Eur J Med Res (2009) 14(Suppl. IV): 86-89

Tobacco Abuse and Physical Activity Among Medical Students

A. Gawlikowska-Sroka[1], E. Dzieciolowska[1], J. Szczurowski[2], E. Kamienska[3], F. Czerwinski[1]

[1]Department of Normal and Clinical Anatomy, Pomeranian Medical University, Szczecin, Poland;
[2]Department of Anthropology, Wroclaw University, Wroclaw, Poland;
[3]Clinic of Pediatrics, Hematology and Oncology, Pomeranian Medical University, Szczecin, Poland

Abstract
Objective: This lifestyle is mainly determined during childhood and connected with poor public prophylactic health policy. The aim of this study was to estimate physical activity and level of tobacco abuse, as well as knowledge about health behaviours, among medical students.
Methods: Questionnaires were completed by Polish (243) and foreign medical students (80).
Results: It was stated that about 20% of the students smoked cigarettes. Female students from Norway took up smoking significantly more often than other participants, whereas there were more smokers among those from Poland. There was a significantly larger percentage of smoking males from Norway than among male Polish students. The same students presented a low level of physical activity. The smallest level of physical activity was characteristic of the Polish women.
Conclusion: This situation requires an intensification of activities aimed at supporting pro-health lifestyles and the elimination of unfavourable effects, especially among medical students.

Key words: health promotion, physical activity, respiratory diseases, smoking

Introduction

Human health is determined by lifestyle by as much as 50%. This lifestyle develops and evolves during the whole of life, but adolescence is of the greatest importance due to striving of young people during that time for independence and self-reliance, the intensive search for their own identity and values, and the changing of the person's self image [1]. The end-stage of adolescence falls at the time of secondary school completion and the taking up of university studies. Therefore, it is important that they enter this period with the right habits for a healthy lifestyle which will be positively strengthened [1]. In Poland, data show a decrease in physical activity, and negative changes regarding drinking and smoking habits. Tobacco smoking is one of the most important risk factors in many diseases of the developed world. It leads to tumours of the lung and larynx, oral cancer, circulatory system diseases, lung obturation, sleep disorders and others [2, 3, 4, 5]. According to the World Health Organisation, about 1.1 billion people in the world are affected by tobacco products. It is the most dangerous risk factor for health and the main cause of preterm mortality in high income countries [6]. The majority of tobacco smokers start smoking in adolescence; 50% of these young people become heavy smokers within 16-20 years [7, 8]. The aim of this study was to estimate the levels of tobacco abuse and knowledge about the risks connected with tobacco smoking, as well as the level of physical activity among medical students of the Polish and English study programme at the Pomeranian Medical University in Szczecin. The research gives an opportunity to determine trends and to compare Poland with other countries, as well as to provide help in designing strategies for health-oriented education that could lead to an improvement in the health of young people [1, 9].

Material and Methods

The study was approved by a local Ethics Committee. The study was conducted in 2007 and included students of the Medical and Dentistry Faculties, as well as first-year students of the English Program at the Pomeranian Medical University in Szczecin, Poland. Questionnaires were completed by Polish medical students (66 males, 177 females) and foreign medical students (28 males, 52 females). The foreign students were mainly from Norway, while a few of them were from Sweden and Germany.

A survey questionnaire of the authors' own design, composed of open and multi-choice questions, was used in the study. Our questionnaire was prepared based on an international standard questionnaire from the HBSC study (Health Behaviour in School-Aged Children: A WHO Collaborative cross-national study) [10], D. Goldberg's GHQ-12 scale (General Heath Questionnaire) [11] and E. S. Huebner's scale (Student's Life Satisfaction Scale, 1991) [12].

Results

Numerous deficiencies in pro-health behaviour were found. About 20% of the students smoked cigarettes. There was a significant difference between Polish and foreign students. Female students from Norway attempted to take up smoking significantly more often than other groups, whereas there were more smokers

Table 1. Comparison of tobacco abuse between Polish and English program students.

	Polish women	Polish men	English program Women	English program Men
n	177	66	52	28
Coming from a big town	95	44	29	19
Coming from a small town	64	21	18	6
Coming from a village	18	0	5	3
Non-smokers	68.7%	60.6%	61.5%	50%
Episode of smoking in lifetime	19.9%	12.1%	30.8%	21.4%
Smokers	20.1%	27.3%	7.7%	28.6%
Smokers for (years)	4.2	4.6	5.7	4.2
First experience with cigarette smoking, min.	13	13	13	14
First experience with cigarette smoking, average	16	15	16	17
First experience with cigarette smoking, max.	20	20	20	21
Average number of cigarettes smoked per day	9.3	10.8	10.8	8.8

among those from Poland (Pearson's Chi^2: 14.09, df =2, P=0.001). There was a significantly higher percentage of smoking males than females among Norwegian students (Pearson's Chi^2: 6.29, df=2, P=0.043). The first experiments with cigarette smoking took place at the age of 16. Students in the study smoked about 10 cigarettes a day. There was no significant difference between groups (Table 1).

Both groups smoked in similar situations. The parents of non-smoking students were non-smokers significantly more often (Figs. 1-4). Also the partners of smoking students were substantially more often smokers themselves. One hundred percent of the women and 90% of the men said that tobacco smoking was unhealthy. The following were most frequently mentioned as negative effects of tobacco smoking: lung

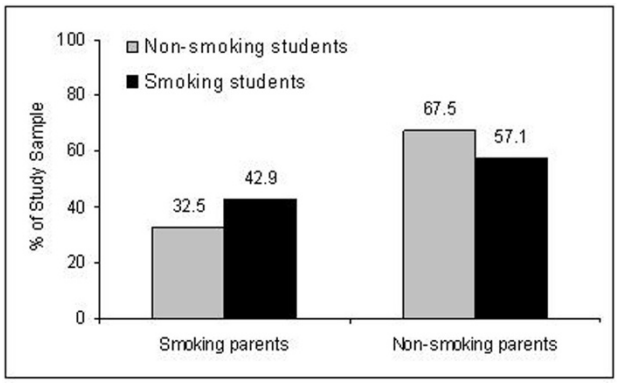

Fig. 1. Influence of tobacco abuse by parents on smoking habits of Polish students.

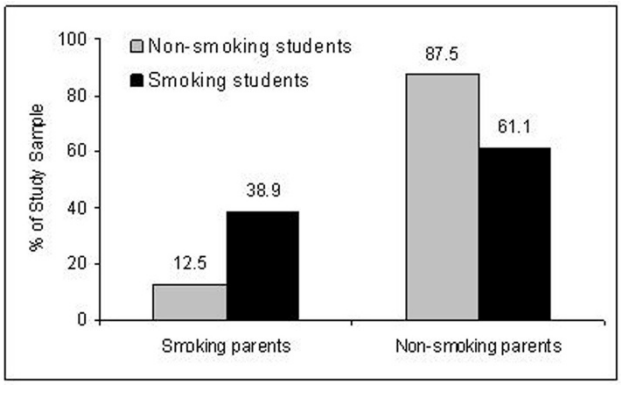

Fig. 3. Influence of tobacco abuse by parents on smoking habits of Polish male students.

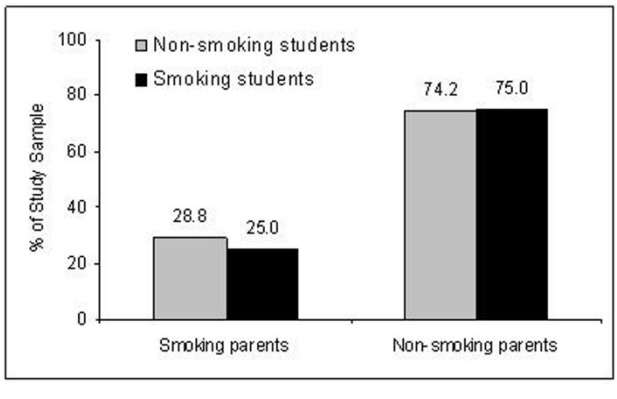

Fig. 2. Influence of tobacco abuse by parents on smoking habits of Norwegian students.

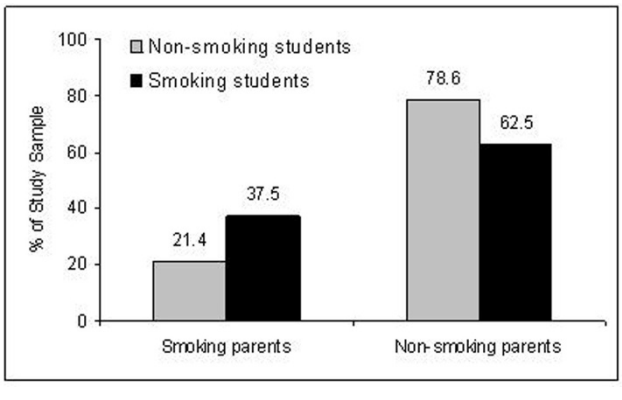

Fig. 4. Influence of tobacco abuse by parents on smoking habits of Norwegian male students.

cancer, lung diseases, heart diseases, coughing, yellow teeth, bad physical condition, bad smell, and bad skin. The majority of students (about 70%) said that their physical fitness was good or very good. Only 4% of the students assessed their physical activity as poor, but this does not correlate with the frequency and time spent on physical exercise. The fewer number of days per week with physical activity, a minimum of 60 minutes, was characteristic of the group of female Polish students – mean exercise days below 2 days per week. The other 3 student groups exercised actively on more than 2 days. The differences between groups are, however, statistically insignificant. The male Polish students did exercise the most regularly – 66%, and then the Polish and the foreign female students. The English-speaking male students exercised the most frequently on random week days – 48%. Their physical effort was thus the least regular. The majority of students did exercise in the afternoon or in the evening, 42-50%, in the respective groups. Norwegian female students did exercise in the morning significantly more than other groups. The exercise time appears to be still too short. Just over half of the male Polish students did exercise for more than one hour – 53%. Physical activity in the other groups was also too low.

Discussion

Tobacco smoking leads to various human disorders. Active and passive smokers suffer from inflammatory diseases of the respiratory system [13]. Exposure to cigarette smoke during pregnancy is directly correlated to the premature rupture of membranes, premature birth, delayed foetal development, low birth body mass and reduced lung function [14, 15, 16]. Spanish research has shown that 18,000 new cases of lung cancer are diagnosed in Spain every year. Approximately 80-90% of lung cancer in men and women is directly attributable to tobacco abuse. This is strongly connected with the fact that cigarette smoke contains over 300 chemicals, 40 of which are known to be potent carcinogens. This leads to cancers not only in smokers but also in non-smokers through passive smoking [3, 17].

In the last decade, the prevalence of smoking has generally increased in the European Union. Tobacco abuse is a public health problem, especially among children and teenagers in Germany. While the proportion of adolescents smoking regularly was 18% in 1997, this increased to more than 30% in 2001 [15]. In a 1998 survey, 43% of Polish pupils aged 11-15 years had smoked at least one cigarette in their lifetime, 16% were occasional smokers and 7% smoked every day. A similar level of young smokers was observed in Denmark, while smaller numbers were reported in Sweden, and higher numbers in Austria (24%), Hungary (18%) and the Czech and Slovak Republics (18%). In comparison with 1990, the level of smoking children in Poland had increased by 1994 [8]. In a study conducted in 2002, 44% of young people were found to have had a smoking episode, 17% smoked cigarettes occasionally, while 8% smoked every day. A higher percentage of regular smokers were found among adolescents whose parents and peers smoked every day [18]. In our study, young people of both groups also pointed to the age of 16 years as the most frequent first tobacco access time. Frequently, according to the study of Crone et al [8], these first attempts at smoking result in permanent addiction and regular tobacco smoking. The survey conducted among first-year male students in Gdansk in the academic year 2002/2003 showed a statistically significant relationship between the faculty of full-time studies and smoking. There were about 17% of students who smoked among the first-year. A greater number of smoking students were found among those of the tourism and recreation faculty – about 25%, with 14% in physical education and a smaller number (7%) in the public health faculty. Only 10% of the people practicing physical activity and 24% of non-active persons smoked [14].

The research conducted at the Silesian University showed that about 11% of students smoked [19]. The fact that 20% of the female Polish students and almost 30% of the Polish and foreign male students in our study admitted to regular tobacco smoking is alarming. Only in the group of female Norwegian students did a smaller number of smokers occur (8%). It would appear to be self-evident that medical students should be fully aware of the harmfulness and consequences of this bad habit and should support a pro-health lifestyle. According to Wojnarowska et al [1], the percentage of smoking boys in recent years has remained at the same level, but that of smoking girls shows an upward trend. This situation is confirmed by our study. Smoking among students took place in various situations, but most often it was in the company of other smokers, very often friends, parents and teachers. This is one reason for the development of negative behavioural patterns. In our study, the students whose parents smoked, or who had smoking partners, were tobacco smokers significantly more often (Pearson's Chi^2: 6.05, df =2, P=0.048, and Pearson's Chi^2: 47.36, df =2, P=0.000, respectively). Both our groups smoked in similar places and situations – almost 100% of smoking women and about 80% of smoking men smoked at parties, while approximately 75% of English-speaking smoking students, 55% of Polish smoking males and 63% of Polish smoking females smoked at home. On the other hand, 88% of non-smoking persons did not plan to start smoking.

These alarming trends indicating an increase in the number of nicotine addicted persons are accompanied by a decrease in physical activity which considerably strengthens the biological potential of the organism and at the same time improves its health state. The dynamic development of technology and urbanisation are eliminating active movement and physical work from life. Bochenek [20] showed that physical culture takes a peripheral position in the activities of youth. A passive attitude toward personal health, including care for fitness, was declared by almost 39% of the questioned young people, while an active attitude was held by 61%. However, more detailed questions about the forms of that physical activity showed a difference between declarations and actually taken activities [19]. A similar situation was observed in our research. It was also stated at the Silesian Medical University that young people exercise for too short a time and irregu-

larly. However, so many as 81% of the questioned subjects believed that the level of their physical activity was sufficient [20].

Scientific studies have demonstrated an increase in the occurrence of hazardous health behaviours in the last decade, including tobacco smoking and a decrease in physical activity. This situation requires an intensification of activities aimed at supporting pro-health lifestyles and the elimination of unfavourable effects. Therefore, the prevention of active and passive smoking and the promotion of physical activity must be intensified. The special situation of children and adolescents should also be considered. Such promotion should be particularly effective at medical universities since medical students should support pro-health behaviour patterns with their own attitudes.

Conflicts of interest: The authors declared no conflicts of interest in relation to this article.

References

[1] Woynarowska B, Malkowska-Szkutnik A, Mazur J. Subjective health of adolescents aged 11-15 years in Poland and other countries of the European Union. Med Wieku Rozwoj 2008; 12: 559-67.

[2] Kademani D. Oral cancer. Mayo Clin Proc 2007; 82: 878-87.

[3] Gómez Raposo C, De Castro Carpeño J, González Barón M. Causes of lung cancer: smoking, environmental tobacco smoke exposure, occupational and environmental exposures and genetic predisposition. Med Clin 2007; 128: 390-6.

[4] Gusbeth-Tatomir P, Boisteanu D, Seica A, Buga C, Covic A. Sleep disorders: a systematic review of an emerging major clinical issue in renal patients. Int Urol Nephrol 2007; 39: 1217-26.

[5] Tejada T, Fornoni A, Lenz O, Materson BJ. Nonpharmacologic therapy for hypertension: does it really work? Curr Cardiol Rep 2006; 8: 418-24.

[6] Hublet A, De Bacquer D, Valimaa R, Godeau E, Schmid H, Rahav G, Maes L. Smoking trends among adolescents from 1990 to 2002 in ten European countries and Canada. BMC Public Health 2006; 10: 280.

[7] Jessor R. Risk behavior in adolescence: a psychosocial framework for understanding and action. J Adolesc Health 1991; 12: 597-605.

[8] Crone MR, Reijneveld SA, Willemsen MC, van Leerdam FJ, Spruijt RD, Sing RA Prevention of smoking in adolescents with lower education: a school based intervention study. J Epidemiol Community Health 2003; 57: 675-680.

[9] Mazur J, Mierzejewska E. Modern approaches to child and adolescent health assessment at population level. Med Wieku Rozw 2004; 8: 459-484.

[10] Currie C, Nic Gabhainn S, Godeau E; International HBSC Network Coordinating Committee. Health Behaviour in School-aged Children: WHO Collaborative Cross-National (HBSC) study: origins, concept, history and development 1982-2008. Int J Public Health 2009; 54 Suppl 2:131-9.

[11] Goldberg DP. Manual of the General Heath Questionnaire. 1978, Windsor, NFER-NELSON.

[12] Huebner ES. Initial development of the student's Life Satisfaction Scale. Sch Psychol Int 1991; 12: 231-240.

[13] Hasnis E, Bar-Shai M, Burbea Z, Reznick AZ. Cigarette smoke-induced NF-kappaB activation in human lymphocytes: the effect of low and high exposure to the gas phase of cigarette smoke. J Physiol Pharmacol 2007; 58 Suppl 5: 263-74.

[14] Wójtowicz E. Smoking by fathers as a factor differentiating birth body mass of progeny. Ann UMCS Sect D 2003; 58: 508-512.

[15] Rosewich M, Adler S, Zielen S. Effects of active and passive smoking on the health of children and adolescents. Pneumologie 2008; 62: 423-9.

[16] Gawlikowska-Sroka A, Tomczyk B, Czerwinski F. Szczecin's newborn infant-somatic state. Ann Acad Med Stetin 2007; 53: 114-118.

[17] Báezconde-Garbanati L, Beebe LA, Pérez-Stable EJ. Building capacity to address tobacco-related disparities among American Indian and Hispanic/Latino communities: conceptual and systemic considerations. Addiction 2007; 102: 112-22.

[18] Kowalewska A, Mazur J, Woynarowska B. Smoking among school adolescents and the social environment. Rocz Panst Zakl Hig 2004; 55: 363-375.

[19] Ordys D, Eszyk J. The estimation of the lifestyle of the Silesian colleges' student's. Ann UMCS Sect D 2003; 58: 404-409.

[20] Bochenek A. Kultura fizyczna w stylu zycia mlodziezy akademickiej. Ann UMCS, Lublin, 2006; 58 Suppl 13: 85-91.

Authors address:
Aleksandra Gawlikowska-Sroka
Pomeranian Medical University
Department of Normal and Clinical Anatomy
Al. Powstanców Wielkopolskich 72
70-111 Szczecin, Poland
Phone: +48 91 4661480
Fax: +48 91 4661482
E-mail: gawlikow@sci.pam.szczecin.pl