

A survey of alcohol and drug use among UK based dental undergraduates

B. Underwood¹ and K. Fox

Objective This study was designed to investigate the prevalence of alcohol and drug use.

Design Anonymous self-report questionnaire

Setting A UK dental school in May 1998

Subjects and methods 1st–5th year dental undergraduates (n=264) were questioned on their use of alcohol and tobacco, cannabis and other illicit drugs whilst at dental school, and before entry.

Results Eighty two per cent of male and 90% of female undergraduates reported drinking alcohol. Of those drinking, 63% of males and 42% of females drank in excess of sensible weekly limits (14 units for females, 21 units for males), with 56% of males and 58.5% of females 'binge drinking'. Regular tobacco smoking (10 or more cigarettes a day) was found to have a statistically significant association with year of study, 4th–5th year undergraduates being eight times more likely to regularly smoke than their junior colleagues. Fifty five per cent of undergraduates reported cannabis use at least once or twice since starting dental school, with 8% of males and 6% of females reporting current regular use at least once a week.

Conclusion Dental undergraduates are drinking above sensible weekly limits of alcohol, binge drinking and indulging in illicit drug use. Dental Schools should designate a teacher responsible for education of undergraduates regarding alcohol and substance abuse.

Alcohol and drug use among UK school children and university students is increasing.^{1,2,3,4,5} A recent nation-wide survey⁶ of second-year university students from a range of faculties found many consuming alcohol above sensible limits^{7,8,9} and using cannabis and other illicit drugs. Binge drinking¹⁰ has also been widely reported among students,^{11,12,13} with established associated health risks and connections with antisocial behaviour.

Surveys of medical students' alcohol^{11,12} and drug use^{13,14} have shown similar high levels to their non-medical counterparts. Alarming, medical students constitute a group who will exert an influence disproportionate to its numbers on future social and economic health in the UK,¹³ a fact also applicable to dental undergraduates.

The Dental Health Support Programme, formerly known as the Sick Dentists' Scheme, was founded in 1986 with the aim of supporting qualified dentists with alcohol and drug addictions and has to date helped over 500 UK dentists;¹⁵ the high incidence giving

cause for concern in the profession. This concern is now being felt at the undergraduate level, with the new GDC guidelines stating:

Behaviour reflecting adversely on the profession, such as dishonesty, indecency or violence; convictions in a court of law; or problems related to alcohol or drugs, during the time as an undergraduate dental student could lead to the first application for registration being referred to the President. It could easily be taken into consideration later if the Council had cause to consider the conduct of a registered dentist.¹⁶

Prior to this study, no significant information existed on the prevalence of alcohol and drug use among UK dental undergraduates. This information is needed before the current concerns can be addressed, and will provide a basis for future research and education.

Method

A survey was conducted at one UK dental school of all undergraduates studying in years 1 to 5 (n=264). A self-report questionnaire was distributed, by the organiser, to 2nd, 3rd and 4th year students before scheduled lectures. Absentees, 1st and 5th year students were contacted via internal mail.

The questionnaire consisted of 4 sides of A4 text on a folded A3 sheet, the cover page acting as a participant information sheet. Questions were asked in closed ended format in standard English making them easily answered, scored and coded (for analysis by computer). The length of the questionnaire was kept as short as feasible allowing completion in less than 5 minutes. Participants were provided with a free pen to act as an incentive and increase anonymity. Return of completed questionnaires was via a self-seal envelope labelled with the organiser's name. In addition the label gave the location of a sealed respondents' box.

The questionnaire was administered over a 2 week period from the 25th May 1998 to the 5th June 1998, avoiding Dental Student Society social events or examination periods, which may not have represented an average week. Prior to distribution, the questionnaire was piloted on 25 medical students, 5 from each year. This highlighted only minor problems that were then corrected before full-scale administration.

Anonymity of participants was essential and, therefore, no name or ethnic group was requested, also no individual questionnaire or year group responses were reported. It was stressed that completion of the questionnaire was voluntary, with no obligation to respond. Confidentiality was strictly maintained with all completed questionnaires being seen exclusively by the survey organiser.

The response rate was high, with 200 undergraduates completing the questionnaire, one respondent who omitted their gender and year was not included in the study.

Ethical approval

Ethical approval was granted by the local research ethics committee.

¹Red Lea Dental Practice, Market Place, Easingwold North Yorkshire, YO61 3AD

*Correspondence to: B. Underwood

REFEREED PAPER

Received 18.10.00; Accepted 18.07.00

© British Dental Journal 2000; 189: 314–417

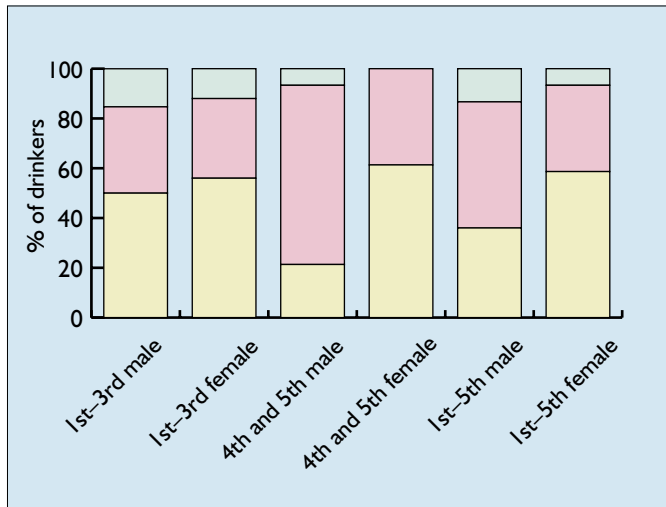


Fig. 1 Level of alcohol consumption by dental undergraduates. Green, hazardous to health level of alcohol consumption; red, increased risk; yellow, sensible level of alcohol being consumed.

Consent for the questionnaire to be distributed at the Dental School was given by the senior staff.

Statistical analysis

Statistical analysis was carried out using SPSS for Windows. Analysis using a variety of non-parametric techniques was undertaken. Results are descriptive and basically quantitative. Associations between variables were analysed by the Chi-square test and Fisher's exact test.

Results

Tobacco

Regular tobacco use (10 or more cigarettes per day) was most highly reported among 4th and 5th year males with 21% currently smoking and 15% smoking prior to becoming undergraduates. Only 4% of 1st to 3rd year males reported current regular tobacco use with 6% reporting regular use before entering dental school. Tobacco use among female undergraduates showed similar findings to their male colleagues, with 13% of 4th and 5th years regularly smoking and 1% of 1st to 3rd years, however 22% of 1st to 3rd year females reported smoking tobacco only whilst drinking.

Alcohol

Eighty two per cent of males and 90% of females reported drinking alcohol. Of those drinking 'sensible levels' (0–21 units per week male, 0–14 units female) were exceeded by 63% of males and 42% females. Hazardous drinking, >50 units per week for males, >35 units for females, was reported by 13% of males and 7% of females (Figure 1).

Table 1 Binge drinking by dental undergraduates

Gender and Year	n	Binge drinking %
Male 1–3	42	45.2
Female 1–3	64	68.7
Male 4–5	30	70.0
Female 4–5	36	40.0
Male 1–5	73	55.6
Female 1–5	100	58.5

Figures are reported as units of alcohol consumed last week, as they were found to be consistently higher than those which the undergraduates reported as their average number of units consumed weekly.

Binge drinking,¹⁰ (defined as drinking half the recommended weekly units of alcohol in one session, i.e. at least seven units for women and 10 units for men) was reported by 56% of males and 58.5% of females with 70% of 4th and 5th year males reporting binge drinking (Table 1). Thirty per cent of those drinking alcohol overestimated their safe weekly maximum consumption (11% of males and 4% of females if Department of Health limits are used) and 71% reported their alcohol intake was less prior to becoming a dental undergraduate.

Cannabis

Sixty two per cent of males and 49.5% of females reported cannabis use since becoming a dental undergraduate, with 44% of males having used cannabis more than once or twice and 8% reporting current regular use (regular being defined as at least once a week). Twenty six percent of females reported having used cannabis more than once or twice whilst an undergraduate, 6% reporting current regular use.

Highest current regular cannabis use was reported amongst male 4th and 5th year undergraduates as 15%, with 59% reporting having used cannabis more than once or twice and 15% reporting regular cannabis use before entering dental school (Table 2). Lowest regular cannabis use was reported by male 1st-3rd years as 4%.

Other illicit drugs, amyl nitrate and inhalant use

Forty five per cent of males and 34% of females reported illicit drug use other than cannabis whilst a dental undergraduate, with 40% of males and 31% of females reporting use before entry to dental school. These figures increase, when amyl nitrate and inhalants (which are not classified as illegal drugs) are included, to 48% of males and 36% of females using drugs whilst undergraduates and 45% of males and 33.5% of females having used drugs prior to entry.

After cannabis (55%) the next most commonly used drugs whilst a dental undergraduate were, amphetamines (16%), amyl nitrate (13%), Ecstasy and magic mushrooms (8%), LSD (5.5%), cocaine (4.5%) and inhalants (2.5%).

Current regular drug use other than cannabis was rarely reported, with 2.9% of 4th–5th year males using amphetamines and 1.4% of 1st–3rd year females using ecstasy at least once a month.

Table 2 Cannabis use since becoming a dental undergraduate

Gender and year	n	Never %	once or twice %	>once or twice %	past regular user, but not in current year of study %	past regular user but not now %	current regular user %
Male 1–3	53	45.3	20.8	26.4	3.8	0.0	3.8
Female 1–3	73	54.8	26.0	9.6	4.1	1.4	4.1
Male 4–5	34	26.5	14.7	23.5	14.7	5.9	14.7
Female 4–5	38	42.1	18.4	15.8	5.3	7.9	10.5
Male 1–5	87	37.9	18.4	25.3	8.0	2.3	8.0
Female 1–5	111	50.5	23.4	11.7	4.5	3.6	6.3
Whole	198	44.9	21.2	17.7	6.1	3.0	7.1

Regular = at least once a week

Associations

A highly statistically significant association between year of undergraduate study and regular tobacco use was found ($p < 0.001$), with 4th–5th year undergraduates being eight times more likely to regularly smoke tobacco than their 1st–3rd year colleagues.

No significant associations were found between year of undergraduate study and drinking over sensible weekly limits or regular cannabis use. There was no significant association between those who drank above sensible limits and smoked tobacco on a regular basis.

Those smoking regularly before entering dental school were found to be statistically significantly more likely to be a current regular tobacco smoker ($p < 0.001$). Of the 14 undergraduates regularly smoking before entering dental school, 9 had continued to regularly smoke, whereas only 6 undergraduates out of 184 had become regular smokers since entry to dental school.

Discussion

The results of this survey reflect drug and alcohol use among undergraduates at one UK dental school. However, there is little reason to suspect students at the university surveyed are unique in their experiences. Unpublished data from a recent study of 75% of all vocational dental practitioners revealed a similar level of alcohol and drug use during their times as undergraduates.

A high response rate was achieved, with 76% of undergraduates completing the questionnaire. Honesty of responses is difficult to access, as with all self-report surveys, but discussions with participants after the survey suggested truthful responses had been reported, with methods used to maintain anonymity being appreciated. For ethical reasons individual year's responses are not reported due to fears of a breach of anonymity. Ethnic background was not questioned. This may affect the results of the study, as there is a large group of ethnic minority students in the dental school. It has been found in previous studies^{6,13} that these groups have much lower levels of alcohol consumption, cannabis use and tobacco smoking than whites.

Figures quoted for sensible weekly alcohol consumption levels (14 units for women, 21 units for men) throughout this report are those recommended by the British Medical Association⁷ and The Royal College of Physicians, Psychiatrists, and General Practitioners.⁸ These are lower than the levels recommended by the Department of Health,¹⁷ (21 units for women, 28 units for men) which have been criticised.⁹

Of those drinking alcohol, 63% of male and 42% of female undergraduates surveyed drank over sensible limits for their gender, levels similar to those reported by students in general⁶ (61% males, 48% females), an obvious cause for concern. More alarming is how alcohol is consumed, with binge drinking¹⁰ being reported by 56% of male and 58.5% of female dental undergraduates, this is double that found in university students in general (28%). Highest levels of binge drinking were reported by male 4th–5th years and female 1st–3rd years at 70% and 69% respectively. The reason for this pattern of alcohol consumption may be due to students restricting drinking during the week because of clinical commitments and then bingeing at weekends. Binge drinking with resultant inebriation has been associated with unprotected sexual contacts, unplanned pregnancies and sexually transmitted diseases, such as HIV.^{18,19} Links between crime (especially violent crime) and heavy drinking^{20,21} have been found, with drink related crime being highest among young males who have been binge drinking at weekends. It would be hard to deny the enjoyment associated with drinking alcohol. There is however, a point after which the hazards outweigh the benefits. Despite formal guidance given on professionalism within the dental course, there would still appear to be a prevalent culture of heavy drinking by undergraduates. Without further intervention this is likely to continue with inevitable consequences.

Regular tobacco smoking (10 or more cigarettes per day) was found to have statistically significant associations ($p < 0.001$) with year of study, senior undergraduates of both sexes being more likely to smoke regularly than their juniors. Due to the cross sectional nature of this survey, it is not possible to say whether there is an upward progression in frequency of smoking from first through fifth year. Twenty one per cent of male and 13% of female 4th–5th years reported smoking at least 10 cigarettes a day, and 21% of female 1st–3rd years reported smoking only whilst drinking. This gives cause for concern, as these individuals will have future responsibility for the health care of the general population.

Regular cannabis use (weekly or more often) by dental undergraduates was found to be lower than that by students in general,⁶ at 8% by males and 6% by females compared to 23% and 16%. Fifty five per cent of dental undergraduates reported cannabis use at least once or twice since coming to dental school, therefore, over half of undergraduates have used a Class B illegal drug, and in doing so risk possible criminal convictions with wider ramifications for future employment or even registration.

Illicit drug use, other than cannabis, (excluding amyl nitrate and inhalants, which are not illegal to use) was reported by 45% of male and 34% of female undergraduates, whilst at dental school, 40% of males and 31% of females reporting use before becoming an undergraduate. This is lower than that found in university students⁶ in general at 59%, this figure does however, include amyl nitrate. Regular illicit drug use (once a month or more often), other than cannabis was rarely reported.

This study gives only a snapshot of the current situation, and it is not known how those surveyed will change in their habits once qualified, therefore the results of this survey should be used as a baseline. Longitudinal studies of those participating in this survey should be carried out yearly to monitor changes in drug and alcohol use during vocational training and beyond. It may also be advisable to survey levels of stress in future studies, as a recent BDA survey²² found high levels of alcohol consumption by dentists was associated with raised stress levels.

In conclusion, this survey has found undergraduates at the dental school surveyed drinking above sensible weekly limits, binge drinking and indulging in illicit drug use to a degree which may damage health and future careers. The Royal College of Physicians of Edinburgh and the Medical Council on Alcoholism, recommend medical schools designate a teacher responsible for education of students about alcohol and substance abuse and for monitoring the impact of such information.²³ This advice is also applicable to Dental Schools.

The authors gratefully acknowledge all undergraduates who took part in this study, Dr B. Scaife for statistical support and Dr P. N. Nixon for advice on questionnaire design.

- 1 Plant M, Plant M. *Risk-takers: alcohol, drugs, sex and youth*. London: Tavistock/Routledge, 1992.
- 2 Balding J. *Young people in 1993* Exeter Schools Health Education Unit; University of Exeter, 1994.
- 3 Wright J D, Pearl L. Knowledge and experience of young people regarding drug misuse, 1969–94. *Br Med J* 1995; 310: 20–24.
- 4 Calman K. On the state of public health. *Health Trends* 1995; 27:71–75.
- 5 Royal College of Physicians. Alcohol and the young. *J R Coll Phys London* 1995; 29: 470–74.
- 6 Webb E, Ashton C H, Kelly P, Kamali F. Alcohol and drug use in UK university students. *The Lancet* 1996; 348: 922–25
- 7 British Medical Association. *Alcohol: guidelines on sensible drinking*. London BMA, 1995.
- 8 Royal College of Physicians, Psychiatrists, and General Practitioners. *Alcohol and the heart in perspective: sensible limits reaffirmed*. London: Royal Colleges, 1995.
- 9 Edward G. Sensible drinking: doctors should stick with the independent medical advice. *Br Med J* 1996; 312: 1.
- 10 Moore L, Smith C, Catford J. Binge drinking: prevalence, patterns and policy. *Health Educ Res* 1994; 9: 497–505.

- 11 File S E, Mabbutt P S, Shaffer J. Alcohol consumption and lifestyle in medical students. *J Psychopharmacol* 1994; 8: 22-26.
- 12 Collier D J, Beales I L P. Drinking among medical students: a questionnaire survey. *Br Med J* 1989; 299: 19-22.
- 13 Ashton C H, Kamali F. Personality and lifestyles, alcohol and drug consumption in a sample of British medical students. *Med Educ* 1995; 29: 187-92.
- 14 Gravensten J S, Kong W P, Marks R G: Drug use by anaesthesia personnel and medical students. *Anaesthesiol* 1980; 53: s345.
- 15 Willis J. The drugs don't work. *BDA Launchpad* 2000: 1: 23-26
- 16 The General Dental Council. *Maintaining Standards*. General Dental Council. London, 1997
- 17 Inter-Departmental Working Group. *Sensible drinking*. Department of Health, London, 1995.
- 18 Robertson, J A, Plant M A. Alcohol, sex and risk of HIV infection. *Drug and Alcohol Dependence* 1998; 22: 75-78.
- 19 Bagnal, G. Education as a solution: the need for care, modesty and realism. In Anderton, D. (ed), *Drinking to your Health: The Allegations and the Evidence*. Social Affairs Unit, London, 1990.
- 20 Home Office Standing Conference on Crime Prevention. *Report of the Working Group on Young People and Alcohol*. Crown Office, London, 1987.
- 21 Tuck, M. *Drinking and disorder: a study of non-metropolitan violence*. Home Office Research Study 10. HMSO, London, 1980.
- 22 Kay E, Scarrott D. A survey of dental professionals' health and well-being. *Br Dent J* 1997 183: 340-345.
- 23 Ritson E B. Teaching medical students about alcohol. *Br Med J* 1990 300: 134-5.