

Calling time on responsible drinking: A qualitative study of perceptions of information on alcohol product labels

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ABSTRACT

Objectives: This study aimed to explore a) how people interpret responsible drinking messages on alcohol product labels, and b) the acceptability of including health information on labels.

Design: Qualitative interviews

Methods: Face to face semi-structured interviews were conducted with 20 people aged 21 - 63; 18 were classified risky drinkers using AUDIT-C. They were shown three sets of alcohol product labels: one including three responsible drinking messages (drink responsibly), one with three positively worded health messages (drinking less reduces risks), and one with three negatively worded health messages (drinking more increases risks). Health messages included information about cancer, liver and heart disease).

Results: Thematic analysis identified three themes: ambiguity about alcohol labelling; identifying oneself as responsible; and acceptability of enhanced product labelling. Participants were critical of responsible drinking messages and wary of conflicting health information in the media. They positioned themselves as responsible, knowledgeable drinkers and distanced themselves from problem drinkers. They did not appear to support the inclusion of health information on labels, however novel information was considered more impactful.

Conclusions: Responsible drinking messages were seen by our sample as an alcohol industry ploy. Although health messages about cancer were seen as potentially impactful, the ability of consumers to position themselves as unproblematic drinkers means that they may not see the information on the label as relevant to themselves. Understanding factors that increase the personal relevance of messages is needed, alongside an exploration of a wider range of methods for alcohol health communication.

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INTRODUCTION

Alcohol contributes to poor health and premature death from multiple causes, including accidents, injuries and cancer (WHO, 2018), Alcohol is not only harmful to consumers, individuals are frequently harmed by other people's drinking (Laslett et al., 2010). Health warnings on product labels provide a potential opportunity to intervene at the moment of consumption.

In 2011, the United Kingdom (UK) alcohol industry subscribed to a voluntary 'Responsibility Deal' with the UK Government, committing to labelling at least 80% of alcoholic beverages with unit content, low-risk guidelines, pregnancy warnings and responsibility statements (Department of Health, 2011). However, a 2016 review found this pledge was often not met (Petticrew et al., 2016), and there was no imperative to include health information beyond that about drinking in pregnancy. This is in stark contrast to UK tobacco products, which must include specified picture and text warnings covering 50% of the surface area (Department of Health & Social Care, 2021).

Labels with specific health messages (e.g. 'alcohol increases your risk of cancer') emphasising long-term health effects of drinking may be what is required to have an impact on behaviour (Blackwell et al., 2021). However, instead, UK alcohol labels include 'responsibility statements', the wording of which sometimes includes phrases such as 'enjoy responsibly', which is an example of 'strategic ambiguity' that serves to subtly advance both industry sales and public relations, without communicating specific harms (Smith et al., 2006).

Messages about responsibility place the onus on the consumer, who may conclude only 'harmful drinkers' should change their behaviour (Maani Hessari & Petticrew, 2018). People interpret

'responsible drinking' to mean drinking without unwanted consequences (Stautz & Marteau, 2016), and being in control (Roznowski & Eckert, 2006). If an individual feels they consume alcohol without negative effects, this may signal they have no need to reduce their intake because they are a 'responsible drinker' (Melia et al., 2021). However, alcohol causes harm even when people do not feel intoxicated (GBD 2016 Alcohol Collaborators, 2018).

Evidence from Australia suggests consumers are critical of responsible drinking messages, believing the alcohol industry is doing a bare minimum in terms of warning about risks (Coomber et al., 2017). Nigerian consumers interpreted such messages as confusing and positioned them in relation to unspecified personal limits (Dumbili et al., 2022). Responsible drinking messages may have negative effects. For example, in a bar lab study, the presence of such messages was associated with increased alcohol consumption compared to control messages (Moss et al., 2015).

Further understanding how people in the UK interpret different types of messages has the potential to inform the development of effective product labels. The present study explored people's views about responsible drinking messages in comparison to health messages. We aimed to understand a) how people interpret responsible drinking messages and b) to explore the relative acceptability of including health information messages on alcohol product labels.

METHOD

Participants

Participants aged 18 or over were recruited opportunistically via an electronic university research noticeboard and social media from one geographical area in Southern England. Advertisements requested participation from current drinkers (consuming alcohol at least once a week) willing to be interviewed about alcohol labels. This was a convenience sample: people were recruited into the study on a first come first served basis. Verbatim transcription was

completed straight after each interview, and coding and analysis commenced while data collection was taking place. Recruitment continued until 20 people had been interviewed, at which time it was deemed there was a sufficient information power (richness) in the data (Malterud et al., 2015). There were 20 participants: nine men and 11 women aged from 21 - 63 (Mean 41.2 SD = 11.79). Three had completed secondary education, two were current undergraduate students, ten had undergraduate degrees and five had a post-graduate degree. Using an AUDIT-C cut off of 5+, for men and 4+ for women (Khadjesari et al., 2017), 18 participants were classified as risky drinkers (see Table 1).

[Insert Table 1]

Interviews

In-person semi-structured interviews lasting 25 - 40 minutes were conducted by the first author in February - April 2019. The interview schedule is shown in Table 2. Participants completed a demographic form (see supplementary file) including AUDIT-C, a brief alcohol screening questionnaire used to identify risky drinking (Saunders et al., 1993). Participants were first asked about usual drinking behaviours, before being presented with three versions of health messages and asked to discuss each one, starting with the responsible (ambiguous) messages, followed by positively-and negatively-worded messages. The labels were developed for an experimental study (blinded for peer review), thus efforts were made to ensure labels were of a similar length in each of the three message types (positive, negative, ambiguous). Positively-framed labels focused on benefits of drinking less, whereas negatively-framed labels focused on risks of drinking. In the ambiguous condition, labels presented information about drinking responsibly, staying in control, and knowing your limits (See Figure 1).

[Insert Figure 1]

After discussing messages, participants shared views about reducing alcohol consumption, including what information they thought would be useful and how to communicate it. Participants received a £20 Love to Shop voucher at the end. The study received ethical approval from the host institution. The interviews were part of a larger project on alcohol health warning labels, with the protocol registered on the Open Science Framework (blinded for peer review).

[Insert Table 2]

Analysis

Analysis took a critical realist perspective, understanding participants' experiences are lived realities that are produced and exist within broader social contexts (Terry et al., 2017). Data were analysed using Braun and Clarke's guidance on reflexive thematic analysis (Braun & Clarke, 2006; Braun & Clarke, 2019), beginning with familiarisation. The first author read the transcripts a number of times, noting down ideas that appeared important in relation to the research question. The second phase involved coding the data in NVivo. Initially, 180 codes were applied by searching each transcript deductively for responses to the alcohol labels, and inductively where other topics were mentioned by the participants. Removing and merging duplicated or similar ideas reduced this to 126 codes. Step three involved generating initial themes. The 126 codes were organised into 23 parent nodes, leading to the creation of initial thematic maps. The 23 parent nodes were organised into maps grouping ideas together (e.g., relating to acceptability). Candidate themes were refined at step four before initial definitions were written and names for the themes were chosen at step five. Coding and analysis were reviewed and discussed by all authors. During the writing stage – step six in TA - the final set of themes and associated sub-themes was finalised in discussion with all authors.

RESULTS

Three main themes were identified in the analysis process (see Table 3). These were named 'ambiguity about alcohol labelling', 'identifying oneself as responsible', and 'acceptability of enhanced product labelling'.

Theme 1 - Ambiguity about alcohol labelling

The theme 'ambiguity about alcohol labelling' captured how participants arrived at an understanding of how to interpret information about alcohol. Three sub-themes comprise this theme, which were named 'the meaning of responsible drinking messages', 'interpretation of guidelines', and 'conflicting media information'.

1a) *The meaning of responsible drinking messages:* The phrase 'drink responsibly' was familiar and interpreted as being 'careful' or avoiding drink driving. Often, participants viewed such messaging as deliberately ambiguous and were critical of it:

It means you should drink as long as you don't get to the point where you're not in control of your own actions ... and it's not likely to lead to injury or harm or, whatever else, it's a bit like the kind of gambling slogan which is like 'When the fun stops, stop', so, yeah, part of my cynicism is that the whole of 'enjoy responsibly' thing is companies covering their own back, making sure they're not obviously being seen to promote excessive drinking (Will).

I think the message is a bit weak, it's not very ... it doesn't really grab your attention ... The first thing I saw was 'enjoy' so ... yeah, when you look at that you think 'Ah ok, you don't really care' ... they're not really sending out a very strong message about what you need to do. So it's a bit vague. (Izzy).

However, drink responsibly messages also had the benefit of allowing participants to feel they had adopted an appropriate personal drinking pattern as it did not challenge their behaviour.

They tended to define responsibility as equating to the maintenance of socially acceptable behaviour (e.g., not becoming violent). Some participants also thought responsible drinking messages sounded condescending, or something to ignore as they felt they already knew how to act responsibly.

Use your common sense, you know, stop when you think you're about to hit the floor... So for me... I wouldn't pay attention to that, it's a bit patronising (Cara).

I think I grew up with the message people should enjoy drinking alcohol responsibly, I think that has been around a long time and so therefore when something has been around for ages you tend to ignore it a little bit, get a bit blasé about it (Louise).

In relation to their own behaviour, they knew they were acting responsibly by knowing how to stay in control. Being in control also meant knowing when to stop, which could depend on the situation - for example a night out:

Knowing when you're in control of your capabilities, so actually you can walk in a straight line and phone a taxi home and know where you are and not lose your handbag and things like that (Molly).

1b) Interpretation of guidelines: When prompted to describe information they had noticed on product labels, participants mentioned alcohol units. This was a further source of uncertainty because it was not clear what this was for:

I've seen it on the back but it's, but that also depends on the percentage ... or the strength of the wine, so I tend to ignore it and it's also very small, it's very small. I think it's a token gesture (Katherine).

Instead, factors such as product strength and the drinking occasion were viewed as useful ways of judging a safe amount to consume. Few participants could accurately state UK guidelines, but

most offered an estimate. When they were given the correct answer they tended to suggest that they measured their consumption in glasses or bottles instead. Thus the usefulness of including this information on the label was questioned, particularly if it was not seen as personally relevant:

Why do they count units, and why do they have a maximum recommended unit? What's the difference between sort of 13 and 15? What's suddenly going to happen to me if I have 15 units? And not having it every day. What is that? Why does that matter? (Sue).

Some were convinced that units were aimed at other people, for example pregnant women, or older people. Furthermore, some questioned the science behind unit guidelines, contributing to the perception of ambiguity:

It's possibly not even particularly scientific, it's probably, you know, the policy which goes what would be a good achievable amount that we should set this to? (Tom).

1c) Conflicting media information Conflicting reports in the media appeared to inform participants' understanding about what it meant to be a responsible drinker. A common topic was about red wine being simultaneously good and bad for you. This appeared to demonstrate that scientists disagreed about the effects of alcohol, meaning many had become blasé about what they heard:

So ... I see conflicting stuff about ... breast cancer ... so I don't know what that means ... I see mention of red wine being good for health one minute and then not the next. I see mention of the, is it tannings [sic], that they add in and ... a correlation between headaches and these tannings (Lisa).

Because of these conflicts, participants were unclear about how they should act on health information, even if they believed it, as it seemed that all media information was untrustworthy and so they remained sceptical about the information in the study. Some held the view that the

purpose of media coverage was to create a sense of worry, and questioned the value of the science behind the headlines:

Science hasn't proved completely that which is better, and which is not, so that is always debatable. Today you will see on the BBC, one glass of wine saves you from ... A&E, like heart attack or cardiac arrest, and very next day they say no alcohol is best (Arun).

Theme 2 - Identifying oneself as responsible'.

The theme 'identifying oneself as responsible' builds on the first theme to describe the ways that participants were able to position themselves as responsible. Two sub-themes were named 'demonstrating alcohol health knowledge' and 'othering heavy drinkers'.

2a) Demonstrating alcohol health knowledge

Participants presented themselves as highly knowledgeable about alcohol and health. They reflected on past behaviour to show how their knowledge was gained by previous negative experiences, which now guided their consumption. For example, one participant reported feeling anxious after drinking, and another experienced palpitations. Observations of how alcohol had affected family and friends also contributed to their understanding.

I know there's a lot of illnesses that have been linked to drinking ... and I know that alcohol affects your liver and your blood pressure ... For me it's more of a psychological and emotional issue, because like I said, I've got alcoholics in my family (Liz).

When reflecting on the labels, emphasis was placed on knowledge about the effects of alcohol on the liver - which was commonly viewed as the most believable and preferable message, regardless of presentation - compared to the other health messages. This may have been reinforced by the label promoting the message of having two days off – a realistic and achievable goal for the participants, only one of whom revealed that they drank every day:

'Alcohol-free days are good for your liver'. That's good to know, that like makes me feel better about my generally five days of alcohol-free stuff (Robert)

I mean yes, I know that your liver can regenerate itself so I totally believe that having two alcohol free days a week could have some bearing on you. [...] Heart disease I am sure it is, some direct link, but it's the liver one I definitely know the direct correlation between the two (Louise).

However, although health knowledge was presented with confidence, there were some gaps in the explanations as to why certain health effects were linked with alcohol consumption:

Obviously your liver, you need your liver otherwise you can't ... I can't think what it does now ... kind of bile and stuff like that. I can't remember what it does now, I think it clears your blood doesn't it, yeah ... if that goes you're dead basically as well aren't you (Jack)

Many contradictions relating to knowledge and behaviour were present in the transcripts. For example, some participants discussed their knowledge of the health impacts of heavy episodic drinking in detail and distanced themselves from this behaviour. However, their descriptions of recent and/or frequent drinking occasions suggested they commonly engaged in the behaviour. Nonetheless, within the interviews, participants presented themselves as highly health literate.

2b) Othering heavy drinkers Rather than themselves, study participants positioned 'heavy drinkers' and 'addicts' as those who needed to heed health information. They presented their own drinking patterns in opposition to heavy drinkers, which cemented their personal identity as responsible drinkers:

I could live without alcohol if I wanted to, you know, if tomorrow they stopped selling wine or beer it's not like my life is going to end ... But then obviously for the people who are actually addicted then that's obviously a real issue (Izzy)

Some acknowledged the likelihood that other people were also likely to view themselves as in control and responsible, regardless of the amount of alcohol they consumed. For this reason, it was challenging to identify who the intended audience of responsible drinking messages were:

It depends on the person's drinking habits, I think it's pretty lame. I've seen a lot of alcoholics who ... drink responsibly, know their own limits and stay in control of their own drinking, and they drink far more than is good for their health (Liz).

This was further revealed in their articulation of specific tastes, in particular for some men in the study this was about craft beers and small, local breweries. Their discussion was suggestive of a possible class/ income divide between those with 'refined' tastes and those who consumed super strength products:

The white lightning stuff, I genuinely can't believe that's sold, I don't understand how that's possible ... because it almost seems to be exclusively drunk by people who have drink problems and advertise as that ... But ... normal alcohol, you know, like wine and beer, but it has its own culture doesn't it (Will)

Further characteristics such as age and pattern of drinking were considered important factors related to who the audience of health-related labels would be. For example, younger participants considered older people more likely to be health aware:

I think it would have an impact on older people, I don't think it would have much impact on young people. Maybe like 40+, when you're starting to kind of think a bit more about your lifestyle, and it maybe is actually starting to have an impact where it shows. (Alice)

Some talked about intoxication as an infrequent occurrence for them. However, it was common for the many to then subsequently to describe drinking patterns that would constitute regular heavy episodic drinking. Drawing on their knowledge behaviour, it was still possible to distance from being the target of health messages:

I don't identify myself as a heavy drinker even though the government probably would define me in that bracket (Ella)

I think I'm quite self-aware about my drinking and my control, but I know a lot of people that aren't (Jamie)

Theme 3 - Acceptability of enhanced product labelling

The final theme relates to features of the interviews with implications for the acceptability of enhanced product labelling including health information. Three sub-themes related to this theme were named 'industry perceptions', 'resistance to health labels', and 'resonating messages linking alcohol with cancer'.

3a) Industry perceptions. Perceptions of the alcohol industry seemed to be very strongly linked to perceptions of the tobacco industry. Participants commonly suggested that pictorial messaging analogous to graphic images on tobacco products would be more effective than the text warnings they were shown in the interviews, making this explicit comparison, as well as by discussing the gradual acknowledgment of smoking as harmful. There was a reluctance to consider alcohol to be as harmful as smoking.

Everybody knew smoking was bad for you, I don't think the message is necessarily out there at the moment how bad drinking is for you I don't know how bad it is in comparison to say something like smoking which was, you know, totally socially unacceptable in the end and everybody knew it was bad. Do we know drinking is as bad as smoking? (George)

Several participants highlighted that the role of the industry in a capitalist neoliberal society is to make money rather than to provide health information, and thus they felt that labelling was not an appropriate strategy for alcohol harm reduction. In fact, this was viewed as contradictory and likely to reduce the impact of messaging:

Why are you pinning it on me? I've brought your product, why are you kind of like making me feel like a bit bad now for drinking it? Yeah, so you know, I'd feel a bit, I'd definitely feel annoyed if that was on my bottle, I really would (Cara)

On the other hand, some participants reflected on the harms related to alcohol consumption, such as costs to health services, and almost reluctantly admitted that it was a harmful drug, and that perhaps this meant that consumers should be better educated:

They're making something which is technically, you know, a drug ... and it's legal, and it can have a serious impact on your health and your mental health (Molly)

However, some of the more ardent sceptics tended to consider labelling self - evidently ineffective, were resistant to behaviour change, and felt that others would have a similar view:

It was ... almost like ... a bit of a cop-out. So we can stick some labels on a bottle and then we can carry on marketing and promoting ... alcohol as freely as before, but it's ok because we've got some labels on the bottle that probably, that we can't evidence to change people's behaviour anyway (Kim).

3b) Resistance to health labels: Overall, evidence from these interviews suggested that participants were resistant to the inclusion of health messages on the labels of the alcoholic products that they consumed. For many of them, the label was not the right time or place for health information. At the point of consumption, participants wanted to enjoy their chosen drink and associated occasion:

I think that would be off-putting ... yeah. You know if you're having a dinner party with friends and ... you know, there's a picture of a tumour or a rotten liver on the bottle of wine, yeah, I think that would probably be quite off-putting (Izzy).

I think it would be kind of a sort of ... sad future where all of the beautiful bottles of wine

just kind of looked the same and just had like diseased livers on them, and just had different serial numbers on (Robert).

Including health messages was also seen as a threat to the enjoyment of particular brands, which had interesting or unusual labels. It was also seen as a paternalistic approach to encouraging alcohol reduction, and therefore seemed to have the potential to cause reactance:

People generally, if they're doing something which they know is probably not good for them, whether they're a child or an adult don't like to be told it, they like to be advised it in a nice way (Molly).

Although most were resistant to health information, it appeared that short term consequences of drinking was more important to many participants:

I know drinking three pints on a Wednesday is about a thousand calories, and that is a thousand calories, plus dinner, plus lunch, and I know that's having an impact on my health because it's making me fat. So if I had calories on drinks products more in your face then I'd probably consume less (John).

If there was a sign in the women's toilet near the mirror saying 'alcohol destroys your good looks, make sure you drink lots of water with that' then a lot of women would leave the loo and go and get a drink of water I think - Ah yeah, 'alcohol gives you wrinkles' will probably have a lot more impact than heart disease for sure. 'Alcohol gives you really bad bags under your eyes' will probably do the same, yeah (Liz).

3c) Resonating messages linking alcohol with cancer: Finally, although in some ways similarly dismissed to the other health labels, it did appear that the cancer message was perceived as different to the other messages. Because this label was both new and unexpected information, it seemed that the message had the potential to make the participants stop and think:

Drinking less reduces your risks of getting seven types of cancer', ok, you've got my attention. Seven types of cancer that sounds incredibly ... risky now to be ... even touching the stuff doesn't it ... Yeah, I mean that's quantifiable, that's definitely got my attention ... I want to know which type of cancers, I want to know a lot more how much you can drink to be safe ... yeah, what less means. (Lisa)

You know, the cancer word is always a good one because people always go aahh cancer ... so this is quite good if you try and reduce drinking to actually just highlight that alcohol can lead to cancer, because you normally think of just alcohol related diseases mainly as sort of cirrhosis of the liver, maybe high blood pressure which can lead to heart disease and such like (George)

Further comparisons to tobacco were made by a number of the participants in relation to cancer. Although the information labels about heart disease and cancer were both similarly new information to many of the participants, the cancer message appeared to be more surprising:

That's a bit of a revelation that is... cancer, that's quite a scary, scary thing. Because you say well I don't smoke, so I don't get this cancer, I don't do this and I don't get that cancer, but seven types that's quite a lot. (Joseph).

DISCUSSION

This study explored how people interpreted responsible drinking messages on product labels and the relative acceptability of including health information on alcohol labels. The first identified theme was about ambiguity about alcohol labelling. Our findings reflect international studies showing that participants are critical of responsible drinking messages (Coomber et al., 2018; Dumbili et al., 2022) and builds on research that shows people interpret this kind of message in relating to drinking consequences (Stautz & Marteau, 2016) by showing how

justifying oneself as in control is also an important feature of responsibility.

Our findings also concurred with previous research on public misunderstanding of alcohol unit guidelines (De Visser & Birch, 2012; Martin-Moreno et al., 2013). Importantly, our findings also suggest a lack of trust in the science behind the use of units as a guideline for regulating consumption. The fact they already appear on products may further reduce perceptions of their usefulness as they may be seen as an industry tool. However, the perception of health information about alcohol as contradictory was also clearly influenced by the media. Alcohol industry perspectives are sometimes foregrounded in the media when health information is presented (Vallance, Vincent, et al., 2020), indicating that participants are probably right to be cynical. Media reporting often places blame on the consumer and may invoke feelings of guilt or worry (Rudge et al., 2021). However, this creates a problematic position where there are few sources of trustworthy information. The distrust of information already presented on labels (both responsibility statements and alcohol units), as well as the perceived contradictory nature of media stories on alcohol, all have implications for the believability and impact of including health information on labels.

The second theme was about identifying oneself as a responsible drinker. Responsible drinking messages present images of 'responsible drinkers' as cool, fun and sexy, particularly in advertisements. This challenges people to engage in complex identity negotiations, even when the source of the message is mistrusted (Gallage et al., 2020). To maintain a morally acceptable identity in the face of conflicting information, people often make concerted efforts to present themselves as good citizens (Gough et al., 2020) and as our participants appeared to do, to embrace the notion of oneself as a responsible, educated drinker. This can be demonstrated in the use of terms such as 'normal alcohol' and references to 'people who have drink problems'. Such moral comparisons have been demonstrated in other qualitative research; Melia et al.'s (2021) participants constructed themselves as responsible drinkers by positioning themselves as on the right side of a socially acceptable boundary between acceptable and unacceptable

behaviour. An important way for our participants to validate that they were on the right side of the line between 'good' and 'bad' drinkers, was to (attempt to) demonstrate their prior health awareness and to distance oneself from problem drinkers. As such, health messaging was considered to be for other people. These findings mirror Conroy et al. (2021) who showed how young adults maintained identities as 'light drinkers' despite conflicting disclosures during interviews. Similar to our participants, Conroy et al.'s participants distanced themselves from stigmatised groups such as 'alcoholics'. Even people who drink at harmful levels distance themselves from needing help due to the stigma of being labelled as a 'problem drinker' (Morris et al., 2022). Together these findings underscore the problems with health messaging of any source, not limited to labels. If people do not see themselves as the intended audience of the message, then they are unlikely to believe that their drinking behaviour needs to change.

The third theme was about the acceptability of enhanced product labelling. Smoking was positioned as an evidently much more dangerous behaviour than alcohol consumption, which served as a further discursive tactic for presenting one's consumption as unproblematic. Although some endorsed the use of shocking/graphic pictorial messages as seen on tobacco, most evidence suggests that although such messaging may grab people's attention, it has little impact on behaviour (Ruiter et al., 2014).

Participants also endorsed the use of calorie rather than health information, an approach that has been supported by other researchers (Martin-Moreno et al., 2013; Robinson et al., 2022). Although this may be useful information for some population groups, evidence shows that including calorie content on labels may be insufficient if the goal is change drinking behaviours (Maynard et al., 2018b). There may be iatrogenic effects of including calorie (and other) information. A review suggested that some people may increase their alcohol intake if they previously underestimated the calorie content of drinks (Martin-Moreno et al., 2013). Furthermore, recent legislation to require the inclusion of calorie information on restaurant menus has been criticised for exacerbating problems for people with eating disorders (Bailey et

al., 2022).

We acknowledge that even if health messages are used, and they change cognition, they may not change behaviour (e.g. de Visser et al., 2017). However, our evidence suggests that the salience of the cancer message warrants further attention. Our participants perceived the cancer label as more effective than the other health messages, similar to other studies (Winstock et al., 2020). This effect has ecological validity as demonstrated in a Canadian experiment conducted in state managed alcohol outlets. Purchasing fell in shops where information about alcohol and cancer was presented on the label, to the extent that the alcohol industry halted the study prematurely (Vallance, Stockwell, et al., 2020) . Notably, research indicated that during COVID-19 pandemic lockdown in the UK, an immunity - focused alcohol label message had a greater impact on motivation to adhere to intake guidelines than other health messages or a control message (Walker & de Visser, under revision).

Cancer can be a scary word, and as with other fear appeal messages, it may be ignored, or questioned. A further issue is that of coherence, which is the extent to which there is a clear explanation of the link between a cause and effect (Hall et al., 2004). It may be difficult to imagine the mechanism by which alcohol causes cancer, as demonstrated in studies on smoking and cervical cancer. A more detailed explanation of the link was found to improve perceptions of vulnerability to the risk (Hall et al., 2004). Interestingly, although heart disease remains the one of the leading causes of mortality in the UK (Bhatnagar et al., 2016), the heart disease message was seen as less relevant. This may also be due to a lack of coherence, and media stories often link red wine with heart benefits.

Implications

Our findings underscore the futility of responsible drinking messaging as a means of regulating drinking behaviours. Indeed, a systematic review of alcohol industry efforts to influence government policies showed that responsible drinking messaging was one of the most

important strategies used by the industry to indicate that it is not to blame for excessive consumption (Savell et al., 2016). Thus, we need to call time on an approach that neither the consumer nor the producer believe to be anything other than paying lip service to the notion of informing and educating people who drink alcohol, and replace these messages with something more salient and convincing to drinkers.

Research consistently points towards areas where public understanding is limited, including relating to the link between alcohol and cancers (e.g Buykx et al., 2016; Winstock et al., 2020). Responses to cancer-related messages suggested that any negative perceptions of the value of messages on labels could be countered if the specific messages were perceived to be unambiguous and relevant. Further to this, if the goal is to change behaviour, we may need to reconsider the drive to understand factors that would increase the effectiveness of alcohol product labelling, and instead move towards providing accurate and actionable health information in a wider range of contexts.

It is also important to consider how to address the binary view of problematic drinkers as other from the responsible self. People drinking at harmful levels often underestimate their alcohol consumption (Garnett et al., 2015) and may not seek support due to perceived stigma (Morris et al., 2022). These findings highlight an urgent need to explore ways to encourage people to accurately reflect on their drinking. In addition to 'responsibility', it would be useful to also explore 'moderation' and how this term is interpreted by people who regularly consume alcohol (Maani Hessari & Petticrew, 2018).

There is a lack of theoretically driven research on alcohol labelling (Hassan & Shiu, 2018), and moderators of intervention impacts more broadly are under researched (Rothman & Sheeran, 2021). Our findings may also have theoretical implications. The extent to which individuals identify as 'prototypical responsible drinkers' and the impact of such identification on receptivity to health messages and drinking plans could be explored using the Prototype

Willingness Model as a framework (Gerrard et al., 2008). Alternatively, the use of Protection Motivation Theory (Rogers, 1983) may illuminate the extent to which people appraise personal level of threat posed by information on alcohol labels (Webb et al., 2010). For example ascertaining how effective someone thinks reducing alcohol consumption would be at reducing their likelihood of developing cancer, heart disease or liver disease, or if reducing consumption incurs response costs, like missing out on social gains from drinking socially. Future studies could apply these theoretical models to predict variability in decision making linked to alcohol labelling.

Limitations

Our opportunistic sample consisted of a limited range of drinkers from one geographical area, and many worked at the host institution. They had a wide age range, but were not diverse in other sociodemographic characteristics, and indeed we did not collect data on factors that influence alcohol consumption such as cultural background, ethnicity and mental health status. A more purposive sample including a range of different demographic characteristics and people with differing patterns of alcohol consumption would allow for comparisons between groups to be explored, although this was beyond the scope of the current study. We presented the labels in one specific order and may have gained different insights had health labels been presented first. The labels themselves were developed for an experimental study to explore their relative impact on drinking intentions but this meant they may have lacked realism.

It is important to note that our previous experiences as alcohol researchers will have influenced our data interpretation. The interviewer would have been perceived by participants as someone with an interest in reducing alcohol consumption, which may have influenced their responses. However, effort was made in the interviews to encourage open discussion, and results show that participants did express a range of opinions.

Conclusions

Responsible drinking messages were perceived as ambiguous, unlikely to change drinking behaviours, and as part of a ploy by the alcohol industry to be seen to be caring about consumers without taking tangible action. Although health messages were seen as potentially more impactful, especially those about cancer, the ability of consumers to position themselves as on the right side of the line between good and problematic drinkers means that they would be unlikely to be heeded even if placed on alcohol products. An understanding of the factors that increase the personal relevance of messages is needed, alongside an exploration of a wider range of avenues for alcohol health communications.

REFERENCES

- Bailey, R. L., Kwon, K., Garcia, C., & Wang, P. (2022, 2022/06/01/). Fast food menu calorie labeling contexts as complex contributing factors to overeating. *Appetite*, *173*, 105992. <https://doi.org/https://doi.org/10.1016/j.appet.2022.105992>
- Bhatnagar, P., Wickramasinghe, K., Wilkins, E., & Townsend, N. (2016). Trends in the epidemiology of cardiovascular disease in the UK. *Heart*, *102*(24), 1945-1952. <https://doi.org/10.1136/heartjnl-2016-309573>
- Blackwell, A., Clarke, N., Pechey, E., & Attwood, A. (2021). Alcohol labelling: Evidence for product information interventions. In R. Cooke, D. Conroy, E. L. Davies, M. Hagger, & R. de Visser (Eds.), *The Palgrave Handbook of Psychological Perspectives on Alcohol Consumption*. Palgrave.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77-101.
- Braun, V., & Clarke, V. (2019, 2019/08/08). Reflecting on reflexive thematic analysis. *Qualitative Research in Sport, Exercise and Health*, *11*(4), 589-597. <https://doi.org/10.1080/2159676X.2019.1628806>
- Buykx, P., Li, J., Gavens, L., Hooper, L., Lovatt, M., Gomes de Matos, E., Meier, P., & Holmes, J. (2016, 2016/11/30). Public awareness of the link between alcohol and cancer in England in 2015: a population-based survey. *Bmc Public Health*, *16*(1), 1194. <https://doi.org/10.1186/s12889-016-3855-6>
- Conroy, D., Griffin, C., & Morton, C. (2021). Defending, contesting and rejecting formal drinker categories: how UK university students identify as 'light-drinkers' or 'non-drinkers'. *Drugs: Education, Prevention and Policy*, 1-10. <https://doi.org/10.1080/09687637.2021.1929078>
- Coomber, K., Hayley, A., Giorgi, C., & Miller, P. G. (2017, 2017/10/01). A Qualitative Investigation of Australian Young Adult Responses to Pictorial and Graphic Alcohol Product Warnings. *Journal of Drug Issues*, *47*(4), 622-637. <https://doi.org/10.1177/0022042617719443>
- Coomber, K., Hayley, A., & Miller, P. G. (2018, 2018/06/01). Unconvincing and ineffective: Young adult responses to current Australian alcohol product warnings. *Australian Journal of Psychology*, *70*(2), 131-138. <https://doi.org/10.1111/ajpy.12177>
- de Visser, R., Brown, C., Cooke, R., Cooper, G., & Memon, A. (2017). Using Alcohol Unit-marked Glasses Enhances Capacity To Monitor Intake: Evidence From a Mixed-method Intervention Trial. *Alcohol and Alcoholism*, *52*(2), 206-212. <https://doi.org/10.1093/alcalc/agw084>

- De Visser, R. O., & Birch, J. D. (2012, Mar). My cup runneth over: Young people's lack of knowledge of low-risk drinking guidelines. *Drug and Alcohol Review*, 31(2), 206-212. <https://doi.org/10.1111/j.1465-3362.2011.00371.x>
- Department of Health. (2011). *Public Health Responsibility Deal: Alcohol Pledges*. <https://www.gov.uk/government/news/public-health-responsibility-deal>
- Department of Health & Social Care. (2021). *Tobacco packaging guidance*.
- Dumbili, E. W., Uwa-Robinson, K., & Odeigah, O. W. (2022, 2022/05/01/). Making sense of “drink responsibly” messages: Explorations of the understanding and interpretations of young Nigerians who use alcohol. *International Journal of Drug Policy*, 103, 103646. <https://doi.org/https://doi.org/10.1016/j.drugpo.2022.103646>
- Gallage, H. P. S., Heath, T., & Tynan, C. (2020, 2020/11/21). Adopting and sustaining responsible drinking: reconciling selves amidst conflicting messages. *Journal of Marketing Management*, 36(17-18), 1635-1657. <https://doi.org/10.1080/0267257X.2020.1857819>
- Garnett, C., Crane, D., West, R., Michie, S., Brown, J., & Winstock, A. (2015, 2015-Mar). Normative misperceptions about alcohol use in the general population of drinkers: A cross-sectional survey. *Addictive Behaviors*, 42, 203-206. <https://doi.org/10.1016/j.addbeh.2014.11.010>
- GBD 2016 Alcohol Collaborators. (2018). Alcohol use and burden for 195 countries and territories, 1990- 2016: a systematic analysis for the Global Burden of Disease Study 2016. *The Lancet*, 392(10152), 1015-1035. [https://doi.org/10.1016/S0140-6736\(18\)31310-2](https://doi.org/10.1016/S0140-6736(18)31310-2)
- Gerrard, M., Gibbons, F. X., Houlihan, A. E., Stock, M. L., & Pomery, E. A. (2008, Mar). A dual-process approach to health risk decision making: The prototype willingness model. *Developmental Review*, 28(1), 29-61. <https://doi.org/10.1016/j.dr.2007.10.001>
- Gough, B., Madden, M., Morris, S., Atkin, K., & McCambridge, J. (2020, Mar 1). How do older people normalise their drinking?: An analysis of interviewee accounts. *Appetite*, 146, 104513. <https://doi.org/10.1016/j.appet.2019.104513>
- Hall, S., Weinman, J., & Marteau, T. M. (2004, Jul). The motivating impact of informing women smokers of a link between smoking and cervical cancer: the role of coherence. *Health Psychol*, 23(4), 419-424. <https://doi.org/10.1037/0278-6133.23.4.419>
- Hassan, L. M., & Shiu, E. (2018). A systematic review of the efficacy of alcohol warning labels. *Journal of Social Marketing*, 8(3), 333-352. <https://doi.org/10.1108/JSOCM-03-2017-0020>
- Khadjesari, Z., White, I. R., McCambridge, J., Marston, L., Wallace, P., Godfrey, C., & Murray, E. (2017, 2017/01/04). Validation of the AUDIT-C in adults seeking help with their

drinking online. *Addiction Science & Clinical Practice*, 12(1), 2.
<https://doi.org/10.1186/s13722-016-0066-5>

Laslett, A. M., Catalano, P., Chikritzhs, T., Dale, C., Doran, C., Ferris, J., Jainullabudeen, T., Livingston, M., & Matthews, S. (2010). *The range and magnitude of alcohol's harm to others*. A. E. a. R. Foundation. <http://www.fare.org.au/wp-content/uploads/research/The-Range-and-Magnitude-of-Alcohols-Harm-to-Others.pdf>

Maani Hessari, N., & Petticrew, M. (2018). What does the alcohol industry mean by 'Responsible drinking'? A comparative analysis. *Journal of Public Health*, 40(1), 90-97.
<https://doi.org/10.1093/pubmed/fox040>

Malterud, K., Siersma, V. D., & Guassora, A. D. (2015, 2016/11/01). Sample Size in Qualitative Interview Studies: Guided by Information Power. *Qualitative Health Research*, 26(13), 1753-1760. <https://doi.org/10.1177/1049732315617444>

Martin-Moreno, J. M., Harris, M. E., Breda, J., Møller, L., Alfonso-Sanchez, J. L., & Gorgojo, L. (2013). Enhanced labelling on alcoholic drinks: reviewing the evidence to guide alcohol policy. *European Journal of Public Health*, 23(6), 1082-1087.
<https://doi.org/10.1093/eurpub/ckt046>

Melia, C., Kent, A., Meredith, J., & Lamont, A. (2021, 2021/12/01/). Constructing and negotiating boundaries of morally acceptable alcohol use: A discursive psychology of justifying alcohol consumption. *Addictive Behaviors*, 123, 107057.
<https://doi.org/https://doi.org/10.1016/j.addbeh.2021.107057>

Morris, J., Moss, A. C., Albery, I. P., & Heather, N. (2022, 2022/01/01/). The "alcoholic other": Harmful drinkers resist problem recognition to manage identity threat. *Addictive Behaviors*, 124, 107093.
<https://doi.org/https://doi.org/10.1016/j.addbeh.2021.107093>

Moss, A. C., Albery, I. P., Dyer, K. R., Frings, D., Humphreys, K., Inkelaar, T., Harding, E., & Speller, A. (2015, 2015/05/01/). The effects of responsible drinking messages on attentional allocation and drinking behaviour. *Addictive Behaviors*, 44, 94-101.
<https://doi.org/http://dx.doi.org/10.1016/j.addbeh.2014.11.035>

Petticrew, M., Douglas, N., Knai, C., Durand, M. A., Eastmure, E., & Mays, N. (2016, Jan). Health information on alcoholic beverage containers: has the alcohol industry's pledge in England to improve labelling been met? *Addiction*, 111(1), 51-55.
<https://doi.org/10.1111/add.13094>

Robinson, E., Smith, J., & Jones, A. (2022, 2022/02/01). The effect of calorie and physical activity equivalent labelling of alcoholic drinks on drinking intentions in participants of higher and lower socioeconomic position: An experimental study [<https://doi.org/10.1111/bjhp.12527>]. *British Journal of Health Psychology*, 27(1), 30-49. <https://doi.org/https://doi.org/10.1111/bjhp.12527>

- Rogers, R. W. (1983). Cognitive and physiological processes in fear appeals and attitude change: a revised theory of protection motivation. In J. T. C. R. E. Petty (Ed.), *Social Psychophysiology: A sourcebook*, (pp. 153-176). Guildford Press.
- Rothman, A. J., & Sheeran, P. (2021, Dec). The operating conditions framework: Integrating mechanisms and moderators in health behavior interventions. *Health Psychol*, *40*(12), 845-857. <https://doi.org/10.1037/hea0001026>
- Roznowski, J. L., & Eckert, J. A. (2006, 2006/03/01). Exploring what "Drink Responsibly" Means to College Students. *Journal of Current Issues & Research in Advertising*, *28*(1), 19-30. <https://doi.org/10.1080/10641734.2006.10505188>
- Rudge, A., Foley, K., Lunnay, B., Miller, E. R., Batchelor, S., & Ward, P. R. (2021). How Are the Links between Alcohol Consumption and Breast Cancer Portrayed in Australian Newspapers?: A Paired Thematic and Framing Media Analysis. *International Journal of Environmental Research and Public Health*, *18*(14), 7657. <https://www.mdpi.com/1660-4601/18/14/7657>
- Ruiter, R. A. C., Kessels, L. T. E., Peters, G.-J. Y., & Kok, G. (2014, 2014/04/01). Sixty years of fear appeal research: Current state of the evidence [<https://doi.org/10.1002/ijop.12042>]. *International Journal of Psychology*, *49*(2), 63-70. <https://doi.org/https://doi.org/10.1002/ijop.12042>
- Saunders, J. B., Assland, O. G., Babor, T., Fuente, J. R., & Grant, M. (1993, 1993//). Development of the Alcohol Use Disorders Identification Test (AUDIT): WHO collaborative project on early detection of persons with harmful alcohol consumption—II. *Addiction*, *88*. <https://doi.org/10.1111/j.1360-0443.1993.tb02093.x>
- Savell, E., Fooks, G., & Gilmore, A. B. (2016, 2016/01/01). How does the alcohol industry attempt to influence marketing regulations? A systematic review [<https://doi.org/10.1111/add.13048>]. *Addiction*, *111*(1), 18-32. <https://doi.org/https://doi.org/10.1111/add.13048>
- Smith, S. W., Atkin, C. K., & Roznowski, J. (2006). Are "drink responsibly" alcohol campaigns strategically ambiguous? *Health Commun*, *20*(1), 1-11. https://doi.org/10.1207/s15327027hc2001_1
- Stautz, K., & Marteau, T. M. (2016, 2016//). Viewing alcohol warning advertising reduces urges to drink in young adults: an online experiment. *Bmc Public Health*, *16*(1), 1-10. <https://doi.org/10.1186/s12889-016-3192-9>
- Terry, G., Hayfield, N., Clarke, V., & Braun, V. (2017). Thematic analysis. *The SAGE handbook of qualitative research in psychology*, *2*, 17-37.
- Vallance, K., Stockwell, T., Hammond, D., Shokar, S., Schoueri-Mychasiw, N., Greenfield, T., McGavock, J., Zhao, J., Weerasinghe, A., & Hobin, E. (2020). Testing the Effectiveness of Enhanced Alcohol Warning Labels and Modifications Resulting From Alcohol Industry

Interference in Yukon, Canada: Protocol for a Quasi-Experimental Study [Protocol]. *JMIR Res Protoc*, 9(1), e16320. <https://doi.org/10.2196/16320>

Vallance, K., Vincent, A., Schoueri-Mychasiw, N., Stockwell, T., Hammond, D., Greenfield, T. K., McGavock, J., & Hobin, E. (2020). News Media and the Influence of the Alcohol Industry: An Analysis of Media Coverage of Alcohol Warning Labels With a Cancer Message in Canada and Ireland. *Journal of Studies on Alcohol and Drugs*, 81(2), 273-283. <https://doi.org/10.15288/jsad.2020.81.273>

Walker, F. C., & de Visser, R. O. (under revision). Messages focused on the effect of alcohol on the immune system boosted intention to adhere to alcohol intake guidelines during Covid-19 lockdown. *Psychology & Health*.

Webb, T. L., Sniehotta, F. F., & Michie, S. (2010, Nov). Using theories of behaviour change to inform interventions for addictive behaviours. *Addiction*, 105(11), 1879-1892. <https://doi.org/10.1111/j.1360-0443.2010.03028.x>

WHO. (2018). *Global status report on alcohol and health 2018*.

Winstock, A. R., Holmes, J., Ferris, J. A., & Davies, E. L. (2020). Perceptions of alcohol health warning labels in a large international cross sectional survey of people who drink alcohol. *Alcohol & Alcoholism*. <https://doi.org/https://doi.org/10.1093/alcalc/agz099>

TABLES

Table 1: *Participant characteristics*

Pseudonym	Age	Gender	Education	AUDIT-C
Alice	26	Female	Current UG student	8
Arun	49	Male	UG	4
Cara	34	Female	UG	8
Ella	21	Female	Current UG student	9
George	52	Male	A - Level	10
Izzy	35	Female	UG	5
Jack	28	Male	PG	6
Jamie	39	Male	UG	3
John	34	Male	UG	8
Joseph	54	Male	A - level	9
Katherine	57	Female	PG	5
Kim	40	Female	PG	8
Lisa	54	Female	PG	4
Liz	63	Female	UG	4
Louise	38	Female	UG	8
Molly	27	Female	UG	7
Robert	43	Male	UG	10
Sue	54	Female	A - Level	4
Tom	43	Male	UG	7
Will	33	Male	PG	5

Table 2: *Interview schedule*

Opening questions

So, as you know, in this interview we are going to be talking about alcohol and health information.

Can you start by telling me a little bit about when you would normally drink alcohol and what kinds of products you drink

On those products - What information do you see on alcohol labels?

What do you think about it? (prompt – what does it mean?).

(if not mentioned) Have you seen information about alcohol units on labels? What do you think about this? The alcohol unit guidelines?

Prompt: The guidelines are that men and women should not drink more than 14 units each week.

Prompt: Do you use these guidelines? Do you think people are aware of them?

Central questions

Materials shown to participant one at a time positive, then negative, then ambiguous.

For each one:

Can you tell me what you think of this information?

Prompts: Have you come across it before?

Who is this information aimed at?

What does it mean to you?

How does the information compare between the three sets of labels?

Prompts: Why, give an example, is it something you think other people are aware of.

What does it make you think about?

If there was a requirement that alcohol products had to have this kind of information on them – how acceptable would you / people you know find this?

Prompts: What kind of information would be most effective? / Least effective?

Where should the information be presented?

At the moment, health messages like these do not appear on alcohol products. What would you think if they did? Who is responsible for telling people about health risks?

Prompt: What about the alcohol industry? (if not mentioned).

Ending question

Do you have anything else you would like to add about the materials you have seen, or the topic we have been talking about?

Table 3: *Main themes and sub-themes identified in the analysis*

Main theme	Sub-themes
Ambiguity about alcohol labelling.	The meaning of responsible drinking messages
	Interpretation of guidelines
	Conflicting media information
Identifying oneself as responsible.	Demonstrating alcohol health knowledge
	Othering heavy drinkers
Acceptability of enhanced product labelling	Industry perceptions
	Resistance to health labels
	Resonating messages linking alcohol with cancer.

Ambiguous

People should enjoy drinking alcohol responsibly.

Everyone should know their own limits when it comes to alcohol consumption.

It is important that people stay in control of their own drinking.



Positive (gain framed) messages

Drinking less reduces your risks of getting seven types of cancer

Regular alcohol-free days are good for your liver. Try to have at least two alcohol-free days per week

You can reduce your risk of dying from heart disease by drinking less alcohol



Negative (loss framed) messages

Alcohol increases your risks of getting seven types of cancer

Drinking alcohol every day is harmful to your liver. Try to have at least two alcohol-free days per week

You are more likely to die from heart disease if you are a heavy drinker



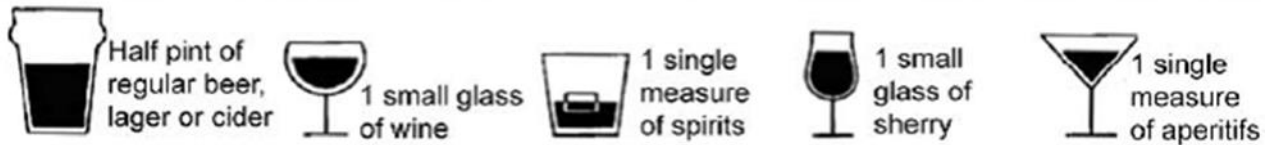
Figure 1: Alcohol health warning labels presented to interview participants

Supplementary file 1. Participant details form.

Participant ID
Gender
Age (years) (months)
Educational attainment (as proxy for SES)	<input type="radio"/> Postgraduate education (master's degree, doctorate or professional/vocational equivalent) <input type="radio"/> Undergraduate education (bachelor's degree or professional/vocational equivalent) <input type="radio"/> A levels, vocational level 3 and equivalents <input type="radio"/> GCSE/O Level grade A* to C, vocational level 2 and equivalents <input type="radio"/> Qualifications at level 1 and below <input type="radio"/> Other qualifications <input type="radio"/> No qualifications
AUDIT-C measures	Q1 Q2..... Q3..... Total score.....
Consent form received	<input type="radio"/>
Date

AUDIT-C

This is **one unit** of alcohol:



And each of these is **more than one unit**:



Q1. How often do you have a drink containing alcohol?

- a) Never
- b) Monthly or less
- c) 2 - 4 times a month
- d) 2 - 3 times a week
- e) 4 or more times a week

Q2. How many units of alcohol do you drink on a typical day when you are drinking?

- a) 1-2
- b) 3-4
- c) 5-6
- d) 7-9
- e) 10 or more

Q3: How often do you have six or more units (women) or eight or more units (men) on one occasion?

- a) Never
- b) Less than monthly
- c) Monthly
- d) Weekly
- e) Daily or almost daily

