

# Relevance of the Aboriginal Rethink Sugary Drink media campaign to Aboriginal and non-Aboriginal audiences in regional Victoria

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**B**efore colonisation, Aboriginal and Torres Strait Islander peoples successfully managed their food supply in a complex and integrated relationship with the land and waterways of Australia for more than 50,000 years.<sup>1</sup> With the arrival of Europeans came the introduction of ration systems, fatty meats, white flour and sugar and the disruption of traditional food practices.<sup>2</sup> Today, dietary factors, including diets low in fruit, vegetables and wholegrains and high in processed foods and sugary drinks, are among the leading contributors to the unacceptable health disparity experienced by Aboriginal and Torres Strait Islander peoples.<sup>3</sup> Diet and obesity are major drivers of the chronic diseases, including cardiovascular disease, type 2 diabetes, kidney disease and cancer, which disproportionately impact the Aboriginal and Torres Strait Islander population.<sup>3</sup>

Sugar-sweetened beverage (SSB) consumption is one dietary factor that contributes to chronic disease. SSBs provide no nutritional benefit and increase the risk of obesity, type 2 diabetes and dental caries. National surveys suggest that approximately half of Australians exceed the World Health Organization recommendation for daily sugar intake and that SSBs are the leading source of added sugars in the Australian diet.<sup>4,5</sup> Diets high in SSBs are responsible for 8.1% of the total burden of disease in the Aboriginal and Torres Strait Islander population and one-third of the burden of disease due to diabetes.<sup>3</sup> Around one-quarter

## Abstract:

**Objective:** To test the hypothesis that a culturally tailored sugar-sweetened beverage (SSB) campaign designed specifically for the Victorian Aboriginal community will not only be valuable for Aboriginal Victorians but will also have cross-over benefits for non-Aboriginal Victorians.

**Methods:** An online survey was completed by 155 Victorians (78 Aboriginal, 77 non-Aboriginal) four months after the Aboriginal Rethink Sugary Drink (RSD) advertisement was launched. Differences between Aboriginal and non-Aboriginal respondents were assessed using  $\chi^2$  and Wilcoxon rank-sum tests.

**Results:** Seventy-six per cent of Aboriginal respondents recalled seeing the advertisement compared to 56% of non-Aboriginal respondents ( $p < 0.05$ ). A high proportion of respondents (59% for Aboriginal, 55% for non-Aboriginal) who had seen the advertisement correctly identified the sugar content of a 600mL drink. The perceived relevance of the advertisement was high (78% for Aboriginal vs. 47% for non-Aboriginal;  $p = 0.003$ ), as was the response that it motivated action to improve health (82% vs. 50%;  $p = 0.001$ ).

**Conclusion:** Notwithstanding the small sample size, the Aboriginal advertisement appeared to engage both Aboriginal and non-Aboriginal Victorians and promote SSB knowledge and motivation to improve health, particularly among Aboriginal Victorians, who were the target population. Public health campaigns should be designed with Aboriginal Australians to ensure equitable reach and impacts across the whole population.

**Implications for public health:** Aboriginal-led health promotion campaigns may be beneficial for both Aboriginal and non-Aboriginal audiences.

**Key words:** Aboriginal health, Indigenous health, nutrition, sugar-sweetened beverages, social marketing

(24%) of Aboriginal and Torres Strait Islander adults (aged 15 years and over) and 20% of Aboriginal and Torres Strait Islander children (2–14 years) consume SSBs daily.<sup>6</sup>

Limiting the intake of SSBs is recommended in both international and national dietary guidelines.<sup>5,7</sup> Led by Cancer Council Victoria, nineteen non-government health and community organisations who share

a concern about the overconsumption of SSBs in the population have formed a national alliance called Rethink Sugary Drink. The alliance raises awareness about SSB-related harm in the community through social marketing campaigns and advocates for Australian governments to take comprehensive action to reduce SSB consumption. Recognising the need to

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reduce SSB consumption in the Victorian Aboriginal population, the Victorian Aboriginal Community Controlled Health Organisation (VACCHO) joined the Rethink Sugary Drink alliance in 2014. Throughout this paper, we respectfully use the term 'Aboriginal' when referring to First Nations peoples residing in Victoria, acknowledging that these comprise a diversity of nations and language groups.

Public health campaigns usually target entire populations and act across sociodemographic groups, regardless of risk. Previous research suggests that population-wide nutrition interventions, such as social marketing campaigns promoting individual dietary behaviour change, may be less effective for population groups with limited social and economic resources and may, as a result, increase health inequities.<sup>8</sup> Such campaigns are usually designed with the general population in mind and are not always evaluated for their equity impact.<sup>9</sup> We argue that public health interventions should be designed with equity in mind, such that groups experiencing the greatest burden of ill-health receive the greatest impact with benefits 'trickling up' to the rest of the population. Here, we use the Rethink Sugary Drink campaign – a culturally tailored Aboriginal Rethink Sugary Drink television advertisement – as a case of trickle-up health promotion. We hypothesise that a campaign designed specifically for the Victorian Aboriginal community will not only be valuable for Aboriginal Victorians but will also have cross-over benefits for non-Aboriginal Victorians.

The Aboriginal Rethink Sugary Drink campaign was the first social marketing campaign of its kind to specifically target SSB consumption among Aboriginal peoples. A prior evaluation of the television advertisement suggested that it was culturally relevant and effective at influencing SSB-related knowledge within the Aboriginal population.<sup>10</sup> Although this advertisement was specifically designed for the Aboriginal population, there is evidence to suggest that it may also be salient for the general population. For instance, in a survey of more than 700 Australian school children, the Aboriginal advertisement was voted the most effective for raising awareness about the health effects of SSBs among young people.<sup>11</sup> Furthermore, in an online choice experiment conducted with non-Aboriginal adults, the intended purchase of SSBs was less for those exposed to the Aboriginal Rethink Sugary

Drink campaign poster than for those not exposed to the campaign.<sup>12</sup>

Given the above findings, along with the increasing interest in the equity impact of population-wide health promotion and obesity prevention strategies,<sup>8,9,13</sup> this paper reports the evaluation of the Aboriginal Rethink Sugary Drink advertisement following its airing on a commercial television network where the audience is predominantly non-Aboriginal. The main objective of the evaluation was to test the hypothesis that a culturally tailored sugar-sweetened beverage (SSB) campaign designed specifically for the Victorian Aboriginal community will not only be valuable for Aboriginal Victorians but will also have cross-over benefits for non-Aboriginal Victorians with regard to campaign exposure and salience, as well as SSB knowledge, attitudes and consumption.

## Methods

### Campaign development

The Aboriginal Rethink Sugary Drink campaign was developed by VACCHO in partnership with Cancer Council Victoria with support from other organisations within the Rethink Sugary Drink alliance. It consisted of a 30-second television advertisement featuring Victorian Aboriginal people, a website, Facebook advertising, merchandise (drink bottles, bags, magnets) and a social media competition. The campaign development process was led by the VACCHO nutrition team, comprising experienced Aboriginal health promotion practitioners and non-Aboriginal nutritionists, and has been described in detail elsewhere.<sup>10</sup>

Development of the key messages and images for television advertisement was based on consultation with Aboriginal staff from VACCHO and its member organisations.

The purpose of the advertisement was to raise awareness about the amount of sugar in SSBs and their associated health risks to lower SSB consumption among adults and children. The advertisement features an Aboriginal family watching a community football match on television and focuses on a young girl who is about to take a sip from a soft drink can. She tips the can upside down to show a stream of sugar spilling out. She asks: "You wouldn't eat 16 teaspoons of sugar in one hit would ya? So why drink it?" Then, after listing some of the potential health effects of SSB consumption, she encourages viewers to drink water instead because "it's from nature"

and "it's too deadly". Based on the formative consultations with Aboriginal staff, the advertisement adopted a non-stigmatising, strengths-based approach, focusing on community assets such as family, culture, Aboriginal English and local role models.

The advertisement was first aired on National Indigenous Television (NITV) in 2015. However, the majority of Aboriginal participants in the first campaign evaluation reported usually watching commercial television channels rather than NITV.<sup>10</sup> In response to feedback from Aboriginal staff and communities, the advertisement was aired on the WIN regional commercial television network in order to expand the reach of the Aboriginal Rethink Sugary Drink campaign. The advertisement was played more than 2,000 times during a period of four months (September–December) in 2016.

### Evaluation design

This evaluation was initiated and led by VACCHO. The evaluation team included VACCHO staff, in partnership with external non-Aboriginal researchers working in the field of health equity and Aboriginal health. Evaluation of the campaign was undertaken using an online cross-sectional survey. The questions were adapted from a previous survey, developed by VACCHO and Cancer Council Victoria, used to evaluate a national Aboriginal SSB campaign.<sup>10</sup> The survey comprised 20 questions covering participant demographics; campaign exposure, understanding and attitudes; and SSB knowledge, attitudes and consumption.

The survey was pilot-tested with Aboriginal and non-Aboriginal staff members from VACCHO prior to dissemination. It took 10–15 minutes to complete. The link to the online survey was distributed via email and social media by VACCHO via their 30 member organisations and non-Aboriginal partner organisations including the Rethink Sugary Drink Alliance, who forwarded the survey to service users using a snowball sampling approach. The survey was only available in English and only Victorian residents aged over 18 years were eligible to participate. The survey was disseminated immediately following the television advertising campaign and remained open for six weeks, from December 2016 to February 2017. Three reminder emails were sent to organisational networks during this time. Organisations were encouraged to send out reminder links to their stakeholders. No incentives were offered for participating. As this study was

set up as a program evaluation to inform future campaigns, no power calculations were performed.

## Measures

### Campaign exposure

Participants were asked whether they had seen any advertisements on television about the health effects of SSBs during the past few months, and to describe any advertisements that they had seen. Participants were then prompted with images and a description of the Aboriginal Rethink Sugary Drink advertisement and asked whether or not they had seen it. Those who had seen the Aboriginal advertisement were asked where (e.g. on television, online, on social media, at VACCHO or an Aboriginal health service) and how often they had seen it in the past few months. This question was important to VACCHO since this was the first campaign for which the organisation had paid for commercial television advertising, and it was important to assess the reach of the campaign on different platforms. Participants were also asked whether they had visited the Aboriginal Rethink Sugary Drink website and whether they recalled seeing the social media promotion that coincided with the campaign.

### Salience of the campaign

Participants were asked to appraise the Aboriginal Rethink Sugary Drink campaign by rating statements about whether the television advertisement was “relevant to me”; had “an important message for my Community”; or “made me feel motivated to take action to improve my own health” and “the health of my family”. Participants could indicate that they either “agree”, “disagree”, or “neither agree or disagree” with these statements. To assess a possible unintended consequence of the campaign, we assessed the level of agreement with the statement “this ad made me feel guilty”. Participants were also asked whether or not they agreed with the statement, “It is good to see an Aboriginal advertisement featuring Aboriginal actors on a commercial television network”.

### SSB knowledge

The knowledge questions were the same as those used in a previous evaluation of a national Aboriginal SSB campaign.<sup>10</sup> Knowledge about the sugar content of SSBs was measured by asking participants how many teaspoons of sugar they thought were in a standard 600 mL soft drink. Participants

were also asked whether they thought drinking too many SSBs could lead to weight gain (true or false) and to select health issues linked to SSB consumption from a list that included obesity, type 2 diabetes, heart disease, stroke, cancer and tooth decay (all these answers are correct responses). Knowledge was also assessed by the level of agreement on a 3-point Likert scale with a series of statements about beverages, such as “sugary drinks are harmful to health”, “water is the healthiest drink” and “soft drink and cordial are good options for kids”.

### SSB-related attitudes

As with knowledge, assessment of SSB-related attitudes was based on the questions used in previous SSB campaign evaluation studies.<sup>10,14</sup> Attitudes were measured using a series of statements about SSBs, which participants rated using a 3-point Likert scale. Statements included: “It is important to encourage Community members to drink less sugary drinks” and “I am supportive of campaigns that aim to reduce sugary drinks in the Community”. New questions, that were not included in the previous evaluation, asked participants whether or not they agreed with the statements: “Sugary drinks are too cheap” and “It is good to see an Aboriginal advertisement featuring Aboriginal actors on a commercial television network”.

### SSB consumption

SSB consumption was assessed using a single question about frequency of SSB consumption. This was measured by asking participants the following question: “During the past week, on how many days did you drink any sugary drinks such as soft drinks, energy drinks, fruit drinks, sports drinks or cordial?” Participants could select between one and seven days.

### Data collection and analysis

Data were collected using SurveyMonkey® (SurveyMonkey®, Sydney, Australia) and extracted into Microsoft Excel 2013 (Microsoft®, Redmond, WA). Only responses from participants who completed at least 50% of the survey questions were included in the analysis. Data were managed and analysed in Stata 15 and each survey question was analysed separately. Frequencies and proportions [n (%)] were calculated for categorical responses. Differences in proportions (between Aboriginal vs. non-Aboriginal respondents and between respondents who had seen the advertisement

vs. respondents who had not) were compared using Pearson’s chi-squared test or Fisher’s exact test where the expected cell count was under five. Differences in medians of continuous variables were examined using the Wilcoxon rank-sum test. A *p*-value of less than 0.05 was considered significant.

Analysis of campaign salience was restricted to participants who reported that they had seen the advertisement when prompted with images and a description of the Aboriginal Rethink Sugary Drink advertisement in the evaluation survey. People who answered ‘not sure’ to having seen the Aboriginal Rethink Sugary Drink advertisement were excluded (n=9) when comparing responses between those who had and had not seen the advertisement.

The collection, management and ownership of data remained with VACCHO throughout the evaluation process. Informed consent was sought from all participants before commencing the survey and no identifying information was collected. A summary of evaluation findings was circulated to all VACCHO members through VACCHO’s social media channels. Ethics approval was granted by the Cancer Council Victoria Human Research Ethics Committee (approval no. HREC 1608).

## Results

A total of 174 surveys were completed, 19 of which were excluded due to missing data. Of the 155 participants in the final sample, 78 (50.3%) identified as Aboriginal and/or Torres Strait Islander (77 Aboriginal, one both Aboriginal and Torres Strait Islander). Nine of the excluded surveys were from non-Aboriginal participants, seven were from Aboriginal and/or Torres Strait Islander participants (six Aboriginal, one both Aboriginal and Torres Strait Islander), and four were from participants who did not identify their Aboriginality. All respondents lived in Victoria. Calculation of response rate is not feasible due to the snowball sampling strategy.

### Campaign exposure

Prompted recall of the Aboriginal Rethink Sugary Drink campaign was high for both Aboriginal and non-Aboriginal respondents: 76% (n=59) of Aboriginal people reported that they had seen the television advertisement compared to 56% (n=43) of non-Aboriginal people (*p*=0.004). Just over

one-third of all respondents (35%, n=55) had seen the advertisement on television, while fewer (29%, n=45) saw the campaign online or on social media. Approximately one-quarter of respondents reported visiting the Aboriginal Rethink Sugary Drink website (28% of Aboriginal respondents and 25% of non-Aboriginal respondents; no significant difference). However, more Aboriginal respondents had seen the social media competition (72% compared with 41% of non-Aboriginal respondents;  $p=0.000$ ). Respondents who had seen the Aboriginal Rethink Sugary Drink advertisement were significantly more likely to have visited the campaign website (33% of respondents who had seen the advertisement compared with 15% of respondents who had not;  $p=0.017$ ). Significantly more respondents who had seen the advertisement had also seen the social media promotion compared with

those who had not (64% compared with 35%, respectively;  $p=0.005$ ).

### Salience of the advertisement

A greater proportion of Aboriginal respondents agreed that the Aboriginal Rethink Sugary Drink advertisement was relevant to them (78% compared with 47% of non-Aboriginal respondents:  $p=0.003$ ), and that the advertisement motivated them to take action to improve their health (76% compared with 50% of non-Aboriginal respondents;  $p=0.013$ ) and the health of their family (82% compared with 50% of non-Aboriginal respondents;  $p=0.001$ ). A high proportion of both Aboriginal and non-Aboriginal respondents perceived the advertisement as having “an important message for my Community” (100% for Aboriginal respondents compared with 85% of non-Aboriginal respondents;

$p=0.004$ ), with more than one-third of Aboriginal respondents also agreeing that the advertisement “made them feel guilty” (36% compared with 5% of non-Aboriginal respondents;  $p<0.001$ ). Almost all (98%) of all respondents agreed that it was good to see an Aboriginal-specific health promotion advertisement on television and that there should be more advertisements like this on television (Table 1).

### SSB knowledge

More than half of Aboriginal and non-Aboriginal respondents who had seen the advertisement correctly identified the sugar content of a 600mL soft drink (16 teaspoons of sugar; 59% of Aboriginal respondents and 55% of non-Aboriginal respondents; no significant difference). Among Aboriginal respondents, this proportion was significantly lower for respondents who did not report having seen the advertisement (31%).

Virtually all (99%) respondents agreed that drinking SSBs led to weight gain, with no significant difference between Aboriginal and non-Aboriginal respondents. Similarly, a high proportion of Aboriginal and non-Aboriginal respondents agreed that drinking SSBs was linked to tooth decay (97% Aboriginal and 100% non-Aboriginal;  $p=0.497$ ), type 2 diabetes (100% for both Aboriginal and non-Aboriginal), heart disease (78% for Aboriginal and 82% for non-Aboriginal;  $p=0.574$ ), kidney disease (77% for Aboriginal and 75% for non-Aboriginal;  $p=0.815$ ), stroke (51% for Aboriginal and 61% for non-Aboriginal;  $p=0.221$ ), or obesity (95% for Aboriginal and 100% for non-Aboriginal;  $p=0.120$ ). When asked if SSB consumption was related to cancer, a significantly lower proportion of Aboriginal respondents answered ‘true’ (50%) compared with of non-Aboriginal respondents (74%;  $p=0.002$ ). This difference remained significant when restricting analyses to respondents who had seen the advertisement (53% of Aboriginal respondents compared with 74% of non-Aboriginal respondents;  $p=0.025$ ).

Similar proportions of Aboriginal and non-Aboriginal respondents agreed that SSBs were harmful to health and that water is the healthiest drink; however, there was a small but significant difference in the response to the statement “soft drink and cordials are good options for kids”. While all (100%) of non-Aboriginal respondents disagreed with this statement, only 89% ( $p=0.006$ ) of Aboriginal respondents disagreed that SSBs were good options for kids (Table 2).

**Table 1: Responses to the Aboriginal Rethink Sugary Drink campaign.**

	Aboriginal participants	Non-Aboriginal participants	p-value for difference between Aboriginal and non-Aboriginal participants
<b>This ad was relevant to me</b>			
Agree	45 (78%)	19 (48%)	0.003*
Disagree	1 (2%)	6 (15%)	
Neither agree nor disagree	12 (21%)	15 (37%)	
<b>This ad made me feel motivate to take action to improve my own health</b>			
Agree	44 (76%)	20 (50%)	0.013*
Disagree	1 (2%)	4 (10%)	
Neither agree nor disagree	13 (22%)	16 (40%)	
<b>This ad made me feel motivated to take action to improve the health of my family</b>			
Agree	47 (82%)	20 (67%)	0.001*
Disagree	0	4 (13%)	
Neither agree nor disagree	10 (17%)	6 (20%)	
<b>This ad has an important message for my Community</b>			
Agree	58 (100%)	34 (85%)	0.004*
Disagree	0	0	
Neither agree nor disagree	0	6 (15%)	
<b>I have talked to friends, family or Community about this ad</b>			
Agree	40 (69%)	22 (55%)	0.141
Disagree	5 (9%)	9 (23%)	
Neither agree nor disagree	13 (22%)	9 (23%)	
<b>This ad made me feel guilty</b>			
Agree	21 (36%)	2 (5%)	0.000*
Disagree	15 (26%)	24 (60%)	
Neither agree nor disagree	22 (38%)	14 (35%)	
<b>There should be more ads like this on television</b>			
Agree	55 (95%)	35 (88%)	0.265
Disagree	0	0	
Neither agree nor disagree	3 (5%)	5 (12%)	
<b>It is good to see an Aboriginal health ad featuring Aboriginal actors on mainstream television</b>			
No	1 (2%)	0	0.350
Not sure	0	1 (2%)	
Yes	55 (98%)	40 (98%)	

Note:

\*significant difference at  $p<0.05$



This difference remained when the analysis was restricted to participants who had seen the Aboriginal Rethink Sugary Drink advertisement (100% of non-Aboriginal respondents disagreed compared with 86% of Aboriginal respondents;  $p=0.027$ ).

### SSB-related attitudes

The majority of respondents agreed that it was important to encourage community members to drink fewer SSBs and were supportive of campaigns that aimed to reduce SSB consumption. Aboriginal and non-Aboriginal people had different opinions on whether SSBs are too cheap (56% of Aboriginal people agreed compared with 81% of non-Aboriginal respondents;  $p=0.005$ ) but there were no significant differences in responses to the other statements (Table 3). There was no significant difference in attitudes to SSBs between respondents who had seen the Aboriginal Rethink Sugary Drink advertisement and those who had not.

### SSB consumption

On average, Aboriginal respondents reported a higher frequency of SSB consumption than non-Aboriginal respondents. In the week before the survey, 58% of Aboriginal respondents reported consuming SSBs on two or more days per week compared to 18% of non-Aboriginal respondents ( $p<0.001$ ). This difference remained when the analysis was restricted to participants who had seen the Aboriginal Rethink Sugary Drink advertisement.

Among Aboriginal respondents, a smaller proportion who had seen the advertisement reported consuming SSBs on two or more days per week compared to those who had not seen the advertisement, but this was not significant (56% compared with 62%, respectively;  $p=0.712$ ).

## Discussion

This study supports the hypothesis that social marketing campaigns explicitly designed with and for Aboriginal populations can benefit both Aboriginal and non-Aboriginal peoples. Using the Aboriginal Rethink Sugary Drink television advertisement as a case study, we demonstrated high exposure to, and salience of, this culturally tailored SSB campaign for both Aboriginal and non-Aboriginal Victorians. Although there is a considerable body of literature describing the impact of various social marketing campaigns, to our knowledge, this is the first study to

**Table 2: Responses to SSB knowledge statements.**

	Aboriginal participants	Non-Aboriginal participants	All participants	p-value for difference between Aboriginal and non-Aboriginal participants
<b>Soft drinks and cordials are good options for kids</b>				
Agree	4 (5%)	0	4 (3%)	0.006*
Disagree	70 (89%)	77 (100%)	147 (94%)	
Neither agree nor disagree	5 (6%)	0	5 (3%)	
<b>Water is the healthiest drink</b>				
Agree	75 (96%)	76 (99%)	151 (97%)	0.747
Disagree	1 (1%)	1 (1%)	2 (1%)	
Neither agree nor disagree	2 (3%)	0	2 (1%)	
<b>Sugary drinks are harmful to health</b>				
Agree	71 (92%)	72 (94%)	143 (93%)	0.788
Disagree	3 (4%)	4 (5%)	7 (5%)	
Neither agree nor disagree	3 (4%)	1 (1%)	4 (3%)	

Note:  
\*significant difference at  $p<0.05$

**Table 3: Responses to SSB attitude statements.**

	Aboriginal participants	Non-Aboriginal participants	p-value for difference between Aboriginal and non-Aboriginal participants
<b>It's important to encourage Community members to drink less sugary drinks</b>			
Agree	75 (96%)	72 (94%)	0.579
Disagree	3 (3%)	4 (5%)	
Neither agree nor disagree	1 (1%)	1 (1%)	
<b>I am supportive of campaigns that aim to reduce sugary drinks in the Community</b>			
Agree	73 (94%)	75 (97%)	0.617
Disagree	2 (3%)	1 (1%)	
Neither agree nor disagree	3 (3%)	1 (1%)	
<b>Sugary drinks are too cheap</b>			
Agree	44 (56%)	62 (81%)	0.005*
Disagree	11 (14%)	4 (5%)	
Neither agree nor disagree	23 (29%)	11 (14%)	

Note:  
\*significant difference at  $p<0.05$

evaluate both Aboriginal and non-Aboriginal community responses to a targeted nutrition promotion campaign designed by and for Aboriginal people. Previously, the Aboriginal Rethink Sugary Drink advertisement had appeared on NITV, which specialises in Aboriginal and Torres Strait Islander content.<sup>10</sup> Broadcasting the advertisement on a commercial television network exposed this Aboriginal-specific campaign to a wider audience, which included both Aboriginal and non-Aboriginal viewers. Despite the small sample size and risk of selection bias, our evaluation produced several interesting findings that warrant further exploration in larger studies.

First, our findings suggest that the Aboriginal Rethink Sugary Drink campaign achieved strong penetration in both the Aboriginal and non-Aboriginal communities, particularly among Aboriginal people who were the target audience. Awareness of the television

advertisement (76%) among Aboriginal respondents was comparable with that reported for an SSB campaign targeting the general population (70%).<sup>14,15</sup> Although recall and awareness of this Aboriginal-specific health promotion campaign was significantly higher among Aboriginal respondents, more than half of non-Aboriginal respondents also recalled the television advertisement and one-quarter had visited the campaign website, indicating the campaign was reaching both population groups. Similar cross-over appeal to non-Indigenous audiences was observed in the evaluation of a national anti-smoking campaign targeting Aboriginal and Torres Strait Islander peoples.<sup>16</sup>

Second, we found that the Aboriginal Rethink Sugary Drink advertisement was perceived as "relevant" and "containing an important message for my Community" for both Aboriginal and non-Aboriginal respondents, albeit significantly higher

for Aboriginal respondents (more than two-thirds of respondents compared to almost half of non-Aboriginal respondents). Similarly, the advertisement motivated a similar proportion of Aboriginal and non-Aboriginal respondents “to take action to improve their health” and “the health of their family”. The higher proportion of Aboriginal respondents agreeing to these statements is not surprising, given that the campaign was designed specifically for the Victorian Aboriginal community, and this supports the findings of previous research about the role of culturally specific social marketing campaigns in engaging Aboriginal and Torres Strait Islander peoples.<sup>10,16–18</sup> However, these results, combined with the high level of exposure of the advertisements for non-Aboriginal respondents, also provide new evidence that an Aboriginal-specific SSB awareness campaign has the potential to benefit non-Aboriginal people as well.

Third, while both Aboriginal and non-Aboriginal respondents demonstrated similar levels of knowledge about SSBs, there were some key differences. In particular, Aboriginal respondents were much less likely to associate SSBs with cancer. This may indicate that there is a general level of awareness in the Victorian Aboriginal community about the health effects of SSBs, particularly in relation to weight gain, diabetes and tooth decay, but that the Aboriginal Rethink Sugary Drink campaign messaging did not succeed in communicating the link between SSB consumption and cancer. Given the higher morbidity and mortality due to cancer among Aboriginal and Torres Strait Islander Australians and the fact that obesity and dietary risks each contribute 9% of this cancer burden,<sup>19</sup> there is a need to continue to promote the links between SSB consumption, obesity and cancer. Furthermore, evidence from the most recent National Aboriginal and Torres Strait Islander health survey suggests that 20% of children consumed SSBs every day,<sup>6</sup> reinforcing the need for further Aboriginal-specific health promotion initiatives targeting SSB consumption among children. While the proportion of Aboriginal respondents in our study who disagreed that “soft drinks and cordials are good for kids” was lower compared to non-Aboriginal respondents, the majority (89%) of Aboriginal participants disagreed with this statement, which is a positive finding. Campaigns such as this, which motivate participants to improve the health of their family, may help increase this proportion further.

Fourth, we observed a difference in SSB attitudes between Aboriginal and non-Aboriginal respondents regarding the cost of SSBs. Fewer Aboriginal respondents agreed with the statement “sugary drinks are too cheap”, which may be a reflection of income inequality between these population groups. In 2016, the median personal income of Aboriginal and Torres Strait Islander Australians was two-thirds that of other Australians<sup>20</sup> and it is well documented that Aboriginal people are more likely than non-Aboriginal people to run out of money to buy food, both nationally<sup>21</sup> and in Victoria.<sup>22</sup> Policies to increase the price of SSB are in place in some remote Aboriginal community-owned stores, often in combination with discounts on sugar-free beverages.<sup>23</sup> Given that taxing SSBs is a strategy that has been proposed for addressing obesity in Australia,<sup>24</sup> the potential impact and acceptability of such a policy for Aboriginal and Torres Strait Islander Australians warrants further investigation, including through qualitative research with Aboriginal participants in non-remote areas.

Finally, although the finding was not statistically significant, the higher proportion of Aboriginal respondents who had seen the advertisement and reported consuming fewer SSBs, compared with those who had not seen the advertisement, is encouraging. However, our finding that Aboriginal respondents were much more likely to consume SSBs in the past week compared to non-Aboriginal people (regardless of advertisement exposure) is consistent with national data<sup>6</sup> and highlights the importance of comprehensive, Aboriginal-led action on reducing SSB consumption. Indeed, social marketing campaigns have been shown to be most effective when implemented as part of a comprehensive approach to improving population nutrition.<sup>24–26</sup> The results of this evaluation support those of other recent studies demonstrating the utility of Aboriginal-led media campaigns<sup>27</sup> and, specifically, that the Aboriginal Rethink Sugary Drink advertisement is a useful component of a comprehensive approach to reducing SSB consumption, both in the Aboriginal community and in the general population.<sup>10,11,28</sup>

An unexpected and unintended finding of this evaluation was the stark difference between Aboriginal and non-Aboriginal respondents with relation to feelings of guilt. More than one-third (36%) of Aboriginal respondents reported that the advertisement

made them feel guilty, while only 5% of non-Aboriginal respondents reported a guilt response. In the previous campaign evaluation, reported guilt was similarly high among Aboriginal and Torres Strait Islander participants in response to both the Aboriginal (32%) and non-Aboriginal (38%) SSB advertisement.<sup>10</sup> The mechanism through which the Aboriginal SSB advertisement produced this different guilt reaction among Aboriginal and non-Aboriginal participants and the potential impact of guilt on health and wellbeing is unclear and should be explored in the future. This finding is concerning, especially since the health communications literature suggests that high perceptions of risk coupled with low self-efficacy may be linked to avoidance behaviour.<sup>29</sup> This evidence reaffirms the need for Aboriginal health promotion campaigns to use a strength-based approach and to be evaluated holistically using larger sample sizes and multiple methods in order to draw more culturally and contextually informed interpretations of the data.<sup>30</sup>

This study has several limitations. First, the cross-sectional survey design limited our ability to evaluate changes in SSB-related knowledge, attitudes and consumption pre- and post-implementation of the Aboriginal Rethink Sugary Drink campaign. Without baseline data or a comparison group, we are not able to empirically attribute any impacts to the campaign. Second, the snowball sampling strategy and the small sample size raise the possibility that the participants in this study are not representative of the broader population of Aboriginal and non-Aboriginal Victorians. It is possible that people who had seen the advertisement may have been more likely to participate in the survey and, as a result, both Aboriginal and non-Aboriginal evaluation participants may have been more engaged with the campaign messages than other Victorians. Furthermore, Aboriginal participants may have had greater exposure to the advertisement given its implementation as an Aboriginal-specific campaign through VACCHO and NITV in the year before its broader implementation. Finally, our study measured exposure and outcome variables via self-report, therefore, recall bias and social-desirability bias may have impacted responses. It is important that future evaluations have larger sample sizes and more rigorous study designs.

Despite these limitations, in addition to supporting our study hypothesis, this study adds to the body of evidence supporting

Aboriginal-led health promotion campaigns. It provides new insights about the responses and attitudes of non-Aboriginal community members to an Aboriginal-specific television advertisement and the potential for targeted campaigns to provide population-wide appeal. Recognising this cross-over success, the Rethink Sugary Drink alliance selected the Aboriginal advertisement as the sole video in its 2020 digital campaign targeting all Australians and the campaign has been expanded into the Northern Territory. Notwithstanding the limitations of the present study, there are implications for policy and practice beyond SSB campaigns. Namely, that investment in Aboriginal-specific social marketing campaigns may also benefit non-Indigenous Australians, and the health and equity impact of such campaigns should be evaluated across the entire population. These findings are important given that the Australian Government is planning a National Preventative Health Strategy while also reaffirming its commitment to closing the gap in health outcomes between Aboriginal and Torres Strait Islander peoples and non-Indigenous Australians.

## Conclusion

The Aboriginal Rethink Sugary Drink campaign was successful in engaging both Aboriginal and non-Aboriginal Victorians. Notwithstanding the study limitations, findings indicate that while Aboriginal people were more likely to recall seeing the Aboriginal-specific television advertisement and more likely to find it relevant and motivating, many non-Aboriginal Victorians also responded favourably to the campaign. Overall, these results suggest that broadcasting Aboriginal social marketing campaigns on whole-of-population platforms is an acceptable and effective strategy for promoting nutrition messages for both the Aboriginal and non-Aboriginal population, as such campaigns can have cross-over appeal and deliver positive results across both audiences. Findings regarding SSB-related knowledge and attitudes may be useful for planning future Aboriginal-specific health promotion initiatives. Broader implementation and evaluation, using larger sample sizes, a pre-test/post-test comparison group evaluation design and sophisticated statistical analyses, is required to further strengthen our hypothesis that public health campaigns designed specifically for the Aboriginal community will not only be

valuable for Aboriginal people but will also have cross-over benefits for the general population.

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## References

- Pascoe B. *Dark Emu Black Seeds: Agriculture or Accident?* Broome (AUST): Magabala Books; 2014.
- Shannon C. Acculturation: Aboriginal and Torres Strait Islander nutrition. *Asia Pac J Clin Nutr.* 2002;11 Suppl 3:5576-8
- Australian Institute of Health and Welfare. *Australian Burden of Disease Study: Impact and Causes of Illness and Death in Aboriginal and Torres Strait Islander People 2011.* Canberra (AUST): AIHW; 2016.
- Australian Bureau of Statistics. 4364.0.55.011 - *Australian Health Survey: Consumption of Added Sugars 2011-12.* Canberra (AUST): ABS 2017.
- World Health Organization. *Guideline: Sugars Intake for Adults and Children.* Geneva (CHE): WHO; 2015
- Australian Bureau of Statistics. *Australian Aboriginal and Torres Strait Islander Health Survey: 2018-2019 Financial Year.* Canberra (AUST): ABS; 2020
- National Health and Medical Research Council. *Australian Dietary Guidelines.* Canberra (AUST): NHMRC; 2013
- Backholer K, Beauchamp A, Ball K, Turrell G, Martin J, Woods J, et al. A framework for evaluating the impact of obesity prevention strategies on socioeconomic inequalities in weight. *Am J Public Health.* 2014;104(10):e43-50.
- Beauchamp A, Backholer K, Magliano D, et al. The effect of obesity prevention interventions according to socioeconomic position: A systematic review. *Obes Rev.* 2014;15:541-54.
- Browne J, MacDonald C, Egan M, Delbridge R, Macalese A, Morley B. You wouldn't eat 16 teaspoons of sugar – so why drink it? Aboriginal and Torres Strait Islander responses to the LiveLighter sugary drink campaign. *Health Promot J Austr.* 2019;30(2):212-18.
- Rethink Sugary Drink. *Sugar in Baby's Bottle Hits Home Health Messages to Australian Students* [Media Release 2017 Feb 16] [Internet]. Melbourne (AUST): Cancer Council Victoria; 2017 [cited 2017 Jul 3]. Available from: <http://www.rethinksugarydrink.org.au/media/sugar-in-baby-bottle-hits-home-to-australian-students.html>
- Blake MR, Lancsar E, Peeters A, Backholer K. The effect of sugar-sweetened beverage price increases and educational messages on beverage purchasing behavior among adults. *Appetite.* 2018;126:156-62.
- Ananthapavan J, Sacks G, Brown V, Moodie M, Nguyen P, Barendregt J, et al. *Assessing Cost-effectiveness of Obesity Prevention Policies in Australia 2018 (ACE-Obesity Policy).* Melbourne (AUST): Deakin University; 2018
- Morley BC, Niven PH, Dixon HG, Swanson MG, McAleese AB, Wakefield MA. Controlled cohort evaluation of the LiveLighter mass media campaign's impact on adults' reported consumption of sugar-sweetened beverages. *BMJ Open.* 2018;8(4):e019574.
- Morley B, Niven P, Dixon H, Wakefield M, Swanson M, Szybiak M, et al. Evaluation of the LiveLighter "Sugary Drinks" mass media campaign. *Obes Res Clin Pract.* 2014 8:70.
- ORC International. *Don't Make Smokes Your Story 2018 Evaluation* [Internet]. Canberra (AUST): Australia Department of Health; 2015 [cited 2019 Jul 8]. Available from: <https://beta.health.gov.au/sites/default/files/don-t-make-smokes-your-story-campaign-2018-evaluation-report.pdf>
- Maksimovic L, Shen D, Bandick M, Ettridge K, Eckert M. Evaluation of the pilot phase of the 'Give up smokes for good' social marketing campaign. *Health Promot J Austr.* 2015;26(1):16-23.
- Campbell M, Finlay S, Lucas K, Neal N, Williams R. Kick the habit: a social marketing campaign by Aboriginal communities in NSW. *Aust J Prim Health.* 2014;20(4):327-33.
- Australian Institute of Health and Welfare. *Burden of Cancer in Australia: Australian Burden of Disease Study 2011.* Australian Burden of Disease Study Series No. 12. Canberra (AUST): AIHW; 2017.
- Australian Bureau of Statistics. *Census of Population and Housing: Characteristics of Aboriginal and Torres Strait Islander Australians.* Catalogue No.: 2076.0. Canberra (AUST): ABS; 2016.
- Australian Bureau of Statistics. 4727.0.55.005 - *Australian Aboriginal and Torres Strait Islander Health Survey: Nutrition Results - Food and Nutrients, 2012-13.* Canberra (AUST): ABS; 2015.
- Victorian Department of Health. *The Health and Wellbeing of Aboriginal Victorians: Victorian Population Health Survey 2008 Supplementary Report.* Melbourne (AUST): State Government of Victoria; 2012.
- Ferguson M, O'Lea K, Altman J, Moodie M, Brimblecombe J. Health-promoting food pricing policies and decision-making in very remote Aboriginal and Torres Strait Islander community stores in Australia. *Int J Environ Res Public Health.* 2018;15(12):2908.
- Obesity Policy Coalition. *Tipping the Scales: Australian Obesity Prevention Consensus* [Internet]. Melbourne (AUST): Cancer Council Victoria; 2017 [cited 2018 Sep 11]. Available from: <http://www.opc.org.au/downloads/tipping-the-scales/tipping-the-scales.pdf>
- Jou J, Niederdeppe J, Barry CL, Gollust SE. Strategic messaging to promote taxation of sugar-sweetened beverages: Lessons from recent political campaigns. *Am J Public Health.* 2014;104(5):847-53.
- Obesity Policy Coalition. *A Comprehensive Policy Program to Reduce Consumption of Sugar Sweetened Beverages in Australia* [Internet]. Melbourne (AUST): Cancer Council Victoria; 2018 [cited 2018 May 25]. Available from: <http://www.opc.org.au/downloads/policy-briefs/reduce-sugary-drinks-in-australia.pdf>
- Walker T, Palermo C, Klassen K. Considering the Impact of Social Media on Contemporary Improvement of Australian Aboriginal Health: Scoping Review. *JMIR Public Health Surveill.* 2019;5(1):e11573
- Blake M, Lancsar E, Backholer K, Peeters A. Estimating the impact of sugar-sweetened beverage price increases and educational messages on beverage purchasing behaviour by socioeconomic position: A discrete choice experiment. *Proceedings of the 38th Australian Health Economics Society (AHES) Conference;* 2016 Sep 26-27; Perth, Australia. Sydney: AHES; 2016.
- Rimal RN. Perceived risk and self-efficacy as motivators: Understanding individuals' long-term use of health information. *J Commun.* 2001;51(4):633-54.
- King M. Contextualization of socio-culturally meaningful data. *Can J Public Health.* 2015;106(6):e457.