

Determining the Effect of Group Education on Improving the Lifestyle of the Elderly

Abstract

Considering the increase in the elderly population and the importance of a health-promoting lifestyle in preventing diseases of old age, the present study was designed and implemented to determine the effect of teaching lifestyle dimensions in a group manner on improving the lifestyle of the elderly. This research is a field trial study conducted on 100 elderly people in 2016. The samples were divided into two groups of 50 people: group education and control. The intervention group received educational instructions on the proper lifestyle for the elderly, while the control group received no educational content. The tool for collecting information was the lifestyle questionnaire of the elderly. The questionnaires were completed before the intervention, one month, two months, and three months after the intervention, and the resulting data were analyzed using SPSS v. 21.

The findings indicated that the mean score for lifestyle in the experimental group increased significantly in the post-test phase compared to the control group ($P < 0.05$). The results of the covariance analysis indicated that the group education on lifestyle dimensions significantly increased the scores representing the lifestyle of the elderly in the intervention group during the post-test phase ($P < 0.001$). The results of the study suggested that the mean score of the lifestyle of the elderly has increased significantly following the intervention. If implemented with proper organization, group education on the lifestyle of the elderly can be an effective method in improving and promoting the lifestyle and reducing the risk factors of the elderly.

Keywords: group education, lifestyle, elderly, education

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Introduction

The ever-increasing population of the elderly in the modern era is a critical challenge that has left the World Health Organization with no choice but to sound the alarm in this regard (1). The reported worldwide statistics point out the depth, severity, and importance of these challenges, in that not only are there 600 million elderly people over 60 years old in the world but also this figure is estimated to double by 2025 and even hit the two-billions mark in 2050. (2) studies in Iran have revealed that, by 2050, people aged 60 years and older will shape 31% of the population, amassing approximately 29 million, while people over 65 will shape 22% of the population (i.e., approximately 20 million people). People over 80 comprise 3.8 percent of the national population (3.5 million) (3).

Older people are often faced with various health-related complications and are also the primary consumers of various services. A significant share of the elderly requires rehabilitation services for motor assistance, hearing, and mental health, all of which impose an additional economic burden on the healthcare system (4).

Since the elderly population of any given society is considered a vulnerable class, it faces a series of age-specific problems, many of which are rightfully perceived as avertible by modifying the lifestyle (5). A healthy lifestyle can be broadly defined as a way of life that provides, maintains, and improves the level of health and well-being of the person adhering to it (6). A healthy lifestyle for an older adult includes healthy

nutrition, physical activity, exercise, personal hygiene, proper sleep, oral and dental hygiene, smoking restriction, mental health, and accident prevention (7).

Although healthy lifestyles should be sought after from birth, it is never too late to change the way of life and establish the proper habits that would eventually lead to a healthy life (8). As such, trying to institute a healthy lifestyle is paramount to preventing diseases, improving the quality of life, increasing life expectancy, and improving physical and mental health (9). The World Health Organization reports that nearly 60% of people's quality of life and health can be attributed to their lifestyle and behavior (8). The most perceivably effective way to alleviate health-related complications and hence realize grace is to adopt a healthy lifestyle voluntarily and, for better results, right before this period (10). Improving lifestyle has long been a focus of health education and health promotion activities, the ultimate goal of which is to improve people's behaviors on the path to a healthy lifestyle. The American Heart Association states that the education of the general public to alter their behavior and lifestyle is one of the most fundamental principles of disease prevention (11). Improving the lifestyle of the elderly is a challenge necessitating intense follow-up, care, and training of the health team, especially nurses. Among the more efficient methods for enhancing health indices and preparing society for the aging process are interventions aimed at promoting knowledge and awareness, which, in turn, can improve healthy behaviors and discard the certain lifestyles that had priorly put them at risk (12).

Extensive studies have been performed on the effectiveness of different teaching methods, leading to a broad range of options among the teaching methods (13). However, most authors argue that group-based and interactive methods are more efficient than the non-interactive or teacher-oriented ones for the elderly. The former is known to not only enhance their knowledge and skill in adopting healthy behaviors but also the elderly are provided with the opportunity of forming friendship networks between themselves and similar groups, potentially to more desirable outcomes (14). Among the educational methods, group education has been touted to be among the more efficient strategies for health-related issues. It is also established to be the most optimal method for improving communication skills, identifying and solving problems, creating independence, and making decisions (13). Group education is a simple and low-cost method that both requires and causes higher levels of reactivity from participants, leading to better insight and less resistance to behavioral alterations (15).

Nevertheless, this method is plagued with its drawback, the more pronounced of which is a lack of human resources, the challenges of gathering people in one place, and inciting the cooperation of people during the meetings (16). Nevertheless, adopting adaptable, low-cost, and effective educational methods to change the lifestyle and choosing a suitable social site for reaching out to people in society requires research and examination (17). Considering the discussion above, the ever-increasing aging population and the subsequent increase in diseases and disabilities caused, adopting the necessary measures to prevent, reduce, or delay the onset of disabilities seems highly relevant (18). Since it is rightfully perceived that the very first step to improving the lives of the elderly is to educate and raise awareness, alter their attitude towards lifestyle, and provide correct health solutions, the purpose of the current study was to determine the effect of teaching lifestyle dimensions using group sessions on improving the lifestyle of the elderly in Yasouj city.

Methodology

The current study is an experimental clinical trial that employs a pre-test/post-test design on 100 older adults in Yasouj city in Iran in 2016. Since the authors failed to find a comprehensive study on the lifestyle of the elderly, 15 eligible individuals were asked to complete a lifestyle questionnaire in a pilot study, having their mean lifestyle score calculated in the process. The relevant formula for the sample size was applied to parameters of the volume of the research population, 95% confidence, 80% test capacity, and 5% error rate, predicting the rate of a minimum difference of 20% between the groups, and 20% possible loss, the results of which revealed that an estimated 50 people were required for each group, taking into account. After receiving the code of ethics and permission to

implement the project, the main researcher received a letter of introduction from the research vice-chancellor of the university to visit the rural health centers, and 200 cases were selected during the latter. The research participants and their families in each village were invited to the village health center by the responsible paramedic, and after describing the objectives of the research, informed written consent was obtained from them. The questionnaire was completed by the elderly or the researcher in case the participant was illiterate. As such, 100 older adults who met the following inclusion criteria participated in the study: aged 60 to 75 years, obtaining unfavorable (42 to 98) or average (99 to 155) lifestyle scores determined by the lifestyle questionnaire, absence of incapacitating physical and mental diseases. The research exclusion criteria were suffering from physical and psychological diseases during the study, missing more than one session in educational interventions, and unwillingness to cooperate.

The main tool for collecting data in this study was the standard questionnaire on the elderly lifestyle developed by Eshaghi et al. (2008) in Iran; Cronbach's alpha coefficient was calculated to be 0.76 (12). The inventory consists of two parts: the first part addresses demographic information such as gender, age, height, weight, marital status, and education, while the second part consists of 46 items addressing nutrition, physical activity, mental health, personal health, oral and dental health, sleeping quality, sexual hygiene, accident prevention, and smoking restriction. Items are scored using a 5-point Likert scale, with 1 representing the most unbearable condition and five denoting the highest quality in terms of lifestyle. The lowest score obtained through the questionnaire was 42 and the highest was 211. A score of 42-98 indicated an unfavorable lifestyle, a score of 99-155 indicated an average lifestyle, and a score of 156-211 indicated a favorable lifestyle (12). The samples of group education were divided into five groups of 10 people, following which they were informed about the goals and process of the intervention. The control group received no information. The healthy lifestyle program for the elderly was presented to those above five educational groups in local health centers during eight one-hour, two days week training sessions by the researcher (Master's student of community health nurse) based on the sub-scales of the questionnaire. Group discussion and Q&A methods were used during sessions when the elderly had a basic knowledge of the subject matter. At the same time, the instructor lectured the educational groups on topics the majority of the elderly were perceived to lack information. The control group did not receive any interventional content from the researchers. The questionnaires were completed three times in the follow-up, one, two, and three months after the intervention by the elderly and by the researcher for illiterate participants. The questionnaires were coded and entered into

the SPSS software program by a research assistant who was not a member of the research team and had no knowledge of the objectives and interventions of the research. After collecting the data and coding the questionnaires, the data were analyzed at two levels of descriptive statistics (distribution and frequency percentage) and inferential (Kolmogorov-Smirnov test, independent t-test, paired t-test and one-way ANOVA) in SPSS v. 21. Necessary permissions about ethical considerations were obtained from Yasouj University of Medical Sciences beforehand. Also, informed written consent was obtained from the elderly, and they were assured that the data obtained from the study would be confidential and hence not be used in similar studies.

Findings

Table 1: Distribution of the mean and standard deviation of the quantitative variables of the participants before the intervention

	Group education	Control	P-value*
	Mean ± SD	Mean ± SD	
Age	4.76 ± 68.22	5.01 ± 68.38	0.574
Weight	9.52 ± 79.32	8.32 ± 76.10	0.192
BMI	2.64 ± 28.60	3.50 ± 25.60	0.001
* One-way ANOVA statistical test ** Compared to the control group, p<0.001 + compared to the group education group, p=0.051 ++ Compared to the control group, p = 0.068			

Out of 100 older adults participating in this research (50 people in group education and 50 in the control group), all people remained until the end of the study, and their information was analyzed. In the current study, the average age of the research participants was 67.9 years (min. 60 and max. 75). Forty-six percent of the research participants were women, and 54 percent were men. Moreover, 60 percent of the samples were illiterate, and 40 percent were literate. There was no significant difference in gender, average age, education, marital status, living with a spouse, and living with family in the two groups. Nevertheless, the one-way ANOVA statistical test revealed a significant difference between the two groups, but these differences were not significant at the p<0.05 level (Table 1).

Table 2: Intra-group comparison of mean, standard deviation, and median score of the lifestyle of the elderly in intervention and control groups

	Mean ± SD				P-value*
	Before intervention	One month after the intervention	Two months after the intervention	Three months after the intervention	
Intervention group (group education)	78.26 ± 10.32 75**	173.18 ± 17.97 176**	184.64 ± 5.25 186**	196.04 ± 5.00 197**	≤ 0.001
Control group	60.62 ± 4.77 60**	60.62 ± 4.77 60**	60.32 ± 4.58 60**	59.30 ± 4.24 60**	0.42
*ANOVA and Kruskal-Walis test **Statistically significant difference at the level of p<0.001 with other periods					

According to Table 2, the mean and median of total scores of the lifestyle in the intervention group (group education) have been significantly increased one, two, and three months after the intervention compared to the pre-intervention period (P<0.001). However, there is no significant difference in the mean and median of total scores of the lifestyle between the pre-intervention and post-intervention periods in the control group. Furthermore, the comparison of post-intervention periods shows an increase in the mean and median of total scores of the lifestyle in the intervention group (group education), such that the difference between one period and the

previous period is statistically significant (P<0.001). The score of the lifestyle in the intervention group (group education) has been improved from “improper and moderate” in the pre-intervention period to “appropriate” after the intervention. However, the score of the lifestyle in the control group has not been improved going from the pre-intervention to the post-intervention period. In general, the mean lifestyle score in the intervention group (group education) has increased by 118 points, while that in the control group has decreased by 1.32 points and the median of this score has remained invariable.

Table 3: Inter-group comparison of the mean and standard deviation of the lifestyle score in two groups (before, one month after, two months after, and three months after the intervention)

	Mean ± SD		P-value*
	Intervention group (group education)	Control group	
Before intervention	78.26 ± 10.32	60.62 ± 4.77	≤ 0.001
One month after the intervention	173.18 ± 17.97	60.62 ± 4.77	≤ 0.001
Two months after the intervention	184.64 ± 5.25	60.32 ± 4.58	≤ 0.001
Three months after the intervention	196.04 ± 5.00	59.30 ± 4.24	≤ 0.001
*ANOVA and Kruskal-Walis test			
**Statistically significant difference at the level of p<0.001 with the control group			

Findings from Table 3 show that there is a statistically significant difference between the average scores of the lifestyle of the elderly during the entire research period (that is, before and three months after the intervention) (p<0.001).

Before the intervention, Tukey's statistical test showed a significant difference between the average score of lifestyle for

the intervention group (78.26 ± 10.32) and the control 60.62 ± 4.77 (P<0.001). After the intervention, the average lifestyle score changed to 196.04±5.00 and 59.30±4.24, a statistically significant difference (P<0.05).

Table 4: Changes in the dimensions of lifestyle among control and intervention group

Intervention group	Mean ± SD				P-value
	Before intervention	One month after the intervention	Two months after the intervention	Three months after the intervention	
Nutrition	18.94 ± 3.66	47.02 ± 3.63	48.44 ± 3.29	50.16 ± 3.23	≤ 0.001
Physical training	4.04 ± 0.90	12.06 ± 0.81	12.74 ± 0.52	12.98 ± 0.14	≤ 0.001
Mental health	21.58 ± 3.59	46.52 ± 3.32	49.40 ± 3.27	51.92 ± 3.15	≤ 0.001
Personal hygiene	10.60 ± 2.98	25.40 ± 1.57	26.60 ± 1.27	27.70 ± 1.16	≤ 0.001
Smoking	8.20 ± 3.8	16.60 ± 2.07	18.20 ± 1.75	19.48 ± 1.09	≤ 0.001
Sexual hygiene	3.42 ± 0.78	11.08 ± 1.25	11.80 ± 1.06	13.50 ± 1.36	≤ 0.001
Sleep	1.28 ± 0.60	4.18 ± 0.43	4.65 ± 0.50	4.78 ± 0.41	≤ 0.001
Accident prevention	4.00 ± 0.85	8.04 ± 0.49	8.44 ± 0.57	8.72 ± 0.45	≤ 0.001
Oral and dental hygiene	4.66 ± 1.52	7.48 ± 2.31	7.86 ± 2.34	8.02 ± 2.63	≤ 0.001
Control group	Before intervention	One month after the intervention	Two months after the intervention	Three months after the intervention	P-value
Nutrition	15.60 ± 1.19	15.60 ± 1.95	15.54 ± 1.19	15.12 ± 1.20	≤ 0.001

Intervention group	Mean ± SD				P-value
	Before intervention	One month after the intervention	Two months after the intervention	Three months after the intervention	
Physical training	3.90 ± 1.88	3.66 ± 0.71	3.64 ± 0.72	3.62 ± 0.72	≤ 0.001
Mental health	14.26 ± 1.97	14.44 ± 1.28	14.32 ± 1.26	13.98 ± 1.15	≤ 0.001
Personal hygiene	7.68 ± 1.43	7.54 ± 1.11	7.44 ± 0.95	7.22 ± 0.88	≤ 0.001
Smoking	4.86 ± 0.88	4.84 ± 0.86	4.78 ± 0.81	4.66 ± 0.74	≤ 0.001
Sexual hygiene	4.04 ± 1.04	4.02 ± 1.04	4.00 ± 1.03	3.88 ± 0.91	≤ 0.001
Sleep	1.24 ± 0.47	1.22 ± 0.41	1.22 ± 0.41	1.16 ± 0.37	≤ 0.001
Accident prevention	3.50 ± 0.58	3.52 ± 0.58	3.52 ± 0.58	3.52 ± 0.58	≤ 0.001
Oral and dental hygiene	3.50 ± 0.77	3.10 ± 0.76	3.10 ± 0.76	3.04 ± 0.72	≤ 0.001

As can be seen in Table 4, there is a statistically significant difference in the mean scores of nutrition, physical training, mental health, personal hygiene, oral and dental hygiene, sleeping hygiene, sexual hygiene, accident prevention, and limitation on smoking between the post-intervention periods (i.e., one, two, and three months after the intervention) in both groups ($p < 0.001$). Furthermore, the mean scores of the lifestyle dimensions in the intervention group are significantly higher than those in the control groups in all three post-intervention periods ($p < 0.001$). However, the mean scores of nutrition, physical training, mental health, personal hygiene, oral and dental hygiene, sleeping hygiene, sexual hygiene, accident prevention, and limitation on smoking in the control group have not been significantly altered in the post-intervention period compared to before the intervention.

Discussion and conclusion

The results of the current study revealed that the average score of the lifestyle in the intervention group increased significantly compared to the control group ($p < 0.001$). Moreover, the average lifestyle score in the group education group increased by about 118 points after three months of the intervention. Hence, the attributes describing their quality of life changed from unfavorable to favorable average levels. Also, a statistically significant difference was observed between the mean lifestyle score of the group education group and the control group. However, this score did not change significantly in the control group after the intervention. As such, one can conclude that educating a healthy lifestyle that aims to promote awareness and attitude can enhance behavioral performance.

Burke et al. (2007) reported a significant increase in the nutrition and physical activity dimension of the elderly after the group education intervention compared to before the intervention and the control group (19), which is highly consistent with the findings of the current study. Nevertheless, Burke et al. (2007) only examined the dimensions of nutrition and physical activity, while the intervention considered for the current study covered all dimensions of lifestyle.

Consistent with the findings of the current study, Nasrabadi et al. (2010) reported the effect of group education on correcting the lifestyle of patients with ischemic heart diseases, as the lifestyle status of the group increased after the training (20). Although the findings of this research align with those of the current study, there are differences in the number of training sessions and lifestyle assessment tools between the two studies. As such, Nasrabadi et al. (2010) implemented four training sessions and measured lifestyle changes 1 month after the training. Nevertheless, evidence has shown that behavioral interventions often exhibit improvements in the medium term; hence the authors of the current study evaluated lifestyle scores consecutively for three months. In contrast, Fredrick et al. (2005) showed that group education does not affect the nutrition and physical activity of people with diabetes (21). The current study showed, however, that group education improves the dimensions of nutrition and physical activity of the elderly, which can be attributed to the fact that diabetes patients are required to adhere to strict diets that hinders their capacity to alter lifestyle-related functions, hence their non-compliance with the training. The findings of this study are in line with Farhadi et al. (2013), who examined the impact of the

healthy lifestyle education program on the quality of life of the elderly (5).

Furthermore, Grimmer et al. (2011) reported similar results in that physical activity has a positive relationship with the quality of life in the elderly, while the relationship between smoking and quality of life was shown to be negative (22). Rugbeer et al. (2017) evidenced that the mental and social health of the elderly increases through the group-training program (23). Sabbaghzadeh et al. (2021) showed that lifestyle education improves the lifestyle of the elderly (24). Overall, findings indicate that, among other educational methods, group education is an effective strategy for health promotion. Björklund et al. (2013) showed no significant difference in the mean stress and anxiety scores of the mental health of pregnant women after group education in the intervention and control groups (25). Studies showed that for mental health, particularly stress, not only the participant but also friends, family members, and healthcare workers play an essential role. Previous evidence from the literature suggested that educational intervention for the elderly can promote their quality of life. Since one of the perceived goals of the health officials is to improve the quality of health services, they can implement various educational programs for the health center staff to familiarize them with different methods of training the elderly, including the group education method. Since group intervention is simple to implement and cost-effective, it can be considered by health workers for promoting a healthy lifestyle.

Educating the elderly on health care and health-improvement habits, which are mainly a source of concern for themselves, is of utmost significance (5). As such, they need to be informed about all conditions and situations that threaten their health and the elements that can help them improve and thus maintain their health. Prospective studies are advised to examine the effect of different educational methods on the lifestyle of the elderly in a more extended period of follow-up, that is, 6-12 months after the intervention

Conclusion

The results of the current research indicated that educating, in groups, the elderly on the dimensions of the lifestyle of the elderly leads to a significant improvement in their lifestyle parameters. As such, it can be concluded from research findings that group training on the dimensions of lifestyle to the elderly has an impact on the lifestyle of the elderly, and considering the importance of a healthy lifestyle in preventing the complications of old age, and coupled with its perceived ease of implementation, cost-effectivity and minimum human resource requirements, adopting the group education method can pave the way to the healthy lifestyle of the elderly and hence their overall health. Therefore, it seems necessary for

health center officials to include lifestyle group training in the program routines of their institution.

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Ethical Permission: Prior to the investigations, the project won the approval of the Ethics Committee of the research sector of Yasuj University of Medical Sciences as research no. 93.12.25.02. Moreover, informed consent of the samples was obtained and all of the moral considerations (including confidentiality of information) were taken into account. The samples were not charged. Registration number of clinical trials was IRCT2015070220401N4.

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