

# **A Randomised Controlled Trial of Training and Support Strategies to Encourage Screening and Brief Alcohol Intervention by Primary Care Nurses**

## *Accessible Report*

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## SUMMARY

Excessive drinking is a major source of health and social problems in the UK each year. Alcohol-related problems are experienced by a high proportion of the population and are by no means confined to alcohol dependent drinkers. Thus tackling excessive drinking in the broader population has a greater impact on reducing alcohol-related problems in society than a focus on the smaller number of extreme cases.

There is good evidence to show that excessive drinking is responsive to brief alcohol intervention in primary health care. However, most of the research to date has focused on general practitioners (GPs). Nurse involvement in brief alcohol intervention is low, despite the fact that they may be more cost-effective at delivering brief intervention in primary care.

This study aimed to identify the most effective and cost-effective strategy to encourage nurses to implement a screening and brief alcohol intervention programme in primary health care.

A randomised controlled trial evaluated the impact on implementation of providing nurses with written guidelines related to programme use (controls), guidelines plus practice-based training related to programme use (trained nurses), and guidelines plus training and ongoing telephone support related to programme usage (trained and supported nurses).

The research hypothesis was that there would be a positive relationship between intensity of the training and support strategy and subsequent implementation of the brief alcohol intervention programme.

Of 312 nurses that were randomly sampled into the study, 270 (87%) were eligible for recruitment and 212 (79%) nurses agreed to use the programme for three months in their practices (76 controls, 68 trained nurses and 68 trained and supported nurses).

After 3 months, 128 (60%) nurses had implemented the programme and there was a significant difference in implementation rate between the intervention conditions. Fewer controls (39%) implemented the programme than trained (74%) or trained and supported nurses (71%).

When the costs of training and support were set against implementation rates, it was found that training nurses was the most cost-effective implementation strategy. The costs per nurse implementing the programme were £155 for controls, £119 for trained nurses and £122 for trained and supported nurses.

Nurses' feedback concerning the brief intervention approach was positive. In addition, direct experience with the brief alcohol intervention programme generated positive attitude changes towards alcohol-related issues, which were sustained beyond the immediate study period.

In summary, this study showed that primary care nurses are interested in screening and brief alcohol intervention and many of them are willing to incorporate this approach into practice. However, giving nurses intervention materials plus written guidelines alone was not sufficient to change practice behaviour. Skill-based training in practices was the most effective and cost-effective implementation strategy in this study. Moreover, direct experience with brief

intervention materials generated positive attitude changes towards alcohol issues amongst nurses that were often sustained beyond the immediate study period.

## INTRODUCTION

### **Context:**

Excessive alcohol consumption is a major source of morbidity, mortality, social problems and loss of economic productivity in the United Kingdom each year. Epidemiological data indicate that alcohol-related problems are experienced by a high proportion of the population and are by no means confined to alcohol dependent drinkers. Indeed, more alcohol-related problems in the UK can be attributed to non-dependent drinkers than to dependent drinkers, simply because the former constitute a much larger proportion of the population than people with established alcohol dependence. Thus it has been suggested that adopting a broader population approach to reducing consumption levels across all members in society may be more effective at reducing the overall prevalence of alcohol-related problems than intervention with a smaller number of extreme cases.

Early detection of excessive drinking and brief alcohol intervention with these increased risk drinkers (secondary prevention) has the potential to form an important component of a population approach to reducing alcohol-related harm in the UK. Here the emphasis is on routine or opportunistic screening of the population to identify individuals whose drinking behaviour increases the risk of alcohol-related problems followed by the delivery of brief structured advice focused on moderating or reducing alcohol consumption. There is a robust evidence base to show that excessive drinkers are responsive to screening and brief alcohol

intervention in primary health care. However, most brief alcohol intervention research in primary care has focused on interventions led by general practitioners (GPs). Research indicates that primary health care nurses are a greatly under-utilized resource for screening and alcohol intervention in routine practice. Since nurses are generally less expensive health professionals than their medical colleagues, it is also possible that they might provide a more cost-effective means of delivering screening and brief alcohol intervention in primary health care. Thus the current study was designed to provide information about how to increase nurse-led involvement in early identification and brief intervention to reduce alcohol-related problems in primary health care.

### **Study aim**

To identify the most effective and cost-effective method of encouraging nurses to implement a screening and brief alcohol intervention programme in primary health care.

Three training and support conditions were evaluated:

Controls – written guidelines

Training – written guidelines + practice-based training

Training & support - written guidelines + practice-based training + telephone support calls

The research hypothesis was that there would be a positive relationship between the intensity of the training and support strategy and subsequent implementation of a screening and brief intervention programme.

## **Methods**

Three hundred and twelve practices from across the North East of England were randomly allocated into the three evenly-sized intervention conditions (n=104) and a telephone script was used to recruit nurses into the study. Recruitment took the form of outlining evidence to support brief intervention effectiveness, promoting official endorsements for the brief intervention programme, reinforcing previously identified incentives for brief intervention and by countering anticipated barriers to involvement. Once nurses had been recruited to the study either an arrangement was made to either deliver the brief intervention programme plus written guidelines at the practice (controls) or an appointment was made for training purposes and subsequently regular support calls were made to nurses in relevant practices.

All nurses received a follow-up visit after three months to determine if programme implementation had occurred. At this visit anonymised copies of all screening questionnaire were collected which contained a record of nurses' brief intervention activity (advice &/or written information given). An assessment of the number of remaining materials left in the brief intervention programme allowed the researchers to check that programme implementation had indeed occurred.

All nurses completed a baseline questionnaire, which was completed before programme implementation, to gather data relating to nurses' personal characteristics and attitudes to lifestyle intervention and alcohol issues. Later nurses completed follow-up questionnaires at three and six months after implementation which obtained feedback about the brief

intervention programme and assessed if changes occurred in nurses' attitudes towards lifestyle intervention and alcohol-related issues as a result of experience in the study.

## **Outcome measures**

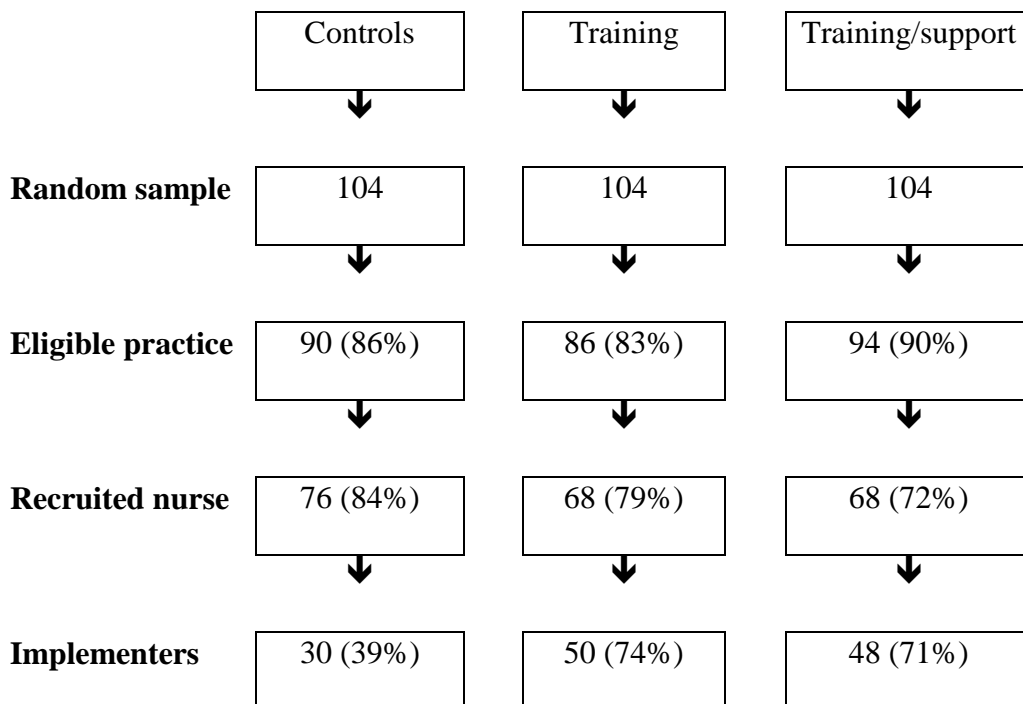
<u>Implementation rate</u>	The number of nurses who actually used the programme with at least one patient as a proportion of those nurses who agreed to implement it.
<u>Screening rate</u>	The number of patients screened divided by the total number of eligible patients consulting that nurse during the 3 month study.
<u>Brief intervention rate</u>	The proportion of 'risk' drinkers who were given brief advice and/or written information about reducing alcohol consumption.
<u>Cost-effectiveness</u>	The cost per nurse of providing guidelines, training and/or support set against implementation rates for the intervention conditions.
<u>Other outcomes</u>	Nurses' attitudes to lifestyle intervention and alcohol-related issues and changes in these attitudes over time.

## FINDINGS

### Practice eligibility and nurse recruitment

There was a comparable recruitment of nurses into the three training and support conditions in the study (see Figure 1). Ineligibility was mainly due to a practice no longer existing or the fact that no nurse was attached to a particular practice. A lack of recruitment was mainly due to pressures on nurse time or GPs refusing permission for their nurses to participate in the study.

**Figure 1. Shows the overall flow of nurse subjects in the study**

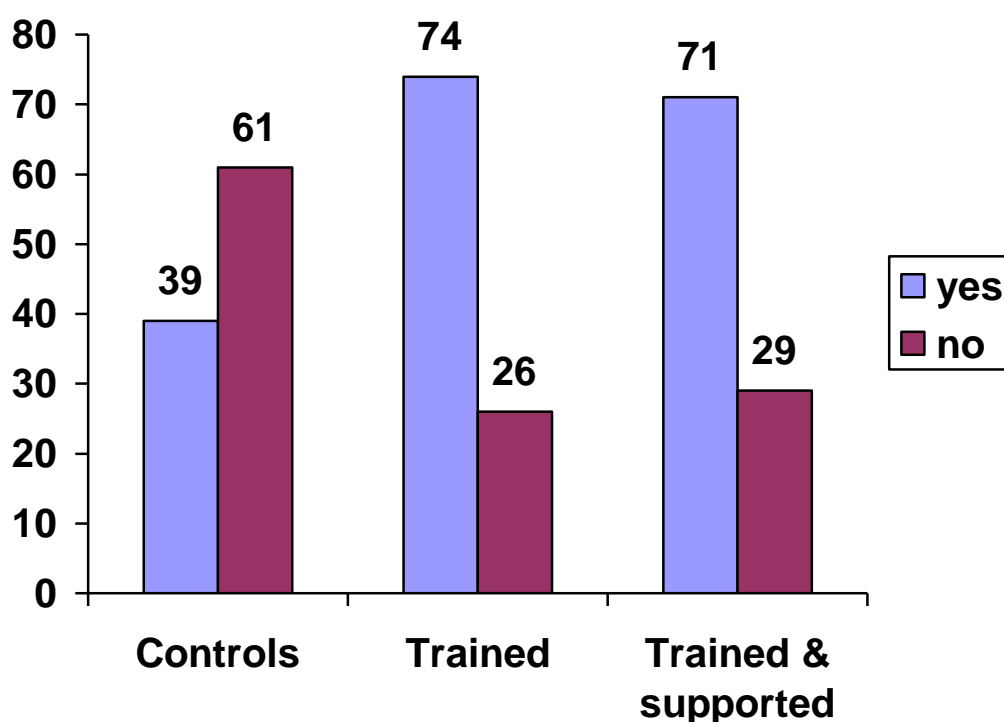




### Impact of nurses' intervention condition on implementation

There was a significant difference in implementation rate by intervention condition and controls were significantly less likely to implement the brief intervention programme compared to trained nurses or trained and supported nurses (see Graph 1).

**Graph 1 Percent of nurses implementing the brief intervention programme**



Overall, the 128 nurses that implemented the brief intervention programme screened 5541 patients (range 0-332) during the 3 months. They identified 1499 (27%) patients as 'risk' drinkers and they provided a brief intervention to 1333 (89%) patients.

## Extent of implementation

There was a significant difference between intervention conditions in overall numbers of patients screened, identified as ‘risk’ drinkers and given brief intervention. Control nurses screened and intervene with fewer patients than trained or trained and supported nurses (See Table 1).

**Table 1. Number of patients screened, identified as ‘risk’ drinkers and receiving brief intervention**

Implementation	controls	Intervention condition		total
		training	training & support	
patients screened				
number	1519	1935	2087	<b>5541</b>
median	0	11	12.5	
interquartile range	0 to 7	0 to 28.25	0 to 36.75	
patients ‘at risk’				
number	369	553	577	<b>1499</b>
median	0	4	5.5	
interquartile range	0 to 7	0 to 9	0 to 10	
brief intervention				
number	281	497	555	<b>1333</b>
median	0	2	1.5	
interquartile range	0 to 4.75	0 to 7	0 to 12	

## Accuracy of implementation

There was a significant difference between intervention condition in screening rate (screening per eligible patient consultations) and accuracy of brief intervention (intervention given to

‘risk’ drinkers). On both measures, control nurses were less accurate than nurses receiving training or training and support.

**Table 2. Median screening and brief intervention rates by intervention condition**

	<b>Controls</b>	<b>Training</b>	<b>Training/support</b>
screening rate	0%	1%	2%
interquartile range	0 to 3%	0 to 5%	0 to 14%
brief intervention rate	0%	37%	33%
interquartile range	0 to 39%	0 to 108%	0-92%

The low median activity rates reflected the fact that all nurses, including those who did not implement the programme, were included in the analysis. Interquartile ranges beyond 100% suggested that inaccurate intervention was due to both ‘risk’ drinkers not receiving brief intervention and some ‘non-risk’ drinkers inappropriately receiving brief intervention.

### **Costings and cost-effectiveness analysis**

The overall production cost of brief intervention materials for the study was £5968 and the cost of a single programme was approximately £15.

The total cost of recruiting nurses into the study was £1823 and the cost of delivering training and support interventions to all nurses was £16,522.

The intervention costs per nurse in each condition were £60 for controls, £88 for a trained nurse and £87 for a trained and supported nurse. Training costs were roughly comparable with those of training plus support because the telephone charges for support were much less influential on overall costs than the time and mileage costs associated with travel to practices.

When implementation rates were set against the costs of intervention, training alone was found to be the most cost-effective implementation strategy. The costs per nurse actually using the programme were £155 for controls, £119 for trained nurses and £122 for trained and supported nurses.

### **Characteristics of nurses in the study**

Nearly all the nurses were female (99%) and had English as a first language (99%). The nurses' mean age was 45 and the mean number of years working in general practice was 11.

The majority of nurses worked in group practices (74%) which were usually in urban (52%) or mixed urban/rural areas (23%).

Nurses' practices had a mean 3 GP partners per practice and a mean practice list size of 5809 patients. Nurses' mean number of consultations per week was 89 in a main practice location, although about a quarter of nurses worked in more than one practice (27%).

Over half of the nurses had post-graduate qualifications (51%) and most nurses expressed a positive (60%) or very positive (24%) attitude towards research in general practice.

## Attitudes to lifestyle intervention

Regarding lifestyle enquiry and intervention, over two thirds of the nurses in this study felt that they had not had enough training or preparation for such work (68%).

Attitudes regarding the importance of lifestyle behaviour to health were very positive, particularly regarding smoking, exercise and alcohol consumption (see Table 3). However nurses' preparedness to advise patients and their perceived effectiveness at helping patients change lifestyle behaviour was relatively low.

**Table 3 Nurses' reported attitudes to lifestyle intervention work**

	<b>Important or very important N (%)</b>	<b>Prepared or very prepared N (%)</b>	<b>Effective or very effective N (%)</b>
smoking	154 (100%)	124 (86%)	35 (23%)
exercise	149 (97%)	138 (90%)	46 (31%)
alcohol consumption	140 (92%)	87 (57%)	26 (17%)
diet/nutrition	131 (85%)	132 (86%)	60 (40%)
stress	129 (84%)	65 (42%)	25 (16%)
prescription drug use	141 (92%)	102 (66%)	63 (63%)
illicit drug misuse	148 (96%)	64 (42%)	17 (11%)

## **Education, training & attitudes to alcohol-related issues**

Regarding training and education concerning alcohol-related issues, the majority of nurses had received less than 4 hours of such experience (64%) over their whole career as a nurse.

Nevertheless nurses reported high role legitimacy (78%) and moderate role adequacy (66%) for working with alcohol-related problems. However, nurses reported less satisfaction (24%), motivation (15%) and self-esteem (10%) regarding working with alcohol-related problems.

## **Feedback on brief alcohol intervention experience**

Most nurses rated their experience with the brief intervention programme as positive (67%) or very positive (7%). Further views about the clarity, relevance, presentation and ease of use of programme materials are shown in Table 4.

The majority of nurses felt that the brief intervention programme was suitable for use in general practice (69%). Moreover, just under half reported that they would probably use the brief intervention techniques on an ongoing basis (46%).

Where nurses reported that they would not continue to use the brief intervention techniques in practice, the primary reason given was due to a lack of time (76%).

**Table 4. Nurses' feedback about the brief intervention programme**

<b>Item</b>	<b>Good/very good</b>
<b>Screening materials</b>	
Clarity	92%
Relevance	86%
Presentation	95%
Ease of use	75%
<b>Alcohol advice card</b>	
Clarity	97%
Relevance	94%
Presentation	98%
Ease of use	81%
<b>Patient booklets</b>	
Clarity	97%
Relevance	93%
Presentation	95%
Ease of use	72%
<b>Programme Guidelines</b>	
Clarity	87%
Relevance	84%
Presentation	93%
Ease of use	68%

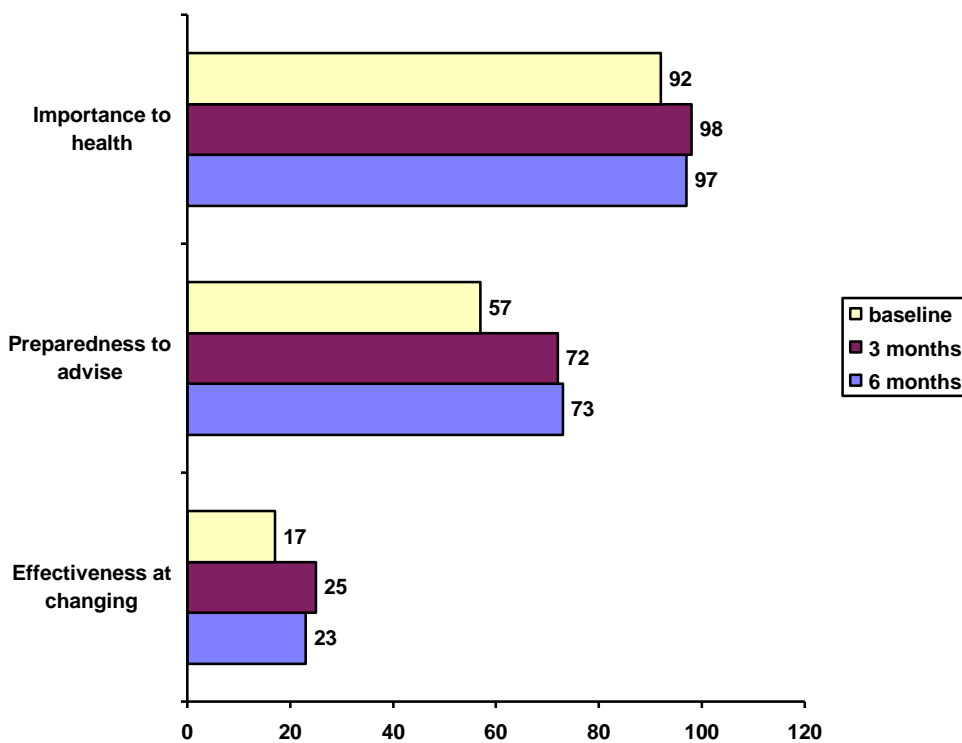
### **Changes in nurses' attitudes**

After experience with the brief intervention programme, there was a improvement in nurses' attitudes towards alcohol-related issues (see Graph 2). There was a significant increase in ratings for the importance of alcohol consumption at 3 and 6 months after the intervention.

There was also a significant improvement in nurses' preparedness to advise patients about alcohol consumption at 3 and 6 months after the intervention.

Lastly, there was a significant improvement in perceived effectiveness at changing excessive alcohol consumption at 3 months, although this effect was not maintained at 6 months.

**Graph 2. Percentage changes in nurses' ratings about alcohol intervention**



There was a significant decrease in the proportion of nurses who preferred to refer patients on for lifestyle advice from 12% at baseline to 4% at 3 months after the intervention, although this finding was not apparent at 6 months.



Regarding changes in nurses' attitudes to working with alcohol-related problems, there was a significant decrease in motivation to work with problem drinkers at 3 months after intervention, although this trend had disappeared at 6 months after the intervention.

Finally, at 6 months after the intervention, nurses reported a significant increase in role legitimacy regarding working with alcohol-related problems.

## IMPLICATIONS

The high uptake rate of materials in this study, combined with the fact that the main reasons for non-implementation were time and workload constraints, suggested that there was a great deal of interest among primary health care nurses in the screening and brief alcohol intervention approach.

At the end of study period 60% of all nurses that had agreed to use a brief alcohol intervention programme had actually implemented it in their practices.

However, there was a significant difference in implementation rate by intervention condition. Nurses that received training or training plus telephone-based support were significantly more likely to implement brief alcohol intervention compared to control nurses that received written guidelines alone.

Thus the provision of relevant practice-based training had an important influence on whether nurses actually implemented brief alcohol intervention,. However, additional telephone-based support calls did not appear to significantly enhance this activity. Nonetheless, it was clear that giving primary care nurses brief intervention materials with just written guidelines was not sufficient to effectively promote implementation.

The costs per nurse of providing training and support interventions in this study were approximately £60 for a control, £88 for a trained nurse and £87 for a trained and supported nurse. Training costs were comparable with the costs of delivering training plus support, since

the telephone charges for support calls were much less influential on overall costs than the time and mileage associated with travel to practices.

When implementation rates were set against the costs of intervention, training nurses was found to be the most cost-effective implementation strategy. The cost per nurse using the programme was £119 for trained nurses compared to £122 for a trained and supported nurses and £155 for a control nurses.

Most of the nurses who implemented the brief alcohol intervention programme in this study did so opportunistically, that is when they had enough time to undertake the extra screening and intervention activity. Programme implementation also tended to occur in specific contexts such as new patient registrations, well person checks or in chronic disease monitoring clinics.

Restriction of screening and brief alcohol intervention to specific contexts was due to the part-time working status of many nurses and a tendency of nurses to specialise on particular health issues. Future implementation research may need to take account of the working context of primary health care nurses and adopt a flexible approach to use of interventions in practice.

Most nurses in this study did not have receptionist help in giving out screening questionnaires. However, when such help was available, nurses implemented the programme more extensively. Nurses reported that they could not ask receptionists to help them with extra work in practices without seeking permission from GPs or practice managers. It is

possible that securing assent for involvement in brief alcohol intervention from the whole of the primary health care team, and in particular from GPs, might enable more efficient delivery of screening and brief alcohol intervention in routine practice.

In addition to implementation rate differences, there was a significant difference between intervention condition in overall numbers of patients screened, identified as 'risk' drinkers and given brief intervention. Nurses who received training or training and support showed greater involvement in screening and brief alcohol intervention compared to control nurses. Trained nurses and those with additional support were also more accurate in their delivery of brief intervention than control nurses.

However, overall screening and brief intervention rates in the study were low. Median screening rates ranged from 0-2% of eligible patients and median brief intervention rates ranged from 0-37% of risk drinkers identified. These low rates were partly due to the fact that analysis included all nurses, including those who dropped out of the study. However, they were also due to the fact that at least some nurses used the programme inaccurately, either by not intervening with all risk drinkers identified or by inappropriately intervening with non-risk drinkers.

Thus at least some nurses used criteria other than (or in addition to) patients' risk drinking status to determine who should receive brief alcohol intervention and future analysis may need to investigate this issue further.

Two thirds of nurses reported that they did not have enough training for lifestyle intervention work. Given that health promotion is such a significant feature of primary care nurse practice this finding was unexpected.

With regard to alcohol-related issues, nearly two-thirds of nurses in this study had received less than 4 hours of training or education on this subject. This finding is in accordance with a previous research with primary care professionals.

Given that current health policy is to extend the health promotion and public health role of primary care nurses, more focus should be place on providing nurses with better preparation for this role. Since direct experience with a brief alcohol intervention programme appeared to produce positive changes in nurses' attitudes to alcohol-related issues, future training in health promotion and lifestyle intervention should focus on practical, skills-based approaches.

We hope that the results of this study will provide direction for future planning of health promotion programmes and policies in primary health care, which could contribute to decreasing the health and social costs of excessive alcohol consumption in the population.