

Training the Future Trainers - Intensifying Anti-smoking Education for a Better Community Health

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To assess the knowledge about harm of smoking among medicine students; exploring the tobacco prevalence in students; training the future trainers in antismoking activity. Questionnaire study in 260 medicine-students (80 males, 180 females from general-medicine and college) before and after antismoking training. Smoking is intensively spread among students (active smokers 33.84%, ex-smokers 15.38%). Smoking was much higher among males compared to women (51.25% vs. 26.1%). 68.1% were moderate-consumers (10 cigarettes/day) and 31.8% heavy-smokers (≥ 20 cigarettes/day). 56% of smokers began smoking between 13-18 year-old and 25% before 16. 65.9% had at least 1 parent-smoker in their family, 45.4% had a partner/close friend who smoked. 89.2% from the entire group were eager to improve their skills for a future antismoking activity. We found 42.6% alcohol users. Initially medicine-students' knowledge concerning the side effects of smoking was insufficient (20% correct answers). We repeated the test after 2 h course and 1-week stage in Pulmonology Clinic. After training, the amount of knowledge in the field increased impressively (88.4% correct answers). We used modern study techniques: case based and team based learning. 31.8% of trained students stopped smoking after our course. The medicine students represent a crucial segment in the fight against smoking. Information acquired at the pulmonology stages/courses had a huge contribution in smoking cessation and their antismoking activity. Training the future health promoters is a priority and may be an issue for a smoke-free behavior in general population.

Keywords: antismoking education; health promoters; information dissemination.

Chronic smoking is a serious illness, an addiction disease with large prevalence in population, a really tobacco pandemic (over 1.1 billion people WHO in 2015), that is on growing especially in adolescents and young adults [1]. Over 4.5 million children and adolescents are active smokers [2]. The antismoking activities are public health priorities in many countries [1]. Education and prevention of tobacco use require a joint effort and support from the families, educational institutions, healthcare system, media and government [3-5]. Correct information about the harmful effects of the chemical substances contained in tobacco smoke is crucial for the prevention and cessation acceleration.

Cigarette smoke contains more than 7,000 chemicals. Hundreds are cytotoxic, mutagenic, antigenic, irritative, and allergenic and the worst over 70 are carcinogenic. The poisonous chemical compounds in cigarette smoke are: nicotine, N-nitrosamines, aromatic and heterocyclic amines, polycyclic aromatic hydrocarbons, heavy metals, chlorinated dioxins and furans, volatile compounds including aldehydes, additives, carbon monoxide [6,7].

The complex chemical mixture of the cigarette smoke causes a wide range of diseases by direct or indirect path. We must note firstly several respiratory diseases: lung and laryngeal cancer, chronic obstructive pulmonary disease, asthma crisis, increased risk for pulmonary TB and respiratory infections, laryngitis, conjunctivitis [2, 8]. The extreme bad effects of smoking on cardiovascular system are well known: atherosclerosis, coronary heart disease, stroke risk and peripheral arteriopathies [9-13]. Women who smoke or are exposed to secondhand smoke during pregnancy are at greater risk for spontaneous pregnancy

losses, preterm delivery, low birth weight, and stillbirth [14-17]. Cigarette smoke exacerbates other different diseases: peptic ulcer, digestive cancers, endocrine diseases, eye dysfunction, sexual dysfunction, mental illnesses and other drug abuse (narcotics) [14-17].

Second hand smoking (smoke resulted from burning end of a cigarette and the expired smoke by the active smokers) contain the same noxious substances and produce the same harmful effects on human body. For this reason both active and passive smoking have to be eliminating from communities [16,17].

Health promoters, doctors and nurses may represent the suitable vectors to reinforce healthy behavior habits in a large amount of population by their privileged position in the field by their capital of trust and their position in the proximity of the community.

In this perspective *training of future trainers* becomes a *must have* of the academic activity in accordance with the antismoking laws existent in Romania and in the European Community UE [18,19].

Experimental part

We used questionnaires with 25 items in 260 students (80 males, 180 females) from General Medicine (GM), college for nurses (CN) and kinesitherapy specialty (KT). We analyzed several parameters: prevalence of smoking; prevalence of smoking by gender; presence of smoking in parents, partners, entourage; alcohol consumption; motivation of starting smoking and its continuation; relationship with sports activities; assessing the knowledge about the harmfulness of smoking and means of withdrawal. We made some comparisons between

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students' responses before and after a 2-hour course and one-week traineeships in Pulmonology Clinic and comparisons with national data.

Results and discussions

The analysis of the obtained data shows a huge prevalence of smokers in medicine students - 88 active smokers (40 male, 48 females) 33.84%. Other 40 students (15.38%) were ex-smokers. This prevalence exceeds the national values among persons aged 15 years and older (26.7% in 2011 - 37.4% in men, 16.7% in women) [1]. In our study smoking was much higher among males compared to women (51.25% vs. 26.1%) and a male/female ratio 1.9:1 smaller than the national ratio 2.2:1. Prevalence of smoking in USA in 2013, in 12th grade students (25.6%) was also smaller than our very large percentage of prevalence [20].

68.1% were moderate-consumers (10 cigarettes/day) and 31.8% heavy-smokers (≥ 20 cigarettes/day). Given the age of smoking onset in the puberty (56% of smokers began smoking between 13-18 year-old and 25% before the age of 16) it can be concluded that most students have a smoking history of 4-6 years without a heavy dependence. Consequently education for quitting smoking in this moment is crucial for the success in quitting smoking approach before physical dependence will be installed.

In the same time we identified the optimal moment for dedicated information sessions concerning general antismoking education: as early as possible in secondary school.

We found some differences between the prevalence of smokers in the fifth-year of GM group, the fourth-year of CN and the second-year in KT: 33.1% in GM, 30% in CN, and 40.4% in KT students. The observation could be partially explained by the differences in time spent in the medical school with multiple opportunities for information in the field.

We tried to find if it is a link between practicing sports and not-starting smoking or quitting smoking. Indeed, the percentage of students engaged in physical activity (football, fitness, field tennis, swimming, jogging or sportive dance) was significantly greater in the nonsmoker group 102/172 - 59.3% than in the active smokers 28/88 - 31.8%.

This observation suggests the beneficial effect that sport brings to encouragement of non-smoking. We can point out the need of orientation of the students and young people towards sports activities which, besides entertainment and the harmonious development of the body, hinders smoking habits. For those students who already smoke sport provides a pleasant concern (occupational therapy) that excludes smoking. Furthermore besides the family and carrier development advices, we recommended for students having preoccupation in social activities, arts, travel, and literature.

At the question: what are the reasons for starting smoking? - the explanations given by students did not surprise us given the early age of smoking onset. If a reason such as curiosity (31.8%) is somewhat understandable and difficult to counteract, the rest of reasons: *it is in vogue* (34%), *many of our friends smoke* (46.5%), *it is cool to smoke* (28.4%), or I do not know (22.7%) are unreasonable considerations and must be countered by increasing the accurate information about toxicity of tobacco use.

65.9% of the students had at least 1 parent-smoker in their family and 45.4% had a partner/close friend who smoked. This observation underlines the fact that education has to be performed continuously and on all levels throughout the general population, by any means (school education, medical advice, TV, media, educational banners,

smoke-free public laws) to mitigate this *contagious* nature of this bad habit. Also, an important impact point may be the reducing of the aggressive smoking advertisements displayed on streets, magazines or films associated with fashionable actors or other *models*.

The high percentage (37.5%) of the reasons for continuation of smoking like I think I am dependent or I'm too accustomed to it expressed a special need and level of the medical intervention. In those cases we assessed the degree of addiction by Fagerstrom test. We found in 27 students (81.8%) mild dependence (predominately psychological and social dependence) and only in 6 cases (18.2%) a truly pharmacologic dependence. Alcohol consumption among adolescents was also extremely high (9.6% daily consumers, 33% occasionally consumers).

Initially, before debating the smoking theme in Pulmonology Discipline, our students' knowledge concerning the side effects of smoking was insufficient (20% correct answers).

We repeated the test after 2h course and 1-week stage with several cases presentation, symposium about *smoking disease* and smoking as the main risk factor for several diseases. After training, the amount of knowledge in the field increased impressively (88.4% correct answers). We used modern study technique: case based and team based learning, case-simulation, testimonials. The greatest reword for our Discipline was that 31.8% of trained smokers-students stopped smoking after our course.

The overall availability of students (89.2%) to involve themselves in antismoking activities was very high. Increase the students' awareness of the harmful effects of smoking and their involvement in tobacco control activities may effectively contribute to antismoking education for the population and for themselves.

At the question who can help people to quit smoking and alcohol use? the students responded (the entire group): antitobacco prohibitive laws (35.7%), written press (18.8%), family (34.6%), the internet (70%), school and postgraduate studies (40.9%), physicians (58.4%), church (10%), volition (67.6%).

Fortunately, in the last decades in UE (including in Romania) tobacco control registered remarkable successes by different measures: banning of tobacco commercials; smoke-free public places laws; graphic warnings on cigarette packs; antismoking repeated campaign in press schools and universities. Medical staff along with governmental authorities, nongovernmental organization and media has to accelerate and enforce antismoking activities, particularly supporting smoke-free areas, tobacco price policies and smoking cessation [21]. A WHO target by 2025 called *Endgame target* has like purpose a 30% relative reduction in prevalence of current tobacco use in persons aged 15+ years [22,23]. According with these principles our efforts are focused to disseminate the accurate information about harmful of smoking and to train the future trainers and healthcare personnel (students, physicians and nurses) considering their assumed mission like health promoters in general population.

Conclusions

Smoking is intensively spread among students with much higher prevalence than Romanian or UE general population. Smoking was associated to being a men, have at least a parent or partner/friends that smoke and not to have adequate information about harmfulness of tobacco use. Information acquired at the pulmonology stages/courses had a huge contribution in smoking cessation and future antismoking activity. Sport was associated to nonsmoking or to early cessation. Upon the study group

the best stimulants for smoking cessation may be an association between volition, physician recommendation and internet referrals. Training the future health promoters is a priority and may be an issue for a smoke-free behavior in general population. Students on one hand and physicians and nurses of the other hand, constitute target groups in antismoking education considering the great potential they have for further transmission of information to large groups of general population.

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