



# Alcohol consumption during the COVID-19 period: May 2020

## ANU Centre for Social Research and Methods

Professor Nicholas Biddle;<sup>1</sup> Associate Professor Ben Edwards;<sup>1</sup> Professor Matthew Gray<sup>1</sup> and Kate Sollis<sup>1</sup>

1 ANU Centre for Social Research and Methods

Australian National University

June 10<sup>th</sup>, 2020

### Abstract

The aim of this paper is to analyse changes in alcohol consumption since the spread of the COVID-19 pandemic. We show that the frequency of alcohol consumption during COVID-19 is slightly higher for males than it was 2-3 years previously, and substantially higher for females. While Australians are more likely to say that their alcohol consumption has decreased than say that it has increased since the spread of COVID-19, self-reported increases in alcohol consumption were larger than in surveys prior to COVID-19. There was a larger self-reported increase in alcohol consumption for females than males, with having a child caring role being a strong predictor of an increase in alcohol consumption for females. For males, on the other hand, it was a loss of job or a decline in hours worked which appears to be the strongest predictor of a (self-reported) increase in alcohol consumption. For both sexes, but particularly for males, psychological distress in April 2020 was strongly associated with higher self-reported increases in alcohol consumption since the spread of COVID-19.

### Acknowledgements

The May ANUpoll was partially funded by the Australian Institute of Health and Welfare and the authors would like to thank Matthew James and Cathy Claydon for the considerable input into the design of the survey, provision of data from the National Drug Strategy Household Survey (NDSHS) as well as comments on an earlier draft of this paper. The authors would also like to thank a number of people who were involved in the development of the April 2020 ANUpoll questionnaire, including Diane Herz, Dr Benjamin Phillips, Dr Paul Myers, Matilda Page, and Charles Dove from the Social Research Centre, as well as Professor Ian McAllister from the ANU.

### 1 Introduction and overview

The focus of many of the current public health debates are on stopping the spread of COVID-19, and ensuring the hospital and broader health system is able to cope with any increased demands placed on it by the pandemic. At the time of writing (early June 2020) the response to reduce the impact of COVID-19 in Australia has been largely successful with slightly more than 100 deaths, and a little over 7,000 confirmed cases. In per capita terms, this is far lower than the USA, Canada, the UK, Spain, Italy and many other continental European countries.<sup>1</sup>

The spread of COVID-19 has placed additional anxiety, worry, psychological distress, and financial constraints on individuals and families (Biddle et al. 2020a; 2020b). There are reasons for expecting COVID-19 and the associated restrictions to impact on use of alcohol, tobacco and other drugs. There is an extensive literature (prior to COVID-19) which shows that heightened stress levels increase alcohol consumption, smoking and other forms of substance use, with differential impacts by sex and age (de Wit et al. 2003; Fox et al. 2003; Hauge et al. 2012) and in particular showing that ‘women are generally more likely to drink to regulate negative affect and stress reactivity’ (Peltier et al. 2019).

There are also reasons for expecting the COVID-19 restrictions to have reduced the use of alcohol, tobacco and other drugs. Many of the activities that are associated with substance use, such as attending sporting events, pubs and clubs and work-related functions have been closed or severely restricted since the spread of COVID-19. In the first wave of the ANU Centre for Social Research and Methods’ COVID-19 impact monitoring survey program, Biddle et al. (2020a) estimated that the per cent of people who said that they ‘never’ met socially with friends, family and work colleagues increased from 2.1 per cent in February 2020 to 49.4 per cent in April 2020. Thus, the COVID-19 pandemic may have caused consumption to increase for some, whereas for others it may have declined. It is, therefore, an empirical question as to whether consumption of alcohol, tobacco and other illicit substances has increased or decreased since the spread of COVID-19.

There is some evidence that alcohol sales increased in the immediate aftermath of the COVID-19 restrictions, with a survey conducted between the 3<sup>rd</sup> and 5<sup>th</sup> of April 2020 finding that 20 per cent of Australians reported buying more alcohol than usual since the COVID-19 outbreak in Australia.<sup>2</sup> Analysis of spending on Commonwealth Bank Cards shows a large rise in spending on alcohol in the week ending 27<sup>th</sup> March 2020 compared to the same week in 2019. However, this has not been sustained. In fact, in most weeks since the week ending 27<sup>th</sup> March, total alcohol spending has been down compared to the same week in 2019.<sup>3</sup> It is also worth noting that there has been a general increase in spending on cards compared with the previous year, with an increased use of payWave (a contactless method of payment). This inflates the card spending levels when compared with the previous year, however, the extent of this bias is not known. This strongly suggests that the initial increase in alcohol sales was a one off that reflected people ‘stocking up’ as they feared that the bottle shops would shut.

One of the few Australian sources on consumption of alcohol is from the third wave of the ABS Rapid Survey, conducted between the 29<sup>th</sup> April and the 4<sup>th</sup> of May, which asked whether alcohol consumption had changed in the last-four weeks (ABS 2020). The ABS survey however did not ask how much consumption had changed, nor was there information on actual consumption levels. According to the ABS survey, 14.4 percent of Australians reported that their consumption of alcohol had increased in the last four weeks, 9.5 per cent said it had decreased and 47.1 per cent said it had stayed the same (the remainder of the population

report that they do not usually consume alcohol). The ABS data also shows that women are more likely to have increased alcohol consumption than men and slightly less likely to report having decreased alcohol consumption (ABS 2020). There is very little data available on consumption of tobacco and other drugs including both legal drugs (prescription medications) and illicit substances during COVID-19.

This paper builds on the existing evidence discussed above and reports on changes in alcohol consumption since the spread of the COVID-19 pandemic using high-quality quantitative survey data. Changes in alcohol consumption are compared between women and men, by age group, and by other characteristics of individuals. Measuring and comparing the change in substance use is important due to the potential negative health impacts on individuals and those around them. The Australian Institute of Health and Welfare (AIHW), in a summary of the impacts of problematic use of alcohol and other drugs, conclude that there is a strong link between alcohol consumption and homelessness and psychological distress, and that tobacco smoking is the leading cause of preventable health burden in Australia.<sup>4</sup>

The paper is primarily based on the May 2020 ANUpoll (the 34<sup>th</sup> ANUpoll) which collected information from 3,219 respondents aged 18 years and over across all eight States/Territories in Australia, and is weighted to have a similar distribution to the Australian population across key demographic and geographic variables. Data for the vast majority of respondents was collected online, with a small proportion of respondents enumerated over the phone. About half of respondents (1,555) completed the survey on the 12<sup>th</sup> or 13<sup>th</sup> of May, with the remaining respondents interviewed between the 14<sup>th</sup> and 24<sup>th</sup> of May.<sup>5</sup>

The remainder of the paper is structured as follows. We begin with an analysis of the frequency of alcohol consumption, comparing to standardised benchmarks from both the National Health Survey and the National Drug Strategy Household Survey. This is followed by a presentation of self-reported increase in alcohol consumption (Section 3), followed by four sections that look at the factors associated with an increase in alcohol consumption: self-reported reasons for an increase (Section 4); work and family reasons (Section 5); tobacco and substance use (Section 6); and mental health outcomes (Section 7). The final section of the paper concludes, with a discussion of the importance of the findings.

## 2 Frequency of alcohol consumption

The May 2020 ANUpoll asked, 'In the last 12 months, how often did you have an alcoholic drink?' While this covers both pre-COVID-19 and the time since the spread of the disease, any changes during the pandemic will still be captured. Although there is no longitudinal information on frequency of alcohol consumption on Life in Australia<sup>TM</sup> which would allow us to look at within-individual change through time, this question was based on the same question asked in both the National Health Survey (NHS) most recently undertaken in 2017/18 (ABS 2019) and the National Drug Strategy Household Survey (NDSHS) most recently undertaken in 2019, but with the most recent results available coming from 2016 (AIHW 2017). Comparing results from the ANUpoll data with these two data sources allows us to benchmark COVID-19 period consumption levels against high quality national estimates and provides an initial estimate of changes since COVID-19.

One of the challenges in comparing estimates from the Life in Australia<sup>TM</sup> with estimates from the NDSHS and the NHS is that the sample for both surveys may differ in important ways from the Life in Australia<sup>TM</sup> sample, and that the mode of data collection is quite different. For both

## Alcohol consumption during the COVID-19 period: May 2020

the NHS and the NDSHS recruitment took place face-to-face. For the NHS, interviews were undertaken face-to-face by a trained interviewer, whereas with the NDSHS the survey was self-completed either on paper or online (78 per cent on paper, 22 per cent online). By comparison, respondents from Life in Australia™ were recruited over the telephone with the majority of respondents for ANUpoll completed the survey online (93.9 per cent in May), and the remainder completing the survey through telephone interviews (6.1 per cent).

Using the Total Survey Error (TSE) Framework (Groves and Lyberg 2010), there is the potential for both measurement and representativeness error to impact on comparisons of alcohol consumption through time. As alcohol consumption is particularly prone to social desirability bias (Krumpal 2013), which tends to be higher for interviewer administered questionnaires, there is a strong possibility that alcohol consumption as recorded on ANUpoll will be higher than that recorded on the 2017-18 NHS because of reasons other than COVID-19. The differences in measurement error between ANUpoll and the NDSHS should be less as they used a more similar mode of data collection. However, recruitment methods are still quite different.

Figure 1a (for males) and Figure 1b (for females) gives the per cent of the 2020 May ANUpoll and the 2016 NDSHS samples by three levels of frequency of alcohol consumption:

- High – Three or more days per week;
- Moderate – Once a month to twice a week; and
- Low – Less than once a month or never.

Under the assumption that the representativeness biases have (a) stayed constant and (b) are consistent across the last consumed and frequency of consumption variables, it is also possible to benchmark the ANUpoll data against what the NHS data would be if it had the same distribution of ‘last consumed’ alcohol. For new panellists (that is, those recruited at the end of 2019) this question was completed between October and December 2019 depending on which recruitment wave they were in. For older panellists (that is, those recruited in 2016 or 2018) panel profiles and this question was updated in Wave 30, which took place between the 5<sup>th</sup> and 19<sup>th</sup> of August 2019.

Figure 1 thus presents the May 2020 ANUpoll data on how often a person has an alcoholic drink alongside what the 2017-18 NHS data would be if it had the same distribution as Life in Australia™ prior to the spread of COVID-19 in terms of number of days since last drink (unfortunately that variable isn’t available on the NDSHS). This is similar to age standardisation in demographic comparisons of differences across population (Boniol 2007). The levels of the standardised NHS data are therefore different from the published data, but the comparison between it and the May 2020 ANUpoll data will give a reasonable indication of change through time.

Keeping in mind the uncertainty around the NHS benchmarks, and general issues with comparing across different types of surveys the results presented in Figures 1a and 1b nonetheless give some *prima facie* evidence for a general increase in frequency of alcohol consumption, with higher increases for females compared to males, especially when comparing with the NHS. Despite this increase for females, however, males still have a higher frequency of consumption relative to females and a lower likelihood of not drinking alcohol at all.

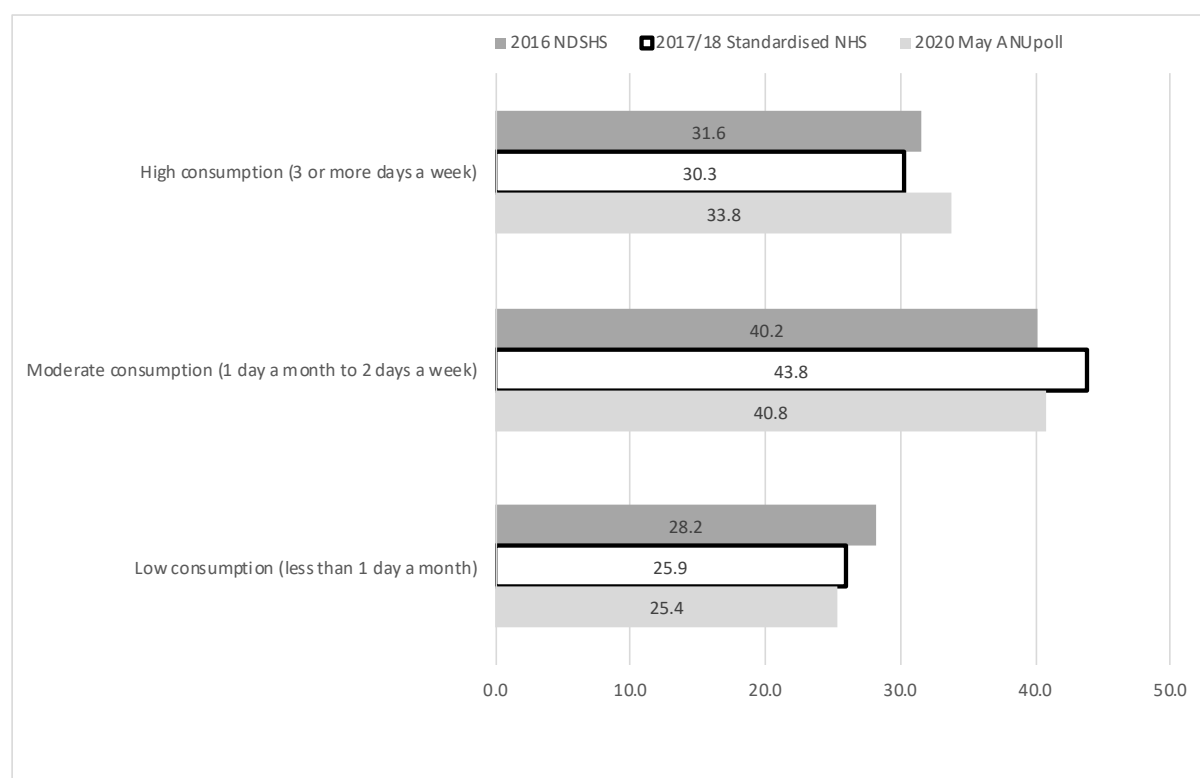
Looking at high alcohol consumption to start with, 33.8 per cent of male ANUpoll respondents were estimated to have drunk alcohol 3 or more days per week in the 12 months preceding

## Alcohol consumption during the COVID-19 period: May 2020

the May 2020 survey, compared to 31.6 per cent in the NDSHS and 30.3 per cent in the NHS 2017-18 benchmark (standardised to prior recency of alcohol consumption). This is a roughly 3.5 percentage point increase compared to the NHS. For females on the other hand, there was a 5.5 percentage point increase into the COVID-19 period when comparing the ANUpoll data with the NHS benchmark, from 16.2 per cent to 21.9 per cent, and a smaller but still positive increase when comparing to the NDSHS (20.8 per cent).

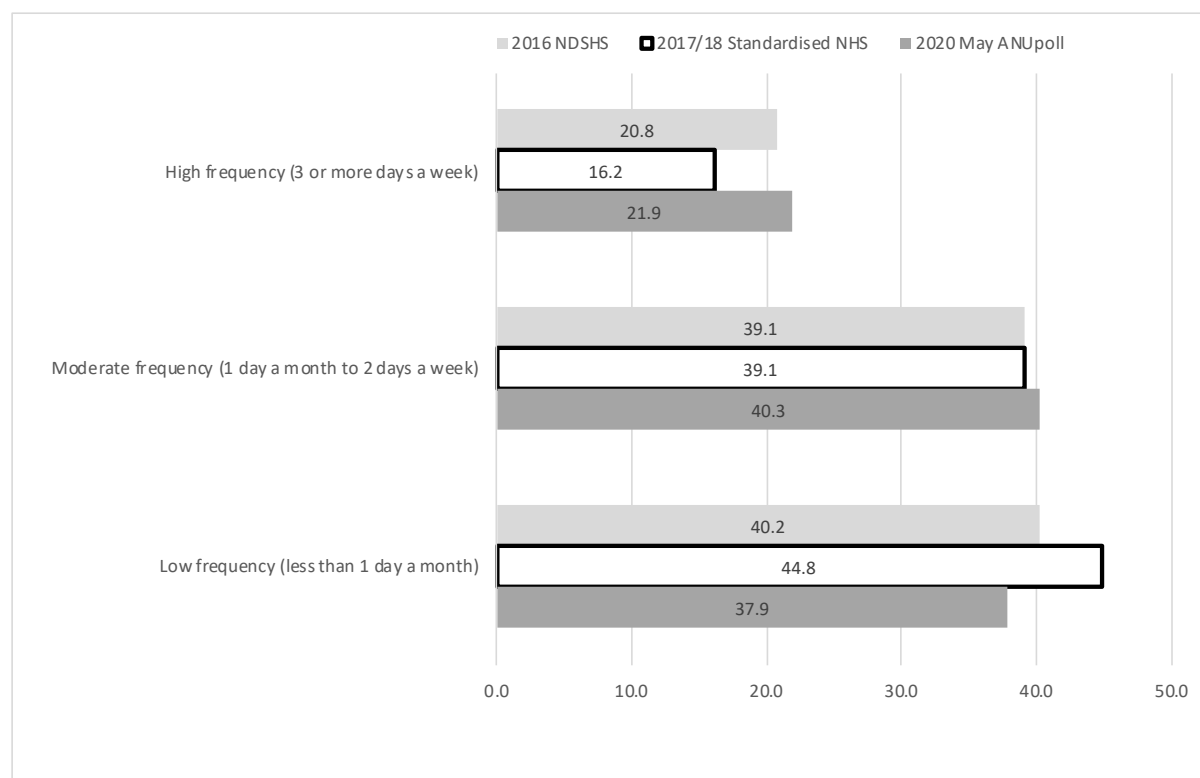
In terms of relatively low rates of alcohol consumption, there was a decline in males who drank alcohol less than once a month (including never) from 25.9 per cent (for the NHS) to 25.1 per cent, and from a larger base in the NDSHS (28.2 per cent). The decline for females was much larger when using the NHS – from 44.8 per cent to 37.7 per cent, a 7.1 percentage point decline – but still large when compared to the NDSHS (a 2.3 percentage point decline).

**Figure 1a** Frequency of alcohol consumption, May 2020 and survey benchmarks, Males



Source: ANUpoll, May 2020, National Drug Strategy Household Survey (NDSHS) 2016, and standardised National Health Survey, 2017-18.

Figure 1b Frequency of alcohol consumption, May 2020 and survey benchmarks, Females



Source: ANUpoll, May 2020, National Drug Strategy Household Survey (NDSHS) 2016, and standardised National Health Survey, 2017-18.

### 3 Self-reported changes in alcohol consumption

While there are challenges with people making judgements about their own change in alcohol consumption (Zeisser et al. 2013), the findings from the self-reported data is very similar to that from the ANUpoll and NDSHS/NHS comparisons described above, especially in terms of differences by sex. Of those Australians who said that they drank alcohol, when asked ‘Since the spread of COVID-19 in Australia, are you drinking more or less alcohol?’, 20.2 per cent reported that their alcohol consumption increased (3.5 per cent saying it increased by a lot and 16.8 per cent saying it increased by a little). However, there were a higher proportion of Australians (27.0 per cent) who said that their consumption has decreased compared to those who said that their consumption had increased, for those who drank (12.0 per cent saying that it decreased by a little, and 15.0 per cent saying it decreased by a lot). This final point highlights the need to ask balanced questions, rather than just asking for changes in one direction, as has been reported in the media from other surveys during the COVID-19 pandemic.

There was a higher proportion of females who reported that their alcohol consumption had increased than males (22.8 per cent compared to 17.9 per cent), but the proportion of people who said that their alcohol consumption had decreased was very similar across the two sexes (27.5 per cent for males and 26.7 per cent for females).

To compare our data with that reported in the ABS Rapid surveys, we can include those who reported that they never drink alcohol in the denominator as not having changed their alcohol consumption. Doing so, our estimated levels change somewhat, but the patterns remain, and the results are somewhat similar to the ABS results. For males, 15.5 per cent of the total sample said their alcohol consumption increased compared to 18.1 per cent of females. The

## Alcohol consumption during the COVID-19 period: May 2020

proportion who said their alcohol consumption decreased was slightly higher for males than females (23.7 per cent compared to 21.2 per cent).

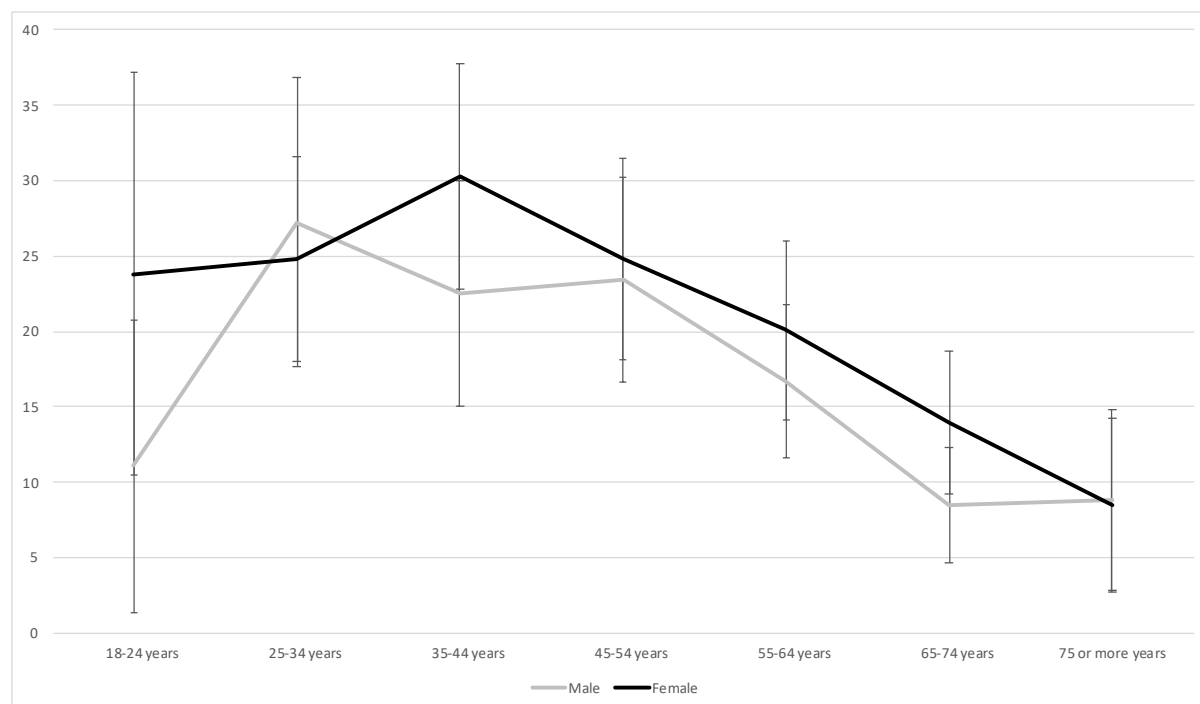
While this provides reasonably strong evidence that people do not feel that their alcohol consumption has increased since the spread of COVID-19, it should be noted that in normal times people tend, on average, to feel that their alcohol consumption has declined. For example, in the 2017/18 NHS, only 9.2 per cent of males and 10.8 per cent of females thought that their alcohol consumption had increased over the previous 12 months, whereas 22.3 per cent of males and 20.8 per cent of females thought that their alcohol consumption had decreased. That is, compared to the pre-COVID-19 period, the proportion of people who report that their alcohol consumption has increased is far higher in our survey (May 2020).

The increase in alcohol was very different based on prior alcohol consumption. Based on the 'last consumed alcohol' question (which, as noted previously, was collected prior to the spread of COVID-19), 22.4 per cent of those males who were relatively frequent drinkers on the panel profile (that is, they had a drink in the last week) reported an increase in alcohol consumption, compared to 8.0 per cent of males who were less frequent drinkers prior to the spread of COVID-19. The levels are higher, but the differences are similar for females. Of those males who were relatively frequent drinkers, 29.3 per cent reported an increase in alcohol consumption, compared to 14.7 per cent of females who were less frequent drinkers.

The increase in alcohol consumption also varied by age. Figure 2 gives the proportion of each age cohort/sex combination who reported that they had increased their alcohol consumption. While there is significant uncertainty around the estimates due to the small sample sizes, some key patterns emerge. The group with the largest self-reported increase is females aged 35 to 44 years, with 30.3 per cent of that group saying that their alcohol consumption increased. For both sexes, but particularly for males, there is a low rate of increase amongst young Australians aged 18 to 24 years (albeit with a large standard errors), as well as for older Australians.



Figure 2 Per cent of Australians who said their alcohol consumption increased since the spread of COVID-19, by age and sex



Source: ANUpoll, May 2020

### 3.1 Size of increase in alcohol consumption

For those who said that their alcohol consumption had increased, the self-reported increase was relatively moderate. When asked ‘Approximately how **many more** standard drinks are you drinking **per week** in comparison to your usual **weekly** drinking consumption, prior to COVID-19?’ [bold in original] 45.8 per cent said that the increase had only been 1-2 standard drinks, with a further 27.8 per cent reporting that it was a 3-4 standard drink increase.

For those who did say they had increased their alcohol consumption, there were no (statistically) significant factors associated with the size of the increase. However, this is in part due to relatively small sample sizes with only 561 respondents asked the question on the size of the increase in consumption. From within that sample, 47.9 per cent of females said their consumption increased by 1-2 standard drinks only, compared to 43.3 per cent for males. So, there is some weak evidence that the size of the increase was less for females than it was for males, although there were more females in total who reported an increase.

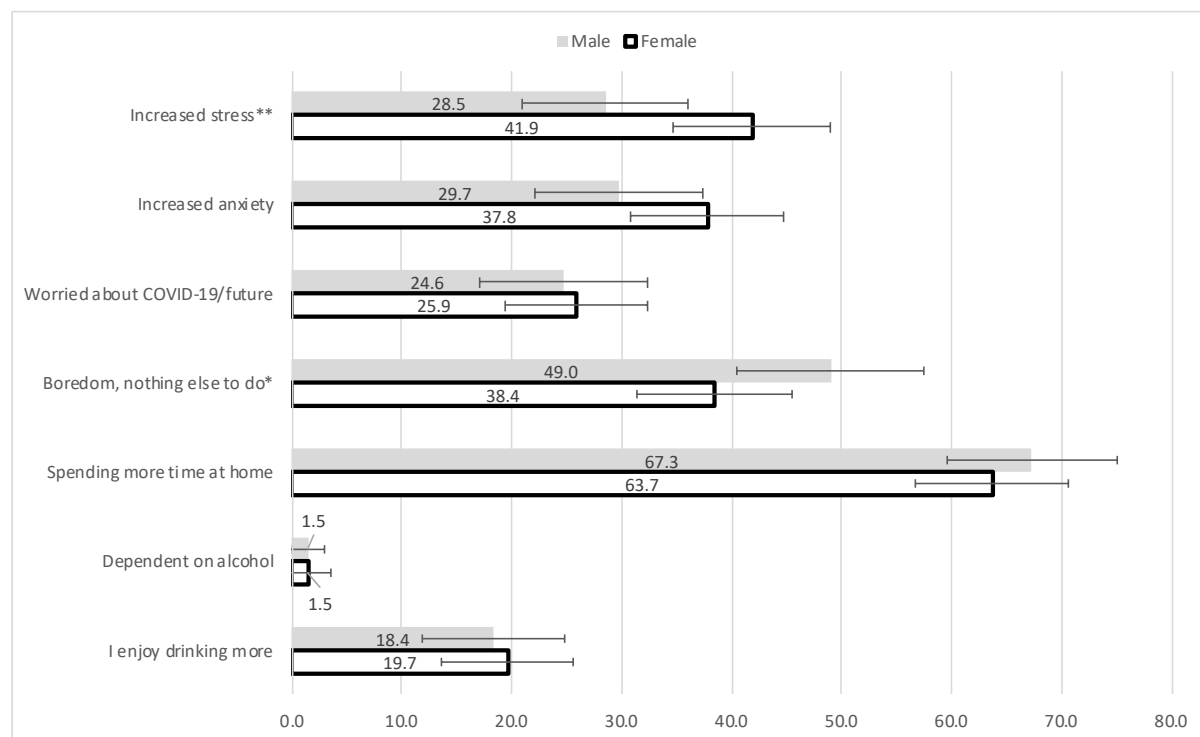
## 4 Self-reported reasons for increase in alcohol consumption

Consistently across most age groups, females have had a higher probability of reporting that their alcohol consumption has increased than males. There are a number of potential reasons for this. In the May 2020 survey, we asked respondents who had said yes to having had an increase: ‘Why do you think your consumption of alcohol has increased?’ with seven potential responses available, as well as an ‘other’ category. People are able to answer yes to more than one option.

As shown in Figure 3, the most common reason given for both males and females is that the person is spending more time at home (67.3 per cent for males and 63.7 per cent for females). This difference is not statistically significant. For males, the next most common response is

‘Boredom, nothing else to do’, which was reported by 49.0 per cent of male respondents, but only 38.4 per cent of female respondents (p-value = 0.10). For females, on the other hand, increased stress was the next most common reason given, reported by 41.9 per cent of respondents, compared to 28.5 per cent of males (p-value = 0.041).

**Figure 3** Self-reported reasons for increase in alcohol consumption for Australians whose alcohol consumption had increased since the spread of COVID-19, by sex, May 2020



Notes: The “whiskers” on the bars indicate the 95 per cent confidence intervals for the estimate. Differences by sex that are statistically significant at the 1 per cent level of significance are labelled \*\*\*; those significant at the 5 per cent level of significance are labelled \*\*, and those significant at the 10 per cent level of significance are labelled \*.

## 5 Observed factors associated with change in alcohol consumption

Given the very different self-reported causes of increase in alcohol consumption for males compared to females, it is not surprising that the factors associated with reporting an increase are also different when analysed econometrically. One effect of the spread of COVID-19 that has impacted males and females quite differently is changes in caring responsibility.

When asked about their main activity, the proportion of Australians who report their main role as ‘Doing housework, looking after children or other persons’ increased between February and April 2020 – from 18.6 per cent to 20.9 per cent for females and from 4.1 per cent to 5.9 per cent for males. Both these increases were statistically significant. The rates then declined slightly between April and May – to 19.7 per cent for females and to 5.7 per cent for males (neither difference statistically significant). While the pattern was experienced by both males and females, the levels were very different, and it would also appear that the relationship with alcohol consumption was also very different. That is, not only are there higher rates of caring for females, it appears to have a much stronger association with changes in alcohol consumption.

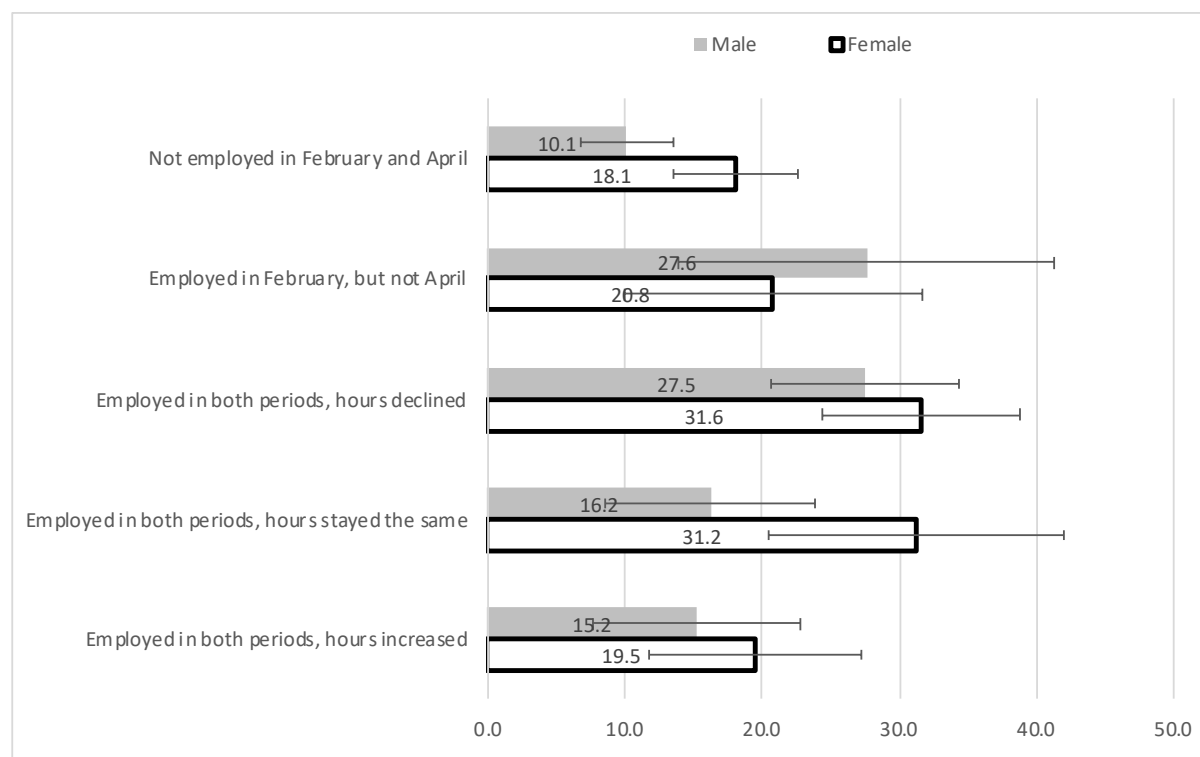
## Alcohol consumption during the COVID-19 period: May 2020

For females whose main role was caring, 28.3 per cent reported that they increased their alcohol consumption. For those for whom it isn't their main role, the self-reported increase was only 21.4 per cent (p-value = 0.07). For males, on the other hand, there was far less of an association with 20.7 per cent of those whose main role was caring reporting an increase in alcohol consumption compared to 17.8 per cent of those without caring being their main role (not statistically significant).

Changes in hours worked also appears to have a strong association, but in different ways for males and females.<sup>6</sup> For males who were employed in both February and April, those whose hours worked stayed the same or increased between February and April 2020 increased their alcohol consumption by 15.8 per cent and 16.5 per cent respectively (Figure 4). For those who weren't employed in either month, the self-reported increase was less – 10.1 per cent. For males whose hours worked declined over the same period, on the other hand, 27.2 per cent reported that their alcohol consumption increased, with a similarly large increase (but large standard errors) for those who stopped working between February and April (27.6 per cent). For males, a decrease in hours worked was associated with an increase in alcohol consumption.

For females, on the other hand, those who had a decrease in hours worked had roughly the same level of increase in alcohol consumption as those whose hours stayed the same (30.0 per cent and 31.1 per cent). The lowest level of reported increase for females was amongst those whose work hours increased (19.5 per cent), those who were not employed over the period (18.1 per cent) and those who lost their job between February and April 2020 (20.8 per cent).

**Figure 4** Per cent of Australians who said their alcohol consumption increased since the spread of COVID-19, by changes in hours worked and sex



Source: Life in Australia™ February 2020, ANUpoll April 2020, and ANUpoll, May 2020

## 6 Tobacco and illicit substance use

While the focus of this paper has been on alcohol consumption, it is also possible that the spread of COVID-19 has impacted on consumption of tobacco and illicit substances. While we have asked far fewer questions on these two types of substances, the data from the May ANUpoll provides little evidence in the data for an increase in the use of tobacco or other illicit substances.

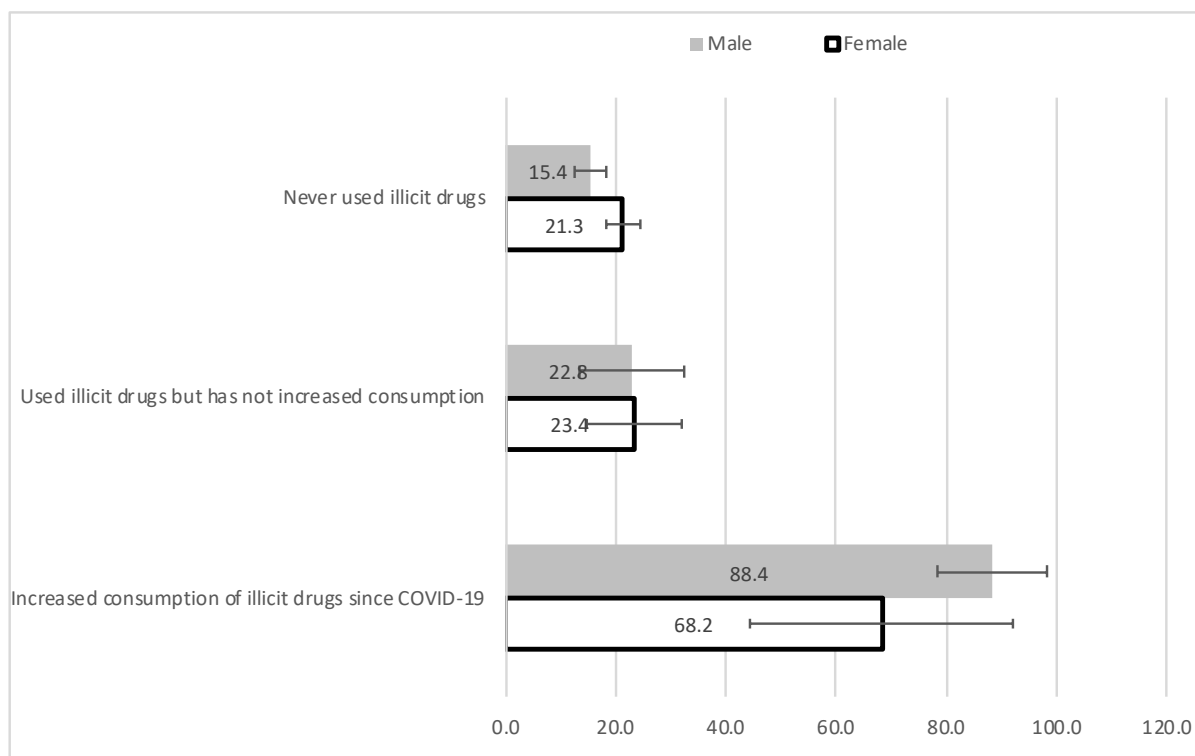
We asked respondents to the May survey ‘How often, if at all, do you currently smoke tobacco?’ From the panel profile, respondents have been categorised into three groups: current smokers, those who have previously been a smoker but are not currently, and those who have never been a smoker. We were able to construct similar categories for the responses in the May 2020 survey.

For those who were smokers on the panel profile, 81.5 per cent were still smokers, and the rest were no longer smokers. Moving in the opposite direction, only 3.8 per cent of ex-smokers had started smoking again, and only 1.0 per cent of never smokers had started smoking. In net terms, there were 11.8 per cent of the total May 2020 sample who said that they were currently smoking compared to 12.2 per cent on recruitment to the panel. While this difference is not statistically significant, there is certainly no evidence of a large increase. That does not mean, of course, that the level of tobacco consumption has not increased for those who were smokers during both periods, or that the decline would have been greater in the absence of the pandemic. However, it does give some evidence that smoking has not increased since the spread of COVID-19.

We do not have information on the panel profile about the use of other illicit drugs. We did, however, ask respondents for whether they feel that their level of usage has increased. Leaving aside those who never use illicit substances (88.6 per cent of the sample), for those who do use illicit substances, 17.6 per cent said that their consumption had increased, whereas 25.7 per cent said that their consumption had decreased.

While there does not appear to be evidence for a significant self-reported increase in the use of illicit substances, there does appear to be a significant relationship between drug use and self-reported changes in alcohol consumption, particularly for males. Specifically, for males there was a slightly larger self-reported increase in alcohol consumption for those who said they had used illicit drugs but whose consumption had not increased compared to those who had never used illicit drugs (22.8 per cent compared to 15.4 per cent,  $p$ -value = 0.108). There were no differences between this group for females. There was, however, a very large level of self-reported increase in alcohol consumption for those who said that their consumption of illicit drugs had also increased – 88.4 per cent for males and 68.2 per cent for females. While the reverse is not necessarily the case, it would certainly appear from the data that if illicit drug use increased during the COVID-19 period for an individual, then so too did alcohol consumption.

Figure 5 Per cent of Australians who said their alcohol consumption increased since the spread of COVID-19, by use of illicit drugs



Source: ANUpoll, May 2020

## 7 The relationship between mental health outcomes and substance use

There is a large body of literature demonstrating the relationship between mental health outcomes and substance use. Summarised by Jané-Llopis and Matytsina (2006), the authors found that ‘In general, people with a substance use disorder had higher comorbid rates of mental disorders than vice versa, and people with illicit drug disorders had the highest rates of comorbid mental disorders.’ In previous analysis, Edwards et al. (2020), showed a very large decline in mental health outcomes in the first few months of the spread of COVID-19 in Australia, with particularly large declines for young Australians and for females. In this section we highlight the relationship between alcohol consumption and mental health outcomes. While it is very difficult to establish a causal relationship using observational data, the longitudinal data analysed in this paper does highlight a negative relationship between mental health and alcohol consumption.

Specifically, we use the Kessler-6 score of psychological distress from April 2020 as a predictor of self-reported increased in alcohol consumption since the spread of COVID-19 in an econometric model, also controlling for demographic, socioeconomic, and geographic characteristics of respondents. While we unfortunately do not have a measure of psychological distress from prior to the spread of COVID-19 for a large proportion of the sample, we do have information on other related variables in February 2020. The additional control variables we include are:

- All things considered, how satisfied are you with your life as a whole nowadays? (scale of 0 to 10);

## Alcohol consumption during the COVID-19 period: May 2020

- Taking all things together, how happy would you say you are? (scale of 0 to 10); and
- How is your health in general? Would you say it is...? (Very good; Good; Fair; Bad; Very bad).

Using life satisfaction and happiness as continuous variables, as well as general health as a series of binary variables, we show through Table 1 a very strong association between psychological distress in April 2020 and self-reported changes in alcohol consumption. Specifically, we present results as marginal effects, or the predicted change in the probability of reporting an increase in alcohol consumption. For the Kessler-6 measure of psychological distress, the marginal effect is calculated as the change in the predicted change in self-reported alcohol consumption increase from a change from a score of 11 (the lower bound of moderate psychological distress and just under the population average) to a score of 19 (the lower bound of serious psychological distress). All other marginal effects are presented as the predicted change in probability from a one-unit increase in that variable for the two continuous variables or for a change from the base case person to a person having that particular characteristic.

Looking at the results for males and females, psychological distress in April 2020, controlling for a range of demographic, geographic, socioeconomic, and pre-COVID-19 characteristics had a very strong association with self-reported alcohol consumption increase. For both males and females, an increase from moderate to serious psychological distress is associated with an increased probability of a little under 0.10 (0.096 for males and 0.098 for females).

A few other important findings emerge from the analysis. Those males with very bad self-reported health in February were far more likely to report that their alcohol consumption increased. Given that a significant component of a person's self-reported health is their mental health, this could also be seen as contribution of poor mental health to alcohol consumption for males, albeit mental health outcomes prior to the spread of COVID-19. Those females who had a degree were more likely to report an increase. Finally, those males who lived in relatively disadvantaged areas were less likely to report an increase than those in more advantaged areas.

**Table 1** Factors associated with self-reported increase in alcohol consumption

	Males		Females	
	Coeff.	Signif.	Coeff.	Signif.
Increase in Kessler-6 measure of psychological distress in April 2020 from moderate to serious	0.096	**	0.098	***
Life satisfaction in February 2020	-0.036	**	0.005	
Self-reported happiness in February 2020	0.064	***	-0.001	
Health good in February 2020	0.015		0.080	**
Health fair in February 2020	0.017		0.065	
Health bad in February 2020	-0.106		-0.012	
Health very bad in February 2020	0.541	***	0.117	
Aged 18 to 24 years	-0.137		0.010	
Aged 25 to 34 years	0.001		-0.058	
Aged 45 to 54 years	-0.033		-0.027	
Aged 55 to 64 years	-0.099		-0.044	
Aged 65 to 74 years	-0.173	***	-0.064	*
Aged 75 years plus	-0.174	**	-0.094	**
Indigenous	-0.040		-0.036	
Born overseas in a main English-speaking country	0.050		0.019	
Born overseas in a non-English speaking country	-0.066		-0.031	
Speaks a language other than English at home	-0.072		-0.060	
Has not completed Year 12 or post-school qualification	0.048		-0.038	
Has a post graduate degree	-0.057		0.114	*
Has an undergraduate degree	0.015		0.080	*
Has a Certificate III/IV, Diploma or Associate Degree	0.017		0.039	
Lives in the most disadvantaged areas (1st quintile)	-0.199	***	-0.019	
Lives in next most disadvantaged areas (2nd quintile)	-0.171	***	0.016	
Lives in next most advantaged areas (4th quintile)	-0.082		0.061	
Lives in the most advantaged areas (5th quintile)	0.021		0.001	
Lives in a non-capital city	-0.031		0.018	
Probability of base case	0.316		0.167	
Sample size	1,029		1,192	

Source: Life in Australia™ February 2020, ANUpoll April 2020, and ANUpoll, May 2020

Notes: Probit Regression Model. The base case individual has a Kessler-6 score of 11, a life satisfaction and happiness score of 7 in February 2020, and excellent general health in February 2020. In addition, the base case individual is female; aged 35 to 44; non-Indigenous; born in Australia; does not speak a language other than English at home; has completed Year 12 but does not have a post-graduate degree; lives in neither an advantaged or disadvantaged suburb (third quintile); and lives in a capital city.

Coefficients that are statistically significant at the 1 per cent level of significance are labelled \*\*\*; those significant at the 5 per cent level of significance are labelled \*\*, and those significant at the 10 per cent level of significance are labelled \*.

## 8 Concluding comments

There has been considerable attention on the effect of COVID-19 on alcohol consumption. While the analysis is complicated by the lack of longitudinal data on all questions asked, some very consistent patterns emerge from the analysis of data from the May 2020 ANUpoll, alongside comparisons with previous waves of data and national survey benchmarks.

Using the 2017/18 National Health Survey (NHS) as a population benchmark and adjusting for variation in the 'time since last drink', it would appear that the frequency of alcohol consumption during COVID-19 is slightly higher for males than it was 2-3 years previously, and more substantially higher for females. Comparing the data from ANUpoll to the National Drug

## Alcohol consumption during the COVID-19 period: May 2020

Strategy Household Survey (NDSHS), there were also increases, though the gender differences aren't as large. All three surveys have been benchmarked to the Australian adult population using survey weights, so on balance it would appear that alcohol consumption has increased slightly in the 12 months up until May 2020, and some of that increase may be attributable to COVID-19.

People are more likely to say that their alcohol consumption has decreased than say that it has increased since the spread of COVID-19. However, there is some evidence that people tend to understate increases in alcohol consumption, and there were more people who said that their alcohol consumption increased since the spread of COVID-19 than who said their alcohol consumption increased in the 12 months leading up to the 2017/18 NHS.

Importantly though, there was a larger self-reported increase in alcohol consumption for females than males, with females 1.3 times as likely to say that their consumption increased. For both sexes, frequent rates of alcohol consumption prior to the spread of COVID-19 were associated with higher rates of self-reported increases due to COVID-19. However, some of the other determinants of the self-reported increase varied. Having a child caring role was strong predictor of an increase in alcohol consumption for females. For males, on the other hand, it was a loss of job or a decline in hours worked which appears to be the strongest predictor of a (self-reported) increase in alcohol consumption.

For both sexes, but particularly for males, there is significant co-morbidity between changes in consumption of illicit drugs and changes in consumption of alcohol. One of the more important findings in the paper is that psychological distress in April 2020 was associated with higher self-reported increases in alcohol consumption since the spread of COVID-19, even after controlling for baseline characteristics in February 2020. The spread of COVID-19 appears to have increased the rate of psychological distress in Australia, and our data shows that this may have led to some people increasing their consumption of alcohol.

It is important not to overstate the increases in alcohol consumption. Compared to high quality survey benchmarks the increase in the consumption of alcohol is moderate, and the vast majority of Australians have said that their alcohol consumption has either stayed the same or declined. Furthermore, for those whose alcohol consumption has increased, the level of increase has been moderate. Nonetheless, we do find increases for particular demographic groups, increases amongst those who were already relatively frequent consumers of alcohol, and particularly troubling increases for those who are experiencing psychological distress.

Finally, while we didn't ask explicitly, one of the potential reasons for a person decreasing their level of alcohol consumption is the lack of social opportunities to do so, due to the impact of physical distancing measures and the temporary closure of pubs and other drinking establishments. A real policy challenge could be those whose alcohol consumption increased during the early stages of the spread of COVID-19 maintaining their new level of consumption as the next phase of the COVID-19 pandemic commences, with those who decreased their consumption returning to their previous level. While some of the original concerns regarding substantial increases in alcohol consumption do not appear to be evident in the data, it is important to keep monitoring consumption using high quality longitudinal data, analysing separately for males and females, and paying particular attention to co-morbidity with substance use and psychological distress.



## References

- Australian Bureau of Statistics (2019). *Microdata: National Health Survey, 2017-18*. Catalogue No. 4324.0.55.001, Australian Bureau of Statistics, Canberra.
- Australian Bureau of Statistics (2020). *Household Impacts of COVID-19 Survey, 29 Apr - 4 May 2020*. Catalogue No. 4940.0, Australian Bureau of Statistics, Canberra.
- Australian Institute of Health and Welfare (2017). National Drug Strategy Household Survey 2016: detailed findings. Drug Statistics series no. 31. Cat. no. PHE 214. Canberra: AIHW.
- Biddle, N., B. Edwards, M. Gray, and K. Sollis (2020a). "Hardship, distress, and resilience: The initial impacts of COVID-19 in Australia." *COVID-19 Briefing Paper*, ANU Centre for Social Research and Methods, Australian National University, Canberra.
- Biddle, N., B. Edwards, M. Gray, and K. Sollis (2020b). "Tracking outcomes during the COVID-19 pandemic (May 2020) – Job and income losses halted and confidence rising." *COVID-19 Briefing Paper*, ANU Centre for Social Research and Methods, Australian National University, Canberra.
- Boniol, M. and Heanue, M., 2007. "Age-standardisation and denominators". *Cancer Incidence in five continents*, 9, pp.99-101.
- de Wit, H., A.H. Söderpalm, L. Nikolayev and E. Young (2003). "Effects of acute social stress on alcohol consumption in healthy subjects." *Alcoholism: Clinical and Experimental Research*, 27(8): 1270-1277.
- Edwards, B., N. Biddle, M. Gray, and K. Sollis (2020). "Initial impacts of COVID-19 on mental health in Australia", *COVID-19 Briefing Paper*, ANU Centre for Social Research and Methods, Australian National University, Canberra.
- Fox, H.C., K.L. Bergquist, K.I Hong and R. Sinha (2007). "Stress-induced and alcohol cue-induced craving in recently abstinent alcohol-dependent individuals." *Alcoholism: Clinical and Experimental Research*, 31(3): 395-403.
- Groves, R.M. and L. Lyberg (2010). "Total survey error: Past, present, and future." *Public Opinion Quarterly*, 74(5): 849-879.
- Hauge, L.J., L. Torgersen, and M. Vollrath, (2012). "Associations between maternal stress and smoking: findings from a population-based prospective cohort study". *Addiction*, 107(6), pp.1168-1173.
- Jane-Llopis, E.V.A., and Matytsina, I., 2006. 'Mental health and alcohol, drugs and tobacco: a review of the comorbidity between mental disorders and the use of alcohol, tobacco and illicit drugs'. *Drug and alcohol review*, 25(6), pp.515-536.
- Krumpal, I., (2013). "Determinants of social desirability bias in sensitive surveys: a literature review." *Quality & Quantity*, 47(4): 2025-2047.
- Peltier, M.R., T.L. Verplaetse, Y.S. Mineur, I.L. Petrakis, K.P. Cosgrove, M.R. Picciotto and S.A. McKee (2019). "Sex differences in stress-related alcohol use." *Neurobiology of Stress*, 10: 100149.
- van Zyl-Smith, R.N., G. Richards and F.T Leone (2020). "Tobacco smoking and COVID-19 infection." *The Lancet Respiratory Medicine* [https://doi.org/10.1016/S2213-2600\(20\)30239-3](https://doi.org/10.1016/S2213-2600(20)30239-3)
- Yam, K.C., J.C. Jackson, C. Barnes, J. Lau, X. QIN and H.T. Lee (2020). "The Rise of COVID-19 is Associated with Support for World Leaders".
- Zeisser, C., T.R. Stockwell, T. Chikritzhs, C. Cherpitel, Y. Ye and C. Gardner (2013). "A systematic review and meta-analysis of alcohol consumption and injury risk as a

## Alcohol consumption during the COVID-19 period: May 2020

function of study design and recall period." *Alcoholism: Clinical and Experimental Research*, 37: E1-E8.

## Endnotes

---

- <sup>1</sup> <https://ourworldindata.org/coronavirus-data#tests-cases-and-deaths>
- <sup>2</sup> <http://fare.org.au/wp-content/uploads/COVID-19-POLL.pdf>
- <sup>3</sup> Information is drawn from data published by the Commonwealth Bank of Australia.
- <sup>4</sup> <https://www.aihw.gov.au/reports/phe/221/alcohol-tobacco-other-drugs-australia/contents/impacts/health-impacts>
- <sup>5</sup> Of those who completed the May 2020 wave of data collection, 2,986 individuals (91.9 per cent) also completed the April 2020 ANUpoll (the 37th wave of data collection). Of those who completed both the April and May surveys, 2,810 respondents (94.1 per cent) also completed the February 2020 survey (35th wave of data collection).
- <sup>6</sup> There were a small number of people who went from being not employed to employed between February and April. However, these individuals are excluded from the figure due to large standard errors.