

Cross-sectional survey of a convenience sample of Australians who use alcohol home delivery services

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Funding information

Australian Rechabite Foundation; Australian Government Research Training Program Scholarship; National Health and Medical Research Council, Grant/Award Numbers: 1148792, 1140292

Abstract

Introduction: Online alcohol purchasing and home delivery has increased in recent years, accelerated by the onset of the coronavirus disease 2019 pandemic. This article aims to investigate the purchasing and drinking behaviour of Australians who use online alcohol delivery services.

Method: A cross-sectional self-report survey with a convenience sample of 1158 Australians ≥ 18 years (49.3% female) who used an online alcohol delivery service in the past 3 months, recruited through paid social media advertisements from September to November 2021. Quota sampling was used to obtain a sample with age and gender strata proportional to the Australian adult population. Descriptive statistics were generated and logistic regression used to explore variables that predict hazardous/harmful drinking (Alcohol Use Disorders Identification Test score ≥ 8).

Results: One-in-five (20.1%, 95% confidence interval [CI] 17.8–22.5) participants had used an alcohol delivery service to extend a home drinking session because they had run out of alcohol and wanted to continue drinking and, of these, one-third (33.9%, 95% CI 27.9–40.4) indicated that if the service was not available they would have stopped drinking. Using delivery services in this way was associated with six times higher odds of drinking at hazardous/harmful levels (odds ratio 6.26, 95% CI 3.78–10.36). Participants ≤ 25 years were significantly more likely to report never having their identification verified when receiving their alcohol delivery at the door compared with purchasing takeaway alcohol in-person at a bottle shop ($p < 0.001$, McNemar).

Discussion and Conclusion: Given the risks associated with alcohol delivery, regulation of these services should be improved to meet the same standards as bricks-and-mortar bottle shops.

KEYWORDS

alcohol, delivery, internet, online, policy

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Key Points

- Convenience was the most common reason for purchasing alcohol online for delivery.
- Using fast delivery services and using delivery services to extend drinking sessions was associated with hazardous/harmful drinking.
- People 18-25-years reported poorer age verification practices for home delivery than in-store.
- Given the risks associated with alcohol delivery, regulation of these services should be improved to meet the same standards as bricks-and-mortar stores.

1 | INTRODUCTION

The sale of alcohol online for home delivery has increased in Australia [1] and internationally [2, 3]. This increase has accelerated since the coronavirus disease 2019 (COVID-19) pandemic and accompanying movement restrictions [1, 4], resulting in some jurisdictions relaxing liquor regulations to increase the availability of alcohol home delivery (e.g., by allowing on-premises venues to offer alcohol home delivery where it was previously prohibited) [5].

The growth of online alcohol sales and home delivery has the potential to increase the physical and economic availability of alcohol in the community, which according to Availability Theory [6], could lead to increases in alcohol consumption and harm. Online purchasing and home delivery increases physical availability by reducing the convenience cost associated with making a purchase as people no longer have to leave their homes to access alcohol. The growth of these services also has the potential to increase the economic availability of alcohol through the expansion of delivery from low-cost warehouse-style bottle shops. In Australia, many of these types of stores entered the online home delivery space several years ago, and have more recently begun offering same-day or fast delivery in under 2 h [7, 8]. This means most Australians can now access the low-cost liquor available at these kinds of stores, when previously availability was primarily limited to the surrounding area of each store. This is important given that price has been demonstrated to be influential to patterns of alcohol purchasing and consumption [9].

Availability Theory also states that changes in alcohol availability can impact alcohol-related harm when these changes affect the distribution of 'routine drinking activities' (behaviours that drinkers engage in when consuming alcohol) [6]. The availability of fast alcohol delivery services (delivery in <2 h) has the potential to disrupt routine drinking activities by enabling home drinking sessions to be extended which would have otherwise had to end had the service not been available. Such circumstances could increase short-term harms (such as

accidents or violence) by increasing intoxication that would have otherwise not occurred, in addition to the long-term harms associated with increased alcohol consumption. While research into online alcohol sales and home delivery is limited, the research conducted to date has found that the use of alcohol delivery services, particularly fast delivery services, may be associated with risky drinking behaviour [10, 11]. For example, a 2019 survey of a convenience sample of 528 Australians who use alcohol home delivery services, found that participants using fast delivery services generally drank more heavily than those who used slower delivery services (e.g., 28% of participants who used fast delivery services reported weekly consumption of ≥ 11 standard drinks in a single occasion, compared with only 10% of participants who used slower delivery services) [10].

Other research into online alcohol sales and delivery has found that age verification practices do not meet the same standards as bricks-and-mortar stores [5]. For example, age verification compliance evaluations from the Netherlands found age verification to be 0–20% for alcohol delivery services compared with 28–74% for other alcohol outlet types [12, 13].

Volume discounts and promotions are highly prevalent on the most popular alcohol retailer websites [14, 15]. These promotions are essentially the online equivalent of a point-of-sale promotion in a traditional bricks-and-mortar store. Research into the influence of in-store point-of-sale price promotions on alcohol purchasing found that participating in a promotion was associated with purchasing greater quantities of alcohol [16].

Given the potential for alcohol home delivery to increase the availability of alcohol, it is important that the regulation of these services is robust in order to minimise alcohol-related harm in our community. Currently, regulation of alcohol delivery in most Australian jurisdictions does not meet the same standards as bricks-and-mortar stores. For example, responsible service of alcohol (RSA) training is not required for most alcohol delivery drivers (except drivers of local deliveries in the Northern Territory and same-day delivery drivers in New South Wales and Western Australia), despite being mandatory

for anyone involved in the service of alcohol in all bottle shops across Australia. A core purpose of RSA training is to learn about underage drinking laws, how to check photo identification and how to recognise the signs of intoxication [17].

1.1 | The current study

Our study aims to investigate the purchasing and drinking behaviour of people who use online alcohol delivery services, using Availability Theory [6] as a framework to contextualise the results. We use this theory to discuss our results and the potential implications of the increase in availability of alcohol home delivery in Australia.

This study builds on a report from Mojica-Perez et al. [10] who surveyed Australians who use alcohol home delivery services. As that study was conducted prior to the COVID-19 pandemic and subsequent rise in online alcohol retail sales in Australia [18], our study seeks to update understanding of how and why people now use these services. Additionally, our study will investigate the influence that participating in an online alcohol promotion may have on alcohol purchasing behaviour. There is an existing body of literature demonstrating the influence of in-store point-of-sale promotions on alcohol [16, 19] and tobacco [20–22] purchasing behaviour, but to our knowledge no research to date has assessed the influence that online alcohol promotions may have on purchasing.

Online alcohol sales are projected to continue increasing in the coming years (annual growth of 7.9% over the 5 years through 2025–2026 in Australia [18]); therefore, knowledge on how and why people use these services is important. This research could help inform improvements to the regulation of online alcohol sales and delivery.

The objectives of this study are to assess:

1. Purchasing patterns, motivations, and consumer-reported age verification practices when using alcohol home delivery services.
2. Whether using alcohol home delivery services to extend drinking sessions is associated with hazardous/harmful drinking (Alcohol Use Disorders Identification Test [AUDIT] score ≥ 8).
3. Whether there is an association between the use of fast delivery services (<2 h) and hazardous/harmful drinking.
4. Whether there is an association between participating in a promotion (purchasing items on sale/using discount etc.) in their most recent online alcohol order and purchasing greater quantities of alcohol (standard drinks).

2 | METHODS

Cross-sectional self-report survey data were obtained from a convenience sample of 1158 Australians between 17 September and 11 November 2021. Several areas of Australia were subject to COVID-19 stay-at-home orders over this period (for more information see Appendix S1); however, bottle shops and home delivery of alcohol remained accessible.

Participants were recruited through paid advertisements on social media sites Facebook, Instagram and Twitter. Eligibility criteria were being aged 18 years or over, currently living in Australia and having used an online alcohol delivery service in the past 3 months. English proficiency was an additional implicit criterion as the advertisements and survey were available only in English. The incentive to participate was the chance to win an iPad Pro. For more information about participant screening, see Appendix S1. Ethics approval for this study was received from the University of New South Wales Human Research Ethics Committee (HC210166).

2.1 | Sample population

We used quota sampling to obtain a sample with age and gender proportions similar to the Australian population (according to Australian Bureau of Statistics 2020 data). For more information about participant recruitment (see Appendix S1).

2.2 | Survey measures

The survey comprised 29 questions adapted from Mojica-Perez et al. [10], Jones et al. [16] and bespoke questions specifically for this study. Questions were separated into three sections: (i) alcohol consumption; (ii) use of online alcohol home delivery services; and (iii) last online alcohol delivery order (for full survey instrument, see Appendix S2).

2.2.1 | Alcohol consumption

We used the AUDIT to determine hazardous/harmful alcohol use in our survey [23]. The AUDIT is a validated 10-question screening tool considered reliable for screening for hazardous and harmful alcohol use and alcohol use disorders [24]. Responses to each question are scored 0–4 to give a total possible score between zero and 40. A score of 0 is abstaining from alcohol, 1–7 indicates low-risk consumption, 8–14 harmful/hazardous consumption

and 15 or more suggests the likelihood of a moderate-severe alcohol use disorder [25]. We used the AUDIT score as a dichotomous variable in our logistic regression; low risk/abstainer for scores 0–7 and hazardous/harmful use for scores of 8 or more.

2.2.2 | Use of online alcohol home delivery services

Participants were asked up to 12 questions (depending on their responses) about their use of online alcohol delivery services, such as the type of service they use most often (e.g., bottle shop website or specialised online-only wine shop) and how their deliveries are usually accepted (e.g., in-person at the door or left on porch).

Participants aged 18–25 were asked how often their identification is verified when receiving a delivery of alcohol and how often it is verified when they purchase alcohol in-person at a bottle shop. The cut-off of 25 years was chosen as some Australian state and territory liquor authorities [26, 27] and retail liquor groups [28] recommend and promote that age should be verified for anyone that looks under 25.

2.2.3 | Last online alcohol delivery order

Participants were asked up to seven questions (depending on their responses) about their most recent online alcohol delivery order (what, how and why they made that purchase).

2.3 | Analysis

For study Objective 1, descriptive statistics were generated for the proportions of responses given. Confidence intervals (CI) were generated for dichotomous variables using an exact binomial test with exact Clopper–Pearson 95% CI.

For Objectives 2 and 3, AUDIT score was used as a binary variable (score of 8 or more indicating hazardous/harmful consumption) in multivariable logistic regression to explore variables that may predict hazardous/harmful drinking. Independent variables included whether participants usually used fast delivery services (Y/N) and whether they had ever used a delivery service to extend a drinking session (Y/N), controlling for the categorical variables age [9, 29, 30], gender [9, 29, 30], income [31, 32] and relative socioeconomic disadvantage [29, 31] based on participants' postcode (using the Australian Bureau of Statistics Index of Relative Socioeconomic Disadvantage). Analyses were carried out using Excel and SPSS Version 26.

TABLE 1 Demographic comparison of our sample to the Australian population.

Demographics	Australian pop, 2020 ^a %	Survey pop, n = 1158 n (%)
Age, years		
18–24	11.6	100 (8.6)
25–34	19.1	306 (26.4)
35–44	17.2	183 (15.8)
45–54	16.2	172 (14.9)
55–64	14.9	191 (16.5)
65+	20.9	206 (17.8)
Sex		
Female	50.4	571 (49.3)
Male	49.6	567 (49.0)
Other/non-binary	Accurate data not available	^b
Not specified	—	^b
Jurisdiction		
New South Wales	31.8	577 (49.8)
Victoria	25.9	215 (18.6)
Queensland	20.2	127 (11.0)
South Australia	6.9	82 (7.1)
Western Australia	10.4	^b
Tasmania	2.1	^b
Northern Territory	1.0	^b
Australian Capital Territory	1.7	67 (5.8)
Annual household income		
\$156,000 or more	23.3	321 (27.7)
\$93,500–\$155,999	24.3	271 (23.4)
\$52,000–\$93,499	23.1	227 (19.6)
\$26,000–\$51,999	18.3	126 (10.9)
\$1–\$25,999	10.6	^b
Nil or negative income	0.4	^b
Prefer not to say/do not know	—	140 (12.1)
Index of Relative Socioeconomic Disadvantage—Deciles ^c		
1–2	20	88 (7.6)
3–4	20	155 (13.4)
5–6	20	205 (17.7)
7–8	20	230 (19.9)
9–10	20	477 (41.2)
Missing	—	^b

^aAustralian Bureau of Statistics—National, state and territory population in 2020 [35].

^bSuppression of small cell values, when proportion is less than 5% of the surveyed sample.

^cBased on participants postcodes using the Australian Bureau of Statistics Index of Relative Socioeconomic Disadvantage 2016 (latest version) [36], 1 = most disadvantaged, 10 = least disadvantaged.

For Objective 4, we report the proportion of participants indicating that they participated in a promotion in their most recent online alcohol delivery order (with 95% CI given, generated using an exact binomial test with exact Clopper-Pearson). We used the Australian Department of Health’s Standard Drinks Guide [33] to calculate the total number of standard drinks (equivalent to 10 g of pure alcohol in Australia) purchased in participants’ most recent order, based on their responses on type and quantity of beverage purchased. We conducted a non-parametric test (Mann–Whitney *U*) to compare medians to assess if participating in a promotion in their most recent order was associated with purchasing more standard drinks.

3 | RESULTS

3.1 | Response rate and completion time

Of 6328 people who clicked the survey advertisement, 1158 completed the survey giving a ‘post-click’ response rate [34] of 18.3%. The survey completion rate was 94.8% with a median completion time of 6 min and 14 s (interquartile range [IQR] 5:03–8:06).

3.2 | Demographics

The mean age of respondents was 45.6 (SD = 16.5), 49.3% were female (1.7% other/non-binary or did not declare) and participants had a median annual household income between \$93,500 and \$155,999. Our quota sampling target for gender was achieved; our age targets were within three percentage points for all age groups except 25–34-year-olds who were over-sampled (19.1% in Australian population vs. 26.4% in our sample, see Table 1). When compared with the Australian population [35], our sample had a higher proportion of New South Wales, Australian Capital Territory and Tasmanian residents, and lower proportion of residents from all other jurisdictions. Our sample had a higher portion of people with an annual household income over \$156,000, and lower portion of people on low incomes. More people in our sample resided in the least disadvantaged suburbs (i.e., most affluent) and less in the most disadvantaged suburbs [36].

3.3 | Purchasing patterns, motivations and age verification when using alcohol home delivery services

Bottle shop websites were the type of online alcohol retailer that participants purchased from most often (see Table 2).

TABLE 2 Purchasing patterns and motivations for using alcohol home delivery services (n = 1158).

Online alcohol delivery measure	%
Type of online store bought from most often	
Bottle shop website, e.g., Dan Murphy’s, Liquorland	35.1
Specialised online-only wine shop, e.g., Naked Wines	25.6
Specialised online-only alcohol shop, e.g., Jimmy Brings	16.2
Specific winery/distillery/brewery website	13.1
Supermarket website, e.g., Woolworths	4.2
Other, e.g., Uber Eats	5.7
Usual duration of time between order and delivery	
Two or more days later	61.1
The next day	9.4
After 4 h but still the same day	3.5
Between 2 and 4 h	5.2
<2 h	20.8
Main reason for buying alcohol online for delivery	
More convenient than going to the shops	30.9
Can get it cheaper online	19.3
COVID-19 pandemic concerns, e.g., lockdowns/exposure	17.2
More variety online	15.4
Run out of alcohol during a drinking session	2.4
Over the blood alcohol limit to drive when purchased	1.9
Other	13.0
How deliveries are normally received	
Accept in-person at the door	47.5
Gets left at the door, on porch or similar	43.1
Gets left at the post office for collection	5.7
Someone else accepts the delivery for the purchaser	2.4
Other	1.3
Frequency of purchasing takeaway alcohol	
Takeaway alcohol in-store purchases	
Less than monthly	41.3
Monthly	20.9
Fortnightly	17.3
Weekly	19.4
Daily	1.1
Purchase alcohol online for delivery	
Less than monthly	51.0
Monthly	31.2
Fortnightly	10.9
Weekly	6.7
Daily	0.2

Abbreviation: COVID-19, coronavirus disease 2019.

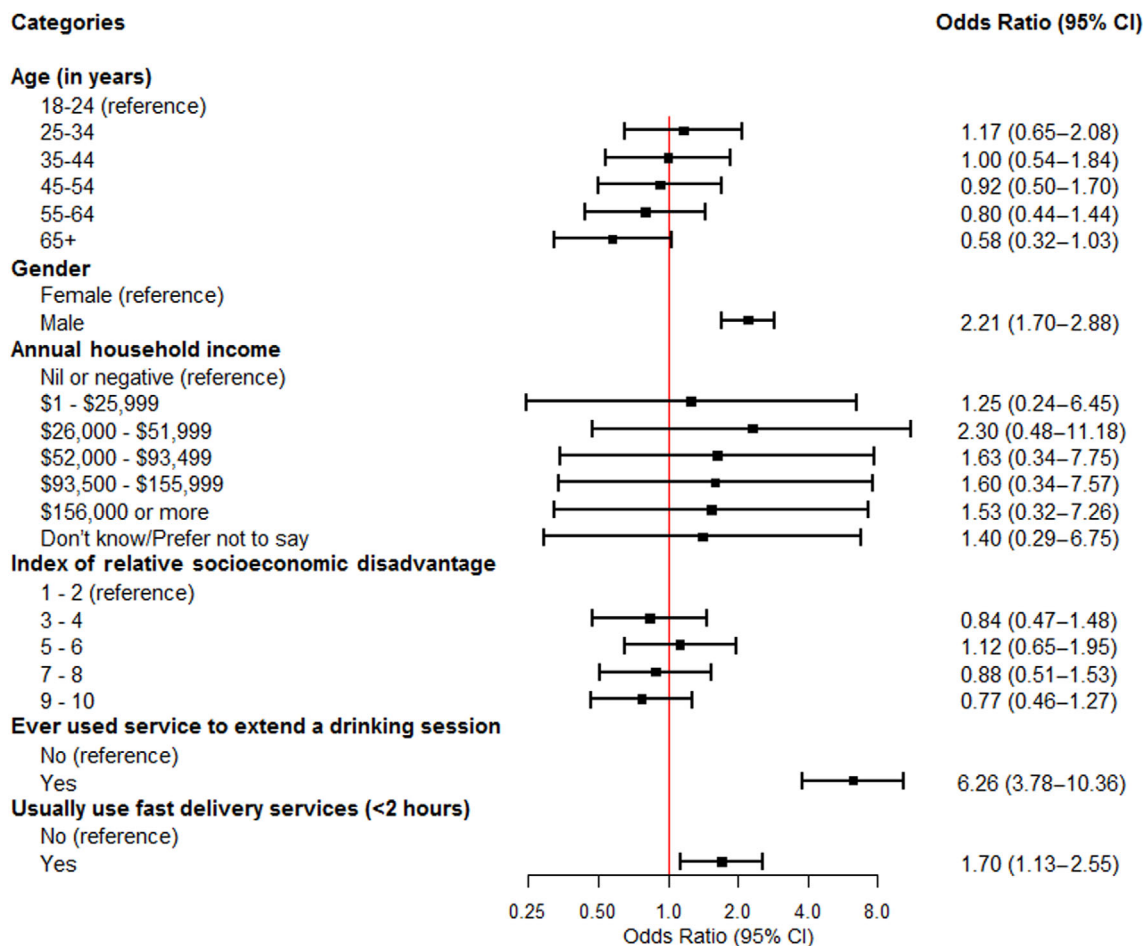


FIGURE 1 Odds ratios of logistic regression model predicting hazardous/harmful drinking (Alcohol Use Disorders Identification Test score ≥ 8). CI, confidence interval.

This was consistent across all age groups except those aged 65 or older who purchased from specialised online-only wine shops (e.g., Naked Wines or Vinomofu) more often (see Table S1 in Appendix S1, for variables stratified by age). Convenience was the main reason selected for buying alcohol online for delivery across all age groups.

Around one-in-five (20.1%, 95% CI 17.8–22.5) participants indicated they had used an alcohol delivery service to extend a home drinking session because they had run out of alcohol and wanted to continue drinking. Of these 233 people, 33.9% (95% CI 27.9–40.4) indicated that if the service was not available, they would have stopped drinking. The remainder indicated that there were other options available to them, such as walking or driving to the shop or asking someone else to make the purchase.

More than a quarter (27.8%, 95% CI 25.2–30.5) of our sample indicated that prior to March 2020 (the beginning of the COVID-19 pandemic in Australia) they had never purchased alcohol online for delivery. Of the remaining 836 people who had purchased alcohol online prior to the beginning of the pandemic, 44.0% had increased their use since the beginning of the pandemic, 4.2% had

decreased and 51.8% said their purchasing had stayed about the same.

There were 119 participants (10.3%) in our sample aged 25 years or under. These participants were asked how often their identification is checked when accepting an alcohol delivery at their door and when purchasing takeaway alcohol in-person in a bottle shop (see Table S2 in Appendix S1). Almost one-third (31.9%) indicated that their identification is never verified when receiving a delivery of alcohol, compared with only 6.7% who never have their identification verified when purchasing takeaway alcohol in-store ($p < 0.001$, McNemar). Conversely, more people reported always having their identification verified when receiving an alcohol delivery compared with in-store (34.5% vs. 26.1%, $p = 0.165$, McNemar).

3.4 | Use of fast delivery services and hazardous/harmful alcohol consumption

Our survey population had a median AUDIT score of 8.0; 59.7% scored eight or more, indicating hazardous/

harmful alcohol use. We performed logistic regression to explore variables that are associated with an AUDIT score ≥ 8 (Figure 1). The model was adjusted for age, gender, annual household income and relative socioeconomic disadvantage based on postcode. For median AUDIT score by all independent variables see Table S3 in Appendix S1. The 20 (1.7%) participants who reported being other/non-binary or did not declare their gender were removed from the analysis. Three additional participants with missing data were also removed. Complete case regression was performed on 1135. Being male (odds ratio 2.21, 95% CI 1.70–2.88), usually using fast delivery services (odds ratio 1.70, 95% CI 1.13–2.55), and having ever used a delivery service to extend a drinking session (odds ratio 6.26, 95% CI 3.78–10.36) were associated with hazardous/harmful drinking. Results were similar for a gender disaggregated sensitivity analysis (Figures S1 and S2 in Appendix S1). A sensitivity analysis using AUDIT score as a continuous variable as the outcome variable for a multivariable linear regression produced similar results (Figure S3 in Appendix S1).

3.5 | Participating in a promotion and quantity of drinks purchased

Around three-fifths (70.7%, 95% CI 67.9–73.3) of our sample made their most recent online alcohol delivery order within the last month. The median spend (including delivery fee) of participants in their most recent order was \$115 (IQR \$70–\$180). Participants purchased a median of 54.8 (IQR 29.7–88.8) standard drinks, with median cost of \$2.08 (IQR \$1.52–\$3.15) per standard drink.

When asked about the main reason/s for making their last online alcohol delivery order, the most common reasons selected were ‘taste’, ‘favourite’ and ‘on special’ (see Table S4 in Appendix S1). If participants did not select that their purchase was ‘on special’ or part of a ‘promotion’ as a reason, they were prompted with a yes/no question asking whether they had participated in a promotion in this most recent order. In total, 55.2% (95% CI 52.3–58.1) of participants indicated that they had participated in a promotion. The median number of standard drinks purchased was higher for those participating in a promotion compared with those who did not (77.9 vs. 44.2, Mann–Whitney *U*-test statistic = 210696.5, z 8.16, $p < 0.0001$).

4 | DISCUSSION

The proliferation of alcohol home delivery offerings in recent years could be increasing the availability of

alcohol in our community by effectively reducing its ‘full cost’—the convenience cost of physically obtaining alcohol and the economic cost of purchasing it [6]. Participants in our sample indicated that their main reason for purchasing alcohol online for home delivery is because it is ‘more convenient than going to the shops’, followed by that they ‘can get it cheaper online’. This aligns with a similar 2019 Australian survey where convenience and value were the most common reasons for purchasing alcohol online [10].

According to Availability Theory, changes in alcohol availability can impact alcohol-related harm when these changes affect the distribution of ‘routine drinking activities’ (behaviours that drinkers engage in when consuming alcohol) [6]. One-in-five participants in our survey had used an alcohol delivery service to extend a drinking session, with a third of these indicating that if the service was not available they would have stopped drinking, suggesting that the expansion of alcohol home delivery (particularly fast delivery services) could be impacting routine drinking activities. Using home delivery services in this way was associated with hazardous/harmful drinking, as was usually using fast delivery services compared with slower ones (regardless of whether they were being used to extend drinking sessions). Our findings are consistent with the 2019 Australian survey, which found that 17.3% of participants whose last order was a fast delivery made the purchase to extend a drinking session, and that participants whose last order was a fast delivery generally drank more heavily than those whose last order was a slower delivery [10].

Previous research suggests that age verification practices of alcohol home delivery services are poorer than those in bricks-and-mortar stores [5]. This aligns with our finding that participants aged 18–25 years were significantly more likely to report never having their identification verified when accepting an alcohol delivery at their door compared with purchasing takeaway alcohol in-person at a bottle shop. Alcohol home delivery services are theoretically increasing the availability of alcohol to minors by effectively reducing its ‘full cost’, as the convenience cost of obtaining alcohol is reduced due to the weaker controls on access.

Australian online alcohol retailers frequently offer discounts and promotions on their websites [14] and directly to customers via email once contact details have been obtained [37]. Over half of respondents in our survey participated in a promotion in their last online alcohol purchase. This compares to only around one-quarter of participants responding to a similar survey question when exiting bottle shops in a study conducted in the Australian state capitals of Sydney and Perth [16]. Whether this difference is related to an increased

availability of discounts and promotions online, or a difference between the two types of customers, is unknown. However, in both studies, participating in a promotion was associated with purchasing more alcohol. This makes sense as many promotions (e.g., multi-buy deals [38]) incentivise consumers to purchase greater quantities of alcohol than they otherwise would have had the promotion not been available.

4.1 | Implications

Despite the potential for online alcohol purchasing and home delivery to increase the availability of alcohol in our community, regulation in most Australian jurisdictions currently does not meet the same standards as bricks-and-mortar stores. Our results support previous research suggesting that age verification practices are poorer for home delivery than in bricks-and-mortar stores, that fast delivery services are associated with drinking at hazardous levels, and that these services are being used by some people to extend drinking sessions. The introduction of mandatory RSA training for all alcohol home delivery drivers could reduce the risk posed by these services, while still enabling consumer access.

Participating in an online promotion was more common than not in our survey, and it was associated with purchasing more alcohol. Some countries, such as Scotland [38] and Ireland [39], have moved to restrict promotions that incentivise consumers to purchase greater quantities of alcohol than they otherwise would have. The introduction of similar restrictions in Australia could reduce these incentives for increased alcohol purchasing.

4.2 | Limitations and strengths

The main limitation of our study is that we used a convenience sample obtained through social media. This sample is therefore not representative of the Australian population who use alcohol home delivery services and our results should be interpreted cautiously with regards to their relevance to the wider population. In an attempt to mitigate this limitation, we used quota sampling to ensure our sample had age and gender proportions roughly similar to the Australian population.

People from disadvantaged backgrounds were under-represented in our sample; compared with the Australian population our sample had a higher proportion of people with a high household income and people residing in affluent suburbs. According to the 2019 National Drug Strategy Household Survey (NDSHS), a broadly representative survey of Australians, people living in the highest

socioeconomic areas are more likely to drink and to exceed single-occasion risk guidelines than people living in lower socioeconomic areas [29]. Our sample did drink more heavily than respondents of the NDSHS; mean AUDIT score for our survey was 9.06 versus 4.58 for NDSHS [30]. The proportion of the population scoring 8 or more (indicating hazardous/harmful use) in the NDSHS was 22.2% [30], whereas 59.7% of our sample scored 8 or more. There are several possible explanations for the large difference in AUDIT score: (i) the oversampling of people with high incomes and from affluent areas; (ii) alcohol survey convenience samples disproportionately attract people who drink more, possibly due to a greater interest in alcohol-related topics (as suggested in a previous study [40] that also found their sample drank more heavily than the population average); (iii) that people who use alcohol home delivery services drink more heavily than the average Australian. Our survey was recruited through social media, therefore participation was limited to active social media users, which may have also affected the constitution of the sample. Due to these limitations, our results could overestimate variables related to quantity and frequency of alcohol purchasing, and hazardous/harmful drinking. The main strengths of the study are its timeliness and a large sample size. Despite its limitations, this paper makes a valuable contribution to improving the knowledge base in this under-researched area.

5 | CONCLUSION

Using fast delivery services and using delivery services to extend drinking sessions was associated with hazardous/harmful drinking in our sample. People 18–25 years reported poorer age verification practices for home delivery than in-store. To minimise alcohol-related harm, regulation of alcohol home delivery services should be improved to meet the same standards as bricks-and-mortar bottle shops, including the introduction of mandatory RSA training for drivers delivering alcohol.

AUTHOR CONTRIBUTIONS

Each author certifies that their contribution to this work meets the standards of the International Committee of Medical Journal Editors.

ACKNOWLEDGEMENT

Open access publishing facilitated by University of New South Wales, as part of the Wiley - University of New South Wales agreement via the Council of Australian University Librarians.

FUNDING INFORMATION

This work was supported by an Australian Rechabite Foundation Research Project Funding Grant. Stephanie Colbert is supported by an Australian Government Research Training Program Scholarship. Claire Wilkinson is supported by a National Health and Medical Research Council Early Career Fellowship (1140292). Xiaoqi Feng is supported by a National Health and Medical Research Council Career Development Fellowship (1148792).

CONFLICT OF INTEREST STATEMENT

The authors declare no conflicts of interest.

ETHICS STATEMENT

Ethics approval for this study was received from the University of New South Wales Human Research Ethics Committee (HC210166).

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SUPPORTING INFORMATION

Additional supporting information can be found online in the Supporting Information section at the end of this article.

How to cite this article: Colbert S, Wilkinson C, Thornton L, Feng X, Campain A, Richmond R. Cross-sectional survey of a convenience sample of Australians who use alcohol home delivery services. *Drug Alcohol Rev*. 2023. <https://doi.org/10.1111/dar.13627>