Reaching the Target Group: health message awareness and related health behaviours

HEALTH PROMOTION EVALUATION UNIT

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Summary
Healthway sponsors sport organisations and community events in exchange for the promotion of health messages at sponsored events. The purpose of this study was to explore the relationship between spectators’ cognitive impact of the health message promoted at sponsored events and their health behaviour. Interview and self-administered surveys were collected among 1648 attendees aged over 15 years across two 12 month time periods at Healthway sponsored events (n=27). Overall, 68.9% of respondents were aware of the sponsored health message promoted at the event they attended, with females approximately 1.4 times more likely to recall a sponsorship message than males. Participants’ health behaviour status was found to be significantly associated with their awareness of sponsored health messages, more so if their at-risk behaviour matched the promoted message. With the exception of smokers, there was little impact of health behaviour status beyond awareness across the remaining levels of cognitive impact. The most consistent trend observed was the confounding nature of age and gender on participants’ health behaviours and their cognitive impact. The results of this study reinforce focusing on raising awareness of health messages at sponsored events, with age and gender profiling of audiences useful to predict likely distributions of health behaviours and subsequent decisions on the selection of appropriate health messages.

Introduction
Healthway provides sponsorship for sport and community events in return for opportunities to promote health messages. Each sponsored group is assigned a health message to promote at their event that is often linked to a broader community wide health promotion campaign. The selection of health messages is a purposeful matching between the type of event and the people likely to attend. One aspect of the health message selection process is consideration of the health behaviour profile of people likely to attend the event, with higher rates of smoking, sunburn and alcohol consumption found among people attending sport events and high alcohol consumption rates among arts audiences (Rosenberg et al., 2012). The selection of appropriate health messages to match sponsored events is considered an important component of sponsorship success.

Health messages typically encourage community members to achieve and sustain health behaviours in line with recommendations from national health guidelines. Health messages promoted at Healthway sponsored events include anti-smoking, anti-drug use, sun protection, health eating, safe alcohol consumption, positive mental wellbeing and the promotion of physical activity. In addition to sponsorship, people attending events may be exposed to health messages through a range of marketing strategies. Often, the sponsored health messages are also supported by broader community wide health promotion campaigns that include a wide range of media advertising.

Systematic evaluations of Healthway’s sponsorship program have shown that approximately 70% of people attending a sponsored event are aware of the sponsored health message (Ferguson et al., 2013). Comprehension, acceptance, behavioural intention and action are also assessed to determine the cognitive impact of the health message in addition to awareness. Evidence shows that different types of sponsored events and health messages impact upon whether people ultimately form a desirable
behavioural intention (Ferguson et al., 2013). For example, sun protection messages typically produce the highest levels of behavioural intention, particularly when they are promoted at daytime outdoor events. Anti-smoking messages, such as “Smoke Free WA”, produce the least cognitive impact irrespective of the event and exercise messages tend to produce greater behavioural intention among people attending sport compared with arts events (French et al., 2004). Furthermore, results suggest that health messages appear to resonate more with females and with people over 40 years of age (Leavy et al., 2012).

However, there is little recent information available on whether the health behaviours exhibited by people attending sport and community events are related to the cognitive impact of sponsored health messages. Therefore, the aim of this study was to compare the health behaviour profile of people attending Healthway sponsored sport and community events between 2008 and 2013 and their cognitive impact of sponsored health messages.

Analysis

Data were analysed using SPSS for Windows Version 21 and STATA Version 13. Descriptive statistics were conducted to quantify the demographic and cognitive impact data. Cognitive impact variables were calculated as a proportion of each preceding level in the hierarchy (i.e., comprehension was calculated among those who were aware of the message; acceptance was calculated among those who were aware of the message and had comprehended the message, etc.).

Individual cross-tabulations were conducted to investigate the cognitive impact variables by event type (sport versus arts), age (<40 years versus >40 years), gender (male versus female) and health behaviour status (as recommended versus not as recommended) relating to smoking, alcohol consumption, fruit and vegetable consumption, exercise and sun protection.

To explore the relationship between each level of cognitive impact and health behaviours for any sponsored health message, a series of logistic regression models were generated. Each of these models was adjusted for age, gender, event and survey type. Post hoc analysis was conducted to determine significant relationships between all health behaviour types. Results are presented as OR (95% CI) for all permutations of message comparison.

A second series of logistic regression models were generated to explore the relationship within the cognitive impact hierarchy, for associations between health behaviours specifically related to the promoted message after adjustment for the event type, gender and age. To account for recruitment of participants at sport and arts events, all logistic regression models included a clustering adjustment at the level of event attended. In addition, all logistic regression models were bootstrapped (500 repetitions) to increase the robustness of each model.

Results

A total of 1648 attendees completed surveys at 27 events between 2008 and 2013. More than half were female (52.7%, n= 865), with an almost even split between people over (50.8%, n=837) and under 40 years of age (49.2%, n= 811). As seen in Table 1, the health behaviour characteristics of respondents showed the majority did not consume the recommended levels of fruit and vegetables, and had been sunburnt at least once in the previous 12 months. Just over half of participants achieved the recommended levels of physical activity, over two-thirds consumed alcohol at safe levels and the majority reported being non-smokers.

Health behaviour characteristics of participants were inequitably split between gender and age, with a significantly greater proportion of males reporting they smoked and achieved sufficient levels of physical activity compared with females. Risky alcohol consumption, insufficient fruit and vegetable consumption and being sunburnt in the last 12 months were unrelated to gender in this sample. Age was observed to
Overall, 68.9% of respondents were aware of the sponsored health message promoted at the event they attended.

Table 1: Behaviour characteristics of participants attending sponsored events

<table>
<thead>
<tr>
<th></th>
<th>Smoking (%)</th>
<th>Physical Activity (%)</th>
<th>Fruit and Vegetables (%)</th>
<th>Alcohol (%)</th>
<th>Sun Burn (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sample prevalence</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Behaviour as recommended</td>
<td>88.2</td>
<td>54.7</td>
<td>21.5</td>
<td>70.1</td>
<td>29.7</td>
</tr>
<tr>
<td>Behaviour not as recommended</td>
<td>11.8</td>
<td>45.3</td>
<td>78.5</td>
<td>29.9</td>
<td>70.3</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male (behaviour as recommended)</td>
<td>84.8</td>
<td>61.8</td>
<td>19.4</td>
<td>70.9</td>
<td>28.9</td>
</tr>
<tr>
<td>Female (behaviour as recommended)</td>
<td>91.2</td>
<td>48.2</td>
<td>23.4</td>
<td>69.5</td>
<td>30.5</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 40 years (behaviour as recommended)</td>
<td>86.3</td>
<td>58.8</td>
<td>16.2</td>
<td>59.9</td>
<td>20.2</td>
</tr>
<tr>
<td>Over 40 years (behaviour as recommended)</td>
<td>90.0</td>
<td>50.7</td>
<td>26.6</td>
<td>80.0</td>
<td>38.9</td>
</tr>
<tr>
<td>Type of event</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sport (behaviour as recommended)</td>
<td>90.3</td>
<td>51.7</td>
<td>23.6</td>
<td>76.8</td>
<td>29.3</td>
</tr>
<tr>
<td>Arts (behaviour as recommended)</td>
<td>90.3</td>
<td>51.7</td>
<td>23.6</td>
<td>76.8</td>
<td>29.3</td>
</tr>
</tbody>
</table>

be significantly associated with all measured health behaviours, with a greater proportion of respondents under 40 years of age reporting they smoked, consumed alcohol at risky levels and achieved sufficient levels of physical activity compared with respondents over 40 years of age. Conversely, significantly greater proportions of respondents over 40 years of age consumed recommended levels of fruit and vegetables, were non-smokers, non-risky drinkers and were not sunburnt in the last 12 months. The health behaviour profile of people attending sport or arts events was similar, except for a significantly greater proportion of respondents at sports events drinking alcohol at risky levels compared with respondents at arts events.

Health behaviour and cognitive impact of any promoted health message

The relationship between participants’ health behaviour status and their cognitive impact of the sponsored health message at the event was compared (Table 2). Overall, 68.9% of respondents were aware of the sponsored health message promoted at the event they attended, with females 1.4 (95% CI = 1.1-1.7) times more likely to recall a sponsorship message than males. When participants’ health behaviour status was compared with their awareness of sponsored health messages, those who did not achieve recommended levels of physical activity were significantly less likely to be aware of health messages. In addition, participants who were sunburnt in the last 12 months were more likely to recall health messages than those who had not been sunburnt.

Among respondents who were aware of a promoted health message, four-fifths (78.9%) were able to correctly comprehend the sponsored health message. Comprehension was not influenced by age or gender, but people who did not meet recommended levels of physical activity participation were almost half (OR = 0.6; 95% CI = 0.5-0.9) as likely to comprehend the sponsored health message, with unsafe drinkers 0.7 times (95% CI 0.5-0.8) less likely to comprehend the health message.

A very high proportion (92.2%) of respondents who comprehended the health message accepted its meaning. Across all health messages, females were almost twice (OR = 1.8; 95% CI = 1.2-2.6) as likely than males to accept the meaning of the health message. Smokers were one fifth less likely (OR=0.2; 95% CI 0.1-0.4) to accept the promoted health message compared with non-smokers, with no significant association between other health behaviours and the acceptance of the health message they recalled.

Less than half (41.2%) of people who accepted the health message formed...
messages at sponsored events (Table 3), participants who were insufficiently active were half as likely (OR = 0.5; 95% CI 0.3-0.8) to be aware of physical activity messages. Respondents who consumed less than the recommended levels of fruit and vegetables were twice as likely (OR = 1.9; 95% CI 1.1-3.4) to be aware of healthy eating messages than participants who consumed the recommended levels of fruit and vegetables. Further, participants who were sunburnt in the last 12 months were one and a half times more likely (OR = 1.5; 95% CI 1.1-1.9) to be aware of sun protection messages than those who were not sunburnt in the last 12 months. Smoking and alcohol consumption were unrelated to awareness of sponsorship messages promoting anti-smoking and safe alcohol consumption respectively.

Beyond awareness, comprehension, acceptance and behavioural intention resulting from exposure to sponsored messages were largely unrelated to relevant health behaviours (Table 3). The exception was the low level of acceptance of anti-smoking messages among smokers compared with non-smokers at sponsored events promoting an anti-smoking message. Message comprehension and forming a behavioural intention was not associated with participant health behaviour status and exposure to a related sponsorship health message.

### Conclusions

The aim of this study was to explore whether respondent health behaviours were related to their cognitive impact of sponsorship.
messages. The results suggest that while the health behaviour of people attending sponsored events is related to their awareness of health messages, it is confounded by their gender and age. More positive health behaviours were observed among females who were more likely to become aware of a message and people over 40 years of age who formed behavioural intentions related to sponsored health messages. The results of the current study reflect trends reported in the 2000-2001 sponsorship monitor report, although a stronger relationship between health behaviour and behavioural intention was found in the earlier study (Saunders et al., 2002). The adjustment of age and gender in the current study, the change in the sponsorship program since 2000, as well as the framing of health messages and their incorporation in wider community health promotion campaigns may explain some of the differences between the two studies.

The cognitive impact of health messages in this study was high and consistent with previous similar research (Ferguson et al. 2013), with awareness of 70%, and behavioural intention formed amongst 40% of those who comprehended and accepted the health message. However, no consistent pattern of health behaviour and cognitive impact beyond awareness emerged to suggest messages were more impactful among at-risk audience members. The results suggest that people who achieve sufficient levels of physical activity were receptive to any promoted health messages at an event, but more so if the message was promoting physical activity. In contrast, people who were sunburnt in the last 12 months were receptive to seeing or hearing any sponsored health message at an event, especially if the message was about sun safety and non-smokers were less likely to accept anti-smoking messages. For people who did not meet recommended levels of fruit and vegetable intake, awareness was highest for messages promoting fruit and vegetable consumption. The results also show that smoking and alcohol behaviours were unrelated to awareness of any sponsored health message or messages specifically related to the corresponding health behaviour.

In this study, health behaviours appeared less influential across the cognitive impact hierarchy than the gender and age of participants. Females and people over 40 years of age were in general more likely to engage in healthier behaviours and were more receptive to seeing and hearing sponsored health messages. The results reinforce efforts to target younger people at sponsored events, particularly around smoking, alcohol, diet and sun protection. Unsafe alcohol consumption was particularly associated with sport events, males and people under 40 years of age, although the cognitive impact of safe alcohol consumption messages was not associated with alcohol behaviour.

There are many factors that impact upon health message awareness of sponsored events, including the framing of health messages to encourage behavioural cessation, initiation, or modification. In the current study, smoking and alcohol messages encouraged cessation and were unrelated to smoking and alcohol consumption, whereas, physical activity, sun protection, and fruit and vegetable messages promoted initiation or increases and were associated with their respective health behaviours. Furthermore, physical activity messages appeared to be very appealing to women over 40 who were already sufficiently active, a finding similar to that observed by a broader community wide physical activity social marketing program (Leavy et al., 2012). Based upon these observations, the framing of the health messages should be considered alongside the health behaviour profile of people attending the event.

When taking the findings of this study into account, consideration should be made for differential variations in the promotional activities at events that directly impact upon awareness of the sponsored health messages. Although adjustment was made for people attending the same event, there remains a clustering effect of exposure to health messages that reflects the sponsorship activities

Table 3: Cognitive impact and health behaviour status with related health messages

<table>
<thead>
<tr>
<th>Health Behaviour</th>
<th>Awareness (n=1648)</th>
<th>Comprehension (n=1135)</th>
<th>Acceptance (n=895)</th>
<th>Intention (n=825)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>OR (95% CI)</td>
<td>OR (95% CI)</td>
<td>OR (95% CI)</td>
<td>OR (95% CI)</td>
</tr>
<tr>
<td>Smoking</td>
<td>0.9 (0.6-1.4)</td>
<td>1.6 (0.5-5.1)</td>
<td>0.1 (0.1 – 0.3)*</td>
<td>0.9 (0.4-2.1)</td>
</tr>
<tr>
<td>Physical activity</td>
<td>0.5 (0.3-0.6)*</td>
<td>0.6 (0.3-1.2)</td>
<td>0.5 (0.2-1.3)</td>
<td>0.9 (0.6-1.8)</td>
</tr>
<tr>
<td>Fruit and vegetable consumption</td>
<td>1.9 (1.1-3.4)*</td>
<td>1.5(0.6-4.1)</td>
<td>0.6(0.3-1.2)</td>
<td>0.5 (0.2-1.2)</td>
</tr>
<tr>
<td>Sun protection</td>
<td>1.5 (1.1-1.9)*</td>
<td>0.9 (0.7-1.2)</td>
<td>0.9 (0.7-1.1)</td>
<td>0.6 (0.2-2.6)</td>
</tr>
<tr>
<td>Alcohol</td>
<td>1.0 (0.6-1.8)</td>
<td>2.1 (0.9-2.2)</td>
<td>2.1 (0.9 – 4.8)</td>
<td>1.2 (0.6-2.3)</td>
</tr>
</tbody>
</table>

Adjusted for gender and age and survey type – clustered by event; * p<0.05
at the event attended. Similarly, the promotion of the same health messages at sport and arts events may impact people’s receptiveness to seeing and hearing health messages, although there did not appear to be any significant differences in health message awareness between sport and arts events, except for higher alcohol consumption at sport events. There is also a small chance that participants in this study do not represent all people attending events, as data were only collected among people who were not directly engaged in viewing the event.

In conclusion, this study supports previous research showing health behaviours are associated with awareness of health messages promoted at sponsored events. As both health behaviour and health message cognitive impact were strongly influenced by gender and age, the process of matching health messages to sponsored events might first focus on the demographic profile of participants. For events allocated physical activity messages, particular attention might be afforded to engaging people who are insufficiently active. Consideration should also be made for the greater awareness of fruit and vegetable messages among people who do not meet fruit and vegetable recommendations. Finally, focusing upon raising awareness of health messages at sponsored events should remain a focus of sponsorship activities, as forming a behavioural intention appears not to be influenced by existing health behaviours once awareness has occurred.

References

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