The relationship between health literacy and quality of life of elderlies with chronic diseases living in Fasa, Iran 2019

La relación entre la alfabetización en salud y la calidad de vida de los ancianos con enfermedades crónicas que viven en Fasa, Irán 2019

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Abstract

Introduction & Background.Health literacy is defined as cognitive and social skills determining motivation and ability of individuals to obtain, understand, and use healthcare information to improve and keep appropriate health. Low health literacy causes undesired health outcomes, harmful health behaviors, dissatisfaction of patients, and a higher death rate. The extant study was conducted to examine the relationship between health literacy and quality of life of elderlies with chronic diseases who live in Fasa, Iran during 2019. Methods. This cross-sectional study was done on 150 elderly with chronic diseases living in Fasa, 2019. Demographic information, quality of life, and health literacy questionnaires were employed to collect data. The gathered data were analyzed by using descriptive statistics, chi-square, one-way Analysis of Variance (ANOVA), and correlation coefficient through SPSS software. Results. Mean value and standard deviation of subjects' ages equaled 67.68±6.92 in this research. The mean value and standard deviation of disease duration in this group equaled 12.47±9.71. More than half of the studied subjects (50.7%) had inadequate health literacy. There was a significant relationship between age, sex, education level, job, and health literacy. There was a significant association between the total score of quality of life and health literacy level. Moreover, there was a significant correlation between age, education, job, disease duration, and quality of life (P<0.05). Conclusion. Findings indicated the effect of health literacy score on the quality of life of elderlies with chronic diseases. Hence, it is recommended that healthcare system managers make appropriate plans to improve the health literacy level of society.

Keywords: Health Literacy, Quality of Life, Elderlies, Chronic Disease.

Resumen

Introducción y antecedents. la alfabetización en salud se define como las habilidades cognitivas y sociales que determinan la motivación y la capacidad de las personas para obtener, comprender y utilizar la información de salud para mejorar y mantener una salud adecuada. La baja alfabetización en salud causa resultados de salud no deseados, comportamientos de salud nocivos, insatisfacción de los pacientes y una mayor tasa de mortalidad. El estudio existente se realizó para examinar la relación entre la alfabetización en salud y la calidad de vida de los ancianos con enfermedades crónicas que viven en Fasa, Irán durante 2019. Métodos. Este estudio transversal se realizó en 150 adultos mayores con enfermedades crónicas residentes en

Fasa, 2019. Para la recolección de datos se emplearon cuestionarios de información demográfica, calidad de vida y alfabetización en salud. Los datos recopilados se analizaron mediante estadística descriptiva, chi-cuadrado, análisis de varianza unidireccional (ANOVA) y coeficiente de correlación a través del software SPSS. Resultados: El valor medio y la desviación estándar de las edades de los sujetos fue de 67,68 ± 6,92 en esta investigación. El valor medio y la desviación estándar de la duración de la enfermedad en este grupo fue de 12,47 ± 9,71. Más de la mitad de los sujetos estudiados (50,7%) tenían conocimientos de salud inadecuados. Hubo una relación significativa entre la edad, el sexo, el nivel de educación, el trabajo y la alfabetización en salud. Hubo una asociación significativa entre la puntuación total de la calidad de vida y el nivel de alfabetización en salud. Además, hubo una correlación significativa entre la edad, la educación, el trabajo, la duración de la enfermedad y la calidad de vida (P <0,05). Conclusión. Los resultados indicaron el efecto del puntaje de alfabetización en salud sobre la calidad de vida de los ancianos con enfermedades crónicas. Por lo tanto, se recomienda a los administradores del sistema de salud que realicen los planes adecuados para mejorar el nivel de alfabetización en salud de la Sociedad.

Palabras clave: Alfabetización en salud, calidad de vida, ancianos, enfermedades crónicas.

Introduction

Increased life expectancy, reduced fertility rate, and many other factors have led to a rising elderly population worldwide[1]. The increasingly elderly population has become one of the most critical economic, social, and health challenges in the 21st century[2]. According to World Health Organization (WHO), population aging is the first successful incident for healthcare, economic, and social development. Population aging is considered a human honor and challenge simultaneously[3,4]. There is an increasing number of elderly in the world. As reported by WHO, 961 million elderlies live in the world. It is predicted that this number will be doubled and 2 billion people by 2025 and 2050, respectively[5]. The majority of these elderly people live in developing countries. The aging phenomenon is occurring more rapidly in Asian countries rather than western ones. Moreover, as an Asian country, Iran has experienced this phenomenon[6]. Therefore, the vast and rapid demographic changes over two recent decades have led to population aging in Iran[6]. According to statistical indicators, the aging trend is expanding in Iran[7]. As reported in census 2016, about 6.1% of the Iranian population constituted individuals older than 65. It is predicted that the Iranian elderly population makes up 31.5% of the population by 2050[8]. There is a 1.7% rise in the annual population of Iran; estimates indicated a 2.5% growth in the population of individuals older than 65[9]. It has been predicted that more than 10% and about 21-25% of the Iranian population will be elderly in 2025 and 2050, respectively[10,11]. The rising trend of population aging warns healthcare and social planners and policymakers. This phenomenon has attracted attention to the importance and necessity of appropriate social-economic programs and strategies for elderlies because population texture change and population aging may lead to higher disability and death rates caused by chronic diseases rather than acute illnesses among elderlies[12,13]. Chronic disease refers to a long-term illness that creates dysfunctions, and somatic changes in the body. Chronic diseases are usually incurable with long treatment periods and recovery stages. In some cases, there is not any definite treatment for chronic disease[14]. Now, there is a rise in the number of deaths caused by chronic diseases and elderlies' illnesses. The cost and treatment duration of chronic diseases are 20-30 times greater than acute diseases, and these treatments have a lower impact on the longevity and productivity of elderlies[15]. In line with increasing age, the probability of one or more chronic diseases will increases so that most elderlies older than 60 suffer from at least one chronic disease[16]. Health literacy has a significant effect on the health outcomes of patients. This variable plays a vital role in making decisions about healthcare needs. Health literacy has been introduced recently as a skill for patients to make the best healthcare decisions in hard situations. Improved health literacy comes up with perfect results, including increases potential ability of patients to make informed decisions, reduced health-threatening risks, increased disease prevention, promoted security, higher quality of life, and quality of care given to patients[17,18]. Regarding the absence of study on the relationship between health literacy and quality of life of elderlies with chronic diseases in Fasa, south of Iran, the present study was aimed at examining the relationship between health literacy and quality of life of elderlies with chronic diseases in Fasa located in Fars province, south of Iran.

Materials and methods

The present study was carried out based on a descriptive-analytical method with cross-sectional type. The statistical population comprised elderlies older than 60 who live in Fasa located in Fars Province, south of Iran. Of them, 150 eligible elderlies that had inclusion conditions were chosen as sample subjects. The equation below was used to calculate sample size:

$$n = \left[\frac{Z\left(1-\frac{\alpha}{2}\right) \pm Z\left(1-\beta\right)}{0.5\ln\left(\frac{1+r}{1-r}\right)}\right]^2$$

Where **c**and **c**represent type 1 (0.05) and type 2 (0.20) errors, respectively; r represents the correlation coefficient between health literacy and quality of life, which reported 0.64 in the study conducted by Husieni et al[19]. According to the points mentioned above, the minimum sample size obtained to 116, which reached 150 subjects to expand the power of the study. The sampling procedure was performed in three health centers located in Fasa. Subjects were randomly selected from elderlies with chronic diseases that had inclusion conditions in every center. In this research, inclusion criteria were the age of 60 and older, suffering from chronic diseases, informed satisfaction and desire for participation, having mental awareness and ability to answer questions, and lack of psychological problems diagnosed with physicians. Furthermore, those elderly people who had speech disorders, severe hearing loss, lack of consciousness, dementia, Alzheimer's, and lack of awareness of time and place were excluded from the study.

After permission was obtained from the Research Deputy of the University and Ethics Committee, as well as the Health Deputy of Fasa University of Medical Sciences, authors entered the research center of health centers and selected 50 elderlies with chronic diseases as research subjects from each center. The subjects were chosen by consideration of the list of supported elderlies in each center. The registered chronic diseases in comprehensive health centers were as follows: hypertension, hyperlipidemia, backache, osteoporosis, cardiovascular diseases, anxiety, diabetes, depression, gastrointestinal diseases and disorders, chronic respiratory diseases, heart attack, and cancer. We called the studied subjects based on the Fasa PERSIAN COHORT data[20]. In the next step, the questionnaires were filled out by caregivers working in each center under the supervision of the authors. The elderlies completed the self-report forms. Questionnaires were filled out by authors through interviews with uneducated elderlies. It should be noted that face-to-face training was given to caregivers to learn how to fill the questionnaires out.

A data collecting instrument, a three-part questionnaire was used in this research. The first part of this questionnaire included demographic features (age, sex, education level, and job) of research subjects. The second questionnaire was the WHO's Quality of Life Questionnaire (WHOQOL)[21]. A study was conducted on 1167 people living in Tehran to examine the validity and reliability of WHOQOL, and participants were divided into two groups with chronic and non-chronic diseases. Test and retest reliability of subscales equaled 0.77, 0.77, 0.75, and 0.84 for physical health, psychological health, social relationships, and environmental health, respectively. The internal consistency of this questionnaire was measured based on the Cronbach's alpha reported in (Table 1) [22]. This questionnaire assesses the quality of life in four dimensions of physical health (7 items, total score of 7-35), psychological health (6 items, total score of 6-30), social relationships health (3 items, total score of 3-15), and life environment health (8 items, total score of 8-40). Overall health perception (I item, total score of 1-5) and overall quality of life (I item, total score of 1-5) were also items of this questionnaire. Each item is scored based on five options varying between 1 and 5. It is worth noting some items are scored reversely. The questionnaire was scored between 0 and 100 based on the Likert Scale, in which zero indicates the lower quality of life, while 100 represents the highest quality of life. A health literacy questionnaire was used as the third instrument. Tehrani Banihashemi et al.[23], employed the Test of Functional Health Literacy in Adults (TOFHLA) to collect data. TOFHLA is one of the most important and reliable questionnaires in the world. Several translated versions of this questionnaire have been validated. To this end, they implemented the validity and reliability steps on 50 subjects during the primary study. In the next step, some options were changed regarding the difficulty rate of questions and variance of response, and the second primary study was carried out on 50 subjects. This questionnaire includes two parts of numerical skills and reading comprehension. The numerical skill part consists of some explanations about prescribed drugs, appointment time, financial funds, and the result of a medicinal test. Required explanations were given in form of cards to subjects, and then relevant questions (17 items) were asked. The reading comprehension part tests the patient's ability to read real texts related to healthcare by asking 50 questions. The texts included preparation orders for upper gastrointestinal imaging, rights, and duties of the patient in insurance letters, and a standard hospital consent letter. The health literacy score of each subject varied between 0 and 100, which was divided into three inadequate (0-59), borderline (60-74), and adequate (75-100) levels based on separating points of 59 and 74[24]. This questionnaire was validated for elderlies in Isfahan, Iran by Javadzadeh, Raeesi et al. who reported reliability rates of 0.79 and 0.88 for numerical skills and reading comprehension, respectively[24].

Table1. Distribution of health literacy in the studied population

Variable	Levels	Frequency	Percent
Health literacy	Inadequate	76	50.7
	Borderline	30	20
	Adequate	44	29.3
Total		150	100

Ethical Consideration

This study was approved as a research project in Deputy of Research and Technology of Fasa University of Medical Sciences. The project was implemented after submitting the official introduction letter of Fasa University of Medical Sciences to the studied healthcare centers. Confidentiality was observed in this study.

Data Analysis

The descriptive data were reported based on the central indicators of mean, standard deviation, percent, and frequency. Data analysis was done by using independent t-test, ANOVA, chi-square, and correlation tests at the significance level of $P<0.05$ through SPSS22 software.

Results

In this research, 150 elderlies with chronic diseases were studied; of them, 73 subjects (48.7%) were female and 77 subjects (51.3%) were male. Mean and standard deviation of age equaled 67.68±6.92. Some elderlies (41 subjects or 27.3%) had a diploma. The mean and standard deviation of disease duration equaled 12.47±9.71. Diabetes, hypertension, heart attack, lumbar disc, and hyperlipidemia were the most prevalent chronic diseases among elderlies with statistics of 35 subjects (29.7%), 31 (20.6%), 20 (13.3%), 11 (7.3%), and 10 (6.7%), respectively.

(Table 1) reports the distribution of health literacy of the studied population. Accordingly, more than half of the subjects (50.7) had inadequate health literacy.

According to (Table 2), the average quality of life, as well as physical, psychological, social, and environmental dimensions of health equaled 54.35±9.36, 55.46±12.34, 58.62±17.35, 56.75±12.19, and 56.94±15.38, respectively.

According to the statistical test of Pearson correlation reported in (Table 3), there was a significant relationship between health literacy and quality of life.

(Table 4) reports the relationship between variables and quality of life. There was a significant association between sex, education level, job, and total score of quality of life.

Table 2. Mean score of quality of life of the studied population					
Variable	Dimensions	Min	Max	Mean	SD
Quality of life	Physical health	31	75	54.35	9.36
	Psychological health	19	87	55.46	12.34
	Social relationship	19	95	58.62	17.35
	Environment health	25	81	56.75	12.19
Total		34	98	56.94	15.38

Table 3. Correlation between health literacy and quality of life in the studied population								
Variable	Reading comprehension	Numerical skills	Overall health literacy	Physical health	Psychological health	Social relationships	Environment health	The overall quality of life
Reading comprehension	1	0.76**	0.94**	0.22**	0.10	0.10	0.01	0.25**
Numerical skills	0.76**	1	0.93**	0.25**	0.13	0.13	0.06	0.29**
Overall health literacy	0.94**	0.93**	1	0.25**	0.12	0.12	0.04	0.29**
Physical health	0.22**	0.25**	0.25**	1	0.51**	0.28**	0.33**	0.50**
Psychological health	0.10	0.13	0.12	0.51**	1	0.58**	0.57**	0.62**
Social relationships	0.10	0.13	0.12	0.28**	0.58**	1	0.57**	0.39**
Environment health	0.01	0.06	0.04	0.33**	0.57**	0.57**	1	0.53**
Overall quality of life	0.25**	0.29**	0.29**	0.50**	0.62**	0.39**	0.53**	1

Table 4. The relationship between variables and quality of life						
Variable	**Subgroup**	**Quality of life**				
		Total score	**Physical health**	**Psychological health**	**Social relationships**	**Environment health**
Sex	Female	48.37±25.59	51.84±9.57	54.0±13.41	58.10±04	56.31±12.77
	Male	60.61±27.22	56.8±8.52	56.75±11.19	59.10±16.77	57.16±11.69
	Sig.	0.007	0.001	0.193	0.728	0.670
Education level	Uneducated	18.05±15.78	52.28±10.28	55.18±9.74	57.09±18.62	57.00±12.55
	Elementary school	28.40±12.80	47.70±9.28	55.6±8.08	58.1±11.04	61.4±8.34
	Secondary school	49.03±19.60	55.50±9.87	57.33±13.75	58.88±17.34	56.13±13.01
	Diploma	62.39±18.72	55.82±8.38	55.02±12.16	57.36±17.93	56.43±12.76
	Associate degree	77.41±15.01	53.88±8.58	51.11±14.11	59.33±19.21	54.48±11.83
	BA and above	80.71±20.10	55.85±9.67	60.71±10.23	63.00±15.77	59.92±11.14
	Sig.	<0.001	0.151	0.238	0.933	0.635
Job	Unemployed	44.39±26.66	52.58±9.32	55.55±12.66	57.61±17.16	56.93±12.34
	Service job	72.34±16.93	56.68±9.52	54.11±13.66	60.17±19.46	56.325±13.22
	Manufacturing job	57.95±26.78	56.28±7.95	58.04±6.98	59.19±13.17	56.95±9.45
	Sig.	<0.001	0.035	0.484	0.718	0.961

Discussion

According to the research results, more than half of the studied subjects (50.7%) had inadequate health literacy. This result was consistent with some relevant studies[24-27]. Mohseni et al.[28], concluded that almost the majority of elderlies (52.5%) had inadequate health literacy. Hosieni et al.[19] found 24% of elderlies living in Rafsanjan, Iran, had inadequate health literacy. According to results obtained by Javadzade et al.[23], about 79% of elderlies had inadequate health literacy. Büssing et al.[27], carried out a study on the health literacy of elderlies with cancer in 2018 and results indicated a low score of health literacy and subjects had inadequate health literacy. The difference between results may be associated with the different life statuses of elderlies. For example, Hosieni studied university retired staffs who were educated and employees of the university of medical sciences, while the studied elderlies in other papers were not similar in terms of job and education[19].

The obtained results of the present study indicated a significant relationship between age, sex, education level, job, and health literacy. Therefore, there was more inadequate health literacy among men with a higher age average and lower education level. Ghasemi..et al.[29], found a significant association between health literacy level, education, and job status. Mohseni argued that physical and mental abilities, environmental situations, economic and social status of individuals depend on their job position; therefore, an appropriate job status affects the health of the person by creating more opportunity for social interactions. Borji et al[30], found a significant relationship between health literacy, age, sex, jab, and education level.

Hosieni et al.[19] conducted a study on the relationship between health literacy and the quality of life of retirees of Rafsanjan University of Medical Sciences and found a significant relationship

between education level and health literacy. Javadzade et al.[23] found a significant relationship between health literacy and age. Various studies have proved the significant relationship between health literacy and education level. Accordingly, the higher the education level, the higher the literacy level will be[30-34]. Further, some studies found an increase in average health literacy in line with higher education levels[35-38]. Cho et al.[35], introduced education as a variable affecting health literacy. Low education level, difficulty in written communications, and less information about medical terms harm the ability of individuals to make successful interactions with the healthcare system. According to the results of the present paper and comparison with other studies, the higher the education level, the more adequate the health literacy will be. On the other hand, the promotion of education leads to higher knowledge levels, which leads to higher health literacy.

In the present study, quality of life scores equaled 55.46 and 54.35 for psychological and physical dimensions, respectively. Accordingly, the psychological aspect had a higher score than the physical dimension. This result was matched with the finding obtained by Hosieni et al.19, which reported a higher score for the psychological dimension (61.66) of quality of life than the physical dimension (56.22). In the study conducted by Ahangari et al. and other papers, the psychological score was higher than the physical dimension of quality of life[39]. According to findings, elderlies obtained a quality of life score of 54.83. In relevant studies, the mean value of 50 with a standard deviation of 10 has been considered a norm indicator of elderlies' quality of life of elderlies[40-42]. Hence, comparing these two scores indicated the higher quality of life score of retired elderlies in the present study. However, compared results between Iranian and foreign studies indicated the higher quality of life of foreign elderlies[2-6]. This difference in the quality of life of foreign and Iranian elderlies may stem from the chronic disease of studied elderlies in the present study since the chronic disease may affect the quality of life. Moreover, another reason for this difference depends on the different support systems and more convenient lifestyles in other countries. Health literacy-promoting program is a type of inexpensive social support that improves the quality of life of elderlies.

According to the present paper results, there was a significant relationship between sex, education level, job, disease duration, and quality of life. This result was matched with results obtained by Khooshemehri et al. [38], who found a significant association between quality of life, sex, and education level. Moreover, Ahangari et al.[39] found that the higher the education level, the higher the quality of life. Ghasemi et al.[40] introduced age and education level as factors affecting the quality of life. Other researchers also found the positive effect of higher education on the quality of life[43-45].

Findings indicate a significant correlation between health literacy and quality of life[35-38]. Khooshemehri, et al.[37], concluded that individuals with adequate health literacy had higher quality of life. Wang et al. found an association between low health literacy and poor quality of life[39]. These findings were in line with the results of other studies[30-33]. Husseini, et al. found a significant relationship between health literacy and quality of life among elderlies. Therefore, health literacy plays a vital role in the improvement of the quality of life of elderlies[25]. Health-promoting behaviors of elderlies have positive effects on the health and quality of life and reduce healthcare costs. Hence, health is taken into account as a factor that promotes healthy behaviors, creates a healthy lifestyle, and improves the quality of life of elderlies.

Conclusion

According to the results, more than half of the studied individuals (50.7%) had inadequate health literacy. There was a significant relationship between age, sex, education level, job, and health literacy. Hence, there was higher inadequate health literacy among unemployed men with higher age averages and lower education levels. There was a significant association between the overall score of quality of life and health literacy. Moreover, there was a significant correlation between sex, education level, job, disease duration, and quality of life. The present study was conducted on the health literacy and quality of life among elderlies who suffer from chronic disease. The absence of the study on this topic can be considered as an initiative aspect of this paper. This research faced some constraints. Regarding the nature of the health literacy assessment tool in this study, only reading comprehension and numerical skills were examined. Although evaluation of these skills is the first step to assess health literacy, this is only a part of the general concept of health literacy. Achievement in the health system must consider other skills, such as listening, speaking, contextual and cultural knowledge. This was a cross-sectional study, so further studies can be done within long-term cases to understand causal relationships between variables.

Disclosure

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