POLICY
Evaluation of a New Core Curriculum on Alcohol Use Disorders for Undergraduate Medical Students

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Abstract — Aims: This study was aimed to review and rewrite the undergraduate curriculum on alcohol use disorders, implement the changes and assess for any evidence of an improvement in knowledge. Methods: A three-stage process was used to review the old curriculum and a new one was designed around the five undergraduate years. Students’ opinions were sought about the acceptability of the new curriculum using a questionnaire, to which 93 responded and 70 volunteers were objectively assessed using an examination based on questions from the text of the Medical Students’ Handbook on Alcohol and Health. Results: There was no evidence of any improvement in the students’ knowledge using the old curriculum. After teaching with the new curriculum, examination scores significantly increased (P < 0.0001). There was no difference between the sexes. The new curriculum was assessed as acceptable to the students. Conclusion: This new curriculum reflects the need for a new teaching method and not only offers improved teaching, but also produces a generation of doctors equipped to identify alcohol-related problems and to deliver brief interventions, helping to reduce the projected consequences of alcohol abuse and the associated burden on the health service.

INTRODUCTION
Alcohol use disorders (AUD) are a subject of increasing importance in the undergraduate medical curriculum because of the increasing prevalence of alcohol abuse. AUD place a huge burden on society and, in particular, on the healthcare system, and this problem has been recognised by the UK politicians as requiring a new strategy. Alcohol is estimated to cost the UK public sector £20 billion a year and account for 7–40% of non A&E hospital admissions, 20% of primary healthcare consultations and 70% of A&E visits between midnight and 5 am (Royal College of Physicians, 2001).

World Health Organisation recommended the top five best strategies to reduce alcohol-related harm. These were taxes, advertising ban, screening and brief interventions, weekend closing day and random breath tests (Chisholm et al., 2004). Analysis of the current UK provisions identified a number of deficits, specifically in lack of training of healthcare professionals in the ability to identify alcohol misuse and to perform brief interventions to those at risk. There have been several meta-analyses of the evidence supporting brief interventions, one analysing six trials in primary care demonstrating a 24% drop in consumption (95% CI 18–31%) (Freemantle et al., 1993) and another looking at 56 trials, 34 of which were in non-treatment seekers and demonstrated cost savings at 4 years and a consistent positive effect with the number needed to treat as 8–12 (Moyer et al., 2002). This compares favourably to smoking intervention, where the number needed to treat is 20. Kaner looked at 29 trials in primary care and A&E and demonstrated consistent positive effects, with the strongest evidence being in men and no difference between short 5–10 min interventions compared to longer counselling (Kaner et al., 2007). The only negative study looked at eight trials in secondary care, which noted equivocal findings (Emmen et al., 2004). The most recent trial reported by Holloway et al. in 2007 reported positive effects (Holloway et al., 2007).

In line with the recommendations from both the Office of the Chief Scientist and current thinking, emphasising the development of an adaptable curriculum, increasing the level and importance of alcohol teaching and integrating this through the entire undergraduate programme, a three-stage process was used to inform the design of the new curriculum (Office of the Chief Scientist, 1987; Ritson, 1990). Alcohol teaching has been an area of undergraduate medical teaching that has sometimes been ignored or represented by only a few hours throughout an entire 5-year syllabus. Twenty-eight British medical schools were surveyed (deans, 100% response rate; heads of psychiatry, 71% response rate; and addiction specialists, 46% response rate) and reported an average of 6 h formal training in substance misuse over the entire course (Crome and Shaikh, 2004).

(1) Reviewing the old curriculum: this involved interviews and discussions with current educators, doctors who had recently completed the old curriculum and medical students who were in the midst of their training. How much time was spent on the topic was noted, with particular weight given to the recognition and treatment of alcohol misuse. Overall, they reported that in their first year students received 5% of their AUD teaching, equating to less than an hour of teaching, 35% in their second and third year each (~4.5 h), 20% in their fourth (2.5 h) and 5% in their fifth.

(2) Multi-professional focus groups: the diverse design team held focus group interviews with representatives of the University, the Tayside Psychiatry Department, Specialist Community Nurses, the Gastroenterology and Hepatology Department and the Specialist Alcohol Prevention Services. These meetings highlighted the strengths and weaknesses of the current programme as perceived by local practitioners and facilitators of the curriculum. They also identified how best to make changes incorporating preferred teaching techniques and different styles of information provision.
In addition to the literature review and the information cited, another contributory source to base the curriculum design on was the Morgan et al. (2006). This is a comprehensive collaboration by a group of experts in this area, from an independent organisation and registered charity, on what medical students should know on this topic. Its recommendations include facts about alcohol, metabolism, alcohol-related harm, assessment, brief interventions and management. A further contributory source was the work by Bien et al. (1993), which outlines FRAMES (Feedback; Responsibility; Advice; Menu; Empathy; Self-efficacy) as the essential components of motivational interviewing and a brief intervention.

Questionnaires completed by the medical students identified that they perceived the majority of their teaching to occur in the third year during psychiatry teaching. Students reported that they received 25% of their AUD teaching in their first year, a mere 6% in their second, 54% in their third, 15% in their fourth year and no teaching at all in their final year. These results were partially supported by the curriculum reviews and multidisciplinary groups, and it was noted that while it was important for students to be aware of treatment, social and psychological support for those already drinking in hazardous quantities, the students did not have the clinical skills at this stage to be able to carry out this support. Furthermore, the students were not being furnished with the skills to perform a brief intervention, which can be applied to more than just AUD, but in counselling about smoking, obesity and drug use. A London-based questionnaire of health professionals in a psychiatric teaching hospital found that while it was important for students to be aware of treatment, social and psychological support for those already drinking in hazardous quantities, the students did not have the clinical skills at this stage to be able to carry out this support. Furthermore, the students were not being furnished with the skills to perform a brief intervention, which can be applied to more than just AUD, but in counselling about smoking, obesity and drug use. A London-based questionnaire of health professionals in a psychiatric teaching hospital found that resources should be focused on teaching psychiatrists, nurses and medical and nursing students ‘the key issues of substance misuse and that this training should be clinically grounded to alleviate the perceived low levels of reported clinical training and resulting lack of confidence’ (O’Gara et al., 2005).

The new curriculum was constructed around each of the five undergraduate years and each stage was themed and built upon and reinforced the preceding stages.

1st year Alcohol and you: general awareness
2nd year Alcohol and society
3rd year Alcohol use disorders: prevention and dependency
4th year Alcohol and psychiatry
5th year Student Selected Components (SSC) addiction and dependency module

This new curriculum offered a staggered reinforced programme throughout the undergraduate period with a dedicated teaching period within each of the five undergraduate years. The changes were to be delivered in a staggered regimen over 2–3 years in small groups. In 2006 year 2 students received an additional 4 h of new curriculum input based on alcohol and society and year 3 students an additional hour of AUD prevention and dependency teaching. In 2007 as well as the year 2 and 3 programmes, additional training on brief interventions was introduced to the year 4 students and the year 1 students attended an alcohol awareness session. By 2008 all the years had the new curriculum running through the training programme including an additional SSC module available to year 5 students who demonstrated a particular interest in this area.

AIM

In this paper, we reported the early assessment of this implemented curriculum.

MATERIALS AND METHODS

Participation was voluntary and approved by Dundee University Ethics Committee.

Teaching assessment

To evaluate the acceptability of the new alcohol teaching regimen in comparison to the old regimen, students were asked to complete a Likert scale evaluation questionnaires. Ninety-three students completed this questionnaire.

Objective assessment

In total, 70 students agreed to take part in the curriculum assessment. They were from an assortment of years and were assessed using questions based on the text of the Medical Students’ Handbook on Alcohol and Health. Questions were designed and approved by a multidisciplinary team of medical educators, gastroenterologists and psychiatrists. Students were assessed in exam-like conditions and supervised by a qualified member of the University of Dundee staff. Thirty-one students who had been taught using the old curriculum were assessed, and 39 students who had received teaching using the new curriculum were also tested.

Statistics

Results were assessed for normality and tested using an unpaired t-test or a one-way ANOVA (Analysis of Variance) test.

RESULTS

Teaching assessment

Of the ninety-three students participating, 3% felt the teaching was too hard, 6% too easy and 91% just right. Twenty percent felt the teaching was too lengthy, 1% too brief and 79% felt it was the appropriate amount of teaching.

Fifty-nine percent of the students felt the teaching demonstrated the importance of alcohol abuse and effects on society and 25% were unsure. Fifty six percent of the students felt the teaching increased their knowledge, 31% felt the teaching did not increase their knowledge and the remainder were unsure.
Sixty-eight percent of students felt that the teaching demonstrated the relevance of AUD to medicine, 16% were unsure and the remainder felt the teaching failed to demonstrate the relevance of AUD to medicine.

Seventy-three percent felt that the teaching was interactive enough compared to 19% who felt it could have been more interactive.

Sixty-six percent found the DVD useful or very useful in increasing their knowledge of brief interventions, a further 25% rated the DVD as satisfactory and only 9% described the video as unhelpful.

**Objective assessment**

The results of the old curriculum were analysed according to sex and year group. The mean score for the female group was 14.29, and the mean score for the male group was 17.20. This difference was not significant ($P = 0.38$). The mean score for the first years was 15.73, for the second years 15.44 and for the third years 13.86. Using a one-way ANOVA test, there was one evidence of any significant difference ($P = 0.89$).

The assessment of the new curriculum students was compared for sex and the mean results were a score of 25.86 for the female group and 27.33 for the male group. The difference was not significant ($P = 0.56$).

The results of the assessments from both groups are shown in Fig. 1. The mean test score from the old curriculum group was 15.23 (95% confidence interval (CI) 12.12–18.33) compared to a mean of 26.54 (95% CI 24.05–29.03) in the new curriculum taught group. The means were significant between both groups ($P < 0.0001$).

**DISCUSSION**

The results, showing a lack of improvement in level of knowledge across the curriculum, support the results of Landy et al. who assessed the knowledge and attitudes to substance misuse in undergraduate British medical students from two medical schools, with a 75% response rate, and found that overall knowledge was poor amongst all students with very little improvement seen between 1st and 4th years. Attitudes to clinical practice between 1st and 4th years improved, and negative attitudes to substance misuse greatly diminished from 1st year to 4th years (Landy et al., 2005). These results support our findings that with the old curriculum knowledge levels were poor and no improvement was seen across the curriculum. However, with the current political climate and the projected consequences of current alcohol trends becoming more important, it was clear that a new curriculum was required.

This new curriculum reflects the need for a new teaching method and not only offers improved teaching, but also produces a generation of doctors equipped to identify alcohol-related problems and to deliver brief interventions helping to reduce the projected consequences of alcohol abuse and the associated burden on the health service.

The new curriculum designed to teach AUD has been subjectively and objectively demonstrated to be an improvement on the old curriculum. However, it is just a starting point; the scores achieved by the students are still a long way below the acceptable level of knowledge. The curriculum needs refining, repetition throughout the years and thorough and regular assessment to encourage learning and development amongst the students. AUD is an important area that has been neglected in undergraduate teaching for many decades, and medical schools across the country need to reassess their curriculum and find new ways to engage students and teach the skills required to address the problem of alcohol misuse.

**REFERENCES**


