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DOI: 10.4103/jehp.jehp_1569_21

# Investigating the effect of teach-back method on improving the lifestyle of health ambassadors in Urmia

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Received: 23-10-2021  
Accepted: 28-12-2021  
Published: 31-10-2022

## Abstract:

**BACKGROUND:** Adopting a healthy lifestyle is necessary to maintain and promote health. The aim of this study was to determine the effect of teach-back method on improving the lifestyle of health ambassadors in Urmia.

**MATERIALS AND METHODS:** In this quasi-experimental study, 200 health ambassadors were participated. The research sample was obtained using simple random sampling method. Data collection tool was a questionnaire including demographic characteristics and lifestyle standard. The educational intervention was performed in 4 sessions of 45 min based on the teach-back method. Data were collected through a lifestyle questionnaire before and 3 months after the educational intervention. Then, the data were analyzed by mean and standard deviation, independent *t*-test, paired *t*-test, and Chi-square test through SPSS 19.

**RESULTS:** The results showed that 24% of the control group and 21% of the intervention group had a good lifestyle before the educational intervention. After the educational intervention 27% of the control group and 54% of the intervention group were in good lifestyle. The results also showed that the mean score of total lifestyle and all its dimensions in the intervention group increased compared to the control group after the educational intervention and the difference between the mean score of total lifestyle and all its dimensions in the intervention group after the intervention was significant ( $P < 0.05$ ).

**CONCLUSIONS:** Among health ambassadors, teach-back communication is more effective in improving the lifestyle. Therefore, it is suggested that this method must be used in designing training programs for health ambassadors.

## Keywords:

Health ambassador, lifestyle, teach-back communication

## Introduction

Health is not just a goal; rather, it is a source of daily life to achieve other goals that ultimately lead to an increased sense of well-being and self-discovery.<sup>[1]</sup> Lifestyle is a way of life that provides, maintains, and promotes the level of health of individuals, so lifestyle plays an important role in the aggravation or persistence of diseases.<sup>[2]</sup> However,

according to the definition of health, which is not only the prevention of disease, a healthy lifestyle also applies to physical, mental, and social well-being,<sup>[3]</sup> which is formed in a specific geographical, economic, political, cultural, and religious context.<sup>[2]</sup> Lifestyle variables that affected health can be classified into the following categories: diet, exercise, sleep, sexual behavior, drug and substance use, use of modern technologies, recreation, study, alcohol consumption, and smoking.<sup>[2-7]</sup> It is said that

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**How to cite this article:** Jadgal MS, Movahed E, Zareipour M, Amirzehni J, Samieizadehtoosi T, Ghorbani F, *et al.* Investigating the effect of teach-back method on improving the lifestyle of health ambassadors in Urmia. *J Edu Health Promot* 2022;11:328.

many of diseases that affected the Western world are caused by lifestyle factors.<sup>[3]</sup> But, despite the importance of a healthy lifestyle, studies in Europe have shown that only 5.8% of adults report a healthy lifestyle<sup>[4]</sup> in developing countries because the intervention is a bigger problem, even in developed countries where well-funded health-care systems also are not always easy, as it requires the coordinated efforts of government, community, and financial resources. Behavioral change to improve lifestyle is another challenge that requires a lot of effort, motivation and time.<sup>[5]</sup> In Iran, during the studies that examined the lifestyle of individuals, it was found that in general, individuals were in a relatively moderate situation in terms of lifestyle.<sup>[6,7]</sup> For example, in one study, it was found that only 26.5% of the subjects were lightweight. They have had a health-oriented life at the desired level.<sup>[6]</sup> And, healthy lifestyles need to be managed by health-care providers. It seems to be several challenges for this management facing health-care providers.

One of the well-known communication gaps in health care is that health-care providers may overestimate their ability to communicate.<sup>[8,9]</sup> A survey-based study found that although 75% of physicians believed they had a good relationship with their patient, only 21% of the patients reported a satisfactory relationship. The results of another study showed that while 77% of physicians believed that patients were aware of their diagnosis, only 55% of the patients remembered the necessary items.<sup>[10]</sup> Therefore, one of the most important challenges in health-care communication is the ability of clients to recall the information provided to them correctly. Studies have shown that patients forget 40% to 80% of the information almost immediately after hearing. Also, half of the memorized information is incorrect.<sup>[11]</sup> According to the results of the studies, it seems that education based on teach-back method can have a good performance in this field and provide a suitable platform for clients. The feedback-based approach is an evidence-based approach that assesses the learner's understanding by asking them questions in which patients are asked to express in their own language what they have seen or understood from the instructor, and if the client does not understand the information well, the instructor repeats the information until the client fully understands.<sup>[12]</sup> Patient comprehension is confirmed when the patient is able to repeat the information correctly in their own language. This method also increases the client's satisfaction, feeling of comfort and self-confidence.<sup>[11]</sup> The effectiveness of this method has been confirmed especially in people with low literacy level.<sup>[13]</sup>

The Ambassador of Health, who has been trained by the Ministry of Health since 1993, is a family member

who has at least eight literacy classes and is voluntarily responsible for transmitting content learned in the field of health and self-care and family activities and take on other members of the society.<sup>[14,15]</sup> Considering that health ambassadors are at the forefront of receiving health education services and also considering that these people have a role in increasing public awareness and can increase public health literacy and possibly change the behavior of community members, use of appropriate educational method is very important in these people. Therefore, the aim of this study was to determine the effect of teach-back method on improving the lifestyle of health ambassadors in Urmia, Iran.

## Materials and Methods

### Study design and setting

This quasi-experimental study was conducted to investigate the effect of teach-back method on lifestyle modification of health ambassadors in Urmia in 2020.

1-CONSORT Chart of research implementation stages.

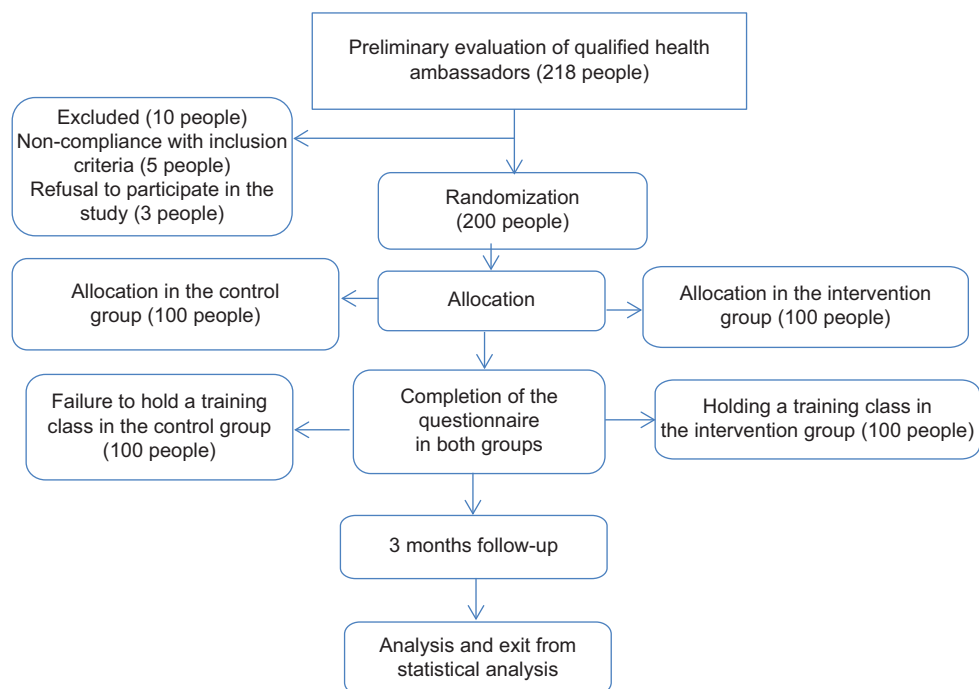
### Study participants and sampling

The required sample size based on a similar study<sup>[16]</sup> and using G Power software considering the effect size of 40% of studies, the mean and standard deviation of the first group is from  $30.5 \pm 2.8$ – $19.27 \pm 3.3$  of the second group of 100, 95% confidence level, 80% test power and 10% loss rate, were calculated for 100 participants of each groups.

The sampling method was simple multi-stage random sampling. For this purpose, first the Urmia city was divided into two regions, north and south, and among the health centers in each region, 10 centers were randomly selected, then 5 centers were randomly selected as intervention centers and 5 centers were considered as control centers. In the next step, based on the list of health ambassador names, 20 health ambassadors from each center were randomly selected.

### Data collection tool and technique

The data collection tool was a questionnaire that organized in 2 main parts. The first part was about demographic information (age, level of education, occupation), the second part was about the lifestyle questionnaire (LSQ). LSQ was used to assess lifestyle. This questionnaire consists of 68 questions that were scored in the Likert scale as always = 4, usually = 3, sometimes = 2 and never = 1. The score range of the questionnaire was 68–272 points. Scores below 136 were considered as poor scores, scores between 136 and 204 were considered as average scores, and scores above 204 were considered as good scores. This questionnaire consists of 10 components including: physical health (eight questions), exercise



1- CONSORT Chart of research implementation stages

and health (seven questions), weight control and nutrition (seven questions), disease prevention (seven questions), mental health (seven questions), spiritual health (Six questions), social health (seven questions), avoidance of arbitrary use of drugs, narcotics, etc., (six questions), accident prevention (seven questions) and environmental health (six questions). The higher score in each of them and in the whole questionnaire indicated the appropriate lifestyle. The validity and reliability of this questionnaire were confirmed by Lali *et al.* in 2012.<sup>[17]</sup>

The validity of the questionnaire was confirmed using content validity. Reliability was also confirmed by calculating Cronbach's alpha coefficient ( $\alpha = 78$ ).

Inclusion criteria included: being a health ambassador (an individual from each household who has at least 8 literacy classes), having a health ambassador file in a health center, and being satisfied with attending the study, and those who were absent for more than one session in training classes were excluded from the study. Individuals who met the inclusion criteria were included in the study and to prevent the exchange of information between the intervention and control groups, the health ambassadors of 5 health centers were selected as the intervention group and the health ambassadors of 5 other centers were selected as the control group. Then they were followed up by phone and invited to the health centers and the objectives of the plan were explained and the consent form was completed. Then the people were asked to come again at the appointed times. First, the pretest questionnaire was completed by

interview with the researcher and then the education programs were taught in 4 sessions of 45 min based on lifestyle (25 min for education, 20 min for feedback). The educational content of each session was taught to the health ambassadors by TB method, i.e., face to face with practical education and using valid sources. Then, the health ambassador was asked to express the educational content in his/her own language. If the health ambassador did not understand the content correctly, he/she was re-taught the educational content. Information was collected through the mentioned questionnaire and then the educational intervention was performed for the intervention group and 3 months after the education, the same questionnaire was completed again [Table 1].

Data were analyzed by using SPSS software version 19 (IBM Corp., Armonk, NY, USA) and independent *t*-test was used to compare research units in terms of demographic characteristics in the two intervention and control groups. Also, in the inferential findings section, *t*-test, paired *t*-test or their nonparametric equivalent tests such as Mann-Whitney and Wilcoxon tests were used to compare the intervention and control groups before and after the educational intervention.

### Ethical consideration

This study is the result of a research project with the code of ethics IR.UMSU.REC.1398.430 in the Research Ethics Committee of Urmia University of Medical Sciences. The conscious consent was obtained from all human participants orally. The authors certify that all data collected during the study are as presented in this

manuscript, and no data from the study has been or will be published elsewhere separately.

## Results

In this study, 200 health ambassadors in the intervention ( $n = 100$ ) and control ( $n = 100$ ) groups were studied. The mean and standard deviation of age of the subjects in the intervention and control groups were  $37.35 \pm 9.57$  and  $38.45 \pm 9.78$ , respectively. The statistical test showed that there was no significant difference between the intervention and control groups in terms of age, sex, level of education, marital status and occupation.

The results of this study showed that 24% of the control group and 21% of the intervention group had a good lifestyle before the educational intervention. However, after the educational intervention, 27% of the control group and 54% of the intervention group had a good lifestyle. This difference was statistically significant in the intervention group but no significant change was observed in the control group after the intervention [Table 2].

The mean scores of physical health, exercise and health, weight control and nutrition, disease prevention, social health in the intervention group increased in compared with to the control group after the intervention. The results of Wilcoxon test showed that the difference between the mean scores of total lifestyle and dimensions of physical health, exercise and health, weight control and nutrition, disease prevention, social health in the intervention group after the intervention was significant ( $P < 0.05$ ). The mean score of lifestyle and dimensions mentioned in the intervention group has increased, while the results of the same test have not a significant difference in the control group before and after the intervention ( $P < 0.05$ ) [Table 3].

## Discussion

The aim of this quasi-experimental study was to investigate the effect of teach-back method on improving the lifestyle of health ambassadors in Urmia. Education in this way was effective in improving lifestyle in most aspects of lifestyle, which is consistent with the study of Nasrabadi *et al.*<sup>[18]</sup> Nasrabadi *et al.* concluded that education has an effect on the lifestyle of patients with ischemic heart disease after the intervention, and their level of awareness has increased. Also, in the study of Zinat Motlagh *et al.*<sup>[19]</sup> educational program were effective on improving the lifestyle of Type 2 diabetes patients. Although these studies have a different educational approach with the present study; But increasing scores for the overall status of lifestyle after

**Table 1: Educational content of intervention group sessions in health ambassadors by teach-back method**

Educational content	Educational topic title	Educational content
First session	Acquaintance with a healthy lifestyle	Acquaintance of ambassadors with educational goals and how to implement it, completion of pretest, acquaintance of duties and performance of health ambassador, acquaintance with self-care, acquaintance with healthy lifestyle, personal health
Second session	Healthy diet, exercise and fitness and weight control	Acquaintance with the principles of nutrition and food groups, nutrition at different stages of life, acquaintance with food units, acquaintance with different types of oils and their uses, regular physical activity during the week, benefits of regular daily physical activity, overcoming barriers to regular physical activity, acquaintance with proper weight, overweight, obesity, weight loss, factors affecting overweight and obesity, weight management
Third session	Mental health, avoidance of drugs and tobacco, environmental health	Acquaintance with the definitions of mental, social, spiritual health, types of communication styles between parents and children, hardiness and psychological resilience, self-care in domestic violence, life skills, acquaintance with self-medication and arbitrary use of drugs, tobacco and exposure to tobacco smoke, effects of tobacco abuse, healthy environment, hygienic disposal and separation of wet and dry waste
Fourth session	Prevention of diseases and accidents	Acquaintance with general infectious and noncommunicable diseases, acquaintance with methods of transmission of infectious diseases and their prevention, acquaintance with methods of prevention and control of noncommunicable diseases, acquaintance with accidents in everyday life and ways to prevent it

**Table 2: Comparison of lifestyle in the two groups of intervention and control in the study population before and after the intervention**

Variables	Intervention group, n (%)	Control group, n (%)	P
Before the intervention			
Weak	46 (46)	44 (44)	0.07
Average	33 (33)	32 (32)	
Good	21 (21)	24 (24)	
Total	100 (100)	100 (100)	
After the intervention			
Weak	9 (9)	42 (42)	0.03
Average	37 (37)	31 (31)	
Good	54 (54)	27 (27)	
Total	100 (100)	100 (10)	

**Table 3: Comparison of mean scores of different aspects of lifestyle in the two groups of intervention and control before and after the intervention**

Lifestyle dimensions	Group	Mean±SD		P*
		Before the intervention	After the intervention	
Physical health	Intervention	15.32±3.94	16.71±4.15	0.001
	Control	14.82±3.41	15.31±4.11	0.83
	P**	0.51	0.001	
Exercise and health	Intervention	11.85±4.71	13.20±4.32	0.002
	Control	11.52±3.52	12.02±3.58	0.41
	P**	0.83	0.001	
Weight control and nutrition	Intervention	13.64±4.01	14.63±4.15	0.019
	Control	13.01±3.89	13.57±3.91	0.081
	P**	0.45	0.018	
Diseases prevention	Intervention	16.81±3.81	18.07±3.61	0.02
	Control	15.94±3.51	16.84±3.51	0.2
	P**	0.14	0.04	
Psychological health	Intervention	15.95±4.06	16.31±6.49	0.5
	Control	16.21±4.15	16.89±6.05	0.4
	P**	0.1	0.6	
Spiritual health	Intervention	14.22±3.49	14.84±3.35	0.06
	Control	13.77±3.54	14.76±3.41	0.1
	P**	0.1	0.4	
Social health	Intervention	16.45±4.14	17.2±3.77	0.05
	Control	15.01±3.54	14.89±3.41	0.1
	P**	0.1	0.02	
Avoid from drugs and narcotics	Intervention	14.66±4.46	15.85±6.67	0.02
	Control	15.11±3.41	14.98±3.31	0.1
	P**	0.1	0.04	
Incidents prevention	Intervention	19.88±4.09	21.13±8.57	0.07
	Control	18.98±3.81	19.15±3.87	0.1
	P**	0.3	0.05	
Environmental health	Intervention	16.97±4.29	17.24±3.60	0.5
	Control	17.18±3.71	16.66±3.87	0.2
	P**	0.6	0.4	
Total	Intervention	158.97±27.10	168.73±32.14	0.04
	Control	159.88±30.21	162.83±31.87	0.1
	P**	0.7	0.05	

\*Wilcoxon test in each group, \*\*Mann-Whitney test between two groups. SD=Standard deviation

education was significant and indicated to promote the status of the intervention group. The results of Qanbari *et al.*<sup>[20]</sup> and Dalir *et al.*<sup>[21]</sup> can be a kind of complementary study of our study; So that their study showed that the teach-back method, in addition to the improvement of treatment, leads to an increase in health promotion by improving their care in patients.

The results of this study indicated that the mean score of physical health score was significant after intervention in the intervention group. As the average lifestyle score and dimensions mentioned in the intervention group have increased; however, before and after the intervention the results of this test have not a significant difference in the control group. These results with Ghasemi *et al.* studies<sup>[22]</sup> that regarding the effect of education on increasing

knowledge, attitude and perception risk among students on the prevention of hepatitis B disease and hepatitis C disease and it is also consistent with the results of the Karam study<sup>[23]</sup> which stated that the Teach Back training improves self-care behaviors in patients. it is also consistent with the results of the study of Karami *et al.*<sup>[23]</sup> which the rate of contamination with hepatitis C virus was high in patients infected with hepatitis B virus in Golestan province.

According to the results of this study, the difference in the mean score of exercise and health was significant after intervention in the intervention group. A study conducted by Emami *et al.*<sup>[24]</sup> showed that educational intervention has been effective on increasing awareness and increasing the overall physical activity among the woman health worker. Also, In the study of Shafieian *et al.*<sup>[25]</sup>, educational intervention promotes physical activity during pregnancy and according to the study of Ghaffari *et al.*<sup>[26]</sup> educational intervention improves awareness, attitude and behavior related to students' physical activity.

Also, the results of this study showed a significant difference in weight control and nutrition score after the intervention in the intervention group. A study by Alizadeh *et al.*<sup>[27]</sup> and Zareipour *et al.*<sup>[28]</sup> on the effect of education on student nutrition showed that students' nutritional status improved after the educational intervention, which is consistent with the results of this study.

The results of the study of Mohalli *et al.*<sup>[29]</sup> also confirmed the effect of family-centered empowerment pattern on the lifestyle of patients with hypertension. The results of the study by Jadgal *et al.*<sup>[30]</sup> also showed the positive effect of health education program on changing inappropriate food habits in students, which confirms the findings of the present study.

According to the findings obtained by comparing the two groups of intervention and control in the posttest stage, the relationship between education and social health was confirmed. The study of Yahyazadeh and Arabgari<sup>[31]</sup> also indicated that there is a significant relationship between social skills education and improving the social health of the experimental group. The mean score of dimensions of mental health, spiritual health, accident prevention, environmental health in the intervention group did not increase in compared with to the control group after the intervention and was not statistically significant, which is in line with the results of the Slater's study.<sup>[32]</sup> In the study of Sabouri *et al.*,<sup>[33]</sup> The results showed the effect of education on women's empowerment in postintervention health care can be effective in improving lifestyle, which is consistent with the results of the present study.

## Limitations

Based on this study, feedback-based training was effective in lifestyle modification in most aspects of lifestyle. Considering that health ambassadors are at the forefront of receiving health education services and also considering that these people have an effective role in increasing public awareness and can increase public health literacy and likely to change the behavior of community members, the uses of an appropriate educational method is very important in these people. Due to the important role of health ambassadors as the future of the country and the low cost of educational activities of these people, the need of extending such training programs and expand it to other health ambassadors seems necessary. Considering the limitations of this study, self-reporting data collection method was applied by administering questionnaires, which can affect accuracy of the findings.

## Conclusions

The present study showed that education based on teach-back method can be effective in improving the lifestyle of health ambassadors in Urmia. According to the results of this study, it is necessary to improve the lifestyle of people in society to improve their physical and mental condition, which can be achieved through education and culture, and by modifying the lifestyle of people can greatly increase the incidence and exacerbation of various diseases. Disease prevention and the inability of people to treat diseases is much cheaper and easier, and in addition to reducing the exorbitant costs of treatment and reducing the occupancy of hospital beds, it also improves the vitality and health of the community.

It is suggested that the feedback-based training program be considered as an intervention with easy implementation, effective in health care programs and training, and health personnel pay attention to the importance of training and type of training, and the uses of this educational method in education so that the health ambassadors themselves witness the promotion of community health.

## Acknowledgments

This study is the result of a research project with the ethics code of IR.UMSU.REC.1398.430 in the Research Ethics Committee of Urmia University of Medical Sciences. The cooperation of the participants in the study is hereby thanked and appreciated.

## Financial support and sponsorship

This study was financially supported by Urmia University of Medical Sciences, Urmia, Iran.

## Conflicts of interest

There are no conflicts of interest.

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