Reviewer's report

Title: Maintaining relevance: An evaluation of health message sponsorship at Australian community sport and arts events

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Reviewer: Ben Smith

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The sponsorship of sporting and arts events is an important communication strategy available to health promoters, and is an area of practice about which there has been relatively little research. The Background section of this manuscript clearly describes the role that health sponsorship can play, the modalities through which this can be delivered, and the challenges faced by government and non-government agencies in the large and evolving environment of commercial sponsorship. The study presented was undertaken to investigate the communication impact achieved by Healthway sponsorship in Western Australia over 6 years. Collecting data in the natural contexts in which sponsorship is delivered is a challenging task and, while this study had a number of methodological limitations, it has useful insights to offer. The recommendations offered below relate to analysis and interpretation of the data collected, and are intended to reduce some of the biases that may be present in the findings and to strengthen the conclusions that are derived from these.

Major compulsory revisions

The stated aim of the study was to evaluate the effectiveness of Healthway sponsorship, which is a purpose expressed in various ways and reflected in the presentation of the findings, especially the relationship between message awareness, intentions and actions (see last sentence of Results). This approach does not take adequate account of the cross-sectional design and the associated problem of establishing causality. A more reasonable approach would be to present the work as an investigation of health sponsorship awareness, understanding and beliefs, and to take a more cautious approach to interpreting effects.

A limitation of the data presented is that the key measure of sponsorship message awareness was collected in two ways, using unprompted or prompted recall. The latter generally gives much higher levels of awareness and is far more vulnerable to the effects of prompting and correct guessing. In order to remove any distortions that this measurement discrepancy may be introducing, the authors should consider only presenting the unprompted recall findings, which seem to have been collected in both the interview and self-administered surveys.

A further measurement issue is the unknown properties of the questions asked of respondents. That said, the questions appear to have been quite straightforward
and to have reasonable face validity, with the exception of the question about taking action in relation to the Healthway sponsorship health message. ‘Action’ is a very broad term. Apart from the measurement questions, there are problems in making sense of how action can be interpreted in relation to sponsorship, given that awareness may be very recent and many health behaviours take considerable time to adopt (e.g., mental health promotion, smoking cessation). The analysis and interpretation of the relationship between sponsorship exposure and action is where the findings are most tenuous, and it is therefore suggested that the data about actions reported by respondents be removed.

The approach used in calculating the prevalence of message understanding, acceptance etc, is to remove from the denominator those who responded negatively to preceding question. As a result the data do not estimate the population prevalence of all of the variables, which would require retaining those who responded negatively to the preceding question in the denominator and categorising them as a negative response in the numerator for the subsequent variables that are examined. This will give substantially lower prevalences of comprehension, acceptance etc, which will better estimate the overall level of exposure and engagement with sponsor messages. It would be valuable to include this analysis as a replacement of, or addition to, the findings currently shown.

The representativeness of the data presented is not addressed in the manuscript. In the Methods a random sampling process is mentioned, and more detail about how this was conducted is required. Were response rates calculated? If no further information about respondent representativeness can be given, this should be discussed as a study limitation.

Minor compulsory revisions

Paragraph 1 in the Background section suggests that sponsorship builds healthy public policy and creates opportunities for health behaviours. This could more clearly state that sponsorship builds awareness and support, that may motivate health behaviour and create a receptive climate for healthy public policy.

Paragraph 6 of the Background mentions “positive effect transfer”. Do you mean positive “affect”?

Paragraph 8 of the Background refers to the “mentally healthy” message. “Mental health” is a more widely used descriptor.

The first paragraph of the Methods refers the reader to references 48 and 49 for information about project selection. This selection procedure should be briefly summarised.

Some clarification is needed about how the logistic regression presented in Table 1 was conducted.

The footnote to the table says that odds ratios were “Adjusted for event, project, and survey type”. What is “project”? 
The first two paragraphs of the Discussion refer to the findings showing that sponsorship generated behavioural intentions, whereas it would be more appropriate to say it was found to be associated with behavioural intentions.

The Discussion comments on similarities between the findings with those obtained a decade earlier. More detail (comparative data) could be given. The observation that the apparent maintenance of this level of cognitive impact is a positive thing is arguable. After 15 years of sponsorship and multiple campaigns, shouldn’t a higher level of cognitive impact be evident?

In the limitations section it should be mentioned that the number of occasions of sponsorship message exposure was not measured, and this may be related to message comprehension, acceptance and behavioural intentions.

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Acceptable

**Statistical review:** No, the manuscript does not need to be seen by a statistician.

**Declaration of competing interests:**

I declare that I have no competing interests