Original Article

Determining the relationship between health literacy level and quality of life among the elderly living in nursing homes

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Abstract:

BACKGROUND: The literacy level of the elderly is predictive of health behaviors, average hospitalization in health centers, and the type of verbal interaction with health service providers; as the level of literacy changes, the quality of life may also change. This study aimed to determine the relationship between health literacy level and quality of life among the elderly living in nursing homes in 2018–2019.

MATERIALS AND METHODS: This study was of a descriptive-analytic, correlation type that was performed on 175 elderly of selected nursing homes in Tehran. The research tools included the Abbreviated Mental Test; Control, Autonomy, Pleasure and Self-realization questionnaire-19; and Health Literacy of Iranian Adults Questionnaire (HELIA). Data were analyzed using descriptive and inferential statistics by SPSS 22 software.

RESULTS: The total score of health literacy and the quality of life of the elderly was 51.01 and 47.75, respectively. The literacy of most of the studied samples was "inadequate" and "not much adequate" (0–66). The relationship between health literacy and quality of life in the elderly was significant, and there was a direct and statistically significant relationship between them ($P = 0.003$). That is, by an increase in literacy rates, the scores of quality of life of elderly people were also increased. The correlation was equal to $r = -0.28$. Health literacy has the ability (31.98%) to predict the quality of life.

CONCLUSION: The results showed a lack of enough education literacy, the average quality of life, and the existence of a significant relationship between health literacy and quality of life in the elderly. The wide range of inadequate literacy in the elderly reveals the importance of paying more attention to the issue of literacy in health planning and health promotion at the national and local levels.

Keywords:
Elderly, health literacy, nursing home, quality of life

Introduction

Health is one of the most important issues in human societies. Health is the fundamental right of every human being and a social goal, and all governments and organizations are obliged to provide individual health. One of the main concerns of governments and policymakers in the field of health is to promote the health of individuals, especially the vulnerable elderly, and achieving this goal requires macro and purposeful policymaking and planning.[1] Health is a necessary condition for playing the individual and social roles, and all groups of society, especially the

elderly, can have full activity if they feel that they and their community are healthy.[2] Undoubtedly, the elderly with health impairments will be unable to accept their personal, family, and social obligations.[3] One of the factors, which has a close relationship with health outcomes such as health status, chronic illness, and hospital admissions, is the health literacy of individuals.[4]

The World Health Organization defines health literacy as follows: Health literacy includes cognitive, social skills, and ability of individuals to understand and utilize existing information in order to maintain and promote optimal health.[5] Health literacy is the result of the collaboration of individual and social factors that address health literacy concerns and areas, and is recognized as an important and indispensable indicator of health-care outcomes and costs. In addition, health literacy is a social component, which has increasingly considered as a tool to improve health outcomes and a means to reduce inequalities in health care.[6] Recent research has shown that health literacy is a better predictor of people's health compared to gender or race, education, occupation, economic status, and social status.[7] In a study in the USA, it has been reported that around 80 million American elderly had a low level of health literacy in 2011, which put them at risk of poor health outcomes.[8]

Although it is not clear to what extent health literacy affects health outcomes, many causes indicate that numerous health-related adverse outcomes are due to inadequate health literacy.[9] Various studies show a wide range of inadequate health literacy levels in different countries. In the study conducted by Tung *et al*.[10] in Taiwan, about 60% of adults did not have enough health literacy. In the study of Nakayama *et al*.[11] in Japan, 85.4% of the participants had a limited level of health literacy, so that the average level of health literacy in Japanese participants in the fields of health care, disease prevention, and health promotion was lower than that of European participants. In the study by Paasche-Orlow *et al*.[12] in North America, nearly 26% of the participants had a low level of health literacy and about 20% had a marginal health literacy level. Furthermore, in Iran, in the study by Mohseni *et al*.,[13] 54.5% of the elderly had inadequate health literacy.

Inadequate health literacy is a predictor of lower health behaviors, higher average hospitalization, difficulty in verbal interaction with health service providers, and weaker health status. It has to be noted that the lower the level of health of the elderly, the lower the level of their quality of life.[14]

Of the important issues of aging is the quality of life. Quality of life refers to providing conditions for happiness and satisfaction in such a way that the achievements of individuals in life could be in line with their attitudes, goals, standards, expectations, and value systems.[15] According to the World Health Organization, quality of life is the people's perception of their position in life in terms of their culture, values, beliefs, goals, expectations, standards, and priorities; therefore, quality of life is completely a mental issue that is not visible to others, and it is based on the understanding of the different aspects of life.[16] The quality of life is the amount of satisfaction or dissatisfaction that people feel in different areas of life. The quality of life includes physical health of the individual, psychological state and beliefs, and social relationships.[17] Planning for improvement of the quality of life of the elderly and development of their role in the community is a step toward achieving healthy and active aging and equitable allocation of health and medical resources in the community. Accordingly, enhancement of the health literacy of elderly can lead to strengthening of their quality of life. The purpose of this study was to determine the relationship between health literacy and quality of life of the elderly living in selected nursing homes in Tehran, Iran.

Materials and Methods

The present study was of a descriptive-analytic, correlation type that was carried out in the elderly living in selected public nursing homes in Tehran during 2018–2019. The research environment was the selected public nursing homes in Tehran, wherein the mention of participants' name was avoided for the confidentiality of the information collected. The research population consisted of 175 elderly men and women living in the nursing homes of Tehran, who were selected as sample by the Morgan table using the convenience sampling method. Data collection tools were Demographic Characteristics Questionnaire; Abbreviated Mental Test (AMT) questionnaire; Control, Autonomy, Pleasure and Self-realization questionnaire (CASP); and Health Literacy of Iranian Adults questionnaire (HELIA).

Abbreviated Mental Test questionnaire
This scale includes items from 1 to 10 that the elderly should be able to answer and earn points of 7 out of 10. The items include age, time of day, year, full name of the relevant health center, identification of two companions or staff, date of birth, date of the Islamic Revolution of Iran, president's name, address repetition, and the ability for counting from 1 to 20. The AMT is one of the most useful methods for screening the cognitive status in the elderly. It is an acceptable method because of its short duration and ability to repeat, lack of dependence on literacy, and low relationship with culture and language.[18]

Health Literacy Questionnaire

To assess the health literacy of the elderly in this study, the Health Literacy of Iranian Adults questionnaire (HELIA) designed by Montazeri *et al*. was used. This is a standard questionnaire, has 33 main items, and is used to measure the ability of individuals in different dimensions of health literacy including reading skills (four questions including questions 1–4), access (six questions including questions 5–10), understanding and comprehension (seven questions including questions 11–17), evaluation (four questions including questions 18–21), and decision-making and application of health information (12 questions including questions 22–33). Scoring the questionnaire was based on a 5-point Likert scale. For questions related to reading skill area, a score of 5 was considered for the option "quite easy;" a score of 4 was dedicated for the option "easy;" a score of 3 was considered for the option "not easy, not difficult;" a score of 2 was considered for the option "difficult;" and a score of 1 was considered for the option "quite difficult." In the case of four other areas of health literacy, a score of 5 was for "always," a score of 4 was for "most of the times," a score of 3 was for "sometimes," a score of 2 was for "rarely," and a score of 1 was assigned to "never." The method of scoring in this tool is as follows: at first, the raw score of each person in each of the areas is obtained by adding up the scores. Then, to convert this score to a range from 0 to 100, the formula "difference between the raw score obtained from the lowest possible raw score divided by the difference of the maximum possible score from the minimum possible score" was used. Finally, to calculate the total score, the scores of all dimensions (based on the range from 0 to 100) were added up and were divided by the number of dimensions (number 5). Scores 0–50 were considered as "inadequate health literacy level," scores 50.1–66 were considered as "not much adequate health literacy levels," scores 66.1–84 were considered as "adequate health literacy level," and scores 84.1–100 were considered as "high health literacy level."[19]

Control, Autonomy, Self-realization and Pleasure questionnaire

The CASP was designed by Hyde based on Needs Satisfaction Model and was translated and localized by Heravi-Karimooi *et al*. This questionnaire contains 19 questions and has domains including control (four questions, 1–4), autonomy (five questions, 5–9), self-realization (five questions, 10–14), and pleasure (five questions, 15–19). The CASP questionnaire, based on the Likert scale, has four options from "most of the times" to "never." The total score of the questionnaire is 76, in which the total score of the control component is 16, the total score of autonomy component is 20, the total score of self-realization component is 20, and the total score of success is 20. Individuals with a score between 55 and 76 had a good quality of life; individuals with a score between 40 and 54 had an average quality of life; and those who obtained a score between 19 and 39 had a poor quality of life.[20]

Given that the questionnaires of this research were standard, their validity was confirmed in previous studies.[18-20] In addition, the Cronbach's alpha coefficient for the reliability of the Health Literacy Questionnaire in the study by Montazeri *et al*.[19] was obtained to be 0.80, and the Cronbach's alpha coefficient of the CASP in the study conducted by Heravi-Karimooi *et al*. was achieved to be 0.78.[20] Furthermore, the internal and external reliability of the AMT questionnaire were calculated as 0.89 and 0.76, respectively. Data analysis was performed by Statistical package for social science (SPSS) software Ver. 22 (IBM Company, Armonk, NY, USA) using descriptive and inferential statistics (mean, standard deviation, and Pearson's correlation).

Results

A total of 175 elderly were enrolled in this study (response rate of 100%). Nearly 61.71% of the elderly were male; 44.57% were in the age group of 66–77 years; 70.85% had a diploma and under diploma education; and 56.57% were married. On the other hand, physicians and health workers, radio and television, and friends and associates were the most important sources that the elderly relied upon (89.41%, 78.28%, and 73.71%, respectively) for obtaining usual health information [Table 1].

The numerical indicators of health literacy and its dimensions are summarized in Table 2. The mean ± standard deviation of total health literacy score was 51.01 ± 12.54, with a range of 31.67–100. Because the average was in the range of 50.1–66, the average health literacy of the studied samples was at "not much adequate" level. The study on health literacy dimensions showed that the highest score was related to the access dimension (63.77 ± 13.95) and the lowest score was observed for the assessment dimension (39.78 ± 16.24).

The health literacy level of the samples is summarized in Table 3. The results indicate that the literacy health level of 71.99% of the study samples is inadequate. (0–66).

The results of one-sample *t*-test in Table 4 show that the mean of total quality of life in the elderly was 47.75 and was estimated to be at the average level in terms of quality of life status. The mean subscale scores of elderly quality of life, including control, independence, self-realization, and pleasure, were 13.63, 15.48, 8.56, and 9.79, respectively; based on these results, it was predicted that the control was at a good level, the autonomy was

Table 1: Demographic characteristics of the elderly living in the studied nursing homes

Variables	Statistical indicators, frequency (%)
Gender	
Male	108 (61.71)
Female	67 (38.29)
Age (years)	
60-65	49 (28)
66-70	78 (44.57)
71-75	23 (13.14)
76-80	16 (9.14)
Higher than 81	9 (5.14)
Education level	
Illiterate	14 (8)
Under diploma	58 (33.14)
Diploma	66 (37.71)
University	37 (21.14)
Maternity	
Single	2 (1.14)
Married	99 (56.57)
Widow	48 (27.42)
Divorced	26 (14.85)
The sources to obtain information about the health and diseases	
Asking from the doctor and health staff	
Yes	156 (89.14)
No	19 (10.58)
The Internet	
Yes	43 (24.57)
No	132 (75.42)
Interactive voice response	
Yes	8 (4.57)
No	167 (95.42)
Radio and television	
Yes	137 (78.28)
No	38 (21.72)
Newspapers, journals, and magazines	
Yes	22 (12.57)
No	153 (87.42)
Asking from friends and acquaintances	
Yes	129 (73.71)
No	46 (0.28)
Booklets, pamphlets, and educational and promotional brochures	
Yes	13 (7.42)
No	162 (92.57)
Satellite channels	
Yes	4 (2.28)
No	171 (97.71)

Table 2: Numerical characteristics of health literacy and its dimensions in the case studies

Variables of research	Mean±SD	Minimum	Maximum
Health literacy	51.01±12.54	31.67	100
Reading skill	50.29±13.01	30	100
Access	63.77±13.95	27	100
Understanding and comprehension	43.57±11.45	34	100
Assessment	39.78±16.24	30	100
Decision-making and use of health information	57.68±13.23	22	100

SD=Standard deviation

between these two variables ($P = 0.003$); that is, with the increase of health literacy scores, the scores of the quality of life of elderly are also increasing. This correlation is equal to $r = -0.28$. Given the fact that it is <-0.3, this correlation is considered to be weak.

A survey on the relationship between the health literacy score and the dimensions of the quality of life of the elderly [Table 5] shows a meaningful and inverse relationship between health literacy and control dimensions ($P = 0.005$), autonomy ($P = 0.038$), and success ($P = 0.021$). The amount of this correlation is equal to -0.23, -0.19, and -0.15, respectively. Because the correlation coefficients are < 0.3, the correlation between the variables is considered to be weak.

A survey on the relationship between quality of life and the dimensions of health literacy [Table 5] shows that there is a meaningful and inverse relationship between quality of life and access dimensions ($P = 0.02$), understanding and comprehension ($P = 0.004$), and decision-making and use of health information ($P < 0.043$). The correlation is equal to -0.16, -0.31, and -0.44, respectively.

Fitting the regression model

In this section, the effect of health literacy variable and its dimensions on quality of life has been simultaneously investigated using a multiple regression model. Table 6 summarizes that health literacy has a 31.98% ability to predict the quality of life. The adjusted coefficient of determination in this model is 0.068.

Discussion

This study aimed to determine the relationship between health literacy and the quality of life of elderly people living in selected public nursing homes in Tehran. According to the results of this study on health literacy and its dimensions, the health literacy score of the studied samples is at the level of "not much adequate."

In the study of Mohseni *et al*.,[13] among elderly people in Kerman, 52.5% of them had inadequate health literacy, 31% had marginal health literacy, and 17% had adequate

at the average level, and the areas of self-discovery and pleasure were at a weak level.

Findings of Table 5 show that, in terms of Pearson's correlation test, the relationship between health literacy and quality of life in the elderly was significant, and there was a direct and statistically significant relationship

health literacy. In the study by Fahim and Sofi[21] 30% of the elderly in Urmia had adequate health literacy, 38.34% had inadequate health literacy, and 31.64% had marginal health literacy. In the study of Kooshyar *et al*.,[22] which was conducted on the elderly with diabetes in Mashhad, the health literacy was at an adequate level in 15.3% of the elderly; 70% of them had an inadequate health literacy level and 14% had a marginal health literacy level. Furthermore, Borji *et al*.,[7] in their study conducted on 250 elderly in Ilam, reported that the health literacy of 24.8% of the elderly in their study was at an adequate level; 24.8% of the elderly had a marginal health literacy level, and 50.4% of them had an inadequate health literacy level. The study by Smith[23] revealed that 40% of the elderly had inadequate health literacy and were faced with moderate-to-severe difficulties in understanding their daily health information. In the study by Kutner *et al*.,[24] which was conducted at an extensive level in the USA, the results show that only 3% of the elderly had adequate health literacy. In a study conducted in the United Kingdom by von Wagner *et al*.,[25] 30% of the

elderly had inadequate health literacy. Matthews *et al*.,[26] in their study, have reported that inadequate health literacy of the elderly is a major barrier to participation in health-care activities. From the viewpoint of the researcher, poor health literacy in the elderly of Tehran in this study can be attributed to various individual and social variations such as psychological, physiological, economic, educational, and cultural differences existing in the society as well as changes in the aging period. On the other hand, majority of the information and education in the health system are recently presented in written form at a higher level that can be understood by the various strata of the society. In addition, because of the chronic diseases in the elderly and consequently the need for learning self-care skills and screening, health literacy in the elderly is of great importance. These issues are a major challenge for health system managers in the country; hence, they should pay much attention to the elderly people's health literacy because adequate health literacy can affect their quality of life.

The results of this study showed that the quality of life of the elderly is moderate. Furthermore, the average subscale scores of the quality of life of the elderly, including control, autonomy, self-realization, and pleasure, are at good, moderate, weak, and weak levels, respectively.

A study on the quality of life in the elderly based on the CASP-19 scale was found outside Iran, but no such

Table 3: Frequency distribution of health literacy level in the studied samples

Health literacy level	Frequency (%)
Inadequate literacy (0-50)	62 (35.42)
Not much adequate literacy (50.1-66)	64 (36.57)
Adequate literacy (66.1-84)	43 (24.57)
Excellent literacy (84.1-100)	6 (3.42)
Total	175 (100)

Table 4: Comparison of quality-of-life scores and their dimensions with a desirable score

Variables	Mean	Median	Minimum	Maximum	Maximum score	Result
Control	13.63	4	1	12	16	Good
Autonomy	15.84	8	0	15	20	Moderate
Self-realization	8.56	8	3	15	20	Weak
Pleasure	9.72	8	3	15	20	Weak
Life quality	47.75	25	14	57	76	Average

Table 5: The relationship between health literacy and its dimensions with the quality of life of the elderly and its dimensions in the samples

Health literacy	Quality of life				
	Control	Autonomy	Self-realization	Pleasure	Quality of life
Reading skill	$P=0.076$ $r=-0.18$	$P=0.84$ $r=0.018$	$P=0.007$ $r=-0.19*$	$P=0.036$ $r=-0.27*$	$P=0.41$ $r=-0.12$
Access	$P=0.035$ $r=-0.32*$	$P=0.175$ $r=-0.23$	$P=0.058$ $r=-0.24$	$P=0.001$ $r=-0.12*$	$P=0.02$ $r=-0.16*$
Understanding	$P=0.002$ $r=-0.17*$	$P=0.0054$ $r=-0.21*$	$P=0.34$ $r=-0.25$	$P=0.07$ $r=-0.16$	$P=0.004$ $r=-0.31*$
Assessment	$P=0.027$ $r=-0.25*$	$P=0.048$ $r=-0.16*$	$P=0.008$ $r=-0.12*$	$P=0.38$ $r=-0.07$	$P=0.063$ $r=-0.25$
Decision-making and use of health information	$P<0.002$ $r=-0.37*$	$P<0.003$ $r=-0.26*$	$P=0.012$ $r=-0.18*$	$P=0.27$ $r=-0.38$	$P<0.043$ $r=-0.44*$
Health literacy	$P=0.005$ $r=-0.23*$	$P=0.038$ $r=-0.19*$	$P=0.34$ $r=-0.05$	$P=0.021$ $r=-0.15*$	$P=0.003$ $r=-0.28*$

P=P value, *<0.05 is significant. r=the correlation coefficient

Table 6: A description of the simultaneous regression model for prediction of quality of life

Model	Correlation coefficient	The square of the correlation coefficient	Adjusted coefficient of determination	Durbin-Watson test
Regression	0.33	0.3198	0.068	1.78

study has been found inside Iran. Instead, many Iranian studies have examined the quality of life of the elderly by other scales, which are discussed below.

The results of the study performed by Azadi *et al*.[27] on 200 elderly people in Ilam, using a 26-item questionnaire of quality of life, published by the World Health Organization, showed that the quality of life of the elderly was at an average level. They pointed out that health literacy is the reason for the average level of quality of life in their research because most elderly were illiterate people and the results obtained from the assessment of the variable of literacy level indicated that the quality of life of the elderly had a meaningful relationship with the level of literacy. In the research by Izadi *et al*.[28] who used the 36-item questionnaire of quality of life (short form [SF]-36), the quality of life of the elderly was assessed to be at a desirable level. The reason for its desirability was the research tool because, in this tool, the increase in score is associated with the deterioration of quality of life. Alipour *et al*.[29] conducted a study on the quality of life of the elderly in the second district of Tehran using LEIPAD [LEIden (the Netherlands), PADua (Italy) Quality of life Questionnaire) scale; their results indicated an average level of quality of life in the elderly. The level of total quality of life and its dimensions in men was higher than that of women. Babak *et al*.[30] performed a study on 637 elderly in Isfahan using the SF-36 scale and observed that the quality of life of the elderly was at an average level. The researchers stated that physical problems such as overweight and psychological problems such as depression can be attributed to the decline in the quality of life of the elderly studied in Isfahan, and they recommended that training of self-care and awareness of age-related illnesses can improve the quality of life of the elderly in future.

In the study by Wu *et al*.,[31] which was conducted on 699 Taiwanese elderly, the overall score of quality of life of the elderly based on the CASP-19 scale was 38.2. The scores for quality of life, including the control, autonomy, pleasure, and self-realization subscales, were 6.7, 10.7, 11.8, and 8.9, respectively. Knesebeck *et al*. Implemented a study to assess the quality of life of older men and women in ten European countries including Sweden, Austria, Germany, the Netherlands, Spain, Italy, France, Denmark, Greece, and Switzerland using the CASP-19 scale. The results of the research indicated that measuring quality of life of the elderly using this scale is appropriate and relevant,[32] and this can be employed as a valid and reliable scale for assessing the quality of life of the elderly in different cultures.[32-37]

In the study by Miranda *et al*.,[38] the majority of the elderly had a good quality of life. Factors such as age, physical activity, diabetes, musculoskeletal disorders,

blood pressure, and depression have independently influenced the quality of life of the elderly. The results showed that all areas studied such as psychological, environmental, social, and physical relationships significantly correlated with the quality of life of the elderly. Bornet *et al*.[39] performed a study entitled "Factors associated with quality of life in elderly hospitalized patients undergoing postacute rehabilitation." The results of their study showed that elderly patients who underwent rehabilitation had a good quality of life. A higher quality of life had a significant relationship with higher performance status, better cognitive status, and higher satisfaction with care. Poor quality of life was significantly associated with accompanying illnesses, symptoms of more depression, and unsatisfied spiritual needs. The researchers concluded that depressive symptoms had a significant relationship with quality of life and recommended that required training should be applied to reduce the symptoms of depression, especially with the help of spiritual descriptors. Soosova[40] reported that psychological problems such as depression, chronic illness, and life without a partner are among the factors determining the quality of life of the elderly, and this can reduce the quality of life in the elderly. The results showed that the development of social communication, participation of the elderly in leisure activities, and volunteering programs are the essential requirements for improving the quality of life of the elderly and further suggested that screening and self-care skills should be learned by the elderly.

Regarding the relationship between health literacy and the quality of life of the elderly, the results of the present study showed that there is a significant and inverse relationship between these two subjects, which means that, increasing the health literacy scores results in enhanced quality of life of the elderly. In addition, the results of this study showed that health literacy has a 31.98% ability to predict the quality of life.

In a study conducted by Hosieni *et al*.,[41] the results of the research showed a significant relationship between the level of health literacy and the quality of life of the elderly, which indicates the key role of health literacy in improving the quality of life of the elderly. Furthermore, in the study by Borji *et al*.,[7] the relationship between health literacy and the quality of life of the elderly in Ilam was analyzed. In their study, there was a considerable relationship between the dimensions of quality of life including physical performance, social function, and mental health with the level of health literacy in the elderly such that the mean scores of health literacy were greater in the elderly who were not restricted in terms of physical activities, who were independent in their daily activities, and who had mental health. In another study by Kooshyar *et al*.[22] on health literacy and quality of life

of the elderly, the Pearson's test results showed that there was a direct and significant relationship between the health literacy score and the total score of health-related quality of life in the elderly. There was also a direct and substantial relationship between the health literacy score and the physical and mental dimensions of the quality of life of the elderly with diabetes, but there was no significant relationship with a social dimension. The researchers stated that health literacy has a significant impact on the various aspects of the quality of life of the elderly, especially the quality of life of the elderly with chronic diseases. This reveals the importance of paying more attention to health literacy in health promotion programs.

In a study conducted by Song *et al.*,[42] the adequate health literacy level was significantly associated with an increase in the scores of physical and mental health dimensions of the quality of life of the studied samples. Moreover, in the studies by Macabasco-O'Connell *et al.*,[43] Wallace *et al.*,[44] and Howard *et al.*,[45] the results showed that an adequate health literacy level was significantly associated with increased quality-of-life scores and their dimensions in the studied samples.

Strengths and weaknesses of the study

The strengths of this study were the simultaneous application of three standard questionnaires, which provide the possibility of adapting the extracted results to the results of other studies. Another strength observed in this research was having a new approach in line with the development of healthy lifestyle programs in the elderly. One of the weaknesses in the study are the non-use of the elderly living in private nursing homes as well as the elderly living at home as a case study.

Innovation of the study

In previous studies conducted on the quality of life of the elderly in Iran, a general quality of life questionnaire had been used, whereas the present study is the first one in Iran that had utilized the CASP, wherein its questions have been translated to Persian and localized. This tool can be used to measure health outcomes in research, health, and treatment departments. The application of the questionnaire is simply possible and can be completed in <15 min by elderly or health-care providers in various fields such as community, health centers, and hospitals.

Limitation of the study

Some of the limitations of this study are listed as follows: this study was conducted on a small population of the elderly living in public nursing homes; thus, generalization of the results to similar populations should be done with caution. Moreover, because the quality of life of the elderly living in public nursing

homes is probably different from that of the total population, generalization of the results obtained to the entire society of the elderly in Tehran should also be performed cautiously. Moreover, another limitation of this study is the usage of variables such as individual characteristics including participants, accuracy, integrity, and mental and emotional conditions of the studied samples at the time of answering the questions, which can affect the outcome of the research.

Conclusion

In general, the results of this study indicated lack of enough level of health literacy and average levels of quality of life and revealed the presence of a significant relationship between health literacy and quality of life in the elderly. Therefore, the wide range of inadequate health literacy in the elderly population is a threat to health system managers and health-care providers. This issue highlights the need for paying more attention to health literacy issues in health planning and health promotion programs at the national and local levels. To improve the level of health literacy of all strata of the society, approaches such as facilitating the access to information and the use of comprehensible and simple educational content could be applied. Moreover, the knowledge of health education and health promotion specialists can be used to design training programs tailored to the target group, and can apply effective and useful measures to develop health literacy skills in all strata of society, especially the elderly.

Conflicts of interest

There are no conflicts of interest.

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