Author’s response to reviews

Title: Developing cancer warning statements for alcoholic beverages

Authors:

Simone Pettigrew (simone.pettigrew@curtin.edu.au)
Michelle Jongenelis (jongem01@student.uwa.edu.au)
Tanya Chikritzhs (T.N.Chikritzhs@curtin.edu.au)
Terry Slevin (Terry@cancerwa.asn.au)
Iain S Pratt (SPratt@cancerwa.asn.au)
David Glance (david.glance@uwa.edu.au)
Wenbin Liang (W.Liang@curtin.edu.au)

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Author’s response to reviews: see over
Dear BMC

Please find below our responses to the most recent review received relating to our submission # MS: 1318418789132598 (i.e., the second review from Reviewer 2). We look forward to receiving your feedback in due course.

Best wishes,
Simone Pettigrew

Professor Simone Pettigrew
School of Psychology and Speech pathology
Curtin University
Western Australia
Ph: +61 8 9266 7990
Simone.pettigrew@curtin.edu.au

<table>
<thead>
<tr>
<th>Comment from Reviewer 2</th>
<th>Response</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. First, the introduction has not addressed the comment about articulating clearly</td>
<td>In a previous revision round we made the following changes to justify the focus on cancer warning</td>
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<td>2. First, the introduction has not addressed the comment about articulating clearly</td>
<td>statements:</td>
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<td>3. First, the introduction has not addressed the comment about articulating clearly</td>
<td>The following italicised text has been added to the Introduction (p.4) to provide more information about the alcohol-cancer link. References are made to the IARC World Cancer Report 2014 (as requested by Reviewer 1).</td>
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| 4. First, the introduction has not addressed the comment about articulating clearly   | A particular knowledge deficit that has been identified relates to drinkers' lack of awareness of the alcohol-cancer link [15, 16]. By comparison, they appear to have a better understanding of the relationship between alcohol consumption and other conditions such as liver cirrhosis, brain damage, mental illness, and heart disease [15]. As such, there is a need for effective product labelling as part of a comprehensive educational program to increase the likelihood that drinkers are aware of the increased risk of cancer associated with alcohol consumption. Even low levels of alcohol intake are implicated as a risk factor for a range of cancers [17, 18]. According to the International Agency for Research on Cancer [17], “Tumour types caused by
drinking alcoholic beverages include cancers of the oral cavity, pharynx, larynx, oesophagus, liver, colorectum, and female breast.” It is estimated that 337,400 deaths per year worldwide are the result of alcohol-attributable cancers [17]. As the evidence base relating to the increased cancer risk posed by alcohol grows, there are increasing calls for cancer warning statements to be included on alcoholic beverage labels to increase public awareness of the alcohol-cancer link [16, 19]. Such warnings have the potential to be effective given high levels of fear of cancer in the general community [16, 20].

This revised text makes it clear that alcohol consumption is associated with a range of other illnesses, but that drinkers appear more aware of these other alcohol-disease relationships than they are of the alcohol-cancer link. The text also provides reference to two recent journal articles (listed below) that have called for exactly the approach taken in our study – i.e., they recommend research on cancer warning statements for alcohol products. We are certainly not stating anywhere that cancer warning statements should be the only kind of warning statements, just that we are testing these to contribute to the evidence base relating to the potential effectiveness of different kinds of messages.


2. Second, the categorization of messages into fear appeals, framing, general vs. specific categories is not conceptually justified and ignores previous literature that has already defined these message dimensions. This would have added much-needed theoretical grounding to the approach for analyzing the impact of message features. A major strength of the study is the multi-method approach which ensures that the developed messages are meaningful to drinkers. As such, a detailed theoretical account of message characteristics in the introduction section is not appropriate because this was not a driver of the design of the study. Rather, as explained in the paper (p.8), the categorization of the messages was based on the results of the qualitative phase of the research rather than being the result of pre-determined testing of different message frames. This has now been made clearer with the inclusion of the italicized text below (p.9):
The statements generated during the focus groups included examples of wording that varied according to message framing (negative vs positive frame), strength of suggested causality (‘alcohol causes/can cause cancer’ vs ‘alcohol increases the risk of cancer’), types of cancer (general reference to cancer vs mentions of specific forms of cancer), and the use of the term ‘Warning’ (or not).

In addition, the italicized text has been added on p.17:

On the basis of the focus group findings, a series of statements that varied according to message characteristics was developed for further testing.

We have been reluctant to include substantial coverage of the message framing literature because the paper is already lengthy and this was not the primary focus of the paper (as noted above and in point 4 below). However, in an effort to accommodate this reviewer’s concern, we have now incorporated more of this literature in the Discussion section of the paper as follows (changes italicized and several new references cited):

P.17 - The focus group participants’ preference for brief, concise statements is consistent with previous research highlighting the need for warning labels to simply and directly communicate the adverse consequences of contraindicated behaviors [41].

P.18 - Overall, responses to the cancer messages were neutral to favorable, indicating that they are unlikely to encounter high levels of negative reaction from the community if introduced on alcoholic beverages. This finding is consistent with reported high levels of support for mandatory warnings on alcohol products in Australia [15, 30]. There were some significant differences in the outcome variables by respondent and message characteristics. Females, younger respondents, and those with higher levels of education generally found the statements to be more believable, convincing, and personally relevant. Positively framed messages (i.e., those that focus on the gains to be obtained from engaging in the recommended behavior [42]), those referring to specific forms of cancer, and those using ‘increases risk of cancer’ performed better than negatively framed messages, those referring to
cancer in general, and those using the term ‘can cause cancer’. The results demonstrating preference for positively framed messages are consistent with those of previous warning message research that has focused on younger drinkers [3, 33, 35, 43] and smokers [44, 45]. However, of note is that while on aggregate the positively framed messages received higher attitudinal scores, the individual statement ‘Alcohol increases your risk of bowel cancer’ (a negatively framed message) performed the best of all the cancer messages. The relationship between message type and attitudinal response may therefore be complex and involve numerous other factors. Previous research has suggested that such factors may include prior knowledge [46] and perceived self-efficacy [47]. Comparisons with previous research investigating the efficacy of messages using different cancer-related wording are not possible due to a lack of prior work in this area.

3. Third, the decision to proceed with the survey even after the qualitative research indicated that cancer warnings would not be well-received is counter-intuitive and is not well-justified. The explanation and discussion about the general health warning effects in the revised manuscript on p. 17 is peculiar. The authors concluded, “The stronger performance on the attitudinal variables of believability, convincingness, and personal relevance suggest that the general health statement may be ultimately less effective in motivating behavioral change because it fails to provide new information that would give drinkers pause for thought.” But no data was presented to support such a conclusion that the general health statement would be less effective because it is not novel. At the same time, these three criteria were used to make the claim that “responses to the cancer statements were neutral to favorable, indicating that they are unlikely to encounter high levels of negative reaction from the

The focus groups identified that drinkers appear to be largely unaware of the alcohol-cancer link and hence that this information is very much needed in the public domain (see p.9). This supports the literature cited in the Introduction, specifically references 15, 16, and 19. As demonstrated by the quantitative data that were subsequently generated, once exposed to cancer warning statements, drinkers did receive them quite well. This is notable given that it was likely to be new information for many of them. As stated on p.10, the general health warning statement was used as a control (given the use of such general statements in other countries) from which to compare the results from the cancer warning statements. In terms of the sentence “The stronger performance on the attitudinal variables of believability, convincingness, and personal relevance suggests that the general health statement may be ultimately less effective in motivating behavioral change because it fails to provide new information that would give drinkers pause for thought”, the reviewer states that “no data was presented to support such a conclusion that the general health statement would be less effective because it is not novel”. It is not possible to provide data from the present study because actual changes in consumption rates post-exposure to the messages were not measured. However, in support of this proposition (please note that it is just a proposition and is not presented as a statement of fact or ‘conclusion’), the following referenced text was included on p.17 in an earlier revision round:
Do the authors think that messages judged to be believable, convincing, and personally relevant would be more or less effective for warning people about alcohol risks?

Previous research has suggested that the provision of new information is likely to be a characteristic of more effective alcohol warnings statements [31].

4. Fourth, the paper does not describe how the authors adjusted for clustering of observations. The analysis approach treats each message rating as independent observations but they are not independent because the responses are clustered within individuals and each message is also clustered within the message characteristics (fear, framing, specificity). This violates the independence assumption for the linear regression models and biases the results due to the intraclass correlation between observations at these levels. An appropriate analysis approach would be to use cross-classified multilevel analysis. This has been described in other studies that utilized a similar design (randomly assigning a few messages to each participant and analyzing message effectiveness by various message features). For an example of how this could be implemented, please refer to Lee et al. (2011) for more details: http://ntr.oxfordjournals.org/cont...
he was able to review the statistics and was satisfied with the analyses reported in the original submission, and
- This second reviewer has stated in both reviews that he does not have the expertise to adequately assess the statistics.