



I Immunise: An evaluation of a values-based campaign to change attitudes and beliefs



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ABSTRACT

This paper presents results of a study determining the efficacy of a values based approach to changing vaccination attitudes. It reports an evaluation survey of the “I Immunise” campaign, conducted in Fremantle, Western Australia, in 2014. “I Immunise” explicitly engaged with values and identity; formulated by locals in a community known for its alternative lifestyles and lower-than-national vaccine coverage rates. Data was collected from 304 online respondents. The campaign polarised attitudes towards vaccination and led some to feel more negatively. However, it had an overall positive response with 77% of participants. Despite the campaign only resonating positively with a third of parents who had refused or doubted vaccines, it demonstrates an important in-road into this hard-to-reach group.

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1. Introduction

Vaccine hesitancy in the developed world is a concern for governments, health practitioners, academics and communities. Whilst a growing literature informs the efforts of policy-makers and health professionals [1–6], community, social identity and lifestyle remain underutilised sites to enact social change in vaccine attitudes.

Particular communities have more reason than others to be concerned about vaccine hesitancy, because when refusers cluster, local vaccination rates will be lower than national averages, threatening herd immunity [7]. This has inspired some to form action groups to promote vaccination at local, national and international levels [8]. In Australia, the Stop the Australian (Anti)Vaccination Network Facebook group counters the nation’s most prominent anti-vaccination organisation [9], while Northern Rivers Vaccination Supporters provides support and information for parents in a geographical region with some of the lowest vaccination coverage rates in the country [10–12].

Vaccine interventions deriving from communities utilise local advocates, a model well utilised by Northern Rivers Vaccination

Supporters. Information, including the reporting and translation of scientific data, is important, but community-based interventions can employ mechanisms building upon social norming, values-framing and story-telling. Evidence suggests that ‘letting people know what other people do is one of the most effective ways of increasing that behaviour’ [13]. Studies of other contested issues suggest that leading with values instead of facts can be an effective way of challenging ideologically loaded beliefs [14]. Moreover, emphasising shared values, identity and lifestyle of local advocates is important, because behaviour change literature shows that trusted and like-minded sources are more likely to influence peers [15]. Sharing messages through stories is a strategy vaccine advocates have employed, explicitly borrowing successful tactics from the opposition [8]. This relationship between information, values, identity, lifestyle and story-telling can be conceptualised as a social-identity theory based approach to (lasting) attitudinal change, advanced as best practice by leading policy researchers [15]. Such an approach takes seriously the social relationships between humans, the ways in which identities are formed within and through these relationships, and the construction of social norms that encourage us to act in ways that affirm them [16].

This article evaluates a research project conducted around a community intervention in Fremantle, Western Australia, run by the Immunisation Alliance of WA, the nation’s first not-for-profit pro-vaccination advocacy organisation [17]. Fremantle reports amongst the lowest vaccination coverage rates in Australia, with

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85.6% of one and five-year olds fully immunised, and 86.6% of two year olds [12]. The “I Immunise” campaign used community advocates and explicitly appealed to (because it derived from) local values around social justice, parenting and alternative lifestyles.

“I Immunise” built from a set of observations linked to the broader evidence relating to behaviour change (above), and vaccination behaviours (examined below). We hypothesised that Fremantle’s low vaccination rates derived at least in part from its prominent alternative lifestyle community. Alternative lifestyles, in particular attitudes towards health and medicine, can impact on how parents think and act with regard to vaccines [2,18,19], as can the geographical clustering of like-minded families [3,7,10,19,20]. The campaign designer’s experiences within the Fremantle alternative community via home-birthing, breastfeeding, baby-wearing and cloth-nappying forums, indicated that vax-hesitant views were hegemonic in these settings. Highly educated parents have much higher levels of concern about vaccine safety than those with less education [3]; researchers have noted that middle class mothers are more likely to question vaccination, and ‘can have a disproportionate influence on others in opinion formation’ [21]. In Fremantle’s birthing and infant scene, educated, middle-class parents learnt from each other to prioritise particular parenting practices instead of vaccination to protect children; a tendency mirrored in similar demographics elsewhere [22,23]. Self-styled experts on one aspect of parenting, such as breastfeeding or natural birth, could claim authority on vaccines and influence discourse in peer-groups, demonstrating the phenomenon of ‘bandwagoning,’ with parents informed by the decisions of those around them [24,25]. We sought to communicate that ‘others in the community have made good choices on the basis of accurate information’ [25] (p. 185). However, what we really emphasised was the values and lifestyle of campaign participants. By appealing to shared identification, we sought to persuade people to vaccinate for reasons that would be salient to them [3,13].

There were two distinct audiences for the “I Immunise” campaign. Leask et al., in their five-fold typology of parental attitudes and behaviours, identify ‘hesitant’ parents as those who vaccinate but with significant concerns, and ‘late or selective vaccinators’ who cherry-pick or delay vaccines [1] – together, these were our ‘fence-sitters’. Our other audience was made up of what Leask et al. call ‘unquestioning acceptors’ and ‘cautious acceptors’ [1]. However, we focused on parents’ outward stance towards vaccination rather than their inward feelings, conceptualising ‘in the closet’ and ‘out and proud’ vaccinators. The later featured in the campaign, whereas the former were its second target audience. Given the hegemony of vax-hesitant views in the alternative community, we expected many parents who fully vaccinated kept this quiet to avoid conflict with peers. By encouraging these individuals to move out of the closet and claim legitimacy as ‘alternative’ parents, the campaign sought to alter community discourse; a strategy advocated in general terms by Brunson, who found that the vaccination attitudes prevalent in a parent’s network are a stronger predictor of vaccine acceptance than the parents’ own perceptions [26].

The aim of this study was to determine if such a values-based approach is an effective tool for changing attitudes and behaviour regarding vaccination.

2. Materials and methods

The “I Immunise” campaign featured six Fremantle residents who identified as living an alternative lifestyle. Campaign development involved collaborating with each spokesperson to develop a 300-word testimonial outlining why vaccination was part of his or her alternative lifestyle. These testimonials featured on a website along with professional photographs of the spokespeople in

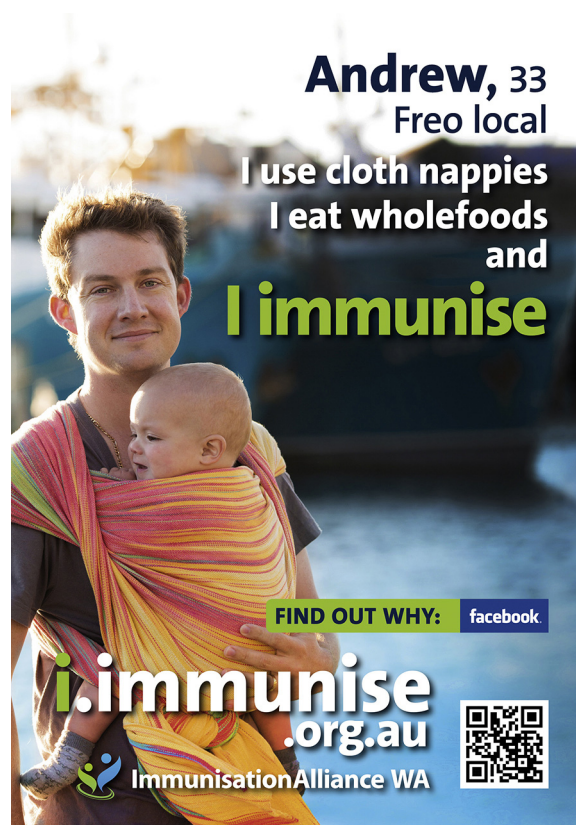


Fig. 1. “I Immunise” poster.

iconic Fremantle locations. Each spokesperson’s testimonial was distilled into a poster, listing first name, age, number of children and two core lifestyle attributes, followed with the words, “I Immunise.” Lifestyle attributes included home-birthing, breastfeeding, baby-wearing and eating wholefoods. One mother breastfed in her photograph; a father wore his baby son in a wrap made by his artisan wife (see Fig. 1 below) [27].

Two posters became billboards, erected for a month; others became large signs displayed on public buildings. Four featured as weekly advertisements in the independent newspaper, *The Fremantle Herald*. Each poster became a meme on the I Immunise Facebook page, including one which ‘went viral’ with 12,086 views as of August 2014 [28]. The series of six posters were distributed to doctors’ surgeries, child health clinics, maternity services, childcare centres, playgroups and private businesses in Fremantle, where many of them remain on display. The campaign attracted local state and national media attention, particularly after the billboards were vandalised by supporters of the Australian Vaccination Sceptics Network [29].

The campaign was evaluated by collecting qualitative and quantitative data via an online survey. The survey targeted participants’ attitudes and experience of the campaign, and asked them to articulate whether it had affected their thoughts, feelings or behaviour towards immunisation. Advertising literature acknowledges the role that both emotions and rational thought play in influencing attitudes and behaviour, as behaviour is not always the result of rational and/or conscious thought [32]. As a result, increasingly research looks at the impact of advertising on both emotions and rational and/or conscious thought. Consequently, questions were posed to participants asking them to articulate separately how the campaign may have affected their thoughts about immunisation, how they feel about immunisation and their subsequent behaviour regarding immunisation after seeing the campaign. The impact on

thoughts and feelings could be either positive or negative and as a result, five dependent variables were collected capturing the positive or negative impact on thoughts and feelings and any changes in behaviour. A large volume of data was collected and just the results describing the evaluation of the campaign (Part 3 of the survey), are presented here, including responses to some open-ended questions.

Recruitment of participants was via snowball sampling and direct campaign contact. The campaign materials referenced the “I Immunise” website, which directed participants to the online survey. Some participants noted in their written comments they had passed the web site and survey on to their friends and family, and interested parties of the campaign emailed the survey link to their networks. Sample posters and testimonials were presented in the survey to ensure respondents had seen the campaign.

Limited demographic information was collected from participants for comparison purposes. Participants were asked if they self-identified as “someone who lives an alternative lifestyle” or not. Those that did not self-identify as living an alternative lifestyle were used as a comparison group.

Statistical analysis was primarily descriptive (frequencies) or non-parametric (chi-squared). Participants were identified as vaccine hesitant after recoding three variables. Three questions asked participants if they had ever refused a vaccination for their child, had doubts about a vaccination or had had any worries about vaccination. A ‘yes’ to any of these questions placed a participant in the vaccine hesitant group, enabling analysis of the effects of the campaign on this specific group.

The online questionnaire had ethics approval under University of Western Australia permit number RA/4/1/5890, and subjects were informed why data was being collected and how it would be collated and used.

3. Results

A total of 304 respondents evaluated the campaign. The basic demographic information of the respondents is presented in Table 1. The respondents were primarily female (90.3%) in both the alternative lifestyle group and the non-alternative lifestyles, and they tended to have similar numbers of children and levels of education. There were significant differences between the two groups when comparing ages and occupational classifications. More alternative lifestyle respondents reported being 25–44yrs (86.0%) compared to the non-alternative lifestyles (73.6%), indicating they were proportionally older ($\chi^2 (3, n = 302) = 8.26; p < 0.05$). More alternative lifestyle respondents reported being self-employed and stay-at-home parents (57.0%) compared to non-alternative lifestyles (32.1%), and a higher proportion of non-alternative lifestyles reported they worked in supervisory or professional roles (49.0% compared to 30.2%) ($\chi^2 (5, n = 270) = 18.64; p < 0.01$).

Just over half of the participants reported they had either refused, doubted or worried about vaccinations for their children (56.5%). As expected, there were significantly more vaccine hesitant participants in the alternative lifestyle group (72.0%) than in the non-alternative lifestyle group (56.5%) ($\chi^2 (1, n = 302) = 6.59, p < 0.05$).

Fig. 2 outlines which elements of the campaign respondents reported seeing. The most visible campaign component was the “I Immunise” website, which was seen by over a third of all respondents. For the alternative lifestyle group, the most visible elements were the campaign website (36.6%), the billboards (24.7%) and stories in the local paper (20.4%). For the non-alternative lifestyles, the most visible element was the campaign website (over 41%) with all other elements (except a stall at a local Farmers Market) being seen by a similar number of respondents.

When looking at differences between the alternative lifestyles and non-alternative lifestyles (Table 2), there was a significant difference in only one dependent variable – feeling more negative about vaccination post the campaign ($\chi^2 (1, n = 304) = 4.36, p < 0.05$).

After recoding the data above, there were 180 (59.2%) respondents indicating a positive impact of the campaign (either feeling or thoughts), 51 (16.8%) indicating a negative impact (either feelings or thoughts), and 73 (24.0%) indicating no impact on feelings or thoughts. There was no significant difference between the alternative lifestyle respondents’ positive, negative or nil impact and non-alternative lifestyles’ positive, negative or nil impact. Leaving out the nil impact, of the 67 alternative lifestyle participants indicating an impact from the campaign, 48 or 71.6% of them reported a positive impact. Of the 156 non-alternative lifestyles, 125 or 80.1% reported a positive impact.

A secondary aim of the current study was to investigate the perceptions of vaccine hesitate participants. Analysing just those respondents who reported an impact from the campaign, significant differences were found between hesitant and non-hesitant, indicating that negative thoughts ($\chi^2 (1, n = 158) = 29.98; p < 0.001$) and feelings ($\chi^2 (1, n = 169) = 31.87; p < 0.001$) were more likely to be generated by this campaign for vaccine hesitant participants (see Table 3).

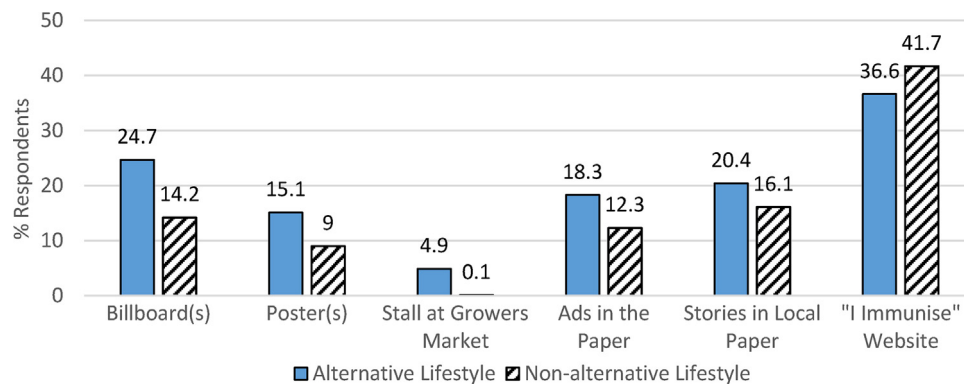
4. Discussion

The most important effect of the campaign we sought to measure was whether it had made alternative lifestyle parents think and feel more positively about vaccination. Respondents from both the alternative lifestyle group and the non-alternative lifestyles reported more positive thoughts or feelings than negative thoughts or feelings after seeing the campaign. The campaign had an overall positive effect for at least 77%; 71% of the alternative lifestyle group and 80.1% of the non-alternative lifestyles. The fact that the campaign did impact positively at least three quarters of the target group suggests that it has value as one type of influencing tool.

We asked all survey respondents separate questions on whether they had ever had doubts about vaccines, had worried about their safety or actually refused an offered vaccine. Of those who reported an impact of the campaign on them, the cohort who had refused a vaccine showed a high level of negative responses to the campaign (69.2% compared to 2.1% for those who had never refused a vaccine), suggesting that we were tapping into vaccine refusers rather than vaccine-hesitant individuals. Research demonstrates that such individuals are very difficult to engage with pro-vaccine messaging, both face to face [33] and through campaigns [34,35]. Hence their negative responses, such as one parent who “went online and redoubled [her] efforts to warn people of the dangers of vaccinating,” are to be expected. Those respondents who reported feeling and thinking more negatively about immunisation after seeing the campaign had a range of grievances teased out in qualitative analysis of their survey comments. Some rejected the perceived propaganda and emphasised the importance of their right to choose. Others emphasised their distrust with the information’s source and its links to government and pharma. There were also complaints that the material was one-sided and that it stereotyped people based on lifestyle and vaccine decisions. The latter was noteworthy because not all parents who responded negatively to the campaign or who had experienced fears, safety worries or refused vaccines identified as alternative lifestyles. Some criticisms were familiar from other quantitative [30,31] and qualitative [36–38] studies and reviews [2,39,40]; more research is required into how these attitudes develop and how communities, governments and health professionals can effectively challenge them.

Table 1
Demographic characteristics of survey respondents.

	Total group n (%)	Alternative lifestyle n (%)	Non-alternative lifestyle n (%)	Group comparisons
Number of respondents	304	93 (30.6)	211 (69.4)	
Vaccine hesitant				$\chi^2 (1, n = 302) = 6.59, p < 0.05$
Yes	185 (61.3)	67 (72.0)	118 (56.5)	
No	117 (38.7)	26 (28.0)	91 (43.5)	
Gender				n.s.
Males	29 (9.7)	6 (6.6)	23 (11.1)	
Females	269 (90.3)	85 (93.4)	184 (88.9)	
Age group (years)				$\chi^2 (3, n = 302) = 8.26; p < 0.05$
15–24yr	10 (3.3)	4 (4.3)	6 (2.9)	
25–34yr	106 (35.1)	38 (40.9)	68 (32.5)	
35–44yr	128 (42.4)	42 (45.2)	86 (41.1)	
45yr+	58 (19.2)	9 (9.7)	49 (23.4)	
Number of children in family				n.s.
1	89 (30.6)	27 (31.0)	62 (30.4)	
2	128 (44.0)	42 (48.3)	86 (42.2)	
3+	74 (25.4)	18 (20.7)	56 (27.5)	
Highest educational qualification				n.s.
Year 10 or 11	11 (3.6)	2 (2.2)	9 (4.3)	
Year 12	19 (6.3)	8 (8.6)	11 (5.2)	
TAFE or trade	47 (15.5)	14 (15.1)	33 (15.7)	
University degree	119 (39.3)	40 (43.0)	79 (37.6)	
Post-graduate qualification	107 (35.3)	29 (31.2)	78 (37.1)	
Occupational classification				$\chi^2 (5, n = 270) = 18.64; p < 0.01$
Management	29 (10.744)	7 (8.1)	22 (11.9)	
Supervisory or Professional	116 (43.0)	26 (30.2)	90 (49.0)	
Technical occupations	15 (5.6)	3 (3.5)	12 (6.5)	
Self-employed or small business owner	40 (14.8)	22 (25.6)	18 (9.8)	
Home duties or stay at home parent	68 (25.2)	27 (31.4)	41 (22.3)	
Unemployed	2 (0.7)	1 (1.2)	1 (0.5)	

**Fig. 2.** Campaign activities recalled by respondents.**Table 2**
Impact of the campaign on thoughts, feelings and behaviour regarding vaccination.

	Alternative lifestyle n (%)	Non-alternative lifestylers n (%)	Chi square results
Think more positively about it			
Yes	32 (25.8)	92 (74.2)	n.s.
No	61 (33.9)	119 (66.1)	
Think more negatively about it			
Yes	14 (37.8)	23 (62.2)	n.s.
No	79 (29.6)	188 (70.4)	
Feel more positively about it			
Yes	39 (29.8)	92 (70.2)	n.s.
No	54 (31.2)	119 (68.8)	
Feel more negatively about it			
Yes	19 (44.2)	24 (55.8)	$\chi^2 (1, n = 304) = 4.36, p < 0.05$
No	74 (28.4)	187 (71.6)	
Do something – behave differently			
Yes	19 (34.6)	36 (65.4)	n.s.
No	74 (29.7)	175 (70.3)	

Table 3
Impact of the campaign across vaccine hesitant and non-vaccine hesitant participants.

	Vaccine hesitant n (%)	Not vaccine hesitant n (%)	Chi square results
Impact on thoughts			
Positive impact	56 (45.9)	66 (54.1)	$\chi^2 (1, n = 158) = 29.98; p < 0.001$
Negative impact	35 (97.2)	1 (2.8)	
Impact on feelings			
Positive impact	61 (47.3)	68 (52.7)	$\chi^2 (1, n = 169) = 31.87; p < 0.001$
Negative impact	39 (97.5)	1 (2.5)	

By contrast, those who lived an alternative lifestyle and responded positively to the campaign reported that they would take actions such as getting their own vaccinations updated, sharing the campaign on their Facebook “even though I knew some of my friends would strongly disagree”, keep their children away from those who were not immunised. One parent wrote, “Decided once and for all to immunise my baby.” Parents reported feeling more comfortable with their decisions to immunise their children and one specified that “it made me realise that vaccination is compatible with ethical parenting.”

The “I Immunise” campaign was novel in that it expressly engaged with values, ideology and identity. More than one testimonial of the ‘out and proud’ vaccinators emphasised social responsibility, seeing this as a key part of their community’s values [27]. However, since research demonstrates that parents make vaccination decisions primarily about their own children rather than the benefit to others [22,39], more research is required into how, and whether, social responsibility can be enhanced through pro-social norms within specific communities, and whether campaigns such as “I Immunise” could be transferable to other similar communities.

Although the campaign was conducted with reference to the geographical community of Fremantle and the broader lifestyle that this Fremantle identity connotes, our findings are potentially applicable to other similar communities, particularly because we did not limit survey responses to Fremantle residents only. There are isolated “Fremantle-type” individuals throughout broader populations, connected by online and social media, and there are other communities with apparent similarities to Fremantle in terms of lifestyle and values, with Portland in the USA [41,42] a popularly referenced example. While similarities between national and international ‘hesitant communities’ need to be mapped and cross-national virtual ‘hesitant communities’ also require investigation, we hope our strategy and limited findings will help researchers in those settings develop and test new ideas. However, all campaigns should be conceived, developed, tested and executed by committed members of local communities, to fit the authenticity needs of their audiences.

There were some real limitations to this study, many of which derive from the fact that it was action research connected to a grass-roots community-led campaign [43]. The presentation of the campaign to a geographical and wider online community precluded an experimental design. Data was gathered opportunistically and via snowball sampling rather than via double blind randomised controlled trials. The response rate was low given that there were no limits placed on who could respond, and this impacted on our ability to drill down to the even smaller cohort of vaccine hesitant or refusing respondents. A Likert scale would have helped us to measure strength of reach, rather than a simple yes/no. We did not collect data on residence within, near or outside Fremantle, which was a significant weakness. Because of social media, we could not adequately control who saw the campaign and wished to respond. However, although the campaign was geographically situated within Fremantle, we know it was viewed and shared widely within Australia and beyond. On this basis, we believe that measuring people’s responses to it via their self-ascribed social identity

can inform us about vaccination as a social practice, and as a site for social interventions.

We see our project contributing to developing evidence-based strategies for dealing with vaccine hesitancy and refusal. Such strategies will be essential for increasing vaccination rates in communities at risk of outbreaks of vaccine preventable diseases [5,6]. We reiterate that even if the campaign polarised some in the community, as we surmise, when it came to parents who had doubted, worried about the safety or even refused vaccines, a reasonable proportion thought and felt more positively about immunisation after seeing the campaign. To be able to alter positively the mindsets of over one third of vaccine hesitant respondents – which would include committed anti-vaccinators as well as fence-sitters – is, we argue, a success. Different strategies are clearly required for those whom we were not able to persuade.

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