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# The effect of self-care self-efficacy program on life satisfaction of the Iranian elderly

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## Abstract:

**BACKGROUND:** With the increase in the elderly population in the world and the consequent increase in diseases and their physical and mental problems, improving self-care behaviors by increasing self-efficacy in the elderly plays an important role in promoting their health and can increase their life satisfaction. This study aimed to investigate the effect of self-care self-efficacy program on life satisfaction of the elderly referred to selected health centers in Isfahan, Iran, in 2014.

**MATERIALS AND METHODS:** This study was a quasi-experimental study with two experimental and control groups and was performed on 64 elderly people referred to selected health centers in Isfahan. The samples were randomly divided into experimental and control groups, and a self-care self-efficacy program was performed on the experimental group. Data collection tools included demographic information questionnaire and life satisfaction indexes A questionnaire. Data were analyzed using the statistical tests such as Chi-square, independent *t*-test, Mann–Whitney, repeated measures analysis of variance, and Least Significant Difference (LSD) *post hoc* test.

**RESULTS:** There was no significant difference between the two groups in terms of demographic characteristics. Before the intervention, the mean score of life satisfaction was not statistically significantly different between the two groups ( $P = 0.88$ ). However, immediately and 1 month after the intervention, the mean score of life satisfaction in the experimental group increased, and this score was significantly different between the two groups ( $P < 0.001$ ).

**CONCLUSIONS:** The results of this study showed that the self-care self-efficacy program has been effective in increasing the life satisfaction of the elderly. Therefore, using this self-care self-efficacy program is recommended to promote life satisfaction in the elderly.

## Keywords:

Aged, personal satisfaction, program, self-care, self-efficacy

## Introduction

Aging is a global phenomenon that is becoming one of the serious social challenges today. Currently, the elderly (population 60 years and older) have the highest population growth rate in the world compared to other age groups,<sup>[1]</sup> which is due to the advancement of medical science and improving the quality of nutrition and prevention of many diseases along the last few decades.<sup>[2]</sup> According to the United Nations predictions, the

proportion of the world's elderly population will increase from about 12.3% in 2015 to about 21.5% in 2050.<sup>[3]</sup> The aging population is increased rapidly in Iran too. Based on the 2019 census in Iran, about 9.9% of the Iranian population is over 60 years old.<sup>[4]</sup> By population forecasts, this percentage will reach about 31.2%, by 2050.<sup>[3]</sup> Accordingly, in 2050, the elderly population of Iran will exceed the global average.<sup>[5]</sup> Therefore, designing extensive programs on the participant of aging is very important.<sup>[6]</sup>

As age increases, many changes occur in the various aspects of the elderly's health

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such as physical, mental, intellectual weakness, and a variety of illnesses, and the elderly will experience some degree of self-care-related problems.<sup>[7]</sup> According to the definition of the World Health Organization, self-care behaviors include health promotion, disease prevention and control, adherence to the use of medicines, and referral to health-care centers such as hospitals if necessary.<sup>[8]</sup>

Increased self-care ability in older adults could lead to self-fulfillment.<sup>[9]</sup> The most important health-promoting self-care behaviors include healthy-eating behaviors, physical activity, stress management, spiritual growth, feeling good, and personal health responsibility.<sup>[10]</sup> Self-care leads to improved health and quality of life, reduced health costs, and increased life satisfaction.<sup>[11]</sup>

It seems that improving self-care behaviors is achieved not only by improving knowledge but also by increasing self-efficacy. Studies show that increased self-efficacy improves self-care ability in the elderly.<sup>[12-14]</sup> Self-efficacy means one's belief in one's ability to succeed in specific situations or accomplish a task. One's sense of self-efficacy can play a major role in how one approaches goals, tasks, and challenges. Self-efficacy refers to an individual's belief in having the required skills to perform a given task a belief in one's capabilities to organize and execute the course of action required to attain a goal.<sup>[15,16]</sup>

Bandura believes that self-efficacy and capability can be increased by acquiring the required skills and knowledge and achieving success in it. According to his theory, perceived self-efficacy leads to the use of self-care behaviors to achieve the desired results.<sup>[17,18]</sup>

Studies have shown that people who are confident in their ability to perform self-care behaviors are more likely to carry out these tasks.<sup>[19]</sup> Research shows that self-efficacy is directly related to health promotion and self-care behaviors in the elderly. In this way, increasing the self-efficacy of the elderly leads to improving his self-care behaviors.<sup>[20]</sup> Abdul Rahman *et al.* showed that a self-efficacy education program on foot self-care behavior among older patients with diabetes improved their foot self-care behaviors.<sup>[21,22]</sup>

Researchers believe that self-efficacy plays an important role in the prediction and commitment of the elderly to self-care behavior. Lifestyle changes such as eating habits, smoking, and exercise require high self-confidence and self-efficacy,<sup>[23,24]</sup> which is defined as the confidence a person has in his or her ability to successfully carry out self-care activities. Fu *et al.* showed that self-care behaviors improve with increasing self-efficacy in the elderly.<sup>[23]</sup>

The goal of increasing self-care self-efficacy is not just to survive and increase longevity, rather, the challenge of the present century is to improve the quality of life, and at the top of it is to increase life satisfaction.<sup>[25,26]</sup>

Satisfaction with a person's life is determined by his or her understanding of his current status concerning his expectations, aspirations, and ideal situation.<sup>[27]</sup> Life satisfaction is a general assessment of a person's quality of life that is determined according to his criteria.

Life satisfaction is important in health-care systems because this concept is in full interaction with health, and there is a close relationship between mental and physical health and life satisfaction.<sup>[28]</sup>

Self-efficacy and self-care individually affects life satisfaction. The more independent an older person is, the more satisfied he or she will feel about life.<sup>[29,30]</sup> Therefore, by supporting and respecting the elderly and subsequently improving self-efficacy, the life satisfaction of the elderly can be increased.<sup>[31,32]</sup>

Self-care self-efficacy is also one of the factors affecting life satisfaction. A study by Tsay and Healstead showed that patients with higher levels of self-care self-efficacy were more satisfied with life.<sup>[33]</sup>

The elderly with more life satisfaction are more likely to engage in health-promoting behaviors.<sup>[34,35]</sup> Studies have shown that each area of self-care individually can affect a person's level of life satisfaction.

Life satisfaction in the elderly can be affected by various factors such as physical health, mental health, depression, anxiety, self-esteem, participation in religious activities and social associations, nutrition, physical activity, feeling good, and appropriate health behaviors, that all of these are the areas of self-care behaviors.<sup>[36]</sup>

Considering the importance of self-care/self-efficacy and life satisfaction in the elderly and the lack of studies that examine the impact of self-care/self-efficacy program on life satisfaction of the elderly in Iran, this study aims to investigate the effect of self-care/self-efficacy program on life satisfaction of the elderly referred to selected health centers of Isfahan University of Medical Sciences was performed.

## Materials and Methods

This research is a semi-experimental study includes two groups (experimental and control). Samples were selected from the elderly (60 years or older) referred to the health centers in Isfahan. Among the health centers in Isfahan, two centers were selected by the simple random sampling which included Hazrat Ali center and

Nawab Safavi center. In the next step, by referring to these centers, all the files of the elderly were reviewed, and the files that met the inclusion criteria were selected.

Then, 36 elderly people in each center were selected using a simple random sampling method. In order to randomly assign the samples to the two groups of control and experimental, a number between 1 and 36 was assigned to each of the 36 samples in each center. Paired numbers were assigned to the experimental group and odd numbers to the control group.

The inclusion criteria included age of 60 years or older, living in Isfahan, the ability to move, lack of speech and hearing problems, and mental disorders (based on the information in the medical file). The exclusion criteria included the inability to continue research for any reason and more than one absence from intervention sessions.

The sample size was estimated using the data of similar studies in each group of 32 people. Considering the probability of sample loss during the study, 72 people were considered. Samples were randomly selected and randomly divided into experimental ( $n = 36$ ) and control groups ( $n = 36$ ).

The data collection tool was a two-part questionnaire: The first part was related to demographic information of the elderly. The second part was the life satisfaction index A (LSI-A) questionnaire, which is for the elderly and designed by Neugarten *et al.*<sup>[37]</sup>

This tool consists of 20 phrases, of which 12 are positive and 8 are negative. The LSIA was designed to measure the five component dimensions of life satisfaction; zest, resolution and fortitude, congruence between desired and achieved goals, positive self-concept, and mood tone.

The answers to the questions were based on a scale of three options (I agree, I disagree, and I have no opinion), which were awarded 2, 1, and 0 points in positive sentences and inverse points in negative sentences, respectively. Scores ranged from 0 to 40, and higher scores indicated greater life satisfaction. This questionnaire was used in the study of Emami *et al.*, and its reliability was confirmed using the Cronbach's alpha test ( $\alpha = 0.8$ ).<sup>[38]</sup>

The self-care self-efficacy program for the experimental group was implemented for 6 weeks, one session per week for 1 h.

To implement the self-care self-efficacy program, self-care behaviors in the four areas of health behaviors, nutrition, well-being, and physical activity were presented to the elderly through four sources affecting self-efficacy,

including performance accomplishments, vicarious experience, verbal persuasion, and physiological states. Strategies used to increase self-care self-efficacy are listed below:

### Performance accomplishments

In this study, we tried to increase the self-efficacy of the elderly by creating successful experiences. The experience of mastery influences one's perspective on his abilities. Successful experiences lead to greater feelings of self-efficacy. However, failing to deal with a task or challenge can also undermine and weaken self-efficacy.

For this purpose, by involving the samples in performing self-care activities, preparing small goals to achieve larger goals, successfully performing the assigned self-care activities by the elderly, and expressing their successes, their self-efficacy was strengthened.

### Vicarious experience

In this study, by holding group meetings, and expressing personal experiences and achievements of the elderly, the beliefs of the elderly about the possibility of self-care were influenced.

Observing someone else perform a task or handle a situation can help the elderly to carry out the same task by imitation. In this study, showing the success of similar people led to the belief that they too could dominate a similar activity.

### Verbal persuasion or social persuasion

Verbal encouragement is another source for increasing self-efficacy. Constructive feedback is important in maintaining a sense of efficacy as it may help overcome self-doubt. In this study, the self-care self-efficacy of the elderly was affected by expressing the importance of correct self-care behaviors, explaining the self-care behaviors, positive feedback, and encouraging them.

### Physiological states

Moods, emotions, physical reactions, and stress levels in a person can affect their judgment of their abilities and abilities to perform certain behaviors. In this study, the self-care self-efficacy of the elderly was affected by expressing concerns and barriers to self-care, increasing self-confidence and well-being, reducing anxiety and stress in the elderly, and changing their judgment about their ability to perform the desired behavior.

In general, in this study, the physical and psychological benefits of performing self-care behaviors were told to the elderly, and the elderly were tried to achieve positive beliefs about self-care behaviors. Participants in the experimental group were evaluated immediately and 1 month after the intervention.

## Ethical considerations

This study was approved by the Ethical Committee of Isfahan University of Medical Sciences with ethical code: IR. MUI. REC.1394.3.558. All participants completed and signed the informed consent form. The researcher fully introduced herself to the interviewees. All the goals and research process for the elderly were explained. The elderly have been told that they can drop out at any time. The elderly were assured that their information would remain confidential. The control group was given an educational booklet 1 month after the last session and completing the questionnaires.

## Statistical analysis

Data were analyzed using the SPSS software (SPSS Inc. Released 2007. SPSS for Windows, Version 16.0. Chicago, SPSS Inc.) and descriptive statistics (including frequency, percentage, mean, and standard deviation [SD] 95%) and also analytical statistics (including, Independent sample *t*-test, Chi-square, Mann-Whitney, repeated measures analysis of variance, and LSD *post hoc* test.

## Results

In this study, 64 elderly participated. Statistical tests showed that there was no significant difference between the two groups in terms of demographic characteristics [Table 1].

The mean and SD scores for life satisfaction of both experimental and control groups and the comparison of these scores in three stages of pretest, posttest, and follow-up (1-month) are presented in Table 2.

Before the intervention, the mean score of life satisfaction in the elderly was not significantly different between the two groups ( $P = 0.88$ ), but immediately and 1 month after the intervention, a statistically significant difference was observed between the experimental and control groups ( $P < 0.001$ ) [Table 2].

Analysis of variance with repeated observations showed that the mean score of life satisfaction in the elderly in the control group, before the intervention, immediately and 1 month after the intervention was not significantly different ( $P = 0.55$ ). However, this score was significantly different in the elderly in the experimental group before the intervention, immediately, and 1 month after the intervention ( $P < 0.001$ ) [Table 2].

LSD *post hoc* test showed that the mean score of life satisfaction in the elderly in the experimental group before the intervention and immediately after the intervention was statistically significantly different ( $P < 0.001$ ).

This score was statistically significantly different before the intervention and 1 month after the intervention, too ( $P < 0.001$ ), but no significant difference was observed in the times immediately after the intervention and 1 month after the intervention ( $P > 0.05$ ) [Table 3].

## Discussion

The results showed that before the intervention, there was no significant difference in demographic variables between the experimental and control groups, and the two groups were homogeneous in this respect.

**Table 1: Demographic characteristics of the participants**

Demographic characteristics	Coordinates of demographics	Experimental group	Control group	Test type	Test result
Age, mean (SD)		68.2 (5.7)	67.8 (5.5)	<i>t</i> -test	$t=0.29, P=0.77$
Gender, <i>n</i> (%)	Male	14 (43.8)	13 (40.6)	Chi-squaretest	$\chi^2=0.06$ $P=0.80$
	Female	18 (56.2)	19 (59.4)		
Education level, <i>n</i> (%)	Illiterate	4 (12.5)	5 (15.6)	Mann-Whitney test	$Z=0.38$ $P=0.71$
	Under diploma	21 (65.7)	19 (59.4)		
	Diploma	5 (15.6)	7 (21.9)		
Marital status, <i>n</i> (%)	University	2 (6.2)	1 (3.1)	Chi-squaretest	$\chi^2=2.36$ $P=0.50$
	Single	1 (3.1)	2 (6.2)		
	Married	17 (53.1)	20 (62.6)		
Occupation, <i>n</i> (%)	Widowed	14 (43.8)	10 (31.2)	Chi-squaretest	$\chi^2=1.83$ $P=0.77$
	Unemployed	20 (62.5)	16 (50.0)		
	Employed	6 (18.7)	8 (25.0)		
Monthly income (Toman), <i>n</i> (%)	Retired	6 (18.8)	8 (25.0)	Mann-Whitney test	$Z=0.99$ $P=0.32$
	<500,000	5 (15.6)	4 (12.5)		
	500,000-1,000,000	14 (43.7)	12 (37.5)		
Chronic illnesses, <i>n</i> (%)	>1,000,000	13 (40.6)	16 (50.0)	Chi-squaretest	$\chi^2=0.09$ $P=0.76$
	Yes	26 (81.2)	25 (78.1)		
	No	6 (18.8)	7 (21.9)		

SD=Standard deviation



**Table 2: Determining and comparing the mean scores of life satisfaction of the elderly in experimental and control groups at pretest, posttest, and follow-up stages**

Stage	Mean (SD)		Independent t-test (t, P)
	Experimental group	Control group	
Before intervention	17.03 (6.5)	17.30 (6.2)	0.16, 0.88
Immediately after intervention	30.7 (5.2)	17.8 (6.2)	8.94, <0.001
1 month after intervention	27.03 (5.1)	17.7 (6.1)	6.68, <0.001
Repeated-measures analysis of variance (F, P)	375.97, <0.001	1.75, 0.55	

SD=Standard deviation

**Table 3: Comparing the mean scores of life satisfaction of the elderly in experimental groups between different stages**

Stage	Before intervention and immediately after intervention (P)	Before intervention and 1 month after intervention (P)	Immediately after intervention and 1 month after intervention (P)
LSD test	<0.001	<0.001	0.12

LSD=Least significant difference

After the intervention, there was a significant increase in the mean score of life satisfaction of the elderly in the experimental group, and this score was significantly different in the experimental and control groups. This result can show that the application of self-efficacy strategies to perform self-care behaviors has been effective and thus has increased the life satisfaction of the elderly immediately and 1 month after the intervention.

These results are consistent with the findings of Tsay and Healstead who showed that self-care self-efficacy is significantly associated with life satisfaction among elderly patients and people with higher self-care self-efficacy are more satisfied with life.<sup>[33]</sup>

Unfortunately, few similar studies investigate the effect of a self-care self-efficacy program on elderly life satisfaction. However, in confirmation of this study, the results of some studies indicate the effectiveness of self-care self-efficacy on life satisfaction.

Fu *et al.* and Mohebi *et al.* showed that increasing self-efficacy improves self-care behaviors in diabetic elderly and thus better glycemic control.<sup>[23,16]</sup>

Furthermore, the study of Zadehahmad *et al.*, which investigates the relationship between self-efficacy and self-care in patients with heart failure, showed a positive relationship between self-efficacy and self-care in these patients and increased self-efficacy is associated with improved self-care behaviors.<sup>[20]</sup>

On the other hand, a study by Budak *et al.* in 2017 showed that there is a significant positive relationship between self-care ability and life satisfaction and improving self-care ability in the elderly can increase their life satisfaction.<sup>[11]</sup> The results of the present study are consistent with these results.

A 2018 study by Abdul Rahman *et al.* evaluated the effectiveness of health education programs based on

the self-efficacy theory on foot self-care behavior for older adults with diabetes. This study has shown that self-efficacy education program has improved foot self-care behaviors in the elderly.<sup>[21,22]</sup>

Lower self-efficacy leads to reduced life satisfaction in the elderly.<sup>[32]</sup> The positive relationship between self-efficacy and physical performance showed that the elderly with higher self-efficacy had better physical performance and more life satisfaction. On the other hand, increasing self-efficacy by increasing self-confidence and life expectancy causes them to feel satisfied.

These results are consistent with the findings of Singh *et al.*, who showed that self-efficacy is significantly related to life satisfaction.<sup>[30]</sup> Bagheri-Nesami *et al.* also showed that by increasing self-efficacy in the elderly, their satisfaction with life could be increased.<sup>[31]</sup>

As mentioned, the self-care self-efficacy program was implemented through self-efficacy strategies in four areas of responsibility for health behaviors, nutrition, physical activity, and well-being.

In the field of health behaviors, to implement a self-care self-efficacy program, measures such as explaining the correct health behaviors by the researcher and the elderly with examples and personal experiences, asking the elderly for periodic health examination and dental examinations, explaining the proper use of medicine at the right dose and time, blood pressure, and glucose control was performed by the researcher.

The findings of this study are in line with the results of Lee study which showed that increasing self-efficacy improves the health performance of the elderly<sup>[39]</sup> and also Niknami *et al.*'s study which showed that health behaviors and life satisfaction are significantly related to each other.<sup>[40]</sup>

In the field of nutrition, to implement the self-care self-efficacy program, these measures were performed by the researcher. Explaining about different food groups and their consumption rate, not consuming harmful foods, and recommended to drink enough water and fluids.

The results of the present study are in line with the findings of Tehrani *et al.*'s study which showed that the elderly with high self-efficacy have a proper nutritional status,<sup>[41]</sup> and also, the study of Ghimire *et al.* who showed that nutritional health status is significantly associated with life satisfaction.<sup>[42]</sup>

In the present study, in the field of physical activity, to implement a self-care self-efficacy program, these measures were performed by the researcher. Investigating how the samples sit, walk and doing housework, showing the correct way with pictures, and encouraging the elderly to do light exercise daily.

The results obtained in this study are consistent with the findings of Rezaei and Esmaeili<sup>[43]</sup> as well as Mohammad Khan Kermanshahi *et al.*<sup>[44]</sup> who showed that physical activity in the elderly increases their life satisfaction. Regular physical activity helps older people achieve a desirable level of life satisfaction.<sup>[44]</sup>

In this study, to implement a self-care self-efficacy program in the field of feeling good, strategies to increase hope, happiness and self-confidence, forgiveness and reduce expectations from others were presented to the elderly. Religious and spiritual activities and social participation were also included in their training.

The results of this study are in line with the findings of other studies that showed hope, happiness, and participation in religious ceremonies increase life satisfaction in the elderly.<sup>[36,45,46]</sup>

Furthermore, the results of the present study are consistent with the study of Moon and Kim which showed that personal health, physical activity, and participation in religious activities and social associations, helping others and trusting people had a significant and positive effect on elderly life satisfaction.<sup>[47]</sup>

### Limitations

One of the limitations of the research was the limited sample of the study to the elderly referring to two health centers in Isfahan, which reduces the possibility of generalization to other elderly in Isfahan and other cities.

Other limitations of this study were the mental and emotional states of the elderly when answering life satisfaction questions.

The inability of elderly family members to participate was another limitation, as family members were influential in teaching some self-care self-efficacy behaviors to the elderly.

Investigating the effect of self-care self-efficacy program on quality of life, successful aging, and each of the areas of self-care behaviors is recommended for future research.

### Conclusions

The results of statistical tests showed that before the intervention, the mean score of life satisfaction of the elderly was not significantly different between the control group and the experimental group. However, after the implementation of the self-care self-efficacy program, a significant difference was observed in the mean score of life satisfaction of the elderly.

The results of this study show that implementing a self-care self-efficacy program is a suitable approach to increase life satisfaction in the elderly. Therefore, nurses can use this self-care self-efficacy program to help the elderly to achieve the ideal state of old age and greater life satisfaction.

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### Conflicts of interest

There are no conflicts of interest.

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