**ORIGINAL ARTICLE** 

# Tobacco and Alcohol Use among Romanian Dental and Medical Students: a Cross-sectional Questionnaire Survey

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Purpose: The aim of this study was to assess smoking and alcohol use in Romanian dental and medical students.

**Materials and Methods:** A total of 185 questionnaires were distributed to male and female dental and medical students (first and sixth year).

**Results:** Across all groups, 60.86% of the responders have never been smokers, while the prevalence of smoking among the different groups was 28.84% for Year 1 dental students, 53.18% for Year 6 dental students, 39.58% for Year 1 medical students and 36.36% for Year 6 medical students. Unadjusted linear regressions showed significant linear relationships between average number of cigarettes smoked a day and average age when students started smoking (p < 0.05). Of Year 6 dental students, 41.30% have drunk at least once a week, compared with 24% of dental freshmen. The use of alcohol among males was significantly higher than in females (p < 0.0001). Unadjusted linear regressions showed significant linear relationships between frequency of smoking and alcohol consumption (p < 0.05).

**Conclusions:** Both medical and dental students in Romania may benefit from preventive interventions in universities addressing the health risk behaviours of alcohol use and smoking.

Key words: smoking, alcohol, dental students, medical students

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Over 1.2 billion individuals smoke worldwide and there are approximately 4 million annual deaths due to tobacco use. International cigarette consumption is rising dramatically, most notably in developing countries, where 82% of the world smokers live (Aquilino and Lowe, 2004; Balczewska, 2004; Hovell et al, 2004; Hruba and Slezak, 2004; Kavcova et al, 2004). In Romania, approximately 40,000 people die annually as a result of smoking; 16,000 of them die prematurely due to cancer. Smoking rates for males and females are 75.4% and 48.7% respectively, and are in-

creasing for young people. The average daily cigarette consumption among smokers is also high, with 18.7% of people smoking more than 10 cigarettes per day. For young people aged 15–24 years, 61.8% described themselves as former or present smokers (National Anti-Drug Agency, 2004).

Data drawn from the European School Survey Project on Alcohol and Other Drugs (ESPAD) carried out in 1999 (Hibell et al, 2000) showed that the proportion of students in Romania who consumed alcohol during the last 12 months is close to the average for all ES-PAD countries (80% versus 83%), while the proportion reporting drunkenness during the same period is substantially lower (36% compared with 53%). Regular use of tobacco and alcohol and lifetime illegal substance use are all associated with concomitant use of different substances, substance use by peers and older siblings, with parental absence and lack of monitoring of children's going out, dissatisfaction with par-

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ents, absences from school, depressive mood, antisocial behaviour and anomie (Kokkevi et al, 2007). In the 2003 ESPAD study of 15- to 16-year-olds, the proportion of subjects who consumed alcohol more than 40 times in their life was 17.4% (25.5% males; 11.4% females). The proportion of subjects who reported being drunk three times or more in the last 30 days was 3% (total), 5% (males) and 1% (females). The unrecorded alcohol consumption in Romania is estimated to be 4.0 litres pure alcohol per capita for population older than 15 for the years after 1995 (estimated by a group of key alcohol experts) (Hibell et al, 2003).

Members of the healthcare professions can be active in influencing politicians and community leaders to adopt appropriate legislative approaches. Dentists, and all clinicians involved in oral health care, have a natural entry to discussion of tobacco-related diseases with their patients because of the oral signs of tobacco use and its influence on many oral diseases and conditions (Seidman et al, 2002; Weaver et al, 2002; Johnson, 2004; Piko and Kopp, 2004; Victoroff et al, 2004). Unfortunately, the medical community is also addicted to tobacco. In 2000, nearly 43.2% of Romanian physicians smoked, among which 50.1% of men and 38.6% in women smoked daily. Smoking was more frequent in the group aged 30-49 (47.2%). More than half of the smoking doctors smoke between 10 and 20 cigarettes a day (Didilescu and Munteanu, 2000).

Curricula in healthcare schools introduce an enormous breadth of information for the future practitioners to feel prepared and comfortable helping tobaccousing patients abstain. However, differences in academic health science exist between dental and medical students and, if so, is this change different in dimensions or degree for the two groups of students regarding tobacco use? The aim of this study was to assess smoking and alcohol use in dental and medical students and to compare them according to gender and between different levels of education.

## **MATERIALS AND METHODS**

The subjects of the study were 185 dental and medical students at the University of Medicine and Pharmacy 'Carol Davila' who were randomly invited to this survey using a questionnaire assessing cigarette smoking and alcohol use and demographic variables at the beginning of the academic year. The questionnaire was completed by students, anonymously, during normal faculty classes. All the students selected for the survey answered the questionnaire. Behavioural measures of smoking included never smoking, number of cigarettes smoked daily, number of days smoked the previous week and the age when the students started smoking. The smoking exposure to the individual was expressed in terms of consumption: 1) the number of cigarettes consumed per day, 2) duration, i.e. the number of years of smoking, and 3) lifetime exposure, i.e. the accumulated exposure over time as formed by the product of daily consumption and years of duration ('cigarette-years') (Bergström et al, 2000). The question assessing the behavioural measure of alcohol use was 'How frequently have you drunk alcohol during the last 30 days?' with possible responses: everyday, once a week, once a month, and never. Demographic variables such as age, gender, marital status and type of accommodation were collected from all the students.

## Data analysis

Descriptive statistics were used on all variables. Group comparisons were made using 2-tailed Student *t*-tests for interval level data and chi-square tests for categorical data. Pearson correlation coefficients were calculated between behavioural assessment of tobacco and alcohol use. Alpha level was set to conventional 0.05. Data were analysed using SPSS 10.0 (SPSS, Inc., Chicago, USA).

# RESULTS

The study sample was derived from officially registered freshmen and graduating students at the University of Medicine and Pharmacy 'Carol Davila' Dental and Medical School during the academic year 2005–2006. The mean age ( $\pm$ SD) of dental students was 21.87 ( $\pm$ 2.49) years old. The percentage of female students was high in the sample (68.96%).

Table 1 presents the distribution of responders and mean age by year and gender. The number of respondents by level of dental and medical education ranges between 37 and 52 respondents, whereas 134 female students and 44 male students participated in the study.

## Tobacco use

Table 2 displays information on dental and medical students' smoking behaviour according to study level

Table 1 Distribution of responders and mean age by year and gender									
	Female	Male	Unknown	Total	Mean age $\pm$ SD				
Dental Year 1	35	15	2	52	$19.42 \pm 1.77$				
Dental Year 6	29	17	1	47	$24.51 \pm 1.95$				
Medical Year 1	41	8	0	49	$19.12 \pm 1.26$				
Medical Year 6	29	4	4	37	$25.54 \pm 1.69$				
Total	134	44	7	185	$21.85 \pm 3.31$				

#### Table 2 Dental and medical students' smoking and drinking behaviour according to study level and gender

		Year				Total		
Smoking frequency	Answer Never smoke Smoked 1-4 days Everyday p	Dental Year 1 71.15 9.61 19.23	Dental Year 6 46.80 2.12 51.06	Medical Year 1 60.41 8.33 31.25	Medical Year 6 63.63 6.06 30.30	Male 50.00 4.54 45.45	Female 63.07 5.38 31.54	60.86 7.06 32.06
Alcohol consumption	Never consumed Once per month Once per week Everyday p	34 42 24 0	17.39 36.96 41.30 4.35	36.73 34.69 28.57 0	27.77 38.89 27.77 5.55	9.09 27.27 56.82 6.81	35.43 40.94 22.83 0.78 †	29.28 38.12 30.38 2.20

Significant differences between the year 1 and year 6 dental education and between males and females. There are also significant differences between year 6 dental and year 6 medical students (p = 0.0055). There are no significant differences between year 1 dental and year 1 medical students and between the year 1 and year 6 medical students. NS, not significant; \* p < 0.05; \*\* p < 0.01; \*\*\* p < 0.001; † p < 0.0001.

and gender. Across all groups, 60.86% of the responders have never been smokers. Among the different groups, the prevalence of smoking was 28.84% for Year 1 dental students, 53.18% for Year 6 dental students, 39.58% for Year 1 medical students and 36.36% for Year 6 medical students. The average number of cigarettes smoked was eleven cigarettes per day. Only 3.24% of all students who had smoked in the past were no longer smokers.

Of the smokers in present survey, 2.70% had started to smoke before the age of 15 and 24.32% before the age of 18. The average age when students started smoking was 17.51. There was a significant difference across the years in faculty for the onset of smoking (p < 0.01). Unadjusted linear regressions showed significant linear relationships between the average number of cigarettes smoked a day and the average age when students started smoking (Fig 1) ( $r^2 = 0.057$ , p < 0.05).

Greater proportions of students living in their own accommodation compared with those living at home

or in university halls smoke much more and more frequently (p < 0.05).

Fig 2 gives the lifetime smoking exposure ('pack years') in dental and medical students.

#### Alcohol use

Students were asked to assess their alcohol attitudes regarding their drinking habits. About one third (28.88%) of all the students (9.09% males; 34.88% females) reported to be abstainers and very few (2.22%) drink on a regular daily basis (4.34% and 5.55% of graduate dental and medical students). Of Year 6 dental students, 41.30% admitted drinking at least once a week, compared with 28.57% of final year medical students, 24% of dental freshmen and 27.78% of first year medical students. Alcohol use among males was higher than among females (p < 0.0001).

Trend analyses (unadjusted linear regressions) showed significant linear relationships between alco-

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**Fig 1** Unadjusted linear regressions between average numbers of cigarettes smoked a day and average age when students started to smoke.



Fig 2 Dental and medical students' smoking exposure ('cigarette years'), \*\* p < 0.01.

hol consumption and frequency of smoking or age of smoking onset (p < 0.05).

Greater proportions of students living in their own accommodation compared with those living at home or in university halls smoke much more and more frequently (p < 0.05).

# DISCUSSION

The present investigation is the first to explore the tobacco and alcohol consumption among Romanian dental and medical students. The study examined 185 undergraduate students of the University of Medicine and Pharmacy 'Carol Davila', with approximate female to male ratio 3:1, representing the larger number of females compared to males entering the dental field in Romania.

Several studies have documented that dental students, particularly males, report excessive alcohol consumption, widespread experimentation with 'soft' drugs and substantial use of other illicit substances (Mian and Kay, 2003; Myers and Myers, 2004). It is well known that smoking behaviour is correlated with high levels of stress, depression and anxiety (Bergen and Caporaso, 1999). Dentistry has a reputation as a demanding, stressful, technically exacting and sometimes personally hazardous career (Osborne and Croucher, 1994; Mian and Kay, 2003; Myers and Myers, 2004; Thornton et al, 2004; Goehring et al, 2005). Many scientists have examined occupational stress in dental undergraduates and have shown that the con-

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cerns of clinical students mirror those of qualified practitioners (Humphris et al, 2002; Naidu et al, 2002; Pau and Croucher, 2003; Pau et al, 2004; Pohlmann et al, 2005; Sugiura et al, 2005).

The present study showed that a greater proportion of sixth year dental students drink and smoke, compared with the medical graduating students' group. The prevalence of smoking in both groups was similar among freshmen. A greater proportion of males reported use of tobacco and alcohol, compared with females. Students using alcohol daily or at least once a week smoked an average 5.12-5.39 cigarettes per day, in comparison with those drinking once a month or never, who smoked 3.95-3.47 cigarettes/day. Among smokers it was also noted that in the first two groups (daily or weekly alcohol users) students smoked 3.1–5.25 days per week compared with those who were either light consumers of alcohol or abstainers (once a month or never), who smoked 1.83–2.34 days per week. The proportion of subjects who had never consumed alcohol in their life was 34.78% among those living with parents, while this percentage was 25% among those living in private or student accommodation. Among participants living in student accommodation, 4.68% reported to use alcohol on a daily basis, and the average number of cigarettes consumed per day was 3.10. Of single students, 36.26% did not consume alcohol at all and only 24.17% of them reported weekly alcohol consumption, compared with the married participants or those living with a partner (22.98% and 34.48% respectively).

Similar results have been reported previously among dental undergraduates. In a cross-national study, Plasschaert et al (2001) revealed that smoking among Dutch students was 42%, which was significantly higher than that of Hungarian students (35.5%) (Nagy et al, 2004). When 148 students in the UK were surveyed, the prevalence of smoking in the dental student group was 11% as second year students, 4% as final year students and 6% as dentists. In comparison, the prevalence of smoking in the medical student group was 15% as second year students, 5% as final year students and 6% as Pre-Registration House Officers. More recently, Polychronopoulou et al (2004) observed that for 165 Greek dental students, 47.3% described themselves as former or present smokers.

Tobacco control intervention takes two forms: preventing individuals from starting to smoke or use other tobacco products, and helping current users to stop. Tobacco control and prevention cannot be undertaken without involvement of healthcare professionals. Physicians and dentists need to be trained to assist tobacco users to cease smoking. Approaches to tobacco control must be integrated not only into the dental and medical curriculum but also in continuing education programmes (Balczewska, 2004). Of particular interest is the result that the prevalence of smoking for Year 1 dental students was 21.8% and for Year 6 dental students 53.2%. In other words, during the education period the number of students who smoke is increasing not decreasing. However, dental schools provide tobacco prevention and cessation information in many parts of the curriculum, ranging from periodontology to oral pathology, prevention, diagnosis and treatment planning. It is necessary to provide schools with examples of how other schools have successfully addressed the problem, as well as to encourage cooperative means for faculty development across the profession. These might include workshops at annual professional conventions, special training conferences held at a school with experience and expertise in the topic, collaborative efforts involving several schools in a region, or web-based or other electronic training programmes. Working together, the entire dental and medical education community can make a difference in reducing tobacco use among the Romanian public and ultimately in saving lives (Weaver et al, 2002).

The findings of this study emphasise the need to initiate prevention interventions for both medical and dental students in Romania at an early stage by using integrated approaches. Assessing the health risk behaviours of these young groups can be a focal point to the outcome of positive health promotion strategies and lifestyle choices.

#### REFERENCES

- 1. Aquilino ML, Lowe JB. Approaches to tobacco control: the evidence base. Eur J Dent Educ 2004;8:11-17.
- Balczewska E. Smoking and tobacco control in Poland. Eur J Dent Educ 2004;8:42-45.
- 3. Bergen AW, Caporaso N. Cigarette smoking. J Natl Cancer Inst 1999;91:1365-1375.
- 4. Bergström J, Eliasson S, Dock J. Exposure to tobacco smoking and periodontal health. J Clin Periodontol 2000;27:61-68.
- 5. Didilescu C, Munteanu I. The prevalence of smoking in physicians in Romania. Pneumologia 2000;49:91-94.
- Goehring C, Bouvier Gallacchi M, Kunzi B, Bovier P. Psychosocial and professional characteristics of burnout in Swiss primary care practitioners: a cross-sectional survey. Swiss Med Wkly 2005;135:101-108.
- Hibell B, Andersson B, Ahlstrom S, Balakireva O, Bjarnason T, Kokkevi A, Morgan M. The 1999 ESPAD Report: Alcohol and Other Drugs Among Students in 30 European countries. Swedish Council for Information on Alcohol and Other Drugs (CAN), 2000.

- 8. Hibell B, Andersson B, Ahlstrom S, Balakireva O, Bjarnason T, Kokkevi A, Morgan M. The ESPAD Report 2003: Alcohol and Other Drug Use Among Students in 35 European Countries. Swedish Council for Information on Alcohol and Other Drugs (CAN), 2003.
- 9. Hovell M, Roussos S, Hill L, Johnson NW, Squier C, Gyenes M. Engineering clinician leadership and success in tobacco control: recommendations for policy and practice in Hungary and Central Europe. Eur J Dent Educ 2004;8:51-60.
- 10. Hruba D, Slezak R. Antismoking education in Czech medical and dental faculties. Eur J Dent Educ 2004;8:36-41.
- Humphris G, Blinkhorn A, Freeman R, Gorter R, Hoad-Reddick G, Murtomaa et al. Psychological stress in undergraduate dental students: baseline results from seven European dental schools. Eur J Dent Educ 2002;6:22-29.
- 12. Johnson NW. The role of the dental team in tobacco cessation. Eur J Dent Educ 2004;8:18-24.
- Kavcova E, Kocan I, Squier C. Tobacco control and the role of the medical community in the Slovak Republic. Eur J Dent Educ 2004;8:46-50.
- Kokkevi A, Richardson C, Florescu S, Kuzman M, Stergar E. Psychosocial correlates of substance use in adolescence: a crossnational study in six European countries. Drug Alcohol Depend 2007;86:67-74.
- Mian O, Kay EJ. A comparison of sensation-seeking between dental and biological science students. Eur J Dent Educ 2003;7:171-176.
- Myers HL, Myers LB. A study of the work stress and health of GDPs. Br Dent J 2004;197:89-93.
- Nagy K, Barabas K, Nyari T. Attitudes of Hungarian healthcare professional students to tobacco and alcohol. Eur J Dent Educ 2004;8:32-35.
- Naidu RS, Adams JS, Simeon D, Persad S. Sources of stress and psychological disturbance among dental students in the West Indies. J Dent Educ 2002;66:1021-1030.
- 19. National Anti-Drug Agency. Prevalence of drug use in Romania (2004). www.ana.gov.ro. Accessed 21.01.2006.

- 20. Osborne D, Croucher R. Levels of burnout in general dental practitioners in the south-east of England. Br Dent J 1994;177:372-377.
- Pau AK, Croucher R, Sohanpal R, Muirhead V, Seymour K. Emotional intelligence and stress coping in dental undergraduates: a qualitative study. Br Dent J 2004;197:205-209.
- Pau AK, Croucher R. Emotional intelligence and perceived stress in dental undergraduates. J Dent Educ 2003;67:1023-1028.
- Piko BF, Kopp MS. Paradigm shifts in medical and dental education: behavioural sciences and behavioural medicine. Eur J Dent Educ 2004;8:25-31.
- Plasschaert AJ, Hoogstraten J, van Emmerik BJ, Webster DB, Clayton RR. Substance use among Dutch dental students. Community Dent Oral Epidemiol 2001;29:48-54.
- Pohlmann K, Jonas I, Ruf S, Harzer W. Stress, burnout and health in the clinical period of dental education. Eur J Dent Educ 2005;9:78-84.
- Polychonopoulou A, Gatou T, Athanassouli T. Greek dental students' attitudes toward tobacco control programmes. Int Dent J 2004;54:119-125.
- Seidman DF, Albert D, Singer SR, Barrows RC Jr, Tepper LM, Ovalles M, Albin J. Serving underserved and hard-core smokers in a dental school setting. J Dent Educ 2002;66:507-513.
- Sugiura G, Shinada K, Kawaguchi Y. Psychological well-being and perceptions of stress amongst Japanese dental students. Eur J Dent Educ 2005;9:17-25.
- Thornton LJ, Stuart-Buttle C, Wyszynski TC, Wilson ER. Physical and psychosocial stress exposures in US dental schools: the need for expanded ergonomics training. Appl Ergon 2004;35:153-157.
- Victoroff KZ, Dankulich-Huryn T, Haque S. Attitudes of incoming dental students toward tobacco cessation promotion in the dental setting. J Dent Educ 2004;68:563-568.
- Weaver RG, Whittaker L, Valachovic RW, Broom A. Tobacco control and prevention effort in dental education. J Dent Educ 2002;66:426-429.