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Development of key competencies for healthy lifestyle in the "Health Promotion" club, 9th grade

ABSTRACT

The key concepts around which modern education is built are literacy; competencies, interactive learning, and lifelong learning. An experimental group of 15 students from 9th grade of "St. Kliment Ohridski" High School - Plovdiv were trained in a program developed by us for "Health Promotion" extracurricular activities. The use of an interactive-teaching technology based on the constructivist approach forms key competencies for a healthy lifestyle on the theme "Let's say no to cigarette smoke" in the students. Through a system of criteria, indicators and appropriate tools we assessed – ideas, knowledge and mindsets and attitudes of students for preventive and health activities and taking responsibility for both individual and public health. The methods used for qualitative and quantitative analysis of the data prove statistically significant results - confirming the hypothesis of the leading role of interactive methods for the formation of key competencies for a healthy lifestyle in the target group. Numerous examples, charts and diagrams illustrate the results of the experimental research.

Key words: Key competencies for a healthy lifestyle, interactive learning, experiment, "Health Promotion" program

Introduction

On the initiative of the World Health Organization (WHO) a global study of young people smoking was carried out in the period 2000 - 2007. (4) It covered 148 WHO member countries. The participation included more than two million students in 11,000 schools, including ones from Bulgaria. The study shows that: every 1 of 10 children in the world smoked cigarettes; every 1 of 10 children used other tobacco products. In most countries girls smoke on a par with the boys. 69% of the children-smokers want to quit.

In Bulgaria in 2008 about half of the students (58.8 %) had tried cigarettes. The number of girls exceeds that of the boys, especially in Sofia. The number of students, who had tried smoking, rose from 47.2 % for 13-year olds to 66.3 % for 15-year olds. Over 25% of children had smoked their first cigarette before the age of 10.

The disturbing data for Bulgaria, as well as our personal observations, provoked us to create a "Promotion of health" club for 9th grade students in the "St. Kliment Ohridski" high school in Plovdiv. Its main purpose is to build key competencies for healthy lives and, in particular - prevention of smoking in its members.

The name of the club was borrowed from the strategy of the WHO for the "promotion of health". The term promotion in English In a literal translation into Bulgarian means: Increase, production, promotion, support, maintenance, support, promotion, encouragement, advertising, popularising. According to WHO *"the promotion of health is a process in which people receive opportunities to increase control over their health or by self-controlled health behaviour to improve their health".* (5)

Health Promotion is a new philosophy and way of thinking, a sign of developed civil society, and mature

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statehood. Health Promotion reflects the idea of overcoming the passive approach to health through a change of the person's value relation to health, by: *Increasing of health culture; self-motivation for better health.*

Health education activities, including: training of the students in healthy diets, in problems related to the use of tobacco, alcohol, drugs, etc., play an important role in the promotion of health. Object and subject of health education is *the adolescent person.* (Панайотова, 2007)

The created by us program of the "Promotion of health" Club is composed of three modules, one of which is "*Let's say no to cigarette smoke".* Implementation of the program is carried out by application of an interactive didactic technology, based on the constructivist approach. Group discussions, games, modelling of situations, role assignment, case studies, etc. are used. Organiser and manager of the club is the biology teacher. Participation of the students in the club is voluntary.

Materials and Methods

The experiment was carried out in the form of a club activity in the 9th grade optional "health education" classes in the "St. Kliment Ohridski" high school, Plovdiv city, during the 2012 - 2013 school year.

The experiment involved a group of 15 students. Formation of the group was carried out on the principle of voluntary participation of the students and a demonstrated interest in health issues. Training sessions were held once a week, outside educational hours, with a duration of between 1 and 2 study hours. For the purpose a suitable room was selected - an equipped classroom for biology and health education, in which the participants can be placed in a circle,

facing one another, in order to ensure equal status for all, including the teachers.

The experiment carried our was a mono-variant one in respect of its substantial and methodological part.

For reporting the results of the experiment we've held two tests - immediately before and immediately after the completion of the relevant section. The initial T_0 and the completion test T_1 are with the same contents. Through the initial test T_0 we establish available knowledge, perceptions and attitudes at the beginning of the experiment. The completion test T_1 we applied for reporting the quality of knowledge, perceptions and attitudes after the completion of the training on the relevant module.

In the context of the competence approach in each module: knowledge is regarded as the result of the assimilation of information in the process of learning. They are an assembly of facts and practices associated with the specified educational activities; • Building and development of skills for the application of knowledge in the carrying out of educational tasks and resolving of educational case-studies. Skills in the context of the educational program are cognitive (including implementation of logical, intuitive and creative thinking) and practical (involving manual dexterity and the use of the materials); • competencies are set down as end results: Degree of ability to use knowledge and skills in work or educational situations and in personal development; ability is described as a combination of knowledge, skills, perceptions and attitudes, as well as having a degree of responsibility and autonomy.

The criteria, indicators and tools for obtaining the results of the experiment are summarized in Table 1.

Table 1. *The criteria, indicators and tools for obtaining the results*

Criteria	Performance Indicators	Tools	Way of reporting of the results
Perceptions for:	The harm from the use of cigarettes, alcohol and drugs.	Test for initial (T_0) and completion levels (T_1) - tasks 1, 2, 3	1. Quantitative analysis - the % of the correct and incorrect answers. 2. Qualitative analysis - on the content of the responses. 3. Statistical analysis
Knowledge of:	Smoking	Test for initial (T_0) and completion levels (T_1) - tasks 7, 8, 9	
Attitudes to:	Health risk factors prevention	Test for initial (T_0) and completion levels (T_1) - tasks 4, 6	
	Proper and healthy way of life	Test for initial (T0) and completion levels (T1) - tasks 5, 6	

Results

We present an analysis of the results of T_0 and T_1 on the module "Let's say no to cigarette smoke". Questions and answers of the tasks in the tests are presented in Table 2.

It is notable that the students initially have erroneous perceptionst, attitudes and knowledge about smoking. Having undergone training - in test T_1 they demonstrate correct knowledge, in most cases up to 100%. For example, in the analysis of their conceptions on: How smoking affects health, what is passive smoking and whether exercises eliminate the negative effects of cigarettes, established by tasks 1, 2 and 3, students meet the 100% true mark.

Table 2. *Questions and answers of T_0 and T_1*

Task. No	Criteria	Question contents	Answers	T_0 Nos.	T_0 %	T_1 Nos.	T_1 %
1.	Conceptions	Does smoking affect your health?	a) does not affect in small quantities	2	13%	-	0%
			b) does not affect, when rarely done	3	20%	-	0%
			c) adverse effects	9	60%	15	100%
			d) depends on individual tolerance	1	7%	-	0%
2.	Conceptions	What is "passive smoking"?	a) inhaling a side stream of smoke from cigarettes without being a smoker in smoking environments	13	67%	15	100%
			b) I don't know	2	13%	-	0%
3.	Conceptions	Is it true that exercise removes the negative effects of smoking?	a) true	10	67%	2	13%
			b) false	5	33%	13	67%
4.	Attitudes	Which of the following would lead you to start smoking?	a) your friends, the company	5	33%	2	13%
			b) my parents smoke and won't find me out	1	7%	1	7%.
			c) if they allow my elder sister (brother) to smoke, they will allow me too.	1	7%	1	7%
			d) to look older (a)	4	27%	-	0%
			e) no one and nothing can influence me	3	20%	10	67%
			f) other causes	1	7%.	1	7%.
5.	Attitudes	How would you change your lifestyle in accordance with the requirements for a healthy way of life?	a) will eat more healthy food	6	40%	1	7%.
			b) will move more actively	5	33%	1	7%.
			c) will stop smoking	2	13%	10	67%
			d) will stop drinking alcohol	2	13%	3	20%
6.	Attitudes	Do you think there is no harm in youths trying cigarettes, if they can stop it before it becomes a habit?	a) yes	10	67%	-	0%
			b) no	5	33%	15	100%

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Task. No	Criteria	Question contents	Answers	Results			
				T_0		T_1	
				Nos.	%	Nos.	%
7.	Knowledge	When smoking you inhale the same type of poisonous gas, which is contained in car exhaust fumes. Who is this gas?	a) carbon dioxide	12	80%	15	100%
			b) oxygen	-	0%	-	0%
			c) ozone	-	0%	-	0%
			d) nitric oxide	-	0%	-	0%
			e) hydrogen	3	20%	-	0%
8.	Knowledge	Apart from the lungs, which other important body organ is damaged by smoking?	a) heart, brain	7	47%	15	100%
			b) liver, kidneys	7	47%	-	0%
			c) I don't know	1	7%	-	0%
9.	Knowledge	Which statements are true?	a) tobacco is a narcotic	10	67%	15	100%
			b) smoking acts relaxively on smokers	7	47%	2	13%
			c) smoking is one of the main causes of cardio vascular diseases	8	53%	15	100%
			d) most young people can stop smoking when they wish	10	67%	2	13%
			e) passive smokers suffer from diseases of the respiratory system	12	80%	14	93%

There are also changes in the students' conceptions about, which is the main reason to start smoking and how they would change their lifestyle to a healthier way of life, established by the answers to tasks 4 and 5 (Figure 1 and Figure 2). In T_0, 20% of the students responded, that no one can influence them in their choices. In T_1 the number of students, given this response increased to 67%. The remaining students noted the influence of friends, the company, the family environment on their decision to start smoking. This shows that factors such as the family model, complex social relationships among friends, etc., have a strong impact in forming the perceptions and attitudes of the students on smoking.

One of the positive trends in the formation of attitudes to a healthy way of life we find in the responses to task 5. In test T_0 only 13% of the students indicated stopping of smoking and drinking as a change to a healthy way of life. The remaining students include a change to healthy eating and active exercise. After the training in this module, 67% of the students indicated positive change by stopping smoking and 20% - by stopping or limiting the use of alcohol (Figure 2)
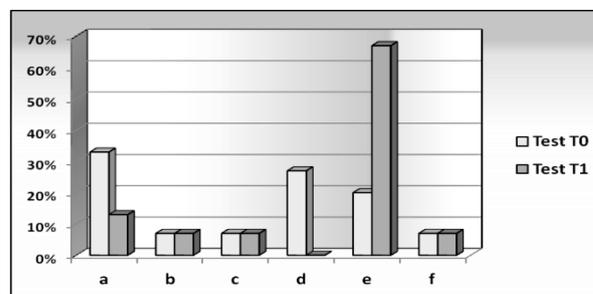

Figure 1. *Results from task 4 for T_0 and T_1 on the issue: Which of the following would lead you to start smoking?*
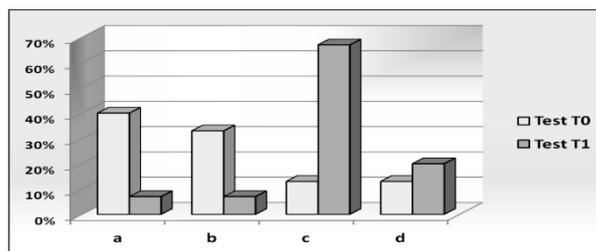

Figure 2. *Results from task 5 for T_0 and T_1 on the issue: How would you change your lifestyle in accordance with the requirements for a healthy way of life?*

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Before conducting the training in module "Let's say no to cigarette smoke" by test T_0 we found gaps in the knowledge concerning the possible damage to the human organism as a result of smoking, as well as in the knowledge of the presence of harmful gases in cigarette smoke. After training in this module knowledge significantly increased. In tasks 7 and 8 the correct answers reach up to 100% (Figure 3).
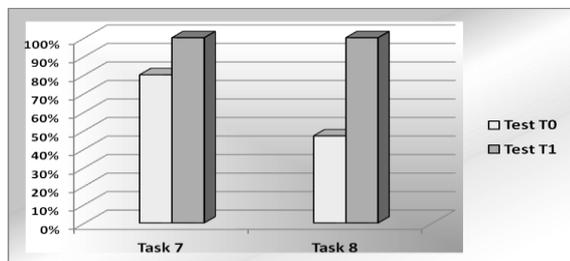

Figure 3. *Results from tasks 7 and 8 for T_0 and T_1*

The resultant change in the perceptions, attitudes and knowledge of the students, we consider, is due to the learning through experience and expertise, the team training and implementation of interactive methods such as role-play, clarification of the symptoms of the "disease" Smoking; preparation of posters: "Tips for stopping smoking", "Long-term and short-term effects of smoking"; a survey on "Your lungs"; case studies and making the correct decisions in given situations; brainstorming, etc. The interesting tasks included in the training-seminars, discussed through interactive methods, lead to a positive change in the conceptions, attitudes and knowledge of the students after training in this module. This is confirmed by the statistical significance of the difference in the results from T_0 and T_1, presented in Table 3.

A *Z-test* has been applied, which can be used for any number of the researched group. Using it we calculated the relative frequencies of respondents having answered a question in the same way in the two sample groups p_1 and p_2. The control value z is calculated by the formula:

$$z = \frac{|p_1 - p_2|}{\sqrt{\dfrac{p_1(1-p_1)}{n_1} + \dfrac{p_2(1-p_2)}{n_2}}}$$

where n_1 and n_2 are the numbers of the two sample groups. (2, p. 279)

For a probability of error 0.05, the "critical" value for **z** is **1.96**. At **z>1.96** it is assumed that, with 5% probability of error, there is a statistically significant difference in the opinions of the two groups of surveyed persons on the given problem.

Table 3. *Statistical significance of the difference in the results from T_0 and T_1*

Task №	T_0, T_1	No. Correct answers	p (p1, p2)	Z	Statistical significance
1	T_0	9	0.6	3.07	**Yes**
	T_1	15	1		
2	T_0	13	0.87	1.63	**No**
	T_1	15	1		
3	T_0	5	0.33	5.58	**Yes**
	T_1	15	1		
6	T_0	5	0.8	5.58	**Yes**
	T_1	15	1		
7	T_0	12	0.8	2.0	**Yes**
	T_1	15	1		
8	T_0	7	0.47	4.07	**Yes**
	T_1	15	1		
Total	T_0	51/8.5	0.57	3.3	**Yes**
	T_1	90/15	1		

From Table 3 it is clear that for all the tasks (without task No 2) a statistical significance of the difference in the results is observed. Lack of such a difference for task 2 is explained by the large number of correct answers in T_0. This indicates a high prior knowledge of the students on passive smoking and its impact on the organism. Total for the entire module $p_1 =$ 0.57 and $p_2 = 1$, resulting in the analysis $z = 3.3$, there is a statistically significant difference.

Conclusion

The analysis of the results gives us grounds to make the conclusion that the use of the developed by us program in health education for the module "Let's say no to cigarette smoke" leads to a positive change in students' attitudes and conceptions and enhances their knowledge on the issues related to smoking and the effects that are observed on human health. This enhances the competence of the students on health issues related to smoking.

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On the basis of our observations (Панайотова, 2007) and the results of the pedagogical research, we can also express the following positive moments in the application of the developed by us program for the "Promotion of health" club, namely:

➢ the apathy and passivity of the students in the assimilation of health-related knowledge and skills are reduced;

➢ the motivation and interest in the studied problem are increased;

➢ activity of participants and the quality of their knowledge are increased;

➢ communication skills are developed;

➢ an atmosphere of high emotional tonus is created;

➢ important personal qualities in students are formed;

➢ that biological knowledge, which has a real theoretical, moral and practical-application importance is increased, understood, and permanently learned.

The above gives us grounds to assume that in the sessions and meetings at the "Promotion of the health" club were provided useful and applicable-in-life knowledge and skills for a healthy way of life and so the study process becomes attractive and, to some extent, the negative response to it is overcome.

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