Original Article

The Effect of Education Program on Health Promotion Behavior on Successful Aging

Mehrnoosh Shirani[1], Gholamreza Kheirabadi[2], Gholamreza Sharifirad[3], Mahrokh Keshvari[4]

[1]Nursing Student Research Center, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran, [2]Behavioral Sciences Research Center, Department of Psychiatry, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran, [3]Department of Health Education, Public Health Department, School of Health, Qom University of Medical Sciences, Qom, Iran, [4]Nursing and Midwifery Care Research Center, Department of Community Health and Gerontological Nursing, Faculty of Nursing and Midwifery, Isfahan University of Medical Sciences, Isfahan, Iran

Abstract

Background: A successful aging pattern indicates a change in attitudes toward aging and life quality improvement, which include the components of general health and life satisfaction. The current study aimed to evaluate the effects of an educational program on successful aging components in the elders. **Materials and Methods:** A three-stage empirical study was conducted on 72 individuals of 60-75 years old who were randomly divided into two experimental and control groups. A 9-session educational program presenting health-related behaviors, including stress management and interpersonal relationships, was held for the experimental group. Two sessions of neutral topics group discussion were held for the control group. A Demographic Information Questionnaire, General Health Questionare-28 (GHQ-28), Diener's Satisfaction with Life Scale (SWLS) were used and completed before, immediately after, and two months after the intervention. Independent *t*-test was used for analysis of obtained data via SPSS software. **Results:** The mean (SD) score of general health in the two groups had no significant differences before the intervention [32.40 (14.70) vs. 30.8 (10.04)] ($p = 0.60$). The mean (SD) scores of general health immediately after intervention and two months later in the experimental group [20.2 (8.8) and 24.1 (8.05)] were significantly lower than control group [31 (9.8) and 30.9 (9.8)] ($p < 0.05$). The mean (SD) scores of life satisfaction in the both groups showed no significant difference before the intervention [16.8 (5.8) vs. 17.3 (5.5)] ($p = 0.39$), but were significantly different immediately after [20.4 (5.1) vs. 17.03 (5.1)] and two months after [19.8 (5.1) vs. 17.1 (5.1)] ($p = 0.004$). **Conclusions:** This study confirmed the effectiveness of health-related educational programs in improving elders 'general health and life satisfaction'.

Keywords: *Family relations, Iran, personal satisfaction, public health, stress disorders*

Introduction

The issue of health and its relationship with the increasing years of life has created many challenges in the present era. The increasing elderly population is one of the achievements of the 21st century, and the aging population is a phenomenon that the human societies have been or will be facing.[1] It is expected that the elderly population will reach two billion individuals in the world in 2050.[2] In the 2006 census in Iran, 5.2% of the population consisted of the elderly, and this rate is predicted to reach 19% by the year 2031.[3] These changes mark a revolution in the demographics of communities, and thus, the strict attention of policymakers around the world is required.[1] Countries are only able to overcome the problems of the elderly when the governments, international organizations, and civil societies implement policies and programs related to successful aging.[4,5] Presenting a model for aging and mapping the coordinates and specifications of successful aging is a qualitative approach towards the elderly period.[6] The term successful aging was used for the first time by Baltes[7] and so far numerous definitions have been provided for this term. The definition of successful aging provided by Palmor includes the three elements of longevity, wellbeing, and life satisfaction. Based on this definition, a successful ager is someone who has general health and is satisfied with his/her life.[6]

The elderly require special attention in the context of different issues. Some psychological problems are more prevalent in this period of life, and stress is among these problems.[8] Today, changes in technology and interpersonal communication impose stress on all groups of society.[9] Stress is among the

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Address for correspondence:
Dr. Mahrokh Keshvari, Nursing and Midwifery Care Research Center, Isfahan University of Medical Sciences, Isfahan, Iran.
E-mail: keshvari@med.mui.ac.ir

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major factors which affect the physical and mental health of the elderly. According to experts in social issues, after the young people, the elderly are the most vulnerable group to stress.[8] One cannot live without stress, but the method of coping with daily stresses should be learnt and reactions towards stress should be adapted to reduce its undesirable effects.[8] Attempts to reduce stress are called stress management. Unsuccessful management of stress causes health problems and damaged cognitive activity; therefore, individuals should have the necessary coping skills to reduce the impacts of stress. When stress is managed and the coping skills are effective, individual are able to cope with the needs and challenges of their life in a better way.[10] Interpersonal relationships is another important factor affecting stress. Improvement of interpersonal relationships results in the reduction of stressful life events,[11] but the reduction of interpersonal relationships leads to increased stress and mental disorders in the elderly.[12] Studies have shown that the elderly, in Iran, do not enjoy a favorable situation in relation to communication skills.[13]

Studies that have been conducted on the effects of stress management methods in Iran and the world have indicated that the amount of stress and its destructive side effects can be greatly decreased through these methods.[8,14] Comprehensive training programs may be able to promote the components of successful aging by focusing on stress management and interpersonal skills training. However, despite the high importance of this topic, unfortunately, it has not been addressed in Iran, and facts and evidence are not available in this regard. Therefore, the researchers in this study attempted to create a comprehensive interventional package tailored to the sociocultural conditions of Iran by integrating two methods of stress management training and interpersonal relations. Through the use of research results from around the world, an extensive library search, and the opinions of experts and specialists, the researchers developed and tested the effectiveness of this training program.

Materials and Methods

This clinical trial study was conducted for 1 month from the beginning of June 2014. The present study was a field trial with three stages, pre-test and post-test, and two groups of control and experimental. The study has been registered with Registration ID of IRCT IRCT2015112810297N4.

The sample size was calculated as 72 using the Cochran sample size formula, taking into account the population size of 350 people and the confidence level of 95% with the error level of 0.1 which was divided into two groups of 36 experimental and control groups. The questionnaires were completed in three stages of before, after, and two months after the end of the intervention. The study population included older adults (60 to 75 years old) with medical records in health centers in Isfahan city. The health centers included the centers which were under the supervision of the department of health of Isfahan and took measures to prevent non-communicable diseases in the first and second levels for the entire population. For sampling, among the areas of Isfahan city, one area was randomly selected, and from that area, two health centers which had the same location conditions and their clients had the same living conditions were chosen and were randomly assigned to two experimental and control groups. The names of the two centers were written on pieces of paper and the first name that was randomly chosen from the bag was assigned to the control group and the other name was assigned to the experimental group. In the second stage, sampling was performed. The sample size was determined as 36 patients in each group and a total of 72 individuals.

Using the codes of the records of individuals with birth dates ranging from 1938-1953 of both health centers, 72 individuals were randomly selected. In total, 350 of the elderly from both centers had the inclusion criteria. After preparing the list containing the names and phone numbers of the participants, they were contacted to review the inclusion criteria and were invited to participate in the study if they were willing. A written informed consent was obtained from each participant. Sampling was performed through random selection and the participants were divided into two equal groups of 36 people, 18 men and 18 women. By the end of the study, there was a sample loss of 4 subjects in the experimental group and 3 subjects in the control group.

The data gathering tools in this study consisted of two questionnaires. The 28-item General Health Questionnaire (GHQ-28) is based on self-reporting method.[15] The GHQ-28 contains multiple-choice questions and the responses include ‘less than usual’, ‘no more than usual’, ‘rather more than usual’, and ‘much more than usual’. The study conducted by Noorbala *et al*. verified the validity of this questionnaire. The Pearson correlation coefficient (Pearson’s r) was 0.85 and was significant at confidence level of 99% and confirmed the validity and reliability of the questionnaire.[16]

Diener’s Satisfaction with Life Scale (SWLS) was used to assess life satisfaction. This scale was prepared by Diener and consists of five statements. The statements measure the cognitive, welfare, and nominative components. The SWSL measures individuals’ satisfaction with each of the statements by a 7-point Likert scale ranging from completely disagree (1 point) to completely agree (7 points). Diener *et al*. reported the test-retest reliability coefficient of the scale as 82% and its Cronbach’s alpha coefficient as 87%. Bayani translated this scale into Persian and a study was conducted in Iran to evaluate the reliability and validity of this scale.[17] Its reliability was determined through test-retest as 69% and its Cronbach’s alpha was reported as 83%. This is a valid and reliable scale for

psychological studies. The lowest life satisfaction score obtained in this questionnaire was 5 and the highest score was 35.[17]

Before starting the training sessions, the researcher provided the material for the sessions based on behavioral objectives in three areas (emotional, cognitive, and psychomotor) and based on evidence (literature review, studies in the field of stress management training,[8] interpersonal relations,[18] interviews with professors and professionals in health promotion and psychology, and interviews with a number of the elderly). Finally, the training content was adjusted and prepared based on the conditions of subjects. The written texts were prepared in the form of pamphlets, booklets, and CDs and they were presented by the researcher via lectures, questions and answers, discussions, and actual examples (e.g., inhaling relaxing aroma and listening to natural sounds).

The educational intervention was conducted in 9 sessions, 1 session per week, and each session lasted about 60-90 minutes. After the implementation of the educational programs, in the evaluation stage, the effects of the program were evaluated using the GHQ-28 and SWLS in two stages of immediately after and two months after the intervention.

Finally, collected data was entered into SPSS, Version 20 (SPSS Inc., Chicago, IL, U.S.A.). Qualitative data in the forms of frequency, and frequency percentage, and quantitative data in the forms of mean and standard deviation have been demonstrated. As inferential statistics, Fisher's exact test and Chi-square test has been applied to compare frequency distribution Qualitative variables between two groups. Also, according to the results of Kolmogorov-Smirnov (KS) normality test indicating normal distribution of variables; we used independent sample *t*-test to compare the means of continuous variables between two groups. In all analyzes, we considered the significance level <0.05.

Ethical considerations

This study has been approved by ethical committee of Isfahan University of Medical Sciences with the code of 393309 and all the subjects were asked to fill the consent forms and the project was explained completely for them before their participation.

Results

In this study, 72 patients were divided into two groups of 36. In each group, 18 men and 18 women participated, and after sample loss, 32 and 33 subjects remained in the intervention group and control group, respectively. The comparison of the demographic characteristics is shown in Table 1. Based on the results of statistical tests, there were no statistically significant differences between the experimental and control groups in terms of age, gender, marital status, and employment status ($p > 0.05$). The two groups were statistically identical in the mentioned characteristics. Table 2 shows the comparison of the elderly general health score in the experimental and control groups before, immediately after, and two months after the intervention. Independent *t*-test showed that the mean general health of the two groups was not statistically different before the intervention ($p > 0.05$) and also immediately after the intervention ($t = 4.65$, $p = 0.00$), and two months after the intervention ($t = 2.97$, $p = 0.004$) the mean (SD) score in the experimental group (immediately: 20.20 (8.80); two months after: 24.10 (8.50)) was significantly higher than the control group (immediately: 31.00 (9.80); two months after: 30.90 (9.80)).

Independent *t*-test showed that the mean score of life satisfaction did not have a significant difference between the two groups ($p > 0.05$) [Table 2]. However, immediately after the intervention ($t = 2.63$, $p = 0.01$) and two months after the intervention ($t = 2.16$, $p = 0.004$), the mean (SD) score of life satisfaction in the experimental

Table 1: Comparison of the demographic characteristics of the participants in the two groups

Variable*		Experimental group Mean (SD)	Control group Mean (SD)	Statistics test, DF**	*p*
Sex	Female	17 (51.50)	15 (46.90)	0.14, 1	0.71†
	Male	16 (48.50)	17 (53.10)		
Age; year mean (SD)		65.9 (5.10)	65.4 (4.20)	0.876, 63	0.65††
Marital Status	Single	2 (6.10)	1 (3.10)	0.16, 2	0.73†††
	Married	23 (69.70)	21 (65.60)		
	Widowed	8 (24.20)	10 (31.20)		
Job	Unemployed and retired	21 (63.60)	22 (68.80)	0.19, 1	0.66†††
	Employed	12 (36.40)	10 (31.20)		
Education	Illiterate	12 (36.40)	13 (40.60)	0.19, 3	0.67†††
	Under Diploma	16 (48.50)	15 (46.90)		
	Diploma	3 (9.10)	3 (9.40)		
	University degree	2 (6.10)	1 (3.10)		

*Qualitative data was shown as *n* (%) and quantitative data was shown as mean (SD). **DF=Degrees of freedom; †The significance level of Fisher's exact test; ††The significance level of Independent sample *t*-test; †††The significance level of Chi-square test

Table 2: Comparison of mean general health and life satisfaction scores before, immediately after, and two months after the intervention

Variables	Experimental group Mean (SD)	Control group Mean (SD)	*t*-test	DF*	*p*
General health					
Before the intervention	32.40 (14.70)	30.80 (10.04)	0.52	63	0.60
Immediately after the intervention	20.20 (8.80)	31.00 (9.80)	4.65	63	0.00
Two months after the intervention	24.10 (8.50)	30.90 (9.80)	2.97	63	0.004
Life satisfaction					
Before the intervention	16.80 (5.80)	17.30 (5.50)	0.39	63	0.67
Immediately after the intervention	20.40 (5.10)	17.03 (5.10)	2.63	63	0.01
Two months after the intervention	19.80 (5.10)	17.10 (5.10)	2.16	63	0.004

Data shown mean (SD); *DF=Degrees of freedom

group (immediately: 20.40 (5.10); two months after: 19.80 (5.10)) was significantly higher than the control group (immediately: 17.03 (5.10); two months after: 17.10 (5.10)). Therefore, it was concluded that the educational intervention was effective in improving public health and life satisfaction among the elderly.

Discussion

The results of this study indicated that there was a significant difference between the subtraction of mean score of public health and life satisfaction of the two groups before, immediately after the intervention, and two months after the intervention. This result indicated the effectiveness of the educational intervention on improving indicators of successful aging.

In line with the present study results, Hedayati *et al*. showed that educational intervention was effective on the impact of stress on quality of life (QOL) and happiness of the elderly in the experimental group and its results before and after the intervention were significantly different.[19]

In the study by Sharifirad *et al*. on the effectiveness of educational intervention based on the PRECEDE model on the stress levels of the elderly, there was a significant difference in the experimental group compared to the control group ($p \leq 0.001$). These findings confirmed the efficiency, effectiveness, and impact of educational programs based on the education model on the prevention and reduction of stress in the elderly.[8] The study by Niknami *et al*. on the health behaviors and life satisfaction of the elderly referring to the association of active retirees, also showed that there was a significant association between health behaviors and life satisfaction in older people ($p = 0.001$). This finding was in agreement with the results of the present study and approved its findings.[13] Kim *et al*. evaluated the effectiveness of health promotion training program on the risk factors of heart disease, health behaviors, and life satisfaction of older women.[20] Their findings were in line with the findings of this study. Heidrich in his review study on 42 studies associated with health behaviors in the elderly showed that training of health-related behaviors lead to behavior changes and promoted life satisfaction in the elderly.[21] The study by Shirbim and Shafee on the effect of stress management training on mental health of students also reported similar results.[22]

Although in this study, stress management and interpersonal skills were not measured, the results and observations of performance skill evaluation during teaching by the researchers showed that with greater domination on stress management skills and improved interpersonal relations, the general health and life satisfaction of the elderly also improved. Stress management skill, is a skill that individuals apply according to their situation, and based on serious and precise evaluation of their feelings. In addition, developing communication skills is a strategy and intervention to address and modify stress. The present study was the first study on the implementation of an educational program on stress management and interpersonal relations of the elderly. The content of the education was provided in three fields of knowledge, attitude, and practice as a comprehensive program for training. It is suggested that the limitations be resolved in future studies. The limited number of the elderly who were able to participate regularly in the education classes and having unique requirements in terms of physical disabilities, mental health problems, and family problems were the most important limitations of the research, and these issues caused communication problems with the elderly. Therefore, extending the time for training and increasing the duration of the intervention are recommended. Another limitation of the study was the duration of the study which was limited to the time needed for a student research. Certainly, a longer follow-up period would be effective for the best results. It is suggested that future studies examine the impact of health-related behavior training programs on the QOL and lifestyle of the elderly. The limitations of our study were due to working with the elders and difficulties in their regular participations in the sessions and their follow up.

Conclusion

Nurses have an important role in changing the patients' behavior, since many health problems are interconnected with the lifestyle of the elderly. Researchers hope that

in collaboration with national health authorities, policy makers, and research centers, they can extensively conduct educational programs and behavioral interventions (stress management and interpersonal relations training) in order to reduce healthcare costs and improve the components of successful aging.

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Conflicts of interest

Nothing to declare.

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