

A FOLLOW-UP SURVEY OF ALCOHOL CONSUMPTION AND KNOWLEDGE IN MEDICAL STUDENTS

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Abstract — We surveyed a medical school's students' drinking habits and knowledge 12 years after a previous survey. In this current survey from two academic years, final year students drank less than second year students did. Women in their second year drank as much as men. Overall, 28% of students drank more than the safe limits; 27% of students were problem drinkers, as measured by the CAGE questionnaire, and 52%, as measured by the AUDIT questionnaire. The proportion of students not drinking any alcohol rose from 6% in the previous survey to 27% in the current survey, possibly due to context and demographic changes. In spite of this difference, there have been no statistically significant reductions in either unsafe drinking levels or CAGE scores over 12 years. A third of students overestimated the safe levels of drinking. All medical schools should write and implement an alcohol policy.

INTRODUCTION

Thirty-eight per cent of men and 18% of women, who are aged between 18 and 24 years and live in the United Kingdom, drink more alcohol than the recommended safe limits of 21 units (for men) and 14 units (for women) per week (Office of Population Censuses and Surveys, 1996). In a survey of 13 British medical schools, 26% of male undergraduates and 13% of female students drank more than the recommended limits (Ghodsse and Howse, 1994).

A previous survey of 260 students from this medical school found higher rates of unsafe drinking in both men (34%) and women (~32%) (Collier and Beales, 1989). Only 6% of students did not drink any alcohol. The CAGE scores in the same survey confirmed the finding; 36% of men and 29% of women had abnormal scores, indicating significant drinking problems (Collier and Beales, 1989).

There is evidence that a significant minority of students continue to drink more than is good for their health or safety, after they qualify. For instance, male doctors' death rates from cirrhosis of the liver is 3.4 times the death rate in an average man's occupation, and is only just below the relative death rate for publicans and bar staff (3.8). The General Medical Council (1995) expressed concern that persistent excessive drinking by students may signal a persistent pattern of behaviour, which has consequences not only for the students' health, but also for their professional ability in the future. A recent survey of house officers suggests that this concern is justified, since 56% of men and 57% of women exceeded safe drinking levels (Birch *et al.*, 1998).

SUBJECTS AND METHODS

Subjects

We surveyed the drinking habits and knowledge of the safe limits of alcohol consumption in second and final (fifth) year

medical students of this school. In all, 244 students out of a total population of 446 students (55%) completed the questionnaire (57% women and 43% men). The median age was 23 (range 19–37) years. To examine whether non-responders had biased our results, we asked students to estimate the percentage of their colleagues whom they considered were drinking 'more alcohol than is good for their health, education or social relationships'.

Measures

We used a structured questionnaire of 20 questions concerning demographic details, consumption of alcohol, and perceived safe levels of drinking, having piloted a previous version. The questionnaire included both the CAGE and AUDIT questionnaires. The CAGE questionnaire consists of four questions with two or more positive answers suggesting a high risk of alcohol dependency or significant drinking problem currently or in the past (Mayfield *et al.*, 1974). The AUDIT questionnaire is composed of 10 questions regarding drinking problems in the last year, with a score of 0–4 on each question (Isaacson *et al.*, 1994). A score of at least 8 out of 40 indicates an alcohol-related problem in the last year. It is a more sensitive measure of hazardous drinking than the CAGE (Royal College of Physicians, 2001).

The project was considered ethically satisfactory by the East London and the City Health Authority research ethics committee.

Analysis

Regarding the current survey, the data were not normally distributed. Therefore comparisons between years and genders were made with a Mann–Whitney *U*-test for interval data and a χ^2 -test (with Yates' correction) for categorical data. When comparing the two separate surveys, we were able to measure the difference [with 95% confidence intervals (CI)] in the proportions of students consuming no alcohol, unsafe amounts, and hazardous amounts of alcohol. We also measured the difference (95% CI) in the proportions with elevated CAGE scores.

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RESULTS

Drinking habits

Tables 1 and 2 give the main findings. Combining both years together, 27/104 (26%) of men drank >21 units of alcohol per week, compared to 41/136 (30%) of women drinking >14 units per week. In spite of this, men drank more alcohol than women did ($P = 0.04$), had higher AUDIT scores ($P = 0.03$) and showed a trend towards more frequently elevated CAGE scores (36 vs 20%, $P = 0.11$) than women. Eighteen out of 104 (17%) of men drank >35 units of alcohol per week (all second year students), compared to 21/136 (15%) of women drinking >21 units (all in their second year). Second year women drank as much alcohol as second year men (see Table 1), but the normal gender difference was apparent in the final year (see Table 2). Second year students drank more alcohol than final year students ($P < 0.001$) and 37% had elevated CAGE scores, compared to 18% of finalists [difference (95% CI) = 19% (8 to 30)]. However, there was no significant difference in the proportions with elevated AUDIT scores, with 57% of second year students compared to 47% of finalists having elevated scores [difference (95% CI) = 10% (-3 to 23)].

Knowledge of safe levels of drinking

A total of 81 out of 234 (35%) students overestimated the safe limits of drinking for women and 72/234 (31%) for men (see Table 3). Regarding governmental advice on safe levels, 37/234 (16%) of students gave the government levels for women as up to 21 units per week and 53/234 (23%) of students thought the correct levels for men were up to 28 units per week. There was no significant difference between the two years of students, regarding female safe levels ($P = 0.47$), but second year students were wrong more often than final year students regarding male safe levels ($P = 0.05$).

Comparison with the previous survey

In the 1989 survey, 18 out of 260 (7%) students had not had an alcoholic drink in the previous week (Collier and Beales, 1989), compared to 65 out of 244 (27%) students in this survey. This 20% difference was significant (95% CI = 13 to 26). In 1989, 83 out of 260 (32%) students were drinking at unsafe levels [over 14 units in women (imputed data) and 21 units in men], compared to 68 out of 240 (28%) students in this second survey. The difference (95% CI) of 4% (-4 to 12%) was not significant. Seventy-four out of 260 (29%)

Table 1. Drinking habits of second year students

Parameter	Men ^a	Women ^a	Totals ^b
Numbers of students	52 (100)	71 (100)	124 (100)
Median (IQR) units of alcohol per week before university	8 (1-20)	4 (1-8)	5 (2-14)
Median (IQR) units of current alcohol per week	14 (1-45)	14 (2-24)	14 (2-30)
Students drinking no alcohol	11 (22)	12 (17)	23 (19)
Students drinking more than the safe limits	23 (45)	37 (53)	60 (50)
Students drinking hazardously (>35 units/week in men or >21 in women)	18 (35)	21 (30)	39 (32)
Students with CAGE score >1	26 (47)	18 (27)	44 (36)
Students with AUDIT scores >8	30 (65)	35 (51)	65 (57)
Academic performance affected	11 (22)	16 (23)	27 (23)
Median (IQR) % of students thought by men to drink unsafely	20 (5-50)	10 (5-40)	
Median (IQR) % of students thought by women to drink unsafely	30 (15-50)	20 (10-40)	

Values are number (%) unless otherwise stated.

^aMinimal missing data causes floating denominator.

^bIn one subject gender was a missing value.

IQR, interquartile range.

Table 2. Drinking habits of final year students

Parameter	Men ^a	Women ^a	Totals ^b
Numbers of students	53 (100)	66 (100)	120 (100)
Median (IQR) units of alcohol per week before university	10 (2-20)	5 (1-8)	5 (2-14)
Median (IQR) units of current alcohol per week	6 (1-12)	2 (0-6)	3 (0-9)
Students drinking no alcohol	13 (25)	28 (42)	41 (34)
Students drinking more than the safe limits	4 (6)	4 (6)	8 (7)
Students drinking hazardously (>35 units/week in men or >21 in women)	0 (0)	0 (0)	0 (0)
Students with CAGE score >1	12 (23)	9 (14)	21 (18)
Students with AUDIT scores >8	27 (56)	23 (39)	50 (47)
Academic performance affected	11 (21)	7 (11)	18 (15)
Median (IQR) % of students thought by men to drink unsafely	15 (5-33)	10 (5-30)	
Median (IQR) % of students thought by women to drink unsafely	20 (10-50)	10 (5-30)	

Values are number (%) unless otherwise stated.

^aMinimal missing data causes floating denominator.

^bIn one subject gender was a missing value.

IQR, interquartile range.

Table 3. Students overestimating safe levels of alcohol drinking

Estimates	Second year students (<i>n</i> = 117)	Final year students (<i>n</i> = 117)
Students overestimating safe limits for women	52 (44)	39 (33)
Students giving government levels for women	14 (12)	23 (20)
Students overestimating safe limits for men	41 (35)	31 (26)
Students giving government levels for men	26 (22)	27 (23)

Values are number (%).

students were drinking hazardously (over 21 units in women and 35 units in men) in 1989, compared to 39 out of 240 (16%) in the second survey. The difference (95% CI) of 16% (5 to 19%) was significant. In 1989, 85 out of 260 (33%) students had elevated CAGE scores, compared to 64 out of 240 (27%) of students in the second survey, with the difference (95% CI) of 6% (-2 to 14%) not being significant.

DISCUSSION

At first glance, it seems that more students are not drinking at all, in this survey compared to the previous one, and that final year students drink more sensibly. However, these two findings may be inter-related and more apparent than real. We surveyed final year students 1 month before their final examinations, and several students spontaneously volunteered that they had significantly reduced their alcohol consumption in order to prepare better for finals. The lack of a significant difference, between the two years, in the proportion of elevated scores of the AUDIT questionnaire (which measures alcohol problems over the whole of the last year) would support the drinking of finalists being anomalous. The current alcohol consumption of finalists being lower than pre-university levels would also support this anomaly. The proportion of second year students in this survey drinking unsafe and hazardous amounts of alcohol was actually greater than by the students in the previous survey. Finally, St Bartholomew's medical college merged with the Royal London medical college between the surveys, with consequent demographic changes (probably more students with religions which proscribe alcohol consumption) that may have contributed to the increased proportion of teetotal students. A prospective study of drinking habits of medical students at another British university suggested that there was only a small reduction in unsafe drinking between the first and fifth years (Guthrie *et al.*, 1998).

When this interpretation is added to the lack of significant differences between the surveys, in both unsafe drinking and CAGE scores, the only logical interpretation is that there has been no significant change in the prevalence of unsafe drinking by the students of this school. The only previous comparable survey also found no substantial difference in either the amount of alcohol drunk or the proportion of medical students drinking unsafely, 10 years later (1984 to 1994) (Ashton and Kamali, 1995), thus suggesting that this may be a national trend.

The prevalence of problem drinking in men seems to be similar to other medical schools (Ghods and Howse, 1994).

However, a larger proportion of female students drank unsafely than general population norms. Alcohol consumption by female students was the same as men's consumption in the second year. The proportion of women drinking unsafely and hazardously in this year was similar to men. This seems a unique finding and Collier and Beales (1989) drew attention to this in the previous survey.

Rather worryingly for patients, about a third of our students overestimated safe levels of drinking. About a quarter thought that the safe limits for drinking were the UK government levels for safe drinking (21/28), rather than the medical profession's advice (14/21). Our students were less accurate than those from the previous survey, where overestimates were given by 21% of students for men and 18% (imputed data) for women (Collier and Beales, 1989). A survey published at the same time showed that 32% of medical students and 30% of doctors did not know the correct safe limits (Myszor *et al.*, 1990). Sixth-form pupils were significantly better informed about safe limits than doctors; a result which is both reassuring and alarming (Myszor *et al.*, 1990). Three Royal Colleges have re-affirmed the safe limits of alcohol consumption as being 14/21 units per week (Royal Colleges, 1995).

In view of the significant morbidity and mortality caused by excessive alcohol consumption, it is a concern that there has been no significant reduction in the prevalence of drinking alcohol by medical students over the last 12 years at this school. It seems likely that this is a general problem for medical students, rather than one specific to this school, although this is the second report of drinking above the norm by female students from this school.

The response rate was not high (55%) in this study which might make it difficult to generalize from these data. Against this, these data were supported by the estimations by participating students of the proportion of their colleagues which they considered as having alcohol problems being similar to the proportions with both abnormal CAGE scores and the proportions reporting negative academic consequences of their drinking. These data suggest that there was little bias by non-response.

What should be done? The General Medical Council (1997) suggested that students involved in substance abuse should be offered help, but that consideration should also be given to their fitness to qualify and thus practise. There is evidence that the general level of drinking in a community influences the prevalence of harmful drinking (Colhoun *et al.*, 1997). It therefore makes sense to set standards of acceptable alcohol consumption in our medical schools. Some medical schools have written and implemented policies to inform and guide students and staff regarding alcohol, along with other health issues (Gray *et al.*, 1998). Yet, in a recent survey in the UK, only four out of 17 (24%) medical schools had actually written and implemented such policies (Williams, 1999). All medical schools should develop their own policies and implement them effectively. Policies should include the setting of standards (e.g. not drinking alcohol during the working day), education about alcohol and its effects, confidential help for those in difficulty, and procedures for managing individuals with drinking problems (Gray *et al.*, 1998; Royal College of Physicians, 2001).

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