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Medical student delivery of alcohol education to high school pupils: the MEDALC programme

R Alcolado and JC Alcolado

ABSTRACT – There is increasing concern about the inappropriate use of alcohol by teenagers and young adults. The objective of this study was to assess the practicality of developing an alcohol education programme for school pupils delivered by medical students. The study design was of a prospective, observational, interventional cohort study. The primary outcomes were the number of schools, school pupils and medical students participating in the programme. Secondary outcomes were quantitative and qualitative measures derived from the feedback received from the participants. Over a three-year period, 60 medical students provided alcohol education sessions to 1,780 high school pupils (aged 13–15 years) within seven schools in Wales. Strongly positive feedback was obtained from all stakeholders and all schools asked to be included in future programmes. In conclusion, medical student-delivered teaching of alcohol education programmes to school pupils appears to be feasible and welcome by schools, teachers, pupils and medical students.

KEY WORDS: alcohol, education, medical education, students

Introduction

Inappropriate alcohol usage among the general population is of growing social, political and public health concern.[1,2] In particular, there is evidence that children and teenagers are drinking more alcohol at a younger age.[3,4] This pattern of drinking is associated with an increased risk of being involved in violence,[5] sexual risk-taking behaviour,[6] hospital admissions related to alcohol intoxication,[7] and the rise of chronic alcoholic liver disease in younger patients.[8,9]

Education on the risks of alcohol abuse is often delivered in schools alongside information regarding illegal drug use and sexual behaviour (eg as part of the personal health and social education syllabus in UK high schools which cater for pupils aged 11–16 years old). Concern has been raised regarding the effectiveness of such teaching. For example, many school teachers feel poorly equipped to teach sex education and both students and teachers may feel uncomfortable dealing with sensitive issues in the framework of an ongoing academic teacher–student relationship.[10] Students also express concerns regarding confidentiality.[11] One initiative to address these problems has been the use of medical students to teach sex education in high schools.[12] For example, Sexpression is a UK-wide project where university students volunteer to provide sex education sessions to local high schools.[13] Advocates of the system point to the benefits to school children of being taught potentially sensitive subjects by people:

- other than their regular teachers
- closer to them in terms of age and lifestyle
- viewed as having specialist or professional knowledge.

School teachers are relieved of what they may perceive as an uncomfortable burden, medical students gain experience in communication skills and teaching, and medical schools engage more closely with their local communities.

The National Institute for Health and Clinical Excellence (NICE) issued guidelines in 2007 which state that alcohol education should be an integral part of the school curriculum and that schools should work with a range of local partners to support alcohol education and to ensure school interventions are integrated with community activities.[14]

Given the serious consequences of inappropriate teenage alcohol drinking, and the previously reported positive outcomes of using university students to provide sex education to school pupils, the purpose of the current study was to assess the feasibility of developing an alcohol education programme for school pupils delivered by medical students.

Methods

This was a prospective, observational, interventional cohort study. Primary outcomes were the number of schools, school pupils and medical students participating in the programme. Secondary outcomes were quantitative and qualitative measures derived from the feedback received from the participants (interest, enjoyment, appropriateness, self-rate score of alcohol knowledge).

Medical student participants were identified from those in year 3 of the five-year undergraduate medical course at Cardiff University School of Medicine. Participation was offered as a nine-week full-time 'student selected component (SSC)'. SSCs are a feature of all undergraduate courses in UK medical schools and are periods of full-time project work intended to allow students to study specific topics at a greater depth than within the core curriculum.

R Alcolado, consultant gastroenterologist, Department of Medicine, Cwm Taf Local Health Board, Royal Glamorgan Hospital, Wales;
JC Alcolado, professor of diabetes and medical education, Centre for Medical Education, Queen Mary University of London, Barts and The London School of Medicine, Whitechapel, London

The total number of places offered on the programme increased as the initiative became established. Students were offered a place on a first-come, first-served basis, with no selection for prior academic achievement or experience.

At the start of their SSC, students were asked to prepare, plan and produce teaching materials for an alcohol awareness session at a local high school. This included the preparation of teaching plans, literature, posters and interactive materials. All the students received a single short session on teaching skills. Teaching plans and materials were reviewed by one of us (RA) prior to their approval.

The teaching sessions took place at a total of seven different high schools in the local area that were specifically chosen because they serve different socioeconomic groups. The numbers of schools involved each year increased incrementally as the programme became established.

High school A was a school that teaches a total roll of 900 pupils in Welsh. Its catchment area of Rhondda Cynon Taff has one of the highest indices of social deprivation in the UK.[15] High school B was an independent (private) single-sex high school in an affluent area of Cardiff with 350 pupils. High school C was a state comprehensive school of over 1,200 pupils from a mixed catchment including relatively affluent and more socially deprived areas. School D was a state comprehensive school with 1,200 pupils serving the same deprived catchment area as School A. High school E was a large state comprehensive school of 1,200 pupils serving a deprived area of Pontypridd. High school F was a mixed-sex independent school in an affluent area of Cardiff of approx 330 pupils. High school G was a second Welsh-medium school of approximately 1,000 pupils in the relatively more affluent south of the deprived Rhondda Cynon Taff area.

The teaching intervention consisted of 90–120 minutes delivered on a single day to year 9 and/or year 10 pupils (ages: 13–15 years).

On each day, the medical students led and delivered the teaching, based on the lesson plans and teaching materials that had been previously prepared. One of us (RA) observed the sessions. School teachers were asked not to remain in any one session for longer than 10 minutes as it was felt this might hinder open discussion and impair the medical student–pupil learning interaction. However, they were encouraged to discreetly observe the sessions for shorter periods of time in order to provide feedback.

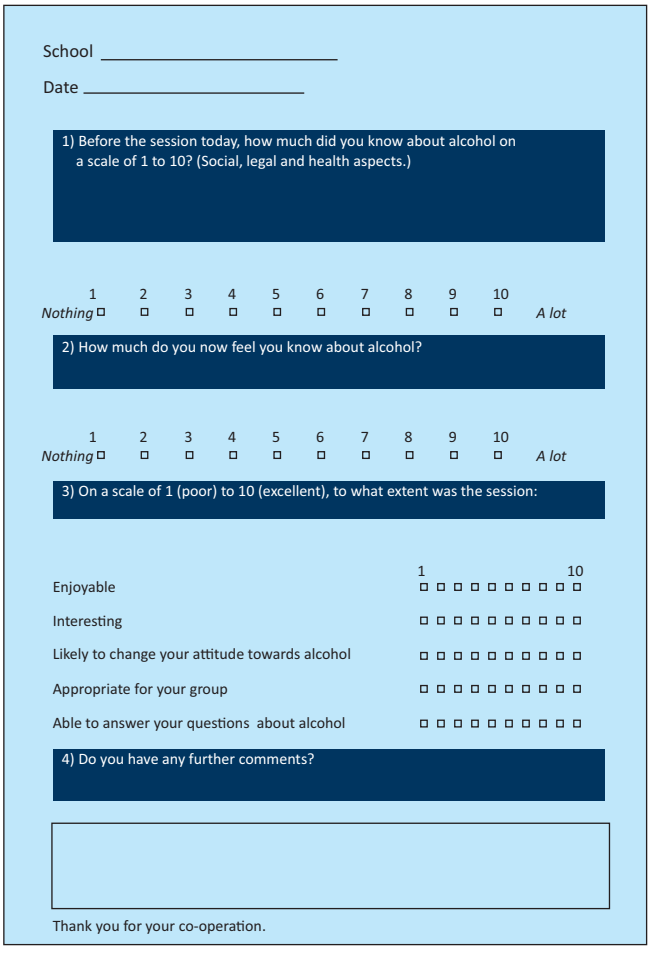
Evaluation of the intervention was obtained from several sources. The high school students were asked to fill out anonymous feedback forms regarding the sessions by the end of the school day (Fig 1). Teachers at each school were interviewed and asked to give their feedback. The medical students were required to write a 1,500-word report, which included their own reflections on the experience, and which formed the basis of a summative assessment.

Results

The number of students taking part in the SSC rose in each year (seven students in 2008, 13 in 2009, and 40 in 2010). The number of students requesting the SSC rose rapidly, and by 2010, over 12% of the eligible Year 3 group was selecting the programme.

A total of 65 planned teaching sessions were delivered, over 22 separate days, in the seven high schools between 2008 and 2010. During this three-year period a total number of 1,660 Year 9 (13–14 year old) and 120 Year 10 (14–15 year old) pupils attended one of the sessions. Sessions were specifically focused on Year 9 pupils as early feedback suggested that many were already drinking alcohol regularly by Year 10.

No high school that was approached expressed any reticence in taking part in the programme and there were few practical or administrative difficulties in organising the sessions. In general, a single teacher at each school became the key contact and arranged timetabling, room allocation and the attendance of pupils at the sessions. No expressions of concern or complaints were received from teachers, pupils or parents. In all cases, the schools were very keen to be included in the programme for subsequent years. The exact format of the teaching sessions varied from year to year but included small group sessions, practical sessions and quiz sessions. An indicative teaching plan is shown in Box 1.


School _____

Date _____

1) Before the session today, how much did you know about alcohol on a scale of 1 to 10? (Social, legal and health aspects.)

1 2 3 4 5 6 7 8 9 10

Nothing □ □ □ □ □ □ □ □ □ □ *A lot*

2) How much do you now feel you know about alcohol?

1 2 3 4 5 6 7 8 9 10

Nothing □ □ □ □ □ □ □ □ □ □ *A lot*

3) On a scale of 1 (poor) to 10 (excellent), to what extent was the session:

	1 ... 10
Enjoyable	□ □ □ □ □ □ □ □ □ □
Interesting	□ □ □ □ □ □ □ □ □ □
Likely to change your attitude towards alcohol	□ □ □ □ □ □ □ □ □ □
Appropriate for your group	□ □ □ □ □ □ □ □ □ □
Able to answer your questions about alcohol	□ □ □ □ □ □ □ □ □ □

4) Do you have any further comments?

Thank you for your co-operation.

Fig 1. Feedback form for school pupils.

Evaluation

Evaluation of the programme was based on interviews with teachers, feedback forms from school children, and the reflection of medical students in their written SSC project submissions.

Feedback from school teachers was overwhelmingly positive. Recurring themes from teachers who had observed the educational sessions were:

- being impressed by the ability of the medical students to control the classes and the high level of active participation by the school pupils
- feeling that the school pupils had been very open with the medical students in class discussions (eg concerning the amount of alcohol they were already drinking)
- observing that the school pupils and medical students appeared to relate well to each other (eg 'they seemed to understand each other', 'they got on very well together')

Box 1. Specimen lesson plan.

Section 1. Legal aspects 30–40 minutes

Introduction: 1–2 minutes.

Quiz: 10–15 minutes covering issues of drink driving, morning after driving, legalities of age and drinking, fines and convictions, sentences available for alcohol-related offences.

Activities: 15–20 minutes, using 'beer goggles' (available from PHSA Association and other educational material suppliers) including, walking along a straight line, driving radio controlled cars through an obstacle course, finding a key on the floor and unlocking a lock.

Round-up by going over posters produced by medical students to reinforce learning points: 2–3 minutes, using handouts with all the quiz questions and answers and copies of the poster materials.

Section 2. Health aspects 30–40 minutes

Introduction: 1–2 minutes.

Labelling and identifying body parts using models/labelled skeletons/posters and talking through long-term consequences using posters with pictures of brain scans, model cirrhotic livers and a foetal alcohol syndrome baby doll (12–15 minutes).

Calorie counting/matching games using laminated pictures of foods, eg cheeseburger, fries and chocolate, to match with calorie content of drinks (6–10 minutes).

Before and after photos of drinkers (famous people) emphasising the cosmetic damage done by alcohol in the short term (3–5 minutes).

Round-up and handouts (1–2 minutes).

Section 3. Social aspects 30–40 minutes

Introduction: 1–2 minutes.

'Why people drink' buzz groups, then focus on peer pressure (10 minutes).

Alcohol unit games, pouring units of 'wine', 'spirits' etc and measuring 'home-poured' drinks (10 minutes).

Scenarios including effect of Facebook pictures on future employment, alcohol-related violence, unprotected sex, stolen/lost phones money etc (10–16 minutes).

Round up, handouts and unit calculators given out (1–2 minutes).

- expressing the view that the medical students knew far more about the risks of alcohol abuse than their own knowledge (eg 'I never knew how many units of alcohol/calories were in my Baileys!').

There was evidence of wider benefit to the schools who participated in the programme. Teachers reported that pupils had been spontaneously distributing literature regarding alcohol abuse among themselves in the playground after the sessions and, in one school, a group of pupils had subsequently led an assembly about alcohol issues for the rest of the school. Another school had their report of the sessions highly praised in a subsequent Iestyn (Ofsted) report. One of the schools had been administering an attitudinal survey to its pupils for several years. Nine months after the medical student-led education sessions, the attitudinal survey revealed lower than average alcohol-related risk-taking attitudes among pupils, the first time this had been in case. Although anecdotal, teachers felt the sessions may have contributed to this result.

Feedback from the school pupils and medical students reflected the positive comments from teachers. For all schools, pupils self-rate their alcohol knowledge as significantly greater after the sessions than beforehand. In 2010, a sufficiently large enough number of school pupils participated to allow meaningful statistical analysis (by Students t-test, significance level $p<0.05$, for 2010 cohort). Pupils also scored the sessions highly on interest, enjoyment and appropriateness (Table 1). In the first year of the programme, the feedback from school pupils in Year 10 strongly indicated a desire for the sessions to have been delivered at a younger age. Discussion in the education sessions revealed that many Year 10 pupils had commenced drinking alcohol several years previously and patterns of problem drinking were already emerging. On the basis of this feedback we decided to concentrate the delivery of future sessions to Year 9 pupils.

Themes from medical student evaluation of the SSC included:

- developing greater teaching skills
- learning how to communicate medical issues to school children
- providing a service to the local community
- being outside the usual healthcare environment
- increasing personal knowledge of alcohol abuse issues.

Discussion

This study has demonstrated the feasibility of a programme where year 3 medical students provide alcohol education to high school students in the UK. Although previous studies have demonstrated the potential value of using students to teach sex education,[13] this is the first reported study of medical students delivering alcohol education to teenagers.

The programme helps meet the NICE guidelines for alcohol education in schools, although the scheme would need to be expanded to cover the entire age range of children and provision should still be made available to refer children with specific problem drinking to external agencies.

Table 1. Evaluation of teaching sessions by school pupils (results shown are the responses from the anonymous questionnaire used in all seven schools in 2010, response rate >95%).

School	A	B	C	D	E	F	G
Number of pupils giving feedback	130	66	180	160	180	65	140
Before the session today how would you have rated your knowledge of alcohol (range 1–10, 1 = nothing, 10 = a lot)	5.7	5	6	4.5	5.5	7	5.6
After the session how do you rate your knowledge of alcohol (range 1–10, 1 = nothing, 10 = a lot)	8.3	8.4	8.7	8.1	8.1	8.4	8.2
($p<0.05$, by students t-test, for each school compared to knowledge before session)							
Session enjoyable?	8	–	8.1	–	8	–	7.7
Session interesting?	8.2	–	8.1	–	7.9	–	8
Session likely to change your attitude to alcohol?	7	7.8	6.8	7.2	7.2	6.5	6.7
Session appropriate for your needs?	8.3	–	8.3	–	7.6	–	7.8
Ability of the medical students to answer your questions?	8.1	–	8.3	–	7.7	–	7.7

Within the SSC framework, medical students appear to highly value the opportunity to take part in the scheme, with numbers currently participating only being limited by the resources available. Common themes from the evaluation relate to learning teaching skills, contributing to the health/social good of the local community, and gaining increased personal knowledge of the problems of alcohol excess. In this regard, it is of note that excessive alcohol intake is a problem among medical students[16,17] and medical student knowledge of alcohol issues, eg taking a good alcohol history, is generally poor.[18]

Within the schools, both teachers and pupils highly valued the programme. No differences were apparent regarding the success of the programme between state-run and independent (fee-paying, private) schools, or between schools covering different socioeconomic populations. Welsh-medium schools provided equally positive feedback. In the first year of the programme, teaching sessions and materials had been delivered in English which was not ideal, but this was rectified in subsequent years as more Welsh speaking medical students selected the SSC.

Our experience suggests that Year 10 (14–15 year olds) is too late to provide such education but that it is well received by Year 9 pupils. Further studies are required to assess whether the sessions should be provided at even earlier ages, or whether several sessions of increasing content should be provided as children move through their high school years.

The intervention was relatively cheap, as it was done as part of the SSC curriculum, with no direct cost to schools involved. Teaching materials, equipment and administrative support were all provided through preexisting undergraduate medical education funding allocations. In this scenario, the absence of harm may be sufficient to advocate the scheme to other medical schools.

It is notoriously difficult to obtain robust evidence of benefit for 'lifestyle' education in schools. For example, teenage pregnancy rates in the UK remain among the highest in Europe despite many years of sex education in schools. A recent long-term study of peer-led sex education failed to find evidence of significant benefit.[19,20] Evaluation of this short-term programme was limited but the universally positive comments from all stakeholders suggest that larger and more detailed studies are warranted. Such research would help identify the best way of providing alcohol education to high school pupils in the UK while making use of the enthusiasm and skills of medical students.

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Address for correspondence: Professor JC Alcolado, Director of Medical Education, Queens Hospital, Rom Valley Road, Romford, Essex RM07 OAG. Email: John.Alcolado@bhrhospitals.nhs.uk