

# Alcohol and other substance use among medical and law students at a UK university: a cross-sectional questionnaire survey

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## ABSTRACT

**Purpose of the study** To examine the use of alcohol and other substances among medical and law students at a UK university.

**Study design** Anonymous cross-sectional questionnaire survey of first, second and final year medical and law students at a single UK university.

**Results** 1242 of 1577 (78.8%) eligible students completed the questionnaire. Over half of first and second year medical students (first year 53.1%, second year 59.7%, final year 35.9%) had an Alcohol Use Disorders Identification Test (AUDIT) score suggestive of an alcohol use disorder (AUDIT $\geq$ 8), compared with over two-thirds of first and second year law students (first year 67.2%, second year 69.5%, final year 47.3%). Approximately one-quarter of medical students (first year 26.4%, second year 28.4%, final year 23.7%) and over one-third of first and second year law students (first year 39.1%, second year 42.4%, final year 18.9%) reported other substance use within the past year. Over one-third of medical students (first year 34.4%, second year 35.6%, final year 46.3%) and approximately half or more of law students (first year 47.2%, second year 52.7%, final year 59.5%) had a Hospital Anxiety and Depression Scale anxiety score suggestive of a possible anxiety disorder.

**Conclusions** Study participants had high levels of substance misuse and anxiety. Some students' fitness to practice may be impaired as a result of their substance misuse or symptoms of psychological distress. Further efforts are needed to reduce substance misuse and to improve the mental well-being of students.

## INTRODUCTION

The misuse of alcohol and other substances has previously been shown to be common among university students in the UK.<sup>1–4</sup> The consequences of alcohol misuse in particular include physical health problems and poor academic performance.<sup>5,6</sup>

There is comparatively little research looking at substance use among the distinct group of UK medical students. This is concerning, given that most medical students will go on to work as medical doctors. Doctors' own substance misuse may impair their fitness to practice and limit recognition of problem substance use in their own patients.<sup>7–10</sup>

There have not been any published reports looking at substance use among UK medical students since 2001; it is not known whether patterns of use have changed since then. Recent

research from elsewhere in the world suggests that medical students' substance use is still an issue.<sup>11–15</sup>

Knowledge of current levels of substance use among UK medical students would inform preventive practice in this area. There is some evidence that hazardous drinking (60g of ethanol or more per drinking session at least 2–3 times per month) at medical school is predictive of later hazardous drinking, underscoring the importance of these efforts.<sup>16</sup>

We carried out a prospective cross-sectional questionnaire survey in order to determine whether UK medical students' alcohol and other substance use has changed since 2001. We also aimed to determine how medical students' alcohol use relates to other substance use and mental health. We surveyed law students in order to compare patterns of use among medical students with those of students with similar professional and academic obligations.

## METHODS

### Eligibility and recruitment

The study took place at a single public university which has between 20 000 and 30 000 students. All first, second and final year medical and law students were eligible to participate. There were no exclusion criteria. Permission to survey the students was obtained from senior medical and law school officials.

Second and final year students were recruited in April 2014 and first year students in October 2014. These dates were chosen to match those of previous studies.<sup>17,18</sup> A member of the research team (JF) attended a compulsory lecture/seminar to explain the study and distribute the questionnaires. Students were given an anonymous paper questionnaire as well as a Change4Life (<http://www.nhs.uk/change4life>) leaflet and contact details for the university's student support service. Students were not permitted to take their questionnaire home or fill it in elsewhere. Students who were absent received an email with a link to an anonymous web version of the questionnaire, with three automatic reminder emails.

Participation in the study was voluntary; no financial incentive was given. Written consent was not obtained due to the anonymous nature of the study. Students were deemed to have given consent if they completed a paper or web questionnaire.



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## Questionnaire

The questionnaire was based on one used by two of the study authors (DNB, FK) in previous studies.<sup>17 18</sup> Participants were asked about their demographics, mental health, smoking and alcohol and other substance use. The questionnaire included: the 10-item Alcohol Use Disorders Identification Test (AUDIT),<sup>19</sup> the 12-item General Health Questionnaire (GHQ)<sup>20</sup> and the Hospital Anxiety and Depression Scale (HADS).<sup>21</sup>

The AUDIT is considered to be the gold standard for alcohol screening in healthcare settings.<sup>22</sup> The tool has previously been used to screen students.<sup>23</sup> The AUDIT comprised of 10 questions and is scored on a scale of 0–40. The questions can be grouped into three domains: recent alcohol use (1–3), dependence symptoms (4–6) and alcohol-related problems (7–10).<sup>24</sup> A score of 8 or more is referred to as a positive screen and is suggestive of an underlying alcohol use disorder. A score of 8–15 is suggestive of hazardous drinking, 16–19 harmful drinking and 20 or more dependent drinking.<sup>24</sup> The AUDIT has a sensitivity and specificity of 92% and 94%, respectively.<sup>19</sup>

The 12-item GHQ can be scored in a number of different ways. We used the GHQ scoring method (0-0-1-1), which is scored on a scale of 0–12. A score of 2 or more is suggestive of an underlying psychiatric disorder.<sup>20</sup>

The HADS anxiety and depression components are scored separately on scales of 0–21. A score of 8 or more for either component is suggestive of a possible anxiety or depressive disorder.<sup>21 25</sup>

The web version of the questionnaire was constructed using the Qualtrics platform (Qualtrics, Provo, Utah, USA). Both versions of the questionnaire were set out in the same manner.

## Measures

The main outcome measures were AUDIT score and past year or lifetime use of other substances. Secondary outcome measures included smoking, GHQ score and HADS anxiety and depression scores.

## Statistical analysis

Modifications to the raw data were limited to algebraic operations, continuous to categorical transformations and the combining of categories. Basic descriptive statistics were obtained to characterise demographics, mental health, smoking, alcohol use and other substance use.

Logistic regression analysis was used to examine factors associated with having a possible alcohol use disorder, as defined by an AUDIT score of 8 or more. We developed a model based on the results of two studies of medical students which found evidence of associations between smoking and cannabis use and alcohol misuse.<sup>17 18</sup> We included a term for smoking (never/ever) and a term for lifetime cannabis use (never/ever). We included terms for HADS anxiety and depression scores (0–7/8–21), as the impact of participants' mental health on their alcohol use was of interest to us. The model also included demographic variables—age (continuous), ethnicity (non-white/white) and gender (female/male) (categorical). We did not use stepwise variable addition or elimination. Separate models were obtained for each year group. Goodness of fit was assessed using the Hosmer-Lemeshow test. Collinearity was measured using the variance inflation factor. Second and final year law students were excluded from this part of the analysis because of their small group sample sizes.

P values less than 0.05 were considered to be significant. Missing values were excluded from statistics and statistical tests.

All analyses were carried out using SPSS software V.23 and V.24 (IBM, Armonk, New York, USA).

## RESULTS

### Study sample

The questionnaire was completed by 1242 of 1577 (78.8%) eligible medical and law students. The response rates for first, second and final year medical students were 100% (313/313), 94.5% (311/329) and 74.0% (265/358), respectively. The response rates for first, second and final year law students were 85.9% (201/234), 54.5% (110/202) and 29.8% (42/141), respectively. We were unable to determine whether survey respondents differed from non-respondents due to the anonymous nature of the study.

### Demographics

Demographic details are presented in [table 1](#). We compared our sample to the corresponding Higher Education Statistics Agency demographic profiles for 2013/14.<sup>26</sup> The percentages of female students in all medical student and the first and second year law student groups were similar to the UK averages of 56.2% for medical/dental students and 60.5% for law students, respectively. The percentage of female final year law students was higher in our sample. The percentages of ethnic minority background students were lower among final year medical and second year law students, compared with the UK averages of 32.5% for medical/dental students and 33.3% for law students.

### Mental health

Participant GHQ and HADS scores are presented in [table 1](#). Over half of first and final year medical students (first year 50.2%, second year 45.3%, final year 54.9%) and all law student groups (first year 54.0%, second year 56.8%, final year 68.4%) had a GHQ score suggestive of a psychiatric disorder. Over one-third of medical students (first year 34.4%, second year 35.6%, final year 46.3%) and approximately half or more of law students (first year 47.2%, second year 52.7%, final year 59.5%) had a HADS anxiety score suggestive of a possible anxiety disorder. Over one-tenth of final year medical (first year 7.3%, second year 8.5%, final year 13.0%) and second and final year law students (first year 9.4%, second year 13.5%, final year 10.8%) had a HADS depression score suggestive of significant depression.

More second and final year medical students (first year 2.4%, second year 7.7%, final year 8.8%) were prescribed sedatives or antidepressants in the past year, compared with law students (first year 4.8%, second year 5.4%, final year 2.7%).

### Smoking

Figures for smoking are presented in [table 2](#). The prevalence of current smoking was lower among medical students (first year 2.6%, second year 4.8%, final year 3.5%), compared with law students (first year 10.6%, second year 19.0%, final year 12.5%).

### Alcohol use

Participant AUDIT scores are presented in [table 2](#). Over half of first and second year medical students (first year 53.1%, second year 59.6%, final year 35.9%) scored positive for an alcohol use disorder, compared with over two-thirds of first and second year law students (first year 67.2%, second year 69.5%, final year 47.4%). More than one-tenth of first and second year law students had scores indicative of alcohol dependence. Median AUDIT scores were lower among medical students (first year 8,

**Table 1** Demographics and mental health, by group and year

Variable	Values	Medicine first year, n (%)	Medicine second year, n (%)	Medicine final year, n (%)	Law first year, n (%)	Law second year n (%)	Law final year, n (%)
Age	≤19	251 (85.7)	71 (24.8)	0 (0)	155 (83.3)	28 (30.4)	1 (2.7)
	20–24	36 (12.3)	200 (69.9)	164 (66.7)	27 (14.5)	63 (68.5)	33 (89.2)
	25–29	5 (1.7)	11 (3.8)	72 (29.3)	4 (2.2)	0 (0)	3 (8.1)
	30–34	0 (0)	3 (1.0)	8 (3.3)	0 (0)	1 (1.1)	0 (0)
	≥35	1 (0.3)	1 (0.3)	2 (0.8)	0 (0)	0 (0)	0 (0)
Gender	Female	149 (50.9)	149 (52.1)	141 (56.9)	115 (61.8)	57 (62.0)	30 (78.9)
	Male	144 (49.1)	137 (47.9)	107 (43.1)	71 (38.2)	35 (38.0)	8 (21.1)
Ethnicity	White	209 (71.3)	216 (75.8)	199 (80.2)	140 (75.7)	82 (89.1)	29 (78.4)
	Black	8 (2.7)	1 (0.4)	8 (3.2)	7 (3.8)	1 (1.1)	1 (2.7)
	Asian	48 (16.4)	35 (12.3)	19 (7.7)	16 (8.6)	1 (1.1)	3 (8.1)
	Chinese	11 (3.8)	15 (5.3)	11 (4.4)	14 (7.6)	2 (2.2)	3 (8.1)
	Mixed	14 (4.8)	15 (5.3)	10 (4.0)	5 (2.7)	4 (4.3)	1 (2.7)
	Other	3 (1.0)	3 (1.1)	1 (0.4)	3 (1.6)	1 (1.1)	0 (0)
	Not known	0 (0)	0 (0)	0 (0)	0 (0)	1 (1.1)	0 (0)
GHQ	0–1	145 (49.8)	156 (54.7)	111 (45.1)	86 (46.0)	38 (43.2)	12 (31.6)
	2–12	146 (50.2)	129 (45.3)	135 (54.9)	101 (54.0)	50 (56.8)	26 (68.4)
HADS-Anxiety	0–7	189 (65.6)	181 (64.4)	132 (53.7)	95 (52.8)	43 (47.3)	15 (40.5)
	8–10	54 (18.8)	48 (17.1)	56 (22.8)	46 (25.6)	23 (25.3)	10 (27.0)
	11–21	45 (15.6)	52 (18.5)	58 (23.6)	39 (21.7)	25 (27.5)	12 (32.4)
HADS-Depression	0–7	267 (92.7)	259 (91.5)	214 (87.0)	163 (90.6)	77 (86.5)	33 (89.2)
	8–10	12 (4.2)	15 (5.3)	17 (6.9)	12 (6.7)	8 (9.0)	2 (5.4)
	11–21	9 (3.1)	9 (3.2)	15 (6.1)	5 (2.8)	4 (4.5)	2 (5.4)

GHQ, General Health Questionnaire; HADS, Hospital Anxiety and Depression Scale.

second year 9, final year 6) compared with law students (first year 11, second year 10, final year 7).

A breakdown of AUDIT scores is given in online supplementary table 1. The higher scores among second year medical students appear to be driven by higher typical quantities, more frequent impaired control over drinking and increased salience of drinking and a greater burden of alcohol-related problems (apart from injuries). The higher scores among first year law students appear to be driven by greater proportions of these students reporting drinking four or more times a week, typically drinking seven or more drinks and weekly or almost daily heavy drinking compared with medical students. Higher scores among second year law students appear to be driven by a wider range of reported behaviours. Greater proportions of law students in all three year groups reported recent alcohol-related injuries compared with medical students.

### Other substance use

Approximately one-quarter of medical students (first year 26.4%, second year 28.4%, final year 23.7%) and over one-third

of first and second year law students (first year 39.1%, second year 42.4%, final year 18.9%) reported other substance use within the past year (table 3). Cannabis was the most commonly used substance. The second and third most commonly used substances were cocaine, ecstasy and nitrous oxide. The prevalence of lifetime use of other substances was highest among final year medical (first year 35.1%, second year 39.1%, final year 57.0%) and first and second year law students (first year 45.7%, second year 52.7%, final year 26.3%). The three most commonly used substances were the same as for past year use.

### Regression analysis

Among first year medical and first year law students, age, cannabis use, ethnicity and smoking were significantly associated with having a possible alcohol use disorder (AUDIT ≥ 8) (table 4). Among second year medical students, cannabis use, ethnicity and smoking were significant. Among final year medical students, only cannabis use and HADS depression score were significant. All significant associations were positive apart from those for age and HADS depression score.

**Table 2** Smoking and alcohol use, by group and year

Variable	Values	Medicine first year, n (%)	Medicine second year, n (%)	Medicine final year, n (%)	Law first year, n (%)	Law second year, n (%)	Law final year, n (%)
Smoking	Never	171 (56.4)	131 (44.9)	101 (39.6)	72 (38.1)	32 (32.0)	15 (37.5)
	Tried a few	117 (38.6)	136 (46.6)	129 (50.6)	85 (45.0)	44 (44.0)	18 (45.0)
	Ex-regular	7 (2.3)	11 (3.8)	16 (6.3)	12 (6.3)	5 (5.0)	2 (5.0)
	Current	8 (2.6)	14 (4.8)	9 (3.5)	20 (10.6)	19 (19.0)	5 (12.5)
AUDIT score	Negative (0–7)	137 (46.9)	113 (40.4)	159 (64.1)	60 (32.8)	29 (30.5)	20 (52.6)
	Hazardous (8–15)	128 (43.8)	120 (42.9)	84 (33.9)	71 (38.8)	43 (45.3)	16 (42.1)
	Harmful (16–19)	16 (5.5)	25 (8.9)	2 (0.8)	22 (12.0)	13 (13.7)	1 (2.6)
	Dependence (20–40)	11 (3.8)	22 (7.9)	3 (1.2)	30 (16.4)	10 (10.5)	1 (2.6)
	Positive (8–40)	155 (53.1)	167 (59.6)	89 (35.9)	123 (67.2)	66 (69.5)	18 (47.4)

AUDIT, Alcohol Use Disorders Identification Test.

**Table 3** Other substance use, by group and year

Variable	Values	Medicine first year, n (%)	Medicine second year, n (%)	Medicine final year, n (%)	Law first year, n (%)	Law second year, n (%)	Law final year, n (%)
Any	Past year	78 (26.4)	81 (28.4)	59 (23.7)	72 (39.1)	39 (42.4)	7 (18.9)
	Lifetime	104 (35.1)	110 (39.1)	142 (57.0)	84 (45.7)	49 (52.7)	10 (26.3)
Amphetamines	Past year	5 (1.7)	2 (0.7)	7 (2.8)	9 (4.9)	8 (8.8)	1 (2.7)
	Lifetime	7 (2.4)	8 (2.9)	17 (6.9)	7 (3.8)	8 (8.7)	2 (5.3)
Anabolic steroids	Past year	1 (0.3)	0 (0)	0 (0)	0 (0)	0 (0)	0 (0)
	Lifetime	1 (0.3)	0 (0)	1 (0.4)	2 (1.1)	0 (0)	0 (0)
Benzodiazepines or Z-drugs	Past year	5 (1.7)	4 (1.4)	6 (2.4)	3 (1.6)	3 (3.3)	1 (2.7)
	Lifetime	6 (2.0)	4 (1.4)	13 (5.3)	3 (1.7)	3 (3.3)	0 (0)
Cannabis	Past year	66 (22.4)	68 (23.9)	46 (18.5)	56 (30.4)	34 (37.4)	6 (16.2)
	Lifetime	89 (30.3)	99 (35.2)	132 (53.0)	74 (40.4)	47 (50.5)	10 (26.3)
Cathinones	Past year	1 (0.3)	3 (1.1)	1 (0.4)	3 (1.6)	3 (3.3)	0 (0)
	Lifetime	3 (1.0)	7 (2.5)	16 (6.6)	3 (1.7)	4 (4.4)	0 (0)
Cocaine	Past year	12 (4.1)	11 (3.9)	13 (5.3)	14 (7.7)	13 (14.3)	3 (8.1)
	Lifetime	12 (4.1)	12 (4.3)	37 (15.1)	17 (9.3)	12 (13.0)	3 (7.9)
Ecstasy	Past year	18 (6.1)	27 (9.5)	11 (4.4)	20 (10.9)	18 (20.0)	4 (10.8)
	Lifetime	23 (7.9)	32 (11.4)	34 (13.8)	24 (13.2)	24 (25.8)	6 (15.8)
GBL or GHB	Past year	2 (0.7)	1 (0.4)	1 (0.4)	0 (0)	1 (1.1)	0 (0)
	Lifetime	3 (1.0)	1 (0.4)	0 (0)	0 (0)	1 (1.1)	0 (0)
Ketamine	Past year	6 (2.0)	6 (2.1)	4 (1.6)	7 (3.8)	9 (10.0)	1 (2.7)
	Lifetime	6 (2.1)	9 (3.2)	19 (7.8)	8 (4.4)	10 (10.9)	2 (5.3)
LSD	Past year	6 (2.1)	0 (0)	3 (1.2)	5 (2.7)	3 (3.3)	1 (2.8)
	Lifetime	7 (2.4)	1 (0.4)	4 (1.7)	7 (3.9)	4 (4.3)	2 (5.3)
Mushrooms	Past year	9 (3.1)	13 (4.6)	1 (0.4)	5 (2.7)	4 (4.4)	2 (5.4)
	Lifetime	12 (4.1)	18 (6.5)	21 (8.6)	6 (3.3)	8 (8.7)	2 (5.3)
Nitrous oxide	Past year	26 (8.9)	26 (9.2)	11 (4.5)	29 (15.8)	10 (11.2)	3 (8.1)
	Lifetime	30 (10.2)	31 (11.1)	22 (9.1)	29 (15.9)	10 (11.1)	2 (5.3)
Opioids	Past year	2 (0.7)	1 (0.4)	1 (0.4)	1 (0.6)	0 (0)	0 (0)
	Lifetime	4 (1.4)	4 (1.4)	5 (2.1)	3 (1.7)	0 (0)	0 (0)
Piperazines	Past year	2 (0.7)	0 (0)	0 (0)	0 (0)	2 (2.2)	0 (0)
	Lifetime	2 (0.7)	0 (0)	0 (0)	0 (0)	2 (2.2)	0 (0)
Synthetic cannabinoids	Past year	1 (0.3)	1 (0.4)	0 (0)	4 (2.2)	2 (2.2)	0 (0)
	Lifetime	1 (0.3)	2 (0.7)	1 (0.4)	1 (0.6)	4 (4.4)	0 (0)

GBL, gamma butyrolactone; GHB, gamma hydroxybutyric acid; LSD, lysergic acid diethylamide.

## DISCUSSION

We found that 53%, 60% and 36% of first, second and final year medical students, respectively, scored positive for an alcohol use disorder. This compares to 57% and 47% for second and final year students, respectively, in a previous UK study.<sup>27</sup> In contrast, one longitudinal UK study found that the prevalence of alcohol misuse increased over time.<sup>18</sup> Our findings suggest that medical students are less likely to engage in drinking patterns suggestive of an alcohol use disorder, compared with law students. The results of our regression analyses suggest that a culture of drinking among university students may lead to more homogenised patterns of alcohol consumption among those with differing backgrounds. This is in keeping with previous research which suggests that some students come to university with pre-existing high levels of alcohol misuse.<sup>17</sup>

We found that 26%, 28% and 24% of first, second and final year medical students, respectively, reported using other substances within the past year. Cannabis was by far the most commonly used substance. These figures are similar to those found for cannabis use in two UK studies<sup>17 18</sup> but lower than the 33% reported for illicit substance use among the students in another UK study.<sup>28</sup> Our findings suggest that the prevalence of other substance use among medical students is less than that

of the law students at the same university. This suggests that perhaps medical students are more aware of the possible dangers of other substance use. Indeed, we found that the prevalence of novel psychoactive substance use, apart from nitrous oxide, was low.

The prevalence of a possible anxiety disorder was higher among the final year medical students in our study (46%) compared with a previous UK study (28%).<sup>18</sup> The prevalence of a possible depressive disorder was also higher (13% vs 5%).<sup>18</sup> Final year medical students with a HADS depression score suggestive of a possible depressive disorder were less likely to have a possible alcohol use disorder. This was not found in other UK studies.<sup>18 28</sup> The medical profession is under much strain, and it could be that stress-related mood symptoms and excessive drinking are related to these work pressures. Indeed, burnout and stress have been shown to be related to excessive drinking among medical students elsewhere.<sup>29</sup>

Study strengths include the anonymous nature of data collection and the good response rates among medical and first year law students. Study findings are comparable to previous UK studies.<sup>17 18</sup> Our study has limitations. The response rate for final year medical students was relatively low. Time pressure may have been a factor as students were surveyed the month

**Table 4** Logistic regression analysis for having a possible alcohol use disorder (AUDIT $\geq$ 8), by group and year

Variable	Medicine first year		Medicine second year		Medicine final year		Law first year	
	OR (95% CI)	P value	OR (95% CI)	P value	OR (95% CI)	P value	OR (95% CI)	P value
<b>Age</b>								
Continuous	0.72 (0.58 to 0.89)	0.002	0.92 (0.82 to 1.03)	0.161	1.02 (0.92 to 1.14)	0.724	0.71 (0.54 to 0.93)	0.013
<b>Cannabis use</b>								
Never	1 (reference)	0.035	1 (reference)	0.032	1 (reference)	0.001	1 (reference)	0.032
Ever	2.17 (1.06 to 4.48)		2.15 (1.07 to 4.34)		3.19 (1.61 to 6.33)		2.99 (1.10 to 8.14)	
<b>Ethnicity</b>								
Non-white	1 (reference)	<0.001	1 (reference)	0.003	1 (reference)	0.118	1 (reference)	<0.001
White	3.58 (1.84 to 6.98)		2.70 (1.41 to 5.15)		1.96 (0.84 to 4.55)		6.60 (2.56 to 16.99)	
<b>Gender</b>								
Female	1 (reference)	0.613	1 (reference)	0.510	1 (reference)	0.089	1 (reference)	0.716
Male	1.16 (0.65 to 2.08)		1.21 (0.69 to 2.13)		1.68 (0.92 to 3.07)		1.17 (0.50 to 2.77)	
<b>HADS-Anxiety</b>								
0–7	1 (reference)	0.064	1 (reference)	0.840	1 (reference)	0.101	1 (reference)	0.799
8–21	0.54 (0.28 to 1.04)		0.94 (0.50 to 1.75)		1.69 (0.90 to 3.17)		1.12 (0.48 to 2.60)	
<b>HADS-Depression</b>								
0–7	1 (reference)	0.575	1 (reference)	0.968	1 (reference)	0.017	1 (reference)	0.966
8–21	1.46 (0.39 to 5.50)		1.02 (0.35 to 2.96)		0.28 (0.10 to 0.80)		1.03 (0.24 to 4.39)	
<b>Smoking</b>								
Never	1 (reference)	<0.001	1 (reference)	<0.001	1 (reference)	0.130	1 (reference)	0.031
Ever	5.80 (2.92 to 11.52)		4.10 (2.21 to 7.63)		1.77 (0.85 to 3.70)		2.66 (1.09 to 6.49)	

AUDIT, Alcohol Use Disorders Identification Test; HADS, Hospital Anxiety and Depression Scale.

before their final examinations. Also, there were no compulsory lectures during the survey period. The response rates for second and final year law students were very low. We were unable to determine whether survey non-responders differed from responders. We note that there is also the potential for recall and social desirability biases. Our figures are likely to underestimate the true prevalence of substance misuse in the context of significant social desirability bias. There may be differences between the students in our study and those from other universities, and this may limit generalisability.

The medical and law students in our sample had high levels of alcohol and other substance misuse. These students are at

risk of substance-related harm. Many students also reported anxiety symptoms. Some students' fitness to practice may be impaired as a result of their substance misuse or symptoms of psychological distress, and this may jeopardise their career progression. It is important that medical and law students with substance use or mental health problems are given the support and treatment that they need. Randomised trials are needed to determine which interventions are effective in these groups. We note that the host university has developed a cross-university multidisciplinary alcohol working group in order to drive preventive work around alcohol consumption among students and staff. This group is seen as an example of good practice in the region.

### Main messages

- ▶ The prevalence of alcohol and other substance misuse is high among medical and law students at a single UK university.
- ▶ First and second year medical students appear to be less likely to misuse substances, compared with law students at the same university.
- ▶ Further efforts are needed to reduce substance misuse and to improve the mental well-being of students.

### Current research questions

- ▶ What is the trajectory of alcohol use among those transitioning from UK medical schools to professional practice?
- ▶ How do UK medical students' attitudes toward alcohol and other substance use relate to their patterns of use over time?
- ▶ What interventions are most effective in reducing substance misuse and promoting mental well-being among medical students?

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