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SMOKING TOBACCO AMONG STUDENTS AGED 17-19 IN AN UPPER SECONDARY SCHOOL IN GDAŃSK, POLAND

SUMMARY

In Poland, tobacco smoking among youth is a social issue. It is a considerable problem in upper secondary schools. Health protection professionals, in particular doctors and nurses, play a material role in the promotion of a tobacco smoke-free lifestyle. The involvement of educational professionals in the prophylaxis would also be beneficial as they may play the role of a bridge between students and health service professionals.

The research was aimed at the identification and diagnosis of tobacco smoking among upper secondary school students in Gdańsk and to offer education strategies preparing youth for change of a lifestyle.

The research was based on a diagnostic survey. The research technique was an anonymous survey. It was conducted on approximately 500 randomly selected students aged 17-19 years. The study was carried out at the beginning of 2006. The analysed independent variables were age, sex, financial status of the family. Statistical analysis was performed with the help of the Chi-square test for independence, with a significance level of 0.05.

Fifty percent of smoking students aged 17, every third student aged 18 and 14% of students aged 19 smoke from 1 to 3 cigarettes a day. Approximately, 40% of the students aged 19 smoke up to 20 cigarettes a day.

A growing tendency in the use of tobacco smoking among students aged 17-19 years is a reason for concern and a proof of the weakness of prevention activities at school. Therefore, it seems necessary to make sure that health service professionals are involved in cooperation with educational professionals in order to change young people's attitudes and beliefs.

Keywords: tobacco smoking, youth, aged 17-19 years

INTRODUCTION

Tobacco use is one of the major preventable causes of premature death and diseases in the world. Today, surveillance of tobacco use among youth in several countries has revealed that the problem is of equal concern in developed and developing countries (1).

The period of adolescence – derived from the Latin word *adolescere* meaning growing towards

maturity - comprises two stages: early adolescence (13-16 years) and late adolescence (17-19 years). The late adolescence (17-19 years) primarily involves the growing towards psychological maturity and the development of an outlook on life. Many authors presenting results of research into the attitudes of youths say that young people aged 17-19 years develop their beliefs themselves. As the process of changes proceeds, the awareness of one's own activity increases and the activity is undertaken

with a view to the introduction of such changes (2,3).

The development and establishment of anti-health behaviour among youths is one of the main reasons behind the excess male mortality – a phenomenon which has been recorded for many years. Research results show that the period between the 15th and 19th year of age is marked by the highest risk of the regular tobacco smoking habit development (4).

Tobacco smoke has a negative impact on the entire organism of both an active and passive smoker. Tobacco smoking among youths also influences the condition of their teeth. In comparison with non-smokers, smokers have an average of 20% more teeth defects and three times more missing teeth (5). Smokers suffer from a deficiency of almost all vitamins, which in consequence decreases the protective role of the organism (6).

Numerous studies have demonstrated the negative impact of substances contained in smoke and tobacco tar on the physical and psychological health of young people (7,8). More behavioural problems are recorded for smoking than for non-smoking youths (8).

As the data on an increase in tobacco smoking among youths are a reason for concern, it is necessary to train some professionals from among the educators who would play a role of a bridge between the students and doctors, nurses and psychologists.

Concrete preventive measures require some knowledge about the scale and nature of the phenomenon, and hence the need to undertake the activity not only on a national, but also a local scale. The research was conducted at the beginning of 2006 in Gdańsk (Pomorskie Province). The study was primarily aimed at the identification and diagnosis of tobacco smoking by upper secondary school students in Gdańsk and to offer education strategies preparing youth for change of a lifestyle.

MATERIAL AND METHODS

The research was carried out at the beginning of 2006. It was carried out among students aged 17-19 years. It was assumed that most of the students attended grades two, three and four of upper secondary schools. Therefore, the research sample was selected from among students attending the subsequent grades of the Group of Naval Architecture and General Education Schools. A school class was selected as a sampling unit. The survey was conducted on all the class members present. It was assumed that the study would cover approximately 500 students, i.e. approximately 17 classes. The tests were based on a diagnostic survey.

The research technique was an anonymous auditorium survey. Permission to conduct the tests was granted by the Principal of the Group of Naval Architecture and General Education Schools in Gdańsk. The students were assured in the survey instructions that the study would be entirely anonymous. During the administration of the tests the subjects were granted full anonymity and a feeling of security. The verification of the data collected was another step. The analysed independent variables were age, sex, financial status of the family. Research results were calculated with the help of the statistical package Statistica 5.0.

RESULTS

Table 1 contains data concerning the subjects' smoking history by sex. Research analysis shows that more than 60% of girls and approximately 70% of boys declared some tobacco usage. Every third student said that he/she never smoked cigarettes (Table 1).

Table 1. Smoking history by sex

Smoking history	Boys		Girls		Total	
	N	%	N	%	N	%
Never smoker	76	32.8	88	38.4	164	35.6
Experimenters	156	67.2	141	61.6	297	64.4
Total	232	100	229	100	461	100

Pearson's Chi-square test 1.61617, $df=1$, $p=0.203630$

Twenty-eight percent of the subjects admitted to smoking at present, and 72% declared that they do not smoke tobacco. Every third boy and every fourth girl admitted to smoking cigarettes (Table 2).

Table 2. Smoking status by sex

Smoking status	Boys		Girls		Total	
	N	%	N	%	N	%
No smoking	157	67.7	174	76	331	72
Current smoking	75	32.3	55	24	130	28
Total	232	100	229	100	461	100

Pearson's Chi-square test 3.93068, $df=1$, $p=0.047416$

Table 3 presents data concerning the frequency of tobacco smoking among the students who smoke. The survey showed that more than 72% of the young people smoke on a daily basis. Approximately 7% of students smoke once a week and every fifth student admitted to occasional smoking (Table 3).

Table 3. Smoking frequency by sex

Smoking frequency	Boys		Girls		Total	
	N	%	N	%	N	%
Daily	61	75.3	38	67.9	99	72.3
Once a week	5	6.2	5	8.9	10	7.3
Occasionally	15	18.5	13	23.2	28	20.4
Total	81	100	56	100	137	100

Pearson's Chi-square test 0.956085, df=2, p=0.619997

Table 4 gives quantitative and percentage data concerning smoking students aged 17-19 years. The analysis shows that the percentage of young people smoking grows and amounts to 22% of students aged 17 years, 30.8% of students aged 18 years and 34.4% of students aged 19 years (Table 4).

Table 4. Smoking status by age

Smoking status	17 years		18 years		19 years		Total	
	N	%	N	%	N	%	N	%
No smoking	117	79	175	69.2	40	65.6	332	72
Current smoking	32	22	78	30.8	21	34.4	131	28
Total	149	100	253	100	61	100	463	100

Pearson's Chi-square test 4.491211 df=2 p=0.10587

Table 5 presents smoking frequency by the age of the students participating in the study. A vast majority of students admitted to smoking on a daily basis: this applies to 78.1% of students aged 17 years, 73.1% of students aged 18 years and 81% of students aged 19 years (Table 5).

Table 5. Smoking frequency by age

Smoking frequency	17 years		18 years		19 years		Total	
	N	%	N	%	N	%	N	%
Daily	25	78.1	57	73.1	17	81	99	76
Once a week	2	6.3	6	7.7	3	14.2	11	8
Occasionally	5	15.6	15	19.2	1	4.8	21	16
Total	32	100	78	100	21	100	131	100

Pearson's Chi-square test 1.350345 df=4 p=,85278

Table 6 shows the number of cigarettes smoked a day by age of the students participating in the study. 50% of smoking students aged 17 years, every third student aged 18 years and 14% of students aged 19 years smoke from one to three cigarettes a day. Approximately 40% of students aged 19 years smoke up to 24 cigarettes a day (Table 6).

Table 6. Daily consumption of cigarettes by age

Daily consumption of cigarettes	17 years		18 years		19 years		Total	
	N	%	N	%	N	%	N	%
1-3	16	50	27	35	3	14	46	35
4-14	12	38	42	54	10	48	64	49
15-24	4	13	9	12	8	38	21	16
Total	32	100	78	100	21	100	131	100

Pearson's Chi-square test 12.39758 df=4 p=,01463

Table 7 gives data on the current smoking level depending on the financial standing of the family. An analysis of research results showed that most smoking students (37% of those surveyed) have the best financial status (Table 7).

Table 7. Predictors of smoking by financial status of the family

Household income	Low		Lower Middle		Middle	High		Total		
	N	%	N	%		N	%	N	%	
No smoking	12	86	155	71	142	73	22	63	331	72
Current smoking	2	14	63	29	52	27	13	37	130	28
Total	14	100	218	100	194	100	35	100	461	100

Pearson's Chi-square test 2.9646, df=3, p=0.397767

DISCUSSION

The Global Youth Tobacco Survey (GYTS), a part of the Global Tobacco Surveillance System (GTSS) initiated by the World Health Organization (WHO) and CDC, was developed to monitor the youth tobacco use, attitudes about tobacco, and exposure to tobacco smoke, and has been completed by approximately 1.4 million students in 133 countries. A key goal of GTSS is for countries to conduct the GYTS every four years. The research was conducted in Poland in 1999 and 2003. In both years, the results of researches showed that 70% of students aged 13-15 years declared some tobacco usage (9).

Our research into the smoking history of upper secondary school students showed that more than 64% of students (including 60% of girls and approximately 70% of boys) made some tobacco smoking attempts. Only every third student declared that he/she never experimented with the substance. Similar results were obtained in survey-based studies conducted by Sierosławski *et al.* in Śląskie Province. The author discovered that 76% of students from grade two of upper secondary schools made some tobacco smoking attempts and that every fourth student surveyed stated that he/she never smoked

cigarettes (10).

Our own research showed that among the young people aged 17-19 years who admitted to being current smokers (28%) there are more smokers among boys (32%) than girls (24%). Similar research results were obtained in the course of the studies conducted on a national scale. For example, Czaja *et al.* found out as a result of his research into anti-health behaviours of technical school students in Gdańsk that 30% of the subjects smoked and that more boys than girls smoked (11). Studies conducted among 1909 students from Poznań by Kubera *et al.* revealed that in the academic years 2000/2001 and 2001/2002 smokers constituted more than 20% of the students surveyed, and that more boys than girls smoked (12). Similar results were presented by Suliga in her studies concerning the consumption of stimulants, alcohol and tobacco among students of Polish secondary schools (13).

Results confirming the aforementioned were obtained in other countries. A disproportionate share of the global tobacco burden falls on developing countries, where an estimated 84% of the world's 1.3 billion current smokers live (14). Statistics reveal that the use of any form of tobacco by 13–15 year-old students is greater than 10%. In addition, almost one in four students (13-15 years old) who ever smoked cigarettes smoked their first cigarette before the age of 10. Further, recent studies have revealed that there is little difference between the sexes in cigarette smoking or in use of other tobacco products (15).

It results from the studies conducted by Peltzer among students of 12 secondary schools in Southern Africa that boys (9.1%) smoke more often than girls (5%) (16). Studies conducted in India by Kotwal *et al.* reveal that 18% of young people aged 15-17 years smoke cigarettes, with more boys than girls engaging in the activity (17). Hammond claims that more Canadian boys (30%) than girls (21%) smoke (18).

Results of our research reveal that the percentage of young smokers increases with age: 22% of students aged 17 years, 30% of students aged 18 years and more than 34% of students aged 19 years admit to smoking cigarettes currently. Results confirming the finding were obtained in the research carried out by Hammond in Canada (n=10559). The author of the study provides that 28% of young Canadians, including 8% of those aged 17 years, and 22% of those aged 18-29 years, smoke cigarettes (18).

Results of our research show that 50% of smoking students aged 17 years, every third student aged 18 years and 14% of students aged 19 years smoke from one to three cigarettes a day. Thirteen

percent of the students aged 17 years, 12% of students aged 18 years and approximately 40% of students aged 19 years smoke up to 24 cigarettes a day. As results from Sierosławski's studies, 11% of students aged 17 years declare smoking from 1 to 5 cigarettes a day, and over 6% of students aged 17 years smoke up to 20 cigarettes a day.

It results from our study that out of the total of 461 students surveyed, 28% of students aged 17-19 years are current tobacco smokers. Similar results are given by MacDonald *et al.* who report that 25% of young Americans aged 17 and 18 years admitted to smoking tobacco (19).

Research analysis showed that a vast majority of students admitting to smoking cigarettes smoke on a daily basis. The above applies to 78% of students aged 17 years, 73% of students aged 18 years and 81% of students aged 19 years. More boys (75%) than girls (approximately 68%) smoke on a daily basis. It results from studies conducted in 1995 by MacDonald *et al.* (2002) in 20 secondary schools in British Columbia, Canada, that among young Canadians more girls (35%) than boys (25%) smoked on a daily basis and that with age the percentage of students who smoked increased (19).

The above studies showed differences in the proportions of smoking boys and girls in Poland and Canada in 1995 and 2005 (18,19). The confirming results concern the finding that the percentage of secondary school students who smoke increases with age.

The results of the research prove that education in this field should become a priority.

CONSLUSION

1. A considerable number (76%) of the surveyed young people who admitted to smoking tobacco do so on a daily basis.

2. The number of students who smoke cigarettes increases with age: 22% of students aged 17 years, 30% of students aged 18 years and more than 34% of students aged 19 years admitted to smoking.

3. It seems that a personal involvement of students and an educator/teacher being a model of pro-health behaviour in the development of prevention programmes would be a sensible and effective method of limiting the tobacco smoking tendency among students aged 17-19 years.

4. The basic prevention measure would consist in the undertaking of larger-scale anti-tobacco advertising campaigns, which have a considerable impact on the target audience, and in particular on young people in the period of adolescence.

5. Therefore, it seems necessary to make sure that health protection professionals are involved in cooperation with educational professionals with a view to changing young people's attitudes and beliefs.

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POJAVA PUŠENJA KOD UČENIKA UZRASTA 17-19 GODINA U VIŠIM RAZREDIMA SREDNJE ŠKOLE U GDANJSKU, POLJSKA

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SAŽETAK

Pojava pušenja kod mlađe populacije u Poljskoj je društveno pitanje. To je značajan problem među učenicima viših razreda srednjih škola. Radnici zdravstvene zaštite, naročito lekari i sestre, imaju posebnu ulogu u promociji zdravog načina života bez pušenja. Angažovanje obučenih profesionalaca u primeni profilakse takođe bi bilo korisno jer oni predstavljaju vezu između učenika i zdravstvenih radnika.

Cilj istraživanja je identifikacija i dijagnoza pušenja među učenicima viših razreda srednjih škola u Gdanjsku kao i primena edukativnih strategija koje bi mlađe generacije pripremile za promenu načina života.

Istraživanje je bazirano na dijagnostičkom pregledu. Tehnika istraživanja je bila anonimno ispitivanje. Istraživanje je sprovedeno na slučajnom uzorku od 500 učenika uzrasta 17-19 godina. Studija je sprovedena početkom 2006. godine. Analizirane su nezavisne varijable kao što su: uzrast, pol i finansijski status porodice. Statistička analiza je urađena pomoću χ^2 testa, sa stepenom značajnosti od 0.05.

Pedeset procenata učenika uzrasta 17 godina, svaki treći učenik uzrasta 18 godina i 14% studenata uzrasta 19 godina puši 1-3 cigarete dnevno. Oko 40% učenika uzrasta 19 godina puši do 20 cigareta dnevno.

Porast tendencije pušenja kao pojave među populacijom učenika uzrasta 17-19 godina je razlog za brigu i pokazatelj nedovoljnih preventivnih aktivnosti u školama. Stoga, neophodno je utvrditi da su radnici zdravstvene zaštite uključeni u saradnju sa obučenim profesionalcima kako bi se promenili stavovi i ubeđenja pripadnika mlađe populacije.

Ključne reči: pušenje, mlađa populacija, uzrast 17-19 godina