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The effect of training program of health promotion behaviors on geriatric general health components

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Abstract:

BACKGROUND: Increasing in elderly's population and their individual and social problems especially mental health problem in this group need special attention. The aim of this study was evaluation of health promotion behaviors training program efficacy on general health components in elderlies referring to health centers in Isfahan city.

MATERIALS AND METHODS: This study was a tri phasic field trial in 2014 in which 72 elderlies allocated randomly in two case and control groups. Case group participated in 9 training sessions on stress management and interpersonal relationships and the control group participated in 2 sessions with a neutral discussion content. Data collection tools were demographic information questionnaire and general health questionnaire 28. Pretest, posttest, and 2-month follow-up were performed in two groups. Data were analyzed by *t*-test, analysis of variance with repeated measurement, least significant difference *post hoc* test, and SPSS 20 software.

RESULTS: Findings of this study showed that the average of general health score in case and control groups had not significant difference before the intervention ($P > 0.05$). However, the mean difference of general health score after intervention and 2-month follow-up was statistically significant in two groups ($P < 0.001$).

CONCLUSIONS: This study showed that interpersonal relationship and stress management training program are effective on promotion of mental health in elderlies. Hence, the findings of this study can be used in the field of treatment and care of the elderly by other health-care categories.

Keywords:

Geriatric, health promotion behavior, interpersonal relationship, mental health, stress management, training program

Introduction

Decreased birth rates and increased life expectancy have caused the elderly population to grow much faster than the general population.^[1] The world's elderly population is predicted to grow rapidly in all parts of the world.^[2] In the 1385 census in Iran, 5.2% of the population was elderly and is predicted to reach 19% by 1410.^[3]

Aging is a change that has taken place over time, has positive and negative

aspects, and includes the dynamics of biological processes, perception, growth and development, and maturity.^[4] People's health changes with age. Of course, not all of these changes are necessary for the natural aging process, rather, poor living conditions with aging process sometimes lead to a decrease in the general health of the elderly.^[5] Aging problems also affect the mental health of the elderly.^[6] Mental health is a state in which a person is aware of his abilities and can cope with the stresses of his life and also communicate with his community.^[7]

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Today, the words change and stress are synonymous. Changes in technology and interpersonal relationships bring stress to all community members.^[8] Stress is one of the factors affecting the physical and mental health of the elderly. According to social experts, after the youth, the elderly is the most vulnerable to all types of stress.^[9]

Despite all this, we cannot live without stress, but we must learn how to cope with daily stress and adapt our reactions to them to reduce their adverse effects.^[9] Trying to reduce stress is called coping. When coping with stress fails, a person suffers from physical problems and cognitive impairment and behavioral problems are called feelings of anxiety and depression.

Therefore, when people are under stress, they must have the necessary coping skills to be able to reduce its effect. If stress is managed and effective coping skills are provided, the person will be able to cope better with their life needs and challenges.^[10]

Interpersonal relationships, especially in old age, are important factors affecting mental health. Improving interpersonal relationships leads to a reduction in stressful life events,^[11] and a reduction in interpersonal relationships leads to increased stress and mental disorders in the elderly.^[12] Studies show that the elderly in our country do not have a favorable condition in terms of communication skills.^[13]

In a study conducted by Imam Juma *et al.*, they examined the effectiveness of a stress management training program in reducing stress, anxiety, and depression in third-grade high school students and showed that stress management training can be used to better manage stress and health-related problems.^[14] In another study, Abbasian *et al.* examined stress management training on reducing stress and depressive symptoms in depressed women and showed that this method can play an important role in reducing stress and depression and improving social adaptability.^[15] Rentala *et al.* reviewed the Stress Management Training Program on Academic Stress and Well Being in Indian Adolescents and showed that this method can be effective in this regard.^[16]

Some studies suggest a positive effect of stress management training or interpersonal relationships on mental health; however, despite the great importance of stress management training and interpersonal relationships at the same time in the mental health of the elderly, unfortunately, this issue has not been addressed in Iran and there are no statistics and evidence in this regard.

Moving in the path of successful aging needs to design and develop educational programs. To the best of

our knowledge, limited studies have been evaluated components of general health in the elderly through a similar intervention with us.

Therefore, this study was designed to evaluate the effectiveness of a training program on health-promoting behaviors on the general health components of the elderly.

Materials and Methods

Study design and setting

The study was a three-stage field trial of pretest, posttest, two-group with two case and control groups.

Study participants and sampling

The study population included the elderly (60–75 years old) with records in health centers of Isfahan. This study was conducted in 2014. For sampling, one area was randomly selected among the districts of Isfahan city and from that area, two health centers that were the same in terms of location and living conditions of the patients were selected and randomly assigned to two case and control groups. By writing the names of the two centers on a piece of paper and randomly placing the first name that came out of the bag to select the control group and the other name to select the case group, then in the second step, sampling was performed.

The sample size was 36 people in each group and a total of 72 people were determined. Thus, from the case number of people born in 1317–1332, 72 elderly people were randomly selected from both centers.

After preparing the list containing their names and telephone numbers, the inclusion criteria were checked by phone and if desired, they were invited and written informed consent was obtained. The two groups were matched in terms of age, sex, and demographic characteristics. Thus, 18 females and 18 males were included in a total of 36 individuals in each group. At the end of the study, 4 members of the case group and 3 members of the control group were reduced [Figure 1].

Inclusion criteria included

Age 60–75 years, interest in participating in the study, having the ability to learn and be fully familiar with the Persian language. Exclusion criteria included mental retardation, Alzheimer disease, deafness, blindness, impaired consciousness, and active mental illness.

Data collection tool and technique

The data collection tool in this study included a questionnaire. The General Health Questionnaire (GHQ)-28 is a “screening questionnaire” based on the self-reporting method that is used in the clinical set to

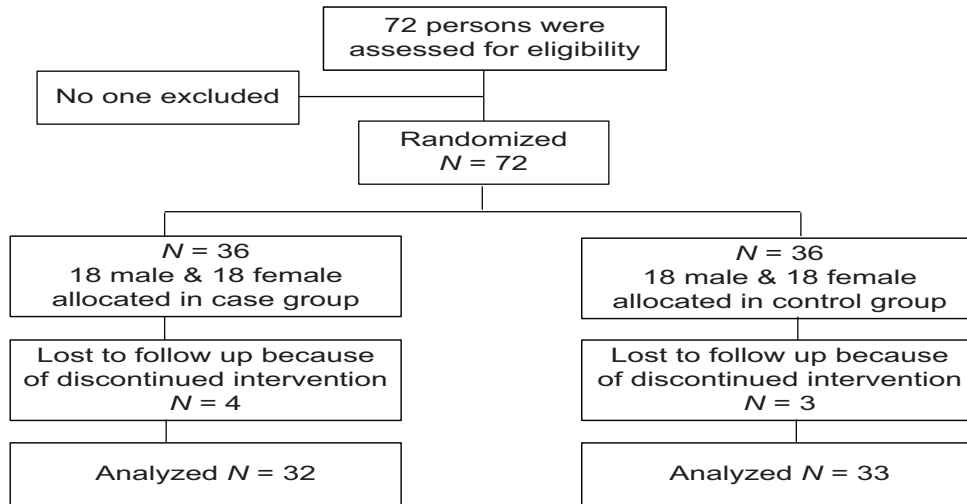


Figure 1: Consort flow diagram of patient's selection and allocation

track those who have a mental disorder.^[17] The 28-item form of the public health questionnaire has the advantage of being designed for all members of the community. This questionnaire as a screening tool can determine the possibility of a mental disorder in the individual. This questionnaire has 4 subscales: subscale of physical symptoms, anxiety and insomnia, social dysfunction, and depression. The average duration of the test is about 10–12 min. The 28-item GHQ has four-choice questions: better than usual, same as usual, worse than usual, and much worse than usual. There are two scoring methods for GHQs – one is the traditional method in which the options are scored as (1-1-0-0) and the maximum score of the participant in the questionnaire will be 28. Another scoring method is the Likert scoring method, in which the options are scored as -3-2-1-0. The maximum score of the participant with this scoring method in the mentioned questionnaire will be equal to 84. To evaluate its validity, a study was conducted by Noorbala *et al.* The correlation rate of $r = 0.85$ was obtained which is significant at 99% confidence level and shows the validity and reliability of the questionnaire in Iran.^[17]

Before holding the training sessions, the researcher prepared the contents of the sessions based on behavioral goals in three areas (emotional, cognitive, and motor-psychological). The educational content of the sessions was based on evidence (reviewing texts and studies in the field of stress management training^[18] and interpersonal relationships^[19,20] Interviews with professors and specialists in health promotion and psychological sciences, as well as interviews with a number of seniors). Finally, the educational content was modified and prepared according to the conditions of the samples. The texts were prepared in the form of pamphlets, educational booklets, and CDs and were presented by the researcher with lectures, questions and answers, and group discussions and the presentation of

objective examples (for example, inhaling soothing scents and listening to natural sounds).

The educational intervention was performed in 9 sessions at intervals of 1 week and each session lasted for 60–90 min.

The meetings were held in groups of 18 people so that men and women participated in the training sessions separately. The elderly sat in a U-shape in the classroom for more interaction.

In each session, 1st week assignments were reviewed and then new topics were discussed. At the end of the session, the contents, summary, and homework of the next session were presented. The topics discussed in successive sessions included: familiarity with stress, its symptoms and effects, stressors, the role of nutrition, aromatherapy, massage in reducing stress, familiarity with relaxation, breathing exercises, appropriate stretching movements to reduce stress and performing these behaviors as well as the role and importance of interpersonal relationships and its role in promoting the level of health, the role and importance of effective listening and how to do it and its role in interpersonal communication, barriers to communication, familiarity with the elements of communication in the family, the role and importance of effective communication.

To increase the awareness of the elderly, lectures and question and answer meetings were provided for them.

To change the attitude of the elderly, group discussions about stress and positive experiences after deep breathing and relaxation were predicted.

Deep breathing and relaxation skills were taught using a practical demonstration by research psychologist

instructor and the elderly performed relaxation with the help of an instructor.

In addition, the elderly expressed their positive experiences at the beginning of each session to provide experience and reinforcement for others and to allow them to repeat skills at home. The control group participated in two group sessions with neutral discussion and due to the fact that the case and control groups were selected from two separate centers, the two groups did not communicate with each other and the possible transfer of training to the control group did not take place.

Twenty-eight item GHQs were used to evaluate the effects of the program. In both case and control groups, a questionnaire was completed three times, at the beginning of the study (before the intervention), immediately after the intervention, and then, 2 months after the intervention.

Data were entered into SPSS 20 software (SPSS Inc., Chicago, IL, U.S.A.). Independent *t*-test and analysis of variance with repeated observations were used to analyze the data.

Ethical considerations

Before participating in the study, the objectives of the study were explained to all participants, and informed written consent was obtained by the researcher. The research units were also assured that the information received would remain confidential. This study has been approved by the ethics committee of Isfahan University of Medical Sciences with the code 393309. This study has been registered with the code IRCT2015112810297N4 in the Clinical Trial Registration Center of Iran.

Results

In this study, 72 people participated in two groups of 36 people. The sample size remained 32 people in the case group and 33 people in the control group. The comparison of their demographic characteristics is given in Table 1.

Table 1 shows comparison of frequency distribution, sex, age, marital status, occupation, education of the studied participants in the case and control groups.

Table 2 shows comparison of the mean general health score of the elderly in the case and control groups before, immediately and 2 months after the intervention.

Independent *t*-test showed that before the intervention, the mean scores of physical symptoms, anxiety and insomnia, social dysfunction were not significantly different between the two groups ($P > 0.001$).

But immediately and 2 months later, the mean score of symptoms of physical dimensions, anxiety and insomnia, social dysfunction in the experimental group was significantly lower than the control group ($P < 0.001$).

However, the mean score of depression in the two groups was not significantly different. Analysis of variance with repeated observations showed that in the control group, the mean scores of physical symptoms, anxiety and insomnia, social dysfunction, and depression were not significantly different between the two times ($P > 0.05$).

However, in the case group, the mean score of physical symptoms and anxiety and insomnia of social dysfunction was different at three times ($P < 0.001$), and the mean score of depression at three times was not significantly different.

Discussion

Education to promote mental health can be considered one of the most effective methods to improve the health of society and prevent psychological trauma.

In fact, human societies cannot survive without maintaining health and hygiene because disease and disability. It will disrupt human relationships and thus deprive human beings of a sense of security and solidarity. The present study investigated the effect of stress management and interpersonal relationships training program on the general health of the elderly.

The educational intervention used in the above study is an integrated and modified method from previous studies in the field of stress management and interpersonal relationships.

The results of this study showed that the mean scores of physical symptoms, anxiety and insomnia, and social dysfunction in the elderly were significantly different between the two case and control groups before, immediately after the intervention, and 2 months after the intervention.

However, there was no significant difference in the mean score of depression between the case and control groups before, immediately, and 2 months after the intervention.

This may indicate that the possible mechanism of depression in the elderly is different from other symptoms. For example, the pattern of changes in chemical neurotransmitters in the brain that leads to depression in the elderly (including serotonin, norepinephrine, and dopamine) may be different from other symptoms in the elderly.

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

Variable*	Mean±SD		Statistics test (df)	P
	Experimental group	Control group		
Sex				
Female	17±51.50	15±46.90	0.14 (1)	0.71 [†]
Male	16±48.50	17±53.10		
Age (years), 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 were shown as n (%) and quantitative data were shown as mean±SD, [†]The significance level of Fisher's exact test, ^{**}The significance level of Independent sample t-test, ^{***}The significance level of Chi-square test. DF=Degrees of freedom, SD=Standard deviation

Table 2: Comparison of the mean general health score of the elderly in the case and control groups before, immediately, and 2 months after the intervention

General health components	Mean±SD		P
	Case group	Control group	
Physical symptoms			
Before	9.1±4.2	8.8±4.2	0.86
Immediately after	3.3±2.9	8.9±4.3	<0.001
2 months later	5±3	8.8±4.3	<0.001
P	<0.0001	0.902	
Anxiety and insomnia			
Before	8.5±5.3	7.9±3.7	0.59
Immediately after	4.2±2.6	8±3.7	<0.001
2 months later	4.9±2.6	7.9±3.7	<0.001
P	<0.0001	0.68	
Social dysfunction			
Before	11.7±3.2	11.75±2.4	0.97
Immediately after	8.8±2.5	11.8±2.3	<0.001
2 months later	9.7±2	11.84±2.4	<0.001
P	<0.001	0.97	
Depression			
Before	3.3±2.4	2.3±1.6	0.25
Immediately after	2.2±0.7	2.28±1.4	0.04
2 months later	1.15±0.5	2.34±1.5	0.02
P	0.002	0.68	

SD=Standard deviation

However, the assessment of this issue requires further research in this area. On the other hand, this result could emphasize the importance of biological therapies in depression in the elderly.

In a study conducted by Tomaras *et al.* entitled "Mental health promotion training and its impact on participants and achieving mental health," the results showed that

training health-related behaviors had a positive effect on increasing the general health of the target group.^[21]

Furthermore, the study of Askari *et al.* in 2013 with the aim of investigating the effect of the educational program showed that the educational intervention has led to an increase in the general health of the target group.

One of the important parts of the educational program of this study was to evaluate the effect of interpersonal relations education, which is consistent with the educational program of the present study.

A study that Moghadam Dizejherik *et al.* examined the effect of stress management training on mental health and life satisfaction and sleep quality of Tabriz Petrochemical Company employees showed that this method is effective in these three areas.^[10]

This finding is consistent with the results of Hedayati research^[22] and Sharifirad *et al.*^[23]

The findings of these researchers also indicate the effect of education on public health. Of course, there are some studies that contradict the results of the present study. Haji *et al.*^[24] showed that stress management training had no effect on the general health of the target group, which could be due to differences in age, target group, and training in the two studies.

Teaching health-promoting behaviors seems to be a process that bridges the gap between health information and health behaviors and motivates the individual to put that information into action, thereby avoiding harmful behaviors and replacing beneficial habits and behaviors.

Considering that the health-related behaviors program comprehensively covers all areas of education, it can be concluded that the important factors for the effectiveness of this intervention include strengthening awareness, motivation, skills, and interest in improving the general health status of the elderly. Since researches have shown that the use of health-related behaviors training program for the elderly is effective, cost-effective, efficient, scientifically feasible and has the desired acceptance by the elderly, so the findings of the present study can be used for education of clients.

Furthermore, the findings of this study can be used in the field of treatment and care of the elderly by other health-care categories.

It is hoped that with the cooperation of the country's health officials, planners, and research centers, intervention-behavioral training programs will be implemented on a large scale to reduce the incidence of disorders in the health of the elderly.

Limitation and recommendation

The first limitation of this study is the small sample size, which limits the generalizability of the results. Furthermore, this study was not able to evaluate the effectiveness of stress management methods and interpersonal relationships separately. It is suggested that further studies should be performed on a larger sample size with a longer follow-up period.

Conclusions

Finally, based on the findings of the present study, the implementation of a training program on health-related behaviors is effective in promoting general health and life satisfaction of the elderly (successful aging) and is a useful method in this field. The findings of this study can be used in future research, and more accurate and comprehensive results can be achieved by removing possible limitations.

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Conflicts of interest

There are no conflicts of interest.

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