Evaluation of Quality of Life and Safety of Seniors in Golestan Province, Iran

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Abstract
This study evaluated the criteria for quality of life (QoL) using standardized short-form health survey with only 36 questions (SF-36; Version 2.0) and Consumer Product Safety Commission (CPSC) questionnaires to study the relationship between QoL and living conditions of seniors in Golestan province in Iran. This was an analytical cross-sectional study with descriptive and analytical parts. The population was individuals above 65 years of age in Golestan province in Iran. The sample size was calculated based on the correlation coefficient; a correlation of .2 or greater was considered statistically significant at 80% for the power of the test at the 95% confidence level. The data on QoL of seniors were collected by interview and observation using the CPSC questionnaire for nursing homes and the SF-36 for QoL health indicators. The reliability of the CPSC questionnaire was estimated using Cronbach’s alpha with a coefficient of .838. The SF-36 questionnaire was validated with Cronbach’s alpha with a coefficient of .95. Chi-square and logistic regression were used to interpret the probability of abnormal QoL between levels of independent predictors. The percentage of seniors in overall poor health as a binary outcome was 43.5, and the percentage of unsafe conditions was 49.8.

Keywords
evaluation, quality of life indicator, senior safety, questionnaire, SF-36, CPSC, Golestan province, Iran

Introduction
Aging is inevitable and is recognized as a critical period of life (Evci, Ergin, & Beser, 2006). WHO has defined aging as a decrease in the ability to adapt to environmental factors and suggests that people above 60 years can be considered to be aged (Evci et al., 2006). Improved nutrition and hygiene, access to health services, increased awareness, and development of medical knowledge and technology such as diagnostic tools have increased life expectancy, and the number of people who reach age 60 is increasing (Malekafzali et al., 2010). Between 2000 and 2050, the number of people aged 80 years is predicted to quadruple. During this period, the proportion of people aged 60 years and older will increase from 11% to 22% (Lutz, Sanderson, & Scherbov, 2008). It is estimated that the number of people above age 60 worldwide in 2025 will exceed 1.2 billion; in 2000, this figure was 600 million (Anglin & Schneider, 2009).

Increased interest in home and environmental health has stimulated research on living conditions that have mainly focused on children or accidents that occur outside the home. There is no common definition of home safety, and much remains to be learned about the effect of conditions in the home on health and the best ways to improve those conditions (Evci et al., 2006). Nearly 15% of people admitted to emergency departments are seniors, and this number is expected to reach 25% by 2030, 5% of whom will be above 85 years of age (Farzianpour, Arab, Hosseini, Pirozi, & Hosseini, 2010). Healthy aging is the key for continued involvement of seniors in the community and involves all aspects of physical, psychological, social, and spiritual health. Improving the quality of life (QoL) will allow people, especially seniors, to feel better and make more effective use of resources in health and social services. A
standardized questionnaire containing scales and measures related to QoL can be used to determine the effects of medical intervention, compare the health of different population groups, and evaluate health needs. This makes it possible to learn about health and how QoL relates to health and the effects of different factors on health (Ardalan et al., 2009; Ardalan & Mazaheri, 2010; Avlund et al., 2003; Farzianpour, Farokhi, Shojaei, Shafi, & Manafi, 2014; Farzianpour, Hosseini, Rostami, Pordanjani, & Hosseini, 2012; Tabatabaie et al., 2010).

The present study assessed QoL using the SF-36 questionnaire to investigate the effects of factors such as age, sex, education, residence, marital status, occupation, and organizations support services. The Consumer Product Safety Commission (CPSC) questionnaire was used to assess the health of the home environment and its relationship with QoL.

**Conceptual Framework**

Farquhar (Farquhar, 1995) categorized the QoL of different lifestyles. He considered QoL from the global, fractional, and concentrated perspectives. The general global definition expressed by (Farquhar, 1995) defines QoL as the degree of satisfaction or dissatisfaction felt by individuals at various stages of life. Farquhar, 1995 defined QoL as the conditions for being happy and satisfied. The definition of fractional QoL focuses on the multi-faceted nature of the concept and each facet separately. George and Biron (Farquhar, 1995) discerned two objective dimensions (general health and functional status; socioeconomic status) and two non-objective dimensions (life satisfaction; self-esteem). Hughes (Aghamolaei, Tavafian, & Zare, 2010; Allain et al., 1997; Backman & Hentinen, 1999; Bowling, 1995; Davies, Lake, & Ellis, 1997; Higgs, MacDonald, & Ward, 1992; http://www.rand.org/health/surveys_tools/mos.html; Nystrom & Segesten, 1994; Oleson, Heading, Shadick, & Bistodeau, 1994; Torrance, 1987) defined the QoL in terms of satisfaction, a sense of mental and physical well-being, socio-economic status, environmental quality, targeted activities, social integration, and cultural factors. The concentrated perspective focuses on one or two aspects of the dimensions, which tend to arise from the professional and political propensities of the various parts. For example, for QoL health services, research has focused on health and functional status measures (Bowling, 1995), and for health economics on work assessment (Torrance, 1987). The SF-36 questionnaire is a measure of safety. The short form of the measure was first provided by the Medical Outcomes Study proposed by the Rand group. The CPSC questionnaire assesses the health of the home environment (Allain et al., 1997; http://www.rand.org/health/surveys_tools/mos.html).

The CPSC is an independent federal regulatory agency with a mission to protect the public against unreasonable risk of injury or death from consumer products through education, safety standards activities, regulation, and enforcement (Backman & Hentinen, 1999; Davies et al., 1997; Higgs et al., 1992; http://www.cpsc.gov/en/About-CPSC/Chairman/Kaye-Biography; http://www.referenceforbusiness.com/encyclopedia/ConCos/Consumer-Product-Safety-Commission-CPSC.html#ixzz3Z4Wgmzsa; Klein, 1998; Nystrom & Segesten, 1994; Oleson et al., 1994; Sample records for life measure validation from WorldWideScience.org; www.science.gov/topicpages/s/study+outcome+measures.html).

**Method and Materials**

This research was approved by the Vice Chancellor for Research of Tehran University of Medical Sciences and the Research and Ethics Committee as #19430-123225 on March 27, 2012. The study is an analytical cross-sectional study with descriptive and analytical parts. The population was individuals above 65 years of age (defined as seniors) in the province of Golestan, Iran. In the first phase, the number of seniors in nursing homes in Golestan province was determined. Next, samples were selected from the population of the nursing homes. For sampling, each nursing home was considered to be a cluster for which simple random sampling was carried out and which were surveyed. The goal was to investigate the association between QoL scores and satisfaction scores in nursing homes. The sample size was calculated based on a correlation coefficient; a correlation of .2 or greater is statistically significant at 80% for power of test at a 95% confidence level. The sample size was calculated as follows:

\[ r = 0.2; w = 0.203; Z_{1-0.05} = 1.96; Z_{1-0.05}^2 = 0.84, \]
\[ n = \left( \frac{Z_{1-0.05}^2 + Z_{1-0.05}^2}{w^2} \right) / 3 = 199. \]

Because each nursing home was considered to be a cluster and there are only five nursing homes in Golestan province, all were studied; thus, the sample size was multiplied by the ratio of cluster sampling (1.5), and the size of sample was obtained as follows:

\[ n = 199 \times 1.5 = 298.5. \]

Because the study population was limited \( n = 350 \), the number of samples was adjusted according to the following formula for a final research population of about 193 seniors.

\[ n^* = \frac{n_0}{1 + n_0 / N} = 198.5 / (1 + 198.5 / 350) = 193. \]

**Data Collection Methods and Tools**

Data were collected using the CPSC questionnaire to measure QoL in nursing homes and the SF-36 questionnaire to determine quality indicators. The results were analyzed using SPSS V.17 software.
The questionnaires consisted of two parts. The first part obtained demographic and other background information that is assumed to affect QoL and quality indicators of the seniors. The second part contained questions related to QoL. The SF-36 questionnaire scored all questions and the general QoL quantitatively on a scale from 0 to 100. The questionnaires were completed by interview and observation.

The SF-36 consists of eight dimensions: physical functioning (PF), mobility restriction (MR), bodily pain (BP), general health (GH), vitality (V), social functioning (SF), emotional problems (EP), and mental health (MH). Each dimension was scored from 0 through 100. The SF-36 has been validated by Montazeri, Goshtasebi, Vahdaninia, and Gandek (2005) as having a Cronbach's alpha coefficient of .95 for the Iranian population (Mohamadian et al., 2011; Montazeri et al., 2005). The CPSC questionnaire had 54 items, and each item had two options (yes/no). The CPSC has been validated by Farzianpour, Rahimi Foroushani, Badakhshan, and Gholipour (2015). The reliability of the CPSC questionnaire was estimated using Cronbach’s alpha coefficient of .838 (Farzianpour et al., 2015; Farzianpour & Tajvar, 2004). The chi-square test and logistical regression were used to interpret the probability of abnormal QoL between levels of independent predictors. The intra-class correlation coefficient showed that the internal consistency of items on the CPSC was acceptable with an average of .815.

Statistical Method and Tools
Data were analyzed using the chi-square test for one-variable analysis and logistic regression modeling for multi-variable analysis.

Location of Research
This study was conducted on 193 individuals attending the Jahandidegan Geriatric Charity Institute in the city of Golestan.

Ethical Considerations
All participants were given a full explanation of the study and freely consented to participate in the research. The questionnaires did not contain the names of the participants, and they were assured that the information collected would be kept confidential and under no circumstances would the published results contain the names of the participants.

Overcoming Operational Limitations
The limitations of this study included several changes in management of the State Welfare Organization of the province that delayed the implementation phase of the project. Other restrictions were the lack of cooperation by some seniors for completing the questionnaire, and it was necessary to fully explain all options to them. In some cases, educated and interested members of their households were asked to encourage and explain the importance of the project, especially regarding questions on the CPSC questionnaire.

Results
In this study, 193 seniors above 65 years of age admitted to the Jahandidegan Geriatric Charity Institute were interviewed, and the SF-36 for QoL and the CPSC for private residences were completed. Of the seniors, 17.8% were male and 82.2% were female, 81.4% lived in rural areas and 18.6% lived in a city, and 5.4% were single, 62% were married, 3.3% were divorced, and 29.3% were widowed (Table 1). In terms of ethnicity, 91.5% were Fars, 1.6% were Turkmen, 4.2% were Sistani, and 2.6% were other ethnicities. For religion, 97.9% were Shia Muslims, and 2.1% were Sunni Muslims. About 20.5% of the participants were illiterate, 35.8% had primary school education, 21.6% had completed literacy courses, 17.9% had high school diplomas, 3.2% had associate degrees, and 1.1% had bachelor’s degrees. The participants received assistance from the following organizations: Relief Committee 6%, State Welfare 1.6%, health services 37%, Social Security 35.3%, military insurance 7.1%, complementary insurance 1.6%, other support services 4.3%, and without support services 7.1% (Table 1). Of all participants, 2.1% were unemployed, 1.9% were employed, 4.2% were self-employed full-time, 4.7% were employed part-time, 66.1% were housewives, 10.6% were farmers, and 3.2% were retirees (Table 1). Analysis of the data showed that 46.4% of men lived in urban and 53.6% lived in rural areas. Of females, 88% lived in urban and 12% lived in rural areas. Of the male participants, 87.9% were married, 6.1% were divorced, and 6.1% were widowers. Of the female participants, 6.9% were single, 55.6% were married, 2.8% were divorced, and 34.7% were widows (Table 1). Of the male participants, 75.8% were Fars, 18.2% were Sistani, and 6.1% were other ethnicities. Of the female participants, 96.6% were Fars, 1.3% were Turkmen, 0.7% were Sistani, and 2.2% were other ethnicities. The data also indicated that 96.9% of males and 98 of females were Shia Muslims and 3.1% of males and 2% of females were Sunni Muslims. The percentage of support services showed that 6.1% of males and 6.2% of females were covered by the Relief Committee, 6.1% of males and 7% of females were covered by State Welfare, 36.4% of males and 36.8% of females were covered by health services, 33.3% of males and 34.7% of females were covered by Social Security, 0% of males and 0.9% of females were covered by military insurance, 0% of males and 2.1% of females were covered by complementary insurance, 6.1% of males and 4.2% of females were covered by other support organizations, and 12.1% of males and
Table 1. Distribution Frequency and Demographic Variables (%) Population.

| Variables        | N (%)       |
|------------------|-------------|
| Gender           |             |
| Male             | 33 (17.8)   |
| Female           | 152 (82.2)  |
| Total            | 185 (100)   |
| Residence        |             |
| Urban            | 33 (18.6)   |
| Rural            | 144 (81.4)  |
| Total            | 177 (100)   |
| Marital          |             |
| Single           | 10 (5.4)    |
| Married          | 114 (62)    |
| Divorced         | 6 (3.3)     |
| Widow            | 54 (29.3)   |
| Total            | 184 (100)   |
| Ethnicity        |             |
| Fars             | 173 (91.5)  |
| Turkmen          | 3 (1.6)     |
| Sestina          | 8 (4.2)     |
| Other            | 5 (2.6)     |
| Total            | 189 (100)   |
| Education        |             |
| Illiterate       | 39 (20.5)   |
| Primary          | 68 (35.8)   |
| High school      | 41 (21.6)   |
| Diploma          | 34 (17.9)   |
| Upper diploma    | 6 (3.2)     |
| BS               | 2 (1.1)     |
| Total            | 190 (100)   |
| Employment       |             |
| Unemployed       | 4 (2.1)     |
| Employed         | 17 (1.9)    |
| Full-time        | 8 (4.2)     |
| Part-time        | 9 (4.7)     |
| Housewifes       | 125 (66.1)  |
| Farmers          | 20 (10.6)   |
| Retirees         | 6 (3.2)     |
| Total            | 189 (100)   |
| Organizations support services | |
| Relief committee | 11 (6)      |
| Welfare          | 3 (1.6)     |
| Health care      | 68 (37)     |
| Social security  | 65 (35.3)   |
| Military         | 13 (7.1)    |
| Complementary insurance | 3 (1.6) |
| Other            | 8 (4.3)     |
| Without          | 13 (7.1)    |
| Total            | 184 (100)   |

Note. BS = Bachelor of Science.

6.2% of females had no insurance (Table 1). Table 2 showed mean scores of QoL seniors with gender in nursing home for PF, MR, EP, V, and MH were significant ($p < .05$). Chi-square tests showed the relationship between dimensions of QoL with CPSC in nursing homes had significant relationship only (MR and VT; Table 3). Chi-square tests showed that level of education and marital status had significant relationship with general health as a binary outcome ($p = .036$ and .007, respectively; Tables 4, 5, 6, and 7). The remaining predictors of general health including age, ethnicity, CPSC score, place of residence (urban/rural) did not show a significant association with outcome. The significant predictors were entered into multiple logistic regression, and its results are in Table 7. The odds ratio (OR) of being in general poor health for primary education was $1.91$ (95% confidence interval [CI] = [0.88, 4.11]) and for high school was $3.04$ (95% CI = [1.22, 7.58]) times that for those with diplomas or higher as the reference group. Married seniors had a significantly lower OR of general poor health compared with widowed or divorced seniors (OR = 0.42, 95% CI = [0.22, 0.78]).

Discussion

This study for the first time in Iran used the CPSC questionnaire to assess the safety of nursing homes and compared the results with those from the SF-36 questionnaire. It was found that, except for the social restrictions of general health, other aspects of QoL were significantly correlated with gender and indicate that males scored higher for QoL than did females. Results of this study were correlated with the more negative attitude of females toward their physical health. Rafati, Yavari, Montazeri, and Mehrabi (2004) showed that QoL had a significant correlation with gender, except in the physical dimension. Adib-Hajbaghery et al. (2009) also found clear connections between physical disability and gender and a higher rate of dissatisfaction in females. Gureje, Ogunniyi, Kola, and Mehrabi (2006) showed that QoL had a significant correlation with gender, except in the physical dimension. Abdollahi and Mohammadpour (2013), by contrast, found that women scored higher for vitality and had fewer physical limitations than men. Jafarzade (2010) found significant differences only for physical

Table 2. Mean Scores of QoL Seniors in Nursing Home in Golestan Province, Iran.

| Scales               | Female   | Male     | p value |
|----------------------|----------|----------|---------|
| Physical Functioning | 50.26±32.34 | 62.72±20.84 | .007    |
| Mobility Restraints  | 38.65±45.74 | 63.63±38.57 | .002    |
| Emotional Problem    | 57.38±45.32 | 82.32±32.79 | .001    |
| Vitality             | 56.08±17.66 | 66.81±16.28 | .001    |
| Mental Health        | 57.13±18.06 | 68.51±16.15 | .001    |
| Social Functioning   | 63.89±26.70 | 58.71±15.77 | .284    |
| Bodily Pain           | 62.53±22.18 | 69.24±13.10 | .096    |
| General Health        | 55.51±17.42 | 56.51±8.61  | .749    |

Note. QoL = quality of life.
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pain between men and women in Sabzevar, Iran. The dimensions of physical activity, physical limitations, and physical pain showed significant correlations with age, while other dimensions and age showed no significant relationship. Rafati et al. studied the QoL of residents of Kahrizak nursing home in Iran and found no significant relationship between age and QoL (Rafati et al., 2004). Abdollahi and Mohammadpour (2013) found a significant relationship between mental and physical health with age. The present study found a significant relationship between education and the dimensions of physical functioning, social functioning, bodily pain, and general health. Rafati et al. observed a significant relationship between level of education and QoL. Haj-Bagheri et al. also found a significant relationship between education and QoL. The number of illiterate females in this study was 4 times that of the number of illiterate men, which may relate to the different scores for males and females versus scores for the four dimensions. Sajjadi and Beglarian (2007) found an inverse relationship between level of education and QoL, where QoL declined as level of education increased; however, they did not speculate on the reasons for this finding.

This present study showed a significant relationship between restricted mobility and emotional problems, vitality, bodily pain, mental health, and employment, but no significant correlation with the other aspects measured. Rafati et al. found only a significant relationship between overall health and physical functioning and employment. The present study found that, except for mental health and social functioning, other dimensions correlated significantly with marital status. Married seniors had better conditions than single, divorced, and widowed seniors. Haj-Bagheri found more severe and moderate disability in widows and single seniors than in married individuals. Kristianson et al. found higher rates of mortality and morbidity and higher levels of overall poor health in single individuals than in married individuals. They attributed this to higher levels of social relationships and activities in married seniors than unmarried ones (Kristjansson, Helliwell, Forbes, & Hill, 1999). The present study found that restricted mobility, mental health, social functioning, and general health were significantly associated with place of residence. Mobility and mental health and social functioning dimensions were better in a village than in a city, and social functioning and general health were better in cities than in villages. Studies have reported different results for these dimensions. Parahyba et al. found lower rates of disability in rural and suburban areas than in city centers. Allain et al. found increased disability in rural areas. It may be assumed that better physical and mental health in rural areas relates to the increased physical activity of the residents and decreased stress compared with urban life (Allain et al., 1997; Parahyba, Veras, & Melzer, 2005). In addition, the high scores for public health in urban areas than in rural areas relates to an increased feeling of safety in urban areas than in rural areas because of greater access to professional and ultra-professional services. The difference between residents of rural and urban areas for social performance requires further research. The lack of a significant relationship between the dimensions of QoL with ethnicity (Fars, Turkmen, Sistani, other) and religion (Shia and Sunni Muslim) could indicate the equal and fair influence of factors affecting this dimension, such as access to social support, safety, and health. It should be noted that the

| Table 3. The Relationship Between Dimensions of QoL With CPSC in Nursing Homes in Golestan Province, Iran 2014. |
|---------------------------------------------------------------|
| CPSC          | QoL  | Good | Fair | Poor | Total | \( \chi^2 \) |
|----------------|------|------|------|------|-------|----------|
| Physical functioning |      |      |      |      |       |          |
| Lower          | 32   | 35   | 0    | 67   | 0.556 |          |
| Normal         | 24   | 21   | 1    | 46   | 0.004 |          |
| Hyper          | 39   | 36   | 3    | 78   | 0.004 |          |
| Total          | 95   | 92   | 4    | 191  | 0.004 |          |
| Mobility restricts |      |      |      |      |       |          |
| Lower          | 60   | 49   | 0    | 109  | 0.004 |          |
| Normal         | 0    | 8    | 1    | 9    | 0.004 |          |
| Hyper          | 37   | 35   | 3    | 75   | 0.004 |          |
| Total          | 97   | 92   | 4    | 193  | 0.004 |          |
| Emotional problems |    |      |      |      |       |          |
| Lower          | 34   | 34   | 0    | 68   | 0.337 |          |
| Normal         | 0    | 2    | 0    | 2    | 0.004 |          |
| Hyper          | 60   | 56   | 4    | 120  | 0.004 |          |
| Total          | 94   | 92   | 4    | 193  | 0.004 |          |
| Vitality       |      |      |      |      |       |          |
| Lower          | 18   | 6    | 0    | 24   | 0.054 |          |
| Normal         | 42   | 51   | 1    | 94   | 0.054 |          |
| Hyper          | 37   | 35   | 3    | 75   | 0.054 |          |
| Total          | 97   | 92   | 4    | 193  | 0.054 |          |
| Mental health  |      |      |      |      |       |          |
| Lower          | 11   | 10   | 1    | 21   | 0.652 |          |
| Normal         | 46   | 38   | 1    | 85   | 0.652 |          |
| Hyper          | 40   | 44   | 3    | 87   | 0.652 |          |
| Total          | 97   | 92   | 4    | 193  | 0.652 |          |
| Social functioning |   |      |      |      |       |          |
| Lower          | 18   | 27   | 0    | 45   | 0.299 |          |
| Normal         | 20   | 13   | 1    | 34   | 0.299 |          |
| Hyper          | 59   | 52   | 3    | 114  | 0.299 |          |
| Total          | 97   | 92   | 4    | 193  | 0.299 |          |
| Bodily pain    |      |      |      |      |       |          |
| Lower          | 12   | 19   | 0    | 31   | 0.434 |          |
| Normal         | 32   | 24   | 1    | 57   | 0.434 |          |
| Hyper          | 53   | 49   | 3    | 105  | 0.434 |          |
| Total          | 97   | 92   | 4    | 193  | 0.434 |          |
| General health |      |      |      |      |       |          |
| Lower          | 12   | 15   | 0    | 27   | 0.842 |          |
| Normal         | 44   | 42   | 2    | 88   | 0.842 |          |
| Hyper          | 41   | 35   | 2    | 78   | 0.842 |          |
| Total          | 97   | 92   | 4    | 193  | 0.842 |          |

Note. QoL = quality of life; CPSC = Consumer Product Safety Commission.
Table 4. Association Between the SF-36 Scores and Socio-Demographic Characteristics of the Study Sample.

| Scales          | Employment        | Unemployed with income | Housewives | Farmers | Retirees | p value |
|-----------------|-------------------|-------------------------|------------|---------|----------|---------|
| PF              | 58.33 (32.14)     | 48.47 (32.86)           | 63.18 (19) | 60      | 25.65    | .424    |
| MR              | 33.33 (57.73)     | 35.53 (45.72)           | 86.36 (25.8) | 48.68   | 45.24    | .031*   |
| EP              | 50 (70.71)        | 52.50 (45.86)           | 84.84 (34.5) | 84.21   | 37.46    | .005*   |
| V               | 38.33 (23.53)     | 56.07 (17.21)           | 70 (16.73) | 61.75   | 18.15    | .018*   |
| MH              | 42.66 (33.30)     | 56.69 (17.24)           | 73.09 (14.7) | 59.26   | 19.58    | .005*   |
| SF              | 41.66 (19.09)     | 63.32 (26.25)           | 68.18 (14.1) | 69.73   | 29.26    | .561    |
| BP              | 40 (12.99)        | 60.76 (22.19)           | 70.22 (10.75) | 72.10   | 21.62    | .007*   |
| GH              | 56.66 (20.20)     | 54.21 (18.15)           | 57.27 (10.80) | 59.73   | 11.95    | .835    |

Organizations support services

| Organizations support services | M      | SD     | CI Lower | CI Upper |
|--------------------------------|--------|--------|----------|----------|
| General health                 |        |        |          |          |
| Relief committee               | 40.90  | 17.58  | 29.09    | 72.52    |
| Welfare                        | 51.66  | 10.40  | 25.81    | 77.52    |
| Health care                    | 53.08  | 17.25  | 48.91    | 57.26    |
| Social security                | 59.44  | 12.26  | 56.40    | 62.48    |
| Military                       | 67.69  | 14.08  | 59.18    | 76.20    |
| Insurance supplementary        | 70     | 8.66   | 48.48    | 91.51    |
| Other                          | 60.62  | 9.42   | 52.74    | 68.50    |
| Total                          | 55.97  | 15.96  | 53.64    | 58.29    |

Note. PF = physical functioning; MR = mobility restricts; EP = emotional problems; V = Vitality; MH = Mental Health; SF = Social functioning; BP = Bodily pain; GH = General Health; CI = confidence interval.
*Significance = p < .05.

Table 5. Distribution of General Health by Education in Golestan Province, Iran 2014.

| Education     | Healthy | Unhealthy | Total |
|---------------|---------|-----------|-------|
| Primary       | 59      | 48        | 107   |
| %             | 55.1    | 44.9      | 100.0 |
| High school   | 18      | 23        | 41    |
| %             | 43.9    | 56.1      | 100.0 |
| ≥ Diploma     | 32      | 13        | 45    |
| %             | 71.1    | 28.9      | 100.0 |
| Total         | 109     | 84        | 193   |
| %             | 56.5    | 43.5      | 100.0 |

Note. χ² = 6.64; df = 2; p = .036.

Table 6. Distribution of General Health by Marital Status in Golestan Province, Iran 2014.

| Marital status     | healthy | unhealthy | Total |
|--------------------|---------|-----------|-------|
| Single             | 4       | 6         | 10    |
| %                  | 40.0    | 60.0      | 100.0 |
| Married            | 75      | 39        | 114   |
| %                  | 65.8    | 34.2      | 100.0 |
| Others             | 30      | 39        | 69    |
| %                  | 43.5    | 56.5      | 100.0 |
| Total              | 109     | 84        | 193   |
| %                  | 56.5    | 43.5      | 100.0 |

Note. χ² = 9.87; df = 2; p = .007.
The present study found limitations in the ability of the seniors to understand the questions for the SF-36 questionnaire. The interviewers found they had to spend a high percentage of time explaining the questions to obtain an appropriate response.

**Limitations of the Study**

The present study found limitations in the ability of the seniors to understand the questions for the SF-36 questionnaire. The interviewers found they had to spend a high percentage of time explaining the questions to obtain an appropriate response.

**Conclusion and Suggestions**

The dimensions of QoL related to gender and relative higher scores of QoL for men than for women indicate that policymakers in the health sector should pay more attention to social factors affecting health, such as education, housing, and physical functioning. Because the illiteracy rate for women was higher than for men and because many of the women had been housewives (unpaid labor), women felt a lower sense of security than did men. The physiological and anatomical differences between women and men indicate the need to increase facilities for physical functioning for women more and eliminate the economic and social barriers to this in the short term. Restrictive measures such as the establishment of special parks for women in Golestan province or in other metropolitan areas are not appropriate strategies to address this deficiency. Some aspects of QoL were better in urban areas than in rural areas; it is necessary for authorities to attend to these issues and develop programs to improve physical activity and mental health. Overall, this study and other studies suggest that aging alone does not particularly affect the dimensions of QoL especially for mental health. Other aspects of the lives of seniors, such as the functional dimensions of independence and a sense of control over life, have great effects on other dimensions.

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**Author Contributions**

Fereshteh Farzianpour is the main author of this article. Fereshteh Farzianpour carried out the conceptual design of the study with Abbas Rahimi Foroushani. Abbas Badakhshian carried out the interviews and did the initial content analysis and the first draft of the article. Fereshteh Farzianpour, Abbas Rahimi Foroushani, Abbas Badakhshian, Mahin Gholipour, and Masoumeh Hosseini participated in the critical review of the article. All authors were involved in drafting and approving the final article.

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**References**

Abdollahi, F., & Mohammadpour, R. A. (2013). Health related quality of life among the elderly living in nursing home and homes. Journal of Mazandaran University of Medical Sciences, 23(104), 20-25.

Adib-Hajbaghery, M., & Akbari, H. (2009). The severity of old age disability and its related factors. Kaums Journal (FEYZ), 13, 225-234.

Aghamolaei, T., Tavafian, S. S., & Zare, S. (2010). Health related quality of life in elderly people living in Bandar Abbas, Iran: A population-based study. Acta Medica Iranica, 48, 185-191.

Alia, T. J., Wilson, A. O., Gomo, Z. A., Mushangi, E., Senzanje, B., Adamchak, D. J., & Matenga, J. A. (1997).
Morbidity and disability in elderly Zimbabweans. Age and Ageing, 26, 115-121.

Anglin, D., & Schneider, D. (2009). Elder abuse and neglect. In Mosby (Ed.), Rosen’s emergency medicine (7th ed., pp. 830-837).

Ardalan, A., Holakouie Naieni, K., Kabir, M.-J., Zanganeh, A.-M., Keshkhar, A.-H., Honarvar, M.-R., ..., Osooli, M. (2009). Evaluation of Golestan Province’s early warning system for flash floods, Iran, 2006-2007. International Journal of Biometeorology, 53, 247-254.

Ardalan, A., & Mazeri, H. (2010). Elders’ needs following the disasters: Older people’s needs following major disasters: A qualitative study of Iranian elders’ experiences of the Bam earthquake. Ageing & Society, 30, 11-23.

Avlund, K., Holstein, B. E., Osler, M., Damsgaard, M. T., Holm-Pedersen, P., & Rasmussen, N. K. (2003). Social position and health in old age: The relevance of different indicators of social position. Scandinavian Journal of Public Health, 31, 126-136.

Backman, K., & Hentinen, M. (1999). Model for the self-care of home-dwelling elderly. Journal of Advanced Nursing, 30, 564-572.

Bowl, A. (1995). Measuring disease: A review of disease-specific quality of life measurement scales. Buckingham, UK: Open University Press.

Davies, S., Laker, S., & Ellis, L. (1997). Promoting autonomy and independence for older people within nursing practice: A literature review. Journal of Advanced Nursing, 26, 408-417.

Evci, E. D., Ergin, F., & Beser, E. (2006). Home accidents in the elderly in Turkey. The Tohoku Journal of Experimental Medicine, 209, 291-301.

Farquhar, M. (1995). Elderly people’s definitions of quality of life. Social Science & Medicine, 41, 1439-1446.

Farzanpour, F., Arab, M., Hosseini, S. M., Pirozi, B., & Hosseini, S. (2010). Evaluation of quality of life of the elderly population covered by healthcare centers of Marivan and the influencing demographic and background factors in 2010. Iranian Red Crescent Medical Journal, 209, 291-301.

Farzanpour, F., & Tajvar, M. (2004). Elderly health and a review on different aspects of their life. Tehran, Iran: Arjomand Publication.

Gureje, O., Ogumniiy, A., Kola, L., & Afolabi, E. (2006). Functional disability in elderly Nigerians: Results from the Ibadan Study of Aging. Journal of the American Geriatrics Society, 54, 1784-1789.

Higgs, P. F., MacDonald, L. D., & Ward, M. C. (1992). Responses to the institution among elderly patients in hospital long-stay care. Social Science & Medicine, 35, 287-293.

Jafarzadeh Fakhari, M., Behnam Vashani, H., & Vahedian Shahroud, M. (2010). The quality of life of the elderly in Sabzevan, Iran. Journal of Sabzevar University of Medical Sciences, 17, 213-217.

Klein, G. (1998). Consumer product safety commission comes back to life. Media General News Service. Retrieved from www.nando.net/newsroom/hti/politics/042298/politics_25539_noframes.html

Kristjansson, B., Helliwell, B., Forbes, W. F., & Hill, G. B. (1999). Marital status, dementia and institutional residence among elderly Canadians: The Canadian study of health and aging. Chronic Diseases in Canada, 20(4), 154-157.

Lutz, W., Sanderson, W., & Scherbov, S. (2008). The coming acceleration of global population ageing. Nature, 451, 716-719.

Malekafzali, H., Baradaran Eftekhar, M., Hejazi, F., Khojasteh, T., Noot, R. H., Falahat, K., & Faridi, T. (2010). The effectiveness of educational intervention in the health promotion in elderly people. Iranian Journal of Public Health, 39(2), 18-23.

Mohamadian, H., Eftekhar, H., Rahimi, A., Mohamad, H. T., Shojaiezadeh, D., & Montazeri, A. (2011). Predicting health-related quality of life by using a health promotion model among Iranian adolescent girls: A structural equation modeling approach. Nursing & Health Sciences, 13, 141-148.

Montazeri, A., Goshtasebi, A., Vahdaninia, M., & Gandek, B. (2005). The Short Form Health Survey (SF-36): Translation and validation study of the Iranian version. Quality of Life Research, 14, 875-882.

Nyström, A. E., & Segesten, K. M. (1994). On sources of powerlessness in nursing home life. Journal of Advanced Nursing, 19, 124-133.

Oleson, M., Heading, C., Shadick, K. M., & Bistodeau, J. A. (1994). Quality of life in long-stay institutions in England: Nurse and resident perceptions. Journal of Advanced Nursing, 20, 23-32.

Parahyba, M. L., Veras, R., & Melzer, D. (2005). Disability among elderly women in Brazil. Revista de Saúde Pública, 39, 383-391.

Rafati, N., Yavari, P., Montazeri, A., & Mehrabi, Y. E. (2004). Quality of life among Kahrizak charity institutionalized elderly people. Journal of Public Health, 93, 21-27.

Sajjadi, H., & Biglarian, A. (2007). Quality of life among elderly women in the nursing home charitable Kahrizak, Tehran, Iran. Payesh, 3(5), 11-18.

Sample records for life measure validation from World WideScience.org.

Tabatabaie, M., Ardalan, A., Abolghasemi, H., Holakouie Naieni, K., Pourmalek, F., Ahmadi, B., & Shokouhi, M. (2010). Estimating blood transfusion requirements in preparation for a major earthquake: The Tehran, Iran study. Prehospital and Disaster Medicine, 25, 246-252.

Torrance, G. W. (1987). Utility approach to measuring health-related quality of life. Journal of Chronic Diseases, 40, 593-600.