

PROBLEME DE COMBATERE A FUMATULUI

Smoking among Romanian adolescents: do the gender differences exist?

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REZUMAT

Fumatul în rândul adolescenților români: există diferențe între fete și băieți?

Pentru a identifica diferențele între fete și băieți cu privire la opiniile și comportamentul legat de fumat, a fost realizat un studiu transversal în rândul a 473 elevi cu vârsta cuprinsă între 15-17 ani din 5 licee din Cluj-Napoca, România. Toți elevii au completat un chestionar care evalua obiceiurile lor legate de fumat. Rezultatele studiului arată faptul că 24,5% dintre elevi erau fumători, constatându-se diferențe semnificative statistic cu privire la prevalența fumatului între băieți (32,2%) și fete (20,9%). Fetele fumătoare sunt mai convinse decât băieții fumători de faptul că fumatul le ajută să își păstreze greutatea, în timp ce băieții fumători văd în fumat o modalitate de relaxare. Încrederea în capacitatea proprie de a nu fuma în momente în care se confruntă cu probleme emoționale a fost mai mică în rândul fumătoarelor decât al fumătorilor. Mai mult decât atât, în comparație cu băieții nefumători, fetele nefumătoare au declarat o încredere mai scăzută în capacitatea proprie de a nu fuma atunci când sunt supărate, deprimare sau nervoase și totodată, intenția lor de a începe să fumeze în viitor a fost mai mare. Băieții nefumători au recunoscut o presiune mai puternică de a fuma din partea colegilor de școală, decât au declarat fetele nefumătoare. Aceste rezultate au implicații pentru activitățile de prevenire și reducere a fumatului în rândul adolescenților din România. În primul rând, programele de prevenire și reducere a fumatului trebuie să insiste asupra formării unor atitudini anti-fumat, dezvoltarea capacității de a rezista presiunilor venite din partea grupului de tineri de aceeași vârstă și încrederea în capacitatea proprie de a refuza să fumeze. În al doilea rând, activitățile anti-fumat trebuie să țină cont de faptul că fetele consideră fumatul o metodă de control a greutateii, iar băieții o metodă de relaxare și să le prezinte alte modalități mai sănătoase de a realiza aceste lucruri. De asemenea, programele trebuie să ajute adolescenții români și în special fetele să dezvolte abilități de a-și rezolva problemele emoționale fără să apeleze la fumat.

Cuvinte cheie: fumat, adolescenți români, diferențe între fete și băieți

ABSTRACT

A cross-sectional research study was carried out among Romanian adolescents to identify gender differences in beliefs and behaviour regarding smoking. A written survey was conducted among 473 students aged 15-17 years from 5 senior high schools in Cluj-Napoca, Romania. All students filled in a questionnaire which assessed their smoking-related behaviour. The results show that one quarter (24.5%) of the subjects were smokers, a significant differences was noticed, regarding the prevalence of smoking between boys (32.2%) and girls (20.9%). Smoking behaviour served a stronger function for smoking girls to remain slim, while smoking boys had stronger beliefs that smoking helped them to relax. Self-efficacy expectations to handle emotional situations without smoking were significantly lower in smoking girls than in smoking boys. Moreover, in comparison with non-smoking boys, non-smoking girls reported low self-efficacy to maintain their non-smoking status when upset, depressed or nervous, and a stronger intention to start smoking than non-smoking boys. Non-smoking boys reported stronger pressures to smoke from their peers in the same school year. These findings have several implications for smoking prevention and reduction activities in Romania. First, smoking prevention programs should strengthen positive attitudes towards non-smoking, resistance against peer influences and enhance self-efficacy beliefs. Second, smoking prevention and reduction activities should address the fact that smoking is seen by Romanian girls as a way to control their weight, and as a way to relax by boys, and thus need to offer other healthier alternatives to realize these outcomes. Additionally, they need to address strategies to cope with emotional situations, in particular for girls.

Key words: smoking, Romanian adolescents, gender differences

Introduction

Smoking among Romanian young people represents an important problem of public health^{1,2}. The Global Youth Tobacco Survey (GYTS) carried out for the first time in Romania in 2004 showed that 56.7% of 13-17 year-old school students had ever smoked cigarettes and 23.2% currently smoke cigarettes (smoked cigarettes at least once in the past month)³.

These underline the importance of developing and implementing efficient smoking prevention and cessation programs. In order to develop appropriate programs for smoking prevention and cessation it is important to understand why adolescents start to smoke and why they continue to smoke. Furthermore, several studies indicate that it is

important to develop more gender sensitive smoking prevention programs^{4,5,6,7}. Hence, the identification of the beliefs that may be more relevant for boys or girls is needed to be able to attune smoking prevention programs to potential different gender related perceptions on smoking.

Hence, the goal of this study is to analyze and describe the differences in perceptions about smoking between the Romanian boys and girls. The theoretical framework used by this study is integrating concepts from various social cognitive theories and is referred to as the Integrated Model for explaining motivational and behavioural Change (I-Change Model)⁸. This model is derived from the Attitude – Social influence – Self-Efficacy Model⁸ that can be considered as an integration of ideas of Ajzen's Theory of Planned Behavior⁹, Bandura's Social Cognitive Theory¹⁰, Prochaska's Transtheoretical Model¹¹, the Health Belief Model¹² and goal setting theories. The I-Change Model has been shown to be useful to explain various health behaviours and smoking behaviour among adolescents in different European countries in particular¹³⁻¹⁷. The I-Change Model distinguishes three phases in the behavioural change process: the premotivational phase (determined by becoming aware of the problem and a person's own level of risk behavior), the motivational phase (becoming motivated to change; determined by attitudes, social influence perceptions and self-efficacy beliefs) and post-motivational process (self-efficacy beliefs, action plans and skills building). These processes are determined by four distal types of influence: behavioural factors (e.g. acquisition of skills and previous experience with the same and related behaviours), psychological factors (e.g. self-esteem, anxiety, depressed affect), biological factors (e.g. gender, age, hereditary variables) and social and cultural variables (e.g. parenting styles, social climate, socio-economic status)⁸.

This paper describes the differences in perceptions on smoking between girls and boys and focuses on motivational determinants such as attitudes, social influences and self-efficacy expectations, in order to identify the most important factors discriminating the two groups and to identify important beliefs for future programme planning on smoking prevention and reduction.

Methods

Design and sample

In the spring of 2004, a number of five senior high schools from Cluj-Napoca, a city with approximately 330,000 inhabitants situated in the North West part of Romania, were randomly chosen and approached regarding participation in a survey about smoking behaviour of Romanian adolescents. Each principal of all five senior high schools was informed about the survey during a meeting with one member of the research team; all principals agreed to participate and all first grade classes from the five senior high schools were involved in the survey.

Cross-sectional data were obtained in May/June 2004. The study sample consisted of 473 students from 19 first year senior high school classes. Adolescents' age varied between 15-17 years. No refusals were recorded; non-response was exclusively due to absence at the day of assessment.

Procedure

The research team administered the questionnaires. Classroom completion of the questionnaire took approximately 50 minutes. Teachers were present in the classroom during the

data collection, but they stayed in the front of the class and they were not involved in the collection of questionnaires, in order to assure confidentiality. Consent to participate was obtained from the school administration – the standard procedure in Romania.

Students were asked to participate and read an introductory letter. They were assured that the researchers would treat their questionnaires in confidence and it was explained that they could refuse to participate. Students put their completed questionnaires in an envelope, sealed it and the researchers collected the envelopes.

Questionnaire

An existing questionnaire based on the I-Change Model¹⁶ was used, piloted and adapted where needed. The I-Change questionnaire was translated from the version used for OCTOPUS, a European three countries study¹⁷ and for The European Smoking Prevention Framework Approach (ESFA), a collaboration of six European countries¹⁶.

The questionnaire assessed smoking behaviour, attitudes, social influences, self-efficacy expectations, intention and several socio-demographic items, which will be described in more detail below.

Smoking behaviour was assessed by asking students to pick a statement that best described them, out of a set of specific smoking-related questions. Responses were cross-validated using an algorithm consisting of concepts measuring current smoking and life-time smoking. Adolescents were then categorized in two groups: smokers and non-smokers. Smokers were defined as smoking at least one cigarette/week or smoking less than weekly, but having smoked more than 100 cigarettes in their lifetime¹⁶. Remaining respondents were classified as non-smokers.

Attitudes were measured on a seven-point scale using 12 items. Six questions assessed the pros of smoking and six other variables assessed the cons of smoking. The pros of smoking referred to expected positive outcomes of smoking (e.g. 'it helps to calm my nerves'; 'it will make me feel relaxed'). The cons of smoking measured the perceived negative outcomes of smoking (e.g. 'it is bad for my health', 'it tastes horrible'). Answering categories ranged from 'I totally disagree (= -3) to I totally agree' (= +3).

Perceived social influences were social norms, social modelling and social pressure of father, mother, brother, sister, best friend, friends and people in the same school year. Social norms were assessed by means of 7 questions on a seven point scale measuring adolescents' perception of whether their parents, siblings and friends think that they should smoke or not. For example: My best friend thinks I definitely should smoke (+3) to definitely should not smoke (-3).

Social modelling referred to students' perception regarding the smoking behaviour of the social environment. Perceived behaviour of parents, siblings and best friend was measured on a two-point scale (0-no, 1-yes), while for friends and people in the same year a five-point scale was used (from nobody = 0 to everybody = 4).

Social pressure assessed the pressure of smoking that students encountered from different persons, and was measured by 7 questions on a five point scale ranging from never to very often. For example: 'Have you ever felt pressure to smoke from your best friend?' Answering options were very often (4), often (3), sometimes (2), a few times (1) and never (0).

Self-efficacy expectations to avoid smoking were measured by 12 items on a 7-point scale. The items measure the adolescents' perception of their ability to refrain from smoking when they were pressured by others (e.g. when with friends who smoke, are you able not to smoke), or when under emotional strains (e.g. when you feel upset, are you able not to smoke) or when they were in daily routines (e.g. when you are watching TV, are you able not to smoke). Answering categories ranged from 'I am sure I will smoke' (= -3) to 'I am sure I won't smoke' (= +3).

Intention was measured by one question on a seven-point scale and evaluated adolescents' intention to smoke in the next year (+3 definitely; -3 definitely not).

Demographic variables assessed by the questionnaire included: age, gender, religious background (none, orthodox, catholic, protestant, other), ethnic background (Romanian, Hungarian, Roma, others).

Analysis

Comparisons between male and female smokers, respectively between male and female non-smokers with regard to their smoking related attitudes, social influences, self-efficacy expectations and intention were performed, using independent sample T-test.

Data analysis was performed with the SPSS-11 statistical program. Significant results are reported at $p < 0.05$.

Results

Characteristics of the sample

Of the 473 respondents, 67.9% were girls. The mean age of the participants was 15.9 years ($SD = 0.3$); 17.1% of the students belonged to disrupted families; 99.4% declared that they had a religious background, predominantly orthodox-orientated (83.9%). The ethnic structure of the sample was as follows: Romanians 96.1%; Hungarians 2.7%; Roma 0.8 %; other ethnic groups 0.4%.

A quarter (24.5%) of the subjects were smokers, a significant difference ($\chi^2(1) = 7.19$; $p < 0.01$) being noticed, regarding the prevalence of smoking between boys (32.2%) and

girls (20.9%). The mean number of cigarettes smoked per week by the smoking students was similar for boys (33) and girls (32).

Smoking girls and smoking boys

A comparison between female ($N = 67$) and male ($N = 49$) adolescent smokers showed that female smokers were significantly more likely to believe that smoking helped them to be slim ($t(112.6) = 2.86$; $p < 0.01$), whereas male smokers believed significantly stronger that smoking helped them to feel relaxed ($t(114) = -2.80$; $p < 0.05$) (see Table I). Female smokers perceived significantly stronger norms against smoking from their mother ($t(82.4) = -2.23$; $p < 0.05$) and father ($t(114) = -2.01$; $p < 0.05$) and more smoking behaviour among their mothers ($t(114) = 2.14$; $p < 0.05$) (see Table II). Regarding self-efficacy expectations, the results from Table III show that smoking girls had less confidence than boys in their abilities of refraining from smoking in emotional situations – when upset ($t(114) = -2.05$; $p < 0.05$), depressed ($t(114) = -2.14$; $p < 0.05$) or nervous ($t(114) = -2.63$; $p < 0.05$). Smoking boys had lower self-efficacy expectations than girls when being on the way from school to home ($t(114) = 2.81$; $p < 0.01$).

Non-smoking girls and non-smoking boys

A comparison between female ($N = 254$) and male non-smokers ($N = 103$) showed that there were no significant differences between these two groups with regard to smoking related attitudes and social influences, except the fact that male non-smokers reported greater pressure to smoke from the people in the same school year (see Table IV and Table V). As presented in Table VI, girls reported lower self-efficacy with regard to refraining from smoking in emotional situations such as when upset ($t(234,2) = -2.58$; $p < 0.01$), depressed ($t(256,4) = -2.65$; $p < 0.01$) or nervous ($t(225,1) = -2.37$; $p < 0.05$). Moreover, non-smoking girls declared stronger intention to start smoking during the next year ($t(252.7) = 3.02$; $p < 0.01$).

Discussion

The purpose of this study was to identify differences regarding perceptions of smoking between Romanian boys

Table I.
Gender differences among smoking adolescents regarding attitudes

Attitudes	Girls Mean (SD)	Boys Mean (SD)	T test
Pros: I feel more confident in company (-3 to +3) ^a	0.74 (1.09)	0.54 (0.88)	Non-significant
Pros: It helps to calm my nerves (-3 to +3) ^a	1.80 (0.97)	1.85 (1.02)	Non-significant
Pros: It will make me feel relaxed (-3 to +3) ^a	0.95 (0.89)	1.32 (0.92)	$t(114) = -2.80$
Pros: It helps me to be slim (-3 to +3) ^a	0.74 (0.91)	0.30 (0.74)	$t(112.6) = 2.86$
Pros: It is easier to be part of the crowd (-3 to +3)	0.86 (1.17)	0.53 (0.95)	Non-significant
Pros: My friends will pay me more attention (-3 to +3)	0.26 (0.91)	0.26 (0.75)	Non-significant
Cons: It is bad for my health (-3 to +3)	2.1 (0.90)	2.1 (0.85)	Non-significant
Cons: It is stupid of me (-3 to +3)	0.98 (1.60)	1.02 (1.52)	Non-significant
Cons: I consider my behaviour to be wrong (-3 to +3)	1.43 (1.03)	1.38 (1.22)	Non-significant
Cons: If I will get sick, I will be sorry that I ever started (-3 to +3)	2.11 (1.3)	1.77 (1.7)	Non-significant
Cons: It tastes horrible (-3 to +3)	-0.1 (1.37)	-0.4 (1.79)	Non-significant
Cons: I believe it to be unfriendly (-3 to +3)	0.16 (0.88)	-0.12 (0.98)	Non-significant

* = $P < 0.05$; ** = $P < 0.01$; *** = $P < 0.001$

Table II.
Gender differences among smoking adolescents regarding social influences

Social norms	Girls Mean (SD)	Boys Mean (SD)	T test
Mother (-3 to +3)	-2.52 (0.68)	-2.18 (0.95)	t (82.4)=-2.23
Father (-3 to +3)	-2.44 (0.95)	-2.08 (0.98)	t (114)=-2.01
Brother (s) (-3 to +3)	-0.70 (1.41)	-0.77 (1.12)	Non-significant
Sister (s) (-3 to +3)	-0.61 (1.20)	-0.55 (1.10)	Non-significant
Friends (-3 to +3)	-1.19 (1.47)	-1.14 (1.22)	Non-significant
Best friend (-3 to +3)	-0.53 (1.83)	-0.77 (1.38)	Non-significant
People in the same school year (-3 to +3)	-0.44 (1.27)	-0.08 (1.32)	Non-significant
Perceived behaviour			
Mother (0 to 1)	0.62 (0.48)	0.42 (0.50)	t (114)=2.14
Father (0 to 1)	0.50 (0.50)	0.51 (0.50)	Non-significant
Brother (s) (0 to 1)	0.19 (0.39)	0.20 (0.40)	Non-significant
Sister (s) (0 to 1)	0.20 (0.40)	0.18 (0.39)	Non-significant
Friends (0 to 4)	3.1 (1.08)	3.0 (0.98)	Non-significant
Best friend (0 to 1)	0.82 (0.38)	0.75 (0.43)	Non-significant
People in the same school year (0 to 4)	1.85 (1.09)	1.95 (1.25)	Non-significant
Social pressure			
Mother (0 to 4)	0.16 (0.59)	0.16 (0.62)	Non-significant
Father (0 to 4)	0.07 (0.36)	0.26 (0.81)	Non-significant
Brother (s) (0 to 4)	0.16 (0.53)	0.22 (0.68)	Non-significant
Sister (s) (0 to 4)	0.23 (0.74)	0.22 (0.74)	Non-significant
Friends (0 to 4)	1.43 (1.40)	1.26 (1.23)	Non-significant
Best friend (0 to 4)	1.13 (1.31)	0.91 (1.15)	Non-significant
People in the same school year (0 to 4)	1.10 (1.26)	1.28 (1.29)	Non-significant

* = P<0.05; ** = P<0.01; *** = P<0.001

and girls, in order to facilitate the development of effective smoking prevention and reduction programs.

The results show that smoking is more frequent among Romanian boys than among Romanian girls. This finding is in contrast with recent figures from Western-European

countries that suggest a reversed pattern^{18,19}. Among the smoking subjects there was no gender difference regarding the mean number of cigarettes smoked per week.

As reported by other studies, the process of becoming a smoker and the different stages one goes through from starting

Table III.
Gender differences among smoking adolescents regarding self-efficacy and intention

Self-efficacy	Girls Mean (SD)	Boys Mean (SD)	T test
When with people who smoke (-3 to +3)	-0.64 (1.67)	-0.38 (1.74)	Non-significant
When with friends who smoke (-3 to +3)	-1.07 (1.53)	-0.79 (1.65)	Non-significant
When you are offered a cigarette (-3 to +3)	-0.49 (1.70)	0.04 (1.92)	Non-significant
When friends offer you a cigarette (-3 to +3)	-0.59 (1.68)	-0.32 (1.74)	Non-significant
When you are shopping (-3 to +3)	1.55 (1.58)	1.20 (1.67)	Non-significant
When you are watching TV (-3 to +3)	1.52 (1.50)	1.51 (1.52)	Non-significant
When you are doing homework (-3 to +3)	1.89 (1.44)	1.81 (1.49)	Non-significant
When you are on your way from school (-3 to +3)	0.97 (1.96)	-0.06 (1.97)	t (114)=2.81
When you feel upset (-3 to +3)	-0.98 (1.91)	-0.28 (1.90)	t (114)=-2.05
When you feel depressed (-3 to +3)	-1.16 (1.97)	-0.42 (1.80)	t (114)=-2.14
When you feel nervous (-3 to +3)	-1.41 (1.78)	-0.51 (1.89)	t (114)=-2.63
When you are worried(-3 to +3)	-0.54 (2.02)	-0.16 (2.06)	Non-significant
Intention (-3 to +3)	0.46 (1.61)	0.89 (1.46)	Non-significant

* = P<0.05; ** = P<0.01; *** = P<0.001

Table IV.
Gender differences among non-smoking adolescents regarding attitudes

Attitudes	Girls Mean (SD)	Boys Mean (SD)	T test
Pros: I feel more confident in company (-3 to +3)	0.27 (1.23)	0.38 (1.22)	Non-significant
Pros: It helps to calm my nerves (-3 to +3)	0.64 (0.96)	0.62 (1.01)	Non-significant
Pros: It will make me feel relaxed (-3 to +3)	0.09 (1.12)	0.13 (1.32)	Non-significant
Pros: It helps me to be slim (-3 to +3)	0.37 (0.77)	0.25 (0.63)	Non-significant
Pros: It is easier to be part of the crowd (-3 to +3)	0.58 (1.32)	0.74 (1.59)	Non-significant
Pros: My friends will pay me more attention (-3 to +3)	0.20 (1.22)	0.30 (1.62)	Non-significant
Cons: It is bad for my health (-3 to +3)	2.67 (0.62)	2.66 (0.77)	Non-significant
Cons: It is stupid of me (-3 to +3)	2.14 (1.27)	1.99 (1.48)	Non-significant
Cons: I consider my behavior to be wrong (-3 to +3)	2.27 (1.01)	2.36 (0.99)	Non-significant
Cons: If I will get sick, I will be sorry that I ever started (-3 to +3)	2.64 (0.83)	2.54 (0.96)	Non-significant
Cons: It tastes horrible (-3 to +3)	1.55 (1.48)	1.24 (1.48)	Non-significant
Cons: I believe it to be unfriendly (-3 to +3)	0.83 (1.36)	0.84 (1.33)	Non-significant

* = P<0.05; ** = P<0.01; *** = P<0.001

to smoke to becoming a regular smoker is fairly similar for both boys and girls, but the motives why adolescents start and maintain smoking habit may differ between boys and girls^{5,7,20}.

The results of our study reveal several differences between male and female smokers regarding their attitudes, social influences and self-efficacy with respect to smoking behaviour.

Smoking serves a stronger function for girls to remain slim, and to feel relaxed for boys. Other studies also suggest that beliefs about the effects of smoking on body weight have more impact on smoking among girls^{5,21}.

With regard to social influences, smoking girls declared more smoking among their mothers than the smoking boys

Table V.
Gender differences among non-smoking adolescents regarding social influences

Social norms	Girls Mean (SD)	Boys Mean (SD)	T test
Mother (-3 to +3)	-2.62 (0.75)	-2.70 (0.60)	Non-significant
Father (-3 to +3)	-2.39 (0.98)	-2.52 (0.84)	Non-significant
Brother (s) (-3 to +3)	-1.14 (1.33)	0.80 (1.26)	Non-significant
Sister (s) (-3 to +3)	-1.04 (1.36)	-0.87 (1.29)	Non-significant
Friends (-3 to +3)	-1.25 (1.43)	-1.08 (1.43)	Non-significant
Best friend (-3 to +3)	-2.01 (1.16)	-1.99 (1.26)	Non-significant
People in the same school year (-3 to +3)	-0.75 (1.37)	-0.77 (1.40)	Non-significant
Perceived behaviour			
Mother (0 to 1)	0.38 (0.48)	0.38 (0.48)	Non-significant
Father (0 to 1)	0.43 (0.49)	0.36 (0.48)	Non-significant
Brother (s) (0 to 1)	0.16 (0.36)	0.12 (0.32)	Non-significant
Sister (s) (0 to 1)	0.07 (0.26)	0.09 (0.29)	Non-significant
Friends (0 to 4)	1.56 (1.42)	1.33 (1.17)	Non-significant
Best friend (0 to 1)	0.17 (0.37)	0.22 (0.41)	Non-significant
People in the same school year (0 to 4)	1.50 (1.25)	1.40 (1.14)	Non-significant
Social pressure			
Mother (0 to 4)	0.03 (0.29)	0.02 (0.21)	Non-significant
Father (0 to 4)	0.05 (0.33)	0.01 (0.09)	Non-significant
Brother (s) (0 to 4)	0.08 (0.39)	0.12 (0.53)	Non-significant
Sister (s) (0 to 4)	0.08 (0.43)	0.04 (0.09)	Non-significant
Friends (0 to 4)	0.87 (0.97)	0.96 (0.88)	Non-significant
Best friend (0 to 4)	0.22 (0.59)	0.26 (0.71)	Non-significant
People in the same school year (0 to 4)	0.55 (0.85)	0.83 (0.86)	Non-significant t (355)=-2.83

* = P<0.05; ** = P<0.01; *** = P<0.001

Table VI.
Gender differences among non-smoking adolescents regarding self-efficacy and intention

Self-efficacy	Girls Mean (SD)	Boys Mean (SD)	T test
When with people who smoke (-3 to +3)	2.44 (1.01)	2.36 (1.05)	Non-significant
When with friends who smoke (-3 to +3)	2.25 (1.11)	2.33 (0.97)	Non-significant
When you are offered a cigarette (-3 to +3)	2.43 (0.93)	2.53 (0.83)	Non-significant
When friends offer you a cigarette (-3 to +3)	2.24 (1.10)	2.53 (0.83)	Non-significant
When you are shopping (-3 to +3)	2.72 (0.49)	2.74 (0.53)	Non-significant
When you are watching TV (-3 to +3)	2.75 (0.49)	2.80 (0.50)	Non-significant
When you are doing homework (-3 to +3)	2.77 (0.48)	2.84 (0.45)	Non-significant
When you are on your way from school (-3 to +3)	2.75 (0.53)	2.79 (0.49)	Non-significant
When you feel upset (-3 to +3)	2.18 (1.21)	2.50 (0.96) ^t	(234.2)=-2.58
When you feel depressed (-3 to +3)	2.17 (1.25)	2.49 (0.91)	t (256.4)=-2.65
When you feel nervous (-3 to +3)	2.12 (1.26)	2.43 (1.05)	t (225.1)=-2.37
When you are worried (-3 to +3)	2.37 (1.03)	2.62 (0.80)	t (240.8)=-2.41
Intention (-3 to +3)	-2.11 (1.31)	-2.49 (0.97)	t (252.7)=3.02

* = P<0.05; ** = P<0.01; *** = P<0.001

did. Various studies show that maternal smoking has slightly more effect on the smoking of girls than of boys^{22, 23}. Thus, adolescent Romanian girls may be more likely than adolescent Romanian boys to model their smoking behaviour to their mothers'. Nevertheless, girls perceived more norms against smoking from their parents. Smoking in young people is often considered as a way to rebel against authority and this factor appears to be more pronounced among girls than among boys^{20,24}. Thus, Romanian girls might be more likely to rebel against non-smoking rules and norms set by authorities such as parents, especially when parents smoke themselves.

Smoking girls declared higher self-efficacy beliefs in refraining from smoking when on the way from school to home than the smoking boys did; as other studies also suggested²⁰, this might be due to the fact that girls want more than boys to keep their smoking behaviour hidden from family and the wider community.

Self-efficacy expectations to handle emotional situations without smoking were significantly lower in smoking girls than in smoking boys. Previous researches from other European countries have also shown that females were more likely than males to say that they smoked to control negative emotions^{20,25}.

Moreover, non-smoking Romanian girls declared lower self-efficacy expectations with regard to refraining from smoking in different emotional situation than non-smoking Romanian boys, showing that non-smoking girls could be also tempted to start smoking as a way to cope with negative emotions.

On the other hand, non-smoking boys perceived more pressure to smoke from the people in the same school year. This is not surprisingly, since one third of the boys were already smokers and probably offered cigarettes to their non-smokers males colleagues; under this pressure, non-smokers boys could be easily start smoking, if they are not equipped with adequate refusal skill.

A very interesting finding of the study is that smoking prevalence was higher among boys, but more non-smoking girls

than non-smoking boys declared higher intention to start smoking in the next year. It is conceivable that more boys experiment with smoking at earlier ages and are already smokers when they arrived in the senior high school, while for many girls the first year of high school may represent a crucial moment in developing their attitudes, intention and behaviour regarding smoking. The transition to high school may cause feelings of maturity among girls and made some of the girls to think about starting smoking, possibly to cope with negative emotions or to compare positively with other girls.

Our results suggest that, in contrast to the existing knowledge paradigm that was widely used in Romanian programs, smoking prevention activities should reinforce adolescent attitudes about the advantages of non-smoking, demonstrating the inaccuracies of some perceived advantages of smoking and indicating that these advantages of smoking can also be realized by other activities. The long-term and short-term disadvantages of smoking should be stressed, while also indicating the tendency of smokers to minimize the disadvantages of smoking. Programs should address the fact that smoking may serve a function for girls to control weight and for boys to remain relaxed, and that other alternatives may be healthier. Smoking prevention programs should present to adolescents the modelling process by which smokers influence non-smokers and help them to develop skills in order to resist the pressure to smoke coming from their friends and peers. Additionally, programs need to address alternative strategies to cope with emotional situations, in particular for girls.

This study has several limitations. First, it is a cross-sectional study. Second, the study sample consisted of first year high school students from Cluj-Napoca. This is one of the main cities of Romania, but it is inevitably a limit to the generalization of the study findings beyond this sample. Moreover, due to classes' structure, the girls were over represented in our sample. Future research should analyze whether similar

patterns are to be found among groups of adolescents with different ages and from different urban and rural areas. Third, the self-reported smoking behaviour was not validated by biochemical measures. However, self-reports have been shown to be reliable and in good agreement with biological indicators when anonymity is assured²⁶. We optimized measurement conditions by assuring respondents that their responses would be treated as strictly confidential.

Despite these limitations, the study illuminates several gender differences regarding smoking related beliefs among Romanian smoking and non-smoking adolescents. The gender differences found in our study do not warrant specific programs for boys and girls, but it is advisable to include gender-specific issues in smoking prevention and reduction programs targeting Romanian adolescents.

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