		0.000
Illiterate	41.78 ± 22.81	
Primary school	48.92 ± 23.28	
High school	64.00 ± 20.49	
Diploma and above	70.00 ± 15.49	
GH		0.000
Illiterate	35.30 ± 15.67	
Primary school	45.85 ± 22.18	
High school	56.63 ± 18.86	
Diploma and above	63.37 ± 18.28	
VT		0.000
Illiterate	32.1	
Primary school	37.6 ± 18.3	
High school	41.2 ± 20.2	
Diploma and above	45.3	
SF		0.000
Illiterate	47.60 ± 27.21	
Primary school	58.52 ± 24.86	
High school	68.75 ± 21.69	
Diploma and above	82.03 ± 19.34	
RE		0.000
Illiterate	30.09 ± 40.40	
Primary school	37.25 ± 42.85	
High school	63.76 ± 43.21	
Diploma and above	72.91 ± 36.95	
MH		0.000
Illiterate	50.75 ± 17.50	
Primary school	55.31 ± 18.67	
High school	62.00 ± 21.02	
Diploma and above	69.25 ± 17.14	

[a] Abbreviations: QOL, quality of life; PF, physical functioning; RP, role-physical; BP, bodily pain; GH, general health; VT, vitality; SF, social functioning; RE, role-emotional; MH, mental health; SD, standard deviation.

Table 5. Comparison of Quality of Life Domains Based on Marital Status in the Studied Elderly Groups [a]

Scale of QOL	Mean ± SD	P Value
PF		0.000
Spouse was alive	69.01 ± 28.29	
Widowed	41.29 ± 29.51	
Divorced	38.88 ± 26.90	
Single	62.18 ± 20.98	
RP		0.000
Spouse was alive	62.34 ± 41.75	
Widowed	33.33 ± 41.93	
Divorced	22.22 ± 44.09	
Single	65.62 ± 44.78	
BP		0.000
Spouse was alive	61.60 ± 21.12	
Widowed	42.50 ± 23.88	
Divorced	32.22 ± 15.63	
Single	56.25 ± 20.12	
GH		0.000
Spouse was alive	55.79 ± 20.70	
Widowed	36.44 ± 19.59	
Divorced	25.66 ± 16.53	
Single	54.15 ± 17.48	
VT		
Spouse was alive	32.5 ± 25.3	
Widowed	52.1 ± 20.1	0.000
Divorced	48.4 ± 18.9	
Single	29.2 ± 15.7	
SF		
Spouse was alive	71.38 ± 23.30	
Widowed	45.83 ± 23.20	0.000
Divorced	36.11 ± 17.05	
Single	71.09 ± 23.85	
RE		
Spouse was alive	57.83 ± 43.89	
Widowed	26.38 ± 36.80	0.000
Divorced	22.22 ± 44.09	
Single	61.29 ± 45.62	
MH		
Spouse was alive	63.95 ± 22.02	
Widowed	49.20 ± 14.82	0.000
Divorced	38.22 ± 38.22	
Single	61.25 ± 61.25	

[a] Abbreviations: QOL, quality of life; PF, physical functioning; RP, role-physical; BP, bodily pain; GH, general health; VT, vitality; SF, social functioning; RE, role-emotional; MH, mental health; SD, standard deviation.

5. Discussion

Always, due to the dwindling strength, weakness of mental powers, the multiplicity of physical and mental illness, lack of ability to perform everyday tasks, mood imbalances, poverty, busy elderly family supervisors, etc., it is hardly possible to take care of the elderlies by first degree family members or best friends. Sometimes, despite the inner propensity of the elderly's family, there is no choice but to transfer the elderly to various charitable institutions or public or private nursing homes. Therefore, it is important to know the QOL of elderlies in nursing homes, their fate and their life style compared with those at home. In this regard, our study revealed that the QOL scores of the elderlies living in nursing homes in all the scales were significantly lower than those of the elderlies living with families. Lower QOL of nursing home residents may be due to chronic diseases and ignorance of their families to care for them. Low scores of mental and social health of elderlies in nursing homes can be due to their limitations in social communication. The elderly often live in isolation and think about past or are saddened for died spouse or their out-of-reach children. Undoubtedly, such isolation can lead to depression and could affected mental health. According to the results, QOL of females in vitality and mental health were better compared with males in nursing homes, but the differences of QOL between females and males, except for two dimensions of vitality and mental health, were not significant. It seems that superiority in mental health of females compared with males in nursing homes was due to extraversion and their willingness to communicate and share their thoughts and feelings with others, leading to mental discharge and females' mental relaxation. In contrary, unwillingness of males to express problems and share feelings had affected their mental health and had led to depression. Certainly, collaborative work, meetings, group-based training and social entertainments can be effective in promoting mental health in males living in nursing homes. Superiority of males' QOL who lived with family in vitality scale compared with females of this group could be due to spending more time out of home and contact with others. In contrast, females spend more time at home alone and their social communications are very limited. This isolation has led to lowered vitality of females than males. Family communication, cultural reform in the context of women's relationships, media training to increase social communication, and community facilities to respond to the social needs of women (theory of Maslow's hierarchy of needs) (13) can be effective in reducing the isolationism. A similar study recently showed that although the QOLs of females who lived with families were lower than males of the same conditions, it was better towards females in nursing homes. These results were consistent with our study (11). In view of Alexandre et al. living with family and getting involved with child development and finance will cause seniors to stay active and social (14). Another study had similar results with ours, concluding that the level of education was effective on increasing the QOL, so that with increase of the level of education, the QOL scores increased in all dimensions (15). This achievement confirms that higher education will lead to greater awareness and positive attitude to life and adaptation power increase, so that the ability to compliance with the existing state enhances the QOL in all dimensions. According to the obtained results, increase in elderly education has not been effective on increasing the mental health. Indeed, their mental health and perception of emotional problems were not related to educational levels. However, the mentioned dimensions were related to cultural issues, religious beliefs and social settings in which they have grown. On the other hand, based on the result of one study, higher education was associated with lower expression of emotional and psychological issues (16). Although the level of education did not play a major role in mental health and feelings of elderlies, it was a motivation for studying and acquiring scientific and artistic degrees. Increased self-esteem in elderlies can make them feel more positive and useful for their society. Educated people spend the aging and leisure time with more diverse entertainments and achieve a more pleasurable life. Most of the elderly people in nursing homes had lost their spouses and had the lowest QOL. Elderlies who had been separated from their spouses (divorced) also had lower QOL scores. A similar study showed that there was a significant relationship between the QOL of single, married and divorced people; the mean score of absolute QOL of divorced ones was less than that of the single and married ones (17). It could possibly be due to living with the spouse and in a family. Of course, living in a household has a higher QOL, which was in accordance with our results. However, this condition does not conflict with superiority of living with families. A review of the available evidence regarding the loneliness of the elderlies indicates the origin of many cases of unstable mental health such as depression, suicide and extreme despair is loneliness (17-19). In a study, loneliness was described as extremely distressing emotional conditions; a negative experience which is unpleasant, agonizing, difficult, frightening and painful; it was also introduced as a dark fate (20). Although there are many barriers to reduce the loneliness of the elderly in society, a successful treatment of loneliness may reduce the serious side effects such as depression. Furthermore, increased social contact can cause health promotion of elderlies. Structural barriers may include cultural barriers (taboo in society for second marriage, considering it as dishonor), lack of adequate facilities for elderlies spending time outside the house and lack of social support for them by the government. Like other studies, our results showed that marital and social support were associated with increased QOL (21);

existence of a spouse can increase life satisfaction of elderlies from the nursing point of view (22, 23). The best way to prevent aging effects is continues social activities, no doubts continuing these activities under the protection of the family and relatives is easier and more suitable than in nursing home. Several studies have confirmed this result in Iran that the QOL of married elderlies has been better than that of the single ones (24-27). Comparing the attitudes of married and single elderlies of the ageing period, in addition to the married elderly having a better attitude compared with the single elderlies, married elderlies at homes showed a better attitude compares with married elderlies in nursing homes. Seniors who were taken care of at home were healthier and enjoyed more of their lives both physically and mentally. Greater independence and freedom, possibility of studying, speaking with family members, visiting friends and sense of belonging to family has led them to have a better sense about life. Generally, two categories should be considered about the valuation of the elderlies; firstly, the objective issue of an elderly means life with family or separately, the frequency of visiting, admissions of orders, permission of elderly affairs, and finally financial assistance and services to. Secondly, the mental imagery of an elderly consists of children and relatives' mentalities in terms of responsibility, care and sustenance, accepting the thoughts and opinions of the elderly and tendency to living near them. Therefore, building the culture in the community to overcome structural barriers requires the cooperation and participation of elderlies' families. Therefore, taking care of elderlies at home is very effective in resolving cultural and social barriers. According to specific needs in this period, QOL in elderlies can be intimidated easily. Hence, considering the contextual factors affecting the QOL in old ages is potentially important. Given the values embedded in the national and religious culture of the Iranian society, home is the best and most suitable place for taking care of elderlies to supervise and resolve their emotional problems. Respect for elderlies among children and adolescents should be established through training in family environments and mass media. It is necessary to recognize the value of age and give responsibility of new roles to elderlies, so that they do not feel useless and unemployed and everyone would be glad of blessing them at home. This study also suggests that keeping elderlies at home rather than nursing homes, by providing chances for marriage, education, and more social activities, could be helpful to increase their QOL. Due to non-availability of sufficient number of elderlies, the samples were not matched; therefore, future studies with larger sample sizes and matching is proposed.

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