

Research Article

The Relationship between Successful Aging and Health Literacy in Older Adults

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Received 4 September 2022; Accepted 19 October 2022; Published 8 February 2023

Academic Editor: Georgian Badicu

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Purpose. This study aims to determine the relationship between successful aging and health literacy in older adults. *Design and Methods.* This cross-sectional, descriptive, and correlational study was conducted between April and September 2021. The sample of the study comprised 379 voluntary older adults aged 65 and above who visited a health center. A descriptive information form, the adult health literacy scale, and the successful aging scale were used for data collection. *Results.* The levels of health literacy were low, whereas the perceptions of successful aging were high. Besides, compared to female participants, the levels of health literacy and the perceptions of successful aging were higher in male participants. Age was negatively correlated with the level of health literacy. Furthermore, health literacy levels and successful aging perceptions of married participants were high. Finally, as the education levels increased, so did the health literacy level and successful aging perceptions. *Practice Implications.* Health policies to promote successful aging and health literacy in adults may be developed. Besides, intervention plans to improve the health literacy levels of different age groups may be prepared. Further studies that use culture-specific scales may be conducted.

1. Introduction

Improvements in life standards and elderly care in Turkey and abroad and the decrease in mortality rates have resulted in an increase in the elderly population [1]. According to the 2021 data of the Turkish Statistical Institute, it has been reported that the population aged 65 and above, which is considered the elderly population, comprises 8,245,124 people. The proportion of the elderly population in the total population increased to 9.7% in 2021 [2]. Older adults are expected to constitute 16% of the global population in 2050 [3]. Population aging brings new burdens to health and social care systems. Aging is a process that is influenced by health status and social, technological, and psychological factors [4]. An increasing share of the elderly population elevates the importance of health literacy (HL) for older adults and, consequently, social welfare. Reasons such as chronic diseases, decline in cognitive and physical abilities, and the decrease in social and economic support result in a

lower level of HL in older adults [5]. The concept of HL becomes even more important for the management of chronic diseases and the effective use of healthcare services by older people. Problems associated with low levels of HL are rapidly increasing in today's world. Knowledge deficits related to health issues can constitute an obstacle to the management of acute and chronic diseases, preventive health behaviors, and participation in health care [6].

Considering the increase in chronic diseases as a consequence of population aging, it is worth to note the importance of HL for older adults [7]. The concept of HL involves access to basic health knowledge that directs decisions and behaviors about individual and community health, understanding, evaluating, and using this basic information, and transferring this information to next generations [8]. Low level of HL is an important community health problem that creates health problems associated with diseases [9]. It is also associated with a lack of information on health services received, inefficient communication with

health professionals, higher mortality rates, inefficient use of health services, poor health outcomes, longer duration of hospital stays, and higher health costs [10]. Improving the HL may have positive effects such as positive communication, treatment adherence, positive health outcomes, lower healthcare costs, and better healthcare decisions [11]. Aging is one of the important factors influencing the HL. Older adults aged 65 and above constitute the risk group with low levels of HL (Braniard et al., 2016[13]). Consequently, successful aging in older adults can be influenced by low levels of HL.

Population aging as a consequence of technological advancements increased the importance of the process of successful aging [14]. Successful aging (SA) is a theory that describes the aging process as well as the activities and behaviors that older adults should perform to age successfully [15]. The concept refers to a positive experience of aging despite the inevitable losses and gradual deterioration of health status during the process. As life expectancy increased, the question of how well older adults age became more important than how long they live [16]. High physical and cognitive capacity and active participation in life are the main determinants of SA [4]. Various social, cognitive, physiological, and health factors influence SA. The concept of SA is based on the assumption that older adults can remain physically and socially active with their personal preferences and efforts [15]. Low risk of disease is the primary indicator of SA [14]. Older adults with higher levels of HL are expected to have access to correct information on medical issues, benefit from health services, and consequently experience a healthy aging process. For successful and healthy aging, older adults should have access to information on health issues and understand and act in line with this information [5].

Given the population aging in Turkey and abroad, determining the levels of SA and HL as well as the relationship between these variables may help the nurses plan the nursing care provided to the older adults. This study aims at early identification of older people who are at high risk in terms of low HL levels. The findings of this study may be used in the preparation of geriatric policies in Turkey. Besides, revealing the level of SA in older adults and determining its relationship with the HL may contribute to the content of health education programs. Within this context, this study aims to determine the relationship between HL and SA in older people. The research questions included the following:

- (1) What is the level of HL in older adults?
- (2) What is the level of SA in older adults?
- (3) Is there a relationship between the levels of HL and SA?
- (4) Is there a difference in HL and SA according to sociodemographic variables?

2. Methods

This study had a cross-sectional, descriptive, and correlational design. Older adults aged 65 years and above, who

visited a health center between April and September 2021, constituted the population of the study. During the period, 2773 individuals visited the health center and 444 of them were over the age of 65 years and above. Voluntary older adults aged 65 years and above, who could read and understand the instructions, constituted the sample of the study. 30 of the 444 older adults refused to take part in the study, whereas 35 had problems understanding the instructions. The study was concluded with the participation of 379 older adults. After receiving necessary permission and written informed consent, face-to-face interviews were conducted for data collection. Each data collection tool was completed in about 20 minutes.

2.1. Data Collection Tools. A descriptive information form, the adult health literacy scale, and the successful aging scale were used for data collection.

2.1.1. Descriptive Information Form. A descriptive information form was prepared by the researchers using the relevant literature. The form included questions on participant characteristics, such as age, gender, marital status, education level, chronic diseases, and free-time activities.

2.1.2. Adult Health Literacy Scale (AHLS). The AHLS was developed by Sezer & Kadioğlu [17] to measure the level of health literacy in Turkish adults. The scale had 22 items on health knowledge and medication usage and one item on the location of the organs. 13 items were scored on a two-point Likert scale (1 = yes, 0 = no), 4 were multiple-choice items (1 = two or more correct responses, 0 = one or zero correct response), 2 were matched items (1 = two or more correct matches, 0 = one or zero correct match), and 4 were fill-in-the-blanks items (1 = true response, 0 = false response). Scores ranged from 0 to 23. Higher scores indicate higher levels of health literacy, and lower scores indicate lower levels of health literacy. High levels of health literacy mean having the necessary knowledge, skills, and confidence to promote one's own health. Cronbach's alpha of the AHLS scale developed by Sezer and Kadioğlu [17] was 0.77. In our study, Cronbach's alpha for the AHLS was 0.79.

2.1.3. Successful Aging Scale (SAS). The SAS was developed by Reker [18] and adapted into Turkish by Hazer and Özsungur [19]. The Turkish version of the scale was composed of 10 items, which were grouped under two subscales, namely, healthy lifestyle (items 5, 6, and 10) and layout (items 1, 2, 3, 4, 7, 8, and 9). Items were scored on a 7-point Likert scale. Possible scores ranged between 10 and 70, with higher scores indicating a higher level of successful aging. Cronbach's alpha value of the scale developed by Reker [18] was found to be 0.84. In the Turkish adaptation study of the SAS scale, Cronbach's alpha value was found to be 0.85 [19]. In our study, Cronbach's alpha for the SAS was 0.87.

2.2. Data Analysis. SPSS version 25.0 was used for statistical analysis (IBM Corp, Armonk, NY, USA). Frequency analysis was used for the descriptive characteristics of the participants, and descriptive analysis was used for the scores obtained from the AHLS and the SAS. The Kolmogorov–Smirnov test was used to test the normality of data. Since the data obtained from the AHLS and the SAS did not meet normal distribution, nonparametric tests, including Mann–Whitney *U* test and Kruskal–Wallis *H* test, were used for comparison. Spearman’s correlation test was used to analyze the correlation between the AHLS and the SAS scores.

2.3. Ethical Considerations. We obtained ethical board permission from the Research and Publications Ethics Board (No. 2021-0084). Participants were informed about the scope of the research, and a voluntary informed consent form was received. Permission to use the data collection tools was obtained via e-mail.

3. Results

Table 1 presents the descriptive characteristics of the participants. Accordingly, 48.02% of the participants aged between 65 and 69 years, 76.87% were female, and 82.32% were married. Besides, 49.87% of the participants were graduates of secondary school. Finally, 92.29% of the participants had a chronic disease and 22.96% performed physical exercises in their free time.

Table 2 presents the mean scores obtained from the AHLS and the SAS. Accordingly, the mean scores obtained by the older adults from the AHLS and the SAS were 6.28 ± 3.75 (min 0–max 18) and 48.84 ± 5.27 (min 40–max 70), respectively.

The comparison of the sociodemographic characteristics and the scores obtained from the AHLS and the SAS in Table 1 showed a statistically significant difference between the AHLS and SAS scores and the age group of the participants ($p < 0.05$). Accordingly, the AHLS and SAS scores of the participants aged 65–69 years were significantly higher than those of the participants aged 70 years and above. Besides, there was a statistically significant difference between gender and the scores obtained from the AHLS and the SAS. That is, the AHLS and the SAS scores of the male participants were significantly higher than their female counterparts ($p < 0.05$). Furthermore, we found a significant difference between marital status and the scores obtained from the AHLS and the SAS ($p < 0.05$). The mean scores of married participants obtained from the AHLS and the SAS were significantly higher than their single counterparts.

The AHLS and the SAS scores of the participants who had an education level of high school and above were higher than those of the rest of the participants. Besides, participants with chronic diseases had higher scores on the AHLS and the SAS. Finally, the AHLS and the SAS scores of the participants that performed physical exercises during their free time were higher than those of other participants (Table 1).

Table 3 shows a positive and statistically significant correlation between the scores obtained from the AHLS and the SAS ($p < 0.05$). In other words, the increase in the SAS scores brought a statistically significant increase in the AHLS scores.

4. Discussion

This study aims to determine the relationship between HL and SA in older adults. Low levels of HL in the developing countries range between 40 and 50% [20]. In our study, the HL levels of older adults were relatively low. Another study conducted in Northern Cyprus also reported low levels of HL in older adults [21]. Similarly, a study in Taiwan found that more than half of the older adults had low levels of HL [22]. These findings were parallel to those of a study on older adults in Slovenia [7]. Although a study during the COVID-19 pandemic reported adequate health knowledge and competencies for urban older adults in Thailand [23], another study in Poland found that 61.3% of the older adults at the age of 65 years and above had low levels of HL [24]. The studies in older adults in Turkey also reported low levels of HL [25–27]. These findings indicated that older adults mostly had lower levels of HL. Therefore, interventions to increase the HL levels of this special risk group may be initiated. Lower levels of HL in older adults mostly result in problems with joining health services and benefiting from the protective health services, which, in turn, may increase hospitalization rates [21].

The concept of SA is gaining prominence as a result of the global population’s aging. The mean SAS scores of the participants in this study were high. A study in Korea found that 13.3% of older adults achieved SA [28]. In parallel to our findings, another study on Turkish adults reported high levels of SA [29]. The study of Kars Fertelli and Deliktaş [30] on the relationship between SA perception and life satisfaction also reported high levels of SA in elderly people in Turkey. Existing studies report the subjective dimensions of SA, which may be influenced by cultural factors [31, 32]. For this reason, further studies may take cultural uniqueness into account.

The levels of HL and SA are influenced by socioeconomic factors [7]. In our study, the level of HL decreased as the age of participants increased. Contrary to our findings, Hazer and Ateşoğlu [5] did not find any relationship between the age group and the level of HL. On the other hand, a study on Vietnamese older adults found a negative relationship between age and the level of HL [33]. Similarly, Çimen and Bayık Temel [13] reported that the level of HL decreased as age increased. Our study also found a significant difference between age and SA perception. Contrary to our study, Kozar Westmen et al. [34] did not find any significant difference between age and SA perception in Northern Carolina. On the other hand, a study in Ecuador found a significant difference between age and healthy aging [35]. Other studies in China and Taiwan also reported a negative relationship between SA perception and age [36, 37]. These findings may be explained with reference to chronic diseases associated with aging and the negative effects of aging on the functional capacities of older adults [35].

TABLE 1: Comparison of the sociodemographic characteristics of the participants with the AHLS and the SAS scores.

Variables		<i>n</i>	%	AHLS $\bar{x} \pm s$	SAS $\bar{x} \pm s$
Age	65–69 years	182	48.02	7.32 ± 4.13	49.91 ± 5.65
	70–74 years	137	36.15	5.41 ± 3.58	48.53 ± 4.87
	75 years and above	60	15.83	5.15 ± 1.40	46.37 ± 3.92
Statistical analysis				$X^2 = 26.204$ $p < 0.001$	$X^2 = 26,589$ $p < 0.001$
Gender	Female	291	76.78	5.72 ± 3.23	47.93 ± 4.88
	Male	88	23.22	8.16 ± 4.67	51.89 ± 5.37
Statistical analysis				$Z^{**} = -4,157$ $p < 0.001$	$Z^{**} = -6,758$ $p < 0.001$
Marital status	Married	312	82.32	6.67 ± 3.88	49.04 ± 5.31
	Single	67	17.68	4.48 ± 2.38	47.93 ± 5.02
Statistical analysis				$Z^{**} = -4.628$ $p < 0.001$	$Z^{**} = -6.758$ $p < 0.001$
Education	Literate	41	10.82	1.95 ± 1.63	47.90 ± 3.08
	Primary school	95	25.07	4.54 ± 2.43	50.26 ± 5.71
	Secondary school	189	49.87	6.03 ± 1.71	46.34 ± 3.57
	High school and above	54	14.25	13.54 ± 1.94	55.83 ± 3.37
Statistical analysis				$X^2 = 221.729$ $p < 0.001$	$X^2 = 151.022$ $p < 0.001$
Chronical diseases	Yes	346	91.29	6.08 ± 3.62	48.42 ± 4.90
	No	33	8.71	8.39 ± 4.48	53.27 ± 6.84
Statistical analysis				$Z^{**} = -2,776$ $p < 0.001$	$Z^{**} = -4.480$ $p < 0.001$
Free time activity	Physical exercise	87	22.96	10.39 ± 4.14	54.20 ± 4.85
	Hobbies	96	25.33	4.45 ± 3.45	48.88 ± 4.38
	Social activity	196	51.72	5.36 ± 1.97	46.46 ± 3.95
Statistical analysis				$X^2 = 108.980$ $p < 0.001$	$X^2 = 140.845$ $p < 0.001$

*Kruskal–Wallis H ; *Mann–Whitney U .

TABLE 2: The AHLS and the SAS scores.

	<i>n</i>	$\bar{x} \pm SD$	Min	Max
AHLS	379	6.28 ± 3.75	0	18
SAS	379	48.84 ± 5.27	40	70

In our study, the levels of HL and SA were higher in older male adults. Similarly, a study in Germany found that older female adults had lower levels of HL [38]. On the other hand, the study of Ozen [39] on gender differences in eHealth literacy in Turkey reported higher levels of eHealth literacy in female participants. Unlike our findings, a number of studies reported higher levels of SA in female participants [30, 40]. The study of Rivadeneira et al. [35] in Ecuador found lower levels of SA in female participants. Similarly, Roberts et al. [41] found lower levels of SA in females in Canada. Lower levels of SA in females may be explained with reference to higher multimorbidity in females [41]. The findings of our study may be influenced by the Turkish context in which most older female adults spend their time at home, whereas the males are more active and continue to work.

The levels of HL and SA were higher in married participants. Similarly, the study of Hazer and Ateşoğlu [5] on older adults reported higher levels of HL in married participants. Another study in Turkey found higher levels of SA in participants that lived with their spouse [29]. Pashaki et al. [42] found that strong family relations and spouse support influenced successful aging. Other studies in the literature also noted the impact of living with spouse or relatives on positive health outcomes and higher levels of SA [43, 44].

TABLE 3: Correlation between the AHLS and the SAS scores.

		SAS
AHLS	<i>r</i>	0.347
	<i>p</i>	0.000*
	<i>N</i>	379

* $p < 0.05$.

Higher levels of SA and HL in married participants of our study may be related to the social support and shared health knowledge among the spouses [26].

Education level has been reported to influence the levels of HL [11]. In our study, the participants with a degree of high school and above obtained higher scores from the AHLS and the SAS. The study of Rivadeneira et al. [35] also found a significant difference between the level of education and SA perception. Existing studies suggested that education had a positive impact on medical adherence, access to health services, and understanding health problems [45, 46]. A study in Germany found that older adults with lower levels of education also had lower levels of HL [38]. Education helps older adults access health information and easily evaluate this information. Consequently, it is logical to expect a significant difference between the levels of education, HL and SA [26].

Patients with chronic diseases require high levels of HL to manage diseases, understand the instructions, use the calculations, and evaluate health information [7, 47]. In this study, the participants with chronic diseases had lower levels of HL and SA. Cutilli et al. [11] reported lower levels of physical and cognitive health in individuals with low levels

of HL. Another study by Aydın and Aydın Sayılan [48] found that SA perceptions were lower in patients with chronic diseases. Based on our findings and the literature, we may suggest that chronic diseases, which influence individuals in physical and cognitive terms, also have a negative impact on SA perceptions.

Being physically active is an important factor for SA [3]. In our study, participants who performed physical exercises in their free time had higher levels of HL and SA. A study in Vietnam found that the levels of HL were higher in older adults who took part in social activities [33]. Another study found a significant difference between SA perception and performing physical activity [49]. Physical exercise and social activities allow older adults to meet with other people and share their knowledge and experiences [33]. A meta-analysis underlined the positive impact of physical exercise on SA perceptions [50]. Given that physical exercise prevents the development of various chronic diseases, it is logical to expect its positive impact on SA perceptions [3].

Improving the HL will support individuals to take responsibility of their own lives, make better decisions about their own health, and have the capacity of healthy aging. Therefore, the HL is an important factor for active and successful aging [5]. Our study found that older people with higher levels of HL also had higher levels of SA. A study in Germany also found a positive relationship between the levels of HL and SA [51]. Similarly, the study of Hazer and Ateşoğlu [5] in Turkey reported a positive relationship between the HL and SA. The study by Eronen et al. [52] in Finland found a strong correlation between the HL and active aging in older adults with chronic diseases. The HL may help older adults cope with diseases and functional limitations, which, in turn, may lead to a fulfilling life [5, 52]. In other words, education on health may have positive effects on SA perceptions. People with higher levels of HL are more likely to have a healthy lifestyle, treatment adherence, and a healthier and longer life [5]. Older adults with higher levels of HL may have active and constructive roles in the society, thanks to their knowledge and experiences.

4.1. Limitations. The study had several limitations. Firstly, it was conducted at a single center. Secondly, some of the participants expressed their dissatisfaction with using more than one data collection tool. Further studies on larger samples may use new scales that take cultural characteristics into account. Finally, this study had a descriptive design.

5. Conclusions

This study found that the participants' levels of HL were low and the SA perceptions were high in comparison to scores from other studies [18, 26, 27, 29]. There is a positive and statistically significant correlation between the scores obtained from the AHLS and the SAS ($p < 0.05$). In other words, the increase in the SAS scores brought a statistically significant increase in the AHLS scores. Besides, the level of HL was negatively correlated with age, and male participants had higher levels of HL and SA. The HL and SA levels were

also higher in married participants. Finally, the level of education was positively associated with the levels of HL and SA.

5.1. Implications for Nursing Practice. Although few studies have dealt with the relationship between the SA and HL in Turkey, the findings of these studies, including ours, may be used in the development of health policies to improve the health status of older adults in Turkey. Health professionals may have important contributions to make to increase the HL in older adults with health development and promotion programs. Besides, individuals may be encouraged to perform physical exercises to achieve successful aging. Special interventions may be planned for different age groups to improve the HL, and further studies may use culture-specific scales. Health policies to promote successful aging and health literacy in adults may be developed. Besides, intervention plans to improve the health literacy levels of different age groups may be prepared. Further studies that use culture-specific scales may be conducted. A randomized-controlled and qualitative study may be conducted.

Data Availability

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Authors' Contributions

Hülya Fırat Kılıç designed the study, supervised the statistical analysis, and drafted the manuscript. Berna Arifoğlu and Nazmiye Kızılkaya designed the study, searched the literature, and collected the data.

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