

Alcohol consumption and protective behavioural strategy use among Australian young adults

Introduction

Alcohol consumption in Australia

Alcohol is an important feature of most modern Western societies and since European settlement alcohol has played an important role in the social, economic, and political culture of Australia. Alcohol consumption is widely accepted and has become an integral part of Western culture; in particular playing an important role in the lives of young adults as they negotiate their entry into adulthood (Roche et al., 2007). However, it is only in fairly recent times that a culture of binge-drinking has become truly noticeable through worldwide media attention (Alcohol Education and Rehabilitation Foundation [AERF], 2007; Australian Medical Association [AMA], 2008; Department of Health and Ageing, 2008; Martinic & Measham, 2008; Roche et al., 2007; West, 2008).

Today, alcohol use and misuse is a major public health issue in Australia with excessive alcohol consumption being a leading cause of motor vehicle accidents, emergency hospitalisations, physical and sexual assaults, injuries, and death (Roche et al., 2007). Alcohol is second only to tobacco as the largest cause of drug-related deaths and hospitalisations in Australia, contributing to 7% of all male deaths and 4% of all female deaths (Healey, 2002). More disturbingly, alcohol accounts for 13% of all deaths among 14-17 year old Australians (National Health and Medical Research Centre [NHMRC], 2009). Furthermore, alcohol has been linked to an increased risk of cancers, disease, as well as injuries caused by falls, fires, drowning and suicide (Healy, 2002; NHMRC, 2009; Roche et al., 2007). Not only is alcohol a leading cause of death, disease, and

injury at an individual level, but reports have shown that alcohol misuse has a large effect on others who are not consuming at dangerous levels with almost three quarters of adult Australians being negatively affected by someone else's drinking (Laslett et al., 2010).

Alcohol as a social problem among young adults aged 18-24

While the consumption of alcohol is seen as a major health risk and social problem, both in Australia and around the world, the consumption patterns of young adults are of particular concern (Australian Institute of Health and Welfare, 2008). The National Drug Strategy Household Survey (2007) found that in Australia, young people aged 18-24 have the riskiest drinking patterns with almost two-thirds drinking at a risky or high-risk level of harm in the short term. However, it was found that only 3% of young people classified themselves as 'heavy' or 'binge' drinkers, with most classifying themselves as 'social' drinkers (Australian Institute of Health and Welfare, 2008). This suggests that the majority of young adults do not consider their alcohol use to have harmful consequences (Roche et al., 2007). The Australian National Health and Medical Research Centre (2009) guidelines to reduce health risks from drinking alcohol recommend "for healthy men and women, drinking no more than four standard drinks on a single occasion reduces the risk of alcohol-related injury arising from that occasion" (p. 3). Media reports, however, tend to suggest that most young people would consider this the minimum number of drinks on a night out, and the majority regularly consume more than this without considering their behaviour a problem (AERF, 2007; West, 2008).

Motivations to drink

There are many motivations that influence a young adults' decision to consume alcohol. The International Centre for Alcohol Policies conducted research into binge drinking by carrying out

focus groups in various countries around the world (Martinic & Measham, 2001). The results of these focus groups found that some of the main motives behind binge drinking behaviour for young people included; it being a social and leisure activity; it is normally done at celebrations or the end of the week; it is a chance to explore adult behaviours; it helps cope with problems; it is associated with increased freedoms; and it facilitates peer relations (Leigh & Lee, 2008). Yet the central motivation was always because “drinking is fun” (p. 58).

Australian research has found that although young adults are well aware of the potentially negative outcomes they also recognise the advantages of alcohol, including confidence, relaxation, greater sociability, fun and increased sexuality (Davey, Davey & Obst, 2002; Sheehan & Ridge, 2001). Furthermore, a study of young students found that the motivations behind binge drinking for females in particular included “pleasure, gender expectations, socializing, relationships, fun, secrecy and transgression, danger, exploration, and independence” (Sheehan & Ridge, 2001, p. 350).

Despite these positive outcomes and the positive motivation to consume alcohol, anti-drinking marketing campaigns are aimed at educating young adults in the risks associated with binge drinking, suggesting that young adults are unaware and ignorant of the consequences (Department of Health and Ageing, 2008; NSW Department of Health, 2009). However, Lupton and Tulloch (2002) believe that people are well aware of the risks involved but the activity is undertaken by choice. They believe that knowledge about risks is mediated through social and cultural frameworks of understanding. This supports the idea that young adults are motivated to drink at dangerous levels not through ignorance but through the well calculated belief that the pleasures and social benefits of voluntary risk-taking will outweigh the negative consequences (Martinic & Measham, 2008). Additionally, it has been suggested that the positive consequences are much

more important and frequent than the negative consequences, and thus young people are motivated to binge drink by the expected positive effects (Leigh and Lee, 2008).

Another motivation towards heavy drinking is that the positive effects are immediate, whereas the negative consequences are delayed or may not occur at all; “a drinking episode might end badly, but its pleasurable beginnings are more powerful motivators” (Leigh & Lee, 2008, p. 63). Similarly, many of the negative consequences associated with drinking alcohol, are seen as ‘not that bad’. Although outcomes such as drink spiking, assault, and potentially dangerous situations are of serious concern to young people, consequences such as vomiting, hangovers, and even increased sexuality are seen as an accepted part of the activity and often even congratulated (Polizzotto, Saw, Tjhung, Chua & Stockwell, 2007). Research has found that severe consequences such as police involvement and long-term health problems were often viewed as very unlikely and irrelevant in the decision to drink (MacAskill, Cooke, Eadie & Hastings, 2001), yet they are probably more likely than imagined (ABS, 2005).

Decision making processes around drinking intentions

There are many negative consequences associated with the consumption of alcohol, both acute (short-term) and chronic (long-term). These include health, social, legal and financial difficulties. Indeed young people who engage in binge-drinking behaviour are at risk for many short-term physical effects arising from intoxication: such as hangovers, blackouts, impaired cognitive and motor coordination, and injury; as well as the more delayed social consequences, such as having problems at home, school, and work. So, while many young people and older adults expect good things to happen when they drink, they are not ignorant of the negative consequences the consumption of alcohol can cause. Research has found that for some young adults there appears

to be no difference between positive and negative times, as all experiences caused by alcohol contribute to the whole, becoming part of a 'good' anecdote (Sheehan & Ridge, 2001). This suggests that it is a complex thought process, weighing up the positive and negative consequences of alcohol consumption that helps motivate people's drinking.

Reducing the social impact of binge-drinking

While there are many factors in Australian culture that encourage alcohol consumption, and promote binge-drinking behaviours, several strategies to help combat the negative effects of alcohol consumption have been identified and developed by the Australian government. The most significant is the Australian federal government's \$53 billion National Binge-Drinking Campaign launched in 2008, with the slogan "Don't turn a Night Out into a Nightmare" (Department of Health and Ageing, 2008). This campaign involved television advertisements and posters, as well as the heavily debated 'alcopop' tax, a tax on pre-mixed spirits. This particular campaign and others like it (NSW Department of Health, 2009) are aimed at educating young people about the negative health and social effects of binge drinking and have advocated moderate alcohol consumption.

However, despite the efforts of the governmental campaigns, statistics would suggest that they have not translated into a reduction in binge-drinking behaviour (Australian Institute of Health and Welfare, 2008; NHMRC, 2009). In fact it has been suggested anecdotally that the alcopop tax has simply driven young people away from pre-mixed drinks towards undiluted spirits (Chikritzhs, Dietze, Allsop, Daube, Hall & Kypri, 2009).

The rigid framework that governs the alcohol industry in Australia is helping to shape Australian culture and the availability and acceptance of alcohol use and misuse (Roche et al., 2007). The

National Centre for Education and Training on Addiction (NCETA) believes that currently, this framework “does not adequately protect young people from risky drinking” (Roche et al., 2007, p.12). Thus the focus may need to shift away from eliminating negative binge drinking behaviours, or educating people on the negative consequences, but rather aim to promote the use of protective behaviours, as well as trying to change the entire culture and attitudes behind alcohol consumption in Australia and the rest of the Western world.

Protective behavioural strategies

Much research has been done looking at the risk and protective factors which are associated with an increase or decrease in alcohol consumption; however, these general factors are commonly individual characteristics such as gender, ethnicity, family situation, personality, and other qualities that cannot be altered. More recently researchers have focused on the cognitive-behavioural strategies that adults can undertake in order to help buffer the negative effects of alcohol (Martens, Ferrier, Sheehy, Corbett, Anderson & Simmons, 2005; Sugarman & Carey, 2007). These ‘protective behavioural strategies’ are conceptualized as “active strategies that can be taught or modelled” (Martens et al., 2005, p. 699). They are primarily aimed at reducing the harmful consequences of alcohol and promote more responsible consumption rather than encouraging abstinence (Martens et al., 2005).

Binge-drinking may be a problem among young adults in current Australian society (Australian Institute of Health and Welfare, 2008; ABS, 2008), however, it is clear that not all young adults engage in dangerous binge-drinking behaviour, and that although many consume alcohol this does not always lead to severe negative consequences (Healey, 2002; NHMRC, 2009). An emerging body of literature has looked at certain behavioural self-control strategies, or protective strategies,

that adults engage in when consuming alcohol to try and reduce the negative consequences. This literature indicates that adults who routinely engage in protective behaviours such as; setting limits on drinks, diluting drinks, and taking social precautions like catching a taxi, are at lower risk of experiencing negative alcohol-related outcomes (Ray, Turrisi, Abar, & Peters, 2009). Earlier research found that older adults engaged in certain self-control behaviours in order to limit alcohol consumption, particularly among problem drinkers (Perri, 1985), however, the majority of recent studies have been conducted among American college students. A general consensus has been reached by researchers which suggests that protective behaviours have a moderating effect on the consumption of alcohol, with young adults who engage in more kinds of protective behaviours more frequently being less likely to experience alcohol-related problems (Benton, Schmidt, Newton, Shin, Benton & Newton, 2004; Delva, Smith, Howell, Harrison, Wilke & Jackson, 2004; Haines, Barker & Rice, 2006; Martens, Martin, Hatchett, Fowler, Fleming, Karakashian & Cimini, 2008).

Gender differences have also been consistently found, with females more likely to engage in these protective behaviours, but the behaviours having a stronger effect for males (Delva et al., 2004). Walters, Roudsari, Vader and Harris (2007) also support the idea that young adults who utilize protective behaviours are at lower risk of alcohol-related problems, even after controlling for consumption, however, their study focused specifically on heavy drinking students. They found that “students who reported a greater BAC [Blood Alcohol Concentration] and more heavy-drinking episodes also reported the least amount of protective behaviours” (p. 2638). Thus they suggest that the individual or environmental factors which lead students to drink more heavily may also discourage them from engaging in protective behaviours.

It is widely assumed that with such a high level of students regularly engaging in some form of protective behaviours, it is natural to use such strategies to reduce the risks when drinking alcohol (Glassman, Werch & Jobli, 2007). Werch (1990) found that protective behavioural strategies were employed at varying levels of frequency and that the degree to which these behaviours are practised is associated with health beliefs associated with alcohol use, levels of alcohol use, and the perceived effectiveness of protective strategies to limit drinking. Engaging in protective behaviours more frequently is found to be associated with lower levels of alcohol consumption and experiencing less alcohol-related problems. This suggests that engaging in these behaviours reduces the impact of binge-drinking behaviours; however, it may be that greater use of protective behaviours is associated with a less accepting attitude towards alcohol consumption, and that those who enjoy drinking at risky levels will not frequently engage in as many protective behaviours (Lewis, Rees & Lee, 2009).

Toumbourou, Williams, White, Snow, Munro and Schofield (2004) found that university students in Australia used strategies for controlled alcohol use and these lead to a reduction in alcohol-related harm; however, their study did not explore the factors which affected engagement in protective behavioural strategies. Likewise, data from the National Drug Strategy and Household Survey (2007) found that 91% of Australians undertake moderating behaviours with the most common behaviour to 'limit the number of drinks'. It was also reported that females were more likely to use any particular measure than males, while the least undertaken measures for both sexes included 'alternating between alcohol and non-alcoholic drinks' and 'drinking low alcohol drinks only' (Australian Institute of Health and Welfare, 2008).

The current study was an attempt to expand on the limited Australian research by examining the use of protective behaviours among young Australians generally, not just when they were

attempting to keep their blood alcohol consumption within limits, and by exploring a wider range of protective behaviours.

Research Aims:

To study the protective behaviours young Australian adults engage in while drinking, and the relationship between protective behaviour use and experience of negative outcomes. It was hypothesised that protective behaviours would be used by all young adults with females engaging in protective behaviours at a higher level than males. It was also hypothesised that the use of protective behaviours would have a significant relationship with negative consequences, such that greater use of protective behaviours was associated with lower scores of negative consequences.

Methods

Sample

Undergraduate students from the University of Adelaide were recruited through the School of Psychology and the Faculty of Engineering, Computer and Mathematical Science.

A total of 210 university students completed the questionnaire, (35.2% male, 64.8% female). Most students were in the 18-20 year age range (64.3 %), with one student under 18 (.5%), 25.5% between 21 and 25, and 8.8% of participants over 25. Six participants were excluded as they had never had a full serve of alcohol.

Measurement and variables

The study was approved by the University of Adelaide's School of Psychology Ethics Committee.

It involved an online questionnaire which assessed:

- (1) the participant's alcohol consumption
- (2) the negative consequences experienced due to alcohol use
- (3) the use of protective strategies

(1) Alcohol consumption

The survey involved two measures of alcohol consumption; self-reported number of weekly standard drinks, and an estimate of weekly alcohol consumption calculated using questions taken from the National Drug Strategy Household Survey (AIHW, 2008). This section involved questions such as, "have you had a full serve of alcohol in the last 12 months?" and "on a day that you drink alcohol, how many standard drinks do you usually have?"

(2) Negative consequences associated with alcohol consumption

Participants' experience of the negative consequences of alcohol use was measured using 30 relevant items adapted from the Drinker Inventory of Consequences (Miller, Tonigan & Longabaugh, 1995). The items used in the current study included negative consequences such as "I have had a hangover after drinking", and "While drinking or intoxicated I have been physically hurt or injured". Responses ranged from 'never' (score of 1) to 'daily or almost daily' (score of 5).

(3) Protective behaviour strategies

Participants' use of protective behaviours was measured using items from the Protective Behavioural Strategies Scale (Martens et al., 2005) and Strategy Questionnaire (Sugarman & Carey, 2007). The final scale consisted of 14 statements relevant to Australian culture and related to safer consumption of alcohol; including "I have used a designated driver" and "I have stopped drinking at least 1-2 hours before going home". Participants were asked to indicate how often in

the last year they had engaged in these behaviours, with options ranging from “never”, to “daily or almost daily”.

Results

Assumption checking

The data set was examined to see whether all variables were normally distributed and met the assumption of homogeneity of variance. All variables met the assumption of homogeneity of variance; however, while protective behaviour strategy score met the assumption of normality the negative consequences score violated the assumption. Therefore, non-parametric tests were utilised in correlations involving negative consequences.

Alcohol use

The most common age of first full serve of alcohol was 16 years (26.7%), and average weekly consumption rate was 20.04 ($SD = 24.75$) standard drinks. When converted to levels of risk this indicated 64.8% consuming at low-risk levels, 25.2% consuming at risky levels, and 10% consuming at high-risk levels, based on current risk levels determined by the National Health and Medical Research Council (NHMRC, 2009).

Negative Consequences

The majority of participants reported that they had experienced negative outcomes associated with alcohol consumption. The participants' average score for negative consequences was 47.11 ($SD = 13.43$) from a possible range of 30 to 120. The most frequently reported negative consequences, as seen in table 1, included: ‘I have had a hangover after drinking’; ‘while drinking I have said or

done some embarrassing things'; and 'I have woken in the morning after a night of heavy drinking and found that I could not remember parts of the evening before'.

[Insert Table 1]

Protective behaviour use

The results demonstrated that all participants scored above 20 for total protective behavioural strategies ($M = 42.38$, $SD = 7.60$), from a possible range of 14 to 70, meaning that participants engaged in at least one or more protective strategies when consuming alcohol. The most regularly used strategies included 'avoided mixing different types of alcohol', 'knowing where my drink is at all times', and 'eating before/during the night'. The least used strategies included 'setting a limit on the number of drinks' and 'hanging out with trusted friends'.

Correlations between alcohol consumption, protective behaviours and negative consequences

Bivariate correlations were conducted in order to assess the relationship between level of alcohol consumption and engagement in protective behaviours. It was found that alcohol consumption was not significantly related to the use of protective behaviours, $r = -.13$, $p = .07$. Correlations were then conducted between use of protective behaviours and level of negative consequences. Non-parametric tests were used as the score of negative consequences violated the assumption of normality, and it was found that use of protective behaviours was significantly related to scores of negative consequences $r_s = -.21$, $p < 0.05$. This suggests that greater use of protective behaviours results in a lower score of negative consequences associated with alcohol consumption.

Gender differences

Independent samples t-tests were performed in order to assess whether or not gender differences were significant in relation to (1) alcohol consumption, (2) engagement in protective behaviours as a whole and (3) use of individual protective behaviours.

(1) Alcohol consumption

The t-tests indicated that males self-reported a higher level of standard drinks per drinking session ($M = 7.87, SD = 5.42$) than females, ($M = 5.55, SD = 3.66$). This difference was significant $t(208) = 2.60, p < 0.05$ and represented a medium effect, $r = 0.24$. Similarly, the results showed that males ($M = 25.98, SD = 33.00$) had a higher level of weekly alcohol consumption than females ($M = 17.02, SD = 18.19$). T-tests indicated that this was also a significant difference $t(208) = 3.74, p < 0.05$ and represented a small effect, $r = 0.17$. This shows that males have a significantly higher level of weekly alcohol consumption, both when self-reporting and according to the measure used in the current survey.

(2) Engagement in protective behaviours

For engagement in protective behaviours the t-test indicates that females ($M = 43.24, SD = 7.45$) engaged in protective behaviours at a higher level than males ($M = 40.81, SD = 7.68$). This difference was significant $t(214) = -2.23, p < 0.05$ and represented a small effect $r = 0.16$.

(3) Use of individual protective behaviours

Table 2 shows the results for each behavioural strategy. Females scored higher than males on most of the protective behaviours although this difference was statistically significant for only three behaviours, all with small effect sizes.

[Insert Table 2]

Discussion

The current study aimed to investigate the use of protective behavioural strategies that reduce the negative consequences of alcohol consumption. It expanded on past research, by exploring whether or not young Australian adults engage in protective behavioural strategies.

The participant's average weekly alcohol consumption was 20.04 standard drinks. This is an extraordinarily high consumption rate according to the national Australian guidelines to reduce health risks associated with alcohol which recommends "for healthy men and women, drinking no more than two standard drinks on any day reduces your risk of harm from alcohol-related disease or injury over a lifetime" (NHMRC, 2009). This confirms that alcohol use and misuse is still a very relevant problem, and highlights the need to develop more effective interventions and health promotion programs. While the mean consumption was high, standard deviation was large suggesting significant variability in participant's alcohol consumption with some individuals drinking at extremely high levels of risk. As the negative outcomes associated with excessive alcohol consumption have been well documented (Healy, 2002; NHMRC, 2009; Roche et al., 2007) it is clear that any behaviours or strategies that may decrease the negative consequences play a key role in reducing alcohol-related harm at a societal level. Thus, the emerging literature concerning protective behaviours and self-control strategies may prove very valuable in constructing future interventions and anti-binge drinking campaigns.

Negative consequences

Greater use of protective behaviours has been found to result in fewer negative alcohol-related outcomes (Delva, et al., 2004; Martens et al., 2005; Sugarman & Carey, 2008). The current study supported this as the results revealed a significant relationship between protective behavioural

strategies and negative consequences, although only a small effect was noted. It is possible that the particular measures of protective behaviours and negative consequences were not well linked and a larger effect size may have been achieved with the use of different scales. In the current study the majority of protective behaviour items are associated with safety at the time of drinking, and physical protection; whereas the negative consequences scale includes several items relating to feelings and emotions, and financial, social and educational problems. In the same way, participants may be more likely to engage in protective behaviours that will guard against more immediate negative consequences, despite the fact that some of the more serious negative consequences result after long term alcohol consumption. It is possible that two scales evaluating similar areas, for instance if both negative consequences and protective behaviours focused on physical symptoms of alcohol intoxication or if both scales were related more closely in time to the drinking behaviour, may produce a more significant correlation between these two variables. The current findings suggest that further investigations into protective behavioural strategies and their effects needs to be conducted in an Australian context.

Engagement in protective behaviours

A thorough examination of participants' engagement in protective behaviours and the general themes that emerged is detailed below. Even though the main hypothesis examined the variables which predicted protective behaviour use, it is important to first understand the practices and conventions around their use in Australian society. It was proposed that results would be comparable to those found in American research, as little investigation has been conducted into protective behaviours in Australia.

It was found that all young adults in our sample (100%) engaged in at least one or more protective behavioural strategy. Although all participants engaged in protective behavioural strategies at some level, the manner in which total use of protective behaviours was scored made it hard to effectively analyse the extent to which each behaviour was used at an individual level. For instance, a protective behavioural strategy score of 34 could be composed of five 'daily' responses (5 points) and nine 'never' responses (1 point each), or it could comprise eight 'once or twice' responses (2 points each) and six 'a few times' responses (3 points). Therefore this total score of 32 could represent a variety of different behaviour patterns. It may be beneficial for future research in the field to convey protective behavioural strategies as a multidimensional construct (Martens et al., 2005) in order to better understand the relationship between protective behaviours and other variables such as alcohol consumption and negative consequences.

It was possible to determine which strategies were used most and least by participants, but it was difficult to understand individual patterns of protective behaviour use. The data was in line with previous research and demonstrated that items such as 'I have avoided mixing different types of alcohol' and 'I have known where my drink is at all times' are the most well used (Glassman, Werch & Jobli, 2007; Walters, Roudsari, Vader & Harris, 2007). Most surprising, and contrary to prior research (Wolburg, 2001), was the finding that the second least used protective behaviour was 'I hang out with trusted friends'. One of the reasons for this result may be due to the wording of the statement. 'I hang out with trusted friends' may have been interpreted differently to a statement such as 'I can rely on my friends to look after me when I drink'. Another possibility is that young people do not actively attempt to hang out with trusted friends and do not consider it a protective behaviour, as they believe the friends they have are already trustworthy.

The results of this study also indicate slightly greater use of protective behaviours for females than males, which corresponds to earlier research in the area (Benton et al., 2004; Delva et al., 2004; Walters et al., 2007). However, this difference was relatively small, and the mean differences between men and women's scores for individual behaviours were most often non-significant. Protective behaviours such as setting a limit on the number of drinks, knowing where my drink is at all times, and limiting the amount of money taken out on a night drinking were the only behaviours which showed significantly higher use for females than males. This may reflect the increasing alcohol consumption rates of young women in today's society (Australian Institute of Health and Welfare, 2008; McCrindle, 2010). The conclusions about gender differences in the current study support the limited research on protective behavioural strategies that has been done in Australia. Although earlier reports have not focused specifically on young people, it has been found that females are more likely to engage in any sort of moderating behaviour than males (Australian Institute of Health and Welfare, 2008). This could be due to women being more sensitive to the need for self-protection than men because of the threat of sexual assault (Delva et al., 2004). In any case the rather small differences between males and females detected in the current study pave the way for future research to be conducted in the area, looking at gender differences both in alcohol consumption, as well as the associated negative consequences and the use of protective behaviours.

Limitations

The current study has been extremely valuable in helping to understand the factors which influence the use of protective behavioural strategies among young adults. However, there are several limitations that must be considered, and which future research may need to address in order to

expand knowledge in the field of binge drinking, its negative consequences, and the use of protective behaviours.

Firstly, all data was collected via a self-report questionnaire. Although participants were assured that their responses would be kept confidential, the integrity of the responses could not be determined. Although self-report measures are often the most practical method of gathering data, it has been shown that often the validity and reliability of self-report data is inadequate, particularly in the area of health behaviours (Stone et al., 2000). Second, the sample consisted solely of undergraduate university students, with a large majority of psychology students, therefore caution must be taken when generalising these findings to the rest of the population. In addition, the larger proportion of female participants in the sample may have affected the results, and may not be representative of the young adults who consume alcohol in Australian society.

Implications

The current study adds several important findings to the emerging field of protective behavioural strategies, and in particular is one of the first in Australia to specifically look at factors which predict engagement in such behaviours. Expanding on previous Australian research, this study used a public health model to examine the use of protective behavioural strategies among young adults. The data indicates that all Australian young adults who use alcohol engage in protective behavioural strategies at some level.

As society's tolerance for binge drinking decreases, and more attention is drawn to the negative physical, social, and financial costs of alcohol misuse, it is timely to promote safer consumption. It has been found previously that campaigns aimed at education and reducing alcohol consumption have proved ineffective among young Australian adults (Hill, 2004; Howat, Sleet, Maycock &

Elder, 2006; Stockwell, 2006), particularly as Australian culture tolerates and even encourages generous rates of drinking (Roche et al., 2008). Just as is the case in America, it is unlikely that young Australian adults are going to cease drinking altogether, thus it is prudent to take the advice of Martens and colleagues (2005) and promote responsible drinking as the goal of health interventions. The current study, corresponding to findings from other studies, indicates that the use of protective strategies may not be related to how much young adults consume, as participants were seen to consume high quantities of alcohol, but rather may relate to their likelihood of experiencing negative outcomes (Sugarman & Carey, 2008).

Thus a campaign that acknowledges the high consumption rates of young adults and aims to promote protective behaviours that can reduce the associated negative consequences may be fairly effective. The current study would suggest that changing people's attitudes towards protective behavioural strategies may be the key to increasing the use of these strategies. It is hoped that in future protective behaviours such as regular water breaks, organising safe transport home, eating, and limiting funds for the night will become second nature to all young adults; that these behaviours will become normal, acceptable and unquestioned practices. Analogous with earlier research in America, the current study found that certain protective behaviours warrant more endorsement than others (Haines, Barker & Rice, 2006). Therefore the most easily implementable, most readily accepted, and most effective strategies, such as keeping an eye on one's drink at all times, eating before or during the night, and socialising with trusted friends should be the initial strategies to focus on.

Furthermore, intervention programs need to consider the cohesive relationship between young adult's attitudes towards protective behaviours, negative consequences, and alcohol consumption. It is important to remember that the promotion of protective behaviours may result

in a reduction in negative consequences, however, it is not necessarily aimed at reducing rates of alcohol consumption. The current study provides support for a different approach to tackle the binge drinking problem; one that moves away from targeting rates of consumption and instead focuses on preventing the negative outcomes. Overall, the current study highlights the need for further research in Australia in the area of protective behavioural strategies.

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Table 1. Negative consequences reported by participants.

Negative consequences	Mean	SD
1. I have had a hangover after drinking	2.52	1.02
2. I have missed days of work because of my drinking	1.36	.68
3. My family have expressed concern about my drinking	1.46	.67
4. My friends have expressed concern about my drinking	1.37	.69
5. My drinking has caused me to use other drugs more	1.31	.65
6. I have been sick and vomited after drinking	1.98	.84
7. Because of my drinking I have not eaten properly	1.96	1.01
8. I have failed to do what is expected of me because of my drinking	1.62	.88
9. I have felt guilty or ashamed because of my drinking	1.72	.82
10. While drinking I have said or done some embarrassing things	2.40	.99
11. When drinking my personality has changed for the worse	1.58	.72
12. While drinking I have said harsh or cruel things to someone	1.56	.76
13. When drinking, I have done impulsive things that I later regretted	1.99	.91
14. I have spent too much or lost a lot of money because of my drinking	2.11	1.07
15. A friendship or close relationship has been damaged by my drinking	1.22	.56
16. My drinking has damaged my social life, popularity, or reputation	1.18	.49
17. I have had trouble with the law because of my drinking	1.12	.42
18. While drinking or intoxicated I have been physically hurt or injured	1.54	.72
19. I have broken things or damaged property while drinking or intoxicated	1.38	.63
20. While drinking or intoxicated I have physically injured someone else	1.13	.44

21.	While drinking or intoxicated I have gotten in a car with someone I believe had drunk too much	1.43	.68
22.	I have woken in the morning after a night of heavy drinking and found that I could not remember parts of the evening before	2.15	1.02
23.	While drinking or intoxicated I have gotten into sexual situations which I later regretted	1.50	.75
24.	I have had unsafe sex because of alcohol	1.35	.67
25.	I have been forced to have sexual experiences because of alcohol	1.13	.38
26.	I often feel like I have lost control when I drink	1.66	.77
27.	I have been asked to leave a venue because of my intoxication	1.28	.59
28.	I have found suddenly found myself in a place that I couldn't remember getting to when drinking	1.40	.66
29.	I have passed out or fainted suddenly because of alcohol	1.30	.61
30.	My school/university studies have suffered because of alcohol	1.40	.73
Total		47.11	13.43

Table 2. T-tests analysing gender differences in use of protective behavioural strategies

Protective Behavioural Strategy	Females <i>M(SD)</i>	Males <i>M(SD)</i>	<i>t</i>-value	<i>p</i>-value	<i>r</i> value
1. Using a designated driver	2.93 (1.10)	2.72 (1.00)	-1.41	.16	.10
2. Alternating between alcoholic and non-alcoholic drinks	2.76 (1.05)	2.46 (1.16)	-1.89	.06	.13
3. Setting a limit on the number of alcoholic drinks	2.37 (1.17)	1.97 (1.23)	-2.30	.02	.16
4. Drinking slowly	2.90 (1.04)	2.76 (1.02)	-.99	.32	.07
5. Eating before/during the night	3.74 (0.92)	3.77 (0.90)	.27	.79	-.02
6. Leaving at a predetermined time	2.70 (1.16)	2.49 (1.13)	-1.28	.20	.09
7. Stopping drinking 1-2 hours before going home	2.66 (1.17)	2.53 (1.11)	-.81	.42	.06
8. Hanging out with trusted friends	2.49 (1.25)	2.28 (1.27)	-1.11	.27	.08
9. Avoiding mixing different types of alcohol	4.27 (0.69)	4.11 (0.73)	-1.61	.11	.11
10. Drinking shots	3.07 (1.01)	3.01 (.85)	-.43	.66	.03
11. Knowing where my drink is at all times	4.11 (0.75)	3.80 (0.95)	-2.63	.01	.18
12. Drinking water throughout the night	3.18 (1.14)	3.20 (1.17)	.11	.91	-.01
13. Limiting the amount of money taken out on a night drinking	3.49 (1.09)	3.12 (1.12)	-2.29	.02	.17
14. Telling others I was not going to drink	2.71 (1.14)	2.62 (1.04)	-.58	.57	.04