

# ATTITUDES OF HUNGARIAN DENTAL PROFESSIONALS TO TOBACCO USE AND CESSATION

Márk Antal<sup>1</sup>, András Forster<sup>1</sup>, Zsolt Zalai<sup>1</sup>, Katalin Barabás<sup>2</sup>, Christoph Ramseier<sup>3</sup>, Katalin Nagy<sup>1</sup>

<sup>1</sup>Faculty of Dentistry, University of Szeged, Hungary

<sup>2</sup>Faculty of Medicine, University of Szeged, Hungary

<sup>3</sup>Department of Periodontology, University of Bern, Switzerland

## SUMMARY

Smoking is the most preventable cause of death worldwide. The regularity of visits of patients to dental offices offers a valuable contact for health professionals and the healthcare system to initiate anti-smoking activity. However, these contacts remain unutilized and there is little interaction between doctor and patient with regard to prevention of smoking and its consequences. The aim of this study was to evaluate the current situation and attitudes towards smoking and giving up smoking among dental professionals.

A survey was carried out in the sample consisting in total of 342 participants, 212 students of dentistry and 130 dentists. Students were asked to complete a questionnaire during the enrolment period; dentists were asked to complete the questionnaire while attending an annual compulsory in-service training course at the University of Szeged. The data were analysed statistically using SPSS 10.0 software, significance was tested using the Mann-Whitney U test and results were compared with data from a similar study conducted by the same research group in 2004 in which general knowledge and attitude towards smoking and giving up smoking was measured and evaluated.

Results demonstrated that there is a lower number of smokers among dental professionals (dentists: 22.3%; students: 20.3%) than in the Hungarian general population and high interest in encouraging and assisting patients in giving up smoking (dentists: 45%; students: 54%). Comparing the results of this study to earlier data collated in 2004, we find a decreasing ratio of smokers among students (34% in 2004 and 20.3% in 2011). An increasing need for information about smoking cessation, tobacco related health hazards and the lack of detailed knowledge about methods and patient education were identified.

*Key words:* smoking, dental students, giving up smoking, dental professionals, questionnaire survey

**Address for correspondence:** M. Antal, University of Szeged, Faculty of Dentistry, H-6720 Szeged, Tisza L. Krt. 64, Hungary. E-mail: antalmrkd@gmail.com

## INTRODUCTION

Smoking is one of the most addictive habits and the most preventable cause of death and disease. There are four million smoking-related deaths in the world annually, and 30% of all human cancer is linked to smoking. The battle against smoking takes place in various places including dental practice. Dentists have a special role in identifying smokers: odor, tooth staining and poor oral hygiene are immediate revealing signs for a dentist.

Smoking is a significant public health burden and cigarette smoking is responsible for 75 percent of deaths resulting from oral and pharyngeal cancer (1). Beyond that, Hungary is one of the leading countries in prevalence of lung, mouth, esophageal, and laryngeal cancer in Europe (2). In terms of oral health risks, smoking is well documented as a significant risk factor for oral diseases such as periodontal disease, keratosis and coronal and root caries (3, 4).

Dental professionals are therefore in an exceptional position to offer preventive care (5, 6); they encounter patients of all ages and may notice the signs of smoking earlier than any other health professional. They also have access to protocols that encourage giving up smoking and pharmaceutical support if needed (7).

Health problems related to smoking are among the most preventable sequelae of the ill habit of smoking (8).

Therefore, knowledge about smoking and methods that may help patients to give up smoking have become essential for dentists and it is accepted that dental professionals need to be more involved in the fight against smoking in order to reduce the morbidity and mortality caused by this disastrous habit (9).

Patients visiting dental offices have regular contact with healthcare professionals, yet there is very little interaction between doctor and patient about smoking and its consequences. Generally, this is attributed to the lack of practice, time and resistance on the part of the patients, so dental professionals often avoid this topic (10).

In order to improve the influence dentists may have on patients who want to give up smoking, an approach utilizing this profession in preventive anti-smoking programmes should be considered. As the first step, efforts have been made to explore the knowledge and attitude of dentists and students towards smoking and giving up smoking in widely different countries including the USA, Australia, Kuwait, and Romania (11–15).

In Hungary, there have been few studies that addressed this problem. Informative courses about smoking and giving up smok-

ing as well as courses on communication and patients' motivation have recently been introduced at two Hungarian universities. To measure the future impact of these newly designed curricula, the current attitude and knowledge of Hungarian dental professionals on smoking prevention have been evaluated.

## METHODS

The study included 342 participants of the mean age of 24 years (SD 5 years) that were either dentists (130, mean age 30 yrs, SD 5 yrs) or students (212, mean age 21 yrs, SD 3 yrs). The dentists were private practitioners. The students were either from Semmelweis University or from the University of Szeged. Demographic data including age, gender, type of residence, and year of study were collected. Subjects were invited to participate and their consent was obtained. They were free to reject participation and were not paid for their contribution.

A questionnaire was completed by each participant. The questionnaire used was similar to the one that had been used by the National College Health Risk Behaviour Survey in the US, and in a similar study of the same research group in 2004 (16). Students were asked to fill in the questionnaire during the enrolment period; dentists were asked to complete the questionnaire while attending the annual compulsory in-service training course at the University of Szeged. Participation in the survey took place on a voluntary basis.

Eight items were used to measure the participants' knowledge about tobacco related health problems and attitude with respect to the responsibility of dental professionals regarding the promotion of smoking cessation activities. Nine items focused on attitudes to smoking and five items aimed at collecting data about personal and family habits. It was a multiple-choice questionnaire and participants were asked to select the answers that described their attitudes best.

Survey data were analysed using the SPSS 10.0 software, significance was tested using the Mann-Whitney U test.

The Human Investigation Review Board of the University of Szeged has accepted this study with the reference number 2848 and stated that both questionnaire and research meet the guidelines of the Medical World Federation proclaimed in Helsinki in 1964.

## RESULTS

In total 342 subjects completed the questionnaire. Of these, 130 (38%) were dentists and 212 (62%) students of dentistry. The gender distribution showed predominance of females. Among the dentists and the students 63.8% and 67.9% respectively, were females (Table 1). The age-range of the majority of students was between 18 and 24 while the most of the dentists were above 30.

### Smoking Behaviour

When asked whether they smoke, 22.3% of the dentists and 20.3% of the students responded that they did. Among smokers, there was only a very small proportion of heavy smokers. There were only 4 dentists (3%) and 2 students (0.9%) that smoke one

**Table 1. Sample distribution by gender**

	Frequency	Percent
Dentists	130	100.0
Women	83	63.8
Men	47	36.2
Dental students	212	100.0
Women	144	67.9
Men	68	32.1

pack of cigarettes or more per day. The answers did not significantly differ between the dentists and the students. Smokers among dentists usually smoke daily, however, students smoke less frequently, on average 1–4 days a week.

The majority in either group did not smoke and the difference between the two groups was not significant.

When asked how old they were when they started to smoke, both students and dentists stated that they were 16–18 years old. Students started to smoke earlier than the dentists surveyed.

Quitting: 6.12% of the dentists and 5.66% of the students had made at least one attempt to quit.

We have also compared the results with our research group's results from a similar survey conducted in 2004 mainly focusing on students of dentistry and medicine (Table 2) (16).

### Attitudes to Smoking and Cessation

When asked whether giving up smoking, smoking prevention or both together might be considered to be a very important preventive measure, 62% of the dentists and 67% of the students rated both factors combined as the most important. Prevention was rated to be the most important by 33% of the dentists and 24% of the students.

In terms of general knowledge about smoking and related health impacts, most participants rated lung cancer and oral cancer to be the most common consequences of smoking (Table 3). Answers were similar among dentists and students, however, students rated oral cancer, preterm birth, high blood pressure, impotence, and lung cancer significantly higher than dental practitioners. Significance level was 95%. Participants rated stress and substitute activities to be the most important factors ruling the prevalence of smoking, but also habit and social influences were indicated in more than 50% of the responses (Table 4).

The survey also included questions regarding the role of education related to smoking. Sixty-two percent of the dentists and 80% of the students stated that they had not received any relevant information about ways of giving up smoking during their undergraduate education, though 45% of the dentists and 42% of the students expected to get some.

There were two questions about the responsibility regarding cessation assistance. In the first one, participants were asked to rate the importance and identify those who should be responsible for acting. Most participants rated family as the most important factor. Primary care (general) practitioners were believed to play an important role, and there was a considerable importance attributed to schools, medical specialists, and dentists (Fig. 1). In

**Table 2.** Comparison of gender distribution and smoking prevalence (%) in 2004 and 2011 year survey results

	Student 2004	Dentist 2011	Student 2011	Total 2011
Count	363	130	212	342
Men	36.4	35.2	32.1	33.2
Women	63.6	64.8	67.9	66.7
Never smoked	64.5	83.0	83.5	83.3
Smoked 1–4 days in the last month	14.9	2.3	4.7	3.8
Smoked 5–9 days in the last month	4.1	0.0	1.8	1.1
Smoked 10–19 days in the last month	3.3	0.7	2.3	1.7
Smoked 20 days in the last month	5.8	3.0	5.1	4.3
Smoked every day in the last month	7.4	10.7	2.3	5.5

**Table 3.** Positive responses assuming the health risks related to tobacco smoking

	Altogether		Dentists		Dental students		Mann-Whitney U test
	Count	Percent	Count	Percent	Count	Percent	Significance
Heart attack	280	81.87	107	82.30	173	81.60	0.870
Gastric cancer	133	38.88	43	33.07	90	42.45	0.085
Oral cancer	307	89.76	110	84.61	197	92.92	0.014
Preterm birth	235	68.71	80	61.53	155	73.11	0.025
Lung cancer	322	94.15	113	86.92	209	98.58	<0.001
Gingivitis	235	68.71	88	67.69	147	69.33	0.750
Cerebral hemorrhage	164	47.95	58	44.61	106	50.00	0.334
High blood pressure	218	63.74	72	55.38	146	68.86	0.012
Arteriosclerosis	283	82.74	109	83.84	174	82.07	0.674
Impotence	226	66.08	72	55.38	154	72.64	0.001

**Table 4.** Important factors supporting initiation of smoking as identified by the study participants

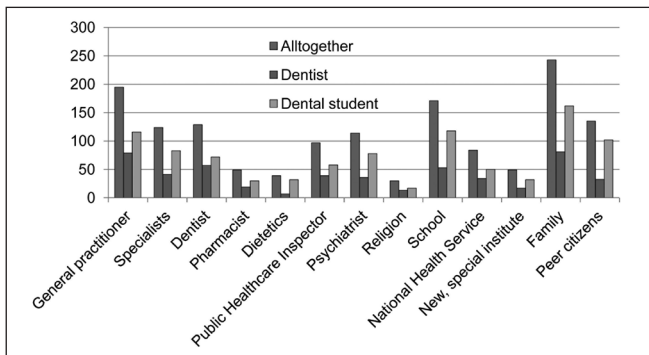
	Altogether		Dentist		Dental student	
	Count	Percent	Count	Percent	Count	Percent
Stress	209	61.1	71	54.6	138	65.1
Bad habit	186	54.4	63	48.5	123	58.0
Social influence	179	52.3	51	39.2	128	60.4
Trend	116	33.9	28	21.5	88	41.5
Substitute activity	210	61.4	77	59.2	133	62.7
Does not know	1	0.3	0	0.0	1	0.5

the second question, participants were asked about the current approaches to giving up smoking. Most participants rated general practitioners as primary counselling providers, though this choice was slightly less expressed by the dentists compared to students (Fig. 2). The role of the family was rated less important in current approaches than in the question of responsibility.

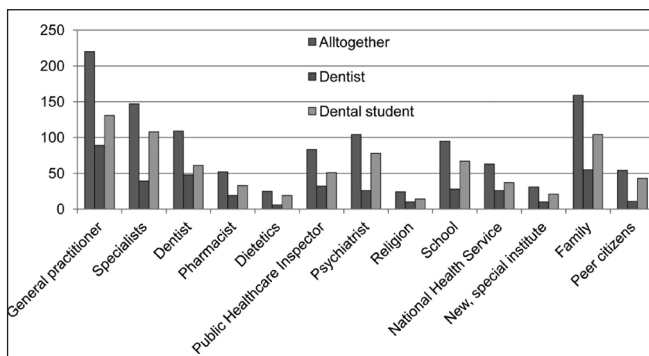
Asking the participants about their willingness to assist their patients in giving up smoking, 45% of the dentists and 54% of the dental students answered positively.

## DISCUSSION

Our results provide a review of the smoking habits of dentists and students of dentistry in Hungary. Not surprisingly, the percentage of smokers is smaller among these health professionals in comparison to the adult Hungarian population in general (17, 18). Comparing our results with similar cohorts in other countries places Hungary among the majority of all European nations (19). Among dental students, Balkan countries have the highest rate of



**Fig. 1.** Who do you rate to be responsible for tobacco cessation?



**Fig. 2.** Who do you think is able currently to assist patients in tobacco cessation?

smoking exceeding 40%, while countries in Africa and the Middle East have the lowest percentage of smokers.

Comparing results of our 2004 and 2011 surveys, we could see a decrease of smoking prevalence among students.

Evaluating participants in the current study, two issues should be noticed. The gender distribution is consistent with that of all Hungarian dentists, with a majority of females. The age distribution of students reflects the one of all students of dentistry, but the age distribution of the dentists is clearly lower than the average age of the Hungarian profession. The reason for this might be the greater interest of younger dentists in attending meetings and conferences in general and the fact that the older dental professionals are less prepared to take part in surveys.

Among the smokers, the social impact of the university setting appears to have lost some of its role in facilitating smoking among students. Stress is still a contributory factor in smoking. Although this survey was not performed during the exam period, it is described by Dudas and co-workers that a strong correlation between stress, anxiety and smoking may be expected (20–22).

Current students start smoking mainly before entering university and when compared to the dentists' answers, there is a shift in starting smoking at a younger age even in this higher educated sample. In addition to starting earlier (23), university undergraduate education still has a sustaining effect on smoking.

As Table 2 shows, smoking frequency has been mainly reduced among students who smoke only a few days every month. The decreasing number of occasional smokers could be the indirect

effect of a general trend turning away from smoking in Hungary, as in recent years several prevention programmes were initiated greatly affecting the less addicted smokers. This fact is, however, not in line with international trends where, for example in the USA there was a decrease in frequent smokers and an increase in the number of infrequent smokers (24).

Our responses about current approaches to giving up smoking and taking responsibility showed that although both students and dentists rate the family as the main agency for support, many believed that significant support can come from general practitioners. As students and dentists currently rated the readiness of dentists to support their patients in quitting smoking at only around thirty percent (31.87%) and such responsibility at almost forty percent (37.71%), there is an evident need for education and motivation of these professionals. Thus, as international research has shown (25, 26), professionals of dentistry have a new challenge when maintaining the oral health of their patients.

## CONCLUSIONS

The results of this study provided important information about students' attitudes toward tobacco cessation promotion in the dentistry setting.

The family and general medical practitioner still play the major role in support for the individual's decision to quit smoking but dental professionals in Hungary are assumed to represent another increasingly important source of support for giving up smoking. The latter may be achieved by promotion of the knowledge among dentists and students about tobacco use and related health hazards and including methods and guidelines for assisting tobacco cessation both in the stomatological and undergraduate medical education curriculum.

As participants have shown a great interest in assisting their current or future patients in cessation, and because of the evidence on the connection between periodontal health, oral health, and tobacco use, conclusions made in this study can be used for evaluating and developing the dentistry curriculum.

## REFERENCES

- Tomar SL. Dentistry's role in tobacco control. *J Am Dent Assoc.* 2001 Nov;132 Suppl:30S-35S.
- Foley KL, Balázs P. Social will for tobacco control among the Hungarian public health workforce. *Cent Eur J Public Health.* 2010 Mar;18(1):25-30.
- Mecklenburg RE; National Cancer Institute (U.S.); National Institute of Dental Research (U.S.). Tobacco effects in the mouth: a National Cancer Institute and National Institute of Dental Research guide for health professionals. NIH Publication No. 00-3330. Washington, DC: U.S. Department of Health and Human Services; 2000.
- Jansson L, Lavstedt S. Influence of smoking on marginal bone loss and tooth loss - a prospective study over 20 years. *J Clin Periodontol.* 2002 Aug;29(8):750-6.
- Ramseier CA, Mattheos N, Needleman I, Watt R, Wickholm S. Consensus report: First European Workshop on Tobacco Use Prevention and Cessation for Oral Health Professionals. *Oral Health Prev Dent.* 2006;4(1):7-18.
- Ramseier CA, Warnakulasuriya S, Needleman IG, Gallagher JE, Lahtinen A, Ainamo A, et al. Consensus report: 2nd European Workshop on Tobacco Use Prevention and Cessation for Oral Health Professionals. *Int Dent J.* 2010 Feb;60(1):3-6.
- Wiener RC, Wiener Pla RM. Evaluation of educational material for tobacco prevention and cessation used in west virginia university dental programs. *J Dent Hyg.* 2011;85(3):204-10.

- 
8. Arnett MR, Baba NZ. Improving tobacco dependence education among the Loma Linda University School of Dentistry faculty. *J Dent Educ*. 2011 Jun;75(6):832-8.
  9. Ehizele AO, Azodo CC, Ezeja EB, Ehigiatior O. Nigerian dental students' compliance with the 4As approach to tobacco cessation. *J Prev Med Hyg*. 2011 Mar;52(1):12-6.
  10. Rosseel JP, Jacobs JE, Hilberink SR, Maassen IM, Segaar D, Plasschaert AJ, et al. Experienced barriers and facilitators for integrating smoking cessation advice and support into daily dental practice. A short report. *Br Dent J*. 2011 Apr 9;210(7):E10.
  11. Smith DR, Leggat PA. An international review of tobacco smoking among dental students in 19 countries. *Int Dent J*. 2007 Dec;57(6):452-8.
  12. Dumitrescu AL. Tobacco and alcohol use among Romanian dental and medical students: a cross-sectional questionnaire survey. *Oral Health Prev Dent*. 2007;5(4):279-84.
  13. Alomari Q, Barrieshi-Nusair K, Said K. Smoking prevalence and its effect on dental health attitudes and behavior among dental students. *Med Princ Pract*. 2006;15(3):195-9.
  14. Barrieshi-Nusair K, Alomari Q, Said K. Dental health attitudes and behaviour among dental students in Jordan. *Community Dent Health*. 2006 Sep;23(3):147-51.
  15. Huang B, Inagaki K, Yoshii C, Kano M, Abbott PV, Noguchi T, et al. Social nicotine dependence in Australian dental undergraduate students. *Int Dent J*. 2011 Jun;61(3):152-6.
  16. Nagy K, Barabás K, Nyári T. Attitudes of Hungarian healthcare professional students to tobacco and alcohol. *Eur J Dent Educ*. 2004 Feb;8 Suppl 4:32-5.
  17. Paksi B, Arnold P, Kun B, Demetrovics Z. Association of the different types of substance use behaviors in the Hungarian adult population. *Psychiatr Hung*. 2011;26(4):258-66. (In Hungarian.)
  18. Kaleta D, Usidame B, Polańska K. Tobacco advertisements targeted on women: creating an awareness among women. *Cent Eur J Public Health*. 2011 Jun;19(2):73-8.
  19. Thyrian JR, Panagiotakos DB, Polychronopoulos E, Willemsen MC, Zatoński W, John U. The exposure to environmental tobacco smoke and attitudes towards tobacco control measures--a comparison of 5 European countries. *Cent Eur J Public Health*. 2010 Jun;18(2):87-92.
  20. Pikó B, Barabás K, Markos J. Health risk behaviour of a medical student population: report on a pilot study. *J R Soc Health*. 1996 Apr;116(2):97-100.
  21. Nagy G, Blazsek J, Bánóczy J. The smoking habits of dentists and dental students in Hungary. *Magyarországon Szájüregi Daganatok a Magyar Fogorvos onkológiai különszáma*. 2003;12(4):279-95. (In Hungarian.)
  22. Dudas RB, Hans K, Barabas K. Anxiety, depression and smoking in schoolchildren - implications for smoking prevention. *J R Soc Promot Health*. 2005 Mar;125(2):87-92.
  23. Hrubá D, Žaloudíková I. Why to smoke? Why not to smoke? Major reasons for children's decisions on whether or not to smoke. *Cent Eur J Public Health*. 2010 Dec;18(4):202-8.
  24. Centers for Disease Control and Prevention (CDC). Vital signs: current cigarette smoking among adults aged  $\geq 18$  years - United States, 2005-2010. *MMWR Morb Mortal Wkly Rep*. 2011 Sep 9;60(35):1207-12.
  25. Ottney AR. Nicotine conjugate vaccine as a novel approach to smoking cessation. *Pharmacotherapy*. 2011 Jul;31(7):703-13.
  26. Miller WR, Rollnick S. Motivational interviewing: preparing people for change. New York: Guilford Press; 2002.

*Received October 10, 2011  
Accepted in revised form February 13, 2012*