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DISTRIBUTION OF SMOKING HABIT AMONG SCHOOL CHILDREN AND YOUTH IN MUNICIPALITY OF KLADOVO

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Smoking is the most spread modern, social disease worlwide. It is considered that efficient programs of cigarette smoking prevention implemented among adolescents would considerably lower tha morbidity and mortality in adults reported for diseases caused by smoking.

The aim of the research was to investigate the prevalence of cigarette smoking among school children and youth in the municipality of Kladovo, as well as the nature of their smoking habit.

The research, in the form of cross-sectional study, was conducted among the pupils of higher grades of elementary schools and all grades of high schools from the territory of the Municipality of Kladovo, during May and June, 2008. Five hundred and twenty-seven examinees aged 10-19 years (49.71% were boys and 50.28% girls) were polled. Data collection was done by a modified form of the Global Youth Tobacco Survey.

15.9% of examinees declared to be smokers. The rate of cigarette smoking prevalence increases with aging: it is lowest at the age of 12 (2.4%) and highest in the examinees aged 17 years or over (30.5%). There is high statistically significant association between age and prevalence of cigarette smoking. The prevalence of cigarette smoking among boys is 16.5%, and 15.3% among girls, without statistically significant difference among sexes. The prevalence of cigarette smoking is ten times higher (30.8%) among adolescents whose best friends (45%) are smokers. This prevalence is 4.5 times higher among adolescents whose partners (16.3%) are smokers. The rate of cigarette smoking prevalence is proportional to the number of parents-smokers: in a group of children whose both parents are smokers, there is the highest prevalence of cigarette smoking (26.2%). The majority of pupils consider that cigarette smoking can seriously damage health (96.8%). The distribution of smoking habit is statistically significantly higher in the group of pupils who are not aware that cigarette smoking is harmful (35.3%). Only 16.7% of examinees mention that preservation of health is the chief motive to quit cigarette smoking. Even 64.3% of examinees do not consider to quit smoking at all. There is a necessity for strict implementation of the healthcare and educational programs in the lower grades of elementary school. The programs should match the age of pupils, and besides providing the information on tobacco harmful effects, they should develop certain skills and techniques which would help them resist to temptations of their peers to consume tobacco or some other psychoactive substances. Greater engagement of health workers is indispensable, primarily in the field of preventive medicine; they should educate adolescents about tobacco harmful effects and motivate the current smokers to leave this habit.

The state itself should be more engaged in the implementation of the health care politics and the current legislation, especially the provisions related to the prohibition of smoking in public places, prohibition of selling tobacco products to minors, and prohibition of tobacco advertising. In addition, the state should increase the budget for these purposes, support health workers in conducting preventive activities and making the healthy environment in schools for children and youths. Acta Medica Medianae 2009; 48 (4):*27-31.*

Key words: *cigarette smoking, adolescents, health, prevention*

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Introduction

According to the definition of the World Health Organization, adolescents are young persons aged 10 to 19 years. Also, they are traditionally regarded to be the healthiest category of the entire population, which is true if standard indicators of getting ill and dying are considered. However, it is also true that this is the only population group in which there has not been some significant improvement in the health status for the last 50 years (1,2).

The time of puberty and adolescence is the time of rebellion, resistance, disagreement with adults, experimenting with various models of behavior, while cigarette smoking may be the expression of maturity and freedom. In this period of life, young people are extremely sensitive to various influences from their surrounding, which is why they are susceptible to the adoption of smoking habit, alcohol and drugs' consumption, as well as early sexual relationships (1).

Nowadays, it is considered that at least 26 diseases are associated with cigarette smoking, such as: blood vessel arteriosclerosis with numerous consequences (elevated blood pressure, brain attack, ischemic heart disease), malignant tumors (cancer of lungs, mouth, pfarynx, larynx, esophagus, stomach, pancreas, colon, kidneys, urinary tract and bladder), chronic bronchitis, ephysema, asthma, catarrh of stomach, ulcer of stomach and duodenum, etc. Besides, the risk of certain diseases increases with the number cigarettes and length of smoking habit (3).

Currently, between 14.000 and 15.000 of young people in developed countries, and between 68.000 and 84.000 in low-and middle-income countries become smokers every day. In other words, every day, 100.000 new tobacco addicts are registered worldwide (4). According to the estimations of the World Health Organisation and the current trends, 50 million of children in China and 330 million of children and adolescents in Europe will die in adulthood because of diseases caused by cigarette smoking. Smoking is the cause of one death case out of six cases in adult population (5,6).

One should bear in mind that besides reaching epidemic proportions smoking is at the same time one of the most preventable diseases of addiction, and the most preventable factor of risk, invalidity and premature death.

Aims

The aim of the research was to investigate the prevalence of cigarette smoking among the school children and youth in the municipality of Kladovo, as well as the nature of their smoking habit, for the purpose of planning, improving and implementing adequate healthcare and preventive activities in elementary and high schools.

Material and methods

The cross-sectional study was conducted among the pupils of higher grades of elementary schools and all grades of high schools from the territory of the Municipality of Kladovo, during May and June, 2008. By random sampling, one class from each generation was chosen.The total number of pupils in the chosen classes was 550, while 527 adolescents accepted to take part in the research (turnout was 95.8%).

Data gathering was done by a modified form of the Global Youth Tobacco Survey.

Data were processed by SPSS program (10.0 version). In the analysis of data, the standars signifinace tests (x2 test) with probability ($p<0.05$) were used.

Results

The research involved 527 adolescents, of which 49.71% of boys and 50.28% of girls. Tobacco was consumed by 46.1% of examinees. 15.9% of the polled declared to be everyday smokers (Table 1).There was no statistically significant difference in the distribution of smoking habit among girls (15.3%) and boys (16.5%) (M-H $x2=0.25$; $p<0.05$) (Table 2).

The number of the polled pupils in elementary schools was 337 (182 boys and 155 girls). There were 30 (8.9%) smokers (Table 1). The distribution of smoking habit among the pupils of elementary schools was higher among boys (11.0%), but there was no statistically significant difference compared to girls (6.5%) of the same age. ($p<0.05$) (Graph 1).

The number of the polled pupils in high schools was 190 (96 boys and 94 girls). The distribution of smoking habit was higher compared to the one reported in elementary schools, and was 54 or 28.4% (Table 1, Graph 1). The prevalence of cigarette smoking was statistically significantly higher in the high school compared to elementary school ($x2= 34.55$; $p<0.0001$). In the high school adolescent population, girls prevailed as smokers (29.8) compared to boys (27.1%) (Graph 1). There was no statistically significant difference in the distribution of smoking habit among genders ($p>0.05$).

The rate of cigarette smoking prevalence increases with aging of pupils (Table 3). It is lowest at the age of 12 (2.4%) and highest in the examinees aged 17 years or over (30.5%). The increase in the number of smokers is the most notable between the age of 14 (15.4%) and 15 (23.8%). There was highly statistically significant association between age and prevalence (x2 test for trend = 52.6%; $p<0.0001$).

A set of questions was given to ascertain the influence of age on the prevalence of cigarette smoking. The majority of patients answered that their best friends had no cigarette smoking habit (290 or 55.0%). A positive answer to this question was given by 237 (45.0%) school children. (Table 4).

Of 290 pupils who answered that their best friend did not smoke, only 11 (3.8%) of them smoked (Table 4). Among school children and youth who gave positive answers to the question related to the cigarette smoking habit of their best friends, the cigarette smoking prevalence was ten times higher and reached 30.8%.

The majority of pupils – 441 (83.7%) answered that their boyfriends/girlfriends had no cigarette smoking habit. A positive answer was given by 86 (16.3%) school children and youths (Table 5).

Of 441 pupils who said that ther partners did not smoke, only 44 (10.0%) of them began to smoke (Table 5). Among school children and youth who gave positive answers to the question related to the smoking habit of their partner, the prevalence of cigarette smoking was severalfold higher, reaching 46.5%.

The rate of cigarette smoking prevalence increases with the number of parents- smokers. In the group of pupils where fathers were smokers (144 or 27.3%), the prevalence of cigarette smoking among children was 14.6%. Among children whose mothers were smokers (61 or 11.6%), the prevalence of cigarette smoking was 21.3% (Table 6). In the group pupils where both parents were smokers (84 or 15.9%), the

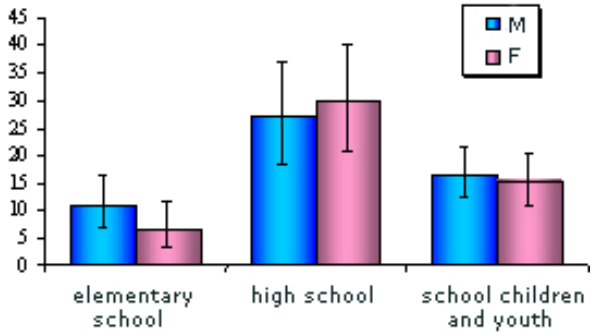
prevalence of smoking habit among children was highest (26.2%).

Table 1. Prevalence of cigarette smoking among school children and youth in the Municipality of Kladovo

School	Total	Smokers		95%CI
		number		
Elementary school	337	30	8,9	6,2-12,6
High school	190	54	28,4	22,1-35,4
Total	527	84	15,9	13,0-19,4

Table 2. Prevalence of cigarette smoking among school children and youth in respect to gender

Gender	Total	Smokers		95%CI
		Number		
Male	278	46	16,5	12,4-21,4
Female	249	38	15,3	11,0-20,3
Total	527	84	15,9	13,0-19,4



Graph 1. Frequency of cigarette smoking among adolescents of Municipality of Kladovo

Tabela 3. Distribution of smoking habit in respect to age

Age (years)	Total	Smokers		
		number	%	
11 or less	43	0	0,0	/
12	82	2	2,4	0,3-8,5
13	95	5	5,3	1,7-11,9
14	65	10	15,4	7,6-26,5
15	74	17	23,0	14,0-34,2
16	50	14	28,0	16,2-42,5
17 and more	118	36	30,5	22,4-39,7
Total	527	84	15,9	13,0-19,4

(p<0,0001)

Table 4. The influence of friends on smoking habit

Smoking status of the best friend	Total	Smokers		95%CI
		number	%	
Non-smoker	290	11	3,8	1,9-6,7
Smoker	237	73	30,8	25,0-37,1
Total	527	84	15,9	13,0-19,4

Table 5. The influence of a partner on smoking habit

Smoking status of a partner	total	Smokers		95%CI
		number	%	
Non-smoker	441	44	10,0	7,4-13,3
Smoker	86	40	46,5	35,7-57,6
Total	527	84	15,9	13,0-19,4

Table 6. The influence of parent-smoker on the smoking status of the examined population

Parental smoking status	Total	Smokers		95%CI
		number	%	
Parents are non-smokers	233	26	11,2	7,4-15,9
Only father	144	21	14,6	9,3-21,4
Only mother	61	13	21,3	11,9-33,7
Both parents	84	22	26,2	17,2-36,9
I don't know	5	2	40,0	5,3-85,3
Total	527	84	15,9	13,0-19,4

Tabela 7. The level of knowledge on tobacco harmful effects

Smoking is harmful to health	Total	Smokers		95%CI
		number	%	
YES	510	78	15,3	12,3-18,8
NO	17	6	35,3	*14,2-61,7
Total	527	84	15,9	13,0-19,4

*(p<0,05)

Table 8. Reasons to quit smoking

Reasons to quit cigarette smoking	Smokers		Ex-smokers		Total	
		%	broj		%	broj
I don't consider quitting smoking	54	64,3	0	0,0	54	42,5
I want to improve my health status	14	16,7	24	55,8	38	29,9
I want to save money	3	3,6	3	7,0	6	4,7
My family doesn't like my smoking habit	5	6,0	9	20,9	14	11,0
My friends don't like my smoking habit	0	0,0	0	0,0	0	0,0
Other reasons	8	9,5	7	16,3	15	11,8
Total	84	100,0	43	100,0	127	100,0

In addition, the questionnaire also provided data on the level of adolscent knowledge on harmaful effects of tobacco to human health, and motivation to quit smoking.

Most pupils considered smoking to be harmful (510 or 96.8%). Only 17 (3.2%) examinees gave negative/incorrect answer to this question (Table 7).

Among pupils who considered smoking health-threatening, the prevalence of smoking habit was 15.3%. In the group of pupils who gave negative answers, the prevalence equalled 35.3%. The distribution of cigarette smoking was statistically significantly higher in the group of pupils not being aware of harmful effects of cigarette smoking (Table 7).

Quitting smoking was considered by 3.6% of examinees. Parental disagreement with their children's smoking habit, as a motive to quit smoking, was reported by 6.0% of examinees. Only 16.7% of examinnes mentioned health as the chief motive for quitting smoking. 64.3% of examinees did not consider quitting smoking at all (Table 8).

Discussion

According to the results of conducted research, tobacco was used by 46.1% of examinees, while 15.9% of examinees considered themselves everyday smokers. In the study conducted among Novi Sad adolescents (2), 50.9% of examinees had consumed tobacco, while 21.8% of adolescents considered themselves smokers.

The results of this research show that the distribution of cigarette smoking among pupils of elementary school amounts to 9%, while it is trippled among the pupils of high school (28%). Similarly to the results of the study conducted in Novi Sad, statistically significant difference in the distribution of smoking habit among genders was not determined (2). Center for Disease Control and Prevention - Atlanta, World Health Organisation, and Canadian Public Health Association started in 2000 the research named Global Youth Tobacco Survey (GYTS) the purpose of which was to globally monitor and estimate the problem of tobacco use among adolescents aged 13-15 years. Serbia participated in this project in 2003. The results showed that 54.7% of children aged 13-15 years used tobacco (55.2% of girls and 54.4% of boys), and even one third of them consumed tobacco up to the age of ten (7). The reserch conducted in Greece in 2004-05 showed that tobacco was used by 32.1% of examinees (34.6% of boys and 28.9% of girls) (8). In Hungury, tobacco was consumed by 70.7% of children (71.4% of girls and 69.5% of boys). The results of GYTS conducted in some European countries during 2003 showed the prevalence of everyday and occasional smokers: in Hungery it was 33.5%, 28.5% in Slovenia, 24.3% in Slovakia, 23.3% in Poland, 23.2% in Romania, 16.9% in Serbia, 16.6% in Croatia, 12% in Albania, and 10% in Greece (9, 10).

The most striking increase in the percentage of smokers, i.e. adoption of smoking habit among the adolescents of Kladovo was between 14 and 15 years of age. Similar results have been obtained in Romania where the adolescent smoking habit is usually adopted between the age of 14 and 16, with the smoking habit prevalence among male high school population of 43%, 33% among females of the same age (11). According to the results of the research on the smoking prevalence among youths in Moscow, the number of smokers considerably increases between 13 and 14 years of age: from 19% of male smokers and 23% of female smokers aged 12-13 years to 50% of male smokers and 24% of female smokers aged 14-16 years (12).

A considerable association has been noticed between the prevalence of adolescent smoking and parental smoking. Parents are role models to their children. In Serbia, 7 of 10 children have parents smokers; in Hungury, four of ten children of non-smokers and six of ten children of smokers have a father smoker, while three of ten children of non-smokers and five of ten children of smokers have a mother smoker (4, 10). Because one parent is a smoker, or both of them, in Serbia, nine of ten children are exposed to passive smoking in their home (7).

In the researches undertaken across Europe between 2002 and 2005, GYTS revealed that between 40% and 97% of children aged 13-15 years are exposed to passive smoking in their homes. In the Balkans, Armenia, and Georgia, the exposure of children to passive smoking is over 90% (13).

Behavior of peers, primarily friends, partners and their attitudes to smoking play a significant role in the adoption of smoking habit among adolescents. The results obtained within the European research on the use of tobacco, drugs and alcohol among pupils, conducted in Montenegro in 2008, showed that 86% of pupils had friends who used tobacco (14).

Besides being aware that smoking is health-threatening, a large number of adolescents (64.3%) does not consider quitting smoking. The smokers who want to quit smoking mention preservation of health as the chief motive. In Croatia, according to the research conducted in 2006, 41.7% of smokers wanted to quit smoking (15).

Conclusion

The obtained data on the adolescent smoking habit in the Municipality of Kladovo undoubtedly point to the fact that children start smoking early, in the elementary school. There is a necessity for strict implementation of the healthcare and educational programmes in the lower grades of elementary school. The programmes should match the age of pupils, and besides providing the information on tobacco harmful effects, they should develop certain skills and techniques which would help them resist to temptations of their peers to use tobacco or some other psychoactive substances. Greater engagement of medical workers is indispensable, primarily in the field of preventive medicine; they should educate adolescents about tobacco harmful effects and motivate the current smokers to leave this habit.

The state itself should be more engaged in the implementation of the health care politics and the current legislation, especially the provisions related the prohibition of smoking at public places, prohibition of selling cigarettes to minors, and prohibition of tobacco advertising. In addition, the state should increase the budget for these purposes, support medical workers in conducting preventive activities and making the healthy environment in schools for children and youths.

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ZASTUPLJENOST PUŠAČKE NAVIKE MEĐU ŠKOLSKOM DECOM I OMLADINOM U OPŠTINI KLADOVO

Tatjana Cagulović, Biljana Kocić and Irena Mihajlović

Pušenje je najrasprostranjenija savremena socijalna bolest u svetu. Smatra se da bi efikasni programi prevencije pušenja duvana među adolescentima u znatnoj meri smanjili morbiditet i mortalitet u odraslom dobu od bolesti izazvanih pušenjem duvana.

Cilj sprovedenog istraživanja bio je da istraži prevalenciju pušenja duvana među školskom decom i omladinom u opštini Kladovo i prirodu njihove pušačke navike.

Istraživanje, po tipu studije preseka, sprovedeno je među učenicima viših razreda osnovnih škola i svih razreda srednjih škola sa teritorije opštine Kladovo, maja i juna meseca 2008. godine. U sudiji preseka, upitnik je popunilo 527 ispitanika uzrasta između 10 i 19 godina (49,71% dečaka i 50,28% devojčica). Prikupljanje podataka obavljeno je modifikovanom formom upitnika Global Youth Tobacco Survey.

Pušačima sebe smatra 15,9% ispitanika. Sa starošću učenika raste i stopa preva-lencije pušenja duvana: najmanja je u uzrastu od 12 godina (2,4%), a najveća kod ispitanika sa 17 i više godina (30,5%). Između starosti i prevalencije pušenja duvana postoji statističi visoko signifikantna povezanost. Među dečacima je prevalencija pušenja duvana 16,5%, a među devojčicama 15,3%, bez statistički značajne razlike među polovima. Među adolescentima čiji su najbolji drug/drugarica pušači (45%), prevalencija pušenja duvana je deset puta veća (30,8%). Među adolescentima čiji momci/devojke puše duvan (16,3%) prevalencija pušačke navike je 4,5 puta veća. Sa brojem pušača-roditelja u porodici učenika raste i stopa prevalencije pušenja duvana: u grupi učenika sa oba roditelja pušača, prevalencija pušenja duvana među decom je najveća (26,2%). Većina učenika smatra je da je pušenje duvana štetno po zdravlje (96,8%). Zastupljenost navike pušenja duvana je statistički signifikantno viša u grupi učenika koji nisu svesni da je pušenje duvana štetno po zdravlje (35,3%). Svega 16,7% ispitanika navodi zdravlje kao motiv za ostavljanje cigareta. O prestanku pušenja ne razmišlja čak 64,3% ispitanika.

Uviđa se neophodnost agresivnijeg sproveđenja zdravstveno-vaspitnih programa već u nižim razredima osnovne škole. Programi moraju biti usklađeni sa uzrastom učenika i trebalo bi da osim pružanja informacija o štetnosti duvana razvijaju određene veštine i tehnike koje će im pomoći da se odupru ponudama starijih ili vršnjaka da počnu da konzumiraju duvan ili neke druge psihoaktivne supstance. Neophodno je i veće angažovanje same države koja bi trebalo da svojom zdravstvenom politikom, efikasnijom primenom postojećeg zakonodavstva u Srbiji, posebno onog koji se odnosi na zabranu pušenja na javim mestima, zabranu prodaje cigareta maloletnicima i zabranu reklamiranja duvanskih proizvoda, većim budžetskim izdvajanjima, podrži preventivni rad zdravstvenih radnika i stvori u školama zdravo okruženje za decu i omladinu. Acta Medica Medianae 2009;48(4):27-31.

Ključne reči: *pušenje, adolescenti, zdravlje, prevencija*