

MODERATING BINGE DRINKING: IT IS POSSIBLE TO CHANGE BEHAVIOUR IF YOU PLAN IT IN ADVANCE

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Abstract — Recent theories of enactment suggest that behaviour change is increased by planning how, where, and when to execute a behavioural response. Drawing on these theories, a brief planning intervention was designed and its effectiveness compared to an information-based health promotion programme (control). All participants were given information about the safe limits per drinking occasion and the adverse consequences of binge drinking, and were asked to drink within the safe limits in order to avoid these consequences. In addition, participants in the planning intervention group received an option menu of possible responses for refusing a drink, asked to choose one strategy and specify a time and place in which the chosen strategy would be implemented. The planning intervention group did not differ from the control group on reported likelihood of future binge drinking, nor on levels of past drinking, age and gender. At a 2-week follow-up, members of the planning intervention group reported lower drinking frequency than controls. The implications of prior planning for interventions aimed at reducing alcohol-related harm are discussed.

INTRODUCTION

The prevalence of drinking above the safe limits on single drinking occasions calls for urgent attention. Binge drinking appears to be most common amongst males and young people (Health Promotion Wales, 1990), especially among students with 56% of male students and 34% of female students designated as binge drinkers (Wechsler and Isaac, 1992). Very little information is currently available on the cognitive processes mediating binge drinking which might be used to inform prevention packages.

Social cognition theories applied to health behaviours stress that intention to initiate an action is a crucial step in behaviour change. However, studies find only weak associations between behavioural intentions and enactment (e.g. Shepperd *et al.*, 1988). Recent developments suggest that the identification of the social processes leading individuals to adopt a recommended action is a crucial step in behaviour change (e.g. Schwarzer, 1992; Gollwitzer, 1993).

The linkage between the post-intentional and pre-actional phase is believed to be heavily influenced by the planning process. Gollwitzer (1993) argued that intentions must be translated into 'implementation intentions' by specifying how, when and where an action is to be executed. Similarly, Schwarzer (1992) highlighted the importance of action plans, actional control processes, and situational resources in translating intentions into behaviour.

The progress has been mainly theoretical (Karloy, 1993). Enactment models often rely on cognitive evidence found in laboratory settings (e.g. Gollwitzer, 1993). It has been argued, however, that elements of these theories could be successfully applied to the health domain and there is some preliminary evidence suggesting that behavioural enactment of breast self-examination is facilitated if a person plans where and when to implement a behavioural intention (Orbell and Hodgkins, 1994).

Orbell and Hodgkins (1994) were able to improve enactment of a previously unperformed behaviour, breast self-examination. However, for regular drinkers, behavioural change involves changing habitually performed maladaptive beha-

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viours. It remains to be seen whether this implementation intention procedure will be effective in changing habitual behaviours. Consequently, the present study was conducted to determine whether planning where, when and how to refuse a drink would promote a greater reduction in binge drinking than a more conventional information-based health promotion message.

METHODS

Purpose and design

The aim of the study was to explore the potential effectiveness of planning where, when and how to refuse a drink in reducing binge drinking. This was done by comparing two groups: (A) An experimental group whose participants received information about safe drinking limits and the adverse consequences of drinking above these limits, and were asked to drink within the safe limits in order to avoid these consequences. In addition, respondents were asked to choose a strategy from a menu of alternative strategies for refusing a drink and specify a time and place in which the chosen strategy would be implemented. (B) A control group, which received the same information as the experimental group (safe limits, the adverse consequences), was asked to drink within safe limits, but did not receive the planning task of choosing a strategy and specifying the time and place for its implementation. Participants were randomly allocated to the two groups to ensure comparability in all aspects other than their exposure to the planning task. The two groups were compared at baseline to ensure their equivalence, especially in their initial motivation to moderate their drinking behaviour (they were compared on past drinking, reported likelihood of future binge drinking, age and gender). At follow-up, 2 weeks later, participants reported on their frequency of binge drinking during the 2-week period. In accordance with Marlatt (1994), binge drinking is defined as the consumption of five drinks (USA) which is the equivalent of six or more units of alcohol (UK) on a single drinking occasion. The following quantities of alcohol represent a unit (UK): $\frac{1}{2}$ pint of beer, a small glass of wine, a small measure of spirit.

Respondents

A sample of 102 undergraduate students

participated, of whom 26.5% were males and 73.5% were females. Respondents' age varied between 18 and 49 years with a mean of 26 years. Only 5% were married or with a regular long-term partner, the remaining 95% being single.

Measures

Data were collected by means of a questionnaire survey which tapped the following:

Previous drinking behaviour. Two dimensions of past drinking behaviour were measured: frequency and recency. Frequency of drinking behaviour was measured by one item: 'how often do you drink 6 units or more on one drinking occasion?' It was assessed using a 4-point scale: most days/once or twice a week/once in 2 weeks or less/never. Recency of drinking behaviour was assessed by a yes/no item: 'have you consumed 6 units or more on one drinking occasion in the past 2 weeks?' Only those respondents who ticked one of the first three responses of frequency of binge drinking and/or a 'yes' response in the recency of binge drinking were classified as binge drinkers and included in this study.

Target behaviour. Actual drinking behaviour was measured 2 weeks later using the same measures as for past behaviour frequency and recency.

Reduction in binge drinking. Reduction in frequency of binge drinking was calculated by subtracting the frequency of binge drinking at follow-up from past frequency of binge drinking (the higher the score the greater the reduction in binge drinking).

Likelihood of future binge drinking. Perceived likelihood was measured by four items which related to typical drinking situations: drinking with a group of friends on a weekend, meeting a friend for a drink during a working week, drinking at a party/night club, at a dinner party/celebration. For example: 'suppose you go to a party one evening, how likely is it that you would drink 6 units or more?' Items were assessed on a 7-point scale from 'extremely likely' to 'extremely unlikely'. The four scores together formed a composite score of likelihood to drink at safe limits (alpha 0.85).

Social desirability scale. As the study involves a follow-up of a plan to carry out a specific act, issues of social desirability effects may be involved. To control for these effects, a 9-item social desirability scale was taken from Eysenck

Personality Inventory (Eysenck and Eysenck, 1964). Any respondent who scored 5 or more on the scale (maximum score 9) was excluded from the analysis. Five of the 107 participants in the sample were excluded, leaving 102 respondents in the analysis.

Planning how, where, and when to refuse a drink — experimental condition. A 6-option menu representing possible ways of refusing a drink was used. The menu was developed from a pilot study of 10 binge drinkers who were asked to identify possible ways of refusing a drink. The most frequently chosen responses were selected: (1) 'no thanks, I do not want to get drunk, I would rather just have a few tonight', (2) 'no thanks, I am watching my weight', (3) 'no thanks, I have to get up early tomorrow', (4) 'no thanks, I cannot afford to be in a round', (5) 'no thanks, I am driving', (6) 'no thanks, I do not want another drink'. Respondents were asked to circle one of 6 options: 'please choose one of the above options as a possible response when offered a drink which you intend to refuse'. In addition, respondents were given the option of choosing their own preferred choice for refusing a drink by adding 'if, however, none of the above 6 options seems appropriate to you, please state a response which you prefer to use'. Respondents were asked: 'please specify the appropriate time and place in which your chosen response would be executed' (e.g. 'on the forthcoming weekend at the local pub').

Demographics. Gender, age and marital status were recorded.

Procedure

Participants were approached during a lecture. Prior to the distribution of the questionnaire participants were informed (orally) that 'the study is aimed at reducing alcohol consumption'. They were also informed that 'alcohol consumption is alarmingly high. This is often because people hold erroneous perceptions regarding safe limits. People typically believe that keeping weekly safe limits is sufficient to avoid the harmful effects of alcohol. This, however, is a misconception as one can drink within the safe weekly limits and still be at risk if one does not drink within the safe limits per drinking occasion. Drinking above the safe limits per drinking occasion has dire consequences for health and well-being. You are therefore asked to drink at

safe limits per drinking occasion in order to avoid the consequences of harmful drinking. In this study you will be informed of the safe limits per drinking occasion and receive detailed information of the consequences of excessive drinking.'

In addition to this spoken message, all participants received written information focusing upon the safe limits per drinking occasion and the adverse consequences of drinking above these limits. Of the 102 remaining respondents, 54 were randomly allocated to the experimental (planning intervention) group and 48 to the control group. All participants were approached collectively. Each respondent (both in the experimental and control conditions) received a self-reported questionnaire comprising the following: (1) information about the safe limits and the adverse consequences of drinking above these limits; (2) measures of past drinking behaviour and demographic variables; (3) social desirability items; (4) behavioural likelihood of drinking at safe limits. The questionnaire distributed to the experimental group also included the planning task. Both the planning intervention and control groups received an envelope containing a second questionnaire to be completed at a later date to assess the target behaviour of post-intervention binge drinking. They were asked to complete this on a date 2 weeks ahead and return it to the psychology general office of the University (either by post or in person). To maintain anonymity, respondents identified themselves using a personally generated code.

RESULTS

Descriptive findings

All respondents engaged in binge drinking to some extent. Five per cent reported binge drinking most days, 33% reported binge drinking once to twice a week and 60% reported binge drinking once in 2 weeks or less frequently. On average, respondents reported low likelihood of drinking at safe limits on typical drinking situations (mean = 13.5).

Behavioural likelihood, past drinking, gender and age are all factors which in previous studies have been found to correlate with binge drinking (e.g. Health Promotion Wales, 1990). To ensure that these factors were not confounded with the experimental manipulation, the intervention and

Table 1. Comparison of the planning intervention and control groups on drinking behaviour, likelihood of binge drinking, age and gender

	Planning intervention				Control				<i>F</i> -value Condition	<i>F</i> -value Gender	<i>F</i> -value Condition and Gender
	Male		Female		Male		Female				
	Mean	(SD)	Mean	(SD)	Mean	(SD)	Mean	(SD)			
Past drinking frequency	2.58	(0.67)	2.59	(0.54)	2.35	(0.63)	2.69	(0.68)	0.62	1.62	1.34
Drinking frequency at follow-up	2.91	(0.90)	3.35	(0.82)	2.50	(0.85)	2.78	(0.96)	8.98**	3.22	0.14
Reduction in drinking frequency	-0.33	(0.49)	-0.76	(-0.75)	-0.14	(-0.53)	-0.09	(-0.91)	12.74***	1.08	1.89
Likelihood of binge drinking	12.75	(7.81)	13.32	(7.04)	11.71	(6.53)	14.66	(7.14)	0.25	1.21	0.54
Age (years)	27.33	(8.02)	28.02	(11.3)	25.64	(7.67)	24.54	(4.86)	2.94	0.01	0.20
Past drinking recency											
No. of 'yes' responses	35				28						
No. of 'no' responses	19				20						
Recency of drinking at follow-up											
No. of 'yes' responses	29				36						
No. of 'no' responses	25				12						
Gender											
No. of males	12				15						
No. of females	42				33						

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.

control groups were compared on these measures by means of a series of 2×2 analyses of variance (ANOVA; condition by gender) for past drinking frequency, behavioural likelihood, and age measures (Table 1) and a series of 2×2 χ^2 -tests for the dichotomous measures, past drinking recency (condition by recency) and gender (condition by gender).

As shown in Table 1, there were no significant differences between the experimental and control groups on past drinking frequency, behavioural likelihood and age. There were also no gender differences or interaction effects. The χ^2 -tests showed that the two groups did not differ significantly on past drinking recency ($\chi^2 = 0.22$, $df = 1$) and gender ($\chi^2 = 0.56$, $df = 1$). The two groups were equivalent at baseline.

Reduction in binge drinking

To determine the impact of the brief intervention on future levels of drinking, a two-way ANOVA (condition by gender) was performed with change in the frequency of binge drinking over time as the dependent measure in one analysis and drinking frequency at follow-up as the dependent variable in a second analysis (Table 1). As shown, the experimental group differed from the control group both on drinking frequency at follow-up and reduction in drinking frequency at follow-up with members of the experimental group showing lower reported frequency of binge drinking at follow-up and greater reduction in drinking frequency at follow-up. There were no gender differences or interaction effects. χ^2 analysis was conducted to explore the differences between reported recency of binge drinking at follow-up. The test showed significant differences between the two groups ($\chi^2 = 5.32$, $df = 1$; $P = 0.05$) with a lower proportion of the experimental group having engaged in binge drinking since the intervention.

To confirm that the impact of the intervention was independent of levels of previous drinking and of perceived likelihood to drink at safe limits, two separate analyses of covariance were performed with intervention condition and gender as the independent measures, change in the frequency of binge drinking over time as the dependent measure and frequency of previous drinking as the covariate in one analysis and perceived likelihood to drink at safe limits as the

covariate in the second analysis. In both analyses, the intervention resulted in a reduction in the frequency of binge drinking ($F = 12.9$, $df = 96.1$; $P < 0.001$; and $F = 12.1$, $df = 95.1$; $P < 0.001$ respectively), while the covariate was unrelated or weakly related to that reduction (for frequency of past binge drinking $F = 4.0$, $df = 96.1$; $P < 0.04$ for perceived likelihood to drink at safe limits $F = 0.25$, $df = 95.1$).

DISCUSSION

The results show that prior planning for the enactment of reductions in binge drinking increases the likelihood of its execution amongst young adults. Specifically, the study shows that supplementing information on drinking at safe limits with a planning task results in reductions in reported binge drinking at follow-up. Moreover, this was the case for two groups that did not differ initially on measures of perceived likelihood of future binge drinking, past drinking behaviour, age and gender. Their initial motivation to modify their drinking behaviour and intention to change were similar, but those participants receiving the planning intervention were more successful in effecting this change.

Gollwitzer (1993) argued that by making a specific plan to act, one passes control for behaviour over to the environment, so that when the specified time or place are encountered, one's intention to act will 'come to mind'.

The present findings are consistent with those of Orbell and Hodgkins (1994). Over and above confirming the role prior planning plays in behaviour change, the present study shows that the benefits of prior planning are not limited to the adoption of unexperienced adaptive behaviour such as conducting a breast self-examination, but also extend to the reduction of an experienced non-adaptive behaviour such as binge drinking.

Interestingly, the present study shows that prior planning to refuse a drink reduces self-reported drinking behaviour at follow-up, irrespective of the levels of perceived likelihood to drink at safe limits reported. Similarly, Orbell and Hodgkins (1994) showed that the effects of implementation intentions were not dependent upon the strength of an initial adaptive behavioural intention. This highlights the need for interventions to move away from predicting and enhancing adaptive intentions

(or likelihood) to the identification of the cognitive processes which are the more proximate determinants of action.

Why should prior planning work among a group of binge drinkers many of whom reported low perceived likelihood of drinking at safe limits? The answer may be found in the relationship between intention, prior planning and future behaviour. Prior planning may be an antecedent of intention and/or action. Possibly, prior planning works by increasing the level of adaptive intentions resulting in the desired behaviour change. Evidence for the relationship between prior planning and intention was shown by Ben-Ahron *et al.*, (1995), who reported that rational problem solving, an element of prior planning (as it considers rational ways of overcoming the obstacles involved in executing a recommended response), was the best predictor of intention to drink at safe limits on every drinking occasion. Experienced binge drinkers realize the difficulties involved in refusing a drink. Faced with a menu of alternative change options, their perceived capability of refusing a drink may have increased and, coupled with a 'plan of action', resulted in a subsequent reduction of drinking behaviour in the experimental group.

The benefits of prior planning have important practical applications to interventions aimed at reducing alcohol-related harm. Brief intervention, the general process of raising awareness and advising change, has the most robust and consistent support amongst alcohol interventions (Bien *et al.*, 1993). It has two essential components, the provision of information at the early stage of alcohol consumption and brief therapy delivered at the point of the first contact, and which usually takes between 5 and 30 min. It is argued that prior planning offers a viable practical tool that should be incorporated in brief interventions. Prior planning worked in reducing binge drinking frequency at a 2-week follow-up, although the time period in which this effect

would last is not yet determined. The likelihood of a long-lasting effect is low without a process of repeated planning. The benefits of prior planning offer promise to those interested in reducing alcohol-related harm.

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