

Investigating the Relationship Between Health Literacy and Financial Literacy Among the Elderly in 2022

Abstract

Aims The identification of factors that affect health literacy in the elderly will aid in designing interventions aimed at promoting health literacy by focusing on these factors. Therefore, the present study was conducted to determine the relationship between health literacy and financial literacy among the elderly.

Materials & Methods This cross-sectional study was conducted on 295 elderly people in Urmia, Iran, who were selected by multi-stage cluster sampling method in 2022. The data collection tool included demographic information, Health Literacy for Iranian Adults and, Financial Literacy Questionnaires. Data were analyzed using SPSS version 16, employing the Kolmogorov-Smirnov test, independent t-test, one-way ANOVA, and Pearson correlation coefficient. The results were statistically significant at the $p < 0.05$ level.

Findings The mean health literacy score of the elderly participants in the study was 64.38 out of 100, indicating a not very sufficient level. Additionally, the mean financial literacy score was 47.84 out of 100, reflecting a low level of financial literacy. A positive and significant correlation was found between financial literacy and health literacy ($p < 0.001$, $r = 0.604$).

Conclusion Due to the low levels of financial literacy and health literacy among the elderly in Urmia, and the positive correlation between financial literacy and health literacy, it is recommended that relevant organizations and authorities conduct training courses focused on financial literacy for the elderly population in Urmia. It appears that these training courses can not only enhance financial literacy, but also improve health literacy.

Keywords Health, Literacy, Health Literacy, Financial Literacy, Elderly

Introduction

According to demographers, old age starts from the age of 60-65 years. Currently, the increasing elderly population is so significant that it is considered as a silent revolution. It is estimated that by the end of 2050, the elderly population will comprise 16% of the world's population. Iran is also facing an increase in the elderly population. According to the 2016 census, 9.2% of Iranian people are over 65 years old. It is predicted that this percentage will reach 14.8% by 2030 and 29.45% by 2050 [1].

Today, the main concern of researchers is not just to increase life span; but given the statistics, it is found that if the main health challenge in the 20th century was only survival and increasing life span; The challenge of the new century is to live with superior quality [2]. Literacy is one of the important factors affecting well-being and health, especially among the elderly [3,4].

Low literacy is a major challenge among people over 65 years old. Because most of the most important and influential medical and financial decisions (for example, selecting a health insurance plan, selecting complex medical options, using retirement savings, and intergenerational transfers) are made in old age. Literacy is now considered as a multidimensional structure that includes a set of skills necessary for optimal functioning in society and achieving personal goals. Health literacy and financial literacy are two important fields of literacy, both of which have important consequences for the health and well-being of the elderly [3,4].

Health literacy includes the ability to access, understand, and use health information and concepts in a way that promotes good health outcomes [4]. The decisions and behaviors that a person makes in terms of his/her lifestyle are affected by health literacy. In a report, the World Health Organization (WHO) has introduced health literacy as one of the biggest determinants of health. Also, the WHO advised the countries of the world to create an association consisting of all people related to this issue to monitor and coordinate strategic activities regarding the promotion of health literacy [5].

The results of various studies in Iran show that health literacy of the elderly is at an insufficient level [4, 6]. Low level of health literacy in the elderly are associated with increased mortality, reduced cognitive ability, reduced physical health, increased risk of dementia, increased risk factors for chronic diseases, and the adoption of some high-risk health behaviors [7]. Health literacy can be effective on improving self-care skills during old age, improving the receipt of comprehensive elderly care services, reducing the burden of referrals to health care centers, and reducing the costs of the health system [7]. These cases indicate the need to pay attention to health literacy among the elderly,

so that by identifying the effective factors, we can design and implement various interventions, including educational interventions, focusing on these factors among the elderly to increase their health literacy.

One of the factors that seems to be effective on improving health literacy, but has received less attention, is financial literacy. Financial literacy includes the ability to access, understand and use financial information and concepts in a way that promotes good financial outcomes [4, 8]. Financial literacy is a combination of financial awareness, knowledge, skills, attitude and behaviors necessary to make sound financial decisions and ultimately achieve individual financial well-being [9]. In the study conducted by James et al.'s entitled "the impact of health and financial literacy on decision making in community-based older adults" in the United States, results showed that there was a positive and significant correlation between health literacy and financial literacy among the elderly [3]. Also, in another study that was conducted among the elderly in United States, the findings showed that there is a positive and significant correlation between health literacy and financial literacy, and a strong association was found between health literacy and health-promoting behaviors, while financial literacy It had a stronger association with mental health [4].

Households with higher levels of financial literacy tend to exhibit greater cognitive ability, a better understanding of health issues, and increased health knowledge. This encourages household members to avoid irrational behaviors (e.g., smoking) and promotes healthy behaviors (e.g., daily exercise and positive lifestyle choices) [8, 10]. Financial literacy, as a tool for rational decision-making, enables individuals to think and act more logically, thereby decreasing their involvement in activities that are detrimental to their health [8]. Individuals with higher financial literacy have access to more reliable information sources and can acquire accurate health knowledge through appropriate screening, thereby enhancing their health literacy. Consequently, improved financial literacy will promote health literacy [10].

Based on the information provided and the detrimental effects of inadequate health literacy on the elderly, along with the significance of recognizing factors influencing health literacy in this demographic, and the scarcity of research on the relationship between health literacy and financial literacy among Iranian elderly, this study aims to determine the relationship between health literacy and financial literacy among the elderly.

Materials and Methods

The present study is a descriptive-analytical cross-sectional study that was conducted in 2022 among the people aged 60 years and older who referred to comprehensive health service centers in Urmia, Iran. Inclusion criteria included age 60 years and older, having sufficient literacy to answer the questionnaire questions, having sufficient physical and mental health and ability to complete the questionnaire, and consent to participate in the study. Exclusion criterion was incomplete completion of the questionnaire.

The minimum number of samples required according to the previous similar study and considering the standard deviation of 12.54 for the mean of health literacy score of Iranian elderly [11], a statistical confidence level of 95% ($z=1.96$), the maximum acceptable error or accuracy of $d=1.5$ and using the sample size formula to estimate the mean of a quantitative trait in a population was estimated to be 268. Finally, taking into account 10% possible drop, the sample size was considered to be 295.

$$n = \frac{Z_{1-\alpha/2}^2 S^2}{d^2} = \frac{(1.96)^2 \times (12.54)^2}{(1.5)^2} = 268$$

The sampling method was a multi-stage cluster. In this way, Urmia was first divided into two north and south parts, based on geographical directions. Then, one urban comprehensive health service center was selected from each part using a simple random sampling method and lottery. Next, by referring to the selected centers and coordinating with the head of the centers, the required samples were completed according to the number of elderly people who referred to each center, from among the elderly people who met inclusion criteria and were willing to cooperate using convenience sampling method.

The data collection tool in this study included 3 parts. The first part included demographic information. The second part included Health Literacy for Iranian Adults Questionnaire, which was designed and psychoanalyzed by Montazeri et al.'s (2014). This questionnaire contains 33 items and measures the level of health literacy of people in 5 dimensions of access (6 questions), reading skills

(4 questions), understanding (7 questions), appraisal (4 questions) and decision-making and applying health information (12 questions). This questionnaire was scored based on a five-point Likert scale. So that for the questions on reading skills, a score of 5 was allocated to the "quite easy" option, a score of 4 was allocated to the "easy" option, a score of 3 was allocated to the "neither easy nor difficult" option, a score of 2 was allocated to the "difficult" option and a score of 1 was allocated to the "quite difficult" option. For the other four dimensions of health literacy, a score of 5 is given to the "always" option, a score of 4 to the "most often" option, a score of 3 to the "sometimes" option, a score of 2 to the "rarely" option, and a score of 1 to the "not at all" or "never" option. The score of each dimension was obtained from the sum of the scores of the items related to that dimension and the total score was obtained from the sum of the scores of 5 dimensions. The score range of access was 6-30, 4-20 for reading skills, 7-35 for understanding, 4-20 for appraisal, and 12-60 for decision-making and applying health information. The way of final scoring is that the raw scores of the 5 dimensions of health literacy were calculated and then converted into standard scores between zero and 100. According to this scoring system, scores 0-50 indicate insufficient health literacy, scores 50.1-66 indicate not very sufficient health literacy, scores 66.1-84 indicate sufficient health literacy, and scores 84.1-100 indicate excellent health literacy. The validity of health literacy questionnaire was confirmed by Montazeri et al.'s using the qualitative content validity method (15 experts in various health fields) and the construct validity was also confirmed by exploratory factor analysis (EFA). Its reliability was also confirmed by calculating Cronbach's alpha coefficient (0.72-0.89) [12]. The third part was Financial Literacy Questionnaire, which was used by James et al.'s (2012) to measure financial literacy of the elderly [3,4]. In this questionnaire that there were 23 questions, the answers to some questions require performing simple mathematical calculations and evaluates the ability to understand financial concepts such as interest and inflation rates. Some questions also assess people's knowledge about the financial terms and institutions such as the insurance companies, deposits, stocks and bonds. All answer choices were multiple choice or true/false with only one correct answer, thus each item was scored as correct or incorrect. The way of final scoring was that first the raw score of financial literacy was calculated and then converted into a standard score between zero and 100. The classification of financial literacy in most of the studies is that a score of less than 60% is considered as low financial literacy, 60-79% as moderate and 80% and above as high financial literacy [13,14].

The standard forward-backward method was used to translate the financial literacy questionnaire [15] and then its validity and reliability were checked and confirmed. First, the original English version of the questionnaire was simultaneously translated into Persian by two independent translators. Then, in a meeting with the presence of a 5-member panel consisting of translators and professors who had sufficient command of the English language and psychometric experience of the questionnaire, the translations were examined and after cultural adaptation, a Persian version was finally prepared. Next, this Persian version was translated into English by two other translators separately. Again, an English version was prepared from these two English versions using the mentioned method (5-member panel) and matched with the original version. After the mentioned panel confirmed the translation and stated that the Persian translation was able to convey the meaning well, 10 elderly people of the target group were interviewed face to face to determine face validity using a qualitative method. In this method interviewed with elderly about the level of difficulty, appropriateness, and ambiguity in the questions. Finally, their corrective comments were obtained and included in the questionnaire [16,17]. To qualitatively confirm content validity, a panel of experts (10 experts in the fields of geriatric health, health economics, and epidemiology) was used, who were requested to include in their evaluation cases such as observing grammar, using the appropriate words, the importance of the questions in the questionnaire, the placement of each question in proper place, and the time to complete the questionnaire. Finally, their corrective comments were obtained and included in the questionnaire [16,17]. Cronbach's alpha coefficient was used to confirm the reliability of the questionnaires. In this way, the prepared pilot questionnaire was given to 30 elderly people in the target group to complete, and then Cronbach's alpha coefficient was calculated. The value 0.743 was obtained and was acceptable [17]. The people who participated in this stage of the research were excluded from the final study.

The ethical considerations of the present study included receiving the ethical approval from the Research Ethics Committee of the Vice-Chancellor for Research and Technology at Urmia University of Medical Sciences (IR.UMSU.REC.1401.008), receiving a written introduction letter from the Vice-Chancellor for Research and Technology at Urmia University of Medical Sciences to present to

research environments, the presence of the researcher in research environments for explaining the objective and method of this study, obtaining informed consent from the subjects to participate in this study, assuring that participation in this study is completely voluntary and if they don't want to, they can withdraw from the study, and their information will remain confidential with the researcher, and the study results will only be reported in general. In addition, the questionnaire also lacked name and surname.

Data were analyzed using SPSS version 16, employing descriptive statistics (mean, standard deviation, frequency, and percentage) as well as analytical statistics, which included the Kolmogorov-Smirnov test (to assess data normality), independent t-test, one-way ANOVA, and Pearson correlation. The results were statistically significant at the $p < 0.05$ level.

Findings

The mean age of the studied elderly was 64.92 ± 5.37 years. Most participants were female (56.3%), in the age range of 60-64 (60.7%), married (87.1%), had high school education level (31.2%), housewife (39.7%), self-employed (29.5%), medium economic status (76.3%), 2 family members (37.6%) and covered by health insurance (96.9%). Most participants reported that they had no specific physical disease (78.6%), and taking no specific drugs (77.6%) (Table 1).

Table 1. Absolute and relative frequency distribution of demographic variables of the studied elderly (n=295)

Variable	n	%	Variable	n	%		
Gender	Male	129	43.7	Unemployed	32	10.8	
	Female	166	56.3		Housewife	117	39.7
Age groups	60-64	179	60.6	Job status	Government employee	46	15.6
	65-69	68	23.1		Manual worker	13	4.4
	70-74	35	11.9		Self-employed	87	29.5
	75-79	3	1.0		Economic status	Weak	13
	80-84	7	2.4	Medium		225	76.3
	85-89	0	0.0	Good		48	16.3
	90-94	3	1.0	Excellent	9	3.1	
Marital status	Married	257	87.1	Number of family member	1	13	4.4
	Widow	38	12.9		2	111	37.6
Level of education	Elementary	41	13.9		3	85	28.8
	Middle school	58	19.7		4	63	21.4
	High school	92	31.2		5	23	7.8
	Diploma	73	24.7	Health insurance cover	Yes	286	96.9
	Associate Degree	13	4.4		No	9	3.1
	Bachelor degree	10	3.4	Health status	Excellent	15	5.1
	Master degree	8	2.7		Very good	61	20.7
Having physical diseases	Yes	63	21.4		Good	146	49.5
	No	232	78.6	Fair	58	19.7	
Taking specific drugs	Yes	66	22.4	Poor	15	5.1	
	No	229	77.6				

Abbreviations: n, number

According to the results of the present study, most of the elderly studied in terms of access were at a not very sufficient level (43.1%), in terms of reading skills at an insufficient level (39.0%), in terms of understanding at an insufficient level (28.5%) and not very sufficient level (28.1%), in terms of

appraisal at an insufficient level (36.3%), in terms of decision-making and applying health information at a not very sufficient level (46.1%), and in terms of total health literacy, they were at a not very sufficient level (42.7%) (Table 2).

Table 2. Absolute and relative frequency distribution of health literacy dimensions' levels among the studied elderly (n=295)

Health literacy dimensions	Insufficient n(%)	Not very sufficient n(%)	Sufficient n(%)	Excellent n(%)
Access	78(26.4)	127(43.1)	57(19.3)	33(11.2)
Reading skills	115(39.0)	84(28.5)	54(18.3)	42(14.2)
Understanding	84(28.5)	83(28.1)	72(24.4)	56(19.0)
Appraisal	107(36.3)	79(26.8)	80(27.1)	29(9.8)
Decision-making and applying health information	15(5.1)	136(46.1)	75(25.4)	69(23.4)
Total	39(13.2)	126(42.7)	88(29.8)	42(14.2)

Abbreviations: n, number

According to the results of the present study, most of the elderly studied were at a low level (65.1%) in terms of financial literacy (Table 3).

Table 3. Absolute and relative frequency distribution of financial literacy levels among the studied elderly (n=295)

Financial literacy	n(%)
Low	192(65.1)
Moderate	85(28.8)
High	18(6.1)

Abbreviations: n, number

Table 4 shows the mean and standard deviation of health literacy and its dimensions, as well as the mean and standard deviation of financial literacy of the studied elderly. The total health literacy of the elderly studied was 64.38 out of 100, which according to the classification was at a not very sufficient level, and financial literacy was 47.84 out of 100, which is at a low level according to the classification (Table 4).

Table 4. Mean and standard deviation of dimensions of health literacy and financial literacy among the studied elderly (n=295)

Variable	Dimensions	Mean ± SD	Scale range [†]	Min-Max [‡]	Mean score (Out of 100)
Health literacy	Access	5.71±18.34	6-30	8-30	19.04±61.14
	Reading skills	3.78±12.17	4-20	4-20	18.91±60.89
	Understanding	6.58±22.63	7-35	12-35	18.81±64.67
	Appraisal	3.83±12.14	4-20	4-20	19.18±60.72
	Decision-making and applying health information	10.07±40.92	12-60	23-60	16.79±68.20
	Total	25.69±106.22	33-165	60-164	15.57±64.38
Financial literacy	Total	4.64±11.00	0-23	0-20	20.18±47.84

Abbreviations: SD, standard deviation

†, The lowest and highest values that can be obtained from the original scale.

‡, The lowest and highest values obtained in this study.

Based on the study results, there was a positive and significant correlation between financial literacy with total health literacy and its dimensions. So that, as the financial literacy of elderly studied

increases, their level of health literacy and its associated dimensions also show improvement (Table 5).

Table 5. Correlation matrix between financial literacy with health literacy and its dimensions among the studied elderly (n=295)

Variable	1	2	3	4	5	6	7
1-Financial literacy	1						
2-Total health literacy	r=0.60 [†]	1					
3-Access	r=0.44 [†]	r=0.39 [†]	1				
4-Reading skills	r=0.48 [†]	r=0.84 [†]	r=0.69 [†]	1			
5-Understanding	r=0.58 [†]	r=0.88 [†]	r=0.60 [†]	r=0.80 [†]	1		
6-Appraisal	r=0.37 [†]	r=0.77 [†]	r=0.70 [†]	r=0.70 [†]	r=0.581 [†]	1	
7- Decision-making and applying health information	r=0.59 [†]	r=0.89 [†]	r=0.65 [†]	r=0.60 [†]	r=0.73 [†]	r=0.55 [†]	1

†p<0.001

The result of the independent t-test showed that there is a statistically significant relationship between financial literacy with gender and marital status. So that financial literacy of male elderly was higher than that of female elderly, and that of widowed elderly was higher than married elderly. Also, a statistically significant relationship there was between health literacy and Health insurance coverage. So that the mean of health literacy score in the elderly who are not covered by insurance was significantly higher than the elderly who are covered. The result of the independent t-test also showed that there is a statistically significant relationship between health literacy and financial literacy with having physical diseases and taking specific drugs. So that the mean scores of health literacy and financial literacy among the elderly who are suffering from physical diseases than the elderly who are not, and among the elderly who take specific drugs than the elderly who do not, were significantly higher (Table 6).

The result of the one-way ANOVA showed that there is a statistically significant relationship between health literacy and financial literacy with age. Then, using the Bonferroni Post Hoc test, the differences between different age groups were examined in pairs. According to the findings, the mean of health literacy score in the age group of 60-69 and above of 84 years was significantly lower than the age group of 70-84 years. Also, the mean of financial literacy score in the age group of 65-79 years was significantly higher than other age groups (60-64, 80-84 and above of 84 years) and in age group of above 84 years significantly lower than other age groups.

A statistically significant relationship there was between health literacy and financial literacy with level of education. So that the mean scores of health literacy and financial literacy in the elderly with bachelor's and master's education were significantly higher than other educational groups. Also, a statistically significant relationship there was between health literacy and financial literacy with the job status. So that the mean scores of health literacy and financial literacy were significantly higher in housewife and government employee compared to manual worker and self-employed, and unemployed compared to other job groups. A statistically significant relationship there was between health literacy and financial literacy with economic status. So that the mean scores of health literacy and financial literacy in the elderly with a excellent economic status were significantly higher than in

other economic groups, and significantly lower in the weak and medium groups compared to good and excellent groups. A statistically significant relationship there was between health literacy and financial literacy with the number of family members. So that the mean scores of health literacy and financial literacy in the elderly with 1 and 2 family members were significantly higher than other groups, and significantly lower in the elderly with 5 family members compared to other groups. A statistically significant relationship there was between health literacy and financial literacy with general health status. So that the mean scores of health literacy and financial literacy in the elderly with excellent general health status were significantly higher than other groups (Table 6).

Table 6. Mean and standard deviation of the dimensions of health literacy and financial literacy according to demographic information of the studied elderly (n=295)

Variable		Financial literacy	Health literacy	Variable	Financial literacy	Health literacy		
Gender	Male	53.35±21.15	65.47±19.02	Job status	Unemployed	75.95±15.10	81.68±18.35	
	Female	43.55±18.33	63.53±12.24		Housewife	46.71±20.34	68.01±11.55	
	†p	<0.001	0.314		Government employee	48.39±14.59	67.07±16.78	
Age groups	60-64	42.02±18.37	62.46±13.36		Manual worker	34.11±19.75	51.18±2.27	
	65-69	59.52±14.35	64.07±20.43		Self-employed	40.77±14.53	53.67±10.20	
	70-74	58.63±26.70	73.19±13.36		‡p	<0.001	<0.001	
	75-79	47.82±00.00	78.78±00.00		Economic status	Weak	57.19±13.61	60.00±17.90
	80-84	39.13±00.00	73.33±00.00			Medium	43.69±17.80	61.62±14.66
	90-94	24.63±5.02	47.27±00.00			Good	59.32±24.12	73.38±11.19
	‡p	<0.001	<0.001			Excellent	76.81±5.75	91.44±10.95
Marital status	Married	46.67±20.30	64.20±15.90	p‡	<0.001	<0.001		
	Widow	55.72±17.64	65.55±13.22	Number of family member	1	63.54±4.17	74.91±16.69	
	†p	<0.010	0.572		2	55.11±22.72	71.08±15.83	
Level of education	Elementary	49.20±20.47	69.38±5.80		3	41.99±15.81	58.93±11.33	
	Middle school	53.14±24.36	65.64±14.72		4	43.40±18.52	62.47±15.57	
	High school	38.84±12.49	54.57±11.03		5	37.61±14.86	51.40±8.30	
	Diploma	46.51±20.78	64.91±16.51		p‡	<0.001	<0.001	
	Associate Degree	52.17±3.07	69.60±7.11	Health insurance cover	Yes	47.93±20.40	64.17±15.75	
	Bachelor degree	73.91±00.00	90.48±6.14		No	44.92±11.50	70.77±5.07	
	‡p	<0.001	<0.001		†p	0.473	0.004	
Having physical diseases	Yes	54.10±21.58	68.71±12.8	Health status	Excellent	76.23±2.24	97.29±0.31	
	No	46.13±19.48	63.20±16.06		Very good	36.84±16.00	59.52±10.96	
	†p	<0.005	<0.012		Good	45.08±19.86	64.48±14.62	
Taking specific drugs	Yes	54.80±21.16	71.70±13.09		Fair	55.47±18.16	61.19±15.72	
	No	45.83±19.47	62.26±15.61		Poor	61.44±10.50	62.50±6.95	
	†p	<0.001	<0.001		p‡	<0.001	<0.001	

†, Independent T-test; ‡, One-way ANOVA

Discussion

According to the results of the present study, health literacy of the elderly in Urmia was at a not very sufficient level. Consistent with this finding, in many national and international studies, health literacy of the elderly has been reported at a low and insufficient level [18-22]. For example, in studies conducted by Sabooteh Molavi Vardanjani et al.'s in Dorood [18] and Goli Roshan Molavi Vardanjani et al.'s in Babol [19], the mean of health literacy score of the elderly was 56.45 and 60.21, respectively

(out of a total score of 100) that according to the classification done, they were at a not very sufficient level. In a study conducted by Mahmoudi et al.'s in Farsan, the mean of health literacy score of the elderly was 49.9 (out of a total score of 100), which was at an insufficient level [20]. In a study conducted by Sangsefidi et al.'s in Bojnurd, the level of health literacy of the elderly was reported to be insufficient [21]. In a study conducted by Firat Kılıç et al.'s in Turkey, the level of health literacy of the elderly was reported to be relatively low [22]. This issue has increased the health care system's concern about the aging crisis. Therefore, to face this challenge, planning at the macro level to improve health literacy of the elderly seems necessary.

According to the results of the present study, financial literacy of the elderly in Urmia was at a low level. Consistent with this finding, in a study conducted by Kiaei et al.'s in Qazvin, the mean of financial literacy score was 51.6 (out of 100), which was at a low level according to the classification [23]. Inconsistent with the findings of the present study, in studies conducted by James et al.'s [3] and Bennett et al.'s [4] in the United States, the mean of financial literacy score of the elderly was 72.5 and 72, respectively (out of 100), which was at a higher level compared to the results of the present study. This finding can be explained in this way that the concept of financial literacy first attracted the attention of researchers in the United Kingdom and the United States, and many educational programs have been conducted to improve financial literacy of the people in the United States. So that, most of the states of this country have an approved chapter on financial literacy, and in addition, a coalition called JumpStart in the United States has undertaken the task of developing and improving financial literacy. This coalition conducts a financial literacy test every two years and publishes the results [24]. Therefore, given the importance of financial literacy in today's modern world and its observed deficiency among the elderly population in Iran, it is necessary to devise a plan. This plan should include planning and strict supervision for conducting financial literacy training courses. Relevant organizations and authorities, such as scientific societies and the society of accountants, should take the lead in this initiative for the benefit of the Iranian elderly.

Stewart et al. also reported in their study that many older adults possess very low health and financial literacy, which leaves them ill-equipped to make informed healthcare and financial decisions, rendering them vulnerable to adverse health and financial outcomes [25].

Based on the study results, there was a positive and significant correlation between financial literacy with total health literacy and its dimensions. So that, as the financial literacy of elderly studied increases, their level of health literacy and its associated dimensions also show improvement. Consistent with this finding, in the studies conducted by James et al.'s [3] and Bennett et al.'s [4] in the United States, a positive and significant correlation was found between the health literacy and financial literacy. Also, Ertaş and Kavas, in their study conducted in Turkey, found a positive and significant correlation between health literacy and financial literacy [26]. Health literacy and financial literacy are two important dimensions of literacy [3, 4] and the findings of various studies show that there is a significant relationship between different dimensions of literacy [27, 28]. Therefore, existence of a relationship between health literacy and financial literacy, it is not far from expected.

Considering that a low level of health literacy is a significant public health issue, impacting various health aspects such as health status, mortality rates, and the utilization of health and medical services, it becomes crucial to address this problem. Particularly among the elderly, a low level of health literacy often leads to poor performance in health care and health-promoting behaviors. Therefore, it is essential to leverage all available opportunities, resources, and facilities to enhance their health literacy. As per the findings of the current study, financial literacy can contribute to improving the health literacy of the elderly. Given the existence of a relationship between financial literacy and health literacy, it's clear that health literacy is a multifaceted and intricate concept influenced by various factors. As such, the task of enhancing health literacy in society should not fall solely on the health system. Instead, all sectors of society, including financial and economic systems, should participate in this endeavor. By playing their part and promoting financial literacy, these sectors can contribute significantly to improving overall health literacy.

In many developed countries, financial literacy has been trained using various methods such as the publication of educational books and the use of mass media such as educational websites, television programs, etc. [29]. For the effective implementation of financial literacy training programs among the elderly, there is a need for great innovations, which include cooperation between organizations and different sectors of society such as scientific and educational institutions, welfare organization, central bank, insurance funds, retirement funds, and Ministry of Health and the use of different social platforms including workplace, health care centers, care centers for the elderly, etc. [29].

Due to the increasing importance of financial literacy in today's modern societies, the necessity for understanding and applying this concept particularly among the elderly, has increased. This knowledge proves particularly beneficial in areas such as health, quality of life, and well-being, which are considered the most crucial aspects of life.

Considering the existence of a significant relationship between financial literacy with health literacy, and some demographic variables of the studied elderly, the results of the present study can be used to prioritize target groups in interventions that are designed and implemented to improve financial literacy and health literacy. For example, the mean scores of health literacy and financial literacy among the elderly with a poor and moderate economic status were significantly lower than that of the elderly with a good and excellent economic status. So, it is suggested to prioritize the elderly with a low economic status when implementing educational programs related to the promotion of financial literacy and health literacy.

One of the strengths of the present study is that due to the lack of studies conducted on the relationship between financial literacy and health literacy among Iranian elderly, this study can be the basis for future studies. Among the limitations of the current study is that it was conducted cross-sectionally. Conducting studies over a longer period would provide a better opportunity to examine the causal relationships between the variables. Another limitation is related to the statistical population of the study, which was the elderly of Urmia, and there is a possibility that the elderly of other cities will show a different trend, as a result, the generalization of the results to all Iranian elderly should be done with caution.

Conclusion

Given the importance of financial literacy in today's world, especially considering its low levels among the elderly in Iran, as well as the established positive correlation between financial literacy and health literacy, it is recommended to carefully plan and monitor training courses on financial literacy for the elderly in Urmia. This responsibility should fall on relevant organizations and authorities.