

# Alcohol brief intervention in bars and taverns: a 12-month follow-up study of Operation Drinksafe in Australia

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## SUMMARY

*This study examined the effect of an alcohol brief intervention program on drinkers in bars and taverns. A 12-month follow-up was conducted with 1211 patrons who took part in a program called Operation Drinksafe involving 118 hotels and clubs in north coast New South Wales, Australia. The brief intervention took ~5 min and consisted of a personalized risk assessment using the Alcohol Use Disorders Identification Test (AUDIT) in combination with a breathalyser to determine blood alcohol concentration (BAC). At follow-up, almost half (46%) the participants reported reduced their alcohol consumption. The mean AUDIT score reduced by 15%, weekly alcohol consumption by 13% and frequency of binge drinking by 19%. Those previously drinking at 'harmful' levels reduced most (AUDIT 29%, consumption 22% and binge frequency 37%). Females had almost twice the odds*

*of reducing consumption compared to males (OR 1.75, CI: 1.33–2.33) as did participants with initial consumption above the mean (OR 2.03, CI: 1.58–2.60). Older respondents showed smaller reductions than young people in composite AUDIT score, but greater reductions on consumption and binge frequency scales. Although a control group was not feasible, these findings suggest that a brief intervention program, presented in an interesting way to drinkers in bars and taverns, may effectively reduce risky alcohol consumption. Brief interventions may be particularly beneficial for those drinking at hazardous and harmful levels who are ready to change their drinking pattern. The partnership between police and health services was the cornerstone of this intervention, and helped to foster co-operation and acceptance from licensees and their customers.*

*Key words:* alcohol; bars and taverns; brief intervention

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## INTRODUCTION

Excessive alcohol consumption causes major health and social problems. Alcohol is a major contributing factor to mortality and morbidity related to stroke, cancers, mental illness, liver disease, falls, injuries and accidents (English *et al.*, 1995). Alcohol is also a major contributor to violence and crime, particularly assaults, offensive behaviour, domestic violence and child

abuse (Commonwealth Department of Health and Family Services, 1996).

From a population and public health perspective, minimal, early and brief interventions for alcohol are one of the most useful strategies to reduce alcohol-related harm on a national scale (Heather, 1996). Two major reviews (Bien *et al.*, 1993; Effective Health Care Team, 1993) concluded that brief interventions in clinical settings were effective in reducing risky alcohol consumption.

Brief intervention strategies for alcohol have mainly been conducted in primary health care settings (Bohn *et al.*, 1995; Heather, 1995a; Piccinelli *et al.*, 1997). A large-scale WHO multi-centre trial found that one in five persons exposed to a brief intervention respond favourably (Saunders *et al.*, 1993a; Babor *et al.*, 1994; WHO Brief Intervention Study Group, 1996). Fleming *et al.* found that physician brief intervention with problem drinkers decreased alcohol consumption and health resource utilization in the US health care system (Fleming *et al.*, 1997).

Brief intervention typically involves two broad steps: (i) screening for hazardous or harmful alcohol consumption; and (ii) provision of brief counselling, information, advice or referral. For brief interventions to be effective, Miller and Sanchez suggest that they need to incorporate six components summarized by the acronym FRAMES: Feedback, Responsibility, Advice, Menu, Empathy and Self-efficacy (Miller and Sanchez, 1993). These components relate to the 'stages of change' model outlined by Prochaska and DiClemente (Prochaska and DiClemente, 1986), which suggests that brief interventions may be more effective with drinkers in stages of 'pre-contemplation', 'contemplation' and 'preparation', who may wish to change negative drinking behaviours.

Heather suggests that there are two classes of brief interventions (Heather, 1995b; Heather, 1996). First, 'specialist' brief interventions that are delivered in specialist drug and alcohol treatment services to people seeking treatment for alcohol problems. Second, 'opportunistic' or 'primary care' brief interventions which are targeted at people in primary health care settings who do not present for an alcohol problem but are screened as drinking at hazardous and harmful levels. In many instances, the intervention may be once-only and last a few minutes as exemplified by the WHO collaborative study.

There is a third class that could be called 'community' brief interventions. This approach is similar to primary care brief interventions, however, the aim is to identify and intervene opportunistically with people in naturalistic environments such as workplaces, sporting clubs, universities, shopping centres, and bars and taverns. There is very little research on brief interventions conducted outside hospital and general practitioner settings (Bien *et al.*, 1993; Heather, 1996).

The present study was based on the premise that well-established brief intervention strategies could be applied to hotels, bars, clubs and taverns. These settings are reportedly associated with alcohol-related problems such as acute intoxication, drink-driving offences, road accidents, violence and street crime (Stockwell *et al.*, 1992; Ireland and Thommeny, 1993; MacLean *et al.*, 1993; Rydon *et al.*, 1993; Stockwell *et al.*, 1993; Krass and Flaherty, 1994; Wood *et al.*, 1995).

The project, called Operation Drinksafe, was promoted as an alcohol education program for drinkers in bars and taverns. A detailed description of the intervention has been reported elsewhere (Reilly *et al.*, 1998). Briefly, the program utilized the Alcohol Use Disorders Identification Test (AUDIT) and a blood alcohol concentration (BAC) reading to provide a personalized risk assessment to patrons. Although AUDIT was originally developed and validated for primary health care settings (Barry and Fleming, 1993; Saunders *et al.*, 1993b; Bohn *et al.*, 1995; Conigrave *et al.*, 1995; Piccinelli *et al.*, 1997; Volk *et al.*, 1997; McCormick *et al.*, 1999), it has also been used in a wide range of other settings and populations including college students (Fleming *et al.*, 1991), long-term unemployed (Claussen and Aasland, 1993), service industry staff (Larsen, 1994), rugby players (Quarrie *et al.*, 1996), and a population survey of Finnish drinking habits (Holmila, 1995).

The present paper provides 12-month follow-up data from a sample of bar and tavern drinkers who participated in the program. The aim was to investigate the impact of a brief intervention strategy on drinking behaviour and, more specifically, to determine which types of drinkers benefited in terms of reductions in AUDIT scores, consumption and binge drinking. Because the AUDIT instrument itself was designed as a key awareness-raising component of the intervention, it was not feasible to conduct a meaningful control in the context of this study.

## METHOD

Operation Drinksafe was conducted in the north coast region of rural New South Wales. This is a rapidly growing area characterized by large towns, rural living, high unemployment, tourism and agriculture. It was implemented in two phases from November 1994 to May 1995 and from September 1995 to February 1996. Drinksafe

was a collaborative project between police and health services. There were 189 presentations involving 118 bars and taverns, which represents ~60% of all hotel bars and clubs in the area. The remaining 40% of licensed premises were considered too small with insufficient patrons to warrant this type of intervention.

### **Alcohol Use Disorders Identification Test (AUDIT)**

The AUDIT consists of 10 questions and can be scored to provide levels of hazardous and harmful alcohol use for men and women. It covers three domains of alcohol consumption, drinking behaviour and alcohol-related problems (Saunders *et al.*, 1993b). It was designed to identify hazardous drinkers whose level of drinking places them at risk of developing problems, harmful drinkers who are experiencing physical, social or psychological problems, and to identify people who are potentially alcohol dependent.

Drinksafe used revised cut-off scores for AUDIT to bring it in line with Australia's National Health and Medical Research Council's (NHMRC) recommended levels of low-risk, hazardous and harmful alcohol use for men and women (Pols and Hawkes, 1992). The NHMRC defines low-risk drinking as two standard drinks a day for women, and four standard drinks a day for men. A standard drink is 10 g of alcohol, for example a nip of spirits, small glass of wine, a can of low alcohol beer or a medium glass of full strength beer.

### **Procedure**

A project team consisting of a uniformed Police Officer and a Health Educator set up an information stand in bars and taverns. Patrons completed a specially designed 20-item questionnaire that included the 10-item AUDIT and then underwent BAC testing on a Drager Alcotest 7110 breath analysis instrument. Individuals were then provided with a personalized risk assessment based on their AUDIT score and BAC reading by the Health Educator and Police Officer. Information was available in the form of a specially designed leaflet explaining 'what your score means?', as well as alcohol leaflets, pamphlets, self-help booklets, easy tips for cutting down and other materials. Referral to drug and alcohol services was provided to people who had alcohol problems.

### **Follow-up sample and telephone survey protocol**

Of 5412 patrons who participated in the intervention, 3289 provided contact telephone numbers. A sample of 2302 (70%) was randomly selected for a 12-month follow-up (sample size calculations were based on a targeted 10% reduction in hazardous/harmful drinking rates with  $\alpha = 0.95$  and  $\beta = 0.80$ ). Trained interviewers worked through the list of respondent names and telephone numbers that they had provided at initial survey. Where unsuccessful, telephone numbers were checked and up to three contact attempts made at various times of day. After a brief introduction, each respondent was reminded that they had taken part in the initial survey and had agreed to be followed up. They were provided with definitions of standard drinks (10 g of alcohol). They were then asked the same 10 AUDIT questions they had answered at baseline plus some additional questions regarding changes they may have made to their drinking behaviour since or because of their involvement in Operation Drinksafe.

### **Analysis**

Data were coded and entered into SAS for checking and cleaning and analysis (SAS Institute, 1987). The sample was profiled by gender, age and initial gender-specific AUDIT risk category. Chi-squared tests were used to test for differences in gender, age and risk distributions of the follow-up sample, the sample of those who agreed to be followed-up and the entire baseline sample. Pre-post changes in AUDIT score, alcohol consumption and binge frequency were tested by paired *t*-test. AUDIT score was calculated as the sum of item scores for the 10 AUDIT questions. Alcohol consumption was calculated by multiplying response category midpoints for question 1 regarding drinking frequency and question 2 regarding standard drinks typically consumed. Binge drinking was defined as having six or more drinks on one occasion. Binge frequency was standardized across response categories by translating daily, weekly and monthly binge drinking episodes into 'times per month'.

Multiple logistic regression provided odds ratios of reduced AUDIT score for initial risk category, age and gender and odds ratios of reduced consumption for initial consumption, age, gender and AUDIT questions which did not deal with consumption.

## RESULTS

### Sample profile

The follow-up sample consisted of 1211 or 53% of the survey sample of 2302. Of 1091 participants not followed up, 96.9% (1057) were uncontactable after a minimum three attempts, had moved or were untraceable. There was no significant difference between gender ratios of the baseline and follow-up samples (d.f. = 1,  $\chi^2 = 0.011$ ,  $p = 0.447$ ), however, the 20–29-year age group and also the ‘harmful’ risk category were under-represented by 8% with resultant over-representation in the 60+ group and in ‘low’ and ‘hazardous’ categories (d.f. = 4,  $\chi^2 = 56.09$ ,  $p = 0.001$  and d.f. = 2,  $\chi^2 = 6.77$ ,  $p = 0.034$ , respectively, Figure 1). There were no differences in gender ratio and age category between the follow-up sample and those who were not contactable or declined to participate.

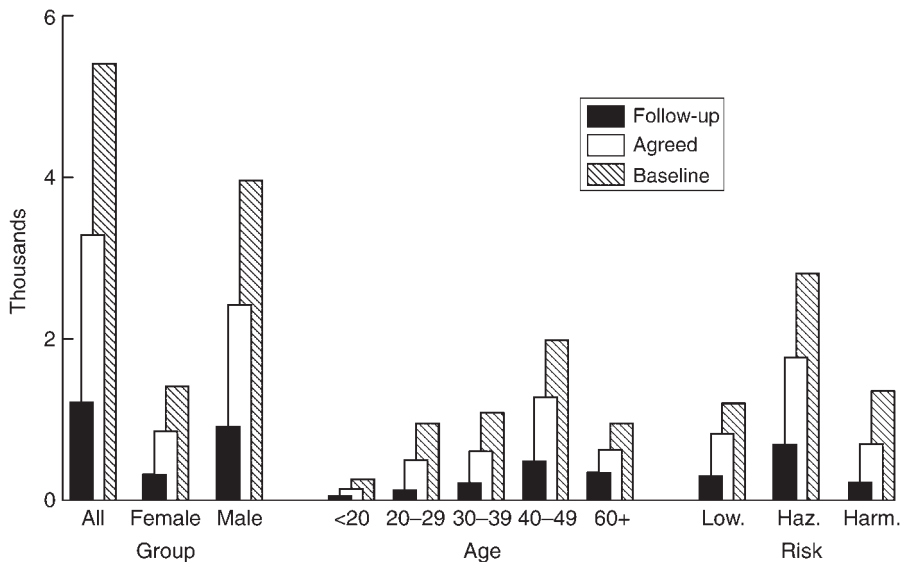
When the sample was compared with Australian population census data for adults (aged 20+) in the study catchment area, an expected preponderance of males, typical of the bar and tavern setting, was apparent (75% of sample compared with 49% of population). Also among males there was a greater proportion aged 40+ in the sample than in the general population (76% compared with 64%). Among

women the age profile in the sample was similar to that of the general population.

### Changes in AUDIT scores

At baseline, 74% (900) of respondents returned AUDIT scores which indicated that they were drinking at hazardous or harmful levels, and males were more likely to be in this range than females (80% compared with 57%, d.f. = 1,  $\chi^2 = 59.7$ ,  $p < 0.001$ ). Almost two-thirds (60%) of the follow-up cohort of 1211 respondents had reduced their AUDIT score, while a quarter (26%) increased (Table 1).

All analysis groups, except for those participants who had low-risk AUDIT scores at baseline, returned decreases in their mean AUDIT score from pre to post and these decreases were all significant (Table 2). The mean change represented a 15% reduction from the baseline values (Figure 2). The greatest reduction was for those who initially had ‘harmful’ scores. Their average reduction at follow-up was 5.5 points or 29% and this shifted the mean score down from the ‘harmful’ to ‘hazardous’ range. Other substantial (20%) changes occurred for respondents aged less than 20 years and for women. There was a slight tendency for low-risk drinkers to increase their AUDIT scores, but this was not significant.



**Fig. 1:** Profile of follow-up cohort compared with potential cohort of respondents who agreed to follow-up and with all participants until 12 months prior to follow-up.

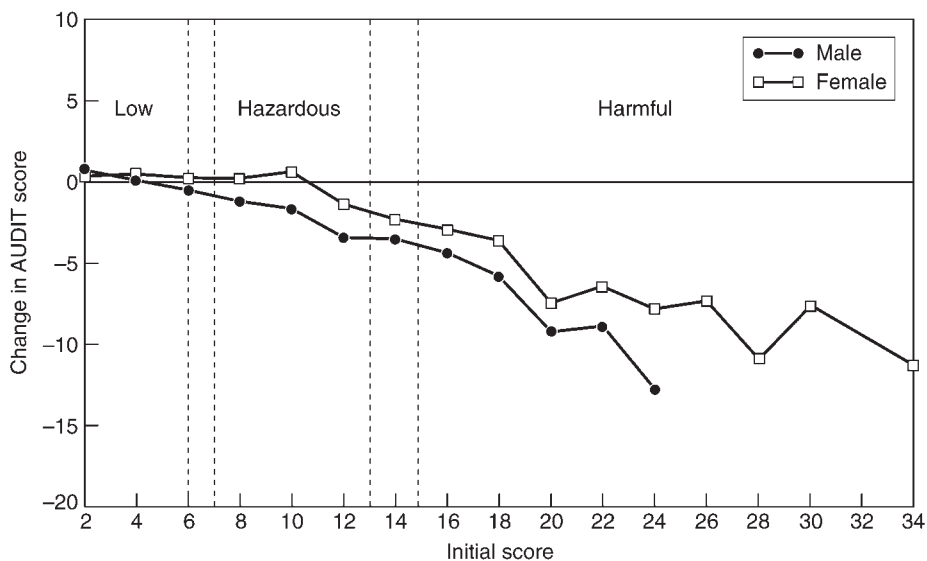
**Table 1:** Profile of reductions and increases in AUDIT score and weekly alcohol consumption of standard drinks

Change	Female	Male	All
Reduced AUDIT score	58.9% (179)	60.3% (547)	60.0% (726)
No change	15.1% (46)	13.8% (125)	14.1% (171)
Increased	26.0% (79)	25.9% (235)	25.9% (314)
Total	100.0% (304)	100.0% (907)	100.0% (1211)
Reduced consumption	54.9% (167)	43.6% (395)	46.4% (562)
No change	17.4% (53)	30.5% (277)	27.3% (330)
Increased	27.6% (84)	25.9% (235)	26.3% (319)
Total	100.0% (304)	100.0% (907)	100.0% (1211)

**Table 2:** Pre post univariate changes in AUDIT score with paired *t*-test results

Group	( <i>n</i> )	Mean pre score	Mean post score	Mean paired change	Paired <i>t</i>	Sig. ( <i>p</i> )
All	(1211)	10.01	8.43	-1.53	-13.71	**
Females	(304)	7.50	5.95	-1.50	-7.13	**
Males	(907)	10.82	9.26	-1.54	-11.73	**
Age group in years						
Age <20	(50)	12.22	7.20	-2.39	-2.75	*
Age 20–29	(121)	11.52	9.32	-2.28	-5.72	**
Age 30–39	(194)	10.91	9.41	-1.29	-4.42	**
Age 40–59	(468)	9.99	8.30	-1.64	-8.83	**
Age 60+	(346)	8.64	7.55	-1.10	-7.14	**
Initial risk level						
Low	(311)	4.40	4.44	0.04	0.16	0.873
Hazardous	(685)	9.78	8.77	-1.01	-9.12	**
Harmful	(215)	18.74	13.22	-5.52	-13.56	**

\**p* < 0.05; \*\**p* < 0.0001.

**Fig. 2:** Change in AUDIT score by initial AUDIT score. [Vertical lines show cutoff scores for: female hazardous (6); male hazardous (7); female harmful (13); and male harmful (15).]

### Changes in weekly alcohol consumption

Almost half (46.4%) reported reduced consumption of alcohol and 26.3% reported an increase (Table 1). Changes in reported weekly consumption show a similar trend in that most groups reduced their intake and again most decreases were significant (Table 3). The average change was a reduction of 13% or 1.9 standard drinks per week. 'Harmful' drinkers again reduced most (by 22%), drinking on average five fewer drinks per week, and women again showed a large reduction of 20% or 1.88 fewer drinks per week. The youngest age group showed an increase in consumption in spite of a reduction in AUDIT score. This result indicates that while this group returned similar answers pre and post to the two consumption questions, their total for other questions was lower at follow-up. 'Low-risk' drinkers reported a small increase in weekly intake although this was not significant.

### Changes in binge drinking

Frequency of bingeing among the whole cohort decreased by a significant 19% (Table 4). This represents 12 fewer binges per person per year from a mean rate of 62. Of almost half the sample (46.9%) who reported binge drinking regularly at baseline (drinking six plus drinks per occasion at least once a week), 30.1% had reduced their reported binge drinking frequency to once a month or less at follow-up. Significant reductions were also evident for both gender groups with females halving their binge rate from 30 to 14 occasions per year and males reducing from 73 to 62 per year. When analysed by age group, the two older age groups which had the greatest binge frequency at baseline showed significant reductions.

The greatest absolute reduction was among 'harmful' drinkers where the binge frequency reduced from 168 times per person per year

**Table 3:** Pre and post univariate changes in calculated weekly consumption of standard drinks with paired *t*-test results

Group	Mean pre score	Mean post score	Mean paired change	Paired <i>t</i>	Sig. ( <i>p</i> )
All	14.57	12.67	-1.90	-7.55	**
Females	9.31	7.43	-1.88	-4.52	**
Males	16.32	14.42	-1.48	-6.24	**
Age <20 years	9.21	11.16	1.94	1.52	0.135
Age 20-29	11.24	10.36	-0.88	-0.98	0.329
Age 30-39	13.84	13.23	-0.61	-0.97	0.336
Age 40-59	15.14	12.78	-2.35	-5.68	**
Age 60+	16.16	13.21	-2.96	-6.99	**
Low init. risk	5.67	5.69	0.02	0.08	0.936
Hazardous init. risk	15.57	13.87	-1.70	-5.13	**
Harmful init. risk	24.23	18.93	-5.31	-6.70	**

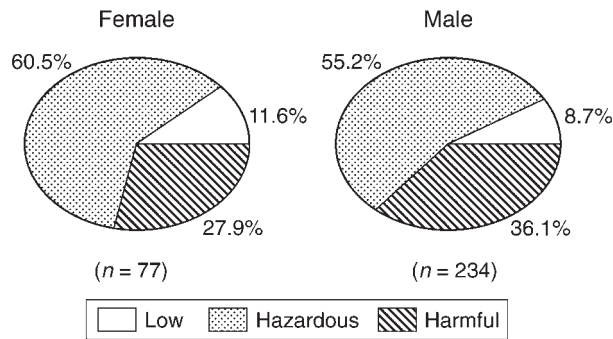
\**p* < 0.05, \*\**p* < 0.0001.

**Table 4:** Pre and post univariate changes in binge frequency per month with paired *t*-test results

Group	Mean pre score	Mean post score	Mean paired change	Paired <i>t</i>	Sig. ( <i>p</i> )
All	5.18	4.22	-0.96	-3.34	**
Females	2.53	1.18	-1.36	-3.97	**
Males	6.07	5.22	-0.82	-2.26	*
Age <20 years	2.88	4.21	1.33	1.09	0.280
Age 20-29	3.35	3.08	-0.28	-0.40	0.687
Age 30-39	4.61	4.81	0.20	-0.31	0.757
Age 40-59	5.84	4.71	-1.10	-2.23	*
Age 60+	5.45	3.55	-1.93	-3.44	**
Low init. risk	0.27	0.57	0.31	2.20	*
Hazardous init. risk	4.65	4.44	-0.22	-0.59	0.555
Harmful init. risk	14.00	8.76	-5.17	-4.91	**

\**p* < 0.05, \*\**p* < 0.005.





**Fig. 3:** Risk level at follow-up for participants with initially 'harmful' consumption.

**Table 5:** Multivariate association between changes in consumption and other measured variables

Predictor	OR of reduced consumption	95% CI
Baseline consumption > sex-specific mean	2.03	1.58–2.60
Unable to stop drinking weekly+	0.82	0.51–1.35
Failed to do expected duties weekly+	1.00	0.43–2.28
Need morning starter weekly+	0.92	0.30–2.89
Feel guilt after drink weekly+	2.34	1.05–5.22
Unable to remember night before weekly+	0.63	0.25–1.59
Injury due to drink in past year	1.98	0.88–4.45
Other person concerned in past year	0.76	0.49–1.19
Female	1.75	1.33–2.33
Aged $\geq$ 40 years	1.01	0.78–1.32

to 105 times. Although there was a significant increase in binge frequency for 'low-risk' drinkers, the actual frequency change was from three to seven times per year.

### Changes between risk levels

Of those initially in the 'harmful' range, two-thirds (66%) had shifted down to lower risk categories at follow-up (Figure 3). Once again the shift was more dramatic among females. Of those initially 'hazardous' drinkers, 23% had reduced to 'low risk' at follow-up with only 4% moving upwards into the 'harmful' range. Of the initially 'low-risk' participants ( $n = 311$ ), 84% remained so at follow-up. Of the remaining 16% who moved into higher levels most (90%) moved up only slightly into the lower half of the 'hazardous' range and only one moved into the harmful range. The upward movement was more marked for males where 19% moved up (compared to 12% of females).

### Multivariate association between changes in consumption and other measured variables

The odds of reduced alcohol consumption at follow-up after adjustment for all other AUDIT variables was derived by multiple logistic regression analysis (Table 5). Significant associations were as follows: females had almost twice the odds (OR = 1.75) of reducing consumption than males; participants who initially consumed more than their gender-specific average intake (of 9.3 and 16.3 standard drinks/week for females and males, respectively) had twice (OR = 2.03) the odds of reducing their intake; and those who frequently (weekly or more) felt guilty or remorseful after drinking had more than twice (OR = 2.34) the odds of reducing intake compared with those who did not.

### Qualitative responses

Respondents were asked: (i) if and how their drinking behaviour had changed since their first

participation in Operation Drinksafe; (ii) what caused the change; and (iii) if and how the Drinksafe program had influenced them.

Of the 1211 respondents, 94.1% (1139) claimed that they had changed their drinking behaviour since their first survey. Of these, 37.8% elaborated by describing how. By far the most common response, accounting for almost three-quarters (73.3%) of replies was 'cut down' or stopped drinking. When combined with 'changed to light beer' or 'now have an alcohol-free day each week' are included (recommended Drinksafe strategies) this increases to 89.0% of all responses compared with only 3.3% reporting they now drink more. When asked what had caused the change, 415 (34%) responded. The most commonly reported reason for change was 'health' (31.7%) followed by 'limited time or finances' (18.6%), 'changed lifestyle' (15.5%) and 'participation in Operation Drinksafe' (10.1%).

Half ( $n = 715$ , 59.0%) of those followed up reported that Operation Drinksafe influenced them. Over half of these reported that their involvement had raised their awareness of the amount they consumed, the risks involved or strategies they could use to cut down. Almost a quarter (23%) made positive comments about the program, and one in 10 (9%) reported that their involvement had led directly to positive behaviour changes, including no longer drink driving or cutting down their intake.

## DISCUSSION

This paper describes a new and promising approach to intervention with drinkers in hotels, clubs, bars and taverns. It is derived from brief intervention strategies that have been shown to be effective in clinical settings (Bien *et al.*, 1993; Saunders *et al.*, 1993a; WHO Brief Intervention Study Group, 1996; Fleming *et al.*, 1997). The results of this study suggest that minimal intervention in bars and taverns using AUDIT in combination with a BAC and brief counselling may be an effective means of reducing alcohol consumption in patrons who are drinking at risky levels.

Results need to be considered in the light of methodological limitations of the study. First, there was no control group. A control was not considered meaningful or feasible in our study. The AUDIT instrument was specifically selected as a major component of the change process.

It has been found that completing AUDIT may itself reduce alcohol intake of respondents (Babor *et al.*, 1994; WHO Brief Intervention Study Group, 1996). Part of the observed change is certainly due to regression to the mean, however, to specifically isolate this and other effects requires further controlled studies.

A further limitation is that of self-selection. At baseline, bar and tavern patrons chose whether to take part in Drinksafe. Random selection was not considered practical considering the setting and the need to maximize participation. Typically, studies which have used random selection procedures reported high refusal rates up to 50% (Stockwell *et al.*, 1992; McLean *et al.*, 1993; Krass and Flaherty, 1994).

A further potential source of selection bias was loss to the follow-up which was mainly due to inability to contact participants. However, a comparison of those followed up with the baseline sample on demographic and baseline drinking found only minor differences in that younger and heavier drinkers were under-represented. This may reflect greater mobility and lower traceability typical of people in an area of high tourism. Additional potential sources of reporting bias are practice effect and differences due to administration of AUDIT by face to face interview at baseline and telephone interview at follow-up. The adoption of the well-validated AUDIT questionnaire and trained interviewers were used to maximize the reliability of the responses.

Some low-level drinkers regressed to a higher mean consumption although this was only statistically significant for binge drinking. This could relate to implicit praise of their low-risk drinking behaviour, and this aspect suggests the need for vigilance in conducting such programs to avoid unintentional consequences.

Nevertheless, considering its limitations, the Drinksafe program demonstrated some encouraging results and positive outcomes. Approximately half the sample reduced consumption and had a lower AUDIT score on follow-up. There was an overall reduction in consumption of 13% and 19%, and lower frequency of binge drinking. Importantly, those previously drinking at 'harmful' levels showed the most positive change. One explanation for these encouraging findings is that Drinksafe attracted patrons who were already considering changing their drinking behaviour. In terms of the stages of change model by Prochaska and DiClemente (Prochaska and DiClemente,



1986), many participants in this study may have been either pre-contemplators or contemplators. They may therefore have been more receptive to receiving information and advice about alcohol, and subsequently reduced their consumption. The reasons given by the respondents about why they changed their drinking behaviour also suggest that the Drinksafe program may have helped to trigger a decision and commitment to change. The nature of the self-selecting sample procedures is likely to yield a high percentage of pre-contemplators and early contemplators.

The key challenge for an intervention of this type is to foster decision and commitment (Miller and Brown, 1991; Miller and Rollnick, 1991). Drinksafe may have acted as a catalyst for participants to think about their drinking which later reinforced a decision to change. Patrons most likely to benefit from a brief intervention encounter may be those hazardous and harmful drinkers who are assessing their alcohol use and are contemplating reducing their consumption. Additionally, patrons who had not previously considered reducing, i.e. pre-contemplators, may also benefit from exposure to an opportunistic intervention such as Drinksafe.

Our study suggests alcohol brief interventions which include both a personal health risk assessment and BAC drink/drive education may be effective in hotels, clubs, bars and taverns. Further studies in bars and taverns are required to evaluate the use of other instruments and different types of brief intervention procedures. Taking alcohol education to where people drink is a simple proposition, but difficult to implement. The model used in Drinksafe needs to be evaluated in more controlled studies. Such studies would need to balance the need for scientific rigour with the practicalities of gaining the co-operation and participation of bar owners and their patrons.

The Drinksafe program produced other positive outcomes. The partnership between police and health services was an important feature of the program, and helped to facilitate a high degree of co-operation and acceptance by licensees and their customers. The Drinksafe program also complemented other responsible services of alcohol practices. The findings in this study indicate that brief intervention strategies may be used successfully in bars and taverns. This project helped demonstrate the potential of using brief intervention strategies to reduce alcohol-related harm in a wide range of community settings.

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