

# Improving the Effectiveness of Noncommunicable Disease Prevention Training Based on Health and Education Experts' Opinions

## Abstract

**Background:** The first need of any society is to have a healthy life that can be achieved through preventive education. Despite providing training in the prevention of risk factors for noncommunicable diseases in the country's educational programs, we are witnessing an increase in the incidence of these diseases. We aimed to summarize the views of experts in the field of health and education on improving the effectiveness of these trainings. **Methods:** This study was conducted with a qualitative approach and conventional content analysis method. Participants were 12 experts in the field of health and 19 employees in education who were selected by purposive and available sampling method with maximum diversity. The data collection method was semistructured interview with note-taking. **Results:** A total of 32 subcategories and 9 main categories were extracted: "Macro health policies," "Strategic health system," "The role of education system in health promotion," "Schools and Lifestyle modification," "Informal learning," "Preventive strategies in promoting health," "Lifestyle, multifactorial phenomena," "The impact of stress on health," and "Factors affecting preventive education." **Conclusions:** Providing preventive education to students is one of the ways to prevent noncommunicable diseases. If these trainings have the necessary attractiveness and support by the authorities (and especially the health system), then it will not only raise students' awareness, but also change their attitude and improve their performance.

**Keywords:** Health system, lifestyle, noncommunicable diseases, preventive

## Introduction

Health is the basic need and right of every human being. Today, we see that many societies are commonly affected by noncommunicable diseases and a high percentage of human mortality is associated with these diseases. Evidence suggests that many health problems in today's society, such as obesity, cardiovascular disease, and the like are associated with lifestyle changes in society.<sup>[1]</sup> One way to ensure and promote health in the society is to provide health education for different levels of the society, especially students.<sup>[2]</sup> Health education includes preventive education and the presentation of healthy lifestyle strategies and patterns. The related activities often include providing trainings in the form of national and regional plans and programs or educational interventions. Few programs seek to evaluate the effectiveness of the trainings provided and strategies for its promotion considering the viewpoints of educational experts. In this article, we intend to summarize the opinions of health

experts and those working in education with respect to improving the effectiveness of training about the prevention of risk factors for noncommunicable diseases.

## Methods

The applied research benefitted from a qualitative approach using the content analysis method (Ethical code: IR.IAU.KHUISF.REC.1398.266). In part of this study, the views of health experts and those working in education on improving the effectiveness of preventive education were examined. According to the purpose of the study, purposeful and convenient sampling was done with maximum diversity.<sup>[3]</sup> In order to achieve maximum data robustness, maximum variability in terms of age, sex, relationship with health plans, and projects were considered during sampling. Data sampling and coding continued until no new code was obtained (until data saturation). Participants included: 12 experts in the field of health and 19 employees in education. The place of interviews was chosen depending on the circumstances of each

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**DOI:**  
10.4103/ijpvm.IJPVM\_654\_20

### Quick Response Code:



**How to cite this article:** Kelishadi R, Hamedani Z, Haghani F. Improving the effectiveness of noncommunicable disease prevention training based on health and education experts' opinions. *Int J Prev Med* 2022;13:141.

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participant in such a way that participants felt comfortable. The research environment was different according to the interviewee group and generally included the educational units of the six education areas: research centers of Isfahan University of Medical Sciences, Isfahan Health Center, and Citizen Health Department of Isfahan Municipality. The common criteria for entering the study were their willingness to participate and the specific inclusion criteria of each group were as follows:

- Experts: Familiarity with the subject of research and expertise in health education and prevention of noncommunicable diseases and implementer of national and regional plans and programs related to health
- Employees in education: Employment of a worker in one of the educational units in one of the six education districts of Isfahan during the academic year 2017–2018.

The exclusion criterion was unwillingness to continue to participate in any stage of the research. Data were collected using semistructured in-depth interviews with note-taking. Interviews began in the group of experts with the question “What has been done in your field regarding the prevention of risk factors for noncommunicable diseases and health-related training?” And it began in the education sector with the question, “Do you consider the students’ lifestyle to be healthy or not?” Why?”, and continued with other related probing questions.

Data analysis was performed using qualitative content analysis using inductive approach. The time of the interviews was from June 2017 to March 2018. The duration of each interview varied between 20 and 80 min. To ensure that the full text of the interviews was preserved, the interviews were recorded with the informed permission and consent of the interviewees, and after each interview, their transcripts were implemented in Office Word as soon as possible. These contents were then categorized and coded into meaningful sentences related to research, followed by primary categories, subcategories, and main categories. Coding, analysis, and classification stages continued throughout the research. Data validity and robustness were determined using four criteria (reliability, transferability, reliability, and verifiability).<sup>[4]</sup>

Reliability was checked through “control by members” and “conversation with peers,” transferability was checked through “accurate expression and description,” reliability through “recording and collecting raw data,” and “data reduction,” synthesis of results by summarizing and categorizing” and verification through “supervision of an external observer with experience in qualitative research on all stages of such research” and “accurate recording of all stages of research through text tape and notes and analysis.” The ethical principles observed in this research were obtaining a code of ethics, informing the participants about the general goals of the project and assuring them about the confidentiality of their identity, considering the right

to voluntary participate or not, prior coordination with the participants regarding the time and place of the interviews.

## Results

Analysis of participants’ points of view led to the emergence of 9 main categories and 32 subcategories [Table 1]. The participants consisted of 12 health experts and 19 education professionals [Tables 2 and 3]. The main categories were as follows: “Macro health policies,” “Strategic health system,” “The role of education system in health promotion,” “Schools and lifestyle modification,” “Informal learning,” “Preventive strategies in promoting health,” “lifestyle, multi-factor phenomenon,” “the effect of stress on health,” and “factors affecting preventive education.”

Of the nine main categories obtained from the analyses, both groups agreed on eight main categories. In addition, what was extracted from the opinions of experts led to the formation of a main category called “factors influencing preventive education.”

## Discussion

Currently, we see that one of the leading causes of death worldwide is noncommunicable Diseases. While controlling the risk factors for these diseases, they prevent infection and reduce deaths caused by them. In other words, prevention of noncommunicable diseases is one of the ways to control these diseases, which can be expanded in the community through the provision of preventive education. These trainings should start at the right time and with the right target group. Given that the largest target group available and teachable is students, the start of preventive education from the beginning of formal school education and their continuation in all courses can have positive effects on promoting community health.

Preventive education must be effective to ensure the health of the community. Numerous factors affect the effectiveness of preventive education. Raising public health awareness, covering all age groups of students, using various methods and tools in education, following and constantly monitoring the progress of programs are among the factors that lead to greater efficiency. In this article, in order to reach solutions to improve preventive education, we want to summarize the opinions of health experts and professionals in education about improving the effectiveness of this education.

### Macro health policies

One of the primary categories of this main category was “the attention of the authorities to the society’s health.” Among the issues raised by the participants were the improvement of the economic situation of the society and paying more attention to the vulnerable groups. Research shows that groups with low socioeconomic status were not only more affected by noncommunicable disease risk factors, but also receive less health services and education than others. The results of some studies also indicate that community

**Table 1: Main and subcategories derived from content analysis**

Main category	Subcategory
Macro health policies	Planning and implementation strategies Compilation of upstream documents Macro-level planning challenges
Strategic health system	Challenges related to health programs Challenges related to community health Improving community health
The role of education system in promoting health	Management system coordination Challenges in the education system Effective health education Targeting education to promote health
Informal learning	Current status of trainings Information-seeking behaviors The effect of advertising on health behaviors
Schools and lifestyle modification	The role of other organs in preventive education Challenges of healthy eating in schools Improving the quality of nutrition in schools Challenges of physical activity in schools The role of educational environment in improving physical activity
Preventive strategies in promoting health	Self-directed strategies in promoting health Monitoring strategies in health promotion
Lifestyle, a multifactorial phenomenon	Healthy lifestyle challenges Current feeding performance Active performance in terms of smoking Active performance in terms of physical activity Individual strategies to improve lifestyle
The effect of stress on health	Comprehensive participation in lifestyle modification Consequences of stress Challenges related to stress Stress reduction strategies
Factors affecting preventive education	Strategies for reforming preventive education Facilitators in preventive education Inhibitory interventions in training

**Table 2: Demographic characteristics of health experts**

Sex	Female	Male				
Frequency	8	4				
Mean age (yrs)		47.6				
Mean work experience (yrs)		20				
Mean work experience at current job (yrs)		4.25				
Education status	BSc	MSc	PhD	Post PhD		
Frequency	2	4	4	2		
Related organization	Department of education	Municipality	Province health center	University of medical sciences	Broadcasting	Agricultural organization
	4	1	1	4	1	1

health is influenced by developmental factors outside the health system (such as changes in the economy and social communication).<sup>[5,6]</sup> Therefore, providing appropriate economic infrastructure in the country is a necessary step.

### Strategic health system

One of the subcategories of this main category was “Improving Community Health.” Solving community

**Table 3: Demographic characteristics of employees in Education**

Sex	Female		Male			
Frequency	14		5			
Mean age (yrs)			46/8			
Mean work experience (yrs)			23/6			
Type of educational department	Governmental	Nongovernmental		Both		
Frequency	9	5		5		
Education status	MSc or higher	MSc	Associate degree or lower			
Frequency	6	13	0			
Educational level	Art college	Primary school	Middle school	High school		
Frequency	1	4	4	10		
Post	Student	Teacher	Trainer	Manager	Executive manager	Teacher (at school)
Frequency	1	3	11	1	2	1

health problems is the main task of any health-care system. Participants found it necessary to identify community health problems, set work priorities considering resource constraints, and conducting needs assessments. Some researchers believe that any obvious improvement in life improves the quality of life and health of the society<sup>[7]</sup> and improving the quality of life is the ultimate goal of all health-related interventions.<sup>[8]</sup>

Another subcategory was “Challenges Related to Community Health.” It can be argued that improving the general health of the society is achieved by improving the level of health literacy, health education, and access to information. Some researchers consider health education for the community and the at-risk group and the group that play an important role in disease control, as one of the most important axes of control and prevention of noncommunicable diseases.<sup>[9]</sup>

“Management system coordination” was another subcategory. The analysis of the findings showed that having a strategic, unifying, and comprehensive management system was one of the effective factors in advancing the goals of the health system and improving its performance. Having managers with strategic thinking and performance in different levels of the health system requires necessary training.<sup>[10]</sup> Research has shown that some managers are not sufficiently aware of the basic tools and methods of strategic management and this information can be provided to them through in-service courses and seminars.<sup>[11]</sup>

### The role of the education system in promoting health

In connection with “effective health education,” participants mentioned issues, such as the role of educators in promoting a healthy lifestyle and the positive role of the educational environment on preventive education. In other studies, the important role of teachers<sup>[12]</sup> and schools, as a suitable place for educating students and families and finally teaching health-related issues to increase awareness, attitude and modeling healthy behavior, has been emphasized.<sup>[13]</sup> According to researchers, the school

environment is considered as a model for influencing students’ health behaviors.<sup>[14]</sup>

Another subcategory of this study was “Targeting education in order to promote health,” which raised issues, such as promoting the educator, the educational role of the family in health education, etc.,. The results of some studies indicate the lack of awareness about ways to prevent noncommunicable diseases and the importance of the role of education in different groups, especially teachers, given their effective role in educating students and influencing families.<sup>[15]</sup>

Another subcategory of this study was the “current state of education.” Participants mentioned issues, such as challenges of the educational environment in existing trainings, multiplicity of learning groups, etc.

### Informal education

They mentioned the effect of propaganda on people and also sensitizing the society through urban propaganda. The results of research in the field of health and media also indicate the positive effect of media advertising on health education.<sup>[16]</sup>

Another subcategory of this main category is “the role of other organs in preventive education.” Some researchers point to the impact of the media on society, stating that it is surprising that not enough focus is placed on the decisive role of the media in health and reducing health inequalities.<sup>[17]</sup> In the present study, some health experts also believed that this potential of the national media is not used effectively in health education.

### Schools and modifying lifestyle

“Challenges of healthy eating in schools” and “Challenges of physical activity in schools” were two other subcategories, and participants believe that the current state of health education in schools is not favorable. Schools invest more in improving the scientific dimension of learners and less in teaching healthy lifestyles. Research has shown that nutritional information is one of the essential needs of students and children in an environment that provides

them with high levels of motor and perceptual skills have a better chance of improving health information.<sup>[18]</sup> Some researchers believe that physical activity for students should not necessarily be high-quality activities and can be planned to the appropriate level of sports activities.<sup>[19]</sup>

“Improving the quality of nutrition in schools” and “the role of the educational environment in improving physical activity” are two important subcategories derived from the analysis of research findings. Schools have the potential to implement programs that make any real change possible. Schools have an important role to play in helping students achieve healthy learning. By offering an appropriate diet, providing opportunities for physical activity, performing interventions that affect food sales at school, provide strategies for developing strategies related to healthy lifestyle education.<sup>[20]</sup>

### Preventive strategies in promoting health

One of the subcategories of this research is “self-directed strategies in promoting health.” Participants mentioned issues, such as paying attention to the diversity of food intake, raising personal awareness about health and physical activity, and avoiding a sedentary lifestyle. Research has shown that inadequate consumption of fruits and vegetables in students is a risk factor for some chronic diseases, such as cardiovascular disease. One of the reasons for this is the lack of access and lack of awareness.<sup>[21]</sup> Another subcategory is “self-directed strategies in promoting health.” Participants mentioned issues such as emphasizing the role of the mother and supervision in school.

### Lifestyle is a multifactorial phenomenon

One subcategory is “Lifestyle Challenges.” Among the challenges raised were urban life and its challenges. In line with this research finding, it has been found that industrialization of life, urbanization, and unhealthy lifestyle are among the effective factors in increasing some noncommunicable diseases.<sup>[22]</sup>

In relation to students “current unfavorable conditions for nutrition, smoking, and physical activity, participants noted: The role of the family and the influence of peers and the influence of the media on students” tendency to smoke. Some studies have shown that family, peers, the environment, and the media influence habits, especially students’ eating behaviors.<sup>[23]</sup>

“Individual strategies for lifestyle improvement” and “comprehensive participation in lifestyle modification” were the two subcategories of this main category, and participants were involved in issues such as educational environment and lifestyle modification, use of knowledge, and positive role modeling in lifestyle. In this regard, one of the important strategies in the Cancer Control Program of the World Health Organization is to raise public awareness in this regard.<sup>[24]</sup>

### The effect of stress on health

The “forms of the school education system” were the primary category of the “challenges related to stress” subcategory. According to the participants, creating an unhealthy competitive scientific atmosphere among students, lack of support from students by the educator, etc., can cause stress and depression in them; However, researchers believe that the quality of the learning process affects students “attitudes and perceptions and requires support, paying attention to students” needs and their pleasant feeling in learning.<sup>[25]</sup>

“The consequences of stress” and “stress reduction strategies” are two subcategories of this main category. Modifying individual lifestyles and using effective methods to reduce student stress were among the items mentioned by the participants. Currently, in order to treat chronic diseases, the cause of the disease is found in the person’s lifestyle.<sup>[26]</sup> One of the changes in an individual’s lifestyle is proper physical activity during the week, which significantly reduces the risk factors and death from noncommunicable diseases.<sup>[27]</sup>

### Factors affecting preventive education

Regarding “strategies for improving preventive education,” the participants mentioned providing content with attractive presentation methods, using different methods of education which is user-friendly, use of new communication media, etc., The results of other studies have shown that teaching through playing and singing increases motivation and improves learners’ performance and assertiveness.<sup>[28-30]</sup>

“Facilitators in preventive education” and “inhibitors in education” were other subcategories of this main category. The facilitators proposed by the participants were as follows: efficient management system and relative increase in the level of information of individuals in the community. The inhibitors in education were the impact of urban life on community health and the time-consuming nature of effective training.

One of the strengths of this part of the study was to examine the opinions of people who, in addition to being experts, were the implementers of health projects and were in close contact with students and were familiar with their needs and spirits. One of the limitations of this study was that we could not examine the participants’ opinions about education at the student level. Therefore, the results may not be applicable to other groups in society.

### Conclusions

Preventive education is a good way to prevent noncommunicable diseases. The best target group of such training is students. In case of having preventive education, the necessary attractiveness and support by the relevant authorities and providers of education, in addition to raising the awareness of students, will change their attitude and improve their performance.

## Acknowledgments

This article is part of the approved student dissertation (number 23820603952008) of one of the authors. The authors thank all the participants as well as the officials of the General Directorate of Education and the education departments of the six districts of Isfahan for their cooperation.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

**Received:** 19 Jan 21 **Accepted:** 04 Feb 21

**Published:** 23 Nov 22

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