Assessing feasibility and acceptability of a brief intervention for risky alcohol consumption in sexual health clinic attendees: a randomised controlled trial

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ABSTRACT

Objectives To assess the feasibility and acceptability of screening attendees at a sexual health clinic (SHC) for alcohol misuse, and delivering a brief intervention (BI). To explore the effect of this BI on drinking and sexual behaviour.

Methods A consecutive sample of consenting SHC attendees aged ≥16 years were screened using Alcohol Use Disorders Identification Test Consumption (AUDIT-C). Men scoring ≥5 and women scoring ≥4 were invited to complete the full AUDIT, alcohol diary and baseline questionnaire.

Interventions Participants were randomised to receive BI by a trained sexual health professional or a standard alcohol leaflet (usual care, UC). All were followed up for changes in alcohol and sexual behaviour at 6 weeks and 6 months. A fidelity check and staff focus group were undertaken.

Results Of 664 participants screened, 215 (32%) were eligible for randomisation and 207 were included in the final analysis: 103 (BI) and 104 (UC). Follow-up rates were 54% and 47% at 6 weeks and 6 months, respectively. Both groups reduced alcohol consumption though the degree of change did not differ between them. There was some evidence of positive changes in sexual health risk in both groups. BI was delivered as intended, adding 5 minutes to the consultation, and staff feedback was positive.

Conclusions Alcohol misuse was common in SHC attendees. Systematic assessment and BI for alcohol misuse was feasible and acceptable to staff and patients. Identification and provision of standard information alone appeared to influence drinking and sexual behaviour.

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Key message points

► It is feasible to assess alcohol use and deliver a brief intervention in a sexual health setting; follow-up rate in this target group was not high.

► Screening followed by simple written information alone appeared to influence drinking and sexual behaviour in this trial.

► Further research is needed to develop and evaluate an intervention for the heaviest drinkers and to evaluate this approach in other sexual health settings.

INTRODUCTION

Excessive drinking is a social problem in the UK, with binge drinking in young people being a key part of the problem.[1] In 2009, a quarter of adults aged 16 years and over in England (22%) drank above recommended limits, and about one in six reported binge drinking.[2] Rising alcohol-related mortality and morbidity are well documented including organ damage (e.g. liver cirrhosis), psychiatric morbidity, trauma, unintended pregnancy and sexually transmitted infections (STIs).[3–5] Rates of STIs are highest in young people.[5] Alcohol use and sexual behaviour are closely linked (e.g. alcohol may enhance perceived confidence in relationships but may lead to unsafe sex[6]). A systematic review on the

association between 'problem drinking' and adverse sexual health identified 11 studies of which eight found a positive association, though proving causation was limited by methodology such as small sample size, poor definition of problem drinking, sexual health outcomes and cross-sectional designs.[7] A study in Portsmouth, UK found high alcohol use among sexual health clinic (SHC) attendees; 86% reported binge drinking with mean consumption in excess of 20 units (a 'unit' is a standard measure of alcohol equivalent to 8 g or 10 ml of pure alcohol) on a 'heavy' night.[8] Level of alcohol use in this study was positively associated with number of sexual partners and unintended pregnancy. Few had received education on alcohol use from school or other sources.

Early identification and brief intervention (BI) is increasingly advocated as a cost-effective strategy to reduce problem drinking. To date the strongest evidence is in primary care. A systematic Cochrane Review of 29 primary care trials reported that BI was associated with a significant reduction in alcohol consumption, equivalent to 4–5 units/week in comparison to controls receiving screening only, treatment as usual or written information.[9] Most of these trials have focused on middle-aged drinkers with other groups under-represented. Common features of BI were personalised feedback on alcohol use and related harm including the benefits of reducing consumption, motivational enhancement, analysis of high-risk situations for problem drinking and coping strategies.

Limited data exist on the feasibility of integrating an alcohol BI into the busy SHC consultation. An Australian study found a reduction in alcohol intake using the Alcohol Use Disorders Identification Test (AUDIT) score in both nurse-delivered BI and control groups over a 3-month follow-up and reduction in binge drinking in their BI group; sexual health outcomes were not assessed.[10] The National Institute of Health and Care Excellence (NICE) recommends routine screening for alcohol-use disorders in genitourinary medicine clinics as individuals who regularly attend them may be at increased risk of alcohol-related harm.[11]

This study aimed to assess the feasibility and acceptability of screening for alcohol misuse, randomisation and delivery of a BI to adults attending a large, urban, inner-city SHC. We also aimed to explore the effect of BI on alcohol and sexual behaviour over a 6-month follow-up period.

METHODOLOGY
This was a two parallel-arm randomised controlled trial (RCT) with a qualitative component.

Study setting
The study was conducted in a large, inner-city SHC in one of the most deprived areas of Portsmouth City. This clinic has good transport links to the city centre and is accessible to young people including student populations. The department saw over 30 000 attendees per year (2010–2011) of which 17 000 were new attendances, approximately 40% having proven STIs.

Inclusion and exclusion criteria
All attendees aged 16 years and over, irrespective of their sexual orientation or gender, attending the clinic for the first episode of care, were recruited. Both symptomatic and asymptomatic presentations were included. Recruitment took place over 7 months from April to October 2011.

Recruitment
Reception staff handed out a study information sheet [which outlined the aims of the study and the purpose of the Alcohol Use Disorders Identification Test Consumption (AUDIT-C)], a consent form and the three-item AUDIT-C[12] card. Participants who consented for the study completed the AUDIT-C and handed it back to the receptionist. The AUDIT-C scores were calculated by a researcher. Men scoring ≥5 and women scoring ≥4 were invited to complete a questionnaire which included the following:

- Sociodemographic information (education, employment, ethnicity)
- The 10-item AUDIT questionnaire[13 14]
- Retrospective alcohol diary to elicit patterns of consumption over the last week, amount/day on the heaviest drinking day (HDD) (defined by Office for National Statistics as >4 units for men and >3 units for women) and on a usual day in the last month
- Smoking and drug use
- Perceptions of problem drinking and measure of self-efficacy
- Sexual behaviour (i.e. change in partners, number of partners and condom use with new partners).

Information about the reason for attendance at the SHC was collected from the participants' routine clinical records.

Participants with a high AUDIT score >15 suggesting alcohol dependence were excluded from the study and flagged up for clinic staff to be referred either to their general practitioner or directly to the Portsmouth Alcohol Intervention Team (AIT). This criterion was later relaxed during the study and the threshold was raised to >20 to avoid missing a key target group with AUDIT scores of 15–20.

Randomisation
Participants were randomised to one of two arms: BI or usual care (UC) in blocks of variable size (four, six and eight that were randomly selected). BI and UC were randomly allocated, whilst maintaining a 50:50 ratio within each block. The overall sequence was contained in a series of individually numbered and sealed envelopes that were held in the clinic. In this single centre, only clinics with more than two staff trained

in BI were used. Block randomisation ensured that any chosen clinic session could manage patient recruitment.

Brief intervention

BI was delivered by one of a team of five trained sexual health staff (four nurses and a non-consultant grade doctor) as part of the routine clinical consultation. These members of staff were randomised to receive training in delivering BI or not by stratified randomisation to avoid volunteer bias. All attended two sessions of training given by the Portsmouth City Primary Care Trust AIT. The BI, using the FRAMES[15] (Feedback, Responsibility, Advice, Menu, Empathy, Self-efficacy) approach consisted of:

- Feedback on participants' drinking levels compared with national norms and peers
- Giving information about potential harms and negative social consequences of alcohol
- Making a link between alcohol and its contribution to the presenting sexual health problem
- Discussion of techniques outlining means for reducing consumption (e.g. avoiding situations that usually result in heavy drinking) focusing on personal responsibility
- Written information offered as a leaflet designed for this study 'Sensible drinking: Enjoy your drink and know what it could be doing to your body and mind' AND a copy of the patient information leaflet on 'Alcohol and sensible drinking' (http://www.patient.co.uk/health/Alcohol-and-Sensible-Drinking.html).

Usual care

Participants randomised to the UC arm were seen by sexual health staff (nurses and non-consultant grade doctors) not trained in BI. They were only offered a copy of the patient information leaflet on 'Alcohol and sensible drinking'.

Follow-up

We attempted to contact all patients at 6 weeks and at 6 months. A £10 cinema voucher was offered as an incentive for participants to complete follow-up at both time points. Initially we tried to undertake 6-week follow-up by texting and asking individuals to self-complete a questionnaire on a secure internet website hosted at the University of Southampton, with a unique personal access code. However, there was low uptake so we switched to text reminders and telephone contact for both follow-up periods. We phoned up to three times in order to make contact and undertook the follow-up questionnaire (which was also used at baseline) by telephone, blinded from the participant's allocation status wherever possible. If we could not make contact by phone we sent a single postal questionnaire. The schedule included the AUDIT questionnaire (6 months only), alcohol diary and specific questions on alcohol consumption on a usual day and HDD, history of alcohol-related harm (i.e. accident and emergency department attendances, hospitalisation) (6 months only) and standard questions on sexual risk behaviour. Clinic records were reviewed at 6 months for new episodes of attendance, reasons for attendance and evidence of any new STIs.

Statistical analysis

Information transcribed from the AUDIT-C card, questionnaires and clinic data were entered onto a secure database and analysed using SAS (SAS Institute Inc.) and SPSS (IBM) software packages. The intervention status was blinded for data entry and analysis. We analysed change over time by completed cases (data shown) and also by assuming no change from baseline in non-responders (data not shown). Standard descriptive methods were used with frequency (%) and mean [±standard deviation (SD)] statistics. The type of the distributions of quantitative variables was checked by the Shapiro-Wilk test. Since only few of the variables had a normal distribution, the results were presented also as median and interquartile range (IQR) unless stated otherwise. The study was not powered to assess changes over time between the groups, so we did not undertake formal statistical comparisons. Hazardous/harmful drinking was defined as >14 units/week in women and >21 units/week in men.[16]

Fidelity check

A sample of BI and UC consultations were audiorecorded and structured analysis assessed the fidelity of the BI and UC consultation. For BI this entailed listening to all consultations to complete a checklist of elements of the intended BI. Alcohol talk in the UC consultations was also checked and the timing and length of the talk noted.

Acceptability to staff was evaluated using a single focus group of the trained BI staff. The focus group was facilitated by two skilled qualitative researchers. A topic guide was used to explore staff views on what worked well and what could have worked better with the study and BI. The group was audio-recorded and transcribed verbatim in preparation for thematic analysis drawing on Braun and Clarke's thematic phases.[17] The computer software package Nvivo 9.2™ (QSR International) was used to organise the data.

RESULTS

Of the 664 participants who were given an AUDIT-C card at clinic reception, 556 (84%) participants returned a completed AUDIT-C card. Of these, 190 (34%) were not eligible to enter the study due to low AUDIT-C scores. Of the 362 participants who were eligible and completed the full AUDIT, 63 were in the high AUDIT group (score >15) and 84 declined after providing initial consent. A clinician had already seen two patients; one was given an AUDIT-C in error and one was not able to read the study information.

This left 215 participants for randomisation: 107 in BI arm, 108 in UC arm (Figure 1). The main reasons for loss of numbers were non-completion of AUDIT-C, a low AUDIT-C score, and patient eligible but declined. Eight people (four in each arm) did not complete baseline information, leaving 207 with baseline data: 103 BI and 104 UC.

Baseline characteristics

The mean age was 25 years, 66% were female, most were White, nearly 50% were in full-time employment and 27% were students. Alcohol consumption was similar between the two groups. There was some imbalance between the two groups with UC patients more likely to be female, students and attending for asymptomatic advice with a higher frequency of sexual activity (Table 1). The overall AUDIT score was 10.1 (SD 3.6) and was similar between the two groups. Some 56% were drinking hazardously/harmfully.

Follow-up

Follow-up at 6 weeks and 6 months was 54% and 47%, respectively. Follow-up questionnaires at both time points were largely completed by telephone interview with study researchers. There was no

difference in age or sex by response category; however, in the UC arm responders were more likely to be heavier drinkers (in terms of units/week, AUDIT score, HDD) at baseline (see Online Supplementary Material Appendix 1).

Alcohol changes

On complete case analysis (n=98) both groups tended to reduce their alcohol consumption across different measures except units drunk on a typical day but as there was reduction in days drinking, overall units per week fell (Table 2). Fewer participants reported drinking hazardously or harmfully following recruitment and most of the reported changes had occurred by 6 weeks. For most measures there were no striking between-group differences, except total alcohol units/week fell more in UC using both complete case analysis (i.e. responders). Any outcome change should be treated with caution due to the small numbers as we were not powered for effect differences and imbalances between the groups existed at baseline and follow-up. Changes in alcohol use tended to be greater in the 28 patients we recruited with baseline AUDIT scores >15 (data not shown). Very few had advice on alcohol use after recruitment from a source other than the SHC.

Sexual health changes

There was no evidence of difference in sexual behaviour between the groups at any time point, though some evidence of change over time overall in 'partner frequency' and in 'regretted sex' after alcohol in both arms (Table 3). There was no difference in the frequency of return to the SHC for further episodes.

Fidelity check

A sample of 21 BI and 8 UC consultations were analysed using a structured framework to determine the impact of BI on consultation length and to assess fidelity. Sampling ensured that audio-recordings of all staff trained in BI were reviewed. The average time of the UC and BI consultations were 8.28 and 12.8 minutes, respectively. Indeed almost 5 minutes were spent talking about alcohol in the BI consultations sampled.

The aspects of BI most commonly discussed were units of alcohol (n=19), the risks of drinking (n=19), targets for reducing alcohol consumption (n=19), plan for reducing (n=18), use of diary (n=17) and leaflet (n=16). The link between alcohol and sexual health was discussed in 10 consultations and the benefits to sexual health of reducing consumption in 13 consultations.

Acceptability of BI to clinic staff

Focus group analysis showed that overall staff were pleased to take part in the study and were supportive of this kind of intervention in the SHC setting. There was agreement that most of the participants were not
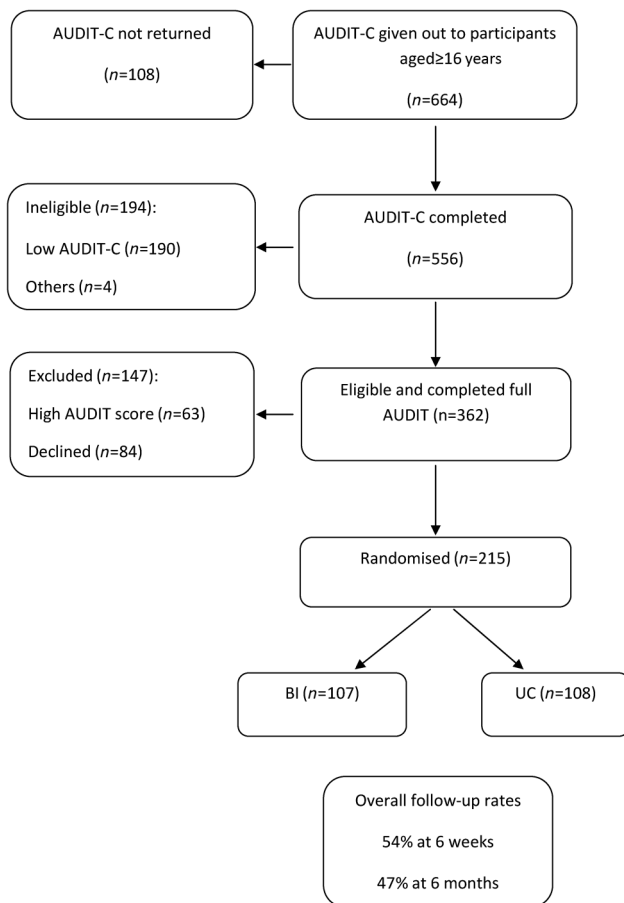
Figure 1 CONSORT diagram of trial profile. AUDIT-C, Alcohol Use Disorders Identification Test Consumption; BI, brief intervention; UC, usual care.

Table 1 Baseline characteristics – all cases (*n*=207)

Parameters*	Usual care (*n*=104)	Brief intervention (*n*=103)	Total (*n*=207)
Sociodemographic characteristics			
Age (years)	24.3±7.6 (22, 19–27)	25.7±8.0 (23, 20–28)	25.0±7.8 (22, 20–28)
Gender			
Female	74 (71.8)	62 (60.2)	136 (66.0)
Male	29 (28.2)	41 (39.8)	70 (34.0)
Ethnicity			
White	101 (97.1)	95 (92.2)	196 (94.7)
Other	3 (2.9)	8 (7.8)	11 (5.3)
Marital status			
Single	97 (93.3)	89 (86.4)	186 (89.9)
Married	2 (1.9)	3 (2.9)	5 (2.4)
Other	5 (4.8)	11 (10.7)	16 (7.7)
Employment status			
Full-time	47 (45.20)	53 (51.5)	100 (48.3)
Part-time	15 (14.42)	17 (16.5)	32 (15.5)
Unemployed	7 (6.73)	6 (5.8)	13 (6.3)
Student	33 (31.73)	22 (21.4)	55 (26.6)
Other	2 (1.92)	5 (4.8)	7 (3.3)
Education completed at what age?			
Not yet finished	27 (25.9)	16 (15.5)	43 (20.8)
≤16 years	24 (23.0)	25 (24.3)	49 (23.7)
17+ years	53 (51.1)	62 (60.2)	115 (55.5)
Smoking (self-description)			
Never smoked	35 (33.7)	37 (36.6)	72 (35.1)
Ex-smoker	9 (8.7)	18 (17.8)	27 (13.2)
Smoking occasionally	28 (26.9)	19 (18.8)	47 (22.9)
Regular smoking	32 (30.7)	27 (26.8)	59 (28.8)
Reason for first attendance (GUM)			
Asymptomatic screen	50 (50.0)	45 (44.6)	95 (47.3)
Symptoms	46 (46.0)	50 (49.5)	96 (47.7)
Contact of STI	4 (4.0)	5 (5.0)	9 (4.5)
Other	0 (0.0)	1 (0.9)	1 (0.5)
Alcohol drinking behaviour			
How often having an alcohol drink?			
≤Monthly	5 (4.9)	7 (6.8)	12 (5.8)
2–4 Times monthly	42 (40.8)	36 (34.9)	78 (37.9)
2+ Weekly	56 (54.3)	60 (58.3)	116 (56.3)
How many units on a typical day?			
1–2	14 (13.6)	12 (11.7)	26 (12.6)
3–6	58 (56.3)	51 (49.5)	109 (52.9)
7+	31 (30.1)	40 (38.8)	71 (34.5)
How often having 6+ or 8+ units on a single occasion?			
Never	1 (1.0)	0 (0.0)	1 (0.5)
≤Monthly	61 (59.2)	59 (57.3)	120 (58.3)
Weekly, almost daily or daily	41 (39.8)	44 (42.7)	85 (41.2)
AUDIT score	10.19±3.9 (10, 7–13)	9.95±3.3 (10, 7–12)	10.1±3.6 (10, 7–12)
Total weekly alcohol units consumed?	24.95±26.0 (17, 6–36)	22.14±18.8 (19, 9–30)	23.54±22.7 (18, 8–31)
Hazardous or harmful drinking†			
Yes	55 (54.5)	60 (58.3)	115 (56.4)
No	46 (45.5)	43 (41.7)	89 (43.6)
Total units on the heaviest day	12.5±11.3 (10, 5–16)	12.1±8.7 (10, 6–16)	12.3±10.0 (10, 6–16)

Continued

Table 1 Continued

Parameters*	Usual care (*n*=104)	Brief intervention (*n*=103)	Total (*n*=207)
Drink with an intention of getting drunk?			
≤Monthly	8 (21.6)	5 (14.3)	13 (18.1)
2–4 Times monthly	7 (18.9)	8 (22.8)	15 (20.8)
2+ Weekly	17 (46.0)	17 (48.6)	34 (47.2)
4+ Weekly	5 (13.5)	5 (14.3)	10 (13.9)
Advice on alcohol use			
Yes	68 (65.4)	66 (64.1)	134 (64.7)
No	36 (34.6)	37 (35.9)	73 (35.3)
Sexual behaviour in last 4 weeks			
How many occasions of sex?	7.0±8.5 (4, 1–10)	5.6±7.7 (2, 1–10)	6.3±8.1 (3, 1–10)
How many partners?	1.3±0.9 (1, 1–2)	1.3±1.3 (1, 1–1)	1.3±1.1 (1, 1–2)
How many were completely new partners?	0.7±1.0 (0, 0–1)	0.7±1.0 (0, 0–1)	0.7±1.0 (0, 0–1)
Condom use with new partners			
Yes	14 (40.0)	9 (27.3)	23 (33.8)
No	7 (20.0)	9 (27.3)	16 (23.5)
Not stated	14 (40.0)	15 (45.6)	29 (42.7)
Drunk and sex that was regretted the next day			
Yes	12 (13.3)	8 (8.6)	20 (10.9)
No	78 (86.7)	85 (91.4)	163 (89.1)

*Continuous variables are presented by mean±SD (median, IQR); categorical variables are presented by frequency and percentage in parentheses [*n* (%)].
†>14 units/week in women; >21 units/week in men.
AUDIT, Alcohol Use Disorders Identification Test; GUM, genitourinary medicine; IQR, interquartile range; STI, sexually transmitted infection.

heavy drinkers and did not have major issues with alcohol consumption. All of the nurses individualised the intervention for patients, rather than delivering every element of BI to each person. The SHC was considered an appropriate environment to deliver BI because of the links between alcohol intake and sexual behaviour. The majority of nurses felt that they were time-constrained and short-staffed in the clinic and did not think they would be able to deliver the intervention long-term without additional resources.

All staff agreed that they were now more informed about units of alcohol from using the unit calculators (tools that work out number of alcohol units in a drink). They believed that the patients also appreciated such tools. Staff suggested that BI may have been easier if it was computer-based, particularly if the programme could aid automatic addition of units, and provide low-, medium- or high-risk guidelines from the patient's data to print and give to patients. Staff felt that more health promotion advertising in the form of DVDs/posters/leaflets in the waiting room would be useful. All agreed that there were no ethical dilemmas in delivering the BI within their consultations.

DISCUSSION

This study showed that it is feasible to systematically assess alcohol use in a busy SHC, to recruit to an RCT and for staff to be trained and deliver BI. It reinforces the previous observation that alcohol misuse is common in a SHC setting; 14% were drinking at

hazardous or harmful levels, and attendees were a predominantly young group with mean age of 25 years.[8]

It is feasible to screen for alcohol misuse in the SHC waiting room where patients often spend long periods waiting before they are seen by a health care professional. It would be difficult to identify problem drinkers in the absence of such systematic screening in a SHC. Unlike previous studies,[18] BI was integrated into the sexual health consultation and delivered by the health care professional seeing the patient. There is evidence from primary care that delivering an intervention immediately after screening is more beneficial than delaying it until a subsequent occasion.[19] In emergency care, it has been shown that minimising the delay between screening and intervention is more effective, and that identifying alcohol-related risk or harm represents a 'teachable moment' where the patient is potentially more receptive to advice and feedback.[20] Similarly, making a link between alcohol consumption and the presenting sexual health problem may help patients appreciate the link between alcohol misuse and risky sexual behaviour. It is interesting in our study that just under 50% of participants were attending with a suspected STI. Previous studies have shown that referring hazardous drinkers to external specialist services is unsatisfactory to patients and is likely to result in a poorer uptake.[21]

Baseline AUDIT scores were reasonably balanced in both the groups with a mean of 10. However, the lower quartile group had a cut-off score of about 7, which indicates low-risk drinking. The AUDIT-C used as a

Table 2 Changes in alcohol behaviour in responders at 6 months (*n*=98)

Alcohol drinking behaviour*	Usual care (*n*=52)			Brief intervention (*n*=46)		
	Baseline	At 6 weeks	At 6 months	Baseline	At 6 weeks	At 6 months
How often having an alcohol drink?						
≤Monthly	1 (1.9)	4 (9.8)	8 (15.4)	4 (8.7)	5 (15.2)	6 (13.0)
2–4 Times monthly	19 (37.3)	13 (31.7)	24 (46.2)	15 (32.6)	13 (39.4)	17 (36.9)
2+Weekly	31 (60.8)	24 (58.5)	20 (38.4)	27 (58.7)	15 (45.4)	23 (50.1)
How many units on a typical day?						
1–2	6 (11.8)	2 (4.9)	5 (9.8)	6 (13.0)	3 (9.4)	3 (6.5)
3–6	27 (52.9)	16 (39.0)	14 (27.5)	25 (54.3)	13 (40.6)	21 (45.7)
7+	18 (35.3)	23 (56.1)	32 (62.7)	15 (32.7)	16 (50.0)	22 (47.8)
How often having 6+ or 8+ units on a single occasion?						
Never	–	1 (2.4)	2 (3.9)	–	1 (3.0)	2 (4.4)
≤Monthly	26 (50.9)	24 (58.5)	32 (61.5)	29 (63.0)	22 (66.7)	32 (71.1)
Weekly, almost daily or daily	25 (49.1)	16 (39.1)	18 (34.6)	17 (37.0)	10 (30.3)	11 (24.5)
AUDIT score	10.59±3.8 (11, 8–13)	–	9.31±3.7 (9, 6–12)	9.37±3.2 (9, 7–12)	–	8.89±3.3 (9, 7–11)
Total weekly alcohol units consumed?	30.62±28.0 (24, 9–46)	19.04±18.2 (14, 7–28)	17.43±17.1 (15, 0–26)	19.71±14.2 (18, 9–29)	17.74±15.9 (13, 5–26)	17.66±19.1 (13, 2–25)
Hazardous or harmful drinking†						
Yes	32 (61.5)	19 (46.3)	24 (46.2)	24 (52.2)	14 (42.4)	19 (42.2)
No	20 (38.5)	22 (53.7)	28 (53.8)	22 (47.8)	19 (57.6)	26 (57.8)
Total units on the heaviest day	14.2±12.6 (12, 6–19)	9.57±6.9 (10, 4–14)	9.96±9.3 (8, 0–16)	11.4±6.8 (11, 7–16)	10.4±7.8 (11, 4–16)	9.8±9.8 (9, 2–14)
Drink with an intention of getting drunk?						
≤Monthly	3 (16.7)	1 (9.1)	11 (21.2)	2 (12.5)	1 (12.5)	13 (28.3)
2–4 Times monthly	4 (22.2)	7 (63.6)	19 (36.5)	3 (18.7)	3 (37.5)	18 (39.1)
2+Weekly	8 (44.4)	2 (18.2)	21 (40.4)	9 (56.3)	2 (25.0)	12 (26.1)
4+Weekly	3 (16.7)	1 (9.1)	1 (1.9)	2 (12.5)	2 (25.0)	3 (6.5)
Advice on alcohol use						
Yes	35 (67.3)	–	1 (4.6)	29 (63.0)	–	0 (0.0)
No	17 (32.7)	11 (100.0)	21 (95.4)	17 (37.0)	8 (100.0)	17 (100.0)

*Continuous variables are presented by mean±SD (median, IQR); categorical variables are presented by frequency and percentage in parentheses [*n* (%)].
†>14 units/week in women, >21 units/week in men.
AUDIT, Alcohol Use Disorders Identification Test; IQR, interquartile range.

Table 3 Changes in sexual behaviour in responders at 6 months (n=98)

Sexual behaviour in last 4 weeks unless stated*	Usual care (n=52)			Brief intervention (n=46)		
	Baseline	At 6 weeks	At 6 months	Baseline	At 6 weeks	At 6 months
How many occasions of sex with men/women?	6.5±7.3 (4, 1–10)	6.85±8.1 (3, 0–12)	6.9±7.7 (3, 0–12)	5.3±6.4 (3, 1–10)	5.0±6.5 (2, 0–8)	5.43±6.2 (4, 0–10)
Number of partners	1.4±1.0 (1, 1–2)	0.91±0.6 (1, 1–1)	0.84±0.4 (1, 1–1)	1.3±0.8 (1, 1–1)	1.15±0.9 (1, 1–1)	1.05±0.7 (1, 1–1)
Number of new partners	0.77±1.1 (0, 0–1)	0.28±0.5 (0, 0–1)	0.19±0.4 (0, 0–0)	0.67±0.8 (0, 0–1)	0.43±1.1 (0, 0–1)	0.44±0.8 (0, 0–1)
Condom use with new partners						
Yes	7 (38.9)	2 (50.0)	3 (75.0)	3 (17.7)	1 (33.3)	2 (22.2)
No	3 (16.7)	–	0 (0.00)	4 (23.5)	–	1 (11.1)
Not stated	8 (44.4)	2 (50.0)	1 (25.0)	10 (58.8)	2 (66.7)	6 (66.7)
Drunk and sex that was regretted the next day						
Yes	8 (18.2)	2 (5.7)	–	2 (4.4)	0 (0.0)	–
No	36 (81.8)	33 (94.3)	44 (100.0)	43 (95.6)	29 (100.0)	34 (100.0)
Advice on sexual health sought/received over follow-up						
Yes	–	3 (27.3)	9 (17.7)	–	1 (10.0)	11 (23.9)
No	–	8 (72.7)	42 (82.3)	–	9 (90.0)	35 (76.1)

* Continuous variables are presented by mean±SD (median, IQR); categorical variables are presented by frequency and percentage in parentheses [n (%)]. †Other than at first visit.
IQR, interquartile range; SD, standard deviation.

screening tool selected many individuals who were not hazardous drinkers. Although the AUDIT-C would seem a pragmatic screening tool for baseline assessment, there is currently no consensus regarding the most appropriate screening tool for alcohol misuse, and a higher cut-off would have targeted a higher-risk group who may have the greatest absolute benefit as well as underlying risk, and focused staff time more effectively.

Follow-up of this mobile patient group was particularly difficult. Other methods that would be possible now but were not tested, such as completing a questionnaire by mobile phone link, as well as identifying at baseline an additional agreed person to contact, might have increased our response. We tried where possible to phone outside work hours but this stretched our resources.

The study was not powered to detect outcome differences, hence any observations should be interpreted with caution. Our groups were imbalanced by chance at baseline and at follow-up (e.g. UC had greater alcohol consumption), which complicates the evaluation. However, both groups reduced both measures of alcohol consumption and of sexual health risk over the 6-month follow-up. It is not possible to say to what extent this was regression to the mean; ideally we should have had an additional 'no intervention' arm to conclusively demonstrate that providing feedback plus a leaflet led to a reduction in drinking levels. Our control arm was considered to be the minimal ethically acceptable input after alcohol screening.

The findings do suggest that systematic assessment and offer of standard information may be effective as a simple low-resource approach. This was the conclusion of the primary care-based trial (SIPS trial) in an older group.[19] Others have also reported significant benefits of screening and assessment alone on drinking behaviour.[22,23] However, a recent trial of screening and brief advice in a SHC compared to a control group receiving general health advice did not find significant changes in mean alcohol consumption or unprotected sex at 6 months, and the authors question the cost effectiveness of this approach.[24]

The feasibility of alcohol reduction interventions in a busy SHC is a key issue given workload pressures and resource constraints. Given the uncertainty in the evidence base, future research may need to target those drinking heavily in this setting (and/or where alcohol misuse is associated with serious sexual health problems). Additional low-resource ongoing support such as web or mobile phone materials may help to improve follow-up rates and effectiveness.

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Appendix 1: Responders (participants who responded at 6 months) versus non-responders – baseline characteristics

Parameters*	Usual care (*n*=104)		Brief intervention (*n*=103)		Total (*n*=207)	
	Responders (*n*=52)	Non-responders (*n*=52)	Responders (*n*=46)	Non-responders (*n*=57)	Responders (*n*=98)	Non-responders (*n*=109)
Age (years)	24.9±8.7 (22, 19–28)	23.8±6.3 (22, 20–26)	26.0±7.6 (24, 21–28)	25.5±8.4 (22, 20–27)	25.4±8.2 (23, 20–28)	24.7±7.5 (22, 20–27)
Female gender	37 (71.2)	37 (72.6)	28 (60.9)	34 (59.7)	65 (66.3)	71 (65.7)
Students	18 (34.6)	15 (28.9)	7 (15.2)	15 (26.3)	25 (25.5)	30 (27.5)
How often having 6+ or 8+ units on a single occasion? (≤monthly/weekly, almost daily or daily)	26 (50.9)/25 (49.1)	36 (69.2)/16 (30.8)	29 (63.0)/17 (37.0)	30 (52.6)/27 (47.4)	55 (56.7)/42 (43.3)	66 (60.5)/43 (39.5)
AUDIT score	10.6±3.8 (11.8-13)	9.8±4.2 (10, 6–12)	9.4±3.2 (9, 7–12)	10.4±3.2 (10, 8–12)	10.0±3.5 (10, 7–12)	10.1±3.7 (10, 7–12)
Total weekly alcohol units consumed?	30.6±28.0 (24.9–46)	19.1±22.6 (13, 5–23)	19.7±14.2 (18, 9–29)	24.1±21.8 (19, 9–30)	25.5±23.1 (19, 9–36)	21.7±22.2 (16, 6–28)
Total units on the heaviest day	14.2±12.6 (12. 6–19)	10.7±9.5 (9, 4–16)	11.4±6.8 (11, 7–16)	12.7±10.0 (10, 6–18)	12.8±10.3 (12, 7–16)	11.8±9.8 (10, 5–16)
New partners in last 4 weeks?	0.8±1.0 (0, 0–1)	0.6±0.9 (0, 0–1)	0.7±0.8 (0, 0–1)	0.7±1.2 (0, 0–1)	0.7±0.9 (0, 0–1)	0.6±1.1 (0, 0–1)
Drunk and sex that was regretted the next day (last 4 weeks)	8 (18.2)	4 (8.7)	2 (4.4)	6 (12.5)	10 (11.2)	10 (10.6)

*Continuous variables are presented by mean±SD (median, IQR); categorical variables are presented by frequency and percentage in parentheses [*n* (%)].

AUDIT, Alcohol Use Disorders Identification Test; IQR, interquartile range; SD, standard deviation.