

ORIGINAL ARTICLE

Smoking and attitudes towards it and its cessation among dental students in Latvia

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Abstract

Background. The prevalence of smoking is higher in Latvia than in most EU countries. This study aimed to determine the level of knowledge of dental students in Latvia about the effects of smoking on oral health and their attitudes toward smoking and its cessation. **Methods.** A cross-sectional survey among all the dental students in Latvia was conducted in 2011. Students at the Riga Stradins University were asked to participate in this anonymous, voluntary survey. The questionnaire included items concerned with the students' own smoking habits, their knowledge of smoking as an addiction and its health effects and their attitudes towards its prevention and cessation in a dental setting. The response rate was 87% (173/200). The Chi-square test and logistic regression were used for the statistical analyses. **Results.** About one quarter of the students (24%) were daily or occasional smokers and almost half of the male students (46%) had smoked at least 100-times in their lifetime. The students revealed a lack of knowledge about the addictive nature of smoking, in that about half of the students did not consider smoking physically or socially addictive. About one fifth (21.4%) didn't consider environmental tobacco smoke (ETS) harmful to one's health. Although the students' awareness of smoking improved during their studies, the most significant factor related to their knowledge was their own smoking history (OR = 2.7; $p = 0.021$). **Conclusions.** Smoking was frequent among undergraduate dental students and they lacked knowledge of its addictiveness. More emphasis ought to be placed on education with regard to smoking and on cessation services.

Key Words: dental students, smoking, tobacco use, knowledge, attitude of health personnel

Introduction

The World Health Organization (WHO) has advocated multi-professional prevention and cessation counseling with respect to smoking among health professionals, including those working in the field of dental health [1]. Dental professionals have a unique opportunity to join in the efforts to both prevent smoking and promote its cessation [2]. Recent research has shown the effectiveness and applicability of prevention and cessation counselling in a dental setting [2–5].

The health hazards of smoking are well-known, as are its significant unfavorable effects on oral health, periodontal diseases and oral cancer [6–8]. Dentists have an important role in educating people about the

risks of smoking for oral health, building up their motivation to quit smoking and providing them with the skills for doing so and also for preventing young people from taking up smoking [4]. The effectiveness of health intervention in healthcare is complex to assess [9], but, in practice, one requirement is that professionals deliver treatment and prevention in a new manner. Change is, thus, based on the individual professional's knowledge, skills and motivation, all of which may be modified by environmental influences. Interventions utilize social cognitive theories like theory of planned behavior [10] or theories fusing multiple theories in recommendations [11]. In order to be competent in matters of smoking prevention and cessation, dentists must be aware of their role and importance, have an up-to-date knowledge and understanding of

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smoking and possess the tools necessary for intervening, but most of all be willing to work with patients in this field, calls for an element of teaching. These abilities, knowledge, skills and attitudes can be acquired during primary dental education and deepened through continuous professional development.

Training health professionals to provide smoking cessation does increase success rates [12]. Individual differences regarding responsiveness to education may then be modified by individual factors, which will include the dentist's own smoking history and behavior and the environment [13,14]. Smoking has been common among dental students in Latvia, so that a survey from 2009 showed that 32% of male students and 11% of female students smoked daily [15]. The social climate with regard to smoking seems to be less stringent than in Finland, for example, and training for its prevention in a dental context is insufficient [15], whereas the need for dental interventions is considerable. The general prevalence of smoking has been very high in Latvia by comparison with many western countries, especially among men (54% for males, 19% for females in 2000) [16,17]. The prevalence of female smoking has in recent times increased [16] in line with the WHO report that in western countries men and women are smoking equally much [18]. Smoking has also been shown to have increased among young Latvian girls aged 15 years from 10% in 1990 to 20% in 2002 [19].

Even though a graduating dentist should have a holistic approach to the management of patients and understand the complex interactions between oral health, drugs and general health, specific courses in smoking prevention and cessation counselling are by and large rare [20–22]. There are few interventions at dental school settings [23,24]. Health education ought to have a positive influence on students' tobacco knowledge and attitudes. The aim of the present study was to determine the level of knowledge of dental students in Latvia about the effects of smoking on oral health. In addition, our aim was to determine their attitudes toward smoking and smoking cessation.

Subjects and methods

A survey on smoking and its cessation was carried among all the dental students in Latvia in 2011. Since there is only one dental school there, the subjects were all 200 students engaged in a 5-year course in dentistry at the Riga Stradins University. The protocol was approved by the Faculty of Dentistry at that university. The anonymous and voluntary survey was presented to students in each year of the course separately during a compulsory practical class or seminar by a dental instructor (I.M.) in April–May in 2011. After having answered the questionnaire the students immediately returned the forms to the dental

instructor. A total of 173 students handed in replies (response rate = 86.5%; range among the years of the course = 72.1–96.7%). Since no identity information was collected from the respondents, specific ethical review was not required according to the national legislation.

The Riga Stradins University dental curriculum contains smoking prevention education in the dental public health course. Tobacco use and oral diseases, and pharmacotherapy for tobacco cessation (3 h) during the 3rd year and smoking cessation for the dental team (3 h) during the 5th year are offered. The education includes lectures and practical exercises.

The questionnaire

The questionnaire was based on previous research among medical and dental students, with slight modifications [25,26]. The first part of the questionnaire gathered information about the student's current smoking status ('no', 'yes, daily', 'yes, occasionally') and smoking history ('smoked at least 100 times during my lifetime', 'never smoked regularly') by means of yes/no answers. In addition, data were acquired on the number of cigarettes smoked, type of tobacco product and number of cessation attempts.

The second part of the survey assessed the respondent's knowledge of the addictive features of smoking, its health risks (general health, oral health) and those attached to environmental tobacco smoke (ETS) using a 5-point Likert scale with the alternatives 'not at all', 'little', 'moderately', 'very' and 'extremely'. Perceived knowledge of the addictive character of smoking was explored in regards to physical, psychological, social and habitual (behavioral) dependence. The health risks mentioned included general morbidity, oral health hazards and ETS risks to health.

In addition, attitudes towards the prevention and cessation of smoking and perceptions of the role of dentists in these were evaluated by means of the statements 'Smoking prevention should be part of education of all healthcare personnel' and 'It is a dentist's responsibility and duty to try to get patients to quit smoking' using a 5-point Likert scale ranging from 'fully disagree' to 'fully agree'. Furthermore, all the respondents were asked to indicate their gender, age and current year of study.

Data analyses

Smoking status was dichotomized to 'smokers' (daily/occasionally) and 'non-smokers' and the year of study was similarly merged to form a dichotomous variable 'pre-clinical' (1st and 2nd years) vs 'clinical' (3rd, 4th and 5th years). Answers concerning the health risks and addictiveness of smoking (seven questions in all) were scored as 1 for a 'correct' answer ('very',

Table I. Current and previous smoking among Latvian dental students ($n = 173$), by gender.

	Male ($n = 35$)		Female ($n = 138$)		Total ($n = 173$)	
	%	n	%	n	%	n
Smoking status						
Non-smoker	71.4	25	77.5	107	76.3	132
Occasional smoker	14.3	5	15.9	22	15.6	27
Current smoker	14.3	5	6.5	9	8.1	14
Smoking history						
Smoked 100× during lifetime	45.7	16	33.3	46	35.8	62
Smoked regularly at least sometime	28.6	10	20.3	28	22.0	38

‘extremely’) and 0 for an ‘incorrect’ one (‘moderately’, ‘slightly’, ‘not at all’). The sum of the scores for the seven questions was then taken as the total knowledge score (theoretical maximum = 7). The question regarding the number of cessation attempts was dichotomized to ‘non-smokers/not tried’ and ‘tried at least once’.

Similarly the students’ responses to statements regarding their perceptions of their role were dichotomized to scores of 1 for a positive answer (‘agree’, ‘fully agree’) and 0 for a negative answer (‘fully disagree’, ‘disagree’ or ‘don’t know’). The sum of these scores served as the attitude score for each respondent, with higher scores indicating more favorable attitudes. For further analysis, the final scores were sub-divided into two groups: ‘negative attitude’ (0–1 points) and ‘positive attitude’ (2 points).

In the multivariate analyses of inter-related factors (gender, year of study, smoking status, smoking history, cessation attempts, attitude) as independent variables the students were divided into three sub-groups according to their total knowledge scores: poor (1–5 points), intermediate (6 points) and excellent (7 points).

Statistical analyses

Frequency distributions and percentages were calculated for the responses and the chi-square test and Fisher’s exact test were employed in the statistical analyses. Logistic regression models were used for the multivariable assessment of factors related to knowledge about the harmfulness and addictiveness of smoking. The corresponding odds ratios (OR) and their 95% confidence intervals (95% CI) were determined. The significance level was set at $p < 0.05$. The data analysis was carried out using SPSS version 19.

Results

The proportion of dental students in Latvia who were current daily or occasional smokers was 23.7% and

approximately half of all the male students had smoked at least 100-times in their lifetime. The students’ current and previous smoking behavior is presented by gender in Table I. Daily smoking was more frequent among males (14.3% vs 6.5%). All smokers reported using filtered cigarettes and only a few used other tobacco products as well. Altogether 15% of the smokers had tried to quit smoking during the past 12 months.

The students’ knowledge of the addictive nature of smoking is shown in Table II. A clear majority of the students (~90%) considered smoking psychologically and habitually very or extremely addictive, while physical and social addiction were less frequently recognized (50–60%). The students who had reached the clinical phase were more aware of the different dimensions of addictiveness than were those in the pre-clinical phase. The difference between clinical and pre-clinical groups with respect to habitual addiction was significant ($p = 0.028$). Most students (>90%) were well aware of harmfulness of smoking to health and oral health. The smokers less often reported smoking to be harmful to oral health ($p = 0.004$). About one fifth of the students (21.4%) didn’t consider ETS harmful to health.

The students’ knowledge regarding the addictiveness of smoking is presented in relation to smoking status in Figure 1. The smokers were more likely to report smoking to be ‘not at all’ or ‘slightly’ addictive than were the non-smokers (Figure 1). About half of the students did not consider smoking physically or socially addictive. The students’ attitudes towards smoking prevention were generally positive and 84% of them indicated that this should be part of the education provided for healthcare personnel.

The logistic regression model showed a history of smoking (OR = 2.7; $p = 0.021$), having reached the clinical phase of one’s studies (OR = 2.5; $p = 0.030$) and positive attitudes towards smoking prevention and cessation (OR = 2.4; $p = 0.022$) to be significantly

Table II. Proportions (%), (n) of the Latvian dental students ($n = 173$) who answered the questions on the addictiveness of smoking correctly, by phase in their studies.

	Pre-clinical ($n = 60$)		Clinical ($n = 113$)		Total ($n = 173$)	
	%	n	%	n	%	n
Physically addictive	53.3	32	57.7	64	56.1	96
Psychologically addictive	83.3	50	92.0	104	89.0	154
Socially addictive	51.7	31	60.4	67	57.3	98
Habitually addictive*	83.3	50	93.8	106	90.2	156

* Chi-square test ($p = 0.028$).

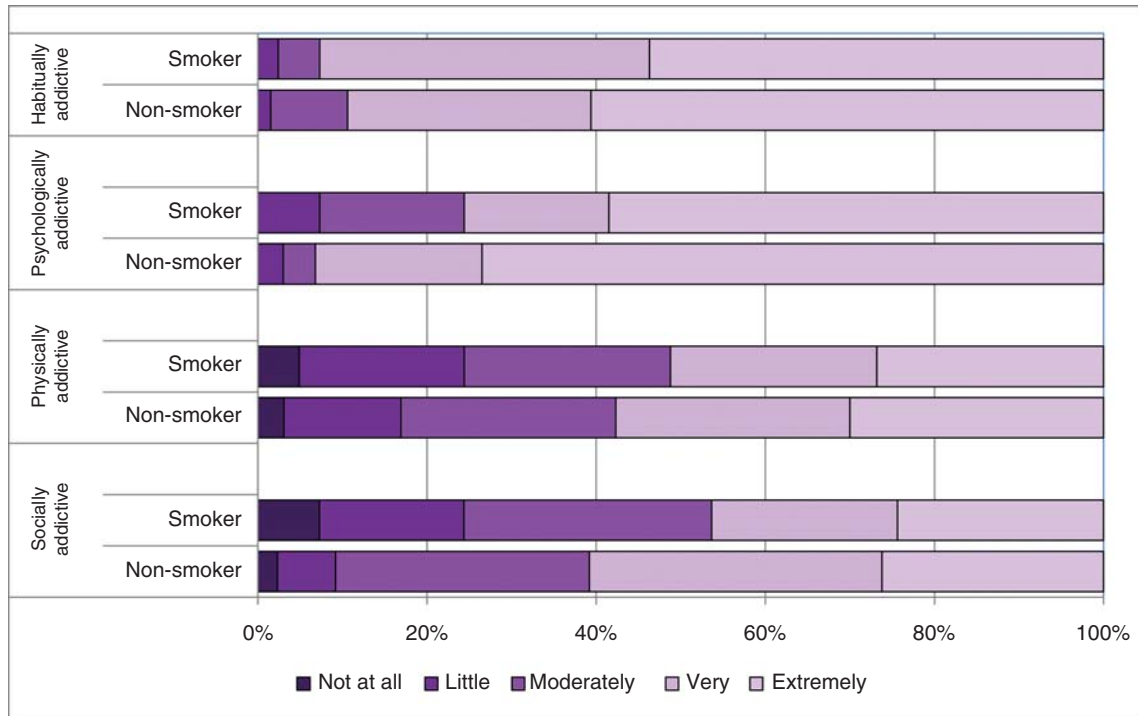


Figure 1. Distribution of Latvian dental students' responses in 2011 regarding addiction to smoking, by smoking status.

associated with a better knowledge of the health risks and dimensions of smoking addiction (Table III).

Discussion

Our results showed high smoking rates among Latvian dental students: about one fourth of them were daily or occasional smokers and half of the males had smoked at least 100-times in their lifetime. This first ever study of smoking among Latvian dental students showed that they lack a proper knowledge of the addictiveness of smoking and the health hazards of environmental tobacco smoke. While the students' awareness of smoking improved during their studies, it was their smoking history that was the most significant factor related to their knowledge.

The prevalence of smoking among health professionals reflects the general prevalence in the population, but a decrease in health professionals' smoking

can be expected to precede any general decline. Smoking is relatively common in Latvia in comparison with the EU average (29% for males, 18% for females in 2010) [16,27]. The proportion of daily smokers in the adult population (15–64-year-olds) in 2010 was 34%, with the highest prevalence among 25–34-year-olds (52% for males, 27% for females) [28,29]. Preventive measures were generally rather weak [30], so that only 3% of the smokers in the adult population claimed that a dentist had recommended quitting smoking and 2% that a dental hygienist had given them this advice in 2010 [29]. Daily smoking was reported by 23.7% of our respondents, which is a higher figure than the 19.6% reported by Warren et al. [15] for third-year dental students in 2009 and ~4-times higher than in Finland [31], for instance. However, a promising declining trend among the males can be observed [15,27]. Young people starting dental studies in Latvia more often have a smoking

Table III. Factors associated with a knowledge of the health risks and addictiveness of smoking among the dental students ($n = 173$) when controlling for background characteristics, as shown by a Logistic Regression Model.

	ES	SE	<i>p</i>	OR	95% CI	
					Lower	Upper
Gender	0.844	0.493	0.087	2.326	0.884	6.117
Study year	0.929	0.427	0.030	2.533	1.096	5.853
Smoking history	0.984	0.426	0.021	2.675	1.160	6.169
Attitude	0.885	0.387	0.022	2.422	1.134	5.173

Gender: 1 = female, 2 = male, Study year: 1 = clinical, 2 = preclinical, Smoking history: 0 = no, 1 = yes, Attitude: 1 = positive, 2 = negative. ES, Estimate of strength; SE, Standard error; *p*, *p*-value; OR, Odds ratio; CI, Confidence interval.

history and, thus, reflect the social climate in Latvia, at least for the first few years of their studies.

If dental professionals are to achieve any change in people's smoking habits they will require systematic training in smoking prevention starting from their basic dental education, but, even then, although a health professional's education reflects the social climate of each country, it is most likely their own smoking habits that will have the greatest impact [21,32]. The figure for smokers among students in the health sector is higher in Latvia (40.3%) than in many other European countries [33,34]. The dental curriculum at Riga University contains smoking prevention education included in the dental public health course; however, the students' poor knowledge of for example tobacco addiction is alarming. Fortunately, they tend to react perceptively to the informal training during their clinical work, as shown by Warren et al. [15], who reported that 43% of third-year students considered that they had some training with regard to smoking issues. An increase in students' knowledge was observed in our study too.

Positive attitudes reflect a better knowledge among future health professionals [35], while attitudes and intrinsic factors certainly play an important role [36,37]. The dental students concerned here had a sense of responsibility for helping smokers to quit. As even brief interventions by health personnel can contribute positively to the rate of cessation of smoking [2,3], it ought to be possible to respond to the positive attitudes among dental students by providing adequate training in the cessation of smoking [38]. In addition, positive attitudes towards cessation will increase people's knowledge of smoking and induce them to believe in the effectiveness of cessation methods [25]. The present dental students felt some degree of commitment to smoking prevention and cessation, but suffered from a lack of comprehensive education and training, especially with regard to addiction and treatment. This situation is common in many countries, as there is a recognized need and consensus regarding the inclusion of smoking cessation programs in the dental curriculum in order to ensure a better preparedness among dental students for helping patients to control their smoking [38,39].

The implementation of smoking prevention campaigns and cessation treatments depend also on the attitudes of dental professionals with regard to smoking and smokers [3,32], which in turn may be influenced by their own smoking history [14]. The present dental students without any smoking history had more positive attitudes towards its prevention and a better knowledge of tobacco addiction problems and health risks than did their peers who had smoked at some time of their life. This is in line with the previous findings of Pipe et al. [32] regarding physicians with smoking history. In a recent study, students who smoked daily were more likely to play down the health

hazards of smoking than non-smokers and less willing to accept the addictive nature of the habit [40]. As half of the male students had smoked at some time and one fourth smoked daily or occasionally, cessation of smoking among the dental students would most likely change the social climate within the faculty radically. It is interesting that this was seen in the questions concerning ETS exposure, where 21.4% of the students did not consider ETS harmful to health. Exposure to ETS is high among dental students in Latvia (50.3% exposed at home during the last 7 days) [15], so that dental education could play an important role in improving students' health and health behavior and could consequently affect public health [38].

It is important for students of dentistry to gain the necessary knowledge and skills with regard to smoking cessation during their studies, as a greater awareness of the role of healthcare personnel will further improve patients' willingness to quit smoking and, finally, because recognition of the beneficial influence of healthcare personnel could open up new strategies for helping patients rid themselves of the smoking habit [21,23]. Advice on smoking cessation will carry a great deal more weight if it is given by a variety of healthcare professionals and, in this sense, the best possible results require multi-professional co-operation [23,25].

Conclusions

Dental education can play a major role in building up the capacity and competence of dental professionals for intervening in cases of smoking, but this will require a positive attitude towards the prevention and cessation of smoking, systematic education on the health risks attached to it and the dangers of addiction and the provision of treatments for it by healthcare personnel who have a proper training in these skills. Smoking is frequent among dental students in Latvia and more should be done to promote the cessation of smoking among them.

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