

‘If I wanna get really drunk I would drink vodka’; drink choices associated with acute intoxication for young Australians.

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Running Head: Drink choices and acute intoxication in young Australians

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Abstract

Background: While survey data can provide information on alcohol products favoured by those who drink to intoxication, it is more difficult to get information on what they drink when they are consuming at a level which places them at high risk of harm.

Objectives: To use complementary quantitative and qualitative data to investigate what young risky drinkers drink, and what they drink when they are drinking heavily.

Methods: 3226 respondents aged 18-24 from the Australian state of Victoria answered questions in the Victorian Youth Alcohol and Drug Survey on their drinking habits and usual drinking choice. Sixty qualitative interviews were also conducted with Victorian 18 to 24 year olds. In each study Regular Drinkers to Acute Intoxication (RDAIs), those who drank 11 or more Australian standard drinks in a session and drank to the point of forgetting afterwards, were compared to those who do not meet both of these criteria.

Results: RDAIs are more likely to drink beer, cask wine, spirits, and ready to drink spirits; however they also consume more drink types than non-RDAIs. Qualitative interviews highlighted spirits, particularly shots, as a popular drink of choice when intoxication was the aim and or/outcome.

Conclusions Young people appear to prefer spirits when intending to get drunk, however there is also evidence to show that RDAIs will drink whatever is to hand. Motives behind drink choice for RDAIs include value for money, where value is gauged by the amount of alcohol per drink, with a focus on both spirits and cheap alcohol.

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Researchers have argued that a new culture of intoxication has emerged among young people, with ‘determined drunkenness’ (Measham, 2006) becoming widespread (Griffin, Bengry-Howell, Hackley, Mistral, & Szmigin, 2009; Measham & Brain, 2005) [deleted for review].(Szmigin et al., 2008). Epidemiological studies indicate that young adults are more likely than other age cohorts to engage in heavy episodic drinking (Matthews, Dietze, Room, Chikritzhs, & Jolley, 2013) and this is associated with increased harms including hospital admission for intoxication (Livingston, 2008). Changes in the social acceptability of heavy consumption of alcohol and other drugs are driven at least in part by changes in the night time economy including aggressive marketing of particular alcoholic products (Measham & Brain, 2005). It is important to understand types of alcohol young people drink when they consume alcohol to the point where they are more likely to encounter harms (which we define as ...) to ensure that alcohol pricing, taxation and marketing policies support alcohol consumers to avoid excessive intoxication.

The limited existing research on drink choice for people who consume greater quantities of alcohol than recommended in relevant guidelines indicates that they are more likely to drink beer and less likely to drink wine (Callinan & Ferris, 2012). However, there is little research on what young people drink when drinking to intoxication, and less still in an Australian context. This article uses quantitative and qualitative data sources to identify types most frequently chosen by young adults aged 18-24 years in Victoria, Australia when drinking to acute intoxication.

Studies on drink choice tend to focus on the demographic profiles, drinking patterns and negative consequences from drinking for those who regularly consume different types of

alcohol. The results of research into drinking choice frequently endorse popular opinion, for instance the stereotypes that wine is most likely to be consumed by older, well-educated females, and beer by males (Klatsky, Armstrong, & Kipp, 1990). Drink choice in venues in Victoria's capital city Melbourne appears to be quite gendered, with beer being more popular with men, wine with women and spirits being quite popular with both genders (Lindsay, 2005). Drink choice also varies by location, with RTDs¹ being more popular among young adults in outer-urban areas, compared to those in the inner city (MacLean, Ferris, & Livingston, 2013). People seem to settle into consuming a restricted range of alcoholic drinks as they get older, with younger people more likely to consume more drink types. In one study, respondents aged under 29 selected a mean of three drink types in the past twelve months as usually consumed (Callinan & Ferris, 2012); a steady decrease in drink types was reported by participants aged from 30 to 70 years, with septuagenarians consuming a mean of two drink types. Drink choices also change over time as new products are developed or promoted by the alcohol industry. For example, alcohol shots (small glasses of spirits) have been sold in many licensed venues since the early 2000s (Measham & Brain, 2005).

The price of alcohol is particularly important for young people when choosing what they want to drink. The availability of cheap alcohol is considered to be an important part of a good night out for young adults (MackAskill, Cooke, Eadie, & Hastings, 2001; MacLean & Callinan, 2013). While one paper (MackAskill et al., 2001) reported that cheap drink promotions would not affect a young person's choice of venue, at least not so they noticed, it would make a difference to their drink choice once they were there. A study conducted in the UK found that drinkers aged 18-24 are more likely to be influenced by price and drink promotions than older drinkers (Craig et al., 2012).

The link between consumption of specific drink types and harm is unclear. A relationship between beer consumption and adverse consequences from drinking may be due in part to the greater affordability and availability of beer to those who are more likely to drink riskily (Dey, Gmel, Studer, Dermota, & Mohler-Kuo, 2013). Furthermore, it has been suggested that beer is less likely to be consumed at home than drinks like wine, possibly resulting in an increased chance of adverse consequences for beer drinkers (Dey et al., 2013) as short term

¹ Ready-to-Drink beverages or premixed spirits, often sweetened (also known as "alcopops").

harm is more likely to occur when drinking on licensed premises (Stockwell, Lang, & Rydon, 1993). However, aside from location of consumption, drink choice may be important in assessing short term risks and harms. For instance, events of alcohol poisoning in Finland have been linked to sales of spirits (Poikolainen, Leppänen, & Vuori, 2002) because poisoning is linked to drinking large amounts of alcohol very quickly, which is easier to do with spirits (Neufeld & Rehm, 2013).

Australian university students associate spirits with an increased risk of short term harm and wine with a decrease (Hasking, Shortell, & Machalek, 2005). There have been mixed results when examining the link between Ready To Drink (RTD) spirits, and risky drinking in youth. A carefully controlled study on German adolescents found no specific “alcopops effect” when predicting negative consequences and found that those respondents who drank alcopops exclusively experienced less negative consequences than others in their cohort (Kraus, Metzner, & Piontek, 2010). If Victorian young adults are similar to their German peers in this respect, this could lead to the hypothesis that much of the link between alcopops and harm in the literature is related to *when and where* alcopops are consumed, rather than *how often* they are consumed. Among young Victorians, the intention to get drunk predicts high risk drinking (MacLean & Callinan, 2013) and it may be that this intention to get drunk results in young people turning to a given drink type.

The aim of the current study is to investigate the relationship between drink choice and Regular Drinking to Acute Intoxication (RDAI), using both qualitative and quantitative methods. In this paper, RDAI is defined as drinking eleven or more Australian Standard Drinks (ASD) in a session at least monthly and also reporting that they had been unable to remember afterwards what happened while they were drinking at least monthly. The latter criterion was used to try and compensate for different levels of alcohol tolerance in respondents.

Identifying drink types used by young adults to drink to intoxication is important for two reasons. The first of these is that alcohol pricing and taxation policies can be based on drink type as well as on alcohol content (Manton, 2014). Products preferred for intoxication should not be made even more attractive by reducing their real cost to young adult drinkers. Secondly, consuming unmixed spirits appears to be linked with alcohol poisoning because of the rapidity of intoxication provided (Neufeld & Rehm, 2013). Young adults’ use of spirits

for intoxication is therefore of particular concern. The drink choices of this target group are examined here using representative survey data from Victorians aged 18-24, and the reasons for these drink choices are explored using qualitative data from another sample of Victorians aged 18 to 24. It is hypothesised that high-risk drinkers will regularly consume more drink types than those who are not RDAIs, and that they will prefer spirits and beer. Finally it is hypothesised that price and alcohol content will be a driving factor in drink choice of those who drink to high risk.

Method

We report on analyses of two datasets here – one quantitative and one qualitative. There is no established means of identifying high risk drinkers among survey and interview participants. Recent Australian guidelines for low risk drinking (National Health and Medical Research Council, 2009) identify consumption of more than four Australian Standard Drinks (ASD) in a single session as risky. Nonetheless, many people, particularly youth, would not consider this to be an excessive drinking session (Harrison, Kelly, Lindsay, Advocat, & Hickey, 2011). Taylor et al.'s (2010) meta-analysis of the dose-response relationship of alcohol to shows a smooth risk curve where acute harms increase with each standard drink consumed. They found that consuming 100 grams of alcohol (equivalent to 10 ASD) is associated with around ten times the risk of acute non-motor vehicle-related injury (e.g. assault, falls or intoxication-related medical events) in the three hours after drinking concludes. Furthermore, to ensure that we are capturing those who drink regularly to acute intoxication, another condition, drinking to the point of forgetting afterward, at least monthly, was also included. Therefore, in analysing both survey and interview data the population of interest is RDAI, that is those that drink eleven or more ASD at least monthly and also drink to the point of been unable to remember what happened while they were drinking at least monthly. This information was gained from both the survey and the qualitative interviews, using the same wording for all relevant questions.

Study 1 – the Victorian Youth Alcohol and Drug Survey (VYADS)

The VYADS was administered to a representative sample between September and November 2009. It involved 5001 interviewees aged between 16 and 24 years. Participants were all living in Victoria, with 72.8% of them in metropolitan Melbourne. Household landlines were

called using Computer Assisted Telephone Interviewing and where there was more than one potential respondent in the household the person in the house with the most recent birthday was selected. The cooperation rate for the survey was 71% (Victorian Drug and Alcohol Prevention Council, 2010). When the sample was compared to the information on 16-24 year olds from the Australian Bureau of Statistics (ABS) there were some discrepancies, most notably an under-representation of males and participants aged between 22 and 24, and over-representation of rural participants. Data was weighted to match the ABS estimates on age, sex and rural status. All results presented here from the VYADS data are weighted.

As all analyses in this paper were focussed on drink choice, abstainers were excluded in this study. Furthermore, to ensure all respondents were of age to legally purchase alcohol and to match the sample of the qualitative study, we analysed only responses from participants aged 18-24 years who nominated at least one drink choice. This sample (n=3226), has a mean age of 20.3 years (95% CI 20.2-20.4), and 50.6% were female. Alcohol consumption was measured using a graduated frequency measure with a reference period of twelve months. In this sample, 58% were studying, 75% in full or part time work and 8% in neither. In this paper we analyse VYADS variables concerning drink choice and the prevalence of risky drinking. Respondents were asked to select what drink types they “regularly” consumed. There was no limit on the number of options selected; therefore, many respondents selected more than one drink type, and percentages of drinks choices selected will add up to more than 100%.

Logistic regression models were used to predict membership in the RDAI group using drink choice as predictor variables. In order to ensure that the higher number of drink types consumed by heavier drinkers is not confounding analyses, models that only included one drink choice also included the number of drink choices selected as a covariate where specified.

Study 2 – Interviews with Victorian young adult drinkers

To understand the reasons for relationships identified in survey data we analysed qualitative interviews with 60 participants conducted in 2012, each of whom had consumed alcohol during the previous six months. These interviews were conducted as part of a study exploring the social and cultural position of alcohol in young people’s lives. Recruitment occurred

though tertiary institutions and via advertisements placed in shopfronts. Participants were asked to share narratives about events and experiences involving alcohol use. Three trained researchers probed participants to identify a range of issues including what drink types they would usually select when they wanted to become intoxicated and when they did not.

Participants were aged 18-24 year (mean age of 20.8 years; 95% CI 20.3-21.4; equal gender split). Using confidence intervals there were no significant differences in mean age while the gender splits (50.6 and 50% respectively) were very similar. The majority of participants (73%, compared to 58.5% in study 1) were studying either full or part-time. Two-thirds were employed full- or part-time (compared to 75% in study 1) and 10% of participants (compared to 8% of study 1) were neither studying nor working. The sample was ethnically diverse, with 17 participants born outside Australia, and 19 speaking another language at home in addition to English.

Participants were recruited via local tertiary institutions and agencies and through word of mouth. Interviews were conducted by three experienced researchers using a detailed theme sheet. Participants were offered the choice of completing interviews on their own, or with one or two friends. At the conclusion of interviews a brief survey of drinking patterns was administered allowing us to differentiate RDAIs (11 of the 60 participants, of whom seven were female and four male) from other participants. In addition to similarities in age and gender, drinking patterns of participants were similar to those of VYADS respondents.

Transcripts were analysed thematically (Miles & Huberman, 1994) and, for this paper, coded according to reasons given by participants for their alcohol product choice and what drinks they preferred when they wanted to become intoxicated. Brand names of alcoholic drinks reported by participants are not identified in the paper.

Results

Given the paper's focus, RDAIs within the VYADS sample of 3,226 respondents were identified: those who drank 11 or more ASDs at least once a month (53%) and also stated that at least monthly they drank so much they had been unable to remember what they did afterwards (11.3%). Of the 331 (10.3%) respondents who met both criteria 65% were male, compared to 48% of the rest of the sample.

Of the 60 participants in the qualitative study, 29 (48%) drank 11 or more standard drinks in a session more than once a month, and of these 11 (18%) reported drinking at least monthly to the point that they couldn't remember what had happened the night before (6 females and 7 males). These participants are identified below as regularly drinking to acute intoxication (RDAIs).

Drink choice for Risky Drinkers to Acute Intoxication (RDAIs)

In the survey, respondents could give multiple answers to the question on drink choice. High-risk drinkers selected a mean number of 3.76 drinks types [95% CI 3.54-3.97], more than those who were not identified as high-risk drinkers (3.12 [3.05-3.19]). The drink choices of RDAIs compared to the rest of the sample are shown in Table 1. Regular strength beer, home brew beer, cask wine, bottled spirits and RTDs are more popular among RDAIs than non-RDAIs.

<Insert Table 1 approximately here>

A similar story is shown in Table 2, in the first column unadjusted odds ratios (UOR) showing the bivariate relationship with each drink choice and RDAIs. In the second column, this relationship has been adjusted to control for the number of drink types selected and in the third to adjust for number of drink types chosen, age and sex. Finally Model 1 includes all drink choices and Model 2 all drink choices controlling for age and sex. When examining the UOR regular strength beer, home brew beer, cask wine, spirits and RTD drinkers more likely to be RDAI. However, when adjusted for the number of drink types respondents reported regularly consuming (see AOR1), mid-strength beer in particular, went from being a non-significant positive predictor of being a high risk drinker, to being a significant negative predictor, suggesting that those who drink mid-strength beer with few or no other drink types are less likely to be RDAIs. Regular consumption of light beer, bottled wine and cider also became a significant negative predictor when other drink types were included in the models. In AOR2 where age and sex were included in the model as well as the number of drink types

bottled wine was no longer a negative predictor of group membership while spirits became a positive predictor.

In Model 1, with all the drink types included in the one model regular strength beer, cask wine, spirits and RTDS were positive and bottled wine negative predictors of group membership. Adding age and sex in the model resulted in light beer becoming a significant negative predictor and bottled wine no longer a negative predictor of RDAI group membership. Overall, the strongest predictors of high risk drinking in the survey data are consumption of regular strength beer, cask wine, bottled spirits and RTDs.

<Insert Table 2 around here>

Drink choice when young adults want to get drunk

The confounding factor in the VYADS data was that it is unclear if any of these drink choices are specific to high risk drinking occasions, or alternatively specific to occasions when high risk drinkers consume alcohol moderately. Qualitative data on this topic allows us to investigate both drink choices for different types of drinking occasions and the motives behind those choices for young adults who consume alcohol at different levels. For example, our interview participant Marco (RDAI) spoke of drinking beer at a family event so he could ensure he wouldn't get 'too wasted'. However, when drinking with his friends he preferred spirits to achieve rapid intoxication.

Different drinks across the night

Young adults in the study frequently referred to an occasion when they drank heavily as a 'big night'. Some participants would consume a range of drink types through a drinking occasion. RDAIs had greater opportunity than more abstemious participants to consume a larger number of drink types. Steven (RDAI) would start with beer at a friend's house, moving onto shots and back to beer as a big night progressed. Here he describes a recent celebration after his exams:

I might head straight to the pub after the exam, so have a few jugs in the sun. A few pints and then I don't know, it depends. If I managed to catch up with a few other mates, I might go on to a couple of other bars and maybe do a few shots of tequila. And then, yeah. a bit more, a few more beers. And then maybe finish the night off with a nice scotch, something like that.

Marco and Carley (both RDAIs) explained that they drank a range of drinks including mixed spirits, moving on to shots when they arrived at venues.

Oh probably like three shots, two bottles of beer, and about two or three bourbon and cokes I think. I think that's as much as I can remember. (Marco, RDAI)

For me, I'd start off with the wine and then a few like [RTDs] or whatever. And then as soon as we're out, we start on the shots, yeah. Carley (RDAI)

In contrast, a couple of the women RDAIs only consumed wine. Zara (RDAI) described her alcohol choice below:

Alright, so I'll usually have -- this is a big night drinking -- I'll have four or five glasses of wine before I leave. That's at home and then we'll usually go to our local pub. I'll have about, oh it could be up to eight glasses there and then some.... A lot of the time there's someone who will have [no parents at] home and then we'll go back and keep drinking there.

Value for money

Many participants in the overall qualitative sample, and particularly those classified as RDAI, selected drinks for a big night that offered the greatest alcohol content for the cheapest price. Participants chose cheap off-premise alcohol to reduce their need to purchase expensive alcohol in venues. Some also described consuming alcohol as they travelled in the car or train to venues, or in a few instances 'side loading'; leaving a licensed premises to drink pre-purchased cheaper packaged alcohol before returning. Michelle (RDAI) and Ryan (not RDAI) pre-drank spirits to save money:

Normally I'd either buy, I'd buy a four pack normally maybe, or if they're two-for², I'd buy two two-for packs. Depends on the specials. I'll only buy cheap drinks (Michelle, RDAI)

² Two-for = two for the price of one.

If I have pre-drinks before I go out somewhere I'll probably drink a six pack or maybe a quarter of a bottle of vodka, maybe like seven or eight standard vodkas. And that, that's because I'm a student and I try not to spend money on alcohol when I go out. So if I drink more at home it's cheaper I reckon. (Ryan, non RDAI)

Clara (RDAI) explained that she chose to attend venues offering cheap deals on alcohol:

There's a place called the [name deleted] that has one-dollar champagne so we go there a lot. I think we're actually going to a place tonight that actually has free champagnes for ladies from seven till eight [pm]. I think like the price and deals is a big factor [in our alcohol product choices].

High alcohol content and rapid intoxication

Research participants often spoke of consuming beer and spirits during a big drinking occasion. Hayden (non-RDAI) drank beer at home and spirits at nightclubs because he believed spirits offered better value for money as an intoxicant:

I drink beer at home. When I go out after I get a little bit pissed I'll start hitting the Tequila.... A bit more bang for the buck.

Men discussed drinking beer when they wanted to drink heavily more often than women did. In the following quote Thanh (non-RDAI) explains that he drinks beer when he wants a 'big party':

... [when we are eating] then we might, we will bring wine. So if we have like a big party you know, then we drink beer, we prefer beer.

As part of the mix of alcoholic products consumed over a night, the majority of women, and only slightly fewer men, would select spirits when they wanted to get drunk. When people wanted to get drunk quickly they would often consume spirits unmixed as shots, particularly when they were out at venues. This was the case for both those classified as RDAI or not, as many participants explained:

...If I take a shot it's, it's, it goes down straight like ... it's quicker, like it gets there quicker. Marco (RDAI)

We know that the shots can sort of do it fast, which is why we have them. (Carolyn, RDAI)

Shots .. that is always the thing that sets you right off (Zara, RDAI)

The reason why I take shots is just to get drunk and get high and enjoy the music more and yeah to, to meet [men]... So the, the practical choice you just go for shots. I would just usually drink two shots at one go. I'll just get high straight away. (May, non RDAI)

If I wanna get really drunk I would drink vodka (Honey, non RDAI)

Discussion

Alcohol marketing and the development of new alcohol products has been influential in emergence in western countries of a culture of intoxication over recent decades (Measham & Brain, 2005). Alcohol use can be seen as a form of 'psychoactive consumption' offering desired physiological states as well as social meanings associated with particular products and brands (Brain, Parker, & Carnwath, 2000). This is something which alcohol manufacturers are enthusiastically exploiting through marketing alcohol to young people (Tim McCreanor, Barnes, Gregory, Kaiwai, & Borell, 2005; T. McCreanor et al., 2012). The aim of the current study is to investigate the relationship between drink choice and high risk drinking using both qualitative and quantitative methods. It suggests that drinking choices are guided by a complex combination of social, cultural, personal and price factors.

As expected, RDAIs consumed more types of alcohol than those who were not RDAIs. Furthermore, RDAIs were more likely to regularly consume regular strength beer, home brew, cask wine, RTDs and spirits than non-RDAIs, but less likely to consume light beer. The distinction between specific types of beer and wine is an important one, as regular strength beer and cask wine consumption were positive predictors of RDAI group membership while other types of beer and wine were not. As predicted, qualitative interviews highlighted that an important motive in drink choice for high-risk drinkers was value for money, while two other common, interrelated, themes were high alcohol content and rapid intoxication. While the RDAIs in the qualitative sample tended to consume more drink types and particularly emphasised the importance of achieving value for money in their alcohol purchases, they were not appreciably different from other participants in their selection of beer and/or spirits when they wanted to become very drunk.

The popularity of regular strength beer which emerged for RDAI survey participants even after controlling for demographics was interesting and provides mixed support to the suggestion that beer's identification in the literature as a drink that leads to harm is merely a reflection of the demographics of those who choose to drink it (Dey et al., 2013). Within the small qualitative sample men were more likely to mention beer drinking on a heavy occasion than women. However some RDAs referred to beer as a drink they would choose when they were not aiming to be intoxicated, suggesting that as a very popular drink in Australia, beer may be used differently according to the event type and the drinker's desire for intoxication. Drinks with higher alcohol content were more commonly mentioned by interview participants in the context of heavy drinking sessions. Spirits were frequently identified as the drink of choice when wanting to get drunk, despite not representing good value for money. One reason stated for this was that shots were considered the best way to become intoxicated quickly, a finding that has been noted in other research (Measham & Brain, 2005).

In line with previous research, value for money was a predominant theme in interview participants' discussions of drink choice (Craig et al., 2012; MackAskill et al., 2001). Given the popularity of spirits drinking when hoping to get acutely intoxicated, and the association between consuming spirits and short term harms including alcohol poisoning (Neufeld & Rehm, 2013) it would be worth ensuring that any policy changes affecting alcohol pricing do not result in spirits becoming cheaper. The relative popularity of cask wine among RDAs in the survey data may also be explained by its price per unit of alcohol, with the cost as low as 25 cents per ASD in Australia (Australian National Preventive Health Agency, 2013). Drinking shots on licensed premises was popular with RDAs who participated in interviews when they were trying to get intoxicated quickly. This indicates that restricting purchases of shots in late night venues may also reduce the harms experienced in this cohort. That said, it is worth noting that RDAs in the VYADS survey regularly consumed more drink types than the rest of the sample. This would suggest that any pricing or taxation structure that has loopholes for any drink type would be exploited by those hoping to get intoxicated cheaply.

A limitation of this study was that the survey data on drink choice is not detailed or collected for this purpose, so when a respondent selects three drinks they regularly consume, there is no way of knowing if some of these are specific to high-risk, or conversely, low-risk,

occasions. While this information could be taken from qualitative research, the focus of the interviews was not on drink choice, and only a small number of interviewees drank at an RDAI level. Future research on what decisions regarding drink choice young people consciously make would be valuable, as would research that is collected during drinking occasions, to get a more objective view of what happens during high-risk drinking. Finally, it is worth noting that the reference period for the two samples was different, six months for the qualitative study and twelve for the quantitative. While it is not anticipated that this would have a sizable impact on the prevalence of monthly eleven plus consumption it should still be kept in mind when interpreting the results.

In conclusion, young Victorians regularly participating in high-risk drinking are more likely to select certain drink types, namely regular-strength beer, cask wine and spirits both bottled and premixed as an RTD. Young people explained that value for money was an important factor in their drink choices, judging this by both speed of intoxication and alcohol strength within drinks. Policy responses to reduce the harms from high-risk drinking by young people should therefore ensure that beer, cask wine, spirits (particularly when not diluted with soft drink) do not become more available or affordable, or higher in alcohol content than they currently are.

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References

- Australian National Preventive Health Agency. (2013). Exploring the public interest case for a minimum (floor) price for alcohol. Canberra: Australian National Preventive Health Agency.
- Brain, K., Parker, H., & Carnwath, T. (2000). Drinking with design: young drinkers as psychoactive consumers. *Drugs: Education, Prevention and Policy*, 7(1), 5–20.
- Callinan, S., & Ferris, J. (2012). What do Australians drink? Canberra: Foundation for Alcohol Research and Education.
- Craig, D. G., Dakkak, M., Gilmore, I. T., Hawkey, C. J., Rhodes, J. M., Sheron, N., & the British Society of Gastroenterology. (2012). A drunk and disorderly country: a nationwide cross-sectional survey of alcohol use and misuse in Great Britain. *BMJ: Frontline Gastroenterology*, 3, 57-63. doi: 10.1136/flgastro-2011-100047
- Dey, M., Gmel, G., Studer, J., Dermota, P., & Mohler-Kuo, M. (2013). Beverage preferences and associated drinking patterns, consequences and other substance use behaviours. *The European Journal of Public Health, Advance Access*, 1-6. doi:10.1093/eurpub/ckt109
- Griffin, C., Bengry-Howell, A., Hackley, C., Mistral, W., & Szmigin, I. (2009). 'Every time I do it I absolutely annihilate myself': loss of (self-)consciousness and loss of memory in young people's drinking narratives. *Sociology*(3), 457.
- Harrison, L., Kelly, P., Lindsay, J., Advocat, J., & Hickey, C. (2011). I don't know anyone that has two drinks a day : young people, alcohol and the government of pleasure. *Health, Risk and Society*, 13(5), 469-486. .
- Hasking, P., Shortell, C., & Machalek, M. (2005). University students Knowledge of Alcoholic Drinks and Their Perception of Alcohol-Related Harm. *Journal of Drug Education*, 35(2).
- Klatsky, A., Armstrong, M. A., & Kipp, H. (1990). Correlates of alcoholic beverage preference: traits of persons who choose wine, liquor or beer. *British Journal of Addiction*, 85, 1279-1289.
- Kraus, L., Metzner, C., & Piontek, D. (2010). Alcopops, alcohol consumption and alcohol-related problems in a sample of German adolescents: Is there an alcopop-specific effect? *Drug and Alcohol Dependence*, 110, 15-20.

- Lindsay, J. (2005). *Drinking in Melbourne pubs and clubs: A study of alcohol consumption contexts*. Clayton, Vic, Australia: School of Political and Social Inquiry, Monash University.
- Livingston, M. (2008). Recent trends in risky alcohol consumption and related harm among young people in Victoria, Australia. *Australian and New Zealand Journal of Public Health*, 32(3), 266-271.
- MackAskill, S., Cooke, E., Eadie, D., & Hastings, G. (2001). Perceptions of factors that promote and protect against the misuse of alcohol amongst young people and young adults. Glasgow: Centre for Social Marketing, University of Strathclyde.
- MacLean, S., & Callinan, S. (2013). "Fourteen Dollars for One Beer!' Pre-drinking is associated with high-risk drinking for Victorian young adults". *Australian and New Zealand Journal of Public Health*, 37(6), 579-585.
- MacLean, S., Ferris, J., & Livingston, M. (2013). Drinking patterns and attitudes for young people in inner-urban Melbourne and outer-urban growth areas: differences and similarities. *Urban Policy and Research*, 31(4), 417-434. doi: <http://dx.doi.org/10.1080/08111146.2013.831758>
- Manton, E. (2014). The diverse drivers of relative changes in excise taxes on beer and spirits in Australia, 1902-2012. *Drugs: Education, Prevention and Policy*, 21(3), 197-204. .
- Matthews, S., Dietze, P., Room, R., Chikritzhs, T., & Jolley, D. (2013). The social location of heavy episodic alcohol consumption in the Victorian population. *Drug & Alcohol Review*, 32(2), 157-161.
- McCreanor, T., Barnes, H. M., Gregory, M., Kaiwai, H., & Borell, S. (2005). Consuming identities: Alcohol marketing and the commodification of youth experience. *Addiction Research & Theory*, 13(6), 579-590. doi: 10.1080/16066350500338500
- McCreanor, T., Lyons, A., Griffin, C., Goodwin, I., Barnes, H. M., & Hutton, F. (2012). *Youth drinking cultures, social networking and alcohol marketing: implications for public health*.
- Measham, F. (2006). The new policy mix: alcohol, harm minimisation and determined drunkenness in contemporary society. *International Journal of Drug Policy*, 17, 258-268.
- Measham, F., & Brain, K. (2005). 'Binge' drinking, British alcohol policy and the new culture of intoxication. *Crime Media Culture*, 1(3), 262-283.
- Miles, M. B., & Huberman, A. M. (1994). *Qualitative Data Analysis: An Expanded Sourcebook* (2 ed.). Newbury Park, CA: Sage.
- National Health and Medical Research Council. (2009). Australian guidelines to reduce health risks from drinking alcohol. Canberra: NHMRC.
- Neufeld, M., & Rehm, J. (2013). Alcohol Consumption and Mortality in Russia since 2000: Are there any Changes Following the Alcohol Policy Changes Starting in 2006? *Alcohol and Alcoholism*, 48(2), 222-230. doi:10.1093/alcalc/ags134
- Poikolainen, K., Leppänen, K., & Vuori, E. (2002). Alcohol sales and fatal alcohol poisonings: a time-series analysis. *Addiction*, 97(8), 1037-1040.
- Stockwell, T., Lang, E., & Rydon, P. (1993). High-Risk Drinking Settings - the Association of Serving and Promotional Practices with Harmful Drinking. *Addiction*, 88(11), 1519-1526.
- Szmigin, I., Griffin, C., Mistral, W., Bengry-Howell, A., Weale, L., & Hackley, C. (2008). Re-framing 'binge drinking' as calculated hedonism-empirical evidence from the UK. *International Journal of Drug Policy*, 19(5), 359-366.

Taylor, B., Irving, H., Kanteres, F., Room, R., Cherpitel, C. J., Greenfield, T., & Rehm, J. (2010). The more you drink, the harder you fall: A systematic review and meta-analysis of how acute alcohol consumption and injury or collision risk increase together. *Drug and Alcohol Dependence*, *110*, 108-116.

Victorian Drug and Alcohol Prevention Council. (2010). 2009 Victorian Youth Alcohol and Drug Survey Final Report. Melbourne, Australia: Victorian Drug and Alcohol Prevention Council.

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