

## RESEARCH ARTICLE

# Smoking Prevention for Adolescents in Romanian Schools

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### Abstract

This study had two objectives. The first was to assess the frequency and content of school-based anti-smoking education received by Romanian adolescents aged 14-15. Secondly, the study aimed to evaluate to what extent the implementation of a specific 5 lessons smoking prevention program influences the quality of anti-smoking school education among Romanian adolescents. The investigation was performed in twenty schools from Cluj-Napoca, Romania, which were randomly assigned to the control and experimental conditions, resulting in 55 participating classes from the seventh grade (28 in the control group and 27 in the experimental group). The experimental group participated in a school-based smoking prevention program consisting of 5 lessons. The control group benefited only in the standard anti-smoking education offered by their schools. Six months after the program implementation, students from both experimental and control groups filled in a questionnaire, assessing several issues regarding their exposure to anti-smoking school education in the last year. The results showed a low exposure to anti-smoking school education among the Romanian adolescents. The implementation of the specific school-based smoking prevention program increased the exposure of Romanian adolescents to a higher number of lessons of smoking prevention and influenced positively the quality of these lessons. The study identified several gaps with respect to anti-smoking education in Romanian schools. It underlines the benefits of the implementation of a school based smoking prevention program with a clear structure, which contains appropriate educational messages and it is easy to implement.

**Keywords:** School-based smoking prevention programs - health education - young people - Romania

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### Introduction

Cigarette smoking represents a significant health problem and tobacco has been identified as causing more preventable diseases and premature deaths than any other drug (Mathers et al., 2006). The argument for smoking prevention among adolescents is based on the observation that if smoking does not start during adolescence, it is unlikely to ever occur and on data indicating that the probability of cessation among adults is inversely related to age at initiation. Even infrequent experimental smoking in adolescence significantly increases the risk of adult smoking as well as the risk of diseases and death (US Department of Health and Human Services, 1994a; 1994b; Lantz et al., 2000). Adolescent smoking have possible harmful effects on later social, emotional, and behavioural well-being, besides short-term and long-term bad consequences on health (US Department of Health and Human Services, 1994a; 1994b; Mathers et al., 2006; Oluwakemi et al., 2013). All these issues underline the necessity of providing appropriate education for smoking prevention for adolescents, as an important step for assuring a good educational development and health promotion.

School-based programmes offer an opportunity to prevent the initiation of tobacco use among adolescents, having several advantages (US Department of Health and Human Services, 1994b; Phinse et al., 2013). In many countries, health education is part of the school curriculum, which facilitates the inclusion of the smoking prevention activities in this curriculum (Murray et al., 1992; Wenter et al., 2002). At the same time, school-based smoking prevention programmes can reach wide audiences and there are opportunities for interpersonal communication, which is important for the fine-tuning of the message. Nevertheless, there are also several limitations. Numerous academic and non-academic demands placed on schools as well as the broad range of different health topics might impede a thorough implementation of all programmes. Besides, the implementation of school-based smoking prevention programmes depends not only on limited time, but also on sometimes insufficiently trained or unmotivated personnel (Murray et al., 1992, Lotrean et al., 2010).

Guidelines for developing and implementing school-based tobacco prevention programmes issued by the National Cancer Institute and the Centers for Disease Control and Prevention (CDC) underlyne the importance

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of delivering good quality educational activities (US Department of Health and Human Services, 1994b). Besides immediate and long-term undesirable physiologic, cosmetic, and social consequences of tobacco use, the educational activities should provide information on the social norms and influences that promote tobacco smoke and should help the development of cigarette refusal skills. With respect to social norms regarding tobacco use, programs should use a variety of educational techniques to decrease the social acceptability of tobacco use, highlight existing anti-tobacco norms, and help students understand that most adolescents do not smoke. In order to understand the social influences that promote tobacco use, programs should help students to develop skills in recognizing and refusing tobacco-promotion messages from the media, adults, and peers. At the same time, programs should help students to develop refusal skills for resisting social influences that promote tobacco use through direct instruction, modelling, rehearsal, and reinforcement, and should coach them to help others develop these skills (US Department of Health and Human Services, 1994b).

Hence, in order to develop an appropriate school-based education with respect to smoking in a country, it is important to assess the current situation, to identify strengths and weaknesses and then to help the implementation of the guidelines by correcting the inappropriate issues and taking advantages of the good actions already in place.

This study focuses on school-based smoking prevention in Romania and it has two objectives. The first one is to assess the frequency and content of school-based anti-smoking education received by Romanian adolescents. Secondly, the study aims to evaluate to which extent the implementation of a specific school-based smoking prevention program influences the quality of anti-smoking education received by Romanian adolescents at school.

## Materials and Methods

### *Sample and procedure*

In Romania, the principals of the schools are entitled to decide whether or not their students would participate in educational programmes. Hence, twenty-five school principals were informed about the possibility of participation of their school in a smoking prevention program during one of their administrative meetings, where the local school inspectorate, which pertains to the Romanian Ministry of Education, convoked their participation. Twenty out of the twenty-five school principals agreed to participate with their schools in the project and provided the number of the 7<sup>th</sup> grade classes that could participate. The research team randomly assigned ten schools to the experimental condition and ten to the control condition. The experimental group consisting of 27, 7<sup>th</sup> grade classes participated in a school-based smoking prevention program. The control group comprising of 28, 7<sup>th</sup> grade classes benefited only from the standard anti-smoking education offered to their students by their schools.

The implementation of the school based smoking prevention program among the experimental group took place during March and April 2006. In October-November

2006 the students from both experimental and control group filled in an questionnaire which assessed several issues regarding their smoking behaviour as well as their exposure to anti-smoking school education in the last year. The present study uses the following information assessed by the questionnaire: socio-demographic characteristics (age and gender), number of anti-smoking lessons which were offered to students in the last year (0, 1-2, 3-5, more than 5, I do not know) and the type of issues presented during these lessons: health effects of smoking, dependency provoked by smoking, economical costs of smoking, the image of smoking and smokers, number of people who smoke, pressure to smoke coming from several persons, advertising for tobacco products, ways of refusing a cigarette, commitment not to smoke.

The research team administered the questionnaires and appropriate conditions were created in order to assure confidentiality and voluntary participation of students (Lotrean et al., 2010). No refusals were recorded; non-participation was exclusively due to absence of students on the day of assessment.

### *Characteristics of the smoking prevention program*

The programme consisted of five weekly lessons of forty-five minutes each and was translated from an effective Dutch programme (De Vries et al., 1992; 1994). This programme used a video-peer-led strategy and was adapted to the Romanian situation and culture by using different cartoons and recording scenes for the video that matched the Romanian context of 13-15 year-old adolescents. All items were piloted and revised when needed (Lotrean et al., 2010).

The program focused on three important determinants of smoking: attitudes, social influences and self-efficacy. With regard to the attitudes, the programme focused on reasons why people do or do not smoke and why people quit smoking, primary short-term effects of smoking and some long-term effects of smoking, passive smoking, economic consequences of smoking (e.g. the amount of money spent by a smoker on tobacco each month and what other things could be bought with money spent on smoking), addiction and the dangers of experimentation as well as alternatives to smoking. Regarding social influences, the programme discussed differences between direct and indirect pressure to smoke, direct pressure to smoke from peers, indirect pressure to smoke from adults and tobacco advertisements. Self-efficacy (SE) was incorporated by demonstrating resistance skills to students and by their practice in various challenging situations; the learning objectives were raising SE in handling social pressure to smoke, raising SE towards finding alternatives to smoking, developing cigarette refusal skills as well as developing responsibility and commitment to non-smoking.

The structure and content of each lesson, presented by adolescents on video, can be summarized as follows: a. introduction of the theme in a class on video, b. activities in small groups, peer-led, c. return to one group and continuation of the lesson on video, d. activities in small groups, peer-led, e. (sometimes) home activities.

The video consisted of an introduction by three

adolescents, real life situations played by adolescents, interviews with adolescents and an introduction to the activities by a young person. The activities, focusing on the theme of the lessons, were realized in groups of four or five students and were led by a peer leader. The peer leaders were students from the same class as the students. Teachers could use various methods to form groups and to choose peer leaders. Two weeks before the programme started, the teacher told the class that they would work on a smoking prevention programme for the next weeks and that they would have to work in small groups. Mostly, teachers formed the groups and then the students in the group chose their own peer leader who had to be a non-smoker. If necessary, teachers could select a peer leader, as well. The peer leaders did not present information about the programme, but served as chairmen of the small activity groups. They summarized the activities, stimulated the group to work and presented the outcomes of group work.

The teachers coordinated the lessons, assisted the peer leaders and stimulated the students to participate. Both teachers and peer leaders received one-hour training before the beginning of the programme. For the training of peer leaders and teachers a special training video was developed which explained their task. Students, peer leaders and teachers had their own manuals, summarizing content of the video by cartoons, as well as the activities and instructions for the achievement of the activities.

Each lesson had a different theme. The first lesson gave a general introduction, shortly discussing the consequences of smoking as well as direct and indirect pressure to smoke. The second lesson focused mainly on the effects of active and passive smoking, which were also shown on video. The third lesson discussed peer pressure and the activities were aimed at recognizing and handling direct pressure. Several methods of skills training were modelled on video and were practiced afterwards during activities by role-plays in small groups in order to enhance self-efficacy and the acquisition of refusal skills. The fourth lesson analysed indirect pressure from advertisements and adults. The last lesson provided a summary; the activities centred on skills training and decision making. To increase commitment, students were asked to make a non-smoking contract and to write their name on a non-smoking poster that could be clearly seen in the class.

#### Data analyses

Included basic descriptive statistics of the respondents

**Table 1. Number of School Lessons Regarding Smoking Prevention in the Last Year**

	Experimental group N=523, %	Control group N=548, %
Number of school smoking prevention lessons		
0	0*	26.5
1-2	15.3*	43.1
3-5	41.5*	11.7
>5	38.1*	7.7
I do not know	5.1*	11

\*statistically significant differences ( $p < 0.05$  at chi2 test) between the two groups

with regard to socio-demographics and items regarding exposure to smoking prevention lessons and their content. Chi square tests were used in order to compare treatment conditions. Mean age was also calculated for the sample and independent sample T-test was used in order to compare treatment conditions. Data analysis was performed with SPSS-12 statistics programme. Significant results were reported at  $p < 0.05$ .

## Results

### Study sample

The sample consisted of 1071 students (523 in the experimental group and 548 in the control group) aged 14-15. The mean age of the sample was 14.5 (SD=0.3) years and did not differ significantly between the experimental and control groups. The conditions also did not differ significantly regarding their gender distribution (50.9% girls in the experimental group versus 51.5% in the control group).

### Number of smoking prevention lessons

The results show that among the control group around one quarter of the subjects did not benefit of any educational activities regarding smoking prevention in the last year. The majority of the junior high school students from this group who had such lessons declared that they participated to 1-2 lessons. Actually only around 20% of the control group students had at least three lessons of smoking prevention at school in the last year (Table 1).

Among the experimental group all subjects benefited of at least 1-2 lessons. The majority participated at anti-smoking communication at school during at least three lessons and one third benefited of even more than 5 lessons.

### Educational items discussed during the smoking prevention lessons

Table 2 shows that a percentage of 60% of the students from the control group remembered that they discussed at school in the last year about health consequences of smoking and around one third about the dependency provoked by smoking. All the other issues related to economical consequences of smoking, image of smoking,

**Table 2. Items Discussed during School Lessons about Smoking Prevention in the Last Year**

Item	Experimental group N=523, %	Control group N=548, %
Health effects of smoking	90.6*	60.4
Dependency provoked by smoking	62.9*	31.6
Economical costs of smoking	33.1*	14.2
The image of smoking and smokers	40.4*	17.9
Number of people who smoke	59.3*	15.3
Pressure to smoke coming from several persons	76.6*	12.6
Advertising for tobacco products	48.9*	10.6
Ways of refusing a cigarette	80.3*	21.4
Commitment not to smoke	59.2*	13.9
I do not remember the content of the smoking prevention lessons	4.2*	10.2
I had no school lessons about smoking prevention	0	26.5

\*statistically significant differences ( $p < 0.05$  at chi2 test) between the two groups

pressure to smoke coming from several persons and tobacco advertising and commitment not to smoke were mentioned by less than 20% of the control group subjects. Only one out of 5 subjects discussed about ways of refusing cigarettes.

The participation in the smoking prevention programs lead to an increased exposure to anti-smoking communication at school regarding all items, in comparison with the control group. All items were discussed by at least one third of the participants, with a range varying between 33-90.6%. The issues which were remembered more frequently, besides health consequence and dependency caused by smoking, were the pressure coming from several persons and ways of refusing pressure to smoke.

## Discussion

This study assessed the exposure to school-based smoking prevention educational activities among Romanian adolescents. The results have several implications for the development of future anti-smoking education in Romania.

The results show the low exposure to anti-smoking education among the control group of the study. The students participated generally to 1-2 lessons, where they mainly discussed about the health hazards of smoking. Several studies showed that this approach and limited number of lessons can not have important effects on smoking behaviour of adolescents (US Department of Health and Human Services, 1994b; 2000; Lantz et al., 2000; Cuijpers, 2002; De Vries, 2007). This underline the necessity of using the school as a place of effective intervention for smoking prevention among Romanian adolescents, by developing and implementing of easy-to-apply educational activities, which should have a clear structure and could be implemented by school staff without requiring special time-consuming training or preparations from them.

The implementation of a special developed 5 lessons smoking prevention program increased the exposure of Romanian adolescents to a higher number of lessons of smoking prevention. It also influenced in a positive manner the quality of these lessons, by addressing several issues which should be discussed with respect to social influence and self-efficacy in order to refuse cigarettes. These results are due to several advantages of the program. First, the teachers needed to follow only a short training, as their main task consisted of coordinating the lessons, assisting the students and stimulating their participation. The teachers did not have to spend much time in discovering how to prepare or use the lessons. Second, by using adolescents, who introduced the lessons on video, the video was meant to be attractive for students and to improve their comprehension since they paid more attention to the message. Third, students were involved in performing activities in small groups, which improved their active participation. Instead of providing information, students were encouraged to discover information (active learning). Thus, students may discover gaps in their knowledge, which will make them more receptive to new

information (De Vries et al., 1994). Moreover, several key-messages were repeated in different ways during several activities and lessons.

Nevertheless, there were students from the experimental group, who declared participation only in 1-2 lessons. This could be the result of recall biases, but also a consequence of their missing from school during some days when the other lessons were presented or an incomplete implementation of the program. Moreover, some issues which were discussed during the lessons were not remembered by all students. Despite this, the key educational messages regarding the identification of social influences and developing skills which help to resist pressure to smoke were remembered by many students, maybe also as a result of stressing and repeating them during the educational activities. This underlines the importance of training and motivating the people involved in the process of program delivering in order to assure a good implementation of the programme. Moreover, it is important to encourage them to provide their feedback on barriers and enabling factors that improve programme implementation in schools.

This study has several limitations. It included only adolescents from one big town of Romania, which limits the generalization of the results to the whole country. Moreover, the data are based on adolescents' own reports, which could be the subject of some recalling biases.

In conclusion, this data identify several gaps with respect to anti-smoking education in Romanian school. They underline the benefits of the implementation of a school based smoking prevention program with a clear structure, which contains appropriate educational messages and it is easy to implement, such as the peer led smoking prevention program described in this study. However, the impact of this program will remain limited if it is not diffused and adopted by schools. Hence, one important implication of this study is the necessity for the diffusion of the peer-led smoking prevention programme through a wider cooperation between governmental agencies, non-governmental organizations, academic area and schools, as other studies also suggest (Koprivnikar, 2010; Lotrean et al., 2010).

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