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Assessing the Relationship between Aging Perception and Ability to Perform Self-Care among the Elderly

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A B S T R A C T

Introduction As the number of older people grows, it's important to look at how they feel about getting older and how well they can take care of themselves as a way to improve their health. So, this study was done to find out how the aging perception and self-care ability in elderly in Sanandaj city (Iran).

Materials & Methods: In 2024, descriptive-correlational research included 135 elderly participants selected using a random selection approach. The data collection tools were the demographic information questionnaire for the elderly, the perception of the aging questionnaire (BAPQ) and, Self-care Ability Scale for the Elderly (SASE). The data were analyzed using SPSS V.21 software utilizing descriptive tests and Pearson correlation at the level of significance less than 0.05.

Results: The mean score of aging perception was 58.041 ± 10.81 which indicated a favorable state of aging perception among the studied samples. The mean score and standard deviation of the self-care ability of the studied elderly was 56.888 ± 11.172 which indicated a low and unfavorable level of self-care ability among them. There was an inverse and significant relationship between the level of aging perception and the ability to perform self-care in the studied elderly ($r = -0.680$, $P<0.001$).

Conclusion: Health care providers for the elderly and nurses in medical facilities must use essential measures and interventions to enhance the sense of aging and augment the self-care capabilities of older adults.

Keywords: Aging, Perception, Self-care, Elderly, Relationship

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Introduction

Old age is a stage of a person's life that begins at the age of 65 and begins with a gradual decline in the function of body organs and cells (1). According to the latest statistics reported by the World Health Organization (WHO), the number and proportion of people aged 60 and over in the population is increasing. In 2020, the number of people aged 60 and over was one billion. This number will increase to 1.4 billion by 2030 and to 1.2 billion by 2050. This increase is occurring at an unprecedented rate and will accelerate in the coming decades, especially in developing countries (2). According to a report by the Statistical Center of Iran, by the end of 1400, the share of the elderly population will exceed 10 percent, and in 1420, it will exceed 19.4 percent, and in 1430, it will exceed 26.1 percent, meaning that by then a quarter of the country's population will be elderly (3).

Aging is a sensitive and important period in every person's life, and it is necessary to pay attention to it, because this period is always associated with biological changes, decreased life capacity, weakening of people's adaptive capacity, and also sudden and sudden changes (4). Due to deficiencies such as loneliness, limited physical activity, decreased self-confidence, and other such problems, the elderly have poor self-confidence, so that most of them will have a negative perception of their aging period (5). The specific perception of aging (SPA) is actually the elderly person's perception and perception of their aging process and the expected consequences (6). A correct understanding of aging leads to better awareness and appropriate acceptance of the natural aging process and will help reduce death anxiety and improve the physical and mental conditions of individuals (7). In fact, the old age period should be considered a period of understanding and coping with aging, which will affect the elderly person's satisfaction with their life during this period (8). Older people with negative perceptions of aging have shorter lifespans, suffer from more functional limitations, and are less likely to make efforts to recover from their disability compared to their peers. The way older people view the aging process affects not only their health status but also their use of healthcare resources (9). Older adults with a more negative view of themselves are less likely to seek preventive health services but are more likely to require urgent or emergency care, such as hospitalization (10, 13). Health-promoting self-care behaviors include having proper nutrition, stress control, spiritual growth, maintaining interpersonal relationships, physical activity, and taking responsibility for individuals (13). In fact, self-care is a kind of guarantee of physical health and quality of life for the elderly, and considering the growth of the population in this age group and the lack of access for all members of society to health treatment facilities, its importance has doubled (14-15).

Another reason is that through the psychological pathway (through self-efficacy or action control beliefs), older adults feel more capable of coping with age-related challenges. Therefore, it has been suggested that having a more positive perception of aging increases their level of self-efficacy, which encourages individuals to be more active and use their ability to maintain self-care (16,18). In contrast, individuals with a more negative perception of aging are less likely to use adaptive strategies to cope with life challenges. Therefore, they are less likely to engage in health-promoting behaviors, which leads to poorer health outcomes (19). Due to a lack of research, these hypotheses about how older people feel about aging and how well they take care of themselves remain just that—hypothetical. Most research on aging focuses on keeping older people healthy and making sure their physical and mental abilities don't get worse. Researchers haven't considered the perception of aging as a significant factor in their mental health (19). Also, despite the significant importance of self-care in the elderly, unfortunately, this issue has not been given sufficient attention, and despite the growth of the elderly population and changes in the

country's population pyramid, the self-care needs of the elderly as a vulnerable group of society have not yet been focused on (20). Meanwhile, since nurses are ideally positioned to meet the needs of individuals and help them cope with stressful and critical situations due to their round-the-clock interaction and close contact with different people, healthcare professionals can support individuals in order to prevent psychosocial issues and problems (21). The aging population and the increase in elderly people in the country can lead to cognitive and functional impairment, which can negatively impact their perception of aging. There is also concern about the elderly's ability to self-care, which can lead to hospital readmissions, high medical costs, and death.

There haven't been many studies that look at the relationship between how older people feel about getting older and their ability to take care of themselves. So, this study was done to find out how the aging perception and self-care ability in elderly in Sanandaj city (Iran).

Materials and methods

Study Design

Between February and June 2024, researchers conducted a descriptive-analytical-cross-sectional study. The study population was all elderly residents of the urban community of Sanandaj City (Iran), covered by health centers and registered in the Sib system.

Setting and Participants

The inclusion criteria for the study were age over 65 years, ability to speak, see, and hear, residence in Sanandaj city, willingness to participate in the research, and informed consent. The exclusion criteria included having cognitive problems in the elderly, being disabled, having a debilitating disease in the elderly, incomplete completion of the questionnaire, and unwillingness to continue cooperation in the research.

Sample Size

Bastani et al. (22) and the following formula were used to figure out the sample size. With a correlation coefficient of 0.3, a power of 90%, and a type I error of 5%, the sample size was estimated to be 113 people. Finally, in order to prevent the reduction of the study power due to sample dropout and missing data, 20% was added to this sample, and finally the sample size was 135 people.

Measurements & Validity and Reliability

1. Demographic tool

This questionnaire included the socio-demographic characteristics of the elderly, including age, gender, education level, employment history, marital status, number of children, smoking, underlying diseases, employment status, weight, height, and body mass index.

2. Brief Aging Perceptions Questionnaire (BAPQ)

The Brief Aging Perception Questionnaire was designed and psychometrically validated by Barker et al. in 2007 and is used to assess an individual's perception of aging (23). This questionnaire has 17 questions in five dimensions: progressive course (3 items), positive outcomes (3 items), positive control (3 items), negative outcomes and control (5 items), and emotional response (3 items). It is scored on a five-point Likert scale: strongly disagree with a score of one, disagree with a score of two, have no opinion with a score of three, agree with a score of four, and strongly agree with a score of five. The lowest score obtained was 17, and the highest score was 85. Higher scores indicated a better and deeper understanding of aging (23). Barker et al. (2007) calculated and confirmed the reliability of this questionnaire with a Cronbach's alpha coefficient of 0.86 (23). This questionnaire was translated and tested for reliability by Mir-Emadi et al. (2018) in Iran. The Cronbach's alpha coefficient for the dimensions and the whole questionnaire was between 0.64 and 0.81, and the test-retest reliability

coefficient (intra-cluster correlation index test) was between 0.65 and 0.96 after two weeks (24). In the present study, the Cronbach's alpha coefficient of this questionnaire was calculated as 0.87 for the entire questionnaire using the test-retest method.

3. The Self-Care Ability Scale for the Elderly

Soderham et al. designed and psychometrically validated this questionnaire to assess the ability and capacity of the elderly in self-care (25). This questionnaire has 17 questions on a five-point Likert scale ranging from “I strongly disagree” with a score of 1, “I disagree” with a score of 2, “I have no opinion” with a score of 3, “I agree” with a score of 4, and “I strongly agree” with a score of 5. If the questionnaire questions were answered completely and correctly, the lowest score obtained was 17, and the highest score was 85 (15). A score of less than 69 indicated low self-care ability, and a score of 69 and above indicated high self-care ability (26). Soderham et al. (1996) reported the validity and reliability of this scale as 0.68 and 0.88, respectively (25). To make this questionnaire work in Iran, Hashem Lo et al. (2013) translated it and made sure it was valid and reliable. The results were 0.86 for validity and 0.743 for reliability (26). Using the test-retest method, the present study calculated the Cronbach's alpha coefficient of this questionnaire to be 0.84.

Sampling was carried out using a random-proportional method in urban areas of Sanandaj city. Sanandaj city has four municipal areas, and the characteristics of all elderly people, including phone numbers and addresses, were available in the Sib system of health centers. Using the website www.random.org, first two areas of the municipal areas of Sanandaj city were randomly selected, and three health centers were randomly selected from each urban area. Then, in the selected health centers, based on the demographic information available in each center, the appropriate sample size was calculated and determined in a quota for each center, according to the original sample size. Then, a list of all elderly people covered by each unit was extracted and the individuals on the list were sorted by number. Using a computer and randomization software, samples were randomly selected according to the quota of each center.

This research was initiated after obtaining permission from the Joint Institutional Committee on Research Ethics of Ilam University of Medical Sciences and by obtaining an official letter of introduction to the urban health service centers of Sanandaj City from the Faculty of Nursing and Midwifery of Ilam University of Medical Sciences. To conduct the research, the researcher, with the permission to conduct the research, referred to the urban health service centers of Sanandaj city. After showing the center officials the goals and methods of the research, and with their consent, the researcher was stationed there during working hours and asked the elderly to cooperate. Initially, the researcher thoroughly explained the study's goals and the methodology for answering the questions to the elderly participants. They also gave their informed consent, which stressed that they were choosing to participate in the study and that the researcher would keep their information private. Following that, they were given demographic information questionnaires (which were made by asking research participants and looking at case files of elderly people), a questionnaire about how they felt about getting older, and a questionnaire about how well they could take care of themselves (which was a self-report). They were given 10 to 15 minutes to answer the questions. If the elderly were unable to answer the questions in the questionnaires for any reason, the questions were read to the elderly by the researcher and marked in the questionnaires based on the elderly's response.

Statistical and Data Analysis

After completing the questionnaire, the collected data were analyzed using SPSS version 21 software. Descriptive statistics (mean, standard deviation, frequency, frequency percentage) were used to

assess the demographic characteristics of the samples. The Kolmogorov-Smirnov test was used to assess the normality of the data distribution. Pearson correlation coefficient tests and univariate regression analyses were used to examine the relationship between the perception of aging and the ability to perform self-care, which was considered significant when the p-value was less than 0.05.

Results

Table 1 shows the descriptive statistics for the total scores of the elderly participants' self-care ability and how they feel about aging. The average total aging perception score was 58.04 ± 10.81, which means that most people had a good and appropriate level of aging perception. The average score for self-care ability was 56.89 ± 11.17, which means that the participants were not very good at taking care of themselves. These results show that the older people in this study had a generally positive view of aging, but they didn't take care of themselves well enough.

Table 1. Descriptive subscales of aging perception and self-care ability in the studied samples.

Variables	Mean ± Standard Deviation
Total Aging Perception	58.041 ± 10.810
Total Self-care Ability	56.888 ± 11.172

The results in Table 2 show that the level of understanding about getting older in the older people who were studied is at a good level. This can be seen by comparing the p value from the table (P<0.001). Also, based on the results of Table 3, considering the t value obtained (P<0.001), the level of ability to perform self-care in the elderly studied is at a low and undesirable level.

Table 2. Status of aging perception and self-care ability in the studied samples.

Variables	Test value= 51			
	P Value	Mean Difference	Confidence Interval	
			Lower	Upper
Aging Perceptions	<0.001	7.041	5.200	8.880
Self-Care Ability	<0.001	-12.11	-14.01	-10.20

Table 3 and the Pearson correlation test show that there is a significant negative relationship (r = -0.680, P<0.001) between the level of understanding of aging and the ability to care for oneself in older adults. This means that as the level of understanding of aging rises, the ability to care for oneself in older adults' decreases. Also, the level of understanding of aging shows the ability to explain 46.2 percent of the changes in the ability to self-care in the elderly.

Table 3. Correlation between aging perception and self-care ability in the studied samples.

Variables	Self-Care Ability	
Aging Perceptions	r	-0.680
	P Value (Pearson)	<0.001

Discussion

The present study was conducted with the aim of determining the relationship between the perception of aging and the ability to perform self-care among the elderly in Sanandaj City. The results showed that the perception of aging in the majority of the elderly studied was at a desirable and appropriate level. Among the dimensions of perception of aging, the highest average score was related to the consequences and negative control dimension, and the lowest was related to the emotional reaction dimension. A higher level of perception of aging is associated with a person's positive attitude toward themselves, increased self-esteem in the elderly, and

a higher level of knowledge about the aging period (19).

It can be said that the elderly studied in the present study had a positive attitude towards themselves, and despite increasing age, their self-esteem was at a desirable level, and their level of awareness and knowledge about the aging period was also at a high level. Two other studies, by Saleh Manija et al. (27) and Khayali et al. (28), and this one, both came to the same conclusion: older people have a strong sense of how they are aging. Just like in this study, Khayali et al. found that the most important part of how people think about getting older was the consequences and negative control dimension, while the least important part was the emotional reaction dimension. The present study's results align with the previously mentioned studies, suggesting that the elderly Iranians have a strong understanding of the aging process and are actively working to mitigate its negative effects. However, their emotional and sentimental response to aging is relatively low, which seems to indicate that the elderly has not been able to adapt emotionally and sentimentally to the changes of aging.

The results of the study by Diehl et al. showed a low level of understanding of aging among the elderly (29), which is inconsistent with the results of the present study. The present study's results are inconsistent with Diehl et al.'s due to cultural and social differences between the two societies, as well as differences in the elderly's mental state in accepting aging and their physical and mental changes during this period. Accepting aging is an important part of the elderly's coping mechanism with age-related changes. The results of the study by Beer et al. were also inconsistent with the results of the present study, indicating a low level of understanding of aging among the elderly. The release of these results coincides with the belief that the elderly's understanding of aging is a sign of their mental health. A poor understanding of aging is associated with a shorter lifespan and worse health function in the elderly (16). The results of the study by Kai et al. were also inconsistent with the results of the present study, indicating a low level of perception of aging among the elderly (30). Physical health conditions, presence in society, and social relationships influence positive self-perception of aging (31). The studies' results show how much chronic diseases, where a person lives, their socioeconomic status, and their social view of aging affect how older people feel about getting older (19, 32, 33). These differences may explain the inconsistency of the present study's results with non-consistent studies.

According to another result of the present study, the level of self-care ability among the elderly studied was low and undesirable. Among the reasons for obtaining such results in the present study, one can point out the lack of awareness and knowledge of the aging period among the elderly, as well as how to take care of themselves, physical disabilities, and psychosocial problems caused by aging. The results of the study by Sang Sefidi et al. were consistent with the results of the present study, indicating a low level of self-care ability among the elderly (34). These results show how important it is to teach older people how to use self-care behaviors in areas like diet and activity, medication schedules, food labels, and managing diseases to improve their self-care ability. The results of the study by Mo et al. showed the inability to take care of themselves among the elderly. In this study, factors related to self-care disability among the elderly were attributed to psychological or emotional factors, memory disorders, concomitant chronic diseases, and annual household income (35). Given the consistency of the results of this study with the present study, it can be said that the level of self-care ability in the elderly can be affected by individual-social factors and mental and physical diseases associated with the elderly. The results of the study by Jang et al. showed that a more unfavorable level of self-care is associated with a poorer nutritional level in the elderly (36). The results of the study by Yoom et al.

showed that in the elderly with a more favorable nutritional status, the average self-care score also increased more (37). Poor nutritional status is associated with impaired emotional and cognitive functioning, social isolation, multiple medication use, physical disability, and a sedentary lifestyle, which can reduce the ability of the elderly to care for themselves (36). The results of the present study are consistent with the studies mentioned above and may indicate the effect of the nutritional status of the elderly on reducing their level of self-care ability. The results of the study by Norouzi et al. (2023), which were inconsistent with the results of the present study, indicated a desirable level of self-care ability among the elderly (38). The older people in the study by Norouzi et al. seemed to have a better understanding of getting older, more knowledge about self-care, and more confidence in their ability to take care of themselves. This is because having the right knowledge and understanding, as well as self-efficacy, are the most important parts of self-care (39). The results of the study by Janjani et al. and Ghasemi et al. were inconsistent with the results of the present study, indicating an average level of self-care (40, 41). The results of both studies, along with the results of this study, show that the older people who were part of the studies by Janjani et al. and Ghasemi et al. know some things about self-management, sticking to a diet and exercise plan, and taking their medications as prescribed. The different groups of patients studied (those with heart failure taking at least three months of heart medication, those who had a heart attack and were over 60 years old, and elderly diabetics) may help explain why the results of the different studies don't always match up with the results of this study. The results of the study by Ochmanovaz et al. showed that the elderly studied had an average level of self-care (42). One reason for the discrepancy between the present study and the study by et al. is that our study used the Self-Care Ability of the Elderly (SASE) questionnaire to assess elderly self-care, while the latter used researcher-made questionnaires.

The results of the present study showed that elderly people with a higher level of understanding of aging had lower levels of self-care ability. It is possible that elderly people who had a higher understanding of aging did not seek to follow self-care behaviors and did not make an effort to perform self-care behaviors by instilling and internalizing the attitude that aging is the end of life and waiting for death. Elderly people consistently report negative perceptions of aging (43). However, to ensure active and healthy aging, it is necessary for elderly people to consider all self-care tips as key strategies for successful aging, which is achieved by adopting and maintaining a healthy lifestyle (44). The 2018 study by Mendoza-Nunez et al. and the current study both found a link between having a positive view of getting older and being able to take care of oneself, especially when it comes to nutrition, sleep hygiene, and the health of the elderly (44). The results of this study agree with those of this study. This shows how important it is to teach older people about the biological, psychological, and social changes that come with getting older and senility, as well as self-care strategies that are related to how they feel about getting older and how it affects their health. The results of studies are also consistent with the results of the present study, showing that self-care is negatively affected by the negative perception of aging by the elderly themselves. In contrast, a positive perception of aging has a beneficial effect on the adoption of health-promoting behaviors in them (19, 45-47). It has been said that teaching older people about the biological, psychological, and social changes that come with getting older and taking care of themselves can change how they think about getting older and group stereotypes; balancing their emotions greatly lowers any negative effects (43). These results support the idea that knowing the facts about the physical, mental, and social changes that come with getting older can help older people feel better about their own aging and encourage them to take better care of themselves (44). Allen's study and this study both found that negative social stereotypes about getting older and discrimination

against the elderly cause them to be under a lot of stress, which may make them more likely to get chronic diseases and not take care of their health and hygiene (48). Therefore, it can be said that higher social support in the elderly may improve the perception of aging in the elderly by increasing psychological resilience and actively coping with stress, which is the main consequence of which is the promotion of self-care among the elderly.

Limitation and Strengths

One problem with this study is that it doesn't look at how social culture and beliefs, socioeconomic conditions, and some personal and social traits of older people affect how they see getting older and their ability to take care of themselves. Also, the mental and psychological conditions of the elderly may have influenced the way they answered the research questions. Given that a questionnaire served as the data collection tool in this study, the researcher was unable to accurately determine the accuracy of the answers.

Conclusion

The results of the present study indicated a high level of understanding of aging in the elderly studied and a low and undesirable level of self-care ability among the elderly studied. Also, the elderly had a higher level of understanding of aging; the level of self-care ability was lower and more undesirable. The present study's results suggest that the elderly need to modify their perspective on aging, decrease their comprehension of it, and enhance their self-care abilities. These issues indicate the need to increase the level of knowledge, improve the attitude of the elderly towards aging perception, and strengthen the level of self-efficacy in the elderly in the field of adopting behaviors related to self-care. Because of these problems and the strong connection between how well an older person understands aging and how well they can take care of themselves, nurses who work in health service centers and hospitals need to take the proper steps to help older people understand aging better and help them take better care of themselves by educating them and setting up appointments for appointments that the older people need.

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CRediT authorship contribution statement

Conceptualization, Methodology, Validation, Formal Analysis, Investigation, Resources, Software, Data Curation, Writing–Original Draft Preparation, Writing–Review & Editing, Visualization, Supervision, Project Administration: HT, MB, RP, OG.

Declaration of Generative AI and AI-assisted technologies in the writing process

The authors attest that they worked alone to write and prepare this manuscript, without the assistance of any professional writing services. Only the authors' original work and contributions are reflected in the content.

Conflict of interest

The authors declare that there are no conflicts of interest regarding the publication of this paper.

Ethical considerations

The research followed ethical guidelines, which included receiving ethical approval from the Ilam University of Medical Sciences (IR.MEDILAM.REC.1402.189), collecting informed consent from participants, ensuring data confidentiality, and adhering to the principles outlined in the Declaration of Helsinki.

Data availability statement

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

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