IN BRIEF

- A study of alcohol and drug use by vocational dental practitioners (VDPs).
- VDPs are using alcohol and drugs to a degree that will cause health problems.
- This paper is intended to promote a more scientific approach to the prevention, intervention and treatment of problematic alcohol and drug use in the profession.

Alcohol and drug use among vocational dental practitioners

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Objective This study was designed to investigate the prevalence of alcohol and drug use in vocational dental practitioners (VDPs).
Design Anonymous self-report questionnaire.
Subjects and methods All UK vocational dental practitioners (n = 719) who started practice in the summer of 1999 were questioned on their use of alcohol, tobacco, cannabis and other illicit drugs whilst a VDP and before graduation.
Results Eighty-nine per cent of males and 88% of females reported alcohol use. Of these, 35% of males and 36% of females drank above sensible levels (up to 21 units per week for males, 14 units for females), with 48% of males and 52% of females 'binge drinking'. Thirty-three per cent of respondents reported cannabis use whilst a VDP. Regular drug use (use at least once a month) other than cannabis whilst a VDP was found to be highest among males, with regular ecstasy use reported by 4% and regular cocaine use reported by 2%. Regular tobacco use (ten or more cigarettes per day) was reported by 9% of VDPs. Regular tobacco users were found to be six times more likely to use cannabis on a regular basis, three times more likely to use ecstasy on a regular basis and four times more likely to use cocaine on a regular basis than those VDPs who reported non regular tobacco use.
Conclusion VDPs are drinking above sensible limits, binge drinking, using tobacco and indulging in illicit drug use to a degree that will cause health problems. However, use of all substances had reduced since qualification.

BACKGROUND

The results of a survey of alcohol and drug use carried out in 1998 among a sample of UK dental undergraduates[1] gave cause for concern. Undergraduates reported drinking alcohol above sensible weekly limits,[2-4] binge drinking[5] and indulging in illicit drug use. It was not known if this pattern of behaviour would continue post qualification as dental professionals.

Vocational dental practitioners (VDPs) are newly qualified dental graduates, who must complete one year of vocational training (VT) before they can be allocated dental list numbers by health authorities.[6] The majority of graduates commence VT in July/August of the year they qualify. The General Dental Council has a statutory duty to promote high standards of personal and professional conduct from all members of the profession. It has specific guidelines regarding drugs and alcohol use, which state:

> *'Complaints of drunkenness or the misuse of drugs, particularly if this involves an abuse of a dentist's prescribing powers, may lead to a charge of* ***serious professional misconduct,*** *even if the offence has not been the subject of criminal proceedings. Problems with alcohol and/or drug dependency could lead to a dentist being referred to the Health Committee'.*[7]

A recent paper[8] reported the findings of a lifestyle questionnaire completed by a cohort of dental students from Newcastle University (n = 66) in their second year as undergraduates in 1995 and after their VDP year. The study found a 'high proportion' of those studied 'drinking excessively, taking cannabis and experimenting with other illicit drugs' as undergraduates and continuing these 'pleasure seeking behaviours even as dental practitioners'. This study only looked at a small number of VDPs from one dental school and therefore its results may not be representative of all UK VDPs.

The profession's concern regarding alcohol and drug addiction was highlighted by the publication of the booklet *'Drugs and Alcohol-Addiction in the Dental Profession'* in 2000.[9] This booklet produced by The Dentists' Health Support Trust and sent to all registered dentists, highlighted the devastating effects addiction can have on not only the addicted but also their family, friends and colleagues and was evidence of how seriously the profession viewed the problem. However these concerns are not a new phenomenon with papers being published in American,[10,11] and British,[12,13] dental journals for over 20 years voicing concern. The use of drugs and subsequent addiction has even been described as an 'occupational hazard for health professionals'.[14]

The aim of this study was to survey all UK VDPs in order to ascertain drug and alcohol use during and prior to VT, to increase understanding of an area which is of significance to all branches of the profession, especially those responsible for the undergraduate and VT curriculum.

METHOD

A survey was conducted of all VDPs in the UK (n = 719) who started in the summer of 1999. Packs containing self-report questionnaires were sent recorded delivery to all UK VDP advisors (n = 70), for distribution to their VDP groups, at their next day release session.

The questionnaire (copies available from the corresponding author) consisted of four sides of A4 text on a folded A3 sheet, the cover page acting as a participant information sheet. Questions were

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Refereed paper
Received 25.09.02; Accepted 04.02.03
doi:10.1038/sj.bdj.4810479

asked in a closed-ended format in standard English, making them easily answerable, scored and coded for analysis by computer. Completion of the questionnaire took no longer than 5 minutes. Participants were provided with a free pen to act as an incentive and increase anonymity.

Once completed, participants were instructed to seal their questionnaire in a self-seal tamper-proof envelope. The envelopes from the entire group were then placed in a large tamper-proof pre-paid return envelope, to be posted to the organisers. VDP advisors were requested to seal these envelopes in front of the group, reinforcing the desire for complete confidentiality.

The questionnaire was distributed to VDPs in January 2000. Prior to circulation the questionnaire was piloted on a sample of newly qualified medical students; this highlighted only minor problems, which were corrected prior to full-scale distribution.

Anonymity of participants was essential and therefore no name, age or ethnic group was requested, with only gender being questioned. It was stressed that completion of the questionnaire was voluntary with no obligation to respond.

Ethical approval

Approval for the survey to be carried out was given by Penelope Vasey (Chairman Committee on Vocational Training for England and Wales), Stuart Robson (President, BDA 2000) and Peter Swiss (Dento Legal Consultant, DDU 2000).

Statistical analysis

Statistical analysis was carried out using *SPSS for Windows*. Results are descriptive and basically quantitative. Associations between variables were analysed using odds ratio.

RESULTS

Fifty-two packs of the 70 sent were returned, containing 537 completed questionnaires (of a possible 719 if all packs had been returned). This gave a response rate of 75%, with 273 of 370 males responding (74%) and 264 of 349 female (76%). Due to the anonymous method it was impossible to investigate why some VDP advisors did not return their groups packs. Twenty-two respondents failed to state their gender and have not been included in the results as it was felt they were unlikely to have read the instructions on how to complete the questionnaire. Three male VDPs did not wish to complete the questionnaire.

Tobacco

Regular tobacco use (10 or more cigarettes per day) was reported by 9% of VDPs, with regular use being more highly reported by males (13%) than females (6%). Fifteen per cent of respondents reported regular use before becoming a VDP. Sixteen per cent of male and 13% of females reported smoking only whilst drinking alcohol.

Alcohol

Eighty-nine per cent of males and 88% of females reported current alcohol use. Of those drinking alcohol, sensible levels (up to 21 units per week for males, 14 units females) were exceeded by 35% of males (Fig. 1) and 36% of females (Fig. 2). Hazardous drinking, > 50 units per week for males, > 35 units for females, was reported by 6% of males and 2% of females. Fifty-eight per cent of males and 55% of females felt their alcohol consumption was more before becoming a VDP. Figures used are those reported as units of alcohol consumed by the respondent last week, as they were found to be consistently higher than those reported as the number of units the respondent would consume in an average week.

Binge drinking,[5] (defined as drinking at least half the recommended weekly units of alcohol in one session, ie at least 7 units for women and 10 units for men) was reported by 48% of male and 52% of female VDPs. Of those respondents who drank alcohol, 38% of males and 26% of females overestimated their safe weekly maximum consumption (7% of males and 3% of females if Department of Health are guidelines are used).

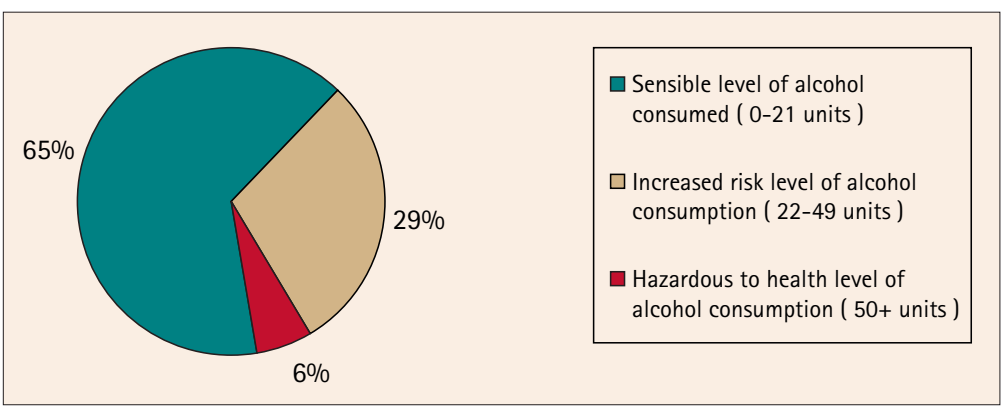

Fig. 1 Level of alcohol consumption reported by male VDPs who drink

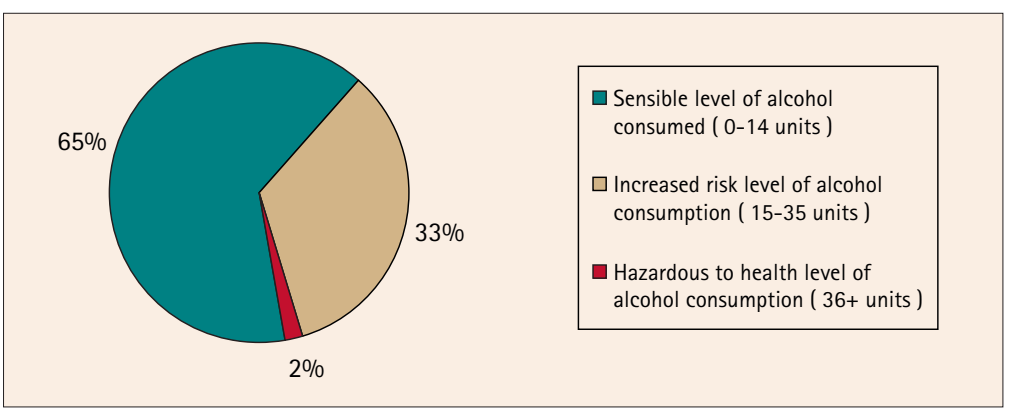

Fig. 2 Level of alcohol consumption reported by female VDPs who drink

Table 1 Response to the question: *'Which of the following describes you best regarding your use of cannabis as a VDP?'*

Gender	*n*	I have never used this substance (%)	I have used this substance once or twice (%)	I have used this substance more than once or twice (%)	I have been a regular* user of this substance as a VDP, but not now (%)	I am currently a regular* user of this substance (%)
Male	268	65.3	12.3	14.9	2.2	5.2
Female	263	68.1	16.0	13.7	0.8	1.5
Total	531	66.7	14.1	14.3	1.5	3.4

*Regular = at least once a week

Table 2 Response to the question: *'Which of the following describes you best regarding your use of Cannabis before becoming a VDP?'*

Gender	n	I never used this substance (%)	I used this substance once or twice (%)	I used this substance more than once or twice (%)	I was a regular* user of this substance (%)
Male	267	40.4	28.8	21.0	9.7
Female	263	50.6	27.4	17.9	4.2
Total	530	45.5	28.1	19.4	7.0

*Regular = at least once a week

Cannabis

Thirty-three per cent of respondents reported cannabis use whilst a VDP (35% males, 32% females). Of those, 14% had used cannabis once or twice, 14% had used cannabis more than once or twice, 2% had been a regular user (regular being defined as use at least once a month) of cannabis whilst a VDP, but not at the time they completed the questionnaire and 3% reported current regular use (Table 1). Higher rates of cannabis use were reported prior to becoming VDPs with 54% of respondents having used cannabis with 7% reporting regular use (Table 2).

Other illicit drugs, amyl nitrate and inhalant use

Illicit drug use including amyl nitrate and inhalants (which are not classified as illegal to use) and excluding cannabis, was reported by 22% of males and 11% of female VDPs (Table 3). Thirty three per cent of males and 22% of females reported illicit drug use including amyl nitrate and inhalants use before becoming a VDP (Table 4).

After cannabis (33%) the next most commonly used drugs by VDPs were amphetamines (9%), cocaine (8.5%), ecstasy (8%), amyl nitrate (7%), magic mushrooms (6%), LSD (5%) and inhalants (1%).

Regular drug use (use at least once a month) other than cannabis whilst a VDP was found to be highest among males, with regular ecstasy use reported by 4% and regular cocaine use reported by 2%.

Associations

Those VDPs who reported being a regular smoker as a VDP were six times more likely to use cannabis on a regular basis, three times more likely to use ecstasy on a regular basis and four times more likely to use cocaine on a regular basis than a VDP who reported non regular tobacco use. The only VDPs who were regular users of any of the following drugs – cannabis, LSD, ecstasy, cocaine, amyl nitrate, inhalants and magic mushrooms were those who reported tobacco use as a VDP.

Of those VDPs reporting currently smoking on a regular basis ($n = 48$) all regularly smoked before qualification. None of those who smoked on a regular basis before graduation ($n = 76$) had stopped smoking completely on becoming a VDP.

No other associations between the variables studied were found.

DISCUSSION

This study gives the first information on the level of alcohol and drug use by VDPs in all areas of the UK. It reports on alcohol and drug use by VDPs before qualification and around five months into their VDP year. There is a possible problem of recall bias when reporting on information that occurred before the time as a VDP and this should be remembered when interpreting results.

Response rates were high, with 75% of all VDPs who started VT in July/August 1999 returning their questionnaires. As with the study carried out on undergraduates[1] and data in general obtained from anonymously administered questionnaires, it is not possible to assess honesty of responses. However informal discussions with participants after the survey suggest responses were truthful with the use of tamper proof envelopes being appreciated. Ethnic background was not questioned to increase anonymity and honesty of responses. A recently published paper[15] looking at VDPs in the cohort one-year prior to this study reported 57% were white. This is significant, as ethnic minority student groups have been found to have much lower levels of alcohol consumption, cannabis use and tobacco smoking than whites.[16,17]

Figures quoted for sensible weekly alcohol consumption levels (up to 14 units for women, 21 units for men) are those recommended by the British Medical Association[4] as in the authors' undergraduate study. The reason for this is the continued lack of medical justification of those levels recommended by the Department of Health[18] (up to 21 units for females 28 units for males). A paper looking at young dentists' 'work, wealth, health and happiness'[19] published in 1999 found that among the female dentists surveyed, a significant relationship between how much alcohol they drank and their mental health. The more they drank the greater the psychological symptoms reported ($P = 0.001$). This gives obvious cause for concern, given that the results of this study indicate that 36% of female VDPs, who drink alcohol, are drinking above sensible limits and 52% are binge drinking.

The association found between regular tobacco use and drug use requires further investigation and may be an area where better smoking cessation counselling services at undergraduate and postgraduate levels would be beneficial.

The reported use of alcohol, cannabis and other illicit drugs by respondents had universally decreased on qualification, but still

Table 3 Response to the question: *'Which of the following describes you best regarding your use of [named drug] as a VDP?'*

Drug	*n*	I never used this substance (%)	I used this substance once or twice (%)	I have used this substance more than once or twice (%)	I have been a regular* user of this substance as a VDP, but not now (%)	I am currently a regular* user of this substance (%)
Amphetamine	531	91.3	5.5	2.8	0.4	0.0
Cocaine	531	91.5	4.0	2.8	0.4	1.3
Ecstasy	531	91.7	4.0	1.7	0.9	1.7
LSD	531	94.7	3.6	0.8	0.6	0.4
Amyl nitrate	531	93.0	5.6	0.9	0.0	0.4
Magic mushrooms	531	94.4	4.7	0.2	0.0	0.8
Inhalants	531	98.7	0.9	0.0	0.2	0.2

*Regular = at least once a month

Table 4 Response to the question: *'Which of the following describes you best regarding your use of [named drug] before becoming a VDP?'*

Gender	*n*	I never used this substance (%)	I used this substance once or twice (%)	I used this substance more than once or twice (%)	I was a regular* user of this substance (%)
Amphetamines	529	84.5	10.4	3.4	1.7
Cocaine	529	88.7	6.8	3.0	1.5
Ecstasy	529	85.6	8.7	3.0	2.6
LSD	529	90.7	6.4	2.5	0.4
Amyl nitrate	529	86.6	11.0	1.9	0.6
Magic mushrooms	528	89.8	8.9	0.6	0.6
Inhalants	528	97.7	1.7	0.2	0.4

*Regular = at least once a month

remains at a level where personal harm is possible. The obvious concern this paper raises is whether the use of alcohol and drugs reported by VDPs is impacting on the treatment they provide to patients. This cannot be answered by the results of this study and needs to be investigated before comment can be made.

At the time of publication of this study, those surveyed will have been 3 years further on in their careers and it is not known whether alcohol and drug use levels will have increased or decreased from those they reported as VDPs. From the evidence available, the number of young people in the UK as a whole using illicit drugs appears to be stabilising, with the majority of longitudinal studies[20-22] reporting a slight fall since peaking in 1995. There is a current belief that *'recreational drug use is in the process of becoming normalised among British youth'*.[23] Whether this is true for VDPs is not known. Ideally those studied should be questioned again in the future to produce a longitudinal study, however the authors suspect the response rates may be too low to produce valid results. It would be inadvisable to compare the results reported in this study with other studies on alcohol and drug use in society in general and other subgroups due to the lack of uniformity in methodologies and definitions of usage.

In an era when the belief that addiction is a disease is being questioned,[24] with the theory that it is a 'learned behavioural disorder' becoming a valid alternative, the profession needs to look at how it is dealing with an ever-growing issue. It is now accepted that evidence-based dentistry is the way forward, it is hoped that this study will contribute to a more evidence-based approach to the prevention, intervention and treatment of problematic alcohol and drug use among dental professionals.

In conclusion, this study has found VDPs in the UK drinking above sensible limits, binge drinking, using tobacco and indulging in illicit drug use to a degree that will cause health problems. However use of all substances had reduced since qualification.

The authors would like to acknowledge Mr J P Ralph (Postgraduate Dental Dean Yorkshire), whose support made this study possible.

1. Underwood B, Fox K. A survey of alcohol and drug use among UK based dental undergraduates. *Br Dent J* 2000; **189:** 314-317.
2. Royal College of Physicians, Psychiatrists, and General Practitioners. *Alcohol and the heart in perspective: sensible limits reaffirmed.* London: Royal Colleges, 1995.
3. Edward G. Sensible drinking: doctors should stick with the independent medical advice. *Br Med J* 1996; **312:** 1.
4. British Medical Association. *Alcohol: guidelines on sensible drinking.* London: BMA, 1995.
5. Moore L, Smith C, Catford J. Binge drinking: prevalence, patterns and policy. *Health Educ Res* 1994; **9:** 497-505.
6. Committee on Vocational Training for England and Wales. *'Composition of vocational training'.* 2001 <http://www.eastman.ucl.ac.uk/~shall/whatisvt.html> (accessed on 20 November 2001).
7. The General Dental Council. *Maintaining Standards.* London: General Dental Council, 1997.
8. Newbury-Birch D, Lowry R L, Kamali F. The changing patterns of drinking, illicit drug use, stress, anxiety and depression in dental students in a UK dental school: a longitudinal study. *Br Dent J* 2002; **192:** 646-649.
9. *Drugs and alcohol— addiction in the dental profession: problems and solutions.* London: The Dentists' Health Support Trust, 2000.
10. Busch L. Rehabilitating the impaired dentist: A look at what the profession is doing to help. *J Am Dent Assoc* 1982; **105:** 781-787.
11. Giangrego E, Oberg S. Chemical dependency: the road to recovery. *J Am Dent Assoc* 1987; **115:** 17-27.
12. Anon. Sick dentists — an escalating problem. *Br Dent J* 1991; **171:**151.
13. Anon. Drink, drugs and dentistry-are you at risk? *Br Dent J* 1996; **180:** 392-393.
14. Combs R H. *Drug-Impaired Professionals.* Harvard: Harvard University Press, 1997.
15. Bartlett D W, Coward P Y, Wilson R, Goodsman D, Darby J. Experience and perception of vocational training reported by the 1999 cohort of vocational dental practitioners and their trainers in England and Wales. *Br Dent J* 2001; **191:** 265-270.
16. Ashton C H, Kalmali F. Personality and lifestyle, alcohol and drug consumption in a sample of British medical students. *Med Educ* 1995; **29:**187-92.
17. Webb E, Ashton C H, Kelly P, Kamali F. Alcohol and drug use in UK university students. *Lancet* 1996; **348:** 20-24.
18. Inter-departmental working group. *Sensible drinking.* London: Department of Health, 1995.
19. Baldwin P J, Dodd M, Rennie J S. Young dentists-work, wealth, health and happiness. *Br Dent J* 1999; **186:** 30-36.
20. Wright, J D, Pearl, L. Experience and knowledge of young people regarding illicit drug use, 1969-99. *Addiction* 2000; **95:**1225-1235.
21. Balding J. *Young people and illegal drugs into 2000.* Exeter: Exeter Schools Health Education Unit, 2000.
22. Plant M A, Miller P. Drug use has declined among teenagers in the United Kingdom. *Br Med J* 2000; **320:**1536.
23. Parker H, Aldridge J, Measham F. *Illegal leisure: the normalisation of adolescent recreational drug use.* London: Routledge, 1998.
24. Heather N, Robertson I. *Problem drinking.* 3rd ed. Oxford: Oxford University Press, 1997.