

FREQUENCIES AND EVOLUTIONS OF THE SMOKING AT HIGH-SCHOOL STUDENTS IN THE COUNTY OF BOTOSANI

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Abstract: Smoking is nowadays one of the most outspread human habits and the toxic effects of the tobacco on the health, although they were suspected, mentioned and sustained with more or less convincing arguments, they were scientifically proven in the late XX century. That is the reason for which we call the period we live now, „the era of diseases and deaths provoked by tobacco products.” Adolescence is the age when risky behaviours appear and develop, for example smoking. The purpose of this paper is to identify the frequency and the evolution of this behaviour, for different groups of teenagers in the county of Botosani and was conducted in 2 study stages; the first stage was performed for 2 classes of students in the 9th grade, at the highschool „Grigore Ghica-Voievod” of the municipality Dorohoi, county of Botosani within the program Global Youth Tobacco Survey (GYTS), with the purpose of signing the Frame Agreement for Tobacco Control (CCCT) by Romania. The second stage of the study was conducted on a group of students from 4 highschools of the municipality of Botosani within a wide action for the identification of the frequency and motivation of these risky behaviours at those ages. The results of these actions were the support of some prophylaxis programs and programs for combating tobacco use by students, which are financed by WHO and EU.

Cuvinte cheie: fumat, adolescenți, prevenire prin educație

Rezumat: Fumatul a devenit astăzi unul din cele mai răspândite obiceiuri umane, iar efectele nocive ale tutunului asupra sănătății deși erau suspectate, menționate și susținute cu argumente mai mult sau mai puțin convingătoare, abia la jumătatea secolului al XX-lea, au fost dovedite științific, motiv pentru care perioada în care ne aflăm, să fie denumită și „epocă a bolilor și deceselor produse de tutun”. Adolescența este vârsta la care apar și se dezvoltă comportamente cu risc printre care și fumatul. Lucrarea are ca scop cunoașterea frecvenței și evoluției în timp a acestui comportament la diferite loturi de adolescenți din județul Botosani și s-a realizat în două etape de studiu; prima etapă s-a realizat la elevii din 2 clase a IX-a, din cadrul liceului „Grigore Ghica-Voievod”, din municipiul Dorohoi, județul Botoșani, în cadrul Programului Global Youth Tobacco Survey (GYTS), în vederea semnării de către România a Convenției Cadru de Control al Tutunului (CCCT). A doua etapă a studiului s-a adresat unui esanțion de liceeni din 4 licee ale municipiului Botosani în cadrul unei acțiuni de anvergură pentru cunoașterea frecvenței și motivației comportamentelor cu risc la aceste vârste. Rezultatele acestor acțiuni au fost suportul unor programe de profilaxie și combatere a consumului de tutun la elevii finanțate de OMS și UE.

INTRODUCTION

The differences between the health indicators from Western countries and Romania are assigned in a proportion of 30 % to the economical downshift and to the social-economical factors, 50 % to the risk factors of the life style, 10% to the environment pollution and 10% to the deficiencies of the medical services.(5) As such, the greatest contribution to the improvement of the health condition falls on the promotion of the sanogenetic life style, respectively of the behaviours benefic to health.(6) A very important period in the human evolution, the adolescence is associated with significant modifications in the area of psychological and social maturation(7); the teenager's response to the transition to the grown-up world can be associated by behaviours with direct repercussions on the health, such as diets, tabagism, alcohol use, sexual activity, drug addictions, violence (3). In the configuration of a risky life style, smoking has the greatest percentage and, like the other 3

risky behaviors (alcohol, drugs and nutrition risky behaviour), can lead to addiction and one must underline the great importance of the social environment, that gives the patterns of a normal behavior, but also the motivations for the adoption of some behaviours, which most of times, are harmful – immediately, but especially in time - to the health and social adaptation (6,8,9).

These aspects have encouraged the conduct of a study for the cognition of the frequency of some unhealthy behaviour in teenagers in the municipality of Botoșani, in parallel with the research of their motivation, recognized by the students.

On a global questionnaire, 22% of the teenagers smoke, among whom 16% smoke every day (1).

In Romania, the monitoring of the risk behaviours to the health started by means of a great action at a national level under the coordination of the Public Health District Authority Cluj; the study has indicated for the area of Moldova a smoking

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frequency of 30,99% in regard to the situation of Romania of 31,7% (6); the educational programs organized in school can determine mutations in the teenagers' opinion and help them resist the group pressure by recognizing the risky situations. (1)

In 2004, under the aegis WHO the program „An Europe without tobacco” was conducted in Romania, in which the county of Botoşani was included with a total sample of 454 students of different ages and collectivities (2). The results of this study at a national level were the basis of signing by Romania of the Frame agreement for fighting against smoking and further one has considered appropriate the annual monitoring of the same behaviour in the same territories, within the objectives of the National Health Plan of the Ministry of Health in relation with the Environment Ministry; many studies in different counties of the country indicate frequencies, distributions and different tendencies of the risky behaviours in teenagers (7,8,4).

In 2010, a cognition activity of some health aspects in teenagers from the municipality of Botosani has included also the monitoring of risky behaviours on 6 behavioral areas: alcohol, tobacco, marijuana use, other drugs, violence, sexual behavior; the results regarding the use of tobacco products at teenagers complete the information obtained by the research from 2004 with data regarding the frequency in evolution of the phenomena and details on ages, sexes, highschool departments.

THE AIM OF THE STUDY

The purpose of this paper is to identify the frequency and the evolution of this behaviour, for different groups of teenagers in the county of Botosani.

MATERIAL AND METHODS

The two studies have been conducted according to some methodologies appropriate to the objectives.

The study from 2004 was conducted according to the methodology elaborated by the Public Health District Authority Cluj in the following stages:

- The assignation of school collectivities and of the study sample;
- The application of the WHO-GYTS questionnaire in those localities, to the number of students and the specified age segment ;
- The conduct of intensive educational programs of this sample regarding the smoking risks;
- Re-testings of the same segments, with the same questionnaire.

Based on these stages the following objectives are reached:(5)

- a) The assessment of smoking prevalence;
- b) The assessment of the educational impact on health in fighting smoking among students.

From these researches at the county's level, this papers refers to the results in a teenagers' collectivity in town Dorohoi in the first stage (2) - of knowledge by a smoking frequency and intensity questionnaire and also of the knowledge level of students with regard to health risks.

For the complex study of the risky behaviours frequency in teenagers from the municipality of Botosani, conducted in 2010, the study methodology consists in the following stages:

- a) *Establishing the collectivities and the study samples*

From the 13 highschools with a number of 8569 students, we have selected a couple of highschools based on the following criteria, for the conduct of the study:

- big number of students, with parallel classes for the same study year;

- with school performances (at olympics or admission exams for high education)
- with different study field.

Therefore, I have chosen the following highschool in the municipality:

- *Mihail Eminescu High school*, with theoretical track, basically mathematics-informatics, but also with social-human track, with a number of 886 students, with school performances of most of the students;
- *Arts highschool Ştefan Luchian*, vocational school, with a severe admission selection, with a number of 223 students;
- *Administrative highschool* – specialized highschool requested by students, offering a certain safety regarding the future qualification and job, with a number of 645 students;
- *School complex of light industry*, highschool with practical track, but also with classes with theoretical track with a structure dominated by the feminine gender, low results as school performances, with a number of 863 students.

A calculated sample, having a basic collectivity the 15-19 years county's population, has established a volume of the group of study of 377 highschool students, without set criteria for the inclusion or exclusion from the group.

- b) *the elaboration of the work instrument*

Having as a goal the knowledge of the risky behaviours frequency, their evolution in time, their motivation, as a support of the recommendations for their prevention and elimination, the research was conducted based on a questionnaire and the results were registered taking into account the information limits of each questionnaire.

The processing of the results was performed with biostatistical indicators which have indicated the frequency, the distribution on ages, sexes, educational tracks, correlations between different risky behaviors and the statistical significance of frequencies' differences.

The special character of the questions, the appeal to memories, but also to intimacy aspects has imposed the stringent conformity with the professional ethics. The students have been thoroughly informed that they are included in a populational study, that the results depend on sincerity and the efficiency of some preventing measures, that the answers are anonymous and confidential, that the nonresponse is not incriminated, but it is better to avoid such situations and that as a last resort they can refuse the inclusion in the study group without any repercussion.

RESULTS AND DISCUSSIONS

The results and determinations are presented for the two separate study stages .

In *the study from 2004* (2), the coordination center of WHO, has selected the National Highschool „Grigore Ghica Voievod” of Dorohoi the 9th grade classes were the subject of the study. For these classes the group of study with 58 students was formed, ages between 15- 17 years and with a greater number of girls (Table 1). The M/F report was 1/1,3, the average age of the group was of $16,26 \pm 0,58$ years and the age differences are not significant from a statistical point of view (test Student -0,067).

Table no 1. The group researched at the National Highschool „Grigore Ghica Voievod” of Dorohoi

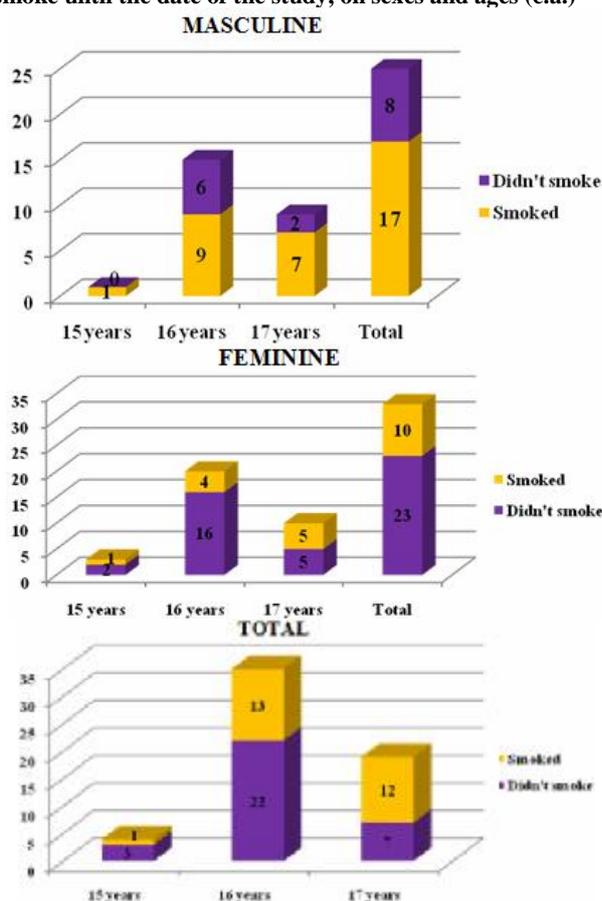
Age	Masculine	Feminine	M + F
15 years	1	3	4
16 years	15	20	35
17 years	9	10	19
Total	25	33	58
Average age	$16,32 \pm 0,56$	$16,21 \pm 0,60$	$16,26 \pm 0,58$

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The small number of subjects didn't allow procentual processing in order to present data as absolute numbers.

A. The number of students who *tried/experimented* smoking represents almost half of the group (26 from 58), being greater in boys (16 of 25) against girls (10 of 33) (Pic. 1); according to the age, the number of students, who have tried at least one time to smoke, grows at 16 years for boys and at 17 years for girls. For the entire group, the greatest frequency of the persons who tried smoking, is at 17 years (more than 6/10 of students).

Figure no. 1. The number of students who smoked/didn't smoke until the date of the study, on sexes and ages (c.a.)



B. The age at which they tried the first cigarette is variable, even 7 years old for boys; most of them (boys and girls) try their first cigarette between 14 - 15 years old (Table II).

Table no. 2. The distribution of students according to the age at which they've tried smoking, on sexes (c. a.)

Age (years)	Masculine	Feminine	M + F
7	2	-	2
8 - 9	2	-	2
10 - 11	1	-	1
12 - 13	3	1	4
14 - 15	8	6	14
16 +	-	3	3
Total	16	10	26

C. The testing and the adoption of this behavior are favored also by the easiness with which the students - minors- can get their cigarettes; so, from 50 students who answered the question, only two of them admit that they were refused at the

store because of their age; eleven consider that it is hard for them to get cigarettes from stores, but most of them have no difficulties in this respect.

D. The questions from the questionnaire regarding to the *knowledge and attitude of teenagers* with regards to smoking, have indicated that from the 58 students, 47 have discussed within their families about the toxic effects of smoking. The majority (43 students) consider that smoking is harmful for the health, even as passive smoking.

Generally, students consider that *organized interventions* are necessary in order to prevent or fight against smoking in students and those have to be especially restrictive, interdicting the commercials, sales or smoking in public spaces.

Students consider that these interdictions are necessary especially in preventing smoking because they are aware that once settled, giving up smoking is very difficult. Therefore, 38 of the respondents say that they give up hard and very hard to smoking, now a habit.

The educational actions and the information from students are different, considered insufficient - by most of them; to these a greater number is added (11 - 30 teenagers) who think that the information transmitted by media is not received by them as proper message, which they have to follow.

With regards to the intervention/the contribution of the school in transmitting the messages regarding the smoking risks, the students consider that these information, which they have received in an organized way, can have a positive impact at school upon students, having an influence on the decision in rejecting smoking, but like the other aspects in school, can be an extra motivation for testing or even for starting smoking (the fact that he/she sees teachers or students smoking, especially in school).

The study conducted in 2010 comprised 377 students distributed relatively in the 4 selected highschoools (Table III)

Table no. 3. Number of students researched on highschoools and their percentage % from the total number of students

Highschool	Total number of students	Total number of students in the study	% from the total
Highschool Mihai Eminescu	886	101	11,40
Arts highschool	223	84	34,67
School complex of light industry	863	100	11,59
Administrative highschool	645	92	14,26
TOTAL	2617	377	14,40

The structure of the group indicates the following:

- the distribution on *sexes* is common, with a greater percentage for the girls: 248 girls (65,8%) and 129 boys (34,2%); the report F/M was of 1,92/1 ;
- as medium of *residence* - all the students come from urban areas;
- from the perspective of an *instructional level*, the group is uniform, easily dominated by the 12nd grade students (28 % of the total) followed by the 9th grade (26%); in the 10th and 11th grades are almost 23 % of the students from the entire group;
- the distribution on *age groups* indicated the average age of students investigated during the study of 16,98 ± 1,03 years, varying between 15 and 18 years; the predominant age is 18 years (42,7%) .

The 11 questions of the questionnaire regarding tobacco products use, indicates synthetically the following aspects:

- From the investigated students 57,8% *have tried smoking*, statistically significant for boys (OR=1,95; IC95%: 1,22÷3,12)($\chi^2=8,05$; GL=1; **p=0,005**), but without significant differences :
- on age groups 46,9% teenagers of 15 years old; 63,1% teenagers of 16 years; 50,6% of 17 years and 60,2% of 18 years teenagers ($\chi^2=4,86$; GL=3; p=0,182);
- on highschool tracks ($\chi^2=5,55$; GL=3; p=0,136) (fig. 2).

With regards to the age they have smoked an entire cigarette for the first time 55,7% of the students have answered never, but there is a 2,9% among teenagers, who answered that they have smoked for the first time at the age of 8 or less. Most of the students have smoked for the first time at 15-16 years (16,4%) and 13-14 years (12,7%) (Fig. 3).

Figure no. 2. Answers frequency to the question if they have tried smoking based on sex, age and school

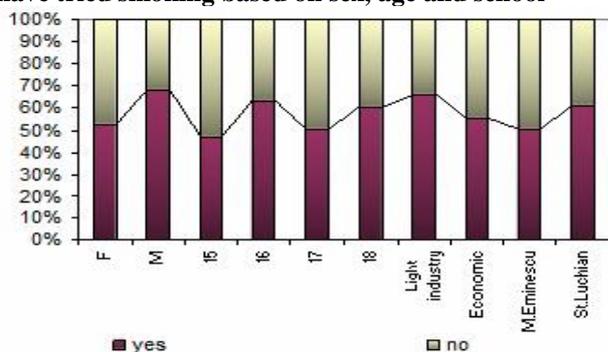
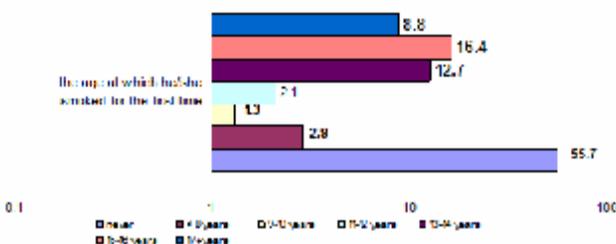
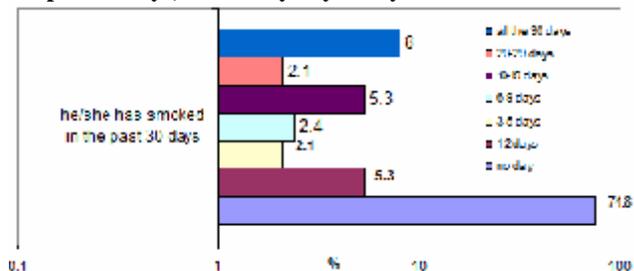


Figure no. 3. Distribution of the students from the researched group regarding the answer to the question „at what age did you smoke for the first time an entire cigarette”



The answers regarding smoking frequency in the past month have indicated a percentage of 8% of the teenagers, who smoked in all 30 days(Fig. 4).

Figure no. 4. Distribution of the students from the researched group regarding the answer to the question „in the past 30 days, how many days did you smoke?”



The frequency was significantly greater for boys (OR=2,86; IC95%: 1,72÷ 4,74): 38,8% of the boys and 18,1% of the girls ($\chi^2=18,05$; GL=1; **p=0,00002**), but the distribution on ages ($\chi^2=5,86$; GL=3; p=0,119) was not statistically significant.

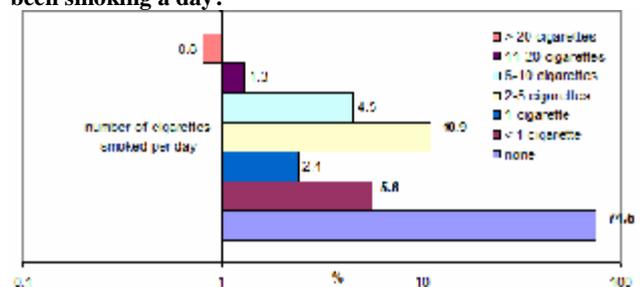
With regards to the *smoking intensity* (number of

cigarettes smoked per day) it is indicated that in the past 30 days 74,5% of the questioned ones didn't smoke, 0,8% have smoked more than 20 cigarettes per day; most of them(10,9%) have smoked in the past 30 days 2-5 cigarettes per day(Fig. 5).

In relation *with the way of getting the cigarettes*, it is indicated that the majority of the ones who smoke get their cigarettes without difficulties from the store (18,8%).

To the question „in the past 12 months, have you tried quit smoking” 33,9% of the total of students who smoked even 1-2 puffs, have tried to quit smoking in the past 12 months, without statistically significant differences on sexes and age groups but coming frequently from the Light Industry Highschool($\chi^2=11,09$; GL=3; **p=0,011**).

Figure no. 5. Distribution of the children from the investigated lote in accordance with the answer to the question: „In the last 30 days, how many cigarettes have you been smoking a day?”



With different frequencies, very important, it is determined that even chewing, sniffing tobacco or tobacco smoking are not something new for the researched students.

CONCLUSIONS

The results of the study conducted in 2004 within an action of WHO at a national level for 58 teenagers in the 9th - 10th grades in town Dorohoi, county of Botosani indicates a greater frequency of smoking(at almost 1/2 of the students), with a critical age of 16 years.

The study certifies again, on another group, in another moment, the determinations of other researchers regarding „feminization” and „rejuvenation” of this risky behaviour.

The recent study on a group of 377 teenagers from 4 highschools selected on set criteria from the municipality of Botosani has indicated that the occasional smoking(68%) or already settled(8% of the students), is more frequent to boys, after the age of 13 years, practiced even in school, favored by the easiness with which they get their cigarettes to which sometimes the testing another use methods adds: sniffing, chewing, cigar; these results impose the recognition of the educational function of the school, because „the school doesn't teach if it doesn't educate” and the education for health must be based on the interaction student - teacher and on the complementarity between parents and the educational unit.

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