

# Investigating the effect of education on health-promoting lifestyle among the elderly of Ramsar in 2017

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## ABSTRACT

**Introduction and Objective:** Providing and enhancing the level of health are one of the essential needs of all people, and implementation of health promotion lifestyle is the most important and effective factor in maintaining and improving the health of the elderly. The present study aimed at defining the effect of aging on health-promoting lifestyle. **Methodology:** This randomized clinical trial was conducted on 72 individuals from the retirees clubs of Education department, Social Security, and Health centers in Ramsar, in 2017. Sampling was done randomly with blocking and random allocation in two groups: Experimental and control. Data were collected in two steps by Demographic profile questionnaire, AMT, ADL, OHI and HPIP II which validity and reliability of them were confirmed. Participants attended eight training sessions (twice each week). Data analysis was performed with the use of SPSS 18 and descriptive (Frequency) and analytic tests (Chi-square, Fisher's exact test, Independent Sample *t* test and Paired Sample *t* test) with a significance level of 0.05. **Results:** The results showed that the mean age of the elderly was  $64.4 \pm 4.1$  years. The mean score of lifestyle enhancement was 148.59 and 173.25 before and after training in the experimental group, respectively. Based on the results of paired *t*-test ( $P < 0.323$ ), there was no significant difference between the mean life expectancy of elderly health promotion in control group before and after educational intervention; however, there was a significant difference between the two groups before and after training ( $P = 0.001$ ). **Conclusion:** Educational programs play an important role in integrating health-promoting lifestyle to encourage the elderly to accept more accountability regarding health, sustained physical fitness, proper nutrition, healthy interpersonal relationships, expected spiritual growth, and the proper management of stress and anxiety in life.

**Keywords:** Education, elderly, health-promoting behaviors, lifestyle

## Introduction

The elderly forms a significant number of population in all human societies, and along with increase in the number of elderly people, their health problems get more and more important.<sup>[1,2]</sup> Maintaining and improving the health of the elderly not only prevent chronic diseases but also greatly

contribute to their independence and participation in family and social activities.<sup>[3]</sup>

Every person's lifestyle has an impact on his/her health, and health-promoting activities and healthy lifestyle are the main strategies for the facilitation and protection of health and are essential for maintaining and improving health, correcting and improving lifestyles.<sup>[4]</sup> Health promotion lifestyle includes six dimensions of health responsibility, physical activity, nutrition, spiritual growth, interpersonal relationships, and stress management.<sup>[5]</sup>

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Feeling responsible and accountable toward one's health means understanding the activities that can be done to improve health so that people and society take responsibility for choosing a healthy lifestyle and have the ability to take responsibility for their health.<sup>[6]</sup>

Nowadays, many scholars have focused their attention on the relationship between physical activity and physical and mental health;<sup>[7]</sup> they have come to believe that although the ability of the body decreases with age, it can be improved.<sup>[8]</sup> Individuals with regular physical activity maintain their physical and mental function and live their daily lives independently and self-sufficiently; in addition, physical activity can also improve mental health.<sup>[9]</sup>

Nutrition is essential for health and disease prevention, and it should focus more on health promotion.<sup>[10]</sup> Nutrition is one of the important determinants of health in the elderly and plays a recognized role in common diseases of the elderly such as cancer, cardiovascular disease, and dementia.<sup>[11]</sup> Spirituality is also part of the philosophy of life and includes personal and private experiences that can be learned through good or bad situations and life.<sup>[11]</sup> Having meaning in life, hope with God's help in difficult situations, and feeling of belonging to a supreme source are all methods that help individuals tolerate less pressure in dealing with harmful incidents.<sup>[1]</sup>

The next dimension of health promotion lifestyle is interpersonal relationships. People are in constant communication with others to share their thoughts, feelings, and desires.<sup>[12]</sup> Communication is a transactional, target-oriented, multidimensional, irreversible, and possibly inevitable process, and the abundance of problems with which the elderly is struggling influences the communication skills of the community.<sup>[13]</sup>

The last aspect of health promotion lifestyle is stress management, one of the several factors the incorrect implementation of which can affect the performance of individuals, endanger their health, and lead to physical and psychological disorders, impairment in performance and adjustment capacity, and ultimately loss of quality of life.<sup>[11]</sup> The most effective and useful way to deal with stress is to strengthen mental and psychological powers, to apply adaptive methods, and to manage stress.<sup>[9]</sup>

Therefore, provision and promotion of health are one of the essential needs of all people.<sup>[15]</sup> Moreover, implementation of health promotion behaviors is the most important and effective factor in maintaining and improving the health of the elderly.<sup>[16]</sup> It is recommended to implement health promotion lifestyle programs to reach the goal of promoting the health of the elderly and to reduce chronic diseases and multiple complications due to the lack of a healthy lifestyle in a wide range.<sup>[17]</sup>

Based on limited research in this field in Iran, the researcher decided to design and implement a research aimed at determining the effect of education on the health-promoting lifestyle in the

elderly to investigate the effect of education on health-promoting lifestyle among the elderly.

## Methodology

This randomized clinical trial was conducted on 72 individuals from the retirees clubs of Education department, Social Security, and Health centers in Ramsar, in 2017. Sampling was done randomly with blocking and random allocation in two groups: experimental and control. After obtaining informed consent from the participants, the questionnaires were completed by both the test and control groups, with full explanation and follow-up by the researcher. Being aged above 60 years, willing completion of written form consent, having reading and writing skills, obtaining a minimum score of 8 in the cognitive test, acquisition of an independent score from the daily activities of life questionnaire, absence of known acute and chronic diseases, and non-compliance with a specific diet were the main inclusion criteria of the present study; the discontinuation of cooperation, failure to complete more than 50% of the health promotion lifestyle questionnaire, and lack of participation in more than one session of health education lifestyle education sessions were the main exclusion criteria. Samples were randomly divided into two groups, with 36 subjects in each group.

Four questionnaires were used to collect required data. A demographic questionnaire includes age, sex, marital status, educational level, residence, home ownership status, chronic disease history, health insurance coverage, household status, financial status, employment status, the level of family income and the amount of monthly income; with 10 items, the second questionnaire was the scale of Abbreviated Mental Test, the validity and reliability of which were verified in Bakhtiyari *et al.*'s study, with Cronbach's alpha coefficient of 0.76 for internal reliability and 0.89 for external reliability.<sup>[18]</sup> Health-promoting lifestyle questionnaire II (HPLP II) includes 52 items categorized in six dimensions; each of the four options is always, most often, sometimes, and never scored from 1 to 4, and the total score of overall health promotion behaviors is between 52 and 208.<sup>[4,19,20]</sup> According to Walker *et al.*'s research, the total Cronbach's alpha turned out to be 0.94 and the subscales turned out to be 0.49–0.97;<sup>[19]</sup> the validity of this questionnaire was assessed and approved with total Cronbach's alpha of 0.82 and subscales of 0.46–0.91 by Mohammedi Zeidi *et al.*<sup>[4]</sup> Activities of daily living questionnaire (ADL) includes eight items. Each item has three options of dependent (zero point), need help (1 point), and standalone (2 points). The overall score of the ADL index is from 0 to 16, and each subject will need help (8–11 points) and standalone (12–16 points) depending on the grade he/she earns in one of the three dependent classes (0–7 points).<sup>[21]</sup> In Iran, the content validity index was 0.82 and Cronbach's alpha was 0.80 for this questionnaire.<sup>[21]</sup>

The intervention was conducted in the form of eight sessions of 45–60 min face-to-face training, held weekly in two sessions over a period of 4 weeks, by lecture, group discussion, presentation

of PowerPoint, and the provision of booklets, pamphlets, and compact discs based on scientific resources.<sup>[11,22,23]</sup> After the end of the sessions, to remind and control the activities, follow-up and counseling were continued by telephone and SMS for 1 month. At this stage, no intervention was performed for the control group. Three months after the end of the training sessions (according to similar studies),<sup>[24,25]</sup> the HPLP II questionnaire was completed by both groups in the presence of the researcher. After the completion of the data collection, educational materials were also provided for the control group. Collected data were analyzed using Statistical Package for the Social Sciences software version 18 and descriptive statistics included frequency distribution, mean, and standard deviation, whereas analytical statistics included Chi-square, independent *t*-test, and paired *t*-test; significance level was considered <0.5.

## Results

The results of the present study showed that the mean age of the elderly participating in the present study was  $64.4 \pm 4.1$  years; the majority of them lived in the city and had private residential unit. 95.8% (69 people) of participants were male and married. 61.1% (44 people) of respondents had academic education and 59.7% (43 people) lived with their spouses and children. The amount of monthly income of 47.2% (43 people) was between 350 and 500 USD, and 59.7% (43 people) considered their income to be insufficient. 86.1% (62 persons) of respondents did not work after retirement, and all participants were covered by health insurance and supplementary care [Table 1].

## Discussion

The analysis of the results of the posttest, which was conducted 3 months after training classes, showed that the mean score of total lifestyle improvement of elderly health was 148.59 and 173.25 before and after educational intervention, respectively [Table 2]; this difference was statistically significant ( $P = 0.001$ ) [Table 3]. According to Khavoshi *et al.*'s study (2015), the mean of lifestyle score increased 3 months after intervention and reached 143.93, a difference of which was statistically significant ( $P = 0.02$ ).<sup>[26]</sup> The results of Taghdisi *et al.*'s study showed that the difference in mean score of knowledge about the aging was statistically significant before and after education ( $P < 0.0001$ ).<sup>[24]</sup>

The results of Heidari *et al.*'s study (2013) showed that there is a significant difference between the mean scores of life-promoting health in the experimental group before and after the intervention ( $P < 0.05$ ).<sup>[27]</sup> The results of Rahimi Froushani *et al.* showed that the difference between the mean scores of healthy lifestyle and its dimensions in the control and test groups was statistically significant ( $P < 0.0001$ ).<sup>[25]</sup> Mehdipour *et al.* (2015) concluded, in their study, that the effect of the educational program on the increase in mean scores of physical activity, mental health, and interpersonal communication in the experimental group was positive and significant ( $P < 0.001$ );

**Table 1: Frequency distribution of demographic variables in two groups of control and intervention**

Demographic characteristics	Frequency (%)	
	Intervention group	Control group
Age		
60-65	24 (66.7)	22 (61.1)
65-70	10 (27.8)	6 (16.7)
70-75	2 (5.6)	8 (22.2)
Sex		
Male	35 (97.2)	34 (94.4)
Female	1 (2.8)	2 (5.6)
Marital status		
Married	33 (91.7)	36 (100)
Single	1 (2.8)	0
Widowed	2 (5.6)	0
Education		
Elementary	0	1 (2.8)
Secondary	1 (2.83)	3 (8.3)
Diploma	10 (27.8)	13 (36.1)
Academic education	25 (69.4)	19 (52.8)
Residence		
City	34 (94.4)	35 (97.2)
Village	1 (2.8)	0
Urban area	1 (2.8)	1 (2.8)
Ownership of residential unit		
Personal property	35 (97.2)	36 (100)
Offspring's property	1 (2.8)	0
Insurance coverage		
No insurance	0	0
Insurance support	36 (100)	36 (100)
Complementary insurance coverage		
No	0	0
Yes	36 (100)	36 (100)
Cohabitation		
Partner	11 (30.6)	14 (38.9)
Partner and offspring	22 (61.1)	21 (58.3)
Offspring	2 (5.61)	1 (2.8)
Alone	1 (2.8)	0
History of chronic diseases		
Yes	0	0
No	36 (100)	36 (100)
Economic condition		
Unstable	0	0
Stable	36 (100)	36 (100)
Income		
<300 USD	2 (5.6)	6 (16.7)
Between 300 and 450 USD	14 (38.9)	20 (55.6)
>450 USD	20 (55.5)	10 (27.8)
Sufficiency of income		
Sufficient	21 (58.3)	22 (61.1)
Almost sufficient	15 (41.7)	10 (61.1)
Job status		
Retired and jobless	34 (94.4)	29 (80.6)
Retired and employed	2 (5.6)	7 (19.4)
Total	36 (100)	36 (100)

however, this difference was not meaningful in regard with nutrition ( $P = 0.113$ ).<sup>[28]</sup>

**Table 2: The mean distribution of total score and dimensions of health promotion lifestyle before and after the intervention in two groups of intervention and control**

Dimensions of health-promoting lifestyle	Intervention group (mean±SD)		Control group (mean±SD)	
	Before intervention	After intervention	Before intervention	After intervention
Total score	148.59±19.84	173.2±14.08	150.02±24.32	150.02±24.32
Health responsibility	22.88±4.64	29.16±3.94	23.00±5.68	23.00±5.68
Physical activity	20.09±5.20	26.33±3.38	19.66±5.43	19.66±5.43
Nutrition	27.22±4.67	30.88±2.81	28.47±5.66	28.47±5.66
Spiritual growth	28.47±4.81	30.72±3.74	28.19±28.19	28.19±6.89
Interpersonal relationships	28.38±5.21	29.72±4.17	27.86±5.43	27.86±5.43
Stress management	21.52±4.64	26.41±3.35	22.83±7.29	22.83±7.29

SD: Standard deviation

**Table 3: Comparison of mean total score and dimensions of health promotion lifestyle in the experimental group**

Variable	Total score	Health responsibility	Physical activity	Nutrition	Spiritual growth	Interpersonal relationship	Stress management
P	0.0001	0.0001	0.0001	0.0001	0.001	0.001	0.0001
t-test result	11.693	8.163	9.416	5.991	3.713	3.651	9.708

Feeling responsible toward one's health is of paramount importance in old age.<sup>[24]</sup> The mean score of health responsibility increased from 22.88 to 29.16 in the intervention group of the present study [Table 2], a difference of which turned out to be statistically significant ( $P = 0.001$ ) [Table 3].

Exercise and physical activity are quite important in guaranteeing a long, healthy life. The average score of physical activity increased from 20.09 to 26.33 in the intervention group; a difference which was, again, statistically significant ( $P = 0.001$ ) [Table 3]. The mean score of this factor experienced considerable increase 3 months after intervention, a difference of which turned out to be statistically significant ( $P = 0.004$ ).<sup>[26]</sup> According to the results of this study and similar studies, it is clear that sports activities are major sources of guaranteeing a high quality of life, and older people should be encouraged to increase their physical activity or keep minimum required physical activities and sports recommendations.<sup>[29]</sup>

Nutrition status is one of the most important aspects of promoting the lifestyle of elderly people.<sup>[24]</sup> The mean postnutrition score increased from 27.22 to 30.88 in the intervention group [Table 3], a difference which was, again, statistically significant ( $P = 0.001$ ) [Table 3]; this was consistent with the results of Khavoshi *et al.*'s study because the average score of nutrition increased within 3 months after the intervention in the test group, which was statistically significant ( $P = 0.26$ ).

A deep understanding of the interpersonal relationships of individuals in their social context provides an effective approach to health promotion.<sup>[30]</sup> The mean score of interpersonal relationships increased from 28.38 to 29.72 after intervention in the test group [Table 2], a difference which was, again, statistically significant ( $P = 0.001$ ) [Table 3]. Although, in Khavoshi *et al.*'s study, the average score of the interpersonal relationships increased 3 months after the intervention in the

test group, this difference did not turn out to be statistically significant ( $P = 0.26$ ).<sup>[26]</sup> Based on the results of Taghdisi *et al.*'s study, it was observed that the implementation of the educational program did not show a significant increase in the mean of interpersonal relationships in the test group and no difference was witnessed in the intervention group.<sup>[24]</sup> With regard to the importance of interpersonal communication in promoting health, interventions such as communication skills training such as active hearing, dialog, and empathy are effective.<sup>[30]</sup>

Spiritual growth, and need, is one of the most important needs in the elderly that needs to be planned for.<sup>[11]</sup> Elderly is the period in which a person considers events throughout his/her life.<sup>[9]</sup> The mean score of spiritual growth increased from 28.38 to 29.72 after intervention in the test group [Table 2], a difference which was, again, statistically significant ( $P = 0.001$ ) [Table 3]. This was, also, consistent with the results of Taghdisi *et al.*'s study, who showed that although the average score of the spiritual growth increased 3 months after the intervention in the test group, this difference did not turn out to be statistically significant.<sup>[24]</sup> Consequently, the belief that there is a God controlling the situation and observing his/her servants and belief that it is possible to control the uncontrollable situations in a way by relying on God and resorting to God reduce the anxiety greatly.<sup>[23]</sup>

Stress is one of the factors, affecting the performance of individuals that can endanger the health of individuals and lead to physical and mental illness, impairment of performance and adjustment power, and ultimately loss of quality of life.<sup>[11,14]</sup> Stress management training helps reduce the level of anxiety by increasing the level of people's understanding of the situation and using relaxation techniques; these programs, which are provided step by step for the individual, enable the person to have a clear understanding of the environment and its stressors, and by doing this, control his/her sense of stress and anxiety.<sup>[31]</sup> According to the findings of the present study, the mean score of stress

management increased from 21.52 to 26.41 after intervention in the test group [Table 2], a difference which was, again, statistically significant ( $P = 0.001$ ) [Table 3]. Although, in Khavoshi *et al.*'s study, the average score of stress management increased 3 months after the intervention in the test group, this difference did not turn out to be statistically significant ( $P = 0.99$ ).<sup>[26]</sup> Although the same increase was observed in the intervention group studied in Taghdisi *et al.*'s research, no change was witnessed in the control group of this study.<sup>[24]</sup> Including training in relaxation methods in healthy lifestyle programs ensures physical and mental health and reduces the psychological stress and physical symptoms associated with it.<sup>[24]</sup>

## Conclusion

Given the important role of education and training, health-promoting lifestyle programs can be implemented to enhance the level of mental and physical health in society.

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## Conflicts of interest

There are no conflicts of interest.

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