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RESEARCH ARTICLE

'Everything causes cancer': How Australians respond to the message that alcohol causes cancer

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Over 5000 Australians are diagnosed with alcohol-related cancers annually, with growing evidence that low-levels of chronic alcohol consumption significantly increases cancer risk. Public knowledge of the link between alcohol and cancer is limited, and therefore, alcohol consumers may be inadvertently putting themselves at increased risk of developing cancer. Informing the community of alcohol-related cancer risk is important to reduce the burden of disease, however, the message that alcohol causes cancer may challenge current understanding of the risks and benefits associated with alcohol consumption. We examine how Australian adults who self-identify as light-to-moderate alcohol consumers, respond to the message that alcohol causes cancer. Seven focus-groups with males and females aged between 18 and 65 years of age were audio-visually recorded, with transcripts thematically analysed within a social constructionist epistemology informed by critical realism. Cancer was represented as an inevitable part of life and something over which participants had no control: consequently, altering alcohol consumption to reduce cancer risk was not justifiable. Participants worked to present themselves as 'normal' consumers of alcohol by recounting personal experiences and depicting an obligation to uphold societal expectations to consume alcohol. Through the construction of cancer as an inescapable disease, and their own alcohol consumption as unproblematic and socially sanctioned, participants were able to resist the message that alcohol causes cancer, and any implied need to alter personal alcohol consumption to reduce the risk of cancer.

Keywords: Alcohol, cancer, warning labels, Australia, qualitative analysis

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Introduction

Cancer is one of the leading causes of death worldwide (Torre et al., 2015); yet nearly one third of all cancers can be attributed to modifiable lifestyle factors (Rehm et al., 2009), and thus are, in principle, avoidable (Khan, Afaq, & Mukhtar, 2010). The World Cancer Research Fund has reported that 2.8 million cases of cancer globally could be eliminated by improving lifestyle practices (Ferlay et al., 2010).

One modifiable lifestyle choice is consumption of alcohol. Alcohol is a group-1 carcinogen (World Health Organisation (WHO), 2010), and one of the largest risk factors for disease burden (Borges et al., 2013). In Australia, it is estimated that over 5000 cases of cancer can be attributed to chronic alcohol use each year (Winstanley et al., 2011), with 1400 of these resulting in death (Cancer Council Australia (CCA), 2016). Light-to-moderate consumption of alcohol has been associated with the following cancers: mouth and oropharyngeal, pharynx, larynx, oesophageal, liver, bowel, breast (in women), and prostate (in men) (World Cancer Research Foundation (WCRF), 2007).

Despite clear evidence of harm, the health effects of alcohol consumption are contested. Some have suggested that consumption of red wine is associated with lower mortality and reduction in heart-disease (Ronksley, Brien, Turner, Mukamal, & Ghali, 2011) others, however, have asserted that the reported benefits of red wine are specific to cardiovascular disease, and consuming red wine does not protect for other conditions, including cancer (Chiuve et al., 2010). With regard to cancer, there is no evidence to suggest that risk differs with the types of alcohol consumed, for example between red wine or beer (Chen, Rosner, Hankinson, Colditz, & Willett, 2011), or that there is a safe limit of alcohol consumption for avoiding cancer (WCRF, 2007). Some researchers have argued that regular consumption of as little as 5g of alcohol daily can result in modest increases in cancer risk (e.g. Chen et al., 2011), and that there is a linear dose-response relationship between chronic alcohol consumption and the risk of attributable death, which starts at zero (Winstanley et al., 2011).

Awareness that alcohol is a harmful substance is not new: alcohol-related health problems have been internationally recognised for decades (Room, Babor, & Rehm, 2005). Many hazards associated with alcohol consumption (e.g. drink driving, drinking during pregnancy, violence) are well publicised through health promotion campaigns (Miller, 2016), and public knowledge and awareness of other alcohol-related health risks (e.g. liver cirrhosis, brain damage etc.) is high (Thomson, Vandenberg, & Fitzgerald, 2012). Knowledge of the link between alcohol and cancer, however, is poor, and therefore consumers may be inadvertently putting themselves at risk (Benedetti, Parent, & Siemiatycki, 2009). Public health campaigns may be one way to inform the public that alcohol causes cancer, and warning labels are deemed to be a cost-effective strategy that has a high level of public and political support (Stockwell, 2006). In Australia there is impetus to introduce mandated warning labels on alcohol bottles and containers that include information about the risk of

cancer (Blewett, Goddard, Pettigrew, Reynolds, & Yeatman, 2011): however, several factors may impact the acceptability and efficacy of such messages.

One factor is the cultural and social significance of alcohol within society (Babor et al., 2010). Alcohol is one of the most widely used drugs in Australia, with over 80% of the population reporting to consume alcohol (Health & Welfare, 2011), which, compared to world standards, is high (WHO, 2014). The ubiquity of alcohol is such that, in Australian vernacular, 'drinking' is synonymous with alcohol consumption (Foundation for Alcohol Research & Education, 2016). People consume alcohol for a variety of complex and diverse reasons: for example, to celebrate (births, marriages), and commiserate (death, war), to be sociable, because of peer pressure, for cultural or religious participation, to become intoxicated, or due to addiction (Australian Chronic Disease Prevention Alliance, 2011). Moreover, exposure to alcohol advertising through multiple media and social platforms (e.g. television, Facebook, Twitter, etc.) contributes to the cultural construction and consolidation of social norms around drinking (Australian Government, 2014; Cavazos-Rehg, Krauss, Sowles, & Bierut, 2015). The alcohol industry promotes positive associations with drinking through media, television, sponsorship of music festivals, sporting events, and so on (Australian Drug Foundation, 2012)—which is known to have an inauspicious influence on young people's drinking behaviours (Atkinson, Elliot, Ellis, & Sumnall, 2011). With alcohol embedded in these cultural and social rituals, disseminating health information that warns of the risk of alcohol-related cancer may challenge some perceived benefits and cultural experiences associated with alcohol consumption.

Additionally, health campaigns that are designed to alter community awareness of harmful lifestyle choices, may influence knowledge and attitudes, but have limited impact on behaviour (Jochelson, 2006). Somewhat problematically, this method of communicating health information (though cost-effective and far-reaching) anticipates that the recipient has the skills, capacity, resources, and autonomy necessary to promote and protect personal health (Ajzen, 1991; World Health Organisation (WHO), 2014). Furthermore, negotiating risk, given the abundance of health information available, is often challenging (Ahmed, Naik, Willoughby, & Edwards, 2012; Wu & Ahn, 2010). Finally, the community may perceive any government intervention as 'nanny statist' and an unnecessary invasion into people's lives (Calman, 2009).

Investigation is needed to explore perceptions of the Australian public about the benefits and risks of consuming alcohol, and how the message that alcohol causes cancer is interpreted and understood. A comprehensive analysis of the impact that information warning of alcohol-related cancer is best achieved through the use of qualitative research methods (C. Wilkinson & R. Room, 2009), that facilitate analysis of the complexity of concepts, or social processes, pertaining to alcohol and cancer.

In this article we examine how Australian males and females, aged between 18 and 65, respond to the information that alcohol causes cancer. Focus group data (38 participants)

were thematically analysed within a social constructionism epistemology (Sargent, 1973), informed by ideas from critical realism (Dingle, 1980). This methodology allowed for acknowledgment that there may be a reality, (e.g. alcohol has a biological effect), but what can be known about the reality is socially constructed through language (Potter, 1996b). Here, we consider the role that language plays in the production (and reproduction) of alcohol consumption, cancer, and how health messages are understood (Keane, 2009).

Method

Based on our purposive sampling strategy (i.e. stratified by age and gender), thirty-eight participants who self-identified as light-to-moderate consumers of alcohol were recruited via a professional market research agency in Adelaide, South Australia. Database members were contacted by telephone and invited to partake in a group discussion about alcohol-related cancer, and the proposed introduction of warning labels on alcoholic beverages. Additional information (which included location of the study, privacy of information, remuneration for time and associated costs, etc.) was then sent to potential participants by post. All personal details such as names and contact details were not made available to the investigators.

Research has suggested that alcohol consumption, (Australian Bureau of Statistics, 2012; Wilsnack, Wilsnack, Kristjanson, Vogeltanz-Holm, & Gmel, 2009), as well as attitudes toward both alcohol (e.g. Callinan, Room, & Livingston, 2014) and cancer (e.g. Murray & McMillan, 1993; Vrinten, van Jaarsveld, Waller, von Wagner, & Wardle, 2014) may differ according to gender and age. Therefore, homogeneous groups (i.e. two all-male, and two all-female groups with individuals aged 25 to 35 years old; one all-male, and one all-female group with people aged 55 to 65 years old; and one mixed gender group of 18 to 24 year olds) were created to explore any common threads within and between these two demographic characteristics (Vaughn, Schumm, & Sinagub, 1996).

The audio and visually recorded sessions lasted approximately 90 minutes. Focus-group recordings were orthographically transcribed, and entered into the qualitative computer program NVIVO-10 (Richards, 1999). We used qualitative analytic techniques (e.g. Potter, 1996a) to examine the discursive construction of resistance (e.g. see Crossley, 2003; Wilson & Stapleton, 2007) to the message that alcohol causes cancer, and any implied need to alter personal alcohol consumption to reduce the risk of cancer. The extracts presented in this paper were selected as the most relevant and concise examples of the primary themes, illustrating discursive strategies used by focus-group participants.

Results

Thematic Analysis, within a social constructionist paradigm (Braun & Clarke, 2013) informed by critical realist ideologies (Sargent, 1973), was employed to investigate repeated patterns of meaning, and identify two dominant themes within the data: (a) the uncontrollability of cancer, and (b) the normalising of alcohol consumption. The following analysis is presented

in two sections. The first focuses on respondents' construction of cancer as unavoidable, thereby rendering behaviour change as futile; the second, on how focus-group members provided accounts of their own drinking practices that worked to 'normalise' these practices within society.

Cancer is unavoidable: therefore, behaviour change is futile

In each focus-group, participants described cancer as an unavoidable disease, and implied the futility of efforts to avoid cancer.

Extract 1 (Females 25-35)

Madison:	I would say over time, any alcohol would do it, but I'm a big anything causes cancer type of person (*laughs*)
Kirsten:	But then in the society everything causes cancer, so...

Extract 2 (Females 25-35)

Jenny:	I guess I'm in denial about a lot of health warnings I mean you see them on everything but, and because cancer's thrown around as so many things causing cancer, um,
Gabby:	People are desensitised to it and oh it's just another thing that causes cancer
Kirsten:	It's like mobile phones and this and that and everything else

Extract 3 (Males 55-65)

Craig:	So [it] came as news to me, but when you think about it well everything causes cancer no matter what you eat or drink or breathe

Extract 4 (Males & Females 18-24)

Usher	I think yet another one to add to the list
Rhys	Then again what doesn't cause cancer, coffee causes cancer, sunscreen causes cancer, probably taking a bath causes cancer
Victoria	Everything can cause cancer

Participants commonly stated that, '*everything' or 'anything'* 'causes, cancer' (e.g. Extract 1), and '(alcohol is) *just another thing*' that causes cancer' (Extract 2). These statements typically followed the question, 'What is the first thing that comes to mind when I say alcohol causes cancer?' The frequency of these responses suggests that this type of counter-argument is readily available, and may be indicative of a dominant perception about cancer. Other features of their conversation also support this interpretation.

Using phrases such as '*everything* causing cancer' and '*anything* causes cancer', has enabled participants to draw upon elements of a previously-used grammatical construction (i.e. in the question) to create a new meaning. This rhetorical strategy, known as *parallelism* (Van Dijk, 1997), is the act of repeating or mimicking syntactic sentence structure, and is argued to be one way that people 'draw attention to preferred meanings' (Van Dijk, 1997, p. 35) or make a message 'sound different' (Potter, 1996b). Moreover, replacing 'alcohol' with '*everything'* or '*anything'* facilitates the discursive use of vagueness: 'alcohol' is a specific description of a

cancer-causing product, whereas 'everything' is a vague description (Drew & Holt, 1998). Thus, whilst the message that alcohol causes cancer is prescriptive, and implies that consumption could be modified to reduce the risk of cancer, changing the meaning to '*everything*' or '*anything*' causes cancer, alters the focus of what causes cancer, and challenges the rationale of changing one behaviour, when all behaviours cause cancer.

In addition, broadening the message to infer that '*everything'* or '*anything'* causes cancer might have aided in weakening the alcohol causes cancer message through creating ambiguity; an ambiguous or vague message (or account) can be more easily undermined or ridiculed, and less easily challenged by specific facts or information (Potter, 1996b). Potter (1996b) has argued that rhetorical vagueness can be used in situations where someone is withholding support or agreement. Indeed, there were many occasions where participants talk worked to resist the message that alcohol causes cancer.

Such resistance was achieved in part through the use of *extreme case formulations* (ECF) (Basham, 2010), and *hyperboles* and *metaphors* (e.g. Lakoff & Johnson, 2008). For example, the inclusion of the extreme descriptors of '*everything'* and '*anything'* in this context, is rhetorically constructive in quantifying the enormity of the things that cause cancer. Here, it is not merely that *some* things cause cancer – *everything* or *anything* does, which enables the respondent to maintain the position that cancer is inescapable, and therefore attempts to avoid it, futile.

Some participants used hyperboles and metaphors to make inappropriate and exaggerated analogies to the alcohol causes cancer message (e.g. Lakoff & Johnson, 2008), again weakening the impact of this message. For example:

Extract 5 (Group 1 – Females 25-35)

Danielle	It's to me it's like <u>really</u>? The alcohol this time, are you gonna tell me eating a toothpick's gonna cause cancer?

Extract 6 (Group 5 – Males 25-35)

Harry	my boss turns around and goes, oh next water will be creating cancer Oh and the other the other comment that I got at work was and when are they putting a label on the sun?

By offering a list of banal things that are unlikely to cause cancer (e.g. water, air, toothpick, coffee, etc.; see also Extracts 3 & 4), and representing them as being unsafe, respondents essentially put forth a straw-man argument (Talisse & Aikin, 2006). The use of these flawed, extreme, responses work to weaken the intended message and resist any implied need for change.

The hyperboles and metaphors used by participants were often incorporated into a *three-part list* to 'emphasis(e) the generality of something' (Potter, 1996b, p. 197). Craig, for example, presented a position that '…everything causes cancer no matter what you eat or

drink or breathe' (Extract 3). Similarly, Rhys (Extract 4), claims that coffee, sunscreen, and 'probably taking a bath causes cancer.' The use of a three-part list thus facilitated the construction of normal and necessary activities as possible causes of cancer. Such language works both to buttress their assertions that '*everything* causes cancer', and the use of a straw-man argument (Talisse & Aikin, 2006). Kirsten (Extract 1) also employed a three-part list use of - 'this and that and everything else.' In addition to providing an endorsement of Madison's contention that 'anything causes cancer,' the vagueness of her description of cancer-causing agents, works to avert criticism for providing incorrect information.

Overall, within these participants' speech, the theme that *cancer is unavoidable* works to establish resistance to the message that alcohol causes cancer, and any implied need to change drinking behaviours. In this context, it functioned to position the individual such that even if they wanted to change their behaviour to avoid cancer, this would not be possible due to the enormity and uncertainty of what causes cancer. As a consequence, the individual can discursively excuse themselves from taking action to reduce the risk of cancer and not modify alcohol consumption to heed the warning.

The normalisation of alcohol consumption to justify drinking practices

To further demonstrate the impracticality of altering alcohol intake to reduce cancer risk, participants worked to normalise both personal alcohol consumption, and alcohol in society. This was achieved, first, by depicting drinking as a normal and necessary part of life; and second, through the presentation of self as a prototypical and responsible consumer of alcohol.

Extract 7 (Males & Females 18-24)

Willow There's certain people in my friendship group that I'm only friends with because they drink ……. in this last month I've had something on every single weekend like whether it be weddings, birthdays, engagements, everything. And with my family and the friends, like friends that have I've got, its, it's kind of like a given, you have to drink um so I think in the last month I reckon I've got drunk every weekend and it sounds really bad, sounds really terrible

Extract 8 (Females 25-35)

Danielle …and I'm not doubting it at all, um, but like, I drink probably also a bit differently, like my work involves, not really drinking, but networking, and it's during the day as well, and I am not saying you have to have a drink, but at lunch time, when you are out at dinner, like at a formal table, and everyone's drinking, it does a) ease the conversation, and b) yea we just do do it generally, so yea

Extract 9 (Females 55-65)

Theresa I did drink, so um, but not every night, just at weekends socially and everything, and when you sorta start cutting back, there's a

lot of peer pressure, they're going 'oh, go on, have one' and so I sort of realised that I'd have to pour a drink and pretend I was drinking it, like, as long as they saw a glass in front of me they were happy, but then if I didn't have it, they were think I wasn't being very sociable

Participants' talk here illustrates the implicit social obligations associated with alcohol consumption. Danielle describes drinking alcohol as a necessary part of her job – and as 'not really drinking, but networking' (Extract 8). Others reported the same obligations when attending social events, and expressed some of the problematic consequences of not drinking, for example, criticism for being unsociable. Here, alcohol consumption is being normalised as a necessary and required part of participants' life, with no 'choice' but to drink. Such talk works to position individuals as prototypical in-group members with shared ideologies, such that their alcohol consumption is necessary for them to meet their in-group responsibilities (Buvik & Sagvaag, 2012). Danielle does not explicitly state that there is no alternative but to consume alcohol, rather, asserting 'I'm not saying that you have to drink', but she has carefully negotiated her speech in order for it to be inferred. In all, people within this focus-group setting were working to problematise the position of *not* drinking, and to portray the out-group position (i.e. someone who does not participate in 'normalised' drinking practices), as undesired.

Furthermore, participants' accounts of past drinking behaviours worked to normalise both former alcohol consumption and current practices. Following the prompt question "How much do you drink?" participants' responses typically included an explanation that their current alcohol consumption was much less than it had been in the past

Extract 10 (Group 5 – Males 25-35)

Harry I am not a big drinker um I used to be when I was younger um but you know I've got kids and a wife and all that kind of stuff and you just don't go out and get drunk

Extract 11 (Group 7 – Males & Females 18-24)

Xanthia ….. I used to drink a lot more when I was younger

Participants, regardless of age, declared that they drank ('a lot') more when they were younger than they do now. This talk facilitated their positioning as prototypical in-group members, by implicitly constructing 'others' (i.e. youth) as behaving recklessly, in contrast to themselves (i.e. adults), who drink responsibly (Emslie, Hunt, & Lyons, 2012). Stereotypically, youth was depicted as a time for going out and getting drunk (Emslie et al., 2012), and heavy alcohol consumption was often presented as part of growing up, as a rite-of-passage (Department of Health, 2004). Nearly all participants reported that their drinking practices had changed over time, either with age and maturity, or due to family/parental responsibilities. Through establishing a contrast with a past undesirable behaviour, their current alcohol consumption was normalised and presented as unproblematic.

The unproblematic, responsible, nature of participants' current drinking was further expressed through the use of the phrase, '*everything* in moderation.' This served a similar rhetorical function to the phrase '*everything* causes cancer', but here, '*everything´* is an extreme case formulation (Basham, 2010) that works to justify the position that any behaviour (including alcohol consumption) is 'okay', if carried out in a moderate fashion (Extract 8). For example:

Extract 12 (Females 55-65)	
Rhonda	I think everything in moderation
Sue	And I think that's the thing, um that you know it's, it's having the occasional glass is okay, but when you get that um the alcoholic, the excessive person, um that that continues, and you know has that potential to do the damage to the liver

Extract 13 (Males 55-65)	
Alex	I live by the rule that everything's okay in moderation, and as long as you do it in moderation
David	Yep
Alex	There is a risk with everything you do you just do it in moderation

The trope '*everything* in moderation' construes extreme behaviour as a cause for concern, but approaching all things (whether healthy or unhealthy) in a moderate way, as being ideal. It is thus implied that a moderate amount of alcohol is acceptable: however, here, what constitutes moderate alcohol consumption is left inherently unclear and subjectively determined. This talk works a) as a normalisation technique, to 'establish the norm' (Wetherell, Taylor, & Yates, 2001, p. 277), and to avoid defining or endorsing precisely what particular behaviour is deemed 'moderate'; b) to further dismiss, or resist, the message that alcohol causes cancer, but in such a way that enabled the speaker to take up the publically preferred position of being a responsible, health conscious individual (e.g. Crawford, 1980).

Additionally, moderation is linked with ideas of 'health transgression' such that a 'little of what you fancy does you good' and 'a healthy lifestyle might be the death of you' (Davison, Smith, & Frankel, 1991; Lupton & Chapman, 1995). These lay concepts of moderation are considered 'common-sense' and, therefore, likely to be resisted if health promotion advice is perceived to challenge these widely held beliefs. Notably, in the context of our focus group discussions, the importance of moderation was only affirmed by people aged 55 to 65 years old, which could suggest a generational attitude or maturity toward any behaviour (e.g. Crossley, 2003). Here, the 55 to 65 year olds presented death and illness as effecting those who were careless or undisciplined with personal health; by contrast, individuals who behaved in a responsible and moral manner are understood to have the right to continue with their (perceived) moderate alcohol consumption (Crossley, 2003).

Discussion

Our analysis of the language used by focus-group participants identified two distinct themes that together demonstrate participants' discursive resistance to the alcohol causes cancer message: a) cancer is unavoidable, therefore behaviour change is futile, and b) the normalisation of alcohol consumption to justify drinking practices.

Participants collectively constructed cancer as an inevitable disease, rendering any effort to avoid cancer through behaviour change as pointless. Respondents used a number of discursive strategies; for example extreme case formulations and hyperboles, to claim that no matter what they did they were going to get cancer. The dominant response that '*everything*' and '*anything*' 'causes cancer', served a number of discursive functions. Specifically, in the context of these focus-groups, where participants were asked what came to mind when they were told that alcohol causes cancer, the participants generally said '*everything* causes cancer' in ways that demonstrated a discursive resistance, not only towards the message, but ultimately to changing behaviour to heed to the warning.

Participants were prompted to provide accounts of their drinking practices; however, in doing so, responses typically included language that worked to establish the normality of these practices. Consuming alcohol was constructed as a necessary part of life (i.e. professional networking or maintaining friendships), and participants negotiated their drinking practices to portray themselves as just doing what they had to do, rather than what they wanted to do. Participants provided practical reasons for drinking (e.g. increase confidence, reduce anxiety, networking etc.), and few reported drinking because they wanted to, or because they liked drinking. This is consistent with previous research which demonstrated that, although pleasure has an obvious association with alcohol (Harrison, Kelly, Lindsay, Advocat, & Hickey, 2011; Klein & Jess, 2002), it is rarely included in prevention discourses, being undervalued as a primary catalyst for alcohol consumption (Bergmark, 2004). People often report enjoyment from drinking (Emslie et al., 2012), yet discourse around alcohol consumption nearly always includes a practical justification, for example to reward a hard day's work, or celebrate special occasions (Lyons, Emslie, & Hunt, 2014). Providing a practical rationalisation for personal alcohol consumption may work to resist being positioned as an irresponsible or risky drinker, something considered undesirable in many cultures. These representations work to resist the alcohol causes cancer message, and remove accountability for any adverse health consequences (here, cancer) resulting from their alcohol consumption.

There are three final points to conclude: First, the response, '*everything* causes cancer', could be considered to be part of a co-constructed interaction (Jacoby & Ochs, 1995), and therefore a limitation of the research. The structure of the initial question 'What is the first thing that comes to mind when I say alcohol causes cancer?' may have primed or facilitated the response that *'everything* causes cancer' or '*anything* causes cancer.' Warnings and messages stating that 'smoking causes cancer' are prolific, making it a very recognisable,

easily accessible phrase (Wold, Byers, Crane, & Ahnen, 2005) that is culturally meaningful (Jacoby & Ochs, 1995). Framing the focus-group questions differently may have prompted different initial responses.

Second, these resistant responses may be a consequence of the vast (perhaps overwhelming) amount of health information available within the Australian culture (Hoorens, Smits, & Shepperd, 2008). Several participants spoke of conflicting health information (Wu & Ahn, 2010), expressing scepticism regarding the reliability of the information. Media's role in shaping public perceptions and propagating confusion is well noted, as the interminable supply of health information is often misrepresented or over-reported (Hoorens et al., 2008). Furthermore, the growth of the internet has enabled information about health and disease to become readily accessible, yet much of this information is inaccurate and of low quality (Ryan & Wilson, 2008). The weight of alcohol advertisements—particularly during sporting competitions sponsored by alcohol companies (Jones, Phillipson, & Barrie, 2010), and pro-drinking messages on social media (Cavazos-Rehg et al., 2015; Jones & Magee, 2011), may also serve to counter messages of alcohol-related harm. Nevertheless, as the amount of information available increases to the point of overload, decision-making abilities decrease, making it difficult to process information (Eppler & Mengis, 2008); people may thus become confused, ignore the information, and do nothing.

Our analysis further suggests that the 'alcohol causes cancer' message is competing with, and undermined by, current health information about safe levels of alcohol consumption, and any associated health benefits. Our participants self-identified as light-to-moderate consumers of alcohol, thus meeting the National Health and Medical Research Council (NHMRC) guidelines of no more than two standard drinks daily (NHMRC, 2009); accordingly, they may consider their current alcohol consumption as safe. As there is no safe level of alcohol consumption with regard to cancer, (CCA, 2016), further efforts may be needed to deliver accurate, consistent information to reduce confusion, and improve awareness of alcohol-related cancer risk.

Finally, the message that alcohol causes cancer, and the way this information is disseminated requires further consideration. First, it seems plausible that alcohol-warning labels stating 'Alcohol Causes Cancer' will prompt precisely the same resistance as reported here – although participants had no knowledge of alcohol-related cancer risk prior to taking part in the study, and therefore some of the questions raised may have been prevented with the provision of more information. Labels that provide specific health information (e.g. 'One in five breast cancers are caused by alcohol') may be less likely to prompt this resistance, but more research is needed to determine this. There is some evidence to suggest that positively framed messages are less likely to be met with resistance (Seitz & Becker, 2007), so labels that highlight positive aspects of reducing alcohol consumption might be more effective in eliciting behaviour change. Second, alternative methods for communicating health risk information (e.g. television advertising or media campaigns) may be more

effective than alcohol warning labels at raising awareness of alcohol-related cancer risk (Corcoran, 2013). Even so, alcohol warning labels, in conjunction with other public health initiatives, may strengthen the validity of this health message in a similar way to warnings on cigarette packaging (Kees, Burton, Andrews, & Kozup, 2010). Certainly, labels may be part of changing the attitude towards alcohol (Louise, Eliott, Olver, & Braunack-Mayer, 2015), and there is some evidence of a shift in the perceptions of alcohol as being harmful (Azar et al., 2014; Eliott, Forster, McDonough, Crabb, & Bowd, (under review)). Nonetheless, further research is needed to fully understand the impact of this relatively new health message, and how alcohol warning labels might effectively communicate this information.

Conclusions

Alcohol consumption significantly increases the risk of several types of cancers, including two of the most common – breast and bowel cancer (Nelson et al., 2013). Reducing alcohol consumption is an important yet understated cancer prevention strategy, particularly compared to strategies such as screening, anti-tobacco campaigns, or genetic testing. The introduction of cancer-related alcohol warning labels may be one strategy to raise awareness of the risks; however, the message that 'alcohol causes cancer' alone, is likely to be met with resistance, and therefore, unlikely to elicit behaviour change. This study builds upon previous research (Claire Wilkinson & Robin Room, 2009) to provide a more nuanced account of public perceptions and attitudes toward alcohol warning labels and alcohol-related cancer risk messages, identifying specific points of resistance and how these are re-produced in conversation. The authors suggest that further research is needed to fully understand the impact of message that alcohol causes cancer, and how (at individual-and population–level) to reduce national cancer burden through a reduction in alcohol consumption.

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