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Abstract

While Australian legislation does not currently require health warning labels on alcohol products, several medical and advocacy organisations have been campaigning for their mandatory inclusion. The current study examines the attitudes and opinions of university students (a particularly high risk group) relating to these messages, and the likelihood of such labeling influencing personal behaviours, in order to establish whether the introduction of these labels is likely to be effective. Alcohol warning labels have the potential to influence behaviours of adolescents and young adults, especially if modifications are made to the content and format of these – suggestions are given in this paper. Finally, results of this research indicate that such health messages must be integrated with other educational measures and strategies aiming to internalise alcohol risk information by changing beliefs and, ultimately, behaviours.

Disciplines

Arts and Humanities | Life Sciences | Medicine and Health Sciences | Social and Behavioral Sciences

Publication Details

Jones, S. C. & Gregory, P. (2010). Health warning labels on alcohol products - the views of Australian university students. *Contemporary Drug Problems*, 37 (1), 109-137.

Health warning labels on alcohol products – the views of Australian university students

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ABSTRACT

While Australian legislation does not currently require health warning labels on alcohol products, several medical and advocacy organisations have been campaigning for their mandatory inclusion. The current study examines the attitudes and opinions of university students (a particularly high risk group) relating to these messages, and the likelihood of such labeling influencing personal behaviours, in order to establish whether the introduction of these labels is likely to be effective. Alcohol warning labels have the potential to influence behaviours of adolescents and young adults, especially if modifications are made to the content and format of these – suggestions are given in this paper. Finally, results of this research indicate that such health messages must be integrated with other educational measures and strategies aiming to internalise alcohol risk information by changing beliefs and, ultimately, behaviours.

Key Words: *Alcohol, warning labels, health messages, adolescents, young adults.*

INTRODUCTION

Alcohol and young people

Alcohol use is widespread in the Australian community, and population-based studies have shown that a large proportion of the alcohol drunk in Australia, as in other countries, is consumed in a way that is inconsistent with National Health and Medical Research Council (NHMRC) guidelines on low-risk drinking. The NHMRC produced guidelines for minimising the risks associated with alcohol consumption by adults in Australia in 2001 (NHMRC, 2001). These guidelines however, have recently been updated, in February 2009, substantially reducing the recommendations for low risk adult consumption, particularly for adult males. *An Australian standard drink*

contains 10 grams (12.5 millilitres) of alcohol (NMHRC 2001), and the 2001 NHMRC guidelines recommended that adult males limit their alcohol intake to an average of 4 standard drinks per day and never more than 6 standard drinks in one day; and women to an average of 2 standard drinks per day and never more than 4 drinks in one day. The revised Guidelines (NHMRC, 2009) recommend consumption two standard drinks or less on any day and never more than four in a day for males and females.

However, there is consistent evidence that Australians, and particularly young Australians, drink at levels far in excess of those recommended. In 2007, more than one quarter of 14 to 19 year olds reported putting themselves at risk of alcohol-related harm based on the 2001 NHMRC Guidelines (i.e., drinking seven or more standard drinks in one day for males and five or more for females) at least once a month during the last year, with the incidence being higher for females (28.3%) than males (24.5%) (Australian Institute of Health and Welfare, 2008). This continues into young adulthood, with 39.6% of 20 to 29 year olds putting themselves at risk of alcohol-related harm at least once a month, although in this group the rates are higher for males (43.8%) than females (35.3%) (Australian Institute of Health and Welfare, 2008).

University students have been identified as a population that is more likely to engage in unsafe alcohol consumption behaviours (Sheffield, Darkes, Del Boca, & Goldman, 2005), and particularly binge drinking, with as many as 44% of university students in the USA found to be binge drinkers (Wechsler, Davenport, Dowdall, Moeykens, & Castillo, 1994). The National University Drug & Alcohol Survey found that 49% of Australian university students reported binge drinking in the two weeks prior to the survey (NSW Health, 2001). As well as the well-known long-term risks associated with excessive alcohol consumption, binge-drinking is associated with a range of short-term risks including alcohol poisoning, unsafe sex, sexual assault, physical violence, motor vehicle accidents, property damage and other criminal activities (Perkins, 2002; Wechsler et al., 1994; Wechsler, Moeykens, Davenport, Castillo, & Hansen, 1995). As a result, strategies must be implemented which can play a role in educating the public, particularly adolescents and young adults, in order to reduce the rates of morbidity and mortality associated with alcohol misuse.

The Australian context

Legal drinking age

In Australia it is illegal to purchase or consume alcohol in licensed premises under the age of 18 years, but the specific provisions for possessing or drinking alcohol on private premises vary between the states. In New South Wales (where this study was conducted) it is illegal to sell or supply alcohol to anyone under the age of 18 (a minor), but it is not illegal for a minor to consume alcohol on private premises.

Responsible service of alcohol

Under the New South Wales Liquor and Gaming Laws, all liquor licensees and staff who serve alcohol are required to complete a Responsible Service of Alcohol (RSA) training course. This course addresses the legal responsibilities associated with serving alcohol, including non-service of alcohol to intoxicated patrons.

Standard drink labeling

Research in the early 1990s demonstrated that standard drink labels on alcohol beverages significantly reduce the mean error in adults' estimations of alcohol content, concluding that standard drink labeling would assist drinkers who wished to drink within NHMRC low risk drinking guidelines (Stockwell and Blaze-Temple, 1990; Stockwell, Blaze-Temple, & Walker, 1991). As a result of this and subsequent research, Australia's Ministerial Council on Drug Strategy recommended the introduction of a policy requiring the inclusion of standard drink information on all alcohol beverages (Stockwell, 1993). However, more recent research with university students suggests that this group may instead use these labels, in conjunction with pricing information, to increase or even maximize their alcohol consumption (Jones and Gregory, in press).

Mandated warnings/signage

One strategy that has been implemented overseas, and considered in Australia, is the introduction of warning labels on all alcohol containers. Unlike the United States, Australia does not currently have warning labels on alcohol products (other than on products produced for export to countries which have mandated warning labels – i.e.,

to comply with legal requirements in the country of sale) or warning signs on display in venues or outlets that sell alcohol. In New South Wales, licensees are required to display signs that state “It is against the law to sell or supply alcohol to, or obtain alcohol on behalf of, a person under the age of 18 years”; bar areas in hotels and clubs must also display at each entrance “Persons under the age of 18 years are not permitted in this area by law”; areas where minors are allowed in the company of a responsible adult must display “Persons under the age of 18 years must be with a responsible adult in this area by law”; and premises with breath testing machines must display a sign which states that the results are not accepted by the police or courts (Office of Liquor, Gaming and Racing, 2008).

Alcohol warning labels

The use of labels to persuade consumers to (not) use a certain product or service in particular circumstances is a powerful and commonly used tool in advertising and health promotion. Labels are said to become cognitively incorporated into the overall image of the product or service, and may thus influence behaviour (MacKinnon, 1993). In terms of health promotion, labels have been utilised to confront and warn consumers about the dangers of certain products, with the most notable example being the introduction of warning labels on all cigarette packaging in the United States in the 1960's (O'Hegarty, Pederson, Yenokyan, Nelson, & Wortley, 2007). As outlined by Wilkinson and Room (in press) providing consumers with ‘full information’ about a product enables them to make informed purchase and consumption decisions; and the inclusion of a warning provides an important symbolic message about the nature of the product. Health warning labels such as these are said to have two related but distinct aims to: a) increase consumer awareness and educate consumers and, as a result of this education, b) prevent harmful consequences; this second aim can be stated more generally as modification of potentially harmful behaviour (Stockley, 2001).

Existing alcohol warning labels

Given the potential persuasive power of labels, as well as the rising social costs of alcoholism in the United States, government-mandated warning labels were enforced

and have appeared on all alcoholic beverage containers manufactured in the United States since 1989 (Stockley, 2001). The commencement of this warning label system reportedly brought about increased awareness of the risks of excessive alcohol use amongst consumers in the United States (MacKinnon, Nohre, Pentz, & Stacy, 2000). As a result, other countries have followed this lead, with at least 20 other countries introducing some kind of mandated warning label, including Brazil, France, India, Portugal, South Africa, Korea, Thailand, and Zimbabwe. There are several other countries considering their introduction (e.g. United Kingdom), or with voluntary labeling in place (e.g. Japan).

Examples of these (mandated) warning labels include: “*avoid the risks of excessive alcohol consumption*” (Brazil); “*drinking alcohol beverages during pregnancy even in small quantities can have serious consequences for the health of the baby*” (France); and “*alcohol reduces driving ability, don’t drink and drive,*” “*alcohol is a major cause of violence and crime*” and “*don’t drink and walk on the road, you may be killed*” (South Africa). Many countries also have provisions to ensure the clear visibility of these labels. For example, in France it is required that the warning be on a contrasting background, be visible, reliable, clear, understandable and indelible; in Guatemala, the label must be written in 12 pt Arial Black font in capital letters, be clearly legible, and occupy 25% of the front part of the label.

Australia does not currently require warning labels on alcohol products, although several medical and advocacy organisations have been campaigning for their mandatory inclusion for over a decade. In 1998, the Australia and New Zealand Food Authority rejected a petition presented by the lobby group Society Without Alcoholic Trauma in 1998 for the introduction of labels (Stockwell, 2006), and in September 2005, the Australian Medical Association (AMA) Victoria joined the Salvation Army in their call for health warning labels on alcoholic beverages. President of AMA Victoria, Dr Mark Yates, stated that “consumers need to be aware of the harmful effects of alcohol just as smokers are reminded that smoking kills every time they buy a packet of cigarettes” (Australian Medical Association, 2005). More recently, in June

2007, the Alcohol Education and Rehabilitation Foundation¹ issued a media release calling on the Food Standards Authority Australia New Zealand to “label alcohol for what it is” (Alcohol Education Rehabilitation Foundation 2007). Population surveys in the United States prior to the introduction of warning labels (Hilton and Kaskutas, 1991) and more recently in Canada (Giesbrecht, Ialomiteanu, & Anglin, 2005) found majority support for the inclusion of warning labels.

Effectiveness of alcohol warning labels

Two comprehensive reviews (Stockwell, 2006; Wilkinson and Room, in press) have summarised the existing evidence on the effectiveness of alcohol warning labels. Stockwell’s (2006) review concluded that awareness of alcohol labels in the United States has increased over time, and is highest among young people and heavy drinkers (two primary target groups for harm reduction) and highest for the ‘birth defects’ warning. However, he also concluded that warning labels have not had a significant impact on drinking behaviours; although he notes that they have been associated with increased discussion of the harmful effects of alcohol consumption and that no studies have reported any negative consequences from the inclusion of warning labels. Further, Wilkinson and Room (in press) cite an earlier review by Babor et al (2003) that cautioned that the US research was based on sub-optimal labels, in terms of their small size and low visibility, and that the effects may be greater with better designed labels in conjunction with parallel policy and communication interventions.

Wilkinson and Room (in press) contrast the evidence on the effectiveness of (possibly flawed) alcohol warning labels to that of tobacco warning labels, and conclude that there is potential for alcohol warning labels to be effective in the Australian context. They point out that potential warning labels need to be carefully designed and evaluated, be part of a broader intervention than simply labeling products themselves, and their effectiveness be evaluated in the context of their long-term impacts on social understandings of alcohol as a product rather than solely their short-term impact on drinking behaviours.

¹ AER is a non-profit organisation, established in 2001 and funded by a perpetual trust, which provides evidence-based treatment, research and prevention programs

Current research

As described above, reviews of alcohol warning labels have concluded that there is some support for the potential effectiveness of warning labels; this is an inexpensive intervention, with no evidence of negative consequences from its implementation in other countries; and it can be argued that consumers have a right to be fully informed of the potential negative effects of consumption. Given the current debate relating to this issue, and the possibility of the introduction of alcohol warning labels in Australia in the future, this study sought to examine the attitudes and opinions of university students relating to these messages, and the likelihood of such labeling influencing personal behaviours. University students were selected as the target group for this research as they are a high-risk group for excessive alcohol consumption (Sheffield et al., 2005; Wechsler et al., 1994; NSW Health, 2001), and a group whose attitudes and behaviours have been found to be resistant to other strategies

METHOD

Focus Groups

Six focus groups containing between six and ten participants were conducted with students enrolled in a university course in a large regional city in New South Wales. All participants were aged over 18 years, and each group ran for approximately one hour. There were two male-only, two female-only and two mixed gender focus groups, with 23 males and 21 females in total. The students who participated were from various faculties including Health and Behavioural Sciences, Commerce, Arts and Law.

Students were recruited using two methods – potential participants were approached directly on the university grounds in various spaces in which students usually congregate (e.g. food court, lawns), and students were recruited using an online message posted on the university bulletin board. Using the latter approach, students expressed interest in the project, and were subsequently sent an information sheet by email, at which point they then decided whether or not they would participate in the

research. Upon completion of the focus groups, participants were provided a \$30 gift voucher to thank them for their participation.

Discussion Guide

Focus group conversations were directed by a discussion guide, with further probing in certain areas where the researchers felt it appropriate. After asking general questions relating to knowledge of short- and long-term consequences of alcohol consumption and the most common sources of such information, participants were asked about the seriousness of (and their perceived susceptibility to) these consequences and, in general, whether they see alcohol misuse (e.g. binge drinking, underage drinking) as a significant issue in Australia. Participants were then asked about their exposure to warning labels on alcohol products and were shown four examples of warning labels that currently in use on alcohol products sold overseas.

“GOVERNMENT WARNING: (1) According to the Surgeon General, women should not drink alcoholic beverages during pregnancy because of the risk of birth defects. (2) Consumption of alcohol impairs your ability to drive a car or operate machinery, and may cause health problems”

“WARNING 1. Women should not drink alcoholic beverages during pregnancy because of the risk of birth defects 2. Consumption of alcoholic beverages impairs your ability to drive a car or operate machinery and may cause health problems”

“WARNING: Drinking distilled spirits, beer coolers, wine and other alcoholic beverages may increase cancer risk and, during pregnancy, can cause birth defects”

“GOVERNMENT HEALTH WARNING: Alcohol can increase the risk of getting cancer including breast cancer and liver cancer” [This was from an Australian wine produced for export].

We were also interested in the participants' opinions regarding the likely effectiveness, credibility and relevance of these messages, and the likelihood of their own and their friends' behaviours being influenced by these. Finally, participants were asked to suggest improvements to these warning messages or make suggestions for other approaches that are likely to be more effective than warning labels on alcoholic products.

Data analysis

All focus groups were audio-recorded and transcribed in full. These transcripts were then analysed and coded by two independent coders (PG and a research assistant) to identify any reoccurring themes between the groups; as each group transcription was completed the coding was gradually refined to allow for any new developments. The coding and draft analyses were reviewed and discussed with a third reviewer (SJ) who also read the transcripts in full to ensure no themes had been missed. All quotes provided in the manuscript are taken verbatim from the transcripts.

RESULTS

Drinking behaviours

Forty-two of the 44 focus group participants self-identified as 'drinkers,' with the remaining two reporting that they do not currently consume alcohol. Male participants reported more frequent consumption than females, with the majority of females describing their drinking as weekly or fortnightly, and males as two or more times per week. However, both genders reported variations in their drinking patterns, particularly noting more frequent drinking during university vacations.

The majority of participants described 'usual' consumption levels that were far in excess of the safe drinking guidelines, with five or six (or more) per occasion being a common response for females and ten (or more) for males. Females were more likely to describe drinking with the intention of getting drunk, although noting that this was a 'weekend' activity; whereas males were more likely to describe not intending to get

drunk, but finding that it often happens anyway. The predominant influences on active decisions about consumption level raised by participants were how much money they have and whether they have to drive, although participants in all groups spontaneously mentioned that actual consumption is often largely driven by social influences and is something that ‘just happens.’

Source of information regarding negative consequences of alcohol consumption

When asked where this knowledge had come from, sources of information mentioned were school education (e.g., primary school, high school, physical education classes, psychology courses); the media (e.g., magazines and TV programs); friends and family (“my mum tried [to talk to me about it]”, “my dad told me I should know my own limits”); and doctors. There was also a commonly-expressed perception that alcohol-related information is just “general knowledge”. Many participants indicated that this knowledge was anecdotal, based on observations of others (e.g. knowing people with gout) or from their own experiences.

You learn from experience and from hearing stories about what other people do, or if you’re not going out to drink as much one night and you’re watching another group get absolutely smashed and you think how stupid they look. So mainly first-hand experience... [Group 2, female]

[You learn] when you start getting affected by it. [Group 5, male]

Participants also mentioned specific sources of information like the RSA course and, in several focus groups, Healthy Harold – referring to the popular giraffe mascot of Life Education Australia. Interestingly, in both of the female-only focus groups, participants spontaneously mentioned a recent Australian Government funded advertising campaign (which uses a format similar to the movie ‘Sliding Doors’ to show the different outcomes when a teenage girl chooses to drink, or not drink, alcohol at a party).

The government ads on TV – where the girl is at a party and she wakes up. She’s slept with someone and she regrets it. [Group 1, female]

There was an ad where a girl got taken to a bedroom. It was pretty effective, so you learn from them as well. [Group 2, female]

In one of the mixed-gender focus groups there were also discussions of other TV advertising campaigns, although these were specifically in relation to drink-driving.

I reckon those ads on TV are effective, especially the one where you look inside the guy's brain when he's playing pool... [Group 4, mixed]

I liked the drink-driving [ad] where he thinks everyone is a cop. I thought that was really effective. [Group 4, mixed]

Exposure to alcohol warning labels

When asked if they had ever seen or heard of warning labels on alcohol products, a few participants reported seeing these on overseas products (they appear on products manufactured in several countries, but not currently on Australian products), and some mentioned alcohol-related messages they had seen in (health promotion) advertising rather than on the products themselves.

I've had a bottle of American Bacardi Gold and that said something about the surgeon-general saying there are risks associated with drinking alcohol. [Group 4, mixed]

We have these sorts of messages in China. They are pretty common. [Group 3, mixed]

I've seen the one about if you're pregnant ... I think it was on a wall. [Group 2, female]

However, many participants confused 'warning labels' with the 'responsible drinking' statements found both on alcohol products and in advertisements, and almost all participants were able to recall at least one version of this statement. However, the effectiveness of, and motivation for, these statements was questioned.

I think it isn't effective and I think it isn't a general knowledge thing either. For example, on alcohol ads they might have small print at the bottom – “we

encourage responsible drinking”, and you won’t even see it. [Group 1, female]

I don’t really take it into consideration. I think they put it there so they look to the public, but they really just want you to buy their stuff. [Group 1, female]

Effectiveness, credibility and relevance of warning labels on alcohol products

After being shown several examples of existing warning labels (from overseas manufactured products), participants were asked whether or not they thought that exposure to similar warning labels on alcohol products in Australia would influence their attitudes and behaviours. The majority of participants did not believe that warning labels were likely to be effective, and there was also an indication from some that the information provided on the bottles (such as standard drink and alcohol percentage information) was likely to *assist* them in becoming intoxicated.

If you’re going out to get drunk, you’re not going to read the bottles. You might look at the contents to try and work out how much it takes to get drunk, but otherwise you’d pick the bottle up, open it and drain it. [Group 5, male]

This doesn’t really affect me. With cigarettes, I wouldn’t touch a cigarette because of the negative stuff about smoking. This doesn’t have the same effect, probably because drinking is more common. [Group 3, mixed]

I think if they do come out and people read them once, they won’t read them again, because they’ll just see some little blurb and think they know what that’s about. [Group 2, female]

When asked *why* the warning labels were not likely to be effective, a range of suggestions were forthcoming, with the most frequently stated reason being that the warnings were not likely to be relevant to their demographic, or because these warnings are only relevant to people who drink more than them.

When you read this, you just think “that’s not me”. [Group 3, mixed]

I don’t drive and I’m not pregnant. [Group 5, male]

Unless I was pregnant or I already knew that I had liver problems or I had a health issue that was affected by my drinking that I was aware of, I probably wouldn't worry about it. [Group 3, mixed]

My uncle is a pretty severe alcoholic. He drinks like a fish, and he's still relatively healthy. I think if he's not affected that badly, I'll be all right. [Group 4, mixed]

It was also clear that participants did not see these warnings as relevant because of the time lag existing for long-term consequences.

I think my friends see the way they drink now as a short-term thing and they're not going to be drinking like that for long enough to worry about the risk of cancer and things like that. [Group 2, female]

I think we think we're immortal. You think it won't happen to you. You don't really think that far into the future, even though there's a history of breast cancer in my family, but because I don't drink that much, I don't worry about it too much ... when you're out and having a good time with your friends, you don't think that it might be the cause of your death. It seems too far away and you'll never get there. [Group 3, mixed]

The content of the warning labels was also discussed, with many participants stating that the warnings are not believable, provide no new information, or simply aren't scary enough.

The thing is, everyone knows how bad cigarettes are and those government ads with the gory images on them help with that, but I don't think people believe that alcohol is as bad. [Group 4, mixed]

The cancer one is a bit of a non-warning, because it says that alcohol might increase the risk of you getting cancer. [Group 5, male]

True or false - it's a case of is this really an issue? Will this increase my risk of breast cancer? It might be so small that really it has no effect on me, so I don't really take that into consideration. [Group 1, female]

It might also be the case that these warnings could actually be used to *increase* drinking levels:

I think they encourage people to think they're stronger than everyone else and they're not going to get cancer. I can show you how much stronger I am by drinking more than you. [Group 3, mixed]

There was also an indication that much of the content of these labels is assumed knowledge, and therefore the participants felt that it would not be useful to them. This was mainly relating to the warning that pregnant women should not consume alcohol.

These ones seem to be directed more to pregnant women. I think the majority of pregnant women would probably already know about that. I'm not pregnant and I know that. [Group 4, mixed]

You have to live under a rock not to have been told many times that you don't drink and drive. Same with pregnant women as well... it's pretty obvious. [Group 5, male]

However this was debated in one focus group, with a contrasting view from one participant.

Recently I've heard a lot of stuff about ladies who say that they didn't know that drinking wine during pregnancy could cause birth problems. I think there are a lot of ladies unaware of it. [Group 4, mixed]

Aside from the content of these warnings, and subsequent relevance to these young drinkers, the participants of these focus groups consistently mentioned the formatting of the existing warning labels that they were shown, often stating that the warning looks like an ingredients label (and so would not be noticed by most people), that there is too much text, or that it is too small to be noticed. They also mentioned logistical issues relating to these messages, such as that many beverages purchased in bars and clubs come in glasses and so would not include the warnings, or that warnings could be covered easily with stubby holders (in the case of beers).

Despite the overwhelming indication that warning labels are not likely to be effective in their current format (i.e. as used on labels on overseas-manufactured products), there were a small number of respondents who stated that they believed that their attitudes and behaviours *would* be influenced by seeing warnings like those presented on alcohol beverages, and therefore that inclusion of these warnings would be a good thing.

I think if I was drunk and the bottle was sitting there right in front of me and I read the warning, I'd say I wasn't drinking anymore. I think it would affect me a lot – the whole warning thing. That scares me. [Group 1, female]

Yes they would [be effective]. They'd make me not want to drink as much more regularly. [Group 1, female]

I think it's a good thing, even if it's a very slight risk. You should always be aware of it. It's definitely a good thing. [Group 1, female]

Also, on several occasions participants acknowledged that, while these warnings were not likely to be effective for people in their age group (i.e. 18 to 23), younger drinkers may benefit more from such approaches:

Maybe because we've been drinking for a few years now, we don't pay much attention when we look at this. Maybe if we were turning 18 and it was hammered into us, we might. [Group 4, mixed]

Maybe learning about it before you start drinking would make you take more notice and you'd be more aware. [Group 4, mixed]

However, the suggested benefit for younger people was not a unanimous belief – it was also highlighted that adolescents love having fun by pushing boundaries, and don't think, or care, about the consequences of alcohol misuse.

I think it's a difficult thing because no matter how hard to try to influence them, younger children are always going to try things – that's just the way it is. [Group 1, female]

I don't think they [underage drinkers] care because ultimately they're buying the drinks to start with to get drunk and that might not stop them. [Group 1, female]

No, not that young. If you want to go out and drink, you're not going to be concerned about the long-term effects. It's more for the thrill of drinking. [Group 3, mixed]

Influence of warning labels

In describing the likely influence of the introduction of warning labels on the alcohol industry, participants often had contradictory opinions. Some mentioned that, “just like the cigarette companies did”, they would fight any legislative changes relating to warning labels, and this belief was sometimes justified by highlighting potential liability.²

They'd have to concede that by putting them on their drinks they're saying that this is actually the case, which could potentially make them liable. [Group 4, mixed]

It's a liability thing, like the class actions against the cigarette companies. [Group 4, mixed]

Some participants, however, were of the belief that warning labels on products would actually benefit (or at least not be harmful to) the alcohol industry.

I think wineries would think their drink is being drunk by more mature people. [Group 4, mixed]

It seems like a pretty minor step compared to what happened with the cigarettes. I don't think they'd have that much resistance to it. [Group 5, male]

² As pointed about by a reviewer, the opposite argument has been made in the US (i.e., that labels could reduce liability as the company has warned consumers about the dangers).

Participants were also unsure of the influence the introduction of labeling would have on governments, with a general feeling that it would be seen as responsible and working for the greater good, but also that it may be seen as hypocritical.

It makes the government seem pretty hypocritical as well – the fact that they're making so much money from taxing this. They've banned cigarette sponsorship in sports, but that's not the case with alcohol. [Group 3, mixed]

Improvements to warning label labels

When asked whether there are changes that could be made to these warnings to make them more useful, both the format of the labels and the content were raised.

Regarding format, a large number of participants mentioned the size and colour of the existing messages, and suggested that having more colour (i.e. red, because that initiates fear) clearer or larger text, or dot points would make the messages more noticeable and “in your face”. One consistent theme that emerged was the use of pictures - participants generally agreed that images are more effective than text, and constantly compared this situation with images of diseased body parts on cigarette packaging.

I think what makes the tobacco ones really effective is the pictures. It's really full-on and you can't help but see it. Even if you're a smoker you still look at it, whereas the text really just looks like an ingredients label and you really don't take much notice. [Group 2, female]

I think pictures. I think they work better because you can just cover up the text, but it's harder to avoid a picture. [Group 5, male]

Regarding content, as expected – based on the earlier discussions of short- and long-term consequences of alcohol consumption – participants indicated that warnings relating to these short-term effects may be more effective in influencing their attitudes and changing their behaviour.

I'd put something about the short-term effects so people might stop and think they could get that. It's about something maybe happening next week if I keep drinking so much. [Group 1, female]

I think they need warnings that will really catch the eye, like “if you drink too much, it will make you a dickhead”. People might at least read warnings like that. It needs to be something that will grab you. [Group 5, male]

It was also suggested that warnings would be better if they were more personal, or included more detailed information that would resonate on a personal level.

When I read these I don't think they apply to me. I think that's someone else they're talking about, so I think they should have the words “you” and “your” – increase “your” risk of getting (whatever) or “you” will die. I think they should personalise it. [Group 3, mixed]

It was also suggested that, rather than general statements, specific consequences and/or statistics be clearly stated; and that messages should be brief and to the point.

Maybe if it says, for example, it increases the risk of getting breast cancer, they could say one in four women get breast cancer. [Group 1, female]

It also says when you're pregnant it could lead to birth defects. They should say birth defects such as.... I don't know whether shock tactics work or not but for example “your child may be born and the fingers may not be properly formed” or something like that. Say something specific about the defect. [Group 3, mixed]

Maybe they could use red writing and say “alcohol = brain damage” or something like that. [Group 4, mixed]

I think we need to be told that we can die if we drink too much. [Group 3, mixed]

DISCUSSION

Effectiveness of alcohol warning labels

In five of the six focus groups, there was a consensus that if alcohol warning messages were exactly the same as those presented (i.e., current United States

warnings, for example), they would have little effect on young adults' beliefs relating to the negative effects of alcohol consumption. This appears to be mainly because they are already generally aware of the messages about the long-term consequences of alcohol, but either do not believe them, do not think they are susceptible to them, or do not worry about things that are unlikely to affect them until much later in their lives. This finding is consistent with previous research which has found that although younger, heavier drinkers are generally aware of the risks outlined in these (United States) warning labels (Mazi, Morris, & Swasy, 1991), they often find this information less believable than non-heavy drinkers or non-users (Andrew, Netemeyer, & Durvasula, 1991). In the current study, although some participants indicated that they would re-think their behaviour after reading these messages, there was a general view that drinking patterns during or immediately after exposure to these labels would not be affected. Again, this is consistent with overseas evidence from countries where such warning labels currently exist (Greenfield, 1997; MacKinnon et al., 2000).

There is a growing body of evidence that young people perceive, and evaluate, risks differently than adults. First, it appears that adolescents use a 'risk-reward calculus' that weights risk more lightly and rewards more heavily than adults (Steinberg and Scott, 2003). Studies of gambling tasks show that adolescents' decisions are influenced more by potential wins (rewards) and less by potential losses (risks) than adults (Furby & Beyth-Marom, 1992); and studies of hypothetical decision making demonstrate that adolescents spontaneously mention more potential risks than adults do (Halpern-Felsher & Cauffman, 2001). In a study of Australian adolescents beliefs about 10 different risk activities, Smith and Rosenthal (1995) found that adolescents' judgments about danger were influenced by the perceived trade-off between positive and negative outcomes and perceived level of control over the outcome.

The findings of this study support the reviews cited above which suggest that alcohol warning messages *could* potentially be an effective intervention for young adults if they are enhanced to be more noticeable, varied, specific and contain messages that are more relevant to this age group. The focus group participants – most of whom indicated relatively frequent moderate-to-heavy drinking – had a good knowledge of the short- and long-term physical, psychological, social and financial harms related to

alcohol consumption. They also indicated almost unanimously that the short-term effects were of more concern to them, mainly because of the lack of relevance of long-term consequences at this stage of their lives. Thus, participants indicated that alcohol warning labels were more likely to be effective if they highlighted the short-term consequences of alcohol consumption, rather than long-term effects such as cancer. This is consistent with previous findings that young people perceive long-term consequences of their actions as being irrelevant and unimportant, and that adolescent smokers hold unrealistically optimistic beliefs (Arnett, 2000; Reppucci, Revenson, Aber, & Reppucci, 2005).

The observed negative reactions to discussion of the long-term effects of alcohol consumption are quite crucial, because the use of messages relating to the long-term consequences of alcohol consumption may actually be counter-productive. This is consistent with psychological reactance theory (Brehm, 1966), which has previously been supported, particularly relating to alcohol consumption amongst youth (e.g., Allen, Sprenkle, & Vitale, 1994). Furthermore, it appears from some of the focus group responses that it is possible (although perhaps not likely) that some young adults would use such messages to increase their drinking levels to show how tough they are, in that they can drink extreme quantities of alcohol and still not suffer the consequences that ‘apparently’ should arise.

The literature on adolescent decision-making supports the assertion that young people are likely to be more responsive to messages about short-term risks. Adolescents tend to discount the future more than adults do and in making decisions about risk behaviours place more weight on short-term than long-term consequences of decisions (Steinberg & Scott, 2003) ; this effect is consistent across various decision situations, including unprotected sex (Gardner & Herman, 1990), smoking (Halpern-Felsher, Biehl, Kropp, & Rubinstein, 2004) and advising others about cosmetic surgery (Halpern-Felsher & Cauffman, 2001). Moore, Gullone, & Kostanski (2007) used a projective technique (“complete the story”) to investigate adolescents’ perceptions of the risks and benefits of health-related behaviours. They found, in a sample of 570 adolescents aged 12 to 17, that these young people focused on short-term (immediate and short acting) rather than long-term (delayed or longer lasting) consequences. Halpern-Felsher and Cauffman (2001) examined similarities and

differences between adolescents' and adults' decision-making competence using hypothetical scenarios across three domains (medical, informed consent, and family). As expected, they found a higher level of decision-making competence among adults, but also found that in the medical domain significantly fewer of the adolescents mentioned long-term consequences associated with the decision. Several explanations have been posited for this emphasis on short-term consequences – centering on cognitive limitations which limit their capacity to consider hypothetical outcomes, and their limited life experience making short-term consequences appear more salient (Gardner & Herman, 1990; Gardner, 1993; Steinberg & Scott, 2003).

Also, in the context of this research it is possible that warnings on alcohol labels are disregarded because the associated harms (both short- and long-term) are inconsistent with personal experiences relating to alcohol consumption. Relating to this, it was clear that messages regarding cancer are unlikely to be effective, mainly because of the perceived abundance of publicity relating to a range of known and suspected carcinogens, resulting in the belief that “everything causes cancer” – which seems to be interpreted to mean that no change in behaviour can prevent cancer. This finding corresponds with a study conducted by Andrews et al. (1991) who found that warnings about cancer were less believable than warnings about birth defects and driving impairment.

In the current study, even the message concerning pregnant women drew criticism from many female members of the focus groups, who stated that (1) even though they were female, because of their age these messages do not apply to them; and (2) it is general knowledge that women should not drink while pregnant. What was *not* acknowledged by any of the participants is that any woman who is sexually active where pregnancy is possible should abstain from drinking, since the levels of drinking and gestational stage of development at which risks occur are unclear (O’Leary, 2004; Calhoun & Warren, 2007) and thus the NHMRC guidelines (NHMRC, 2009) advise that ‘not drinking is the safest option’ for women who are pregnant, planning a pregnancy or breastfeeding. A survey of over 7000 pregnant African-American women found that 50% of those who were not aware of the alcohol warning labels drank either at conception or antenatally, and 30% at both timepoints (Hankin et al., 1996). As a result, it seems that this may be a useful message to convey, despite the

fact that perceived knowledge of this issue is high. Also, given the concerns raised about placing themselves in dangerous positions (particularly for females), engaging in embarrassing behaviour, and the influence that alcohol consumption has on physical appearance, warnings relating to these consequences may be more effective and more likely to be internalised.

Significantly, it was clear from discussions that if warnings are to be introduced, the format of these messages must be carefully considered. In the format that currently exists on some United States products, young adults are likely to either: not even notice the warning, notice it only on the first occasion and never again, or not recognise the true importance of the message. It was suggested that large colourful text in a prominent location on the container would correspond with greater authority and would be more likely to catch their attention. The problems relating to the format and visibility of warning messages have also been recognised previously (Agostinelli and Grube, 2002; Creyer, Kozup, & Burton, 2002), and the use of pictorials, colour, and signal icons has been previously found to improve recognition of alcohol warning labels (Laughery, Young, Vaubel, & Brelsford, 1993).

Despite this, there was a strong indication among focus group participants that they believe that children may benefit more greatly from this information *before* they start drinking. There are obvious problems with using these alcohol warning labels to educate children before they start drinking, given the presence of the messages on the actual products, and so what is more feasible is for these same messages to be conveyed to children via another method (i.e., at school or by their parents). However, reviews of school-based alcohol education programs have not found strong evidence for the effectiveness of these strategies. For example, a systematic review of school-based substance abuse prevention programs concluded that the average effect size for programs targeting senior high school students was not significantly different for zero, and the confidence interval for the effect size of those targeting elementary school students included zero, although the mean effect size for middle/junior school programs was 0.09 (CI 0.05 – 0.14) (Gottfredson & Wilson, 2003). Similarly, a review of the effectiveness of school-based drink driving education programs (Elder et al., 2005) concluded that there was insufficient evidence of the effectiveness of

these programs in reducing drink driving, although there was some evidence of their effectiveness in reducing riding with drunk drivers.

A key conclusion of the review conducted by Wilkinson and Room (in press) was that in order for alcohol warning labels to be effective, they should not operate in isolation – but should be supported by signage in venues and outlets where people purchase alcohol, and included in alcohol advertisements and promotional materials. Similarly, previous commentators on strategies to reduce alcohol related harms among young people have emphasised that no single intervention will be sufficient to tackle this issue and there is a need for a coordinated approach to intervention, education and treatment (Davey, Davey, & Obst, 2002; Bonomo, 2005). It is clear from this study, and previous research with young people, that the messages developed for these materials (and associated media campaigns) should focus on the short-term consequences of excessive alcohol consumption if they aim to address the drinking behaviours of this age group; we note that the current Australian Government mass media campaign ('Don't turn a night out into a nightmare') takes this approach, and it will be interesting to see future evaluations of the effects of that campaign.

It is important to note that this was a small-scale, exploratory study – conducted with 44 young people aged 18 to 22 in a large regional city in New South Wales. Thus, the results may not be generalisable to all young people, particularly those from different states or countries. Given the results of this study, further research with larger samples of young people is urgently needed to inform the debate on alcohol warning labels in relation to young people's drinking behaviours. This research should include: examining the believability of different messages, across different population groups; survey research to assess community support for warning labels and to assess the indirect as well as direct effects (i.e., not only impact on short-term drinking decisions but also the potential for a longer-term shift in attitudes from explicitly identifying alcohol as a potentially hazardous product); and experimental studies to determine the most effective formats (size, colour, layout, placement etc) for warning labels.

CONCLUSION

Current Australian legislation does not satisfactorily identify alcohol as a serious drug, or one that can pose significant risk to individuals who consume alcohol (as well as those who do not). Existing legislation in more than 20 countries around the world requires alcohol containers to incorporate some sort of alcohol health warning, and several more are in the process of introducing such legislation. However in Australia, where drinking is clearly embedded into our culture and is an integral part of our society, this lead has not been followed.

However this study provided no evidence that, in their current form, alcohol warning labels on alcoholic products are likely to result in a change in risk behaviours amongst young adults. It appears to be the case that young adults are quite aware of the negative consequences relating to alcohol misuse, but continue to put themselves at risk by regularly binge drinking. If this is the case, then perhaps alcohol warning labels may not be an effective deterrent, although this is not necessarily true of other population sub-groups such as underage drinkers, pregnant women, or poorly educated children and adults. However, some suggestions were made as to how these warnings could be improved and enhanced to make them more likely to elicit changes in drinking behaviours, and other strategies (such as role modeling from celebrities, exposure at youth-specific festivals and exposure on news and current affairs shows) were suggested.

Evidence provided by health researchers around the world, and evaluations of the influence of health warnings on alcohol products in other countries, have consistently found that alcohol warning labels have the *potential* to significantly influence behaviours of drinkers (Agostinelli & Grube, 2002; Babor et al., 2003; Greenfield, 1997; Stockwell, 2006). Many of these studies conclude by stating that this is dependent upon the content, format, and presentation of the messages – and the views of our university student participants were consistent with this. We conclude by highlighting that while alcohol warning labels have the potential to influence behaviours, they must clearly be integrated with other educational measures and strategies aiming to internalise alcohol risk information by changing beliefs and, ultimately, behaviours.

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