Understanding binge drinking among young people: an application of the Theory of Planned Behaviour

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Abstract

Binge drinking (i.e. consuming half the recommended weekly consumption of alcohol in a single session) is a common activity among young people. Using the Theory of Planned Behaviour as its theoretical framework, this paper reports a study exploring the motivational and attitudinal factors underlying binge drinking in a sample of undergraduate students. Questionnaires were completed by 136 undergraduates which focused on their drinking behaviour and their beliefs about binge drinking. Binge drinking was found to be more prevalent among male respondents, and a number of significant differences in the beliefs of male and female respondents were found which supported this difference in drinking behaviour. A regression analysis identified two key predictors of the frequency of binge drinking; these being positive control beliefs and perceived behavioural control. Frequent binge drinkers were more likely to recognize the influence of a range of factors which may serve to encourage binge drinking (e.g. celebrating an event) and less likely to believe that the decision to engage in binge drinking is under their control. The results are discussed in relation to measures which may help to reduce the incidence of binge drinking through changes in the social environment.

Introduction

High alcohol consumption has been linked to a range of adverse effects, including high blood pressure (Shaper et al., 1981), heart disease (Sherlock, 1982) and cirrhosis of the liver (Colliver and Malin, 1986). In addition to the above diseases, high levels of alcohol consumption have also been associated with accidents, injuries, suicides, crime, domestic violence, rape, murder and unsafe sex (British Medical Journal, 1982; Morgan Thomas et al., 1990). While many of the adverse effects of high alcohol consumption are due to continued heavy drinking (e.g. cirrhosis of the liver, heart disease, etc.), others are more specifically related to excessive alcohol consumption in a single drinking session (e.g. unsafe sex, violence, etc.). For example, the Royal College of Psychiatrists (1986) have estimated that the incidence of car accidents is related to the blood alcohol level of the driver with the incidence being twice as high at 80 mg/100 ml and 10 times higher at 150 mg/100 ml. A similar pattern emerges for non-traffic injuries (Hingson and Howland, 1993). Honkanen et al. (1983) found that 53% of hospital out-patients treated for accidental falls in Finland had been drinking prior to their fall compared with only 15% of time-, location- and sex-matched controls. As with the incidence of car accidents, the probability of having a fall was found to be dose related. Moreover, there is evidence to suggest a link between 'binge' drinking and, up to 24 h later, the incidence of stroke (Lancet, 1983).

In recent years health promotion campaigns have highlighted the negative health effects of continued heavy drinking and have advocated
drinking within sensible weekly limits (at the
time of the study, up to 14 units of alcohol per
week for women and up to 21 units for men)
(HEA, 1987). These guidelines also recommend
moderate alcohol consumption on each occasion
and the avoidance of 'binge' drinking. However,
Despite the potential adverse effects of heavy
drinking in a single session, relatively little
research has been focused on this issue. In one
of the few studies in the area, Moore et al.
(1994) examined the prevalence of binge drinking
in Wales, using Bennett et al.'s (1990) definition
of a binge as drinking half the recommended
weekly consumption of alcohol in a single
session (i.e. at least 7 units of alcohol for women
and 10 units for men). They found that the
prevalence of binge drinking was highest among
younger age groups, with 31.1% of drinkers
aged 18–24 engaging in binge drinking at least
once a week. In addition, male drinkers were
more likely to engage in binge drinking as were
single people. Considering education level, 25.4%
of drinkers in full-time education engaged in
binge drinking at least once a week, although
this was mainly accounted for by age and marital
status. As expected binge drinking was positively
associated with weekly alcohol consumption,
with over 50% of 'at risk' drinkers (i.e. 22–49
units/week for men and 15+ units/week for
women) and 90% of 'harmful' drinkers (i.e. 50+
units/week for men) engaging in binge drinking
at least once a week. However, binge drinking
was not found to be restricted to heavy drinkers,
with 11.2% of drinkers who kept within recom-
mended weekly limits also engaging in binge
drinking at least once a week.

Moore et al. (1994) concluded that while there
is a high prevalence of binge drinking in Wales
it cannot entirely be explained by the level of
weekly alcohol consumption and called for further
research on the determinants of, and motivations
underlying, binge drinking among young adults.
One model which may usefully be employed to
identify the key motivational factors underlying
binge drinking is the Theory of Planned Behaviour
(TPB: Ajzen, 1991). The TPB is a widely used
social psychological model of the relationship
between attitudes and behaviour which has been
successfully applied to the prediction of a range
of health behaviours (see Conner and Sparks,
1996). Briefly, the TPB outlines three main
influences on a person's behaviour: his/her
evaluation of the behaviour (i.e. attitude), his/
her perception of the social pressure to engage
in the behaviour (i.e. subjective norm) and his/
her perception of control over performing the
behaviour (i.e. perceived behavioural control).
Underlying each of these three factors are
specific beliefs focusing on the consequences of
performing the behaviour (i.e. behavioural
beliefs), the perceived wishes of important
referents (i.e. normative beliefs) and the factors
which may inhibit or facilitate performance of
the behaviour (i.e. control beliefs).

To date, the TPB has not been used to examine
the determinants of binge drinking, although in
a longitudinal survey of Canadian school students,
Schlegel et al. (1992) found that the three main
components of the TPB contributed to the
prediction of intentions to get drunk which, in
turn, were predictive of the frequency of getting
drunk in non-problem drinkers. In an earlier
phase of the survey, Schlegel et al. (1987)
examined the utility of the attitude and subjective
norm components in distinguishing between
regular drinkers who showed controlled drinking
(i.e. usually consumed 1–3 drinks per session)
and uncontrolled drinking (i.e. usually consumed
at least 8 or 9 drinks per session). These two
variables successfully discriminated between the
two groups, although a number of other variables
were also found to be important, including a
measure of locus of control.

The present paper reports a study using the
TPB to identify the key beliefs underlying binge
drinking in a sample of undergraduates at a
Welsh university. Such a sample is likely to be
an 'at risk' group, given that Moore et al. (1994)
found that nearly a third of young people aged
18–24 and over a quarter students in full-time
education engaged in binge drinking at least
once a week.
Understanding binge drinking

Method

Respondents
A sample of undergraduates attending a Welsh campus-based university was recruited. Potential respondents were approached personally by the third author in various settings (e.g. coffee bar, dining hall, lecture theatre, etc.) and asked to complete a short questionnaire on attitudes towards alcohol. Respondents either completed the questionnaire straight away or took the questionnaire away to complete in their own time and return to the Psychology department. Respondents participated in the survey voluntarily, receiving no payment for completion of the questionnaire. In total, questionnaires were completed by 136 undergraduates. The sample consisted of 59 males and 77 females who were aged between 18 and 27 (median age = 20).

Measures
The questionnaire was based on the TPB (Ajzen, 1991) and was developed from pilot interviews with an additional 16 undergraduates (eight male and eight female) in line with Ajzen and Fishbein’s (1980) recommendations. Unless otherwise indicated, all items were scored on seven-point response scales following procedures outlined by Ajzen (1988). Reliable measures were identified through a combination of factor analysis and internal reliability measures.

The front page of the questionnaire gave a brief description of what constituted a ‘binge’ drinking session and asked respondents to indicate ‘On average, how often would you say you drank 3.5 pints/7 shorts (or 5 pints/10 shorts) in a session?’. (Two versions of the questionnaire were produced. For males, the amount of alcohol referred to was always 5 pints/10 shorts, while for females the amount was always 3.5 pints/7 shorts.) Respondents indicated the average number of times they engaged in binge drinking using a time frame of either a week, a fortnight, a month or a year as appropriate. For analysis all responses were recorded into frequency per month. The respondents were also asked ‘In a typical week, how much alcohol would you consume?’. Respondents indicated how many pints of beer/larger/cider, how many shorts and how many glasses of wine they consumed in a typical week. These responses were recoded into units of alcohol and summed to give a weekly total.

The rest of the questionnaire was based on the TPB. Respondents’ attitude towards binge drinking was measured through the use of five semantic differential scales (e.g. Drinking 3.5 pints/7 shorts in a session would be unpleasant/pleasant) (α = 0.86). Subjective norm was measured using three items (e.g. People who are important to me would approve/disapprove of me drinking 3.5 pints/7 shorts in a session) (α = 0.41). Three items were used to measure perceived behavioural control (e.g. Whether or not I drink 3.5 pints/7 shorts in a session is largely controlled by myself) (α = 0.78).

A number of belief-based measures were also included in the questionnaire. For behavioural beliefs respondents were asked to indicate their agreement with various potential outcomes (e.g. Drinking 3.5 pints/7 shorts in a session would make me feel more confident) and their evaluation of the outcomes (e.g. Feeling more confident would be...good/bad). Responses to each pair of items were multiplied together. Two behavioural belief scales were subsequently constructed. The first focused on positive behavioural beliefs and included four item pairs (e.g. Drinking 3.5 pints/7 shorts in a session would make me feel happy) (α = 0.78), while the second focused on negative behavioural beliefs and also included four item pairs (e.g. Drinking 3.5 pints/7 shorts in a session would make me suffer from a hangover later on/ the next day) (α = 0.64).

For normative beliefs respondents were asked to indicate the extent to which certain referents would approve or disapprove of them binge drinking (e.g. My friends would approve/disapprove of me drinking 3.5 pints/7 shorts in a session) and the extent to which they were motivated to comply with these referents (e.g. With regard to my drinking, I want do what my friends think I should). Responses to each pair of items were multiplied together. Two normative belief scales
were subsequently constructed including those referents who would encourage binge drinking (positive normative beliefs) (two items, $\alpha = 0.62$) and those who would discourage binge drinking (negative normative beliefs) (three items, $\alpha = 0.76$).

Finally, for control beliefs respondents indicated the extent to which certain factors would facilitate or inhibit binge drinking (e.g. Celebrating an event would make me more/less likely to drink 3.5 pints/7 shorts in a session) and their frequency of occurrence (e.g. I celebrate events...never/frequently). Responses to each pair of items were multiplied together and two control belief scales were subsequently constructed. The first included three items and focused on factors that might facilitate binge drinking (positive control beliefs) (e.g. Being at a club or party would make me more/less likely to drink 3.5 pints/7 shorts in a session) (a = 0.81). The second included three items and focused on factors that might inhibit binge drinking (negative control beliefs) (e.g. Having to be up early the next day would make me more/less likely to drink 3.5 pints/7 shorts in a session) (a = 0.52).

**Results**

**Descriptive data**

Binge drinking was found to be a common activity in the present sample, with 46.3% of respondents reporting that they engaged in binge drinking at least once a week. Male respondents were more likely to engage in binge drinking, reporting an average of 4.67 binge drinking sessions per month compared with 2.46 binge drinking sessions per month for female respondents ($t = 4.00, P < 0.001$), such that 64.4% of male respondents engaged in binge drinking at least once a week compared with only 32.5% of female respondents ($\chi^2 = 13.70, P < 0.001$). In addition, male respondents consumed more units of alcohol in a typical week compared with female respondents (26.97 versus 9.40 units) ($t = 6.98, P < 0.001$), such that 50.8% of males consumed more than their weekly limit compared with only 16.9% of females ($\chi^2 = 17.84, P < 0.001$).

In relation to beliefs about binge drinking, male respondents were found to have a more positive attitude towards binge drinking ($t = 3.82, P < 0.001$), to perceive more social pressure to engage in binge drinking both overall ($t = 3.37, P < 0.01$) and from friends and drinking mates ($t = 4.07, P < 0.001$), to perceive fewer inhibitors to engage in binge drinking ($t = 2.30, P < 0.05$), and to perceive more facilitators to engage in binge drinking ($t = 2.82, P < 0.01$).

**Correlates of binge drinking**

Due to the number of significant sex differences described above, the correlations between the TPB variables and frequency of binge drinking were computed as partial correlations, controlling for sex (see Table I). The correlations showed that frequent binge drinkers were more likely to have a positive attitude towards binge drinking ($t = 3.82, P < 0.001$), to perceive more social pressure to engage in binge drinking, to believe that binge drinking leads to various positive consequences and to see many facilitators of binge drinking. Frequent binge drinkers were also less likely to believe that binge drinking leads to negative consequences and to believe that they have control over their binge drinking. In addition, a strong positive correlation was found between

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**Table I. The TPB and frequency of binge drinking (controlling for sex)**

<table>
<thead>
<tr>
<th>Step/variable</th>
<th>$r$</th>
<th>$^2R^2$</th>
<th>$R^2$</th>
<th>$\beta$</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Sex</td>
<td>0.09</td>
<td>0.09</td>
<td>0.14</td>
<td></td>
</tr>
<tr>
<td>2. Attitude</td>
<td>0.42***</td>
<td>0.29</td>
<td>0.38</td>
<td>0.17</td>
</tr>
<tr>
<td>Subjective norm</td>
<td>0.27**</td>
<td></td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Perceived behavioural control</td>
<td>-0.19*</td>
<td>-0.28**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behavioural beliefs (+ve)</td>
<td>0.29**</td>
<td></td>
<td>0.10</td>
<td></td>
</tr>
<tr>
<td>Behavioural beliefs (-ve)</td>
<td>0.28**</td>
<td></td>
<td>0.08</td>
<td></td>
</tr>
<tr>
<td>Normative beliefs (+ve)</td>
<td>0.22*</td>
<td></td>
<td>0.04</td>
<td></td>
</tr>
<tr>
<td>Normative beliefs (-ve)</td>
<td>0.17</td>
<td></td>
<td>0.05</td>
<td></td>
</tr>
<tr>
<td>Control beliefs (+ve)</td>
<td>0.44***</td>
<td></td>
<td>0.34**</td>
<td></td>
</tr>
<tr>
<td>Control beliefs (-ve)</td>
<td>0.16</td>
<td></td>
<td>0.02</td>
<td></td>
</tr>
</tbody>
</table>

* $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$.
frequency of binge drinking and the number of units consumed in a typical week ($r = 0.63$, $P < 0.001$), such that 93.0% of respondents who consumed more than the recommended weekly limit engaged in binge drinking at least once a week compared with only 24.7% of respondents who kept within weekly limits ($\chi^2 = 55.15$, $P < 0.001$).

Predictors of binge drinking: regression analysis

In order to identify the most important predictors of binge drinking, the TPB variables were entered into a regression analysis. Sex was entered at the first step, followed by the TPB variables at the second step. In this way it was possible to control for the effects of sex. As shown in Table I, sex was able to explain 9% of the variance in the frequency of binge drinking ($F = 10.62$, d.f. = 1,114, $P < 0.01$). The addition of the TPB variables led to a significant increase in the amount of variance explained ($R^2$ change = 0.29, $F$ change = 5.55, $P < 0.001$). Together the variables under consideration were able to explain 38% of the variance in the frequency of binge drinking ($F = 6.43$, d.f. = 10,105, $P < 0.001$). Inspection of the $\beta$ values revealed that only two variables emerged as significant independent predictors in the final regression equation, these being perceived behavioural control ($\beta = -0.28$, $P < 0.01$) and positive control beliefs ($\beta = 0.34$, $P < 0.01$). Frequent binge drinkers were therefore less likely to believe that they have control over their binge drinking and more likely to see many facilitators of binge drinking.

A further regression analysis was conducted in which respondents' typical weekly consumption of alcohol was entered at a third step. This led to a further increment in the amount of variance explained ($R^2$ change = 0.14, $F$ change = 29.01, $P < 0.001$), with the variables under consideration explaining 52% of the variance in the frequency of binge drinking ($F = 10.05$, d.f. = 11,104, $P < 0.001$). However, both perceived behavioural control ($\beta = -0.21$, $P < 0.01$) and positive control beliefs ($\beta = 0.21, P < 0.05$) still emerged as significant independent predictors of binge drinking along with the number of units consumed in a typical week ($\beta = 0.51$, $P < 0.001$).

Discussion

The present study sought to identify the motivational factors underlying binge drinking in a sample of undergraduate students. Binge drinking was found to be a common activity with 46.3% of the sample engaging in binge drinking at least once a week. This figure is slightly higher than that obtained for people in full-time education in Moore et al.'s (1994) study, but may reflect the nature of the current sample who were all studying at a campus-based university. Such an environment may contain its own particular social pressures to engage in binge drinking (e.g. cheap bars, close social networks, etc.). Male respondents reported engaging in binge drinking more frequently than female respondents, with 84.7% of male respondents engaging in binge drinking at least once per week compared with only 32.5% of female respondents. This difference between male and female respondents in their pattern of alcohol consumption was also reflected in a number of significant differences in their beliefs about binge drinking. Male respondents had a more positive attitude towards binge drinking and were more likely to perceive themselves to be under social pressure to engage in binge drinking, particularly from friends and drinking mates. In addition, they cited more factors which may act to make binge drinking more likely to occur, such as celebrating an event, being at a party and so on, and fewer factors which may act to inhibit binge drinking. Thus for many male respondents binge drinking is a social behaviour, both in terms of being encouraged by one's friends and in terms of a social environment which facilitates drinking. Such findings are consistent with the Bennett and Smith (in preparation) study on the influence of differing drinking situations and contexts on drinking behaviour in which they found that for men, round buying and being in a group of male friends were...
among the most powerful influences on binge drinking.

The present study was also able to identify a number of factors which were predictive of the frequency of binge drinking over and above that explained by sex. Two factors emerged as important determinants of the frequency of binge drinking, these being perceived behavioural control and positive control beliefs. Frequent binge drinkers were less likely to believe that the decision to engage in binge drinking was under their control and more likely to cite a range of factors which may make binge drinking more likely to occur, thus recognizing a number of external influences on their drinking behaviour. The present results are therefore in line with previous work which has suggested that problem drinkers have a more external locus of control orientation (Donovan and O'Leary, 1978; Huckstadt, 1987). For example, Schlegel et al. (1987) found that college students who usually consumed at least 8 or 9 drinks per session had a more external locus control than those students who usually consumed 1-3 drinks per session.

The present study found that there was a strong relationship between weekly alcohol consumption and binge drinking with 93.9% of 'heavy' drinkers (i.e. over recommended weekly limits) engaging in binge drinking at least once at week compared with only 24.7% of 'sensible' drinkers (i.e. within recommended weekly limits). Nevertheless, the above relationships between perceptions of control and binge drinking were found to remain even when weekly alcohol consumption levels were taken into account in the regression analysis. This finding indicates that the frequency of binge drinking cannot be explained by the weekly level of alcohol consumption alone and highlights the utility of examining the attitudinal determinants of binge drinking.

The present results have a number of implications for attempts to reduce the incidence of binge drinking among young people. In particular, they suggest that for many young people binge drinking is very much a social behaviour which is facilitated by their social environment. As a result, the most effective interventions may be those that attempt to influence the context of consumption either directly or through social manipulations (WHO, 1988, 1991).

Social manipulations may be achieved through the use of the media to modify social norms surrounding alcohol consumption. This may involve formal educational programmes modelling appropriate drinking behaviour (Bennett et al., 1992) or more informal work with programme producers to provide appropriate models of alcohol consumption in more popular programmes (DeFoe and Breed, 1988/89). Other media approaches may involve engaging in issues particularly pertinent to young people. Leathar (1981), for example, describes a media intervention targeted at young men in Glasgow with high consumption levels. In this, focus groups were used to identify factors which controlled their alcohol consumption. As a result of this a campaign focusing on the need to consume 21 units or less of alcohol a week was abandoned. The people they interviewed simply did not monitor their consumption in this way. Instead, they focused on the social costs of high consumption, emphasizing the problems of lack of money and not being able to spend this on other things, losing credibility by appearing out of control in front of their peers, and so on.

More 'grass roots' or direct attempts at changing the drinking environment are described by Yates and Hebbethwaite (1983). Such initiatives have involved, for example, attempts at harm reduction through increasing drinkers awareness of local bus timetables or taxi services or changing the pub environment and facilities to encourage other activities than simply the consumption of alcohol. In addition, encouraging a mixed clientele may help reduce the social pressure to engage in binge drinking (Tuck, 1989), given that females are less likely to engage in binge drinking and have a more negative attitude towards binge drinking.

In conclusion, the present study has identified a number of factors associated with binge drinking in young adults in full-time education. For these adults, binge drinking is seen to be part of their social environment, both in terms of peer pressure...
to engage in binge drinking and situations which encourage binge drinking. Steps are needed to change young people's social environment so that less emphasis is put on alcohol in order to reduce the incidence of binge drinking. Such measures may help to reduce the adverse effects of binge drinking and continued heavy drinking.

References


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