

Article

Vaping harms awareness messaging: exploring young South Australians' responses to vaping prevention campaign materials

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Abstract

Nicotine vaping products (NVPs) pose health risks associated with nicotine dependence and increased likelihood of tobacco consumption. Despite having a secondary role in smoking cessation, recreational NVP use is increasing among younger people. Vaping prevention campaigns aim to influence views on the health risks of vaping. This study examined perceptions of Australian and international vaping prevention campaigns among 27 young South Australians aged 16–26 years who do and do not use NVPs, to inform targeting and framing of vaping risk messaging. Participants viewed example materials from three vaping prevention campaigns: 'Epidemic', 'Do you know what you're vaping' and 'Unveil what you inhale'. Focus groups and interviews assessed whether materials were easily understood, appropriate, relevant, credible and effective in health communication. Participants indicated that all campaigns would influence their thoughts and actions related to vaping. The 'Do you know what you're vaping' campaign prompted thoughts about uncertainty about individual health risks, though participants did not indicate that this was enough to motivate vaping cessation. Participants considered the 'Unveil' campaign effective, with those who did not vape indicating they would click through to access resources, and those who did vape responding well to the 'challenge' aspect of the messaging. The 'Epidemic' campaign fear appeal did not clearly prompt change in vaping views or behaviours. Campaigns using a challenge approach may generate conversation about vaping harms, while fear appeals can be dismissed by younger audiences. Evidence-based short messages and the presentation of multiple versions of content were considered effective approaches.

Keywords: electronic nicotine delivery devices, vaping, health communication, prevention

BACKGROUND

Nicotine vaping products (NVPs), or vapes, are increasingly popular in Australia. Australia's largest, representative alcohol and other drugs monitoring survey shows that current daily NVP use is most prevalent among 18- to 24-year-old Australians. This age group has had the largest increase in NVP use—from 6.8% in 2016 to 18.7% in 2019 (AIHW, 2017, 2020). The frequency of NVP use also rose among people who

smoked combustible tobacco over this period, with monthly or greater use increasing from 3.4% to 7.8%. The data reflect the growing use of NVPs, despite potential harms.

NVP use can expose people to potentially harmful chemicals, including respiratory irritants and carcinogens. They are highly addictive and can produce nicotine dependence partially because of unregulated high nicotine concentrations, palatable flavours and nicotine salt formulations which allow for rapid delivery of

Contribution to Health Promotion

- Despite awareness of the potential harms of vaping, the prevalence of nicotine vaping product use is increasing.
- These products can be viewed by younger people as a 'cleaner' and less health-harmful alternative to conventional combustible tobacco.
- Vaping prevention health campaigns use different communication approaches to convey current evidence on vaping health risks and available supports.
- Prevention messaging that challenges common risk perspectives may help generate further conversation about harms.
- Prevention messaging effectiveness should be tested for presentation focused on presenting evidence, unknown risks, personal challenges or fear appeals to identify which prompts the highest engagement with calls to action.

nicotine (Douglass *et al.*, 2020). This corresponds with the use of NVP and tobacco products being increasingly reported (El-Toukhy and Choi, 2016). Vaping may also increase the likelihood of transitioning to smoking (National Academies of Sciences Engineering and Medicine, 2018), with cohort studies indicating that vapers have a 34% increased risk of subsequent tobacco smoking (Hammond *et al.*, 2017; East *et al.*, 2018). Although evidence suggests that NVPs are potentially less harmful than conventional tobacco cigarettes and can be used for tobacco smoking cessation (National Academies of Sciences Engineering and Medicine, 2018), there are considerable risks associated with the recreational use of these products by young people.

From October 2021, the Australian Therapeutic Goods Administration revised the Poisons standard to clarify nicotine regulation and legal access options (Therapeutic Goods Administration, 2021a), adapted the medical cannabis model to fit nicotine vaping products and set a maximum nicotine level (Therapeutic Goods Administration, 2021b), and further access reforms are currently under consultation (Therapeutic Goods Administration, 2022a). The Australian government has recently allocated over \$200 million of its budget to tackle tobacco and NVP use specifically through campaign development, cessation support programs, manufacturing, import and retail regulation and policy reform (Thomas, 2023). Current legislation stipulates that it is illegal to sell

nicotine-containing vaping products without a medical prescription and any vaping products to minors. Furthermore, retailers must provide evidence that the vaping products that are sold are nicotine-free as it was found that most single-use non-nicotine vaping products contained nicotine (Department of the Premier and Cabinet, 2023).

Health communication campaigns are an established tool for successfully increasing risk salience and reducing intentions to use NVPs (Noar *et al.*, 2020a). As NVP use is partly predicted by lower perceived harms of vaping (Jongenelis *et al.*, 2019), significant public health benefits could be yielded by effective preventive health messaging that increases knowledge about potential risks. Additionally, given that risk information shapes NVP users' views about the safety of these products, effective messaging can clarify inaccurate risk perceptions among users.

The highly modifiable nature of NVP design relative to traditional tobacco products requires research specifically focused on vaping and media, to deliver effective public health messaging and garner public support for NVP control policies. This is a key population health issue, as it forms part of the public narrative around vaping, where conflicting messaging about health harms to youth, and about NVP tobacco cessation options for adults (Banks *et al.*, 2022) creates a messaging environment that requires careful campaign targeting. Preventive messaging can include factors such as executional style (e.g. presenting facts/evidence) and emotional tone (e.g. eliciting fear) (Dunstone *et al.*, 2017).

Given the above, this study examines perceptions of Australian and international vaping prevention campaigns among young South Australians aged 16–26 years who do and who do not use NVPs. The findings intend to inform and improve the delivery of vaping prevention messaging for young people in the South Australian context.

METHODS

Study design and setting

A mixed methods qualitative approach was used for this research, comprising a brief demographic survey and a series of facilitated focus groups and individual interviews with young people in metropolitan Adelaide and regional South Australia.

Ethics

Ethical approval for this research was obtained via the Flinders University Human Research Ethics Committee (Approval#: 5632). All participation was voluntary, and respondents indicated informed consent.

Participants

Recruitment was conducted via a professional market research recruitment agency. Participants were then screened for eligibility, with requirements to have not participated in related research in the past 6 months, to speak English and to be available for a 60-min discussion about NVPs. Three types of participants were recruited for this study: (i) people who vaped, aged 16–26 years, including those who also smoke; (ii) people who smoked tobacco only, aged 16–26 years and (iii) people who neither vaped nor smoked tobacco, aged 16–26 years. Vaping status was indicated by any use of NVPs within the past 12 months. Participants were recruited from three regions of metropolitan Adelaide, North, South and Central and from regional/rural areas of South Australia. A \$70 digital voucher was provided after completing participation.

Procedure

A demographic survey was completed where information on baseline knowledge of vaping and frequency of use was defined as any point over the last 12 months. Eligible participants ($n = 27$) were scheduled for a focus group session with others who matched their participant type (e.g. people who vaped), or for an individual interview. Focus groups ($n = 6$) were facilitated by two researchers, and single interviews ($n = 3$) were conducted by one researcher. Examples of Australian and international public health NVP campaigns were identified via a rapid review of government and non-government health communication initiatives within the previous 5 years. This time frame reflected the changing social context of NVP use. Key search terms related to health communication campaigns and vaping behaviours were used in online searches to identify examples of Australian and international public health vaping campaigns ($n = 22$). The study design adheres to standards defined by consolidated criteria for reporting qualitative research to best capture focus group data and adequately analyse and interpret findings (Tong *et al.*, 2007).

A series of campaign messages and materials sourced from the review was presented to participants in varying orders to limit order effects. These sessions assessed which aspects of the materials were easily understood, socially appropriate/acceptable, considered credible with the audience and prompted participants to think about their own use of NVPs or that of their family and friends, and any actions they may take in response to the materials.

Materials

Participants read a project information summary, and gave written informed consent, prior to study involvement. Participants were provided with a \$70 digital

gift card honorarium for participation. Participants completed a brief demographic survey asking about tobacco and NVP use, and core demographic details. Sessions followed a semi-structured topic guide (Supplementary Appendix A) that began by discussing general perspectives on vaping and participants' awareness of existing vaping campaigns, where they may have seen them, and their perceptions of those campaigns and messages.

Researchers identified three campaign visual resource sets (Supplementary File S1) that represented the identified range of evidence-based approaches to producing awareness of NVP harms, for use as discussion stimulus materials. These material sets were selected based on the target population, key messaging and the use of co-design/pre-testing, theory or evidence base and review or evaluation.

The New South Wales Government 'Do You Know What You're Vaping' campaign (18) (Figure 1A) included integrated media assets targeting people aged 14–17 years, and a resource toolkit for young people, parents and caregivers, education and health professionals about the health impacts and hazardous ingredients of vapes. The campaign's key messages directly map to published evidence on the use of NVPs (NSW Health, 2022). This campaign was developed in consultation with young people, parents, clinicians, researchers, creative, education and healthcare partners, using principles of semiotics to attract a younger audience, and was informed by qualitative and quantitative testing conducted by the designing agency.

The Lung Foundation Australia 'Unveil What You Inhale' campaign provides a toolkit of resources for young people, parents and caregivers and education professionals, to discuss health impacts, hazardous ingredients and industry marketing of vapes. This campaign was co-designed with young people in a target audience of 12–24 years. The vaping prevention resources were developed to promote the dangers of vaping and to deliver 'information to empower young vapers to make safer, more informed choices' (Sabio marketing, 2022) (Figure 1B).

The US Food and Drug Administration 'The Real Cost: Epidemic' campaign (Figure 1C) challenges the 'cost-free' perception of NVP use, with a key message that uses shock imagery to convey the hazardous ingredients of NVPs, and health impacts (IBB Online, 2018). The target audience was young people who had used NVPs or were open to doing so and was designed by an established director and marketing agency. Controlled trial evidence supports the effectiveness of this campaign with young people aged 13–17 years, with significantly less positive attitudes to vaping and smoking than in controls following campaign exposure (Noar *et al.*, 2022), and lower intentions to vape (Noar *et al.*, 2020b).

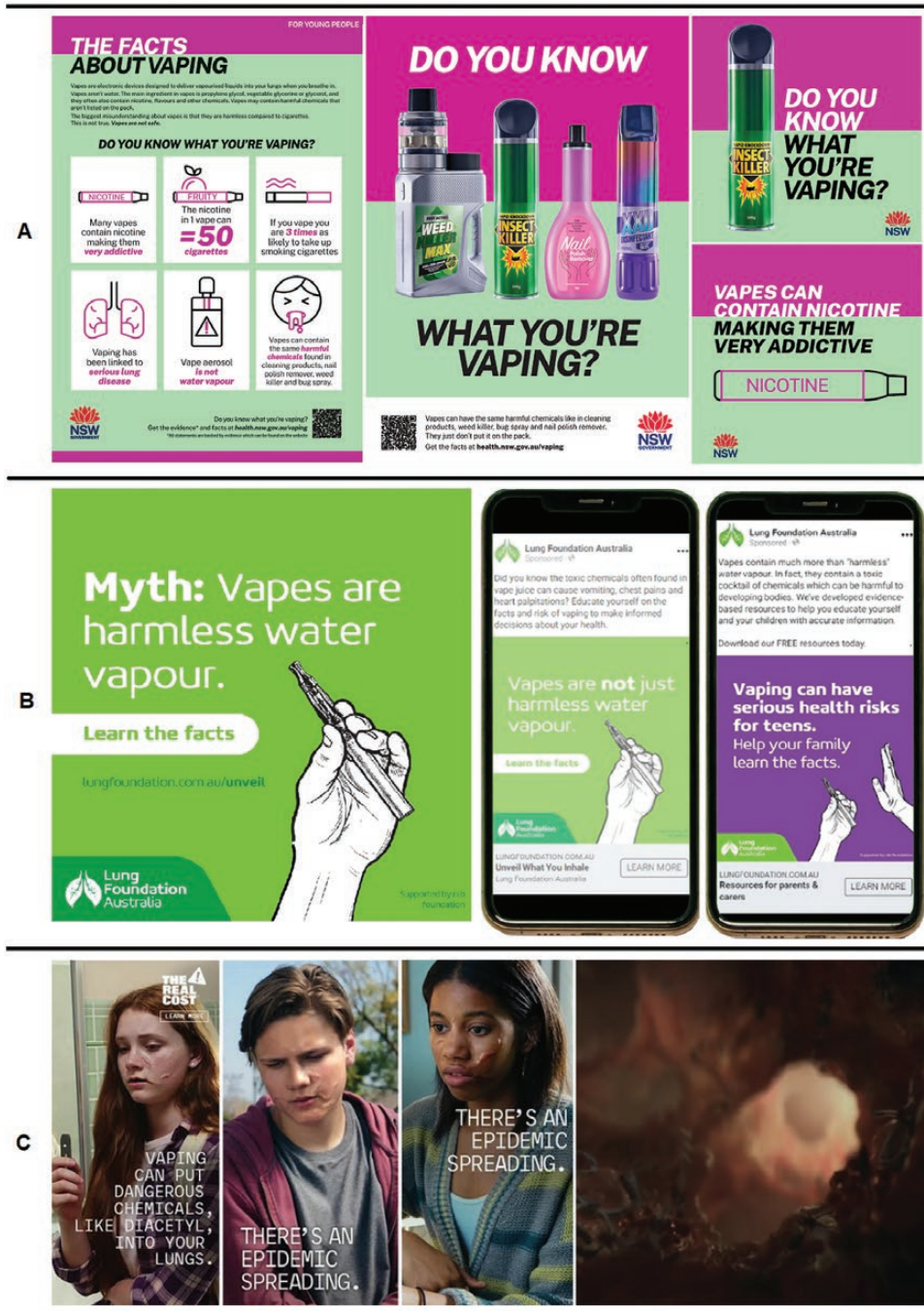


Fig. 1: Vaping prevention health communication campaign example materials: (A) NSW Health campaign media and toolkit, adapted, Bastion agency; (B) Lung Foundation Australia campaign, adapted, Sabio agency and (C) US Food and Drug Administration campaign, adapted, FDA Resource Library.

Analysis

Results from a Scholar and Scopus search for literature on the evaluation of anti-NVP campaigns were used to identify methods that assess campaign

effectiveness. These were adapted and used to develop an interview discussion guide to explore perceptions of selected campaigns. Initial deductive coding topics derived from the guide are summarized in Table 1. The

discussion guide was designed to address key areas of the Message Impact Framework: attention, warning reactions, attitudes and beliefs and intentions relating to future behaviour, and perceived message effectiveness (Seth *et al.*, 2016).

Focus group and interview audio was verbatim-transcribed and imported into NVivo 1.3 for coding and analysis. Data were coded by two researchers (JT and OE) using descriptive thematic analysis following pre-determined descriptive themes derived from literature and organized according to the campaign to assess its effectiveness. Using this approach and the information guide as a starting point to shape the analysis patterns were identified. Researchers utilized deductive coding methods to identify and extract further organizing themes described in Table 3 (Braun and Clarke, 2006; Saldana, 2015).

RESULTS

Participants

Study participants comprised slightly more men than women, and participants were of an average level of income and were mostly full-time employed or students (Table 2). Participants' average age matched the target demographic for this study, and almost half lived with parents or guardians. Participants who have not used NVPs or tobacco in the last 12 months comprised

most of this cohort ($n = 17$, 63%) with one quarter having used a vape in the past 12 months, and few smoking tobacco only. Participants were largely from metropolitan South Australia (81.5%) compared to regional areas (18.5%), indicating good coverage of metropolitan areas. Supporting material in the following section notes if participants smoked (S), vaped (V) or did neither (N), as well as female (F), non-binary (NB) or male (M) gender.

Perspectives on vaping

Prior to the discussion of any vaping prevention campaign materials, participants were asked to describe their views on what vaping is and how they personally view it. Multiple participants considered vaping a 'cleaner or healthier' alternative to combustible tobacco products. For participants who vaped, it was also considered an appealing activity, beyond views on potential health implications. For many participants, vaping was considered an acceptable social activity, particularly relative to tobacco smoking, which was viewed as more harmful. Vaping was described as something that was frequently considered normal across young adult regular social activities. Participants also specifically described that vaping was associated with alcohol consumption at events, taking the place of cigarettes.

Generally [I] think of it as like, not as sort of health hazardous, [versus] traditional sort of tobacco smoking. (23, M, N)

Just like that sweet flavour. Nicotine release. I mean, I still find it better than smoking, so it's kind of like, "Wow, yum, you know, I want some of that."... I definitely like the grape, strawberry, watermelon, like fruity, sweet kind of flavours. (21, M, V)

It's very common... like everyone's in the bathroom at lunch... [and] I associate it a lot with drinking, every time we go out, it's like you have your drink, and your vape. (18, M, V)

I've experienced friends and kind of close acquaintances who have never smoked in their life before, and they've just kind of picked it up as a habit. So, people do it very socially... especially when we're maybe out on the town... (24, F, V)

Participants views on the descriptive themes of a campaign were coded, analyzed and then organized according to four factors for each campaign: (i) visual and design elements (i.e. how their design concept was viewed), (ii) personal relevance (i.e. the extent to which young people identified with the message), (iii) message perception (i.e. how young people understood the main message) and (iv) perceived campaign effects (i.e. which campaign

Table 1: Summary of semi-structured interview guide topics

	Initial coding topic
1	Vaping campaign description (<i>current awareness, expected effectiveness</i>)
2	Initial reactions and thoughts about the campaign (<i>delivery of key point</i>)
3	Understanding of the main message (<i>accuracy and comprehension</i>)
4	Perceived personal relevance (<i>messaging relevance and credibility</i>)
5	Perceived effective and ineffective (<i>appeal and engagement</i>)
6	Motivating versus changeable features (<i>motivating features</i>)
7	Components considered convincing (<i>convincing features</i>)
8	Believability of campaign approach and message (<i>believability</i>)
9	Personal effect of campaign approach (<i>dissuasive/neutral/encouraging</i>)
10	Most impactful campaign on feelings about vaping (<i>relative impact</i>)

Note. Topics deductively summarize sections of focus group topics.

Table 2: Participant demographic characteristics, $n = 27$

Characteristic	n (%)
Gender	
Male	16 (59.3)
Female	11 (40.7)
Smoking and vaping	
Smokes tobacco only	3 (11.1)
Attempted to quit tobacco (yes)	5 (18.5)
Vapes (tobacco use permitted)	7 (25.9)
No tobacco or vape use	17 (63.0)
Vaping product features	
Uses nicotine	5 (18.5)
Uses flavoured liquids	3 (11.1)
Uses disposable vapes	5 (18.5)
Uses tank/mod refillable vapes	2 (7.4)
Annual income	
≤\$49,000	3 (11.1)
\$50,000–79,000	8 (29.6)
≥\$80,000	16 (59.3)
Employment	
Full-time	10 (37.0)
Part-time	2 (7.4)
Student	7 (25.9)
Other	2 (7.4)
Lives with parents	13 (48.1)
Age (years), range, M (SD)	17–28, 22.9 (3.1)

Note. Valid percentages used.

elements were viewed as influencing vaping-related attitudes and behaviours). Table 3 summarizes the presence of descriptive themes across vaping prevention campaigns as noted by participants. For the purposes of capturing perspectives on anti-NVP campaigns, further data collection on each of the campaigns was unnecessary after six focus groups due to theme saturation.

Do you know what you're vaping

The NSW Health 'Do You Know What You're Vaping' campaign was generally well received by participants, with specific reactions noted in the following sections. The NSW Health campaign was designed in a manner that rapidly drew attention, was considered vibrant and encouraged further interaction. Some participants felt that the NSW Health campaign was aimed at a younger target audience, which limited feelings of personal relevance in older-aged participants. The alignment of common examples of household chemicals with vaping harms did support personal relevance. participants

conveyed the need to be able to identify with the vaping experience.

...Like I said that kind of human factor is missing for me. I want to kind of know the stories of people who have vaped and, if there are any consequences to that.... I think if you use it more regularly... it might not be personally relevant.... For me, I'd kind of reconsider and be like, 'Oh, is this just me being tempted? Maybe I just shouldn't tonight'. (24, F, V)

When asked if the approach used in this campaign would work within their social circles, participants generally agreed that the campaign would draw attention and described that it would be more effective for non-users because it was 'thought prompting'. Participants, particularly people using NVPs, indicated it would be less effective with people who vaped, because the campaign language was insufficiently persuasive and overly fact-focused. Beyond the central tagline, this campaign used brief factual statements rather than the preferred method of questions or challenges, as in the 'Unveil' campaign. Overall, the NSW Health campaign was considered to have high online visibility and relevance for all participants.

Despite reporting that the overall campaign design drew attention, people who vaped in the sample were moderately inclined to interact with these campaign materials compared to those who smoked or did not use either product. The campaign focus on unknown NVP ingredients prompted thoughts about their own vaping.

[Showing] that there's more nicotine in a vape... as well as the harmful chemicals in there. I just thought it was kinda like a juicy liquid that tasted good to be honest—I didn't think it was anything like that. (23, M, V)

Unveil what you inhale

The Lung Foundation Australia campaign was perceived by participants as drawing less attention than the other two campaigns, while presenting a high level of information, with the green design theme connoting 'health' and 'wellbeing'. Overall, the Lung Foundation Australia campaign adopted a positively themed information-driven design that had broad appeal with participants. The high level of detail presented in the factsheet appealed to participants who vaped or smoked tobacco. Using variations on content, such as how vapes or health symptoms were depicted in images, also allowed participants to relate the messaging to their own personal experiences.

Table 3: Presence of descriptive themes across vaping prevention campaigns

Theme	Do you know what you're vaping?	Unveil what you inhale	Epidemic
Visual and design			
Uses colour for attention	●	●	
Varied level of detail	●	●	
Colour/concept match	●	●	●
Conveyed positivity		●	
Personal relevance			
Narrow age focus	●		●
Familiar NVP depiction	●	●	
Familiar NVP use shown			●
Familiar social contexts			●
Considers level of detail	●	●	
Variations on content	●	●	
Message perception			
Unknown risks	●	●	●
Harmful Ingredients	●	●	●
Shock/fear			●
Myth challenging		●	
Provides facts	●	●	
Credibility/trust		●	
Open conversation		●	
Perceived effects			
Draws initial attention	●		●
Thought of harmful ingredients	●	●	●
Thoughts of own behaviour	●	●	
Motivates information seeking		●	
Reinforces vaping abstinence	●		
Seen as exaggerated/hyperbolic	●		●
Terminology as barrier			●

Note. Marker indicates that a theme was present within a campaign. NVP = nicotine vaping product.

I could look at it and be like, 'oh, I did have racing heartbeat. Maybe it's due to vaping, maybe I should stop doing that'. Because you associate [it] with [a] negative symptom. (24, F, S)

Overall, participants, particularly those who smoked or vaped, were able to identify with the messaging approach, and appreciated that this messaging had enough components to allow them to consider their own experience and seek further information. Language that poses a challenge prompted participants to seek further information from the 'Unveil' campaign (e.g. 'it's up to you now'). Participants also considered the green colour scheme to convey health and well-being, and the presence of Lung Foundation Australia branding to increase the credibility of the message.

The main message identified in the 'Unveil' campaign was a broader view that people need to engage in conversation about the contents and health consequences of vaping to improve how they understand and act on the risks. The credibility and trust of the Lung Foundation were also identified as something that improved how the vaping prevention messaging was viewed. Participants described that the 'Unveil' campaign would have positive effects on their thoughts and behaviour in learning about vaping. The personal challenge element to the main message was considered effective by participants who vaped, and as worth reading further by those who did not. When compared with the other campaigns it was noted that the 'Unveil' campaign was likely to draw less initial attention and was viewed as more informative rather than critical of behaviour.

The Real Cost: Epidemic

'Epidemic' differed from the two other campaigns by using shocking imagery with a disgust and fear appeal (i.e. invasive organism). Participants noted that the imagery drew their attention and prompted them to think. The full length of the video clip considered by many to be long, was a factor that affected the likelihood of attending to the key message. The 'Epidemic' campaign materials were seen as attention-grabbing, and having a unique concept, though participants suggested that messages should be briefer to sustain audience attention to the end, or it could indicate a vaping focus earlier on. The scenario in which vaping was depicted improved the relatability of the message, as did the age group represented. However, depicting vaping across a range of social groups may increase the appeal and relatability of messaging.

[I] like the diversity of the people in the [video]. It's showing people of kind of all social peer groups can be influenced by vapes. It's not just this one type of person. (24, F, V)

The main message in the 'Epidemic' campaign was understood by participants as vaping having very negative health effects, closely connected to the metaphor depicting it as an invasive organism. However, despite their impact the use of a fear appeal may not always resonate well with younger audiences for vaping prevention messaging (Sun *et al.*, 2021; Xuan and Choi, 2021). This was seen in some participants noting they would not engage with fear-based content when encountered (e.g. in social media feeds).

Participants described that the 'Epidemic' campaign provided a familiar and simple message that vaping was harmful and suggested this approach may translate into changes in vaping views and behaviours, when it was not seen as hyperbolic. One participant who vaped considered the video and social media tiles effective but noted it could take multiple exposures to achieve this.

It would get me to reconsider (vaping)... I think, if these kind of advertisements were more in number, that I was, you were, seeing [them] kind of everywhere, then maybe I'd be reconsidering. (24, F, V)

Participants also described that the use of chemical terms that they were unfamiliar with could reduce their ability to interpret and act on the messaging. Overall, participants indicated that 'The Real Cost: Epidemic' would draw their initial attention, due to its fear appeal and invasive organism imagery. However, this campaign was also viewed as less informative than other vaping prevention campaigns, and as similar

to previous fear-appeal campaigns for tobacco products. Those who vaped noted that it would not change their likelihood of vaping. For those who did not vape, this messaging reminded them of the potential health harms, but could be dismissed due to perceived hyperbole, and low explanation of chemical harms.

DISCUSSION

This study described the reactions of young South Australians aged 16–26 years to three examples of vaping prevention public health media campaigns. Specifically, the audience responses to NVP health and harms media campaigns, including the appropriateness and perceived effectiveness of messaging in existing Australian and internationally produced media, were examined.

Awareness of the increasing prevalence of vaping was indicated by all participants, with most emphasizing two views. First, that it was considered less harmful than tobacco smoking, and second, that it was highly normalized across social contexts. Research suggests that although Australia shows lower social approval of vaping than comparable countries, vaping is highly normalized as a positive activity among younger people (Aleyan *et al.*, 2019).

Vaping was regularly seen across social contexts, not only in educational settings but also at workplaces, entertainment events and parties where alcohol is consumed. This indicates that health communication materials on vaping should be targeted beyond school settings, to better engage with those who continue to vape beyond school age and to address potential associations with recreation and alcohol use. Vaping and alcohol co-use is an emerging issue that may warrant consideration in messaging, given associations of NVPs and problematic alcohol use by young people (Frie *et al.*, 2022).

Participants indicated that each of the three campaigns would have some influence on their thoughts and actions related to vaping. The NSW Health campaign prompted participants who vaped to think about the uncertain risks inherent to vaping and their own health, though did not indicate that this was enough to motivate them toward vaping cessation. The 'Unveil' campaign was considered effective by participants, with those who did not vape indicating they would click through to read more resources from the campaign, and those who did vape responding well to the challenge aspect of the messaging. Research shows that adolescents prefer unambiguous language about vaping harms (Kurtzman *et al.*, 2022).

As most vaping prevention campaigns are designed for this demographic, language preferences of young people aged 16–26 may differ, and should be explored

further. The fear appeal in the ‘Epidemic’ campaign did not clearly prompt a change in vaping views or behaviours in participants. Although this campaign was effective at drawing attention, it may be unlikely to be translated into action by young people affirming that fear appeals may have limited engagement in vaping prevention messaging (McKenzie *et al.*, 2023).

An ongoing Cochrane review revealed that there is a high degree of certainty that NVP use is effective for smoking cessation and that there were no serious adverse effects of NVP use (Hartmann-Boyce *et al.*, 2022). This body of evidence was used to inform current policy which allows for prescription-only use of NVPs (Therapeutic Goods Administration, 2022b). However, the ambiguity of language because of conflicting recommendations by health authorities creates public confusion and can lead to reduced confidence in health messaging and engagement in high-risk health behaviours attributed to an increase in tendencies to avoid information relating to harms (Yang *et al.*, 2021). Participants in this study justified the use of NVPs by their perception of a relatively low risk of harm compared with tobacco use and social acceptability. This can be a consideration within campaign messaging, as was the case with anti-tobacco campaigns which contributed to the shift of social perceptions of tobacco use from acceptance to disapproval (Hoek *et al.*, 2022).

Australia is in its early days of assessing the public health impacts and effectiveness of NVP harms awareness media campaigns. Anti-vaping campaign research shows that information on harmful ingredients and health consequences are the mainstay themes of prevention campaign messaging (Eggers *et al.*, 2023). Research suggests that campaigns should, for example, address adverse consequences of youth NVP use while avoiding youth vernacular (Boynnton *et al.*, 2022). Evidence underpinning mass media campaigns intended to drive awareness of harm associated with vaping by young adults suggests various approaches to optimizing efforts by tobacco/nicotine control stakeholders. Technology-based (e.g. online, text messaging) and individualized interventions can help address the complexity of vaping products and behaviours (Berg *et al.*, 2021). Despite a relatively recent and evolving evidence base on NVP prevention communication, reviews do indicate that these types of media campaigns can increase vaping knowledge, risk perceptions and consideration of addiction likelihood (Ma *et al.*, 2023).

This study had some challenges, including a lower proportion of people who vaped, although this was sufficient for our purposes given the rich nature of the qualitative data provided. However, as Australian vaping regulations are becoming stricter, it is a strength

of this research that we were able to recruit young people who willingly shared their views on a matter that is currently debated in public discourse. Another limitation of this study is that frequency of use patterns was not captured in the demographic survey which could have an influence on perceptions. The focus groups included both users and non-users of NVPs and tobacco which may influence the data. The breakdown of the focus groups offered data for perceptions on general prevention only and therefore was inadequate to address cessation or differences by gender or ethnicity, as this would require a larger sample. Conducting in-person focus groups was a further challenge, however, some focus groups and some individual interviews were conducted via teleconference, as planned, to accommodate participants’ schedules. This hybrid approach will be valuable as a viable approach for future vaping prevention campaign research with younger populations.

CONCLUSION

Findings from this research indicate several key considerations for the design of preventive vaping media campaigns. There was a moderately high awareness of vaping-related harms, with a strong sentiment that it is considered a cleaner and healthier alternative to tobacco smoking. Campaigns that use a challenging approach have the potential to generate conversation about vaping health harms, and fear-appeals risk being dismissed by younger audiences. The use of evidence-based short message hooks is seen as effective, and that presentation of multiple versions of content, such as devices/symptoms, allows different participants to identify with different parts of campaign collateral.

Bright visual design elements connoting health and well-being can be used to draw the attention of young people who do and do not vape. Fear appeals are highly attention-drawing (i.e. cut-through) in vaping prevention campaigns, though at the expense of full engagement with campaign messaging. Messaging could clearly indicate how chemical effects are relevant to individual health and symptoms. Campaigns could visually represent the different types of people who vape, and the different social contexts in which it occurs. Messaging included in a campaign should be tested for presentation in the form of ‘just facts’, ‘unknown risks’, ‘personal challenges’ or ‘fear appeals’ to identify which prompts the highest engagement with calls to action.

SUPPLEMENTARY MATERIAL

Supplementary material is available at *Health Promotion International* online.

AUTHOR CONTRIBUTIONS

Conceptualization: Joshua Trigg, Billie Bonevski, Clinton Cenko; Literature searches and data extraction: Joshua Trigg, Ola Ela; Formal analysis: Joshua Trigg, Ola Ela; Writing—Original draft: Joshua Trigg, Billie Bonevski, Ola Ela, Ashlea Bartram; Writing—Review & editing: Joshua Trigg, Billie Bonevski, Ola Ela, Jacqueline Bowden, Ashlea Bartram, Clinton Cenko. All authors reviewed the manuscript and confirmed the approval of the submitted manuscript.

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CONFLICT OF INTEREST STATEMENT

None declared.

DATA AVAILABILITY STATEMENT

For data used in this study contact the corresponding author.

INSTITUTIONAL ETHICAL APPROVAL

This study was approved by the Flinders University Human Research Ethics Committee [Approval#: 5632]. Participants gave informed consent to participate in this research.

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