

Tobacco smoking problem in a group of 18-year-old high school students in the city of Gdańsk – finding causes and preventive methods

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Abstract

Purpose: The aim of the study was to evaluate smoking prevalence among 18-year-old secondary school students as well as their awareness of systemic health threats of smoking. Our goal was also to discuss the youth smoking risk factors and effective ways both to prevent and fight smoking problem.

Material and methods: 1516 18-year-old students (808 men, 708 women) from randomly selected 12 high schools were studied. The adolescents fulfilled the anonymous questionnaire.

Results: 34.1% (517) of all participants smoke every day or occasionally, with the highest percentage of smokers in vocational schools (49.6%); women are the most frequent smokers (52.8%). The lower prevalence of smoking was observed in high schools (21.2% of men, 20% of women). In technical high schools 36.1% of men and 11.1% of women were smokers. The habitual smokers were found in all schools; the highest percentage was observed in vocational schools (32.75%-33.13%). The percentage was particularly high among women (33.13%). 92.09% of studied women and 89.95% of men were aware of smoking systemic health threats (93.84% of high school students, 88.25% of vocational school students).

Conclusions: It is alarming that the percentage of smokers among 18-year-old students is high, in particular among women and vocational schools students. The results indicate that smoking is a serious problem in this population. It is vital to create the preventing and educating programmes

addressed especially to adolescents. There is a need of future studies aimed to evaluate smoking risk factors and create effective methods of prevention as well as smoking cessation help resources.

Key words: adolescents, cigarette smoking, prevalence, psychosocial risk factors, prevention.

Introduction

Epidemiological studies of Polish population in the recent years show a high percentage of smokers among adults, teenagers and juveniles [1]. Wide range of systemic health threats tied to smoking habit, particularly cancers and cardiovascular diseases [2,3], proves a need to conduct intensification study of this phenomenon among Polish youth and to undertake educative and prophylactic measures.

Aim

The aim of the study was to evaluate smoking prevalence and frequency among 18-year-old secondary school students of different profiles and to find ways to fight the smoking problem.

Material and methods

Study was conducted in schools randomly selected by the Gdańsk City Office (7 high schools, 4 vocational schools and 1 technical high school). 1516 18-year-old students of both genders, 808 men and 708 women were examined. Youth had filled anonymous questionnaire about number of smoked cigarettes, smoking habit duration and awareness systemic health threats of smoking.

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Table 1. Tobacco smoking intensification among students according to school profile and gender

School Profile	Men		Women		Total number of students in school	Total number of smokers (%)
	Number of studied students	Number of smokers (%)	Number of studied students	Number of smokers (%)		
High school	344	73 (21.22%)	370	74 (20%)	714	147 (20.59%)
Vocational school	284	132 (46.48%)	329	172 (52.28%)	613	304 (49.59%)
Technical high school	180	65 (36.11%)	9	1 (11.11%)	189	66 (34.92%)
Total	808	270 (33.42%)	708	247 (34.89%)	1516	517 (34.10%)

Table 2. Number of cigarettes smoked per day according to school profile

School profile	Number of men studied	Number of men smoking		Number of women studied	Number of women smoking	
		Up to 10 cigarettes a day (%)	Over 10 cigarettes a day (%)		Up to 10 cigarettes a day (%)	Over 10 cigarettes a day (%)
High school	344	29 (8.43%)	44 (12.79%)	370	42 (11.35%)	32 (8.65%)
Vocational school	284	39 (13.73%)	93 (32.75%)	329	63 (19.15%)	109 (33.13%)
Technical high school	180	16 (8.89%)	49 (27.22%)	9	0 (0%)	1 (11.11%)
Total	808	84 (10.40%)	186 (23.02%)	708	105 (14.83%)	142 (20.06%)

Results

Results are presented in *Tab. 1-3*. Data in *Tab. 1* show, that among 1516 studied students 517 (34.1%) smoke every day or occasionally. The highest number of smokers was observed in vocational schools (49.6%), where the highest percentage of smokers was among women (52.8%). In high schools percentage of smokers in both genders was lower, similar – 21.2% in men and 20% in women. In technical high school men smoked more (36.1%) than women (11.1%).

In every school students who smoke over 10 cigarettes a day were found, they can be classified as habitual smokers. Mostly they were vocational schools students (32.75%-33.13%), women in particular (33.13%). (*Tab. 2*)

Positive answer to the question about being aware of systemic health threats of smoking was given by 726 men (89.85%) and 652 women (92.09%). The highest percentage of students knowing the systemic health threats were high school students (93.84%), the lowest in vocational schools (88.25%). (*Tab. 3*)

Discussion

Results of our study show that smoking among 18-years-old school youth, especially in vocational school, constitutes a significant problem calling for decisive prophylactic/preventive

action. It seems to be even more important due to the fact that majority of the students studied were aware of negative influence of smoking on general health condition; however, this fact did not result in quitting smoking.

What are the factors that favour smoking?

Many research on correlates of cigarette smoking among children, adolescents and adults seem to emphasise multifactorial model containing social influence, environmental, psychological and behavioural factors [4,5]. One of the most important factors coexisting with smoking is positive attitude towards smoking as well as beliefs and opinions about positive consequences of nicotine intake. These opinions are shared by adolescents and, unfortunately, also by children [5-10]. Many of the adolescent smokers (68%) think that smoking helps to calm down when a person is upset, embarrassed or sad [6]. Research also proved that these opinions are even shared by non-smoking persons, with children among them, who consider smoking the way to improve mood. British study of 3000 children (aged 11-15) who never smoked revealed that about 60% of them believed smoking could be a helpful way to relax [6]. These results seem to indicate that positive attitude toward cigarette smoking doesn't have to be the result of personal experience but sometimes rises from suggestions and other people's opinions as well as from the observation of social behaviour. Teenagers reported that among several examined behaviours,

Table 3. Level of students' awareness of unfavourable influence of smoking

School Profile	Men		Women		Total number of studied students	Total number of aware students (%)
	Number of studied students	Number of aware students (%)	Number of studied students	Number of aware students (%)		
High school	344	321 (93.31%)	370	349 (94.32%)	714	670 (93.84%)
Vocational school	284	245 (86.27%)	329	296 (89.97%)	613	541 (88.25%)
Technical high school	180	160 (88.89%)	9	7 (77.78%)	189	167 (88.36%)
Total	808	726 (89.85%)	708	652 (92.09%)	1516	1378 (90.90%)

nicotine intake is the most frequent phenomenon observed in their environment [11]. Thus, the common presence of smoking behaviour can influence their decision to smoke.

Studies concentrated on environmental factors coexisting with smoking among adolescents emphasised the impact of peers' attitudes and behaviours [4,5]. The risk of initiation and smoking maintenance is significantly associated with smoking among adolescents' friends and siblings and their attitudes toward smoking.

Initiation and prevalence of smoking can also be influenced by family structure, parental attitudes toward smoking, parental smoking (especially mothers), the quality of parent-child relationship and parental attachment [4,7,9,10,12,13]. It's worth to emphasise that the poorer the relationship with parents, the stronger the adolescent's tendency to become peer group member and to be 'one of them'.

Research on reasons of initiation of cigarette smoking indicate that stress is one the most important correlates [4,9]. This factor seems to be especially important in political and economical transformation period in Poland. One study aimed to "evaluate" the reasons of smoking revealed that "dealing with stress" was the most frequently reported factor leading to smoking [9]. The authors emphasised the fact that reasons of smoking associated with stress and frustration, resulting from "missed" possibilities and lack of prospects, prevailing now among the youth, hadn't been mentioned by Polish adolescents in the 60s-80s. The researchers contribute the present tendency to the socio-political situation in our country.

Many of the researchers indicate the coincidence of smoking and other risk behaviours, e.g. alcohol or drug use [14-16]. According to these studies the problem of smoking among the adolescents becomes even more important, as it is defined as alcohol or drug addiction risk factor and proves the necessity of actions – not only preventive ones, but also those encouraging adolescents to quit smoking.

There has been noticed the co-morbidity of smoking or nicotine dependence and mental disorders [6,17]. This problem seems to be serious taking into consideration the results of Finnish psychiatric inpatient adolescents study which revealed three times higher risk of self-mutilation and four-fold risk for suicidal thoughts and attempts among smokers than non-smokers [18].

Depression is one of the disorders that raise the risk of smoking initiation, correlated with number of smoked cigarettes and difficulties with cessation. Depressed people are also less likely to remain abstinent due to the fact that when a person is addicted to nicotine, worsened mood can be the withdrawal symptom [17]. Depression is also the predictor of future smoking. The above associations are observed in children, adolescents and adults [4,6,15,17,19-21]. Research results support the conclusion that perhaps we deal with such a problem in Poland. Study aimed to estimate prevalence of depression among Polish adolescents revealed depressive disorders in 50% students from comprehensive schools and 65% students from vocational schools. From these young people up to 25% required anti-depressive treatment [22]. Moreover, alarming are the results of studies on mental health problems among adolescents between 13-17 years of age [23,24] who reported high level of sadness, gloom, loneliness, low self-esteem and suicidal thoughts. High prevalence of depression among 16-17 aged students revealed in research by Jaklewicz [22] and the high prevalence of smoking among our study population (18-years-old), especially in vocational schools, suggest the possibility of coexistence of the phenomenon in Polish adolescents, which have been reported by some authors [25]. The additional problem is that cigarette smoking can have the bearing on depressive mood increase [26]. Perhaps, we have to face the 'vicious circle' mechanism.

One of the most important psychological factors that have been consistently reported as associated with smoking is self-efficacy – the basic term phenomenon of Bandura's theory [27]. According to Bandura, self-efficacy refers to one's beliefs concerning his or her ability to cope with problems and anticipation of success in solving them. Research on association between self-efficacy and health behaviours with smoking among them, revealed that among children, adolescents and adults low self-efficacy leads to smoking initiation and maintenance as well as cessation failures [28,5]. World-wide research findings are consistent in these results. One of the most important aspects of self-efficacy is its influence on social functioning, because the level of self-efficacy determines the efficacy in resisting negative social pressure. In practice low self-efficacy means that a young person has no ability to resist his or her friends' negative influence and because of that the risk of the negative

behaviour increases. This ‘refusal self-efficacy’ is one of the protective factors against smoking initiation, continuing smoking and maintaining the abstinence [7,10]. Findings of research of Danish adolescents indicate that youth smoking initiation can be based on three-dimensional ‘attitude-social influence-self-efficacy model’ [5]. The authors of the study emphasised the role of increasing self-efficacy in smoking prevention process in adolescents.

Rotter’s ‘locus of control’ (internal vs external) is another psychological factor that is believed to be related to health behaviours [29]. The person with more internal locus of control believes that he or she is responsible for his or her life, behaviour and action and has an ability to control the life. Such a person is more disposed to positive health – related behaviours and better compliance with medical treatment.

Cigarette smoking among adolescents as well as adults seems to be one of the main ways of dealing with stress [12]. Furthermore, smoking is used because of the lack of abilities to cope with stress with positive means. This problem should be of particular importance due to the fact that ‘dealing with stress’ is the most frequent smoking motivational factor reported by Polish adolescents [9] who have no knowledge about stress coping methods [30]. The problem seems to be even of greater importance that, as studies show, young people facing problems try to solve them on their own or ask for help and support their peers, friends and only later they spot adults, most often their parents, which is a positive sign. Taking the above into consideration, it seems necessary to develop and strengthen, in child’s earliest years, the above mentioned personality traits and abilities helping in successful coping with problems, including frustration and stress, and as regards adults – realise the impact of parent – child relationship on their convictions, behaviour, actions and life choices.

How to prevent smoking?

The review of the literature on smoking in adolescents provides the clear evidence that there is a need of educational programs addressed to children and teenagers. These programs should contain the information of negative consequences of tobacco use, but what’s even more important, preventive action designed specifically to address risk factors for children, adolescents and adults, especially parents and teachers. This task seems to be even more difficult taking into consideration all the factors mentioned above and additionally intensified target marketing run by tobacco corporations.

One of the basic aims of the prevention is to increase the knowledge about negative nicotine intake results. Most of the studies, including this report, revealed that knowledge seems to be sufficient in adults (up to 95% of them know the risk connected with cigarette smoking) [21] as well as in adolescents. In our study the proportion of examined students reporting the knowledge about negative smoking consequences reached 90.9%. The truth is that the knowledge about negative consequences of ‘the’ behaviour should be sufficient factor to stop it. However, the truth also is that human-beings can sometimes act illogically. Many authors have reported that knowledge of it’s own was not the factor leading to change or stop negative behaviour [9,21,31]. To be successful one needs to realise the

problem and to be motivated to change. On a social scale it requires financial means and combining a variety of effective actions, taking into account all factors affecting initiation or continuation of smoking.

Particularly dangerous is the early initiation of smoking which can be associated with wide range of negative health related consequences, higher risk of addiction as well as difficulties with cessation. Moreover, it has been documented that the symptoms of nicotine dependence in adolescents occur short after the smoking initiation, sooner than in adults and smoking may be a risk factor of other addictions [32]. Thus many authors highlight that prevention programs should be addressed to children as well as adolescents, especially due to the fact that cigarette smoking increases among children under 13 [12]. Research point out that probability of continuing smoking in adult life is higher among persons who started to smoke under 13 [33], according to other authors this tendency is observed in persons who initiate to smoke under 18 [12]. Thus, the delay of smoking initiation moment should become a vital aim of the prevention. The preventive interventions should also be focused on 18-year-old smokers considering themselves ‘adults’. This group of adolescents is at higher risk of developing addiction in future. Previously reported parent-child relationship and its quality, parents’ attitudes and behaviours (which can be preventive as well as risk factor) should be appreciated. As one of the studies revealed even smoking parents can effectively prevent smoking in their children [13].

It is worth noticing that teenagers rarely tend to initiate conversations with adults of risk behaviour [12]. It is, among others, connected with the fact that such behaviour is not approved of by them, often simply forbidden or being a taboo. The task for parents, tutors, psychologists and doctors is to get it through to children and adolescents with such arguments that will be understood an interesting for them. It is essential to avoid patronising which arises resistance irrespective of the importance of the problem. It is also important to match the form and contents of information with the converser/recipient’s age as age, among others, determines the perception of reality. The same principle applies to anti-smoking campaigns and programmes. Threatening adolescents with distant consequences of smoking, such as: “If you smoke, in 20 years’ time...” is an ineffective method. For young people less abstract, that is more probable, are immediate or not so distant negative effects of smoking. They will be more likely to accept such arguments while they will reject those not being very realistic to them. Form and contents should be adequate to young people’s perspective so it would be positively perceived by a given age group and refer to important aspects of life of the group addressed.

In the context of pre-health or medical treatment actions taken, messages evoking negative emotions (fear, disgust), especially those using images, are more effective than neutral ones, provided they are properly used and include the method (strategy) of preventing or dealing with the threat. Stress should be rather put on positive aspects of not smoking than only on negative ones of smoking accentuating and focusing on advantages of not smoking seems to be more effective.

Taking into account a number of psychological factors favouring smoking, preventive actions should include methods

of developing children's and youth's personalities in such a way as to strengthen the qualities and teach the behaviour favouring abstinence. Developing assertive communication style, strengthening internal sense of control and self-efficacy, teaching the ability to reject negative social influence and indicating positive methods of coping with stress, increase sense of strength and enrich resources of activities useful in managing problems [5].

Attention should be paid to potential effectiveness of combining school activities with media campaigns, especially those aimed at youth mainly, as well as with open-air events (e.g. HELP European Campaign, Woodstock Station) and advertising banners [8]. Combination of such elements as information on imminent effects of smoking, positive effects of not smoking, education on social influence theory and training the ability to refuse, increases its effectiveness [12].

It is also worth noting that although universal activities addressed to large social group are doubtlessly valuable, the "individualisation" is also important. The basis of this idea are differences in temperament and personality traits, causes and factors favouring smoking related to age, gender, social and cultural factors. Taking these differences into account during anti-nicotine programmes preparation could result in their higher effectiveness.

Recapitulation

Prevention requires solutions in macroscale – covering whole country – and social campaigns, planned and developed for a concrete social group and aimed at that group. As Charlton et al. [8] suggest "non-smoking should become a norm" and school "a place free from cigarettes", also school employees should be banned smoking [8]. Survey performed in Poland in 2006 by PENTOR [34] showed that 76% of Poles supported ban on smoking in public places, large number being smokers themselves! Therefore even the persons to be affected by the ban are in favour of its introduction. Maybe such restrictions will make some smokers limit smoking or even quit the habit.

Percentage of smoking teenagers is still high, especially among vocational school girls, which has been confirmed by our study. Also lowering age of initiation of smoking and drinking alcohol is worrying. Further research aimed at finding causes and behaviour inducing smoking and other risk behaviour should be a valuable source of information when taking preventive and therapeutic activities. Those issues will be a subject of further research by the authors of this study.

Conclusions

1. Smoking is a big problem in population of 18-year-old students, irrespective of school profile.
2. It is alarming that 52.7% of women and 46.3% men in vocational schools smoke.
3. It is important to create educative programs not only in schools, dealing with ways of smoking prevention and fighting smoking habit in population on the verge of manhood and womanhood and in younger population.

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