

Junior doctors' understanding of alcohol units remains poor

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ABSTRACT

A survey of 586 trainee doctors in Yorkshire was undertaken to ascertain current junior doctors' knowledge and understanding of alcohol units. Approximately 18% of trainees had no knowledge of alcohol units despite the fact that 82% believed they had a good knowledge. Once again, those who did not drink alcohol knew less about alcohol units than those who did. Little progress seems to have been made on this important subject since our previous survey 7 years ago. Further steps must be taken to ensure that junior doctors are taught about alcohol units during the course of their training so that they are able to counsel patients appropriately.

KEYWORDS: Alcohol units, awareness, trainee doctors, knowledge, patients

Introduction

Many people enjoy drinking alcohol without it having any deleterious effects on their health or lifestyle. However, people regularly present to a variety of health services with problems relating to alcohol consumption. Although economic recession increases abstinence from alcohol, it also increases the frequency of binge drinking.¹

Excess alcohol consumption has a significant impact on the National Health Service (NHS). Between 2010 and 2011, alcohol was responsible for 1.2 million hospital admissions (NHS Information Centre 2011) and the cost of alcohol-related ill health to the NHS in England was estimated to be £3.3 billion for the same period.² In England, 18% of the adult population (7.6 million) drink at a level that would be regarded as hazardous to their health, and another 7% (2.9 million) show evidence of some alcohol-related harm.³

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Early identification of the problem and an appropriate, non-stigmatising response from medical professionals can improve outcomes. 5–10 minutes of advice ('brief intervention') by 'competent practitioners' can be highly effective. This approach is endorsed by the National Institute for Health and Care Excellence (NICE).⁴

The effect of acute intoxication, chronic toxic effects and addictive propensity of alcohol are directly proportional to the amount of alcohol consumed. The quantity of alcohol is measured in units instead of 'standard drinks' because the strength of alcohol and size of the measures vary widely. It is important that the public at large understand alcohol measurements in units, but it is crucial that junior doctors also understand alcohol units because they need to be in a position to counsel their patients appropriately.

In our previous survey in 2005,⁵ we found that just over half (58%) of the doctors (hospital doctors and general practitioners

Box 1. The study questionnaire.

- 1 Do you drink alcohol? Yes/No
- 2 Do you understand alcohol measurement in units? Yes/No
- 3 What is the recommended maximum **DAILY** alcohol intake in units for:
Males ... units
Females ... units
'Don't know'
- 4 How many alcohol units does a 750 ml bottle of wine (12%) contain? ... units
- 5 Please calculate the **WEEKLY** consumption of alcohol in units for the following four drinking patterns:
(a) One 750 ml bottle of whisky (40%) per week ... units
(b) 3 pints of lager (4%) daily ... units
(c) 1 glass (200 ml) of wine (13%) twice daily ... units
(d) 2 large (100 ml each) sherries (20%) 3 days a week ... units
- 6 Please state your grade and your year of training (please circle):
GPVTS trainee Year 1, 2, 3
Foundation trainee year 1, 2
Hospital specialist trainee year 1, 2, 3, 4, 5, 6, 7, 8

GPVTS = general practice vocational trainees.

[GPs] surveyed in the Yorkshire and Humber region had some knowledge of alcohol units. We wanted to review the situation in a current cohort of junior doctors given that alcohol has been incorporated into the core competences of postgraduate curricula.⁶

Methods

Between November 2011 and March 2012, we undertook a survey of foundation year (FY) doctors, general practice vocational trainees (GPVTS), core medical trainees (CT) and specialist trainees in medical specialties (STs) working in the Yorkshire and Humber region. We asked them if they could complete the questionnaire (Box 1) during one of their training days. The questionnaires, with an accompanying information sheet, were distributed at the beginning of the day and trainees were asked not to confer or obtain assistance or use electronic devices such as smartphones. They were asked to state whether they drank alcohol and whether they understood alcohol units. There then followed three further questions intended to assess their knowledge and understanding of the subject. They were asked to state their training grade at the end of the questionnaire and were reassured that their responses would remain anonymous. Completed questionnaires were collected on the same day.

The questionnaire was similar to the one used in our previous survey, but with a few modifications. Questions 1 and 2 were included in the previous questionnaire, as was question 3; however, on this occasion, in accordance with current UK guidance, we asked respondents to provide the daily, rather than weekly, recommended maximum alcohol consumption in units. Question 4 was similar, but on this occasion we used a different strength of alcohol from the last questionnaire. Question 5 differed from the last survey in that we asked respondents to give the correct answer to four fictitious drinking patterns, whereas in the previous survey respondents had to calculate the highest and lowest amount of units of these patterns. Although the volumes quoted for wine and sherry in question 5 do not equate to 'standard measures', we felt that using these volumes would help facilitate calculations.

Results and analysis

A total of 699 questionnaires were distributed and 586 (84%) returned. Three trainees did not state their training grade. We grouped the trainees into three groups according to their level of experience: Group 1: the first 2 years of training (FY1 and 2), Group 2: the next 2 years of training (CT1 and 2, and GPVTS1 and 2) and Group 3: higher trainees (GPVTS3, ST3 and above). The total number in each group was 320, 184 and 79, respectively. Of the respondents, 433 (74%) drank alcohol (one trainee did not specify this in their response). Ninety trainees indicated they did not know about alcohol units and another 17 did not state whether they did or did not know about alcohol units; for the purpose of analysis, we have assumed that they too did not have this knowledge. The results of questions 3 to 5 are shown in Table 1.

Question 3 (Q3): maximum daily allowance

Despite asking for the daily limit (and putting this in bold and capital letters), 137 stated the weekly limit in their response. Therefore, we accepted both the daily and weekly limits (if correct) as a correct response. In total, 447 respondents got

Table 1. Responses to the three 'clinical' questions.

Question number	Correct response	Wrong response
Q3	431 (74%)	155 (26%)
Q4	180 (31%)	406 (69%)
Q5	152 (26%)	434 (74%)

the correct answer for males (3–4 units per day; 21 units per week) 484 for females (2–3 units per day; 14 units per week). In addition, 431 out of 586 trainees (74%) gave the correct amount for both genders and scored 1 point.

Question 4 (Q4): total units in a bottle of wine

A 750 ml bottle of 12% wine contains 9 units of alcohol and 180 trainees (31%) answered this correctly, scoring 1 point. Eighteen responded with less than 5 units and eight responded with over 18 units.

Question 5 (Q5): the vignettes

In total, 250 respondents answered the amount of alcohol in a bottle of whiskey (30 units) correctly. We accepted a range of 40–60 units for the lager drinker because this was a difficult calculation given that the volume was given in pints (the correct answer is 47.6 units) and 342 responded within this range. The correct amount for the wine drinker was 36.4 units. We accepted values between 36 and 37 units, and 69 trainees gave a correct response for the sherry drinker (270 responses were correct [12 units]). We gave respondents a score of 1 point for this question if they gave the correct answer to at least three of the four vignettes and 152 (26%) achieved this.

Knowledge of alcohol units and experience

We compared the levels of knowledge of alcohol in the three groups to determine whether there was an improvement in the level of knowledge with 'seniority' and increased training. The results are shown in Table 2. We found a positive correlation of knowledge with experience (Fisher's exact test, $p < 0.01$). Of the three trainees who did not state their grade, two scored 2 points and one scored 3 points (their results are not included in Table 2).

Knowledge of alcohol units and drinking behaviour

We found that non-drinkers had a significantly lower knowledge about alcohol units than those who drank alcohol (Fisher's exact test, $p < 0.01$) (Table 3). The trainee who did not state whether he/she drank alcohol scored 1 point.

Table 2. Experience and knowledge score.

Score	0	1	2	3
Group 1 (n=320)	55 (17%)	152 (48%)	79 (25%)	34 (11%)
Group 2 (n=184)	45 (24%)	91 (49%)	26 (14%)	22 (12%)
Group 3 (n=79)	6 (8%)	27 (34%)	26 (33%)	20 (25%)

Table 3. Drinking habit versus knowledge score.

Drinker	Total score 0	Total score 1	Total score 2	Total score 3
No (n=152)	54 (35%)	69 (45%)	16 (11%)	13 (9%)
Yes (n=433)	54 (12%)	200 (46%)	115 (27%)	64 (15%)

Knowledge of alcohol units and self-reported knowledge

In total, 17 respondents did not indicate whether they were familiar with alcohol units and, for the purpose of the analysis, we assumed that they did not. We found a positive correlation (Table 4) between respondents claiming to know about alcohol units and the results of the actual questionnaire (Fisher's exact test, $p < 0.01$).

Discussion

Alcohol is the third biggest lifestyle risk factor for disease and death in the UK after smoking and obesity. An overwhelming majority (83%) of those who drink more than the recommended guidelines do not think that their drinking is putting their long-term health at risk and, in contrast to most smokers, who want to quit, only 18% of those who drink alcohol in excess have a desire to change their behaviour.⁷

The UK Government has amended the maximum recommended alcohol limit from a weekly consumption figure to a daily one, with the intention of discouraging binge drinking (defined as more than 8 units and 6 units in single session in males and females, respectively). However, the current daily recommended limit of 3–4 units for males and 2–3 units for females also recommends that anyone who has drunk heavily in one session should then abstain from alcohol for 48 hours. Eight trainees in our survey quoted figures of 28 units for males and 21 units for females, assuming that people could drink the maximum recommended limit on a daily basis. The latest Government Alcohol Strategy (Home Office Consultation, November 2012) focuses on binge drinking to reduce anti-social behaviour, overshadowing the health issues from chronic misuse. In the UK, liver disease increased by 25% from 2001 to 2009 and 37% of these cases were alcohol related.⁷ Harmful alcohol use and dependence are currently under-identified by health professionals. Out of 1.6 million people in England who are alcohol dependent, only around 6% receive treatment per year.⁸ Clinical staff in all parts of the NHS need better training on alcohol interventions. Thus, NICE has incorporated such training in guidelines on the management of alcohol-related chronic physical complications⁹ and mental health problems.¹⁰ However, hand in hand with these strategies is a need to ensure that all health professionals who work with patients who might or do misuse alcohol are fully

Table 4. Self-reported knowledge versus actual score.

Understand units	Total score 0	Total score 1	Total score 2	Total score 3
No (n=107)	44 (41%)	46 (43%)	11 (10%)	6 (6%)
Yes (n=479)	64 (13%)	224 (47%)	120 (25%)	71 (15%)

conversant with the concept of alcohol units, so that they are in a good position to provide appropriate counselling.

Doctors are particularly well placed to prevent alcohol-related problems. The General Medical Council (GMC) expects doctors to communicate appropriately when discussing sensitive issues, such as alcohol consumption, with patients.¹¹ In 2005, we conducted a survey of 445 doctors (including GPs and consultant physicians as well as junior doctors) in the Yorkshire and Humber region⁵ and found that, although 79% drank alcohol (similar to the general population), only 18% were fully conversant with alcohol units, despite many respondents feeling that they had a good knowledge of the subject. At that time, we felt that it was vital that more prominence was given to education about alcohol, including alcohol units, in undergraduate and postgraduate medical curricula. The Academy of Medical Royal Colleges developed consensus across 13 medical colleges and faculties and incorporated the subject of alcohol into core competencies for trainee doctors.¹² Furthermore, doctors' knowledge, skills and behaviour and/or attitudes towards alcohol-related problems are also included in the UK Foundation programme curriculum,¹³ as well as in core medical training and higher specialist training in general internal medicine.

However, despite alcohol being included in postgraduate medical curricula and within our regional teaching programmes, many of the junior doctors in our study had poor knowledge of alcohol units. Therefore, there is a need to ascertain precisely what is included within these teaching sessions and whether they include the calculation of alcohol units. It is also worrying that many trainees overestimated their knowledge and understanding of the subject, with 82% (479/586) of the doctors participating in our study feeling that they understood alcohol units but only 18% (108/586) having no knowledge of the subject. Of particular concern is that doctors do not realise they lack this knowledge or have misplaced confidence in their knowledge of the subject (ie scoring 0 on questions 3–5). We found that 13% (64 of 469) scored 0 points despite believing that they had a good knowledge. Our results are not very different from those of a small survey conducted by the Department of Health in 2008, when 82% of the general population surveyed believed that they knew how to calculate alcohol units when in fact 77% were unable to calculate how many units were in a large glass of wine.³ The calculation of alcohol units is relatively simple: percentage alcohol by volume (ABV) equals the number of units of alcohol in 1 l. A useful ready reckoner is as follows: a pint of beer or lager is equivalent to 2.5 units, a 135 ml glass of wine to 1.5 units, a 175 ml glass of wine to 2.0 units, a 250 ml glass of wine to 3 units and a small measure of spirits is equivalent to 1 unit.

In our previous survey, we found that trainee doctors in Yorkshire had a poor level of knowledge about alcohol units⁵ and the level of knowledge remained poor in this current cohort of trainees. As in our previous survey, we also found that the level of knowledge improved with time and 'seniority'.

It is vital that all junior doctors receive appropriate education about alcohol during their training so that they are in a good position to counsel patients appropriately. Despite alcohol now being included in postgraduate curricula training and in teaching sessions, we found no significant improvement in knowledge since the last survey we undertook 7 years previously. The content of teaching sessions needs to be

reviewed to ensure that junior doctors are being educated on how to calculate alcohol units and so that e-learning modules could be developed on this subject. Doctors need to recognise the potential limitations of their knowledge and the availability of online calculators and smartphone apps that they can use to facilitate accurate calculations. Alcohol and the calculation of alcohol units must be given more importance and significance during undergraduate and postgraduate training to ensure a medical workforce that is well conversant on this important topic and in a good position to counsel patients appropriately.

Strengths and limitations

This was an opportunistic study that enabled a high return with minimal expense. Although self reported, the results show a similar drinking pattern to the British population (74% vs 78%). We have assumed that participants did not confer with colleagues or use electronic devices. The training sessions were selected in such a way that individual trainees only saw the questionnaire once but that all could potentially be included in the survey. We conducted the current survey 7 years after the first to avoid approaching the same group of trainees. Although we modified some of the questions and scoring we do not feel that this materially affected the findings of our study; however, it precluded specifically comparing the results to all of the questions. Although teaching on alcohol has been included in teaching programmes within our own deanery the authors do not know exactly what these sessions covered, whether the teaching provided in each session was consistent or whether trainees attended these sessions; this was not encompassed within the study or survey. ■

Contributors and sources

Abhay K Das, the lead author, organised the repeat survey and is the guarantor of the paper. Oliver J Corrado redesigned the questionnaire and helped design the protocol and prepare the manuscript. Zuzanna Sawicka, Safirul Haque, Sujo Ananthnam and Lopa Das distributed the questionnaires and information sheets, and also collected and collated the responses. Robert West provided statistical support. The guarantor accepts the full responsibility for the conduct of the survey, had access to the data and controlled the decision to publish.

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Ethical approval

The study was approved by Leeds East office of Yorkshire and Humber Research Ethics Committee (11/YH/0294).

Conflict of interest statement

All of the authors declare that they have no competing interests. Oliver J Corrado was the Director of the West Yorkshire Foundation School from 2005 to 2012 and has a particular interest in postgraduate medical education.

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