

RESULTS OF THE PILOT PROJECT OF THE PROGRAM „NON SMOKING IS THE NORM“ AFTER TWO YEARS

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Abstract: *The study deals with the pilot study outcomes of the educational preventive program “Non-smoking is a Norm“. After a two-year realization in the same group of younger schoolchildren the efficiency of the program was found out in the field of health education and healthy life style promotion. An experiment was used with experimental and control group. An individual structured interview with children and questionnaire for parents were chosen for the evaluation.*

Key words: *Anti-tobacco education, healthy lifestyle, primary preventive program, health education, drug prevention*

Introduction

The aim of the study was to find out the adequacy and suitability of the primary preventive program called „Non-smoking Is the Norm,“ including checking its efficiency. The program focuses on health education, healthy lifestyle promotion, and smoking prevention, and so far is being implemented in first and second years of primary schools. The survey was carried out at thirteen pilot schools which entered the project. The program is designed according to generally recommended principles of long-term effects on the same group of children and is planned for five years.

Methodology

To prove the adequacy of the program, we chose a method of experiment with a group in which the first part of the program was carried out (by five lessons during the first year of the elementary school). The impact on the determining factors was compared with a control group in which no lessons had been taught. The control classes included children in their second year of the same schools from parallel classes and the results were compared with those in the first group. Both groups (the experimental and the control groups) were homogenous.

Before commencing the program, 476 children in their first year took part in the initial survey; 273 were members of the experimental group and 203 of the control group. 431 children in their second year also took part in the experiment; the experimental group consisted of 254 children and the control group of 178 children. The final post-test, which was taken six months after the initial survey, was filled in by 408 respondents, 241 of which were members of the experimental group, and 167 of the control group.

The children were also interviewed individually by way of structured interview, the aim of which was to find out:

1. their attitudes towards adult smoking and their own potential smoking in the future
2. their smoking environment
3. their risk behavior
4. behavior leading to observing the principles of healthy eating.

Parents from the experimental group were also addressed by means of a questionnaire which stressed questions regarding the parents' attitude to second-hand smoking and to the ways in which parents protect their children before it.

Analogically to the previous year, a teachers' manual, worksheets for the children, and course graduate certificates were issued for the second part of the project. The lessons were taught again by trained students of the teaching faculty who provided feedback about individual activities so that the program can be updated and adapted to the particular needs of individual schools.

All results were processed in EPI INFO 6.09a software, the statistical evaluation was carried out by the means of Kruskal-Wallis χ -quadratic test.

Results

1. Attitudes toward smoking

The content of the pre-test, focusing on the children's attitudes toward adult smoking and toward their own idea about their smoking or non-smoking behavior in the future was conceived in the same way as that of the questionnaire in the first phase of the project, and so enabled to evaluate the long-term effect of the program on these factors.

The frequency of children who rated their admiration for girl/women smoking by giving this phenomena marks 1 or 2, slightly increased compared to the previous year in the experimental group and decreased in the control group, so the children from both groups did not differ. During the following six months the number of smoking "admirers" went up equally in both groups, hence differences were not found even in the post-test (table 1).

Tab. 1: Admiration toward smoking (given in %, relative frequency)

E-F: experimental group, admiration toward female smoking, C-F: control group,

admiration toward female smoking; E–M: experimental group, admiration toward male smoking, C–M: control group, admiration toward male smoking

	E-F	C-F	E-F	C-F
1.-PRE	1,9	1,4	3,9	2,9
1.-POST	0,7	2	2,6	4,4
2.-PRE	1,2	1,1	0,8	2,2
2.-POST	3,6	3,6	2,3	4,2

The numbers of children admiring male smoking decreased surprisingly in comparison to data obtained during the previous year when the children were in the first grade. In the final survey at the end of the second grade, the frequency of children admiring male smoking increased in both groups, more in the control group. In the group of the children influenced by the program, there were fewer admirers despite the increase in comparison to the previous year before initiating the program.

Critical reservations towards female smoking (rated by marks 4 or 5) have a steady frequency in both years of the experiment in both monitored groups; it fluctuates at approximately 95 %. The numbers of children criticizing male smoking, significantly influenced by the project, decreased in both groups between the survey at the end of the first grade and before the start of the program at the beginning of the second grade. However, the frequencies came out to be similar during the post-test at the end of the second grade (see Table 2).

Tab. 2: Critical approaches to smoking

E-F: experimental group – criticizing female smoking; C-F: control group – criticizing female smoking; E–M: experimental group – criticizing male smoking; C–M: criticizing male smoking

	E-F	C-F	E-M	C-M
1-PRE	96	95,7	94	94,3
1-POST	92,6	94,1	92,2	90,1
2-PRE	96,2	94,4	81,2	91
2-POST	96,3	94	91,1	89,8

Less children in their second grade at the beginning of the program expressed their **belief that they would smoke** in the future than at the end of the first grade; this accounted for children in both groups. The numbers of “future smokers” increased in the post-test, but they were still lower than those given at the end of the first year. The numbers of children who did not know whether they would smoke in the future or not increased in comparison with the first year for children in the experimental group, decreased for children in the control group, and the level of frequencies was similar (tab.3)

Tab. 3: Potential future smokers

	Future smokers Exper. group	Future smokers Control group		Don't know Control group
1. PRE	2,3	3,8	5	2,9
1.POST	2,9	5,4	3,7	11,3
2. PRE	0,7	1,2	8,7	8,5
2.POST	2	3	10	9,1

The fluctuation of “decided” and “hesitating” future smokers frequencies is reflected in tendencies of the **answers regarding future non-smoking**. The group involved in the prevention program was positively influenced by it, which was reflected in the significant increase of the future non-smokers numbers during the program. Unfortunately, this tendency turned around during the second year and the decrease of the desirable attitudes could be observed both during the pre-test survey and after undergoing the second stage of the program. As for the control group, a significantly negative development could be observed during the first year while the numbers of non-smokers rose in this group during the pre-test phase to the level equal to that of the experimental group; later, the numbers fell again, but they were similar to those of the experimental group. (tab. 4).

Tab. 4: Future non-smokers

E – experimental group (involved in the prevention program), C – control group

	Future non-smokers E	Future non-smokers - C
1. PRE	92,7	93,3
1. POST	93,4	83,3
2. PRE	90,6	90,3
2. POST	88	87,3

It can be said that the attitudes of children which were arrived at according to their admiration or criticism of smoking and according to the decisions about their future smoking or non-smoking were positively formed during the first phase of the program, but failed to be formed equally during the second phase.

2. Smoking environment, exposure to smoke

A. Exposure of children to second-hand smoke in their home environment

It can be concluded from the results that high numbers of children live among smokers and are exposed to negative effects of second-hand smoke. From the total number of 431 children both in the experimental and control groups, about a third have a

mother who is a smoker and about a half have a father who is a smoker. Compared to data acquired during the first year, the numbers of parents – smokers rose. It cannot be said whether this fact is due to the increase of smokers among parents in absolute numbers, or whether the existing smokers did not use to smoke while the children were present.

More than a quarter of children are exposed to second-hand smoke from their relatives (uncles, aunts, grandparents, or other relatives).

Tab. 5a: Data regarding the occurrence of smokers among parents and other relatives from experimental group children (E) and control group children (C)

Smokers in the family %				
	E1	E2	C1	C2
Father smokes	45,5	50	41,6	45,5
Mother smokes	33,3	27	34,4	29
Uncle smokes	22,4	24,4	21,6	28,2
Aunt smokes	15,2	10,5	20,8	20
Grandmother smokes	29,7	27,6	34,4	40
Grandfather smokes	34,5	32,2	24,8	30,9
Other relative smokes	6,1	4,6	2,4	4,5

Tab. 5b: Data regarding the numbers of smokers among parents and grandparents of both groups of children during the first year

Children’s exposure to second-hand smoke at their homes (%)	
Mother smokes	21,3
Father smokes	33,7
Grandparents smoke	35,6

B. Smoking at home and in the public

Children answered the question regarding smoking in the public. Three quarters of children stated that members of their family smoke at places where children are. Among the places given most frequently were garden, bus stop, restaurant, in the street, balcony, porch, toilet, hallway, car, kitchen, living room. There were no differences among the experimental and the control groups.

Tab. 6: Exposure of children to second-hand smoke

Do members of your family smoke during your presence? %				
	E1	E2	C1	C2
Yes	72,4	72,2	75,8	68,9
No	27,6	27,8	24,2	31,1

3. Children's risk behavior

Personal children's experience with smoking and alcohol consumption as well as behavior encouraging positive attitudes towards smoking, such as lighting cigarettes or sending children to bring them were coined as risk behavior.

More than a half of seven-year olds stated that they have already tasted alcohol; the numbers equaled in both groups. In the control group, the number of those who have tasted alcohol by the end of their second grade amounted to nearly 60 % (tab. 7). Although children said that they "only" tasted alcohol and that they are not its regular or occasional consumers, this situation is alarming.

The actual experience with smoking was the highest in the experimental group during the pre-test: more than 10% of children had already tried smoking. During the second survey, the numbers of experimenting smokers declined dramatically (tab. 7). The percentage of experimental smokers was equal during the pre-test and the post-test surveys with the control group (8 %).

Tab. 7: The frequency of indicators characterizing children's risk behavior

Children's risk behavior %				
	E1	E2	C1	C2
Experimented with smoking	10,6	4,6*	7,9	7,8
Experimented with alcohol	54,3	52,3	53,7	58,7
Buys/brings cigarettes	6,7	3,3	7,9	11,5
Lights cigarettes	6,3	4,6	6,8	10,2

Note: The statistical significance of difference in frequency regarding children experimenting with smoking during the pre-test and post-test surveys is * $p \leq 0,05$

The development of the indicators pointing to the accessibility of cigarettes is positive: the frequency of positive answers lowered in the experimental group in the second grade during both tests while the numbers of children bringing cigarettes to parents or lighting them were rising in the control group (tab. 8). We can assume that the program also had a positive impact on parents who had been given information letters and anti-smoking brochures called "How Your Child Will Not Become a Smoker."

Tab. 8: Accessibility of cigarettes, risk behavior

Bring cigarettes – E: experimental group; Bring cigarettes – C: control group; first year/grade – pre-test and post-test; second year/grade: pre-test and post-test

	Brings cigarettes - E	Brings cigarettes - C	Lights cigarettes -E	Lights cigarettes -C
1st year PRE				
1st year POST	9,9	9,9	6,6	6,6
2nd year PRE	6,7	7,9	6,3	6,8
2nd year POST	3,3	11,5	4,6	10,2

4. The characteristics of children with various/different? attitudes to their own smoking

Approximately 9 % of children (9 boys, 1 girl) stated that they will smoke in the future during the second survey at the end of the second year. Differences between the percentage of boys and girls can be due to the fact that the society tolerates male smokers, who are the models for 8-year old boys, more than female ones. 10 % of children of both sexes were undecided (20 boys, 19 girls).

The analysis of selected monitored indicators (judging according to present attitudes of children towards their future smoking or non-smoking) showed interesting differences (tab. 9a).

Table 9a: The characteristics of children with different attitudes towards their future smoking/non-smoking behavior at the end of the second year

The characteristics of children with different approaches to their future smoking or non-smoking (%)	Will smoke N = 10	Don't Know N = 39	Will Not Smoke N = 356
Admires female smoking	10	3,4	2,6
Admires male smoking	20	2,8	2,6
Mum smokes	44,4	48,5	24,1
Dad smokes	66,7	68,7	44,9
They would advise their parents not to smoke	77,8	76,7	90
Buys cigarettes	30	7,9	5,9
Lights cigarettes	30	13,2	5,6
Tried smoking	40	5,3	5,1
Tried alcohol	80	65,8	52,9

There is a significantly higher number of those with positive attitudes towards both female and male smoking in the group of children who stated that they will smoke in comparison with the other two groups. Nearly one third of them buys or lights cigarettes; 40 % of them have tried smoking. Most of them – 80 % - have tried alcohol. All these numbers are significantly higher than those in the groups of the undecided children and those who stated that they would not smoke.

Two thirds of children who want to smoke in the future or who are undecided yet have father who is a smoker and nearly one half of them have mother who is a smoker. However, nearly 80 % of those children would recommend their parents not to smoke. They understand smoking as risk behavior.

In the future non-smokers group, about one quarter of the children have mother who is a smoker and one half have father who is a smoker. According to the results, the numbers of those children who have got access to cigarettes, who have tried alcohol, ad who admire smoking, are the lowest in this group. Similar results were obtained in this group in previous surveys during the first stage of the survey (tab 9b).

Tab. 9b: Results of the pilot study after the first year of the experiment (first-graders).

The characteristics of children with different approaches to their future smoking /non-smoking %			
	Future smokers N=19	Don't know N=33	Future non-smokers N=424
Mother smokes	57,9	30,3	19,1
Father smokes	57,9	54,5	31,4
Buys cigarettes	31,6	18,2	6,6
Lights cigarettes	36,8	24,2	5
Admires male smoking	15,8	9,1	2,4

5. Observing the healthy eating principles

The project focuses at smoking prevention, but also encompasses the healthy lifestyle issues in wider contexts, especially healthy eating. In order not to make this issue too complex for the tested children, the aim of program is to encourage children to increase the consumption of fruits, vegetables, and dairy products. The impact of the program on such behavior was monitored in the questionnaire, in which one of the question asked the children about the consumption of food, vegetables, and dairy products in the previous day.

More than 80 % of children ate fruit – most frequently it was an apple, banana, strawberries, tangerine, orange, peach, nectarine, or kiwi (see tab. 10). Two thirds of children ate some vegetable meal. Although the surveys were carried out in December (the pre-test) and in June (the post-test), the frequency of answers was similar. Hence it can be concluded that there is no seasonal impact on the fruit and vegetable consumption. There were no differences in the experimental and in the control groups.

Tab. 10: The frequencies of answers regarding the children’s current consumption of fruits, vegetables, and dairy products.

Ate healthy food yesterday %				
	E1	E2	C1	C2
Dairy products	74,7		81,9	82,5
Fruits	81,8	83,3	80,8	79
Vegetables	65,6	68,5	63,8	66,5

Note: the statistical significance of differences between the answers frequency during the first and second survey: ** $p \leq 0,01$

Over 80 % of children acknowledged the consumption of dairy produce: milk, yoghurt, cheese, drinking chocolate, cottage cheese, and butter (which does not belong into this category) were given most frequently.

Such results cannot be seen as satisfactory: the recommendation for the daily proportion of fruits/vegetables/dairy products state 3–4 portions of fruit, 4–5 portions of vegetables, and 3 portions of dairy products. Should the respondents observe those recommendations, 100 % of them would have to give a positive answer regarding the consumption of any amount of fruits/vegetables/dairy produce. In the groups formed by the program, a special attention was given to those food categories, including the information about “Five Times a Day” and “M Elixir” programs, which were sent to parents. There was an increase of dairy products consumption in the experimental group, it was not significant enough, however, to see the influence of the program on the experimental group in comparison with the control group.

6. Parent questionnaire

Cooperation with the parents is necessary for the efficiency of the school health education programs. In the “Non-smoking Is the Norm” program, child-parent cooperation is secured by the means of doing homework together and addressing parents by letters providing information about the course of the program in their child’s class.

The letters also contained scientific information about smoking risks, especially about the risks of second-hand smoking, about healthy eating, and about the necessity of regular consumption of fruits, vegetables, and dairy produce for human body. Feedback was obtained by means of a questionnaire addressed to the parents of the children who were members of the experimental group. 126 questionnaires were returned, which is 50 % return. The questionnaires were most frequently filled in by mothers (60 %), fathers (8 %), and a third of the questionnaires was filled in by both parents. Only 9 % of both parents were both smokers. About one third of the respondents stated that one parent smokes.

The questionnaire consisted of eleven questions which dealt with issues of the dangers of second-hand smoke, the ban on smoking at public places, and the way children should be protected before smoking. (tab. 11)

Tab. 11: The frequency of answers in the parent questionnaire

Question		in %
1	Second-hand smoke represents a serious health risk for children	92,1
2	Agreement with the ban on smoking in public	79,4
3	Don't know if the ban on smoking in public has any impact on smoking at home	27,8
4	Never smokes at home	78,6
5	Leaves when someone smokes near their child	66,5
6	Are sure that when their child leaves home, s/he is in a non-smoking environment	54,9
7	Smoking outside is a adequate protection before passive smoking	95,2
8	It is not necessary to increase the protection of children before second-hand smoke	60,8
9	Children should be taught about the way of avoiding second-hand smoke at school	81
10	Parents do not mind discussions about the ban on smoking in public	48
11	Parents are not smokers	57,1

A vast majority of parents (92 %) stated that second-hand smoke represents a serious health risk for their children. A majority (79 %) also agreed with the ban on smoking in the public; parents who were smokers also expressed this opinion.

The parents' opinions regarding the issue whether the ban on smoking in public there can have an impact on their smoking at home were most contradictory. A third of parents said they are not able to judge this. An equal proportion of them stated that there will not be any influence: "Everyone can do at their homes what they want to." An equal proportion yet expressed the opinion that because of the ban, smokers will realize that non-smokers don't like smoke and will stop smoking at home as well.

Nearly 79 % of parents stated that they never smoke at home. Only 14% of parents ask someone, who is smoking while their child is present/nearby, to extinguish the cigarette, but two thirds of them leave with their child so that s/he is safe from the smoke.

More than a half of parents are sure that their child is not exposed to cigarette smoke while away from home. However, about a quarter of parents stated that they are not entirely sure about this; nevertheless, they say that the relatives and friends their child visits are non-smokers. About 20 % of parents could not judge the possibility of exposure to second-hand smoke outside home.

A vast majority of parents (95 %) consider smoking outside their home (apart from non-smoking) the only adequate protection of their child before smoking. More than a half of them consider the protection of their child before smoking as satisfactory. Only 20 % of parents promised that they will be more consistent.

Nearly a half of parents support the discussions about smoking in public places, and nearly a half of them support and look for experts' opinions. More than 20 % do not follow the discussions, 14 % of parents do not like the form of the debates although they admit that it is necessary, and 13 % of the respondents state that they not only support the non-smoking debates, but that they also join them.

Most of the parents (81 %) would appreciate if the school would teach children how to actively protect themselves before second-hand smoke. 10% of parents were not sure, an equal number of parents think the school has other responsibilities. No one stated unambiguously that the school should not teach children to be in opposition to smokers.

Result analysis

The aim of the pilot study was to test the form and methodology of the further stage of the “Non-smoking Is the Norm” educational program aimed at second-grade children at Czech primary schools. The program contains five lessons, elaborates their detailed structure, and brings further suggestions for the creative input of teachers. According to the experience of chosen trained teachers, the children find the program interesting, and their desire to express their opinions is inspiring. The level of difficulty both of the form and the content is adequate to the children's age.

Unlike the first stage of the project, the second one did not unfortunately have a significant impact on the children's attitudes towards smoking. The only significant statistical differences with the experimental group were noted in lower numbers of those who already experiment with cigarettes and those who eat more dairy products. Another statistically significant difference could be found with the prevalence of signs signaling easy accessibility of cigarettes and the presence of risk behavior connected with handling with cigarettes with the experimental group.

As for children who think at the age of eight that they will smoke in the future, they also more frequently experimented with smoking and alcohol. Most of the “future smokers” also admired adult smokers, which is a warning signifying that the probability of their becoming smokers in the future is high. Children copy adult's behavior – this is a part of the social learning process. The parents of children from this group were also smokers more frequently.

Conclusion

The survey **has not shown statistical corroboration of the impact of the anti-smoking program on children's attitudes towards smoking, or on their preference of healthy lifestyle and eating.** The efficiency of the program has not been proved unquestionably, however, we are able to state **maintaining of the current state of affairs and improvements in some respects.** It is a well-known fact that exercising impact on attitudes and behavior is not a matter of a single intervention (5 lessons in our case), but that acquiring knowledge is demonstrable even after short-term training. A number of factors (family, personal experience, school, peers, culture and its values, etc...) determine everyday attitudes and behavior.

The responses on the program from the schools are encouraging. Children like it and are looking forward to its continuation next year. Teachers also evaluate it and recommend it for further practical use. Parents responses have also been positive.

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VÝSLEDKY PILOTNÍ STUDIE PROGRAMU „NORMÁLNÍ JE NEKOUŘIT“ PO DVOU LETECH

Souhrn: Příspěvek hodnotí výsledky pilotní studie preventivního edukačního programu „Normální je nekouřit“ po dvou letech realizace ve stejném skupině dětí. Cílem bylo zjistit účinnost programu zaměřeného na výchovu k podpoře zdraví a zdravého životního stylu a výchovu k nekouření u dětí mladšího školního věku. Metodou experimentu s experimentální a kontrolní skupinou byla prokazována efektivita programu. Pro ověření postojů a chování dětí byla použita metoda individuálního rozhovoru s dětmi a dotazníku pro rodiče.

Klíčová slova: výchova k nekouření, zdravý životní styl, primárně preventivní program, výchova ke zdraví, drogová prevence