

Decreasing Prevalence of Social Drinkers in Australia

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Abstract

Introduction. There has been a recent decrease in population level alcohol consumption in Australia, particularly in young people. Whether this is due to increasing abstinence or a shift in the way people think about alcohol is not known. The aim of this study is to investigate trends in self-identification of drinker types in Australia from 2001-2013 in light of shifting patterns of alcohol consumption in Australia.

Methods Five waves of the National Drug Strategy Household Survey from 2001 to 2013 (N = 118,416) were used to assess trends in self-identification as a drinker type (non-, ex-, occasional, light, social, heavy and binge drinker). Consumption patterns and demographics of the self-identified groups were also examined.

Results The pattern of self-identification has mostly remained steady over time. The two exceptions to this are a decrease in identification as a social drinker (28% to 22%) and a corresponding increase in identification as a non-drinker (from 19% to 27%). There are few changes over time in the demographic make-up of, or consumption patterns in, the social drinker category with the exception of those over 50, who continue to identify as social drinkers at the same rate.

Conclusion The recent increase in abstinence in Australia seems to be matched by a corresponding decrease in self-identified social drinkers, particularly among those under 50. This indicates that the decrease in consumption is not occurring in those most likely to experience harms.

Introduction

According to Australia's National Drug Strategy Household Survey (NDSHS), undertaken every three years with more than 20,000 respondents (Australian Institute of Health and Welfare, 2014b), per capita alcohol consumption in Australia has been declining since 2007. An increase in consumption was observed between the years 2001 and 2007, but between 2007 and 2013 a 10.5% decline was observed, consistent with the trends in the more reliable data collated by the Australian Bureau of Statistics. Population levels of alcohol consumption in Australia have decreased over the same period (Australian Bureau of Statistics, 2015). According to analyses by Livingston and Dietze (2016), the increase between 2001 and 2007 was largely driven by increases in drinking among middle-aged Australians, while the subsequent decline was largely driven by reductions in drinking among respondents under the age of 30. Furthermore, we have seen an increase in reported abstinence in the Australian data over time, from 16.6% in 2004 to 22.0% in 2013 (Australian Institute of Health and Welfare, 2014b).

It is not clear what is driving this decline in drinking in Australia, particularly among young people. Focussing on teenagers, declining drinking trends appear consistent across socio-demographic groups, ethnic groups and geographic areas, and cannot be explained by changes in survey methodologies or substitution to other drug use (Livingston, 2014). Some theories that have been posited for decreases in drinking among young people include changes in: policy or public health education, parental supply and modelling, the cultural position of alcohol, or in the way young people spend their leisure time (Pennay, Livingston, & MacLean, 2015). However, these are simply hypothesised explanations, with limited evidence for each theory.

One potential explanation is that Australians are changing the way they drink. Over the past twenty years there has been increased attention paid to health and fitness, with exercising, eating well and avoiding alcohol and other drugs reportedly important concerns for many Australians in the context of their health and identity (Wyn, 2009). There has also been an increasing focus on shifting 'drinking cultures' in public health education through promoting responsible or sensible drinking, as opposed to 'binge' or heavy drinking (Savic, Room, Mugavin, Pennay, & Livingston, 2016). Therefore, it may be that what is driving reductions in drinking across the population is a shift from heavy drinking to more moderate levels of drinking. Alternatively, it could be that this shift is solely being driven by increasing abstinence rates.

There has been very little research around the world exploring the way in which drinkers self-identify and whether these categories are meaningfully related to actual drinking practices. To our knowledge, current US and European national surveys do not include questions about how drinkers

self-categorise. There have been two studies from the US exploring how self-identification as light, moderate and heavy drinkers differ with respect to quantity and frequency of drinking, but both of these studies are more than twenty years old. Drawing on survey data from a US community sample (n=415), Abel and Kruger (1995) found that drinking categories were conceptually defined in terms of quantity of drinking, with light drinking operationally defined by respondents as 1.2-1.4 drinks per day, moderate drinking defined as 2.5-3.6 drinks per day and heavy drinking defined as 3.7 drinks per day and above. These ranges, however, differed depending on socio-demographic characteristics such as gender and age, with males and older people having higher thresholds for moderate and heavy drinking.

A second US study examined the self-rating drinking habits of 150 'high-functioning middle aged-men' who did not qualify as having alcohol abuse or dependence as measured by the DSM-III (Daepfen, Smith, & Schuckit, 1999) and reported that most identified as infrequent drinkers (67%), followed by moderate drinkers (28%), non-drinkers (3%) and heavy drinkers (1%). Infrequent drinkers reported consuming an average of 1.6 drinks on an occasion and drinking 6.3 days per month, moderate drinkers reported an average of 2.0 drinks per occasion and drinking 16.3 days per month and heavy drinkers also reported drinking 2.0 drinks per occasion, but on 27.5 days per month. Given the similarity in number of drinks across these three groups, it appears from this study that self-definition of drinking type was related to frequency of drinking rather than quantity of drinking. Even when looking at maximum number of drinks per day, there was little difference across the three groups, with moderate drinkers (6.9) reporting greater maximum drinks per day than heavy drinkers (6.5), but heavy drinkers reporting more maximum drinking days per month (30.0 vs 21.3). Please note that the definition of a drink in both of these studies seems roughly equivalent to an Australian Standard Drink (ASD; 10grams of pure alcohol).

The Australian NDSHS uses detailed quantity and frequency measures that enable us to explore changes in alcohol consumption at a population level, but also asks a question about how individuals self-categorise by drinker type. The response options include non-drinker, ex-drinker, occasional drinker, light drinker, social drinker, heavy drinker and binge drinker. Along with looking at changes in patterns of consumption, analysing change over time in these drinker types, particularly with respect to how they correlate with drinking patterns, might shed light on what is driving reductions in population levels of drinking. Exploring whether binge or social drinking has increased or decreased, and if so, which socio-demographic groups are changing the ways in which they self-identify, might highlight which sociological or public health theories suggested above have more merit in explaining what factors are driving reductions in drinking in Australia. For example, a drop

in self-described binge drinking may be a reflection of a genuine drop in heavy episodic drinking or a shift in the way that Australians are viewing binge drinking. Alternatively a reduction in social drinking may indicate that those who drink in social situations (or at least view themselves that way) are more happy not to do so, or again, that the way in which we view social drinking may be changing.

This paper attempts to address three inter-related research questions.

- 1) How do NDSHS participants self-identify in terms of drinking categories, and how does this correlate with their actual drinking patterns?
- 2) What are the changes over time in these drinking categories (2001-2013) and what can this tell us about falling population levels of consumption in Australia?
- 3) Are any changes over time in these categories a reflection of changing patterns of consumption or a shift in how these terms are used?

Method

Sample

The sample consisted of respondents from the National Drug Strategy Household Survey (formerly the National Drug Survey) between the years 2001 and 2013. All NDSHS surveys were administered with a multistage stratified area random sample design. Sampling occurred at the household level so some segments of the population, for example homeless or institutionalised, are excluded. Smaller states were oversampled to ensure high enough sample sizes for state based analyses. Response rates for each survey are shown in Table 1. It is worth noting that while the response rate is relatively low on an international scale, it above average in an Australian context and has been shown to reflect changes in per-capita consumption (Livingston & Dietze, 2016). Respondents used in this study were aged 18 and over. Further details of the survey methodologies are available in the NDSHS survey reports (Australian Institute of Health and Welfare, 2002, 2005, 2008, 2011, 2014a).

Table 1 shows the number of participants included in the current study from each survey from 2001 to 2013. Participants were excluded from analyses if they did not answer the question on what kind of drinker they considered themselves to be at the time of the survey. As can be seen in Table 1 this was consistently under 1.5% of the sample. Furthermore, those who considered themselves to be ex-drinkers (ranging from 1.3 to 1.6% of the sample) provided widely variable responses to items on consumption – presumably in part because of the number of ways one could interpret questions on consumption in the past twelve months if one had stopped drinking during this time. Furthermore, some ex-drinkers reported no consumption in the past twelve months, presumably as they had

stopped drinking more than a year ago. As such these respondents were also excluded from all analyses in this study. Please note that sample size in any given analysis may be lower due to missing responses on used variables, never more than 2.5% of the sample in that analysis.

Table 1.

NDSHS participants, 2001-2013

Year	Response Rate	Administration	N	Missing	% missing	Ex-drinkers	N
2001	50.0	F2F, D&C, CATI	25267	309	1.22%	356	24602
2004	47.8	D&C, CATI	26730	249	0.93%	348	26133
2007	51.6	D&C, CATI	21846	245	1.12%	324	21277
2010	50.6	D&C	25082	333	1.33%	368	24381
2013	49.1	D&C	22696	321	1.41%	352	22023

N= 121,621

F2F = Face to Face; D&C = Drop and Collect; CATI = Computer Assisted Telephone Interview.

Measures

The NDSHS is a large scale survey with extensive questions about alcohol, tobacco and drug use, along with a wide range of demographic questions. Of particular interest in this study, respondents were asked “*do you consider yourself to be . . .*” with a range of response options (non/ex/occasional/light/social/heavy/binge drinker). Respondents who reported consumption in the past twelve months were asked about their alcohol consumption using graduated frequency questions to obtain the total volume of consumption in ASDs for the previous twelve months. This was done using the midpoint of all provided ranges (e.g., 5-6 drinks = 5.5 ASD) and with the total number of drinking days capped at 365 for the year.

This estimate of consumption enabled identification of those who were drinking outside of the National Health and Medical Research Council (NHMRC) guidelines for avoiding short and long term risk from alcohol consumption (NHMRC, 2009). Short term risky consumption is defined as more than four standard ASDs per occasion once a month or more and long term risky consumption as more than two ASDs per day on average. The NDSHS also includes the Alcohol Use Disorders Identification Test (AUDIT) questions, and in order to identify those drinking at high-risk levels as defined by the AUDIT (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001), those who scored 15 or higher (roughly the top 5% of respondents) were identified in the current study. Heavy drinking occasions in this study were defined as an occasion where 11 or more ASD were consumed, in order to identify those occasions with more acute intoxication than those that place the respondent at increased short term risk (Livingston, Laslett, & Dietze, 2008) that is roughly associated with neurological outcomes such as loss of self-control, lack of co-ordination and slurred speech (Welch, 2011). In a separate section to the graduated frequency questions, respondents were also asked

about their frequency of drinking and how much they would consume on a typical occasion; responses to these items are used in Figure 1.

Analysis

Survey weights were used to adjust for differences from census statistics in age, sex, geographic location and the likelihood of being asked to participate in the survey based on the number of household members. With the exception of Table 1 all presented results are weighted. Weighted means, confidence intervals and percentages were generated using Stata version 14 (StataCorp, 2015). Bivariate logistic regressions with social drinker self-identification as the outcome variable and number of years since 2000 (i.e., 2001=1, 2013 = 13) as a predictor variable within each of the demographic categories was used to identify trends in identification over time.

Results

Figure 1 shows the mean number of ASDs per occasion and frequency of alcohol consumption reported by respondents, along with how they self-identified in terms of their drinking. As can be seen there does appear to be some agreement between how people categorise their drinking type and their reported consumption, for instance heavy drinkers drank the most frequently, while binge drinkers drank more when they did drink. Light drinkers were the second most regular drinkers, but drank about 2.6 ASDs per occasion while social drinkers drank less often but drank about 4.9 ASDs per occasion when they did drink.

The proportion of respondents who identified as each drinker type in 2013, along with the percentage of people within each of these groups who drank at levels above the long and short term guidelines defined by the NHMRC (2009), and the proportion who would be considered high risk drinkers based on the AUDIT (Babor et al., 2001), are shown in Table 2. The most common drinker type was non-drinker, followed by occasional drinker and then social drinker. There was a higher proportion of drinkers drinking outside of the short term risk guidelines than the long term risk guidelines in all drinker types except for ex-drinkers and heavy drinkers. Based on the AUDIT, there were higher proportions of high-risk drinkers in the self-identified 'heavy' and 'binge' drinker groups. Nearly 10% of self-described social drinkers had AUDIT scores that qualified as high risk. Interestingly, a substantial proportion of self-described light drinkers reported consumption levels above the short-term (29.7%) and long-term (17.3%) guidelines.

Table 2. Proportion of respondents drinking riskily based on the NHMRC's long term and short term risky guidelines and high risk AUDIT scores in 2013.

	Prevalence (%)	Long Term Risk (%)	Short Term Risk (%)	High-risk (AUDIT) (%)
Non-drinker	28.5 (27.8-29.3)	0.5 (0.4, 0.9)	1.7 (1.3-2.1)	0.2 (0.0-0.3)
Occasional drinker	27.4 (26.7-28.1)	3.8 (3.3, 4.5)	22.6 (21.3, 24.0)	1.3 (1.0-1.8)
Light drinker	17.2 (16.6-17.7)	17.3 (16.0, 18.7)	29.7 (28.1, 31.4)	1.7 (1.3-2.2)
Social drinker	22.6 (21.9-23.2)	37.8 (36.4, 39.6)	62.3 (60.7, 63.9)	9.3 (8.4-10.4)
Heavy drinker	3.0 (2.8-3.3)	92.8 (91.1, 95.0)	90.1 (87.2, 92.3)	49.8 (45.6-54.0)
Binge drinker	1.3 (1.2-1.5)	62.7 (55.7, 69.1)	88.6 (83.0, 92.5)	41.9 (35.3-48.7)
Total	100	16.5 (16.0-17.1)	30.1 (29.4, 30.8)	4.9 (4.5-5.2)

N = 22,641

Figure 2 shows the distribution of respondents in each wave of the survey by self-identified drinker type. There has been little change over time in the proportion of respondents who identify as each drinker type with some notable exceptions. The proportion of the sample who identified as non-drinkers rose from 20% to 27% between 2001 and 2013 and conversely the proportion of the sample who identified as social drinkers dropped from 30% to 22% over the same period. Aside from this there was a small fall and subsequent rise in the proportion who identify as occasional drinkers and the number of self-identified light drinkers has dropped slightly since 2007.

We propose two alternative explanations for the drop in self-identified social drinking between 2001 and 2013: 1) the proportion of people with 'social drinking' patterns has decreased, and/or 2) that the way in which Australians view social and other types of drinking, and therefore the way they categorise themselves, has changed. In order to examine the second hypothesis, the total alcohol consumption for the year for each self-identified drinker type was analysed (Figure 3). There was no real change in the amount of alcohol consumed per year by social drinkers, although consumption dropped for binge drinkers between 2010 and 2013. This does not provide any support for the second explanation given above. Given the notable shift in self-identified social drinkers over time, the focus for the rest of this paper is on this group, in particular on any changes in this group over time, to determine whether population reductions in drinking in Australia are being driven primarily by increased abstention, or whether changes in social drinking is also influencing this change.

To investigate whether the decrease in self-identified social drinkers is due to a particular demographic group or group of people with a particular drinking pattern no longer identifying as a social drinker, the proportion of people in age, sex and drinking categories who consider themselves to be social drinkers is shown in Table 3. The proportion of respondents in all groups who consider themselves to be social drinkers decreased with the exception of those aged over 50. In this group

the proportion of respondents who considered themselves to be social drinkers stayed fairly steady and no significant trend over time was found. This suggests that the reduction in social drinking may be due to younger and middle aged drinkers no longer self-identifying as social drinkers, regardless of gender or heavy drinking occasions. To further investigate this the proportion of respondents within age and sex based categories identifying as a non-drinker is shown in Table 4. A complementary pattern can be seen in Table 3 with an increase in the proportion of respondents aged under 50 and in both genders identifying as non-drinkers.

Table 3.
Proportion of social drinkers in demographic and heavy drinking occasion based categories, 2001-2013 and odds ratios from bivariate logistic regression predicting self-reported social drinkers.

		2001	2004	2007	2010	2013	OR
Age	<30	41.5 (39.9, 43.2)	43.2 (40.9, 45.4)	40.3 (37.3, 43.5)	34.3 (32.5, 36.1)	32.4 (30.5, 34.3)	0.97***
	30-49	28.4 (27.5, 29.4)	30.7 (29.4, 32.0)	28.8 (27.3, 30.4)	24.6 (23.7, 25.6)	22.9 (22.0, 23.9)	0.98***
	50+	18.9 (17.9, 19.9)	21.9 (20.7, 23.2)	21.8 (20.4, 23.3)	19.5 (18.6, 20.4)	18.6 (17.7, 19.5)	1.00
Sex	Male	34.5 (33.4, 35.5)	35.9 (34.5, 37.3)	34.7 (32.9, 36.5)	30.3 (29.3, 31.3)	28.7 (27.6, 29.8)	0.98***
	Female	23.0 (22.2, 22.9)	26.3 (25.1, 27.5)	23.6 (22.3, 24.9)	20.3 (19.5, 21.1)	18.7 (17.9, 19.5)	0.97***
Heavy drinking occasions	None	23.1 (22.4, 23.8)	24.3 (23.4, 25.2)	23.1 (22.0, 24.2)	19.9 (19.3, 20.6)	19.0 (18.3, 19.7)	0.98***
	< monthly	55.8 (52.7, 58.9)	53.3 (49.4, 57.2)	47.8 (42.7, 52.9)	51.0 (47.6, 54.4)	48.2 (44.6, 51.8)	0.99*
	< weekly	60.0 (57.3, 62.8)	61.7 (58.3, 65.0)	59.7 (55.4, 63.8)	53.5 (50.8, 56.1)	51.3 (48.4, 54.1)	0.97***
	weekly +	53.6 (48.3, 58.9)	56.2 (49.8, 62.2)	46.8 (38.4, 55.3)	45.2 (40.6, 49.8)	43.5 (37.9, 49.3)	0.95***

N=118,416

OR = Odds Ratio from bivariate logistic regression predicting social drinker self-identification with years from 2000 as the predictor variable. * $p < .05$, ** $p < .01$, *** $p < .001$,

Table 4.

Proportion of non-drinkers in demographic and heavy drinking occasion based categories, 2001-2013 and odds ratios from bivariate logistic regression predicting self-reported non-drinkers.

		2001	2004	2007	2010	2013	OR
Age	<30	13.0	14.0	16.4	19.4	21.0	1.04***
		(11.9, 14.2)	(12.6, 15.6)	(14.3, 18.8)	(17.9, 21.0)	(19.4, 22.7)	
	30-49	16.1	16.5	16.9	20.0	21.2	1.03***
		(15.4, 16.9)	15.5, 17.5	(15.7, 18.1)	(19.1, 21.0)	(20.2, 22.1)	
	50+	26.8	26.6	26.6	28.1	27.8	1.00
		(25.9, 28.0)	(25.3, 27.9)	(25.1, 28.2)	(27.1, 29.2)	(26.7, 29.0)	
Sex	Male	13.1	13.3	14.8	17.2	18.3	1.03***
		(12.3, 13.8)	(12.4, 14.4)	(13.6, 16.1)	(16.3, 18.1)	(17.4, 19.3)	
	Female	23.7	24.4	24.8	27.5	28.2	1.02***
		(22.8, 24.5)	(23.4, 25.4)	(23.5, 26.1)	(26.6, 28.4)	(27.2, 29.1)	

N=118,416

Discussion

In this examination of self-identified Australian drinker types there were indications that respondents do classify themselves in a manner fairly consistent with reported patterns of consumption, as found in the US (Abel & Kruger, 1995). However, unlike the findings of Daeppen and colleagues (1999) it appeared that, given more nuanced options, respondents based their classification on both quantity and frequency rather than frequency alone. For instance, heavy drinkers drank more often than binge drinkers but drank less per session when they did drink. Similarly, light drinkers drank more often than social drinkers, but drank less per occasion when they drank. Our analysis also shows that there has been an increase in self-identified non-drinkers, which is in line with increased abstinence as reported by consumption measures (AIHW, 2013).

Risk of alcohol-related harm also appeared to vary with self-identified drinker type as found in previous research (Daeppen et al, 1999). Heavy drinkers had a high prevalence of drinking to long and short term risk, and risk of short term harm was more common among binge and social drinkers than it was among light and occasional drinkers. However it is worth noting that 29 and 17% of those who identified as light drinkers drank outside of the short term risk and long term risk guidelines respectively. Risky drinking as measured by the AUDIT varied markedly between drinker types, with over 40% of binge and heavy drinkers meeting this criterion, at least four times more than any of the other groups. Given that the AUDIT assesses harms as well as consumption, it may be that these harms influence how people view their own drinking in addition to the actual level of consumption.

The decline in self-reported 'social drinking' in Australia appears to be driven more by actual changes in drinking behaviour than in changes in the definition of 'social drinking' over time. The volume of alcohol consumed and the drinking patterns of self-reported social drinkers were fairly stable across the survey waves, suggesting a consistent definition of 'social drinking' in Australia. Instead, drinking behaviour has changed substantially, with those aged under 50 less likely to identify as 'social drinkers' while the proportion of 'non-drinkers' in the population has increased. This is line with previous research identifying that the drop in Australian population consumption is largely due to decreased drinking in young people (Livingston & Dietze, 2016; Pennay et al., 2015).

Overall it does appear that the decrease in social drinkers and corresponding increase in non-drinkers may be indicative of a shift in drinking in social settings in Australia. It is worth noting that there has not been much decline in the prevalence of self-identified heavy or binge drinkers, those experiencing high rates of harms as per the AUDIT. Therefore, the observed drop in consumption in Australia does not seem to be due to decreases in those drinkers who would most benefit from a decrease, at least based on self-reported drinking categories. However, there is some evidence that the definition of 'binge drinking' may have shifted in recent years – up until 2010 the average volume of alcohol consumed by a self-defined 'binge drinker' varied between 1347 and 1492 ASDs per year, while in 2013 it fell to 1218. This may reflect a general hardening of attitudes to drinking in Australia, with the threshold to self-define as a binge-drinker falling as heavy drinking becomes less acceptable. This is consistent with previous work in the US which found that the amount of drinking associated with 'drunkenness' fell as population level consumption declined (Kerr, Greenfield, & Midanik, 2006).

Overall, these results suggest that much of the increase in abstinence has come about via reductions in self-identified 'social drinking'. This may provide some useful insight into previous research identifying a divergence between consumption and harm levels in one Australian jurisdiction (Livingston, Matthews, Barratt, Lloyd, & Room, 2010). The self-identified social drinking group drinks at relatively low risk levels and are less likely to be in the top 5% of AUDIT scores than heavy and binge drinkers, so declines in social drinking may have little bearing on rates of alcohol-related harm.

Limitations

As is common in Australian research, the response rate for these surveys was low. As such, it is possible that the change found in this study is influenced by the type of individuals responding to the survey, as compared to a change in prevalence of self-identified drinker status. However, it is worth noting that the response rate has remained fairly steady over the twelve years covered in these five

surveys, and that trends in actual consumption appear to be reflected in the survey results (Livingston & Dietze, 2016).

Conclusion

The increase in self-identified non-drinkers, particularly at the expense of social drinkers, may signify the start of a shift in the Australian drinking culture where those who felt pressure in the past to drink, at least in social settings, no longer felt like they needed to do so. However, if the recent reduction in consumption is not among groups of drinkers with more harmful patterns of consumption, then there is no reason to expect that the harms from alcohol will decrease in line with consumption. Policy changes that have a larger impact on heavier drinkers, for instance those focussed on price where the impact would be felt per drink, rather than per person, may be beneficial in reducing the harms from consumption among those drinkers that experience the most harm, that is, those that identify as heavy or binge drinkers.

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