

## PEER REVIEW HISTORY

BMJ Open publishes all reviews undertaken for accepted manuscripts. Reviewers are asked to complete a checklist review form (<http://bmjopen.bmj.com/site/about/resources/checklist.pdf>) and are provided with free text boxes to elaborate on their assessment. These free text comments are reproduced below. Some articles will have been accepted based in part or entirely on reviews undertaken for other BMJ Group journals. These will be reproduced where possible.

### ARTICLE DETAILS

<b>TITLE (PROVISIONAL)</b>	Using a mass media campaign to raise women's awareness of the link between alcohol and cancer: cross-sectional pre- and post-intervention evaluation surveys
<b>AUTHORS</b>	Scully, Maree; Dixon, Helen; Pratt, Iain; Miller, Jessica; Patterson, Carla; Hood, Rebecca; Slevin, Terry

### VERSION 1 - REVIEW

<b>REVIEWER</b>	Dr Tom Carroll Director, Carroll Communications. Australia. Adjunct Professor, The University of Sydney. Australia.
<b>REVIEW RETURNED</b>	24-Sep-2014

<b>GENERAL COMMENTS</b>	<p>The paper provides a clear description of both the public education campaign intervention and the methods employed to undertake the campaign evaluation. The conclusions presented about the campaign's effectiveness in increasing women's knowledge about the link between alcohol consumption and cancer are reasonable, notwithstanding the limitations of the study recognized by the authors.</p> <p>Table 3: The n=119 for respondents who recognized the television ads in Survey 1 appears inconsistent with the 67.5% prompted recognition figure in the table.</p> <p>While responses to prompted message recall questions asked following exposure to the television ad/s provided a measure of respondents' comprehension and recognition of the ad's message, message recall from those who described the ad/s without prompting would have also been useful to report as a measure of salient campaign messages that had been attended to, processed and spontaneously remembered.</p>
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<b>REVIEWER</b>	Nikki Hawkins Centers for Disease Control and Prevention (CDC); United States of America
<b>REVIEW RETURNED</b>	08-Dec-2014

<b>GENERAL COMMENTS</b>	<p>This is a clear, nicely written paper. My comments are few and minor.</p> <p>--First, the conclusion in the abstract should mention that the campaign didn't seem to influence changes in behavior or intentions, as this is an important part of the findings. In line with this comment, the statements of the study goals in the abstract and intro (pg 5, lines16-21) don't mention that the goals were to also change</p>
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	<p>intentions and behavior. I assume this was an intended outcome of the campaign, and it should be stated as such, even though there was not evidence of this happening.</p> <p>--Was there a reference for the focus group work?</p> <p>--Explain how TARPs are calculated</p> <p>--How much information about the survey was given to participants on the invitation email? Could it have discouraged heavy or non-drinkers from participating?</p> <p>--Were incentives given for participation? The response rates actually seem pretty low for online surveys, which in my experience have been higher. Others may want to know how they could improve response rates if conducting similar surveys.</p> <p>--How were survey questions on intentions and concerns developed? The way in which these questions were asked seem extremely important. Were they used before or previously tested?</p> <p>--Have the researchers considered stratifying the results on intentions and concerns by amount of drinking? I realize the sample size is small but asking someone if they're concerned about the amount they drink without considering how much that actually is, may wash out your results. Could you stratify these questions by those who drink <math>\leq 2</math> drinks a day versus 3+?</p> <p>--In table 4, it's unclear what numbers are being presented for the last question regarding knowledge and all the intentions questions. Are these the % of people who "agreed with these statements"? or something else? Also, it's especially confusing to interpret the intentions statements that begin with a negative phrase "not at all concerned..." and "extremely unlikely..." If you're measuring agreement, maybe you could do a reverse reporting, e.g., "I am concerned about..." "It is likely that I..."</p> <p>Other than these minor suggestions, I think it is a nice paper and that readers would find it informative.</p>
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### VERSION 1 – AUTHOR RESPONSE

#### REVIEWER 1 COMMENTS:

\* Table 3: The n=119 for respondents who recognized the television ads in Survey 1 appears inconsistent with the 67.5% prompted recognition figure in the table.

Response: Thank you for noting this apparent inconsistency. The n=119 is smaller than the total number of respondents who recognised either of the campaign ads at phase 1 (n=139, or 67.5%) because in Survey 1 the additional questions assessing reactions to the campaign were only asked of those respondents who recognised the first of the two campaign advertisements they were randomly shown. Thus some respondents who did not recall the first ad they were shown, but did recall the second ad they were shown, were not asked these additional questions (hence the lower n). In survey 2, only one ad was shown, so all respondents aware of that ad were asked these additional questions. We have revised the notes at the foot of Table 3 to make this point clearer.

\* While responses to prompted message recall questions asked following exposure to the television ad/s provided a measure of respondents' comprehension and recognition of the ad's message, message recall from those who described the ad/s without prompting would have also been useful to report as a measure of salient campaign messages that had been attended to, processed and spontaneously remembered.

Response: We agree with this point. While open-ended data on these was collected by the market research agency, it was not available in a form that could be readily analysed in the short time available to complete these revisions for BMJ Open.

## REVIEWER 2 COMMENTS:

\* The conclusion in the abstract should mention that the campaign didn't seem to influence changes in behavior or intentions, as this is an important part of the findings. In line with this comment, the statements of the study goals in the abstract and intro (pg 5, lines16-21) don't mention that the goals were to also change intentions and behavior. I assume this was an intended outcome of the campaign, and it should be stated as such, even though there was not evidence of this happening.

Response: Given alcohol & cancer was a 'new' public health topic for the Western Australian public, the campaign aims were to increase awareness of long term risky drinking, particularly alcohol-caused cancer. It was not necessarily expected that the campaign would change behaviour in its initial stages. Data on drinking intentions and behaviour were gathered, and reported on in this evaluation. However the primary aim of the evaluation was to determine whether short-term markers of campaign impact were achieved following the initial waves of the campaign.

As suggested by the reviewer, we have revised the Abstract to clearly state that drinking intentions did change\* in response to the campaign, but self-reported drinking behaviour did not. Also, the campaign objectives now stated more clearly at the end of the Introduction. The existing Discussion section considers the short-term impacts of the campaign, and also canvasses the challenges of an isolated campaign such as this in effecting real changes in drinking behaviour.

Note: \*Change in intentions now evident, when recoding intentions as per the reviewer's suggestion below.

\* Was there a reference for the focus group work?

Response: We have added a reference for the focus group work (citation number 23). It was an internal report rather than a published one.

\* Explain how TARPs are calculated.

Response: A description of the TARPS measure has been added to the Method (see sub-section headed 'Intervention').

\* How much information about the survey was given to participants on the invitation email? Could it have discouraged heavy or non-drinkers from participating?

Response: To address the reviewer's question, we have added more detailed description of the survey invitation to the Method (see subsection headed 'Population Surveys'). The market research company (My Opinion) sent panellists a standard survey invitation, which detailed survey topic, length and rewards, plus privacy. We recontacted the market research company for details on how the survey topic was presented in the invitation to participants, and unfortunately it varied between survey phases. It was stated to be 'Attitude and behaviour' at the baseline survey, 'Healthcare/Medical' at Survey 1, and 'Alcoholic beverages' at Survey 2. The authors were not previously aware of this inconsistency. As the first two invitations did not mention alcohol, they are unlikely to have led people to opt in or out of the survey based on their drinking status. The mention of 'alcoholic beverages' in the final survey could have made respondents think the survey was alcohol industry market research rather than a health survey, which seems more likely to discourage non-drinkers rather than heavy drinkers from participating. However, the distribution of drinking behaviour reported in Table 2, corresponds well with other survey estimates of Australian women's drinking behaviour, suggesting the survey achieved a fairly representative sample in terms of demographic characteristics and drinking behaviour over the three waves.

\* Were incentives given for participation? The response rates actually seem pretty low for online surveys, which in my experience have been higher. Others may want to know how they could improve response rates if conducting similar surveys.

Response: Incentives were given for participation. Panellists for the market research company participate in a rewards system where they can earn points for completing surveys, and points can be

redeemed for gift cards and vouchers. We have added more detailed description of the incentives offered to the Method (see subsection headed 'Population Surveys'). We acknowledge in the Discussion (see 'Strengths and limitations of study' section) that a limitation of the study was the low response rate, which is typical of on-line surveys, and could compromise the generalizability of the findings."'). However, the response rates we found were similar to those achieved in other health-related surveys of on-line panels in Australia.

\* How were survey questions on intentions and concerns developed? The way in which these questions were asked seems extremely important. Were they used before or previously tested?

Response: The format of the questions on intentions and concerns were based on previous questions used to assess reactions to campaigns by the market research company previously, as they have found these useful for monitoring changes in response to other campaigns. They were adapted to focus on the behaviour (alcohol consumption) being addressed by this campaign. The wording and response format of these questions reflects items used to assess these constructs by Ajzen (2002). However, Ajzen would advocate using multiple items to assess each construct, and creating a composite scale following piloting and establishing the measure's psychometric properties. Given budget and practical constraints on survey length in this applied study, it was necessary to limit assessment of these responses to single item measures previously found to be useful.

Acknowledgement of the potential limitations of the intention, concern and behaviour measures used has been added to the Discussion (see 'Strengths and limitations' section).

Reference: Ajzen I (2002). Constructing a TpB Questionnaire: Conceptual and Methodological Considerations. Downloaded from

[http://chuang.epage.au.edu.tw/ezfiles/168/1168/attach/20/pta\\_41176\\_7688352\\_57138.pdf](http://chuang.epage.au.edu.tw/ezfiles/168/1168/attach/20/pta_41176_7688352_57138.pdf), 19/12/2014.

\* Have the researchers considered stratifying the results on intentions and concerns by amount of drinking? I realize the sample size is small but asking someone if they're concerned about the amount they drink without considering how much that actually is, may wash out your results. Could you stratify these questions by those who drink  $\leq 2$  drinks a day versus 3+?

Response: We agree that responses to items assessing concerns and intentions regarding personal drinking would be likely to vary by drinking status. In the initial draft of the paper, we reported that we had examined interactions between alcohol consumption and campaign phase on intentions, but that as they were non-significant we did not present the results broken down by drinking status. However, to make these findings clearer for readers, we have now reported them stratified by respondent's drinking status as the reviewer requests (see Table 5). Overall, women who were heavier drinkers ( $>2$  per day) were more likely to endorse these concerns and intentions than light drinkers ( $\leq 2$  per day). While a significant increase in the proportion of women who intended to reduce their alcohol consumption occurred following the campaign\*, changes in concern about drinking and recent reductions in drinking were not found for heavy or light drinkers, suggesting the campaign did not impact on these latter variables.

Note: \*Change in intentions now evident, when recoding intentions as per the reviewer's suggestion – see next comment.

\* In table 4, it's unclear what numbers are being presented for the last question regarding knowledge and all the intentions questions. Are these the % of people who "agreed with these statements"? or something else? Also, it's especially confusing to interpret the intentions statements that begin with a negative phrase "not at all concerned..." and "extremely unlikely..." If you're measuring agreement, maybe you could do a reverse reporting, e.g., "I am concerned about..." "It is likely that I..."

Response: We agree with the reviewer's comments here. To address these issues and make the results clearer for readers, we have re-coded the response variables so as to make more conceptual sense (e.g. % concerned about own alcohol consumption). The analyses and reporting of these has been revised accordingly (see 'Analysis' section in Method and Table 5 in Results). Notably, with the responses recoded in this way, there is now evidence of a significant increase between baseline and post-campaign in the proportion of women intending to reduce their alcohol consumption. The abstract, results and discussion have been revised to accurately report this finding.

**VERSION 2 – REVIEW**

<b>REVIEWER</b>	Nikki Hawkins Centers for Disease Control & Prevention
<b>REVIEW RETURNED</b>	20-Jan-2015

<b>GENERAL COMMENTS</b>	The paper has improved and is, in my opinion, ready for publication.
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<b>REVIEWER</b>	Dr Tom Carroll Carroll Communications, Australia
<b>REVIEW RETURNED</b>	05-Feb-2015

<b>GENERAL COMMENTS</b>	This paper makes a valuable contribution to the literature on the effectiveness of mass media campaigns focusing on alcohol consumption and cancer risk. The description of the campaign intervention (including TARP weights) over two campaign phases and hyperlink to the campaign materials provides is useful for the reader's understanding of the study's findings. Unprompted message recall would also have been useful to report to add an assessment of the salience of the campaign messages. Reasonable caution has been applied in interpreting the campaign evaluation results based on the evaluation methodology and limitations of the study have been duly acknowledged.
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