

# The prevalence of mandated and voluntary health information on alcohol products in Australia

Simone Pettigrew,<sup>1,\*</sup> Asad Yusoff,<sup>1</sup> Bella Sträuli,<sup>1</sup> Leon Booth,<sup>1</sup> Paula O'Brien,<sup>2</sup> Jacquie Bowden,<sup>3</sup> Aimee Brownbill,<sup>4</sup> Julia Stafford,<sup>5</sup> Michelle I Jongenelis,<sup>6</sup> Tazman Davies,<sup>1</sup> Tanya Chikritzhs,<sup>7</sup> Tim Stockwell,<sup>8</sup> Fraser Taylor,<sup>1</sup> Alexandra Jones<sup>1</sup>

<sup>1</sup>The George Institute for Global Health, Australia

<sup>2</sup>Melbourne Law School, University of Melbourne, Australia

<sup>3</sup>National Centre for Education and Training on Addiction (NCETA), Flinders University, Australia

<sup>4</sup>Foundation for Alcohol Research and Education (FARE), Australia

<sup>5</sup>Cancer Council Western Australia, Australia

<sup>6</sup>Melbourne Centre for Behaviour Change, University of Melbourne, Australia

<sup>7</sup>National Drug Research Institute, Curtin University, Australia

<sup>8</sup>Department of Psychology, University of Victoria, Canada

Submitted: 16 June 2024; Revision requested: 5 November 2024; Accepted: 28 November 2024

## Abstract

**Objective:** Regulations to restrict alcohol promotion and requirements for mandatory display of information about health risks associated with alcohol use have been minimal and hard-won in Australia. This study (i) outlines an approach to monitoring alcohol industry use of health messages on alcohol products and (ii) reports prevalence and nature of government-mandated health-related information and voluntary health messages on alcohol products.

**Methods:** Images of 5,923 alcohol products sold in four large alcohol stores in Sydney were captured. Data were collected in-store and via web-scraping. Label content was extracted from the images.

**Results:** There was high compliance (97%-99%) with government-mandated requirements other than the pregnancy warning label (63%). Presence of voluntary health-related messages was common (65%), but typically present in the form of DrinkWise (an industry-led social aspects/public relations organisation) statements that are unlikely to be effective.

**Conclusions:** This study provides a unique and systematic approach to examining alcohol industry compliance with government-mandated on-product information requirements and voluntary inclusion of other health-related messages.

**Implications for Public Health:** The results demonstrate the need for ongoing monitoring to enforce alcohol industry compliance with Australia's existing and future labelling regulations and to assess the industry's voluntary use of other forms of health messaging.

**Key words:** alcohol, regulation, labeling, warnings, health information

## Introduction

Despite the large and growing body of evidence demonstrating that alcohol is a primary contributor to death and disability globally<sup>1</sup> and that no amount of consumption can be considered 'safe',<sup>2</sup> frequent alcohol use remains culturally embedded in many countries.<sup>3</sup> In addition, the alcohol industry invests substantial resources in promoting alcohol products as key lifestyle accompaniments that bring substantial social benefits.<sup>4,5</sup> This

situation results in low consumer awareness of the nature and extent of alcohol-related harms,<sup>6,7</sup> reflected in ongoing high alcohol consumption prevalence rates in many countries.<sup>8</sup> In Australia, the context of the present study, around three-quarters of 14+ year olds consume alcohol,<sup>9</sup> and 27% of adults drink at levels that exceed the National Health and Medical Research Council's low-risk guideline.<sup>10</sup> Overall, Australia rates poorly on global comparisons of alcohol policy implementation, rating 47.7 on the 100-point Alcohol Control Policy Index,<sup>11</sup> and the total social, health and economic costs

\*Correspondence to: Simone Pettigrew;

e-mail: [spettigrew@georgeinstitute.org.au](mailto:spettigrew@georgeinstitute.org.au).

© 2024 The Author(s). Published by Elsevier B.V. on behalf of Public Health Association of Australia. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Aust NZ J Public Health. 2024; Online: <https://doi.org/10.1016/j.anzjph.2024.100215>

of alcohol use in Australia are conservatively estimated at around \$67 billion per annum.<sup>12</sup>

Harms from alcohol include increased risk of around 200 health conditions, including impaired foetal development, multiple cancers, liver disease, cardiovascular disease, injuries and mental health problems.<sup>13,14</sup> To assist countries in achieving reduced harmful use of alcohol, the World Health Organization (WHO) recommends a range of evidence-based interventions, one of which is to 'provide consumer information about, and label, alcoholic beverages to indicate the harm related to alcohol'.<sup>15</sup> This recommendation reflects: (i) current suboptimal consumer understanding of alcohol-related harms<sup>16,17</sup>; (ii) consumers' right to know about dangers associated with readily available and heavily promoted products, especially those that are ingested into the human body<sup>18,19</sup>; (iii) the ability of information exposure to modify alcohol-related knowledge, intentions and behaviours<sup>20–23</sup>; and (iv) the additional benefit of softening the ground for the introduction of further regulatory changes.<sup>24,25</sup> However, few countries have implemented comprehensive requirements for consumer information on alcohol products, and the WHO has noted that 'alcoholic beverages are remarkable as consumer products with relatively little consumer information on the label'.<sup>13</sup>

Health warnings on alcohol product labels are a key element of comprehensive alcohol policies designed to inform the public about alcohol-related harms.<sup>26</sup> They can be effective in increasing awareness of alcohol harms, slowing down drinking, and decreasing purchasing and drinking occasions.<sup>17</sup> However, they are very unpopular with the alcohol industry (likely reflecting their potential efficacy), resulting in intense lobbying and threats of legal action that have delayed or prevented warning label implementation globally.<sup>27,28</sup> This was evident in Australia's recent adoption of a pregnancy warning label, where industry delaying tactics saw more than 20 years pass before public health advocates were successful in achieving implementation of the mandatory label.<sup>29</sup> These tactics included the development and implementation of a voluntary DrinkWise pregnancy message; DrinkWise is an industry-led social aspects/public relations organisation that was established in 2005 to implement initiatives ostensibly designed to reduce alcohol-related harms, especially among children.<sup>30</sup>

The pregnancy warning label was introduced by the Australian Government in 2020, with a three-year transition granted to industry leading up to a mandatory compliance date of 1 August 2023. All products packaged from this date onwards are required to display the label (label variations according to product volume and packaging type are shown in [Figure 1](#)). There was strong public support for this policy, with survey research showing that 72% of Australian adults agreed that alcohol products should display pregnancy warning labels.<sup>31</sup>

Other health-related information elements that are required on alcohol labels in Australia include the volume of the container, alcohol content (expressed either as mL/100 g, mL/100 mL, or percentage of by volume (%ABV)) and standard drinks per container (one standard drink = 10 ml of ethanol)<sup>32</sup> (see [Supplementary Table S1](#) for the dates from which mandatory label elements were required to be present on alcohol products). These label elements are deemed to be health-related due to their role in assisting consumers to understand the amount of alcohol they are ingesting. Alcohol industry actors may add other health-related information to the label, such as an '18+' symbol

to indicate the product is only for consumption by adults. Since 2011, DrinkWise statements and logos have been displayed on some products, ranging from referrals to the DrinkWise website for access to various health-related information to statements such as "Kids and alcohol don't mix".<sup>33</sup> DrinkWise messages have been criticised for having low salience on pack and weak wording, resulting in low effectiveness.<sup>34–36</sup>

There is a current lack of monitoring of the extent to which both mandatory and voluntary health-related information is displayed on the labels of alcohol products sold in Australia. In terms of government-mandated label information, monitoring is critical for identifying areas of non-compliance and ensuring accountability of non-compliant actors.<sup>26</sup> In the case of voluntary provision of health-related information, monitoring the extent to which the alcohol industry is abiding by its own standards is important to provide evidence on the level of implementation of such industry-led policies. The aims of the present study were to address the current monitoring vacuum by developing a systematic method of documenting the health-related information present on alcohol products in Australia and assessing the prevalence and nature of this information. Specific information elements of interest were container volume (mandatory), alcohol content (mandatory), standard drinks per container (mandatory), pregnancy warnings (mandatory) and voluntary health messages. As well as providing information on the prevalence of these labelling elements, the data collection and analysis methods described in this study can be used to monitor all aspects of on-pack marketing.

## Methods

### Data collection

A two-pronged data collection approach was used to access labels on alcohol products sold in Australia. The two phases involved in-store data collection and web-scraping.

#### In-store collection

An established data collection protocol was used that has been developed for gathering food product label data.<sup>37</sup> Permission was obtained from store managers to collect data in three outlets representing small, medium and large alcohol retail chains in metropolitan Sydney. A minimum of five photographs was taken of each product to ensure all label elements were captured. Data collection occurred between June and November 2023. Data collectors took photographs of labels that were present on all sides of products using a bespoke app that guided them through taking photographs of specific label elements (e.g. pregnancy warnings). All alcoholic beverages for sale in the stores were photographed, with the exception of the individual products contained within multi-packs and the very small number of products in locked cabinets that were not accessible.

#### Web-scraping

A web-scraping technique previously used to analyse food products sold in online retail stores<sup>38</sup> was applied to alcohol products available for sale on the Sydney website of a large Australian alcohol retailer for which in-store data collection approval could not be obtained. Data were scraped 1–3 August 2023. Python 3.0 programming language was used to automate website access and product category

Figure 1: Mandatory pregnancy warning label variants and identified DrinkWise health-related messages.

## Mandatory pregnancy warning label



For products <200ml packaged since 1 August 2023



For products ≥200ml packaged since 1 August 2023



For products with corrugated cardboard outer-packaging packaged since 1 February 2024

## DrinkWise messages



Get the facts **DrinkWise.org.au**



navigation (e.g. Retailer Home Page → Beer → Pale ale product/brand). For each product the following content was downloaded: (i) all text information available on the main product promotion webpage from which shoppers make their purchase selection (e.g. product name, alcohol content, package size) and (ii) all product images, including those visible on the main product page and any additional images that could be viewed through optional product image rotation functionality. Multi-packs were not included in the web-scraped data set due to the online images failing to show all sides of the outer packaging, notably the bottom/underneath packaging panel. Out-of-stock products and those that were exclusive to online sale (i.e. not available in the chain's stores) were also excluded.

### Data analysis

Duplicate products from the different stores and between the in-store and web-scraping collections were removed by matching product barcodes. Data extracted from the product label photographs for the purposes of this study included product name and type, container volume, alcohol content, standard drinks per container and other health-related information. The latter was coded as 'pregnancy message' (with subcategories 'mandatory pregnancy warning' and

'other pregnancy warning') and/or 'voluntary health message' (subcategories 'DrinkWise' and 'other'). Nutrition claims (e.g. 'low sugar', 'gluten free') relating to product contents were not within scope. Descriptive analyses were conducted to investigate the prevalence of each assessed label element.

Frequencies were calculated overall and by product category (beer, cider, premix, spirits and wine). Chi-square tests with pairwise z-tests (Bonferroni adjusted alpha level of  $\alpha=0.003$ ) were used to test for significant differences in information element prevalence by product category for the varying types of pregnancy warning labels and voluntary health messages.

### Results

In total, 5,923 products were included in analyses (see Table 1). Of these, most (91%) were from the in-store collection and the remainder from the online collection. This distribution was due to the in-store data being prioritised during duplicate removal because of the larger number of photographs per product compared to the images shown online, such as per the multi-pack situation described above. Almost all of the products (99%) were ≥200 ml in volume. Wine was the largest product category (n = 3,241 products) and cider

Table 1: Presence of key information elements on sampled alcohol products.

	All products	Beer	Cider	Premix <sup>a</sup>	Spirits	Wine
Number of products (n)	5,923	760	94	607	1,221	3,241
Volume per container <sup>b</sup> (%)	99	99	100	99	99	99
Alcohol content <sup>b</sup> (%)	99	99	100	99	99	99
Standard drinks per container <sup>b</sup> (%)	97	98	100	99	96	98
Pregnancy message <sup>c</sup> (%)	86	85	95	90	85	85
Voluntary health message (%)	65	71	77	82	67	59

<sup>a</sup>Also known as ready-to-drink alcoholic beverages

<sup>b</sup>Government mandated

<sup>c</sup>Results include the mandatory pregnancy warning and other pregnancy message variants

was the smallest (n = 94). Across all products, compliance with mandatory requirements to display container volume (99%: range 99%-100%), alcohol content (99%: range 99%-100%), and standard drinks per container (97%: range 96%-100%) was very high.

Pregnancy messages were present on 86% of products (see Table 1). When assessed by type of pregnancy message, 63% of products displayed the mandatory warning label and 25% displayed another form of pregnancy message (see Table 2). Prevalence of the mandatory label was markedly lower for spirits (50%) compared to all other product categories. A small proportion of products (1.7%) displayed two pregnancy messages—the mandated pregnancy warning plus another pregnancy message.

Voluntary health messages were visible on 65% of products, ranging from 59% for wine to 82% for premix products (see Table 1). In most instances (53% of all products), the identified message was from DrinkWise, ranging from 49% for wine products to 67% for premix products (see Table 2). The identified DrinkWise images are shown in Figure 1. There was particularly wide variation in the proportion of products displaying 'other' (i.e. non-DrinkWise) voluntary health messages, which included warnings about the risks of drink driving or alcohol use among those under 18 years of age. In total, 26% of all products carried an 'other' voluntary health message, ranging from 19% of wine products to 57% of ciders. 4.3% of products displayed more than one voluntary health message.

## Discussion

The results of the present study indicate high but imperfect compliance with Australian government-mandated labelling requirements for the display of volume per container, alcohol content and number of standard drinks per container information.

This level of compliance reinforces the importance of prescribing specific forms of information provision in regulation to ensure high prevalence in the marketplace. However, of note is the non-trivial 3% of products that failed to display standard drinks information, which is of concern given that this requirement has been part of the law since 1995, and previous research found that 68% of Australians wanted standard drinks information to be more prominently displayed on alcohol products.<sup>31</sup> Further research is needed to identify circumstances in which non-compliance is occurring. For example, few countries globally have mandated the provision of standard drinks per container information,<sup>17</sup> potentially resulting in international products being less likely to feature this label element on their packaging.

Also noteworthy was the finding that more than one-third of products had not yet adopted the mandatory pregnancy warning, despite the data collection period (June–November 2023) straddling the final date of the transition period (31 July 2023). Of particular concern is the slow uptake of the mandatory label in the spirits category (50% displayed the mandatory pregnancy warning); the typically higher alcohol content suggests greater potential for harm to unborn babies compared to other product categories. The outcomes suggest a substantial number of producers (i) may have decided to either delay using the mandatory pregnancy warning until very late in the transition period (despite producers being permitted, but not required, to introduce the mandatory pregnancy warning at any time during the three-year transition period from 1 August 2020 to 31 July 2023) or (ii) may not be compliant with the legal requirement for the mandatory pregnancy warning to be applied to products labelled from 1 August 2023. A further potential issue is product shelf life, highlighting the importance of including a requirement at the end of the transition period to adhere warning stickers to products that do

Table 2: Presence of pregnancy warnings and voluntary health-related information by type (%).

	All products (n = 5,923)	Beer (n = 760)	Cider (n = 94)	Premix <sup>1</sup> (n = 607)	Spirits (n = 1,221)	Wine (n = 3,241)
Pregnancy message	86	85 <sup>a,b,c</sup>	95 <sup>a,b,c</sup>	90 <sup>b</sup>	85 <sup>c</sup>	85 <sup>a,c</sup>
Mandatory warning	63	67 <sup>a</sup>	60 <sup>a,b</sup>	70 <sup>a</sup>	50 <sup>b</sup>	65 <sup>a</sup>
Other <sup>2</sup>	25	20 <sup>a</sup>	37 <sup>b</sup>	21 <sup>a</sup>	38 <sup>b</sup>	22 <sup>a</sup>
Voluntary health-related message	65	71 <sup>a</sup>	77 <sup>a,b</sup>	82 <sup>b</sup>	67 <sup>a</sup>	59 <sup>c</sup>
DrinkWise <sup>3</sup>	53	62 <sup>a</sup>	62 <sup>a,b,c</sup>	67 <sup>a</sup>	51 <sup>c</sup>	49 <sup>b,c</sup>
Other	26	30 <sup>a</sup>	57 <sup>b</sup>	43 <sup>b</sup>	31 <sup>a</sup>	19 <sup>c</sup>

Notes: Proportions with the same superscript letter in each column did not significantly differ from each other at a Bonferroni adjusted alpha level of 0.003

<sup>1</sup>Also known as ready-to-drink alcoholic beverages

<sup>2</sup>Includes DrinkWise pregnancy messages

<sup>3</sup>Excludes DrinkWise pregnancy messages

not yet display the mandatory pregnancy warning, but could sit on shelves for many years prior to purchase.

Evidence of delaying tactics has been reported previously in the form of the intense industry resistance to the introduction of the pregnancy warning label<sup>29</sup> and slow uptake since the regulation was introduced.<sup>39</sup> Recent research showed that only around one-third of premix alcoholic beverages on the Australian market displayed the mandatory pregnancy warning label almost two years into the three-year transition period.<sup>39</sup> The 70% compliance found in the present study for the premix beverage category is approximately double this figure, suggesting around one-third of producers introduced the warning in a timely fashion, one-third waited until the final year of the transition period to do so and a further one-third failed to do so within the transition period. The lesson from these observations appears to be that allowing alcohol companies more time to implement new labelling requirements results in further delays in providing important health information to consumers.

Excluding pregnancy messages, around two-thirds of the sampled products displayed some form of voluntary health messaging. DrinkWise messages were displayed on 53% of all products, which is a substantial increase on the 37% identified in a smaller study (n = 251 products) of alcoholic beverage labelling undertaken a decade ago.<sup>40</sup> The current high prevalence of DrinkWise messages is of concern given previous research has found them to be of little value,<sup>34–36</sup> and to have the potential to confuse and mislead consumers through the use of vague and ambiguous wording that could be interpreted as alcohol promotion.<sup>41</sup> For example, the wording of the slogan 'DrinkWise' suggests there is a wise way to drink alcohol, which is contrary to evidence that there is no safe level of consumption.<sup>2</sup> Similar issues have been identified with industry-generated messages used in other jurisdictions, such as those developed by Drinkaware in the UK.<sup>42</sup> This highlights the importance of developing and implementing government-mandated health information with evidence-based designs to be included on alcoholic beverages to avoid the proliferation of industry-initiated ineffective labels that have the potential to mislead consumers.<sup>30,43</sup>

Wine products were less likely to display voluntary health messages compared to other products (59% vs. 65% average across all product categories). This is potentially problematic in light of the importance of placing health warnings on wine products to counteract pervasive inaccurate beliefs about beneficial effects of this particular alcohol category.<sup>17</sup>

The primary limitation of the present study was that data collection was confined to alcohol retailers in one city in Australia and hence the data cannot be assumed to constitute complete coverage of the Australian alcohol market. However, the major retail chains were represented in the data set, and the high levels of concentration in the Australian and global alcohol industries mean substantial consistencies can be expected in product offerings across jurisdictions. In addition, no attempt was made to determine whether products displaying the mandatory pregnancy label had the correct version applied (e.g. correct size and colour attributed). Future research could collect broader samples and include analyses of the extent to which non-compliant products are sourced domestically or imported and examine warning label style elements to assess compliance with variant specifications. Finally, this study did not assess consumers' awareness and interpretation of the captured label information, which is a further important area of future research.

In conclusion, the results of the present study highlight the importance of comprehensive monitoring of the Australian alcohol market to assess and encourage compliance with existing and future labelling regulations. In particular, the lacklustre findings in relation to the adoption of the new mandatory pregnancy warning label indicate the need for effective monitoring of industry uptake of this new standard to ensure that all products packaged on or after 1 August 2023 are displaying the label. It is important for manufacturers to be held accountable for their failure to adhere to this vital element of Australia's strategy to reduce alcohol-related harms. In addition, the documented prevalence of non-evidence-based voluntary health messages points to the need for policymakers to consider the introduction of validated approaches to information provision that can better inform drinkers of the risks associated with alcohol consumption.

## Ethics

Ethical approval for this study was obtained from the University of New South Wales Human Research Ethics Committee, approval number iRECS4533.

## Funding

This study was funded by National Health and Medical Research Council Ideas Grant #2021186.

## Conflicts of interest

The authors have no competing interests to declare.

## Author ORCIDs

Simone Pettigrew  <https://orcid.org/0000-0003-3921-1174>  
 Asad Yusoff  <https://orcid.org/0009-0009-7640-2501>  
 Bella Sträuli  <https://orcid.org/0009-0008-2566-6972>  
 Leon Booth  <https://orcid.org/0000-0002-6326-1908>  
 Paula O'Brien  <https://orcid.org/0000-0002-6879-0489>  
 Aimee Brownbill  <https://orcid.org/0000-0002-3368-3907>  
 Julia Stafford  <https://orcid.org/0000-0001-5959-0525>  
 Michelle I Jongenelis  <https://orcid.org/0000-0002-0717-1692>  
 Tazman Davies  <https://orcid.org/0009-0005-8220-0376>  
 Tim Stockwell  <https://orcid.org/0000-0002-5696-6803>  
 Alexandra Jones  <https://orcid.org/0000-0001-5039-144X>

## References

- Shield K, Mantney J, Rylett M, Probst C, Wettlaufer A, Parry CDH, et al. National, regional, and global burdens of disease from 2000 to 2016 attributable to alcohol use: a comparative risk assessment study. *Lancet Public Health* 2020; 5(1):e51–61.
- World Health Organization. *No level of alcohol consumption is safe for our health*. Geneva: WHO; 2023.
- Flor LS, Gakidou E. The burden of alcohol use: better data and strong policies towards a sustainable development. *Lancet Public Health* 2020;5(1):e10–1.
- Jernigan D, Ross CS. The alcohol marketing landscape: alcohol industry size, structure, strategies, and public health responses. *J Stud Alcohol Drugs Suppl* 2020;(s19):13–25.
- Pettigrew S, Jongenelis Ml, Jongenelis G, Pierce H, Stafford J, Keric D. Get them laughing to get them drinking: an analysis of alcohol advertising themes across multiple media in Australia. *J Stud Alcohol Drugs* 2020;81(3):311–9.
- Sanchez-Ramirez DC, Franklin RC, Voaklander D. Perceptions about alcohol harm and alcohol-control strategies among people with high risk of alcohol consumption in Alberta, Canada and Queensland, Australia. *J Prev Med Public Health* 2018;51(1):41–50.

7. Pettigrew S, Jongenelis M, Pratt IS, Liang W, Slevin T, Chikritzhs T, et al. Australian drinkers' perceptions of alcohol-related risk by consumption status. *Addiction Res Theor* 2016;**24**(6):507–13.
8. Ritchie H, Roser M. *Alcohol consumption. Our World in data*. 2024.
9. Australian Institute for Health and Welfare. *Alcohol, tobacco & other drugs in Australia*. Canberra: AIHW; 2023.
10. Australian Bureau of Statistics. *Alcohol consumption*. Canberra: ABS; 2023.
11. Madureira-Lima J, Galea S. Alcohol control policies and alcohol consumption: an international comparison of 167 countries. *J Epidemiol Community Health* 2018; **72**(1):54–60.
12. Whetton S, Tait RJ, Gilmore W, Dey T, Agramunt S, Halim SA, et al. *Examining the social and economic costs of alcohol use in Australia: 2017/18*. Perth, Australia: NDRI: Curtin University; 2021.
13. World Health Organization. *Global status report on alcohol and health 2018*. Geneva: World Health Organization; 2018.
14. Shield KD, Parry C, Rehm J. Chronic diseases and conditions related to alcohol use. *Alcohol Res* 2014;**35**(2):155–71.
15. World Health Organization. *Updated appendix 3 of the WHO global NCD action plan 2013-2030*. Geneva. 2022.
16. Vallance K, Stockwell T, Zhao J, Shokar S, Schoueri-Mychasiw N, Hammond D, et al. Baseline assessment of alcohol-related knowledge of and support for alcohol warning labels among alcohol consumers in northern Canada and associations with key sociodemographic characteristics. *J Stud Alcohol Drugs* 2020; **81**(2):238–48.
17. World Health Organization. *Health warning labels on alcoholic beverages: opportunities for informed and healthier choices*. Geneva: WHO; 2021.
18. Burton R, Henn C, Lavoie D, O'Connor R, Perkins C, Sweeney K, et al. A rapid evidence review of the effectiveness and cost-effectiveness of alcohol control policies: an English perspective. *Lancet* 2017;**389**(10078):1558–80.
19. Vallance K, Romanovska I, Stockwell T, Hammond D, Rosella L, Hobin E. "We have a right to know": exploring consumer opinions on content, design and acceptability of enhanced alcohol labels. *Alcohol Alcohol* 2018;**53**(1):20–5.
20. Pettigrew S, Jongenelis M, Glance D, Chikritzhs T, Pratt IS, Slevin T, et al. The effect of cancer warning statements on alcohol consumption intentions. *Health Educ Res* 2016;**31**:60–9.
21. Pettigrew S, Booth L, Jongenelis M, Brennan E, Chikritzhs T, Hasking P, et al. A randomized controlled trial of the effectiveness of combinations of 'why to reduce' and 'how to reduce' alcohol harm-reduction communications. *Addict Behav* 2021;**121**:107004.
22. Schoueri-Mychasiw N, Weerasinghe A, Vallance K, Stockwell T, Zhao J, Hammond D, et al. Examining the impact of alcohol labels on awareness and knowledge of national drinking guidelines: a real-world study in Yukon, Canada. *J Stud Alcohol Drugs* 2020;**81**(2):262–72.
23. Booth L, McCausland T, Keric D, Kennington K, Stevens-Cutler J, Scott L, et al. Evaluating an alcohol harm-reduction campaign advising drinkers of the alcohol-cancer link. *Addict Behav* 2023;**145**:107760.
24. Christensen ASP, Meyer MKH, Dalum P, Krarup AF. Can a mass media campaign raise awareness of alcohol as a risk factor for cancer and public support for alcohol related policies? *Prev Med* 2019;**126**:105722.
25. Weerasinghe A, Schoueri-Mychasiw N, Vallance K, Stockwell T, Hammond D, McGavock J, et al. Improving knowledge that alcohol can cause cancer is associated with consumer support for alcohol policies: findings from a real-world alcohol labelling study. *Int J Environ Res Publ Health* 2020;**17**(2):398.
26. World Health Organization. *Global alcohol action plan 2022-2030*. Geneva: WHO; 2023.
27. Millot A, Serra M, Gallopel-Morvan K. How the alcohol industry fought against pregnancy warning labels in France. A press coverage analysis spanning 20 years. *Front Public Health* 2022;**10**.
28. O'Brien P, Gleeson D, Room R, Wilkinson C. Commentary on 'Communicating messages about drinking': using the 'Big Legal Guns' to block alcohol health warning labels. *Alcohol Alcohol* 2018;**53**(3):333–6.
29. Heenan M, Shanthosh J, Cullerton K, Jan S. Influencing and implementing mandatory alcohol pregnancy warning labels in Australia and New Zealand. *Health Promot Int* 2023;**38**(3):daac022.
30. Brennan E, Wakefield MA, Durkin SJ, Jernigan DH, Dixon HG, Pettigrew S. Public awareness and misunderstanding about DrinkWise Australia: a cross-sectional survey of Australian adults. *Aust N Z J Publ Health* 2017;**41**(4):352–7.
31. Dekker MR, Jones A, Maulik PK, Pettigrew S. Public support for alcohol control initiatives across seven countries. *Int J Drug Pol* 2020;**82**:102807.
32. Food Standards Australia New Zealand. *Labelling of alcoholic beverages*. Canberra: FSANZ; 2023.
33. Brennan E, Dunstone K, Vittiglia A, Mancuso S, Durkin S, Slater MD, et al. Testing the effectiveness of alcohol health warning label formats: an online experimental study with Australian adult drinkers. *PLoS One* 2022;**17**(12):e0276189.
34. Coomber K, Martino F, Barbour IR, Mayshak R, Miller PG. Do consumers 'Get the facts'? A survey of alcohol warning label recognition in Australia. *BMC Publ Health* 2015;**15**(1):816.
35. Coomber K, Hayley A, Miller PG. Unconvincing and ineffective: young adult responses to current Australian alcohol product warnings. *Aust J Psychol* 2018; **70**(2):131–8.
36. Pettigrew S, Brennan E, Schoenaker DAJM, Durkin SJ, Dunstone K, Dixon HG, et al. Comparing responses to public health and industry-funded alcohol harm reduction advertisements: an experimental study. *BMJ Open* 2020;**10**:e035569.
37. Dunford E, Trevena H, Goodsell C, Ng KH, Webster J, Millis A, et al. FoodSwitch: a mobile phone app to enable consumers to make healthier food choices and crowdsourcing of national food composition data. *JMIR mHealth and uHealth* 2014;**2**(3):e37.
38. Maganja D, Davies T, Sanavio L, Louie JCY, Huffman MD, Trieu K, et al. Current food labelling practices in online supermarkets in Australia. *Int J Behav Nutr Phys Activ* 2023;**20**(1):105.
39. Sträuli B, Davies T, Jan S, Booth L, Laznik N, Taylor F, et al. Uptake of mandated pregnancy warnings in the Australian alcoholic ready-to-drink beverage market. *Drug Alcohol Rev* 2024;**43**(1):165–9.
40. Foundation for Alcohol Research and Education. *Alcohol label audit*. Canberra, Australia: FARE; 2013.
41. Pettigrew S, Biagioni N, Daube M, Stafford J, Jones SC, Chikritzhs T. Reverse engineering a 'responsible drinking' campaign to assess strategic intent. *Addiction* 2016;**111**(6):1107–13.
42. Pettigrew M, Maani N, Pettigrew L, Rutter H, Van Schalkwyk MC. Dark nudges and sludge in Big Alcohol: behavioral economics, cognitive biases, and alcohol industry corporate social responsibility. *Milbank Q* 2020;**98**(4):1290–328.
43. Kokole D, Anderson P, Jané-Llopis E. Nature and potential impact of alcohol health warning labels: a scoping review. *Nutrients* 2021;**13**(9):3065.

## Appendix A Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.anzjph.2024.100215>.