

Driving Compliance with Vape Regulations: An Environmental Scan of Messaging Strategies

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Abstract

Youth vaping is an increasing public health concern. In Australia, government communications seek to promote compliance with regulations and reduce uptake and use. However, the extent to which these messages are informed by behaviour change theory remains unclear. Guided by theories of social cognition and their belief-based frameworks, this study examined the extent to which Australian vaping-related public health communications reflected key behavioural determinants associated with vaping prevention and cessation. An environmental scan of online communications from federal and state agencies and authorised health organisations was conducted to identify messages targeting vaping-related behaviour change. Materials were assessed for alignment with theoretically relevant constructs, including attitudes, social norms, perceived control/self-efficacy, intention/motivation, and other behavioural and social influences. Findings indicate that most communications emphasised attitudinal beliefs by framing vaping as harmful to health, alongside perceived behavioural control through encouragement to quit and provision of cessation resources. In contrast, relatively few messages addressed normative beliefs, such as peer influence, social approval, or social identity, despite the socially embedded nature of youth vaping. Habit formation and disruption were also largely absent from communications. The limited use of normative and habit-related strategies may reduce the relevance and persuasiveness of vaping communications for youth and other socially influenced populations. These findings highlight the importance of more systematically applying behaviour change theory in public health marketing communications on vaping. Integrating audience segmentation and broader social and behavioural determinants alongside attitudinal and control-focused strategies may strengthen the resonance and effectiveness of future vaping prevention and cessation communications.

1. Introduction

The rapid rise in e-cigarette and vaping use, particularly among young people, has emerged as a significant global public health challenge (1). International evidence indicates substantial increases in experimentation and regular use among adolescents and young adults, raising concerns about nicotine dependence, gateway effects, and long-term health consequences (2). In Australia, vaping prevalence has historically remained relatively low due to stringent nicotine regulations; however, recent years have seen a marked increase in youth vaping, prompting heightened regulatory and public health concern (3). In response, the Australian Government introduced major policy reforms effective from 1 July 2024, restricting the sale of nicotine-containing e-cigarettes to pharmacy settings under a prescription-only model (4). Despite these reforms, enforcement challenges, continued access through informal markets, and the increasing social normalisation of vaping among young people continue to undermine regulatory efforts (5). These challenges highlight the need for complementary public health communication strategies aimed at preventing uptake and supporting behaviour change (6).

Public health campaigns addressing vaping uptake and cessation have been implemented across Australia by governmental bodies, including federal and state health departments (7, 8), as well as non-governmental organisations (9, 10). These campaigns employ a range of communication formats,

including digital media, social media content, videos, and print materials, and commonly target adolescents and young adults, alongside parents, carers, teachers, and educators. For example, the “Give Up for Good” campaign primarily emphasises the health harms of vaping, risks of nicotine addiction, and, to a lesser extent, regulatory information (7). Despite the growing investment in vaping-related communication initiatives, many campaigns lack an explicit foundation in behaviour change theory, a limitation frequently identified across public health interventions more broadly (11). The absence of theoretically informed design and evaluation frameworks makes it difficult to systematically develop, assess, and refine social-cognitive interventions, potentially limiting their effectiveness (12). Within the health marketing literature, theory-driven approaches are recognised as essential for strengthening message design, audience segmentation, and behavioural impact (13, 14). However, the application of behaviour change theory within vaping-related public health communications remains limited and inconsistent.

Among the frameworks used to develop and understand health messaging, social cognition theories of behaviour change represent some of the most widely applied and empirically supported approaches (15). Frameworks such as the Theory of Planned Behaviour (16), Self-Determination Theory (17), and the Health Action Process Approach (18) share a common emphasis on psychological determinants of behaviour, including attitudes, social norms, motivation, self-efficacy, and behavioural intentions. These determinants are typically targeted through specific behaviour change techniques (BCTs) (19). The belief-based structure underpinning many social cognition frameworks enables the identification of specific cognitive and motivational targets for communication strategies (20), and prior research has demonstrated their utility in informing effective health messaging interventions (21–23). However, the extent to which real-world vaping prevention and cessation campaigns reflect these theoretical constructs remains unclear, particularly when interventions are not explicitly designed using behaviour change theory. Applying an established social cognition framework as an analytical lens therefore provides a systematic means of assessing the extent to which key behavioural determinants are represented within vaping-related communications, as well as identifying potentially overlooked constructs relevant to behaviour change.

The Current Study

Given the increasing reliance on digital platforms for health communication (24) and the evolving policy landscape surrounding vaping in Australia (25), there is a need for systematic evaluation of existing vaping-related messaging using established behavioural theory frameworks. Conducting an environmental scan of communications disseminated by federal and state government agencies, as well as authorised health organisations, provides a comprehensive approach to examining publicly available messaging aimed at influencing vaping-related behaviours. Analysis of materials distributed across official websites and social media platforms enables the identification of dominant message strategies, target audiences, and the extent to which communications reflect theoretically relevant behavioural determinants. This is particularly important within health marketing contexts, where alignment between

message design and evidence-based behavioural frameworks is considered essential for enhancing audience relevance, engagement, and behavioural impact among priority populations.

Guided by theories of social cognition (15), the present study examined the extent to which Australian vaping-related public health communications reflected key belief-based determinants associated with behaviour change. Drawing on the broader social cognition literature, the study assessed whether messaging addressed a range of behavioural, motivational, and social belief constructs relevant to vaping prevention and cessation, including attitudinal beliefs, normative beliefs, perceived behavioural control/self-efficacy, and other theoretically relevant influences on behaviour. Through this analysis, the study aimed to identify both the dominant theoretical emphases within current communications and potential gaps in the representation of behavioural determinants important for influencing vaping-related behaviours among young people.

2. Materials and methods

This study employed an environmental scan methodology (26) to systematically identify and review publicly available online communications produced by Australian federal and state/territory government agencies, as well as authorised health organisations, addressing vaping-related behaviour change. The study aimed to analyse the presence of evidence-informed behaviour change strategies associated with health behaviour change and the extent to which these strategies targeted different belief-based constructs within vaping-related messaging (15).

A structured keyword search using the terms *vape*, *vapes*, *vaping*, *e-cigarette*, and *e-cigarettes* was conducted across official websites and social media platforms (Facebook, X/Twitter, and YouTube) associated with the Australian Federal Government, State and Territory Governments, and relevant non-governmental organisations (NGOs). Searches were conducted between October and December 2025 and involved systematic navigation of campaign webpages and media repositories to identify and retrieve eligible materials.

Materials were included if they: (a) were current at the time of data collection and aligned with regulatory changes effective from 1 July 2024, when nicotine-containing vapes became legally available in Australia exclusively through pharmacies; (b) were published in English; (c) were produced by eligible governmental or non-governmental organisations; and (d) addressed vaping-related behaviours among direct users or individuals with potential influence over vaping behaviours, such as family members, peers, teachers, or educators. Materials primarily focused on retailer regulations or seller compliance were excluded. Eligible materials included videos (MP4 format, with transcripts exported to Word documents), posters (PDF format), and social media tiles (PNG format). All retrieved materials were securely stored on a password-protected Google Drive accessible only to the research team.

3. Data analysis

Two authors independently assessed all identified materials against the predefined inclusion criteria to ensure systematic and unbiased selection (see Fig. 1 for the search and screening flow diagram of the environmental scan). Following confirmation of eligibility, the first author extracted relevant data into a structured abstraction table, including the file name (corresponding to the archived version stored on Google Drive), meaning unit, condensed meaning unit, assigned belief code, and identified behaviour change technique. The second author independently replicated the data extraction and coding procedures.

Data organisation and analysis were guided by a qualitative content analysis framework (27), enabling systematic identification and categorisation of message content. Discrete message components were coded according to targeted psychological constructs derived from established social cognition theories of behaviour change (15) and mapped to recognised behaviour change techniques within the Behaviour Change Technique Taxonomy v1 (19). Where coding discrepancies occurred, the two authors, together with a third researcher, reviewed and resolved differences through discussion and consensus.

Descriptive analyses were conducted using SPSS (Version 31) to examine the frequency and distribution of belief-based constructs and behaviour change techniques across included materials. As the study analysed publicly accessible materials and did not involve human participants or identifiable personal data, formal human research ethics approval was not required.

4. Results

A total of 369 communication messages disseminated by the Australian Federal Government, State and Territory Governments, and relevant non-governmental organisations (NGOs) were analysed. Across these materials, eight belief-based constructs were identified: knowledge (KN), attitudes (ATT), perceived control/self-efficacy (SE), intention/motivation (INT), social norms (NM), action planning (AP), risk perception (RP), and anticipated regret (AR). These constructs reflect key psychological determinants commonly targeted within health communication campaigns aimed at influencing behavioural uptake and cessation.

Analysis of the campaign materials also identified seven behaviour change techniques (BCTs), mapped to equivalent techniques within the Behaviour Change Technique Taxonomy v1 (19). These included information about health consequences/natural consequences (BCT5.1; HLT), instruction on how to perform the behaviour/shaping knowledge (BCT4.1; INS), information about others' approval/comparison of behaviour (BCT6.3; APP), credible sources/comparison of outcomes (BCT9.1; CR), goal setting (BCT1.1; GS), action planning (BCT1.4; PLAN) and information about emotional consequences (BCT5.6; EMO).

Overall, the findings demonstrated a strong emphasis on attitudinal, knowledge-based, and health consequence-focused messaging, while normative, emotional, and planning-related constructs were comparatively underrepresented. The coding of individual messages is presented in Appendix 1 Content

Analysis and Coding, while Fig. 2 summarises the distribution of belief-based constructs and behaviour change techniques across the dataset.

4.1 Belief codes

4.1.1 Attitude and knowledge.

Attitudinal belief constructs were the most prominent messaging strategy identified, appearing in 289 of the 369 communications analysed. These messages predominantly framed vaping negatively by emphasising adverse health effects, nicotine addiction, and broader impacts on wellbeing and social acceptability. Through repeated emphasis on negative outcomes, communications sought to reinforce unfavourable evaluations of vaping and discourage uptake and continued use.

A substantial proportion of communications focused on the physical health harms associated with vaping. Campaigns frequently warned that vaping was harmful to health, with messages describing symptoms such as “shortness of breath...when I was training, playing football, at the gym and going for runs” (FG-1). Communications also highlighted exposure to harmful chemicals, commonly stating that “vapes contain toxic chemicals” (NGO-35; NGO-39; NSW-1) and warning that these substances “can cause lung damage, heart disease and cancers” (VIC-9). Some campaigns used vivid and emotionally salient language to reinforce these harms, for example stating that vape users were inhaling chemicals “used to preserve dead bodies” (NGO-21).

Nicotine dependence was another dominant attitudinal theme. Messages consistently framed nicotine as addictive, frequently warning that “nicotine in vapes is addictive” (FG-97; NSW-1). Several communications further highlighted the vulnerability of young people, explaining that nicotine exposure may negatively affect brain development and contribute to long-term dependence (TAS-9).

Some communications additionally addressed the broader social and wellbeing impacts of vaping. These messages reflected changing social perceptions among young people, with campaigns suggesting that vaping was becoming socially undesirable or “gross” (CC-31). Educational materials also reinforced concerns regarding addiction and harms to developing brains and lungs (CC-12).

Knowledge-based constructs were similarly prominent, appearing in 274 of the 369 communications analysed. Unlike attitudinal messages, which framed vaping negatively through evaluative content, knowledge-based communications primarily aimed to increase awareness and understanding by providing factual information about vape constituents, health consequences, addiction risks, and behavioural outcomes.

Many communications provided detailed information regarding the chemical composition of vaping products. Messages identified harmful substances including formaldehyde, arsenic, benzene, and heavy metals, with one campaign noting that “Over 200 unique chemicals have been found in illegal vapes”

(FG-3). Other communications compared vape contents to household cleaning products or nail polish remover (NSW-8; NSW-14) to increase awareness of potential harms.

Communications also frequently described the physiological consequences of vaping, including nicotine poisoning, respiratory symptoms, lung damage, and oral health harms. Some campaigns highlighted risks during pregnancy, while others focused specifically on young people, warning that nicotine exposure may impair “attention, learning, memory, and mood” through impacts on brain development (TAS-9). Several communications additionally linked vaping to future tobacco smoking uptake, noting that young people who vape may be more likely to subsequently take up smoking (FG-4).

4.1.2 Perceived control/self-efficacy

A total of 196 messages incorporated self-efficacy constructs aimed at strengthening individuals’ confidence in their ability to resist, reduce, or quit vaping. These communications commonly provided practical guidance, coping strategies, and behavioural support intended to help individuals manage cravings and replace vaping with healthier behaviours.

Some campaigns encouraged behavioural substitution strategies to manage urges and reduce reliance on vaping. Suggested alternatives included “picking up a piece of fruit when you have the urge to vape” (FG-60; FG-78) or engaging in physical activity, such as to “go for a run whenever I had the urge to vape” (FG-78). Other messages emphasised emotional coping and behavioural self-regulation, encouraging individuals to develop healthier ways of managing stress “as opposed to resorting to vaping” (FG-60).

Communications also promoted access to formal cessation support services and professional assistance. Several campaigns advised individuals that they could “get the help you need to quit smoking or vaping” through healthcare professionals and cessation services (TAS-17). Youth-focused campaigns further highlighted the importance of social support networks, encouraging individuals to “speak to a trusted adult, see your GP, youth health services or other health services for help quitting vaping” (NSW-28).

In addition, several messages sought to strengthen refusal self-efficacy in response to peer pressure and social influence. Campaigns provided suggested refusal responses, including statements such as “Vaping is not for me because I don’t know what’s in it” and “I care about my health and fitness and don’t want vaping to ruin it” (SA-7). Other communications promoted behavioural commitment strategies, encouraging young people to “promise me that you won’t use vapes during school hours?” (TAS-15). Educational materials also encouraged supportive dialogue within families by recommending that parents “talk to your child about the facts of vaping” (TAS-20; NSW-31; NT-4).

4.1.3 Intention/motivation

A total of 44 messages incorporated intention- or motivation-based constructs related to vaping behaviour. These communications aimed to strengthen individuals’ commitment to quitting or avoiding

vaping by encouraging persistence, behavioural commitment, and confidence in the ability to successfully stop vaping.

Many messages explicitly promoted determination and ongoing commitment to cessation through direct motivational appeals, including statements such as “Give up for good” (FG-10; FG-17; FG-26; FG-28) and “Keep at quitting” (FG-13). Other communications highlighted personal commitment to behaviour change through testimonial-style narratives, for example “After the frightening episode, I decided to quit cold turkey” (FG-74).

Several campaigns also emphasised the role of encouragement and social reinforcement in supporting motivation to quit. Some messages incorporated peer-directed appeals, such as “What'd you do that for? Stop vaping bro, you need to quit” (FG-49), while others reinforced the achievability of cessation by emphasising successful quitting experiences, noting that “Many people have successfully quit vaping and smoking, and you can too” (FG-74).

4.1.4 Social norms

Of the 369 messages analysed, only 39 incorporated normative belief constructs reflecting the influence of social approval, peer behaviour, and social environments on vaping. These communications highlighted the role of friends, peers, and broader social contexts in shaping vaping initiation and continued use, although normative messaging was substantially less common than attitudinal or knowledge-based approaches.

Several messages described vaping behaviour as socially influenced by peer groups and friendship networks. For example, some communications reflected social modelling processes through statements such as “I first took up smoking because my friends were doing it” (FG-74) and “I only use them because my friends do” (FG-87). Other campaigns highlighted the difficulty of resisting peer pressure within social settings, with one individual stating that “Tonight was the first night I went to the pub with some mates and a few of them had some vapes. It was pretty hard to turn down” (FG-93).

Some communications also reflected the perceived normalisation of vaping within youth social environments. Messages described vaping as highly visible and socially embedded within recreational settings, with statements such as “Every pub you went to, every place you went one of the boys whipped it out” (FG-94) and “It was hard to stop when you'd go out to parties and whatnot. And everyone has a vape” (FG-94). Overall, these findings suggest that while some campaigns acknowledged the role of social influence and peer norms in vaping behaviour, normative constructs were comparatively underrepresented within Australian vaping-related communications.

4.1.5 Other social cognition constructs

A smaller proportion of communications reflected additional social cognition constructs, including action planning, risk perception, and anticipated regret. Compared with attitudinal, knowledge-based, and self-efficacy messaging, these constructs appeared relatively infrequently across the dataset.

Fifteen messages incorporated action planning strategies designed to support quitting or avoiding vaping. These communications typically emphasised structured approaches to behaviour change, including planning, goal commitment, and accessing social or professional support. For example, one message stated that “putting a plan in place with your family and friends and even seeking support from your doctor can help you commit and achieve your goals” (NGO-46). Other campaigns encouraged individuals to “Make a plan to beat the chill” (NGO-91) or reinforced long-term commitment to cessation through statements such as “Now that I’ve quit vaping and nicotine, I plan on never going back” (NGO-119).

Risk perception constructs were identified in only five messages and primarily focused on the potential for acute or severe health harms associated with vaping. Several campaigns used personal narratives to communicate these risks, including descriptions of medical emergencies and hospitalisation. For example, one message described how “One kid had some sort of reaction to it, and they had to call an ambulance” (CC-3), while another recounted being taken “straight into the emergency room” and believing “I was going to die” (NSW-42).

A further five messages reflected anticipated regret associated with vaping initiation or continued use. These communications emphasised retrospective reflection on the negative consequences of vaping, including statements such as “If I knew what I know now, I wouldn’t have picked up a vape” (NSW-42). Collectively, these findings indicate that constructs relating to planning, perceived risk, and anticipated regret were comparatively underutilised within current vaping-related communications.

4.2 BCTs

4.2.1 Information about health consequences

The most frequently identified BCT across the vaping communications was information about health consequences (HLT), appearing in 286 of the 369 messages analysed. These communications primarily emphasised the physical harms associated with vaping, including exposure to toxic chemicals, nicotine addiction, and adverse health outcomes. The dominance of this technique indicates that Australian vaping-related campaigns relied heavily on communicating the negative health consequences of vaping as a central persuasive strategy.

Many communications highlighted the chemical composition of vaping products and the presence of hazardous substances. Messages commonly stated that “vapes contain toxic chemicals” (NGO-35; NSW-1), while others used more vivid framing to reinforce perceptions of harm, for example noting that “Think formaldehyde was just in the morgue? It’s also in your vape” (VIC-1). Several campaigns also focused on nicotine exposure and addiction risks, warning that “vapes can contain nicotine making them very addictive” (NT-6; TAS-24) and that “the nicotine in 1 vape can equal 50 cigarettes” (TAS-18; NT-5; NSW-7).

Communications further emphasised the potential physical health consequences associated with vaping. These messages commonly referred to respiratory harms, cardiovascular disease, cancer risks, and oral health impacts, including claims that “chemicals in vapes can cause lung damage, heart disease and cancers” (VIC-9) and that “vaping can cause bad breath, gum disease and tooth decay” (QLD-2). Similar warnings appeared in federal and Cancer Council campaigns, which described vaping as “dangerous to your health” (FG-2) and linked adolescent vaping with future smoking uptake (CC-2).

Some campaigns additionally used personal narratives and lived-experience accounts to communicate health risks in a more emotionally engaging manner. For example, one individual described waking up “gasping for air” and feeling that “my lungs just felt like they were on fire; I did think I was going to die” (NSW-48). Collectively, these findings suggest that health consequence messaging was the dominant behaviour change strategy used across Australian vaping-related communications.

4.2.2 Instruction on how to perform the behaviour

A substantial proportion of communications (196 of 369) employed the instruction on how to perform the behaviour (INS) technique, which involved providing practical guidance on how to avoid, reduce, or quit vaping. These messages commonly directed individuals toward specific behavioural strategies, support resources, and actions intended to facilitate behaviour change or support others in quitting.

Many campaigns focused on strengthening refusal skills and empowering young people to resist vaping. Communications emphasised the importance of education and informed decision-making, with one message stating that it is “crucial to educate young people to make informed decisions and equip them with skills to say no to vape” (NGO-61). Other campaigns encouraged young people to remain “vape free” (FG-45) and promoted behavioural strategies aimed at reducing exposure to vaping, including advice to avoid situations where vaping may occur (NGO-45; FG-90).

Several communications also promoted access to professional cessation support and behavioural resources. Campaigns encouraged individuals to “talk to your doctor or pharmacist” (TAS-17) and directed audiences toward support services, digital tools, and helplines. For example, one communication recommended using “the My QuitBuddy app to be able to track [your] progress” alongside contacting Quitline or visiting the Quit website (FG-74).

In some campaigns, instructional messages were framed around broader lifestyle and financial benefits associated with quitting vaping. One communication encouraged workers to redirect money previously spent on vaping toward alternative goals such as “an upcoming festival or gig... a holiday, a new ute, [or] new tools” (NGO-33). Other messages targeted parents and carers by providing guidance on initiating conversations with young people, advising them to “talk to your kids about the risks of smoking and vaping” (VIC-9). Overall, these findings suggest that instructional techniques were commonly used to provide practical behavioural guidance and facilitate vaping prevention and cessation efforts.

4.2.3 Information about others’ approval

A total of 47 information about others' approval (APP) techniques were identified across the campaign materials. These messages primarily conveyed social approval for quitting vaping, challenged perceptions of peer acceptance surrounding vaping, and highlighted supportive social norms related to cessation and refusal.

Several communications addressed peer belonging and social acceptance, acknowledging that vaping may occur due to social pressures and the desire to fit in with friendship groups. For example, campaigns recognised that young people may vape due to "wanting to fit in with friends" (FG-9), while simultaneously reassuring audiences that refusing a vape would not negatively affect social relationships, noting that "your mates won't actually care whether you say yes or no" (FG-42).

Some campaigns also highlighted the influence of close social networks during quit attempts. Messages acknowledged concerns about disappointing family, peers, or community members when trying to stop vaping, with one communication explaining that "many people don't talk about trying to quit... because they worry they'll disappoint their mob if they slip up or start smoking or vaping again" (FG-5). Other communications encouraged individuals to distance themselves from vaping-supportive social environments by advising them to "try not to surround themselves with people who might make them want to vape" (FG-9).

Several messages additionally reinforced community endorsement of quitting and framed cessation as socially valued and increasingly normative. Campaigns highlighted that "thousands of people are quitting vaping" (FG-32), suggested that peers "will respect you for having the self-control" (FG-42), and encouraged refusal behaviours by emphasising that "if you say no, you'll help other people feel comfier doing the same" (FG-42). Collectively, these findings indicate that APP techniques were used to challenge perceived social norms around vaping and promote social approval of quitting and refusal behaviours.

4.2.4 Credible sources and goal setting

A total of 44 credible source (CR) techniques and 44 goal setting (GS) techniques were identified across the campaign materials. CR techniques primarily involved presenting information through trusted or authoritative sources to strengthen message legitimacy and persuasiveness. These sources included research evidence and survey findings (TAS-12; TAS-6; SA-13), healthcare professionals and subject-matter experts (NSW-39; NGO-2; NGO-101), as well as social media influencers who communicated campaign messages to youth audiences (QLD-1; FG-1). The use of these sources appeared intended to enhance message credibility and reinforce the perceived validity of vaping-related health information.

Goal setting (GS) techniques were similarly used to encourage behavioural intentions, self-regulation, and commitment to behaviour change. These messages commonly encouraged individuals to establish clear goals related to refusing vapes, avoiding vaping-related situations, and maintaining progress toward cessation. For example, several campaigns encouraged audiences to develop personal targets and strategies to resist vaping offers and support quitting attempts (FG-1; FG-10). Collectively, these

findings suggest that both CR and GS techniques were used to reinforce motivation and support vaping prevention and cessation behaviours through credible messaging and behavioural self-regulation strategies.

4.2.5 Action planning and emotional consequences

Action planning (PLAN) and emotional consequences (EMO) techniques were comparatively underrepresented within the campaign materials, with only 15 and 5 instances identified, respectively.

PLAN techniques focused on encouraging individuals to develop concrete strategies to quit vaping or support others in quitting. These communications commonly promoted structured planning, behavioural preparation, and engagement with support services as part of the cessation process. Several messages directed individuals, families, peers, and educators toward available support resources, including Quitline and healthcare services. For example, one campaign encouraged individuals to “call Quitline on 13 QUIT (13 7848) for free, confidential and culturally-safe support to help them make a plan” and noted that individuals could also “reach out to Quitline directly to talk about any concerns or ask how to support a loved one to quit” (FG-5; FG-19). Overall, these messages framed planning and external support as important facilitators of successful cessation.

In contrast, EMO techniques focused on the emotional consequences associated with vaping, particularly regret, addiction, and loss. Several communications highlighted the unintended progression to nicotine dependence, warning individuals that “you won’t realise that you’re getting hooked on it” (NGO-6). Other messages conveyed retrospective regret associated with harmful behaviours, including reflections such as “if we knew about smoking back then we wouldn’t have done it” (NGO-56). Some campaigns also emphasised the broader sacrifices associated with addiction and cessation challenges, with one individual reflecting that “I have done so many things I wouldn’t have been able to do at all” (NGO-111). Collectively, these findings suggest that emotional and planning-based behaviour change techniques were used far less frequently than informational and instructional approaches within Australian vaping-related communications.

5. Discussion

The present study provides a systematic environmental scan of government and NGO vaping-related communications used within Australian public health campaigns. Using social cognition theories and behaviour change taxonomies as analytical frameworks, campaign materials were categorised according to the psychological constructs and BCTs they targeted. Overall, the findings demonstrated a strong emphasis on attitudinal and knowledge-based messaging, particularly through the use of information about health consequences and credible source techniques. This pattern was evident across federal and state government campaigns, NGOs, and health service communications, with health harms remaining the dominant focus of vaping prevention messaging. Similar patterns have been observed internationally, where anti-vaping campaigns have also relied heavily on harm-focused and informational approaches (28, 29).

The dominance of health consequence and knowledge-oriented messaging reflects what has been described within science communication as an information-deficit approach, whereby behaviour change is assumed to result from increased awareness and factual understanding (30). Within this perspective, communication efforts primarily aim to correct perceived knowledge deficits with the expectation that informed individuals will subsequently modify their attitudes and behaviour. Such approaches remain attractive within public health contexts because they are comparatively straightforward to design, standardise, disseminate, and evaluate relative to interventions targeting more complex social, emotional, or automatic behavioural processes.

However, the findings of the current study suggest that health information alone may not adequately address the broader psychological and social determinants underpinning vaping behaviour, particularly among young people. Within social cognition theories, such as the Theory of Planned Behaviour (16), attitudes encompass not only instrumental evaluations relating to harms and benefits, but also affective evaluations concerning anticipated pleasure, enjoyment, or emotional experience (31). In the present scan, messaging overwhelmingly targeted instrumental attitudes through health risk and addiction information, while comparatively little attention was given to affective beliefs or emotionally rewarding aspects of vaping. This imbalance is notable given evidence that affective attitudes may be more strongly associated with health behaviour than instrumental beliefs alone (32), including within vaping research specifically (33).

Emerging evidence suggests that vaping behaviour is frequently embedded within affective, experiential, and socially situated meanings, including curiosity, enjoyment, stress regulation, and social belonging (34, 35). For example, research among Australian university students found that affective attitudes relating to enjoyment and pleasure were among the strongest predictors of vaping intentions and behaviour, whereas risk perceptions were not independently predictive when reflective and automatic processes were considered together (36). Similar findings have been observed across samples in the United States, Finland, and China (37–39), suggesting that affective evaluations may represent a particularly salient attitudinal target across diverse cultural contexts. Experimental evidence further demonstrates that willingness to vape among non-users increases when products are presented with sweeter flavours, brighter colours, and more appealing aesthetics (40). Because these evaluations are often socially reinforced, communication strategies directed primarily toward health harms may weaken perceptions of safety while leaving more behaviourally salient affective drivers relatively unchallenged.

A further gap identified within the current messaging landscape was the comparatively limited use of normative content. Messages addressing subjective norms and social influence represented only a small proportion of the overall communication environment, despite extensive evidence that peer influence and social norms are central determinants of both smoking and vaping behaviour (41–43). Australian adolescents frequently report perceiving vaping as normalised within peer groups, with vaping often understood less as a response to explicit pressure and more as an adjustment to descriptive and injunctive norms embedded within everyday social interactions (44). In this context, not vaping may itself become socially atypical within some friendship networks and youth settings (35).

These social influences are not merely contextual but behaviourally consequential. Longitudinal network research suggests that adolescent vaping is associated both with having friends who vape and with subsequently forming friendships with peers who vape over time (45). This reciprocal process of peer influence and peer selection may reinforce vaping habits and increase the likelihood of sustained use and nicotine dependence. Such normative influences may also be amplified through digital environments where vaping-related content increases the visibility and perceived acceptability of vaping behaviour (46, 47). Experimental evidence indicates that exposure to social media vaping content can influence vaping intentions and related beliefs (48), suggesting that online environments form part of the broader social ecology through which vaping behaviour is shaped. Consequently, messaging strategies focused primarily on individual risk awareness may fail to address the social conditions under which vaping becomes normalised and maintained.

The present findings also suggest that current vaping communications may inadequately address habitual and automatic processes associated with vaping behaviour. Repeated exposure to positively framed vaping content, appealing product aesthetics, and socially rewarding experiences may contribute to the development of implicit attitudes and automatic behavioural scripts favouring vaping (32, 49). Although research in this area remains comparatively limited, evidence indicates that implicit pro-vaping biases and vaping habits independently predict vaping behaviour beyond nicotine dependence alone (36). Neurobiological findings similarly demonstrate heightened cue reactivity to vaping-related stimuli within brain systems associated with conditioned responding (50), suggesting that vaping cues may acquire motivational salience independently of conscious evaluation. Qualitative research further indicates that stress, routine social situations, and product accessibility often reinforce vaping through repeated everyday exposure rather than deliberate decision-making processes (51). Consequently, messaging focused primarily on reflective reasoning and health risk awareness may have limited capacity to disrupt vaping once behaviour becomes routinised through habitual, social, and hedonic mechanisms.

A related issue concerns the role of self-efficacy and perceived behavioural control within current communications. Although self-efficacy-related content appeared relatively frequently, it was primarily oriented toward cessation support, including advice on quitting, managing cravings, or accessing professional assistance. Comparatively less emphasis was placed on building confidence to refuse vaping within socially pressurised situations. This distinction is important because knowing how to quit or where to seek support is conceptually different from feeling capable of refusing a vape when offered within peer settings (33). Evidence suggests that perceived behavioural control contributes independently to vaping intentions alongside attitudinal and automatic determinants (36). Similarly, intervention research from the Australian Our Futures Vaping program demonstrated reductions in e-cigarette use among secondary school students by strengthening refusal capability and decision-making skills beyond standard health education approaches (52). Collectively, these findings suggest that while existing communications may support cessation once motivation has been established, they appear less focused on strengthening refusal efficacy within the social contexts where vaping uptake commonly occurs.

These conceptual imbalances were also reflected in the BCTs identified across the analysed materials. Coding against the BCT Taxonomy v1 (19) demonstrated a strong concentration of techniques focused on providing information about health consequences and instructing cessation-related behaviour, consistent with the emphasis on instrumental attitudes and knowledge-based messaging observed throughout the dataset. In contrast, techniques targeting emotional regulation, action planning, goal setting, and normative restructuring appeared comparatively infrequently. Similar patterns have been identified within North American vaping prevention campaigns, where communications rarely extended beyond informational and health consequence techniques despite the broader range of strategies available within established behaviour change frameworks (28). Comparable findings were also reported in an Australian environmental scan of COVID-19 communications using the same coding framework (53). Together, these findings suggest that the predominance of informational and harm-focused messaging may reflect a broader tendency within public health communication rather than a phenomenon unique to vaping prevention efforts.

6. Implications for health marketing

The present findings have several implications for health marketing practice. Although Australian anti-vaping campaigns are active across multiple communication settings, the analysed materials were predominantly concentrated on health harms, chemical risks, and cessation guidance, with comparatively limited emphasis on subjective norms, affective beliefs, and refusal self-efficacy. These findings suggest that future campaign effectiveness may depend less on increasing message volume and more on improving alignment between campaign design and the behavioural determinants associated with vaping behaviour. A central principle of health marketing is that effective campaigns move beyond awareness generation toward audience insight, strategic exchange, and behaviourally informed value creation for clearly defined audiences (13, 54, 55). Consistent with this perspective, the current findings suggest that anti-vaping communications may benefit from more audience-centred and strategically differentiated approaches.

First, stronger audience segmentation may improve campaign relevance and effectiveness. Digital segmentation approaches allow campaigns to identify and prioritise subgroups according to behavioural risk, media use, motivational profiles, and stage of behaviour change, rather than treating youth audiences as homogeneous (56). The predominance of cessation-oriented messaging identified in the present scan, alongside comparatively limited refusal-focused content, suggests that non-users, experimental users, regular users, and nicotine-dependent users are often addressed through broadly similar communication strategies (29, 57, 58). Prevention-oriented audiences may benefit from messaging that strengthens refusal confidence, reinforces non-vaping identities, and communicates that not vaping is socially acceptable and increasingly normative. In contrast, current users may require content focused on coping strategies, behavioural planning, quit confidence, and clear pathways to cessation support. Segmenting audiences according to behavioural needs and motivational profiles is consistent with established health marketing practice and may improve both campaign efficiency and behavioural relevance.

Second, campaign positioning may require recalibration beyond predominantly biomedical and harm-focused framing. Although the strong emphasis on toxic exposure and health consequences provides important risk information, these approaches may not fully address why vaping remains appealing to some young people. Health marketing research recognises that behavioural choices are often shaped by symbolic, emotional, and social meanings alongside functional consequences (55, 59). Where vaping is associated with stress relief, curiosity, identity expression, image, or social belonging, campaigns may benefit from incorporating counter-positioning strategies designed to reduce the perceived desirability of vaping while simultaneously increasing the appeal of non-use. This may include framing vaping less as an expression of individuality and more as participation within a commercially engineered product environment designed to capture attention and sustain consumption.

Third, the findings suggest that social influence and normative strategies remain comparatively underutilised within vaping-related communications. Given the role of peer influence and perceived social norms in vaping uptake and maintenance, campaigns may benefit from more directly targeting the social contexts in which vaping occurs. Strategies that correct inflated perceptions of vaping prevalence, communicate that many young people do not vape, and frame refusal as socially confident rather than socially costly may address determinants not activated through harm-based messaging alone. From a health marketing perspective, shifts in perceived social norms and social acceptability may also represent important indicators of campaign impact alongside traditional awareness-based metrics.

Fourth, channel strategy and campaign delivery should increasingly reflect the digital and socially mediated environments in which young people encounter vaping-related content. Adolescents and young adults are frequently exposed to vaping-related messaging through short-form, visually engaging, and socially networked digital platforms where peer modelling and affectively appealing content compete for attention (60–62). Public health campaigns therefore operate within a broader communicative ecology rather than in isolation. Consistent with emerging models of digital campaign effectiveness, evaluation approaches may need to move beyond awareness and recall toward indicators such as engagement quality, sharing behaviour, perceived norm change, and downstream behavioural outcomes (63). More dependent or routinised users may also require support beyond static campaign exposure. For individuals attempting cessation in response to cravings, environmental cues, or high-risk situations, context-responsive digital interventions and ecological momentary support tools may provide useful complements to broader communication campaigns (64, 65).

Finally, the present study demonstrates the value of theory-informed campaign auditing within health marketing practice. Applying social cognition theories (15) alongside the Behaviour Change Technique Taxonomy v1 (19) provided a structured framework for evaluating the extent to which campaign materials targeted key behavioural determinants and behaviour change processes. Such approaches may assist campaign developers and policymakers in identifying potential gaps within communication portfolios and improving theoretical alignment between campaign content and intended behavioural outcomes. Overall, harm-focused anti-vaping communication remains an important component of public health strategy. However, future health marketing efforts may be strengthened through greater

integration of audience segmentation, normative and affective messaging, refusal self-efficacy strategies, responsive digital support tools, and evaluation frameworks linked to behavioural and social outcomes.

7. Strengths and limitations

This study offers several strengths that enhance its contribution to the health marketing and health communication literature. The analysis was guided by social cognition theories of behaviour change and their belief-based frameworks (15), providing a theoretically grounded and systematic basis for examining vaping-related communications. This approach enabled a more fine-grained assessment of the extent to which attitudinal, normative, control-related, and broader behavioural determinants were represented within campaign messaging, while also demonstrating how social cognition frameworks and behaviour change taxonomies can be applied to the evaluation of real-world public health communications.

The study was also conducted within a highly policy-relevant and contemporary context, focusing on communications disseminated following major Australian regulatory reforms introduced from 1 July 2024, which restricted access to nicotine-containing vaping products to pharmacy settings. By situating the analysis within this evolving policy environment, the findings provide timely and practically relevant insights for the refinement of public health and social marketing campaigns aimed at reducing vaping uptake and supporting cessation. In addition, the study employed a comprehensive environmental scan across federal and state/territory government agencies and non-governmental organisations and incorporated multiple communication channels, including official websites and social media platforms. The breadth of data sources enhances the ecological validity of the findings by capturing the diversity and complexity of real-world vaping-related communication strategies.

Several limitations should also be acknowledged. First, the study employed a cross-sectional design and therefore captured campaign materials at a single point in time. Consequently, the analysis does not account for changes in communication strategies or shifts in messaging in response to evolving regulatory and social environments (66), which may be particularly relevant given the rapidly changing nature of alternative nicotine product markets. Second, the study focused exclusively on message content and did not examine behavioural outcomes or audience responses. As such, the findings cannot determine the effectiveness of the identified communication strategies in influencing vaping-related attitudes, intentions, or behaviours. Future research incorporating behavioural, experimental, or longitudinal designs would assist in evaluating the extent to which different message strategies influence vaping uptake, cessation, and peer-related behaviours among priority populations. Finally, although young people were frequently represented as a target audience within the analysed materials, the study did not directly assess audience segmentation or the extent to which messages were tailored to specific behavioural or demographic subgroups. This is an important consideration within health marketing practice given evidence that vaping-related motivations and behavioural determinants differ across non-users, experimental users, regular users, and nicotine-dependent populations. Future

research would benefit from examining how theory-informed and segmented communication strategies influence behavioural outcomes among different youth subgroups, including refusal confidence, cessation intentions, and peer-to-peer influence processes.

8. Conclusion

This study provides a theory-informed environmental scan of Australian anti-vaping public health messaging, applying social cognition theories of behaviour change alongside the Behaviour Change Technique Taxonomy v1 across 369 materials from federal, state, and non-government sources. The findings indicate that messaging was heavily concentrated on health consequences, knowledge provision, and cessation guidance, while affective, normative, habit-related, and refusal-oriented content remained comparatively limited. This pattern is consistent with an informational model of behaviour change in which communication prioritises risk awareness and knowledge provision over broader behavioural determinants associated with vaping uptake and maintenance.

Although harm-focused communication remains an important component of public health strategy, the findings suggest that future health marketing campaigns may benefit from stronger audience segmentation, greater emphasis on social and affective determinants of behaviour, and broader integration of behaviour change techniques targeting normative influence, refusal self-efficacy, habit disruption, and behavioural maintenance. Collectively, these findings highlight the value of theory-informed approaches for strengthening the design and evaluation of vaping-related public health communications.

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Figures

Figure 1. Search and Screening Flow Diagram for the Environmental Scan

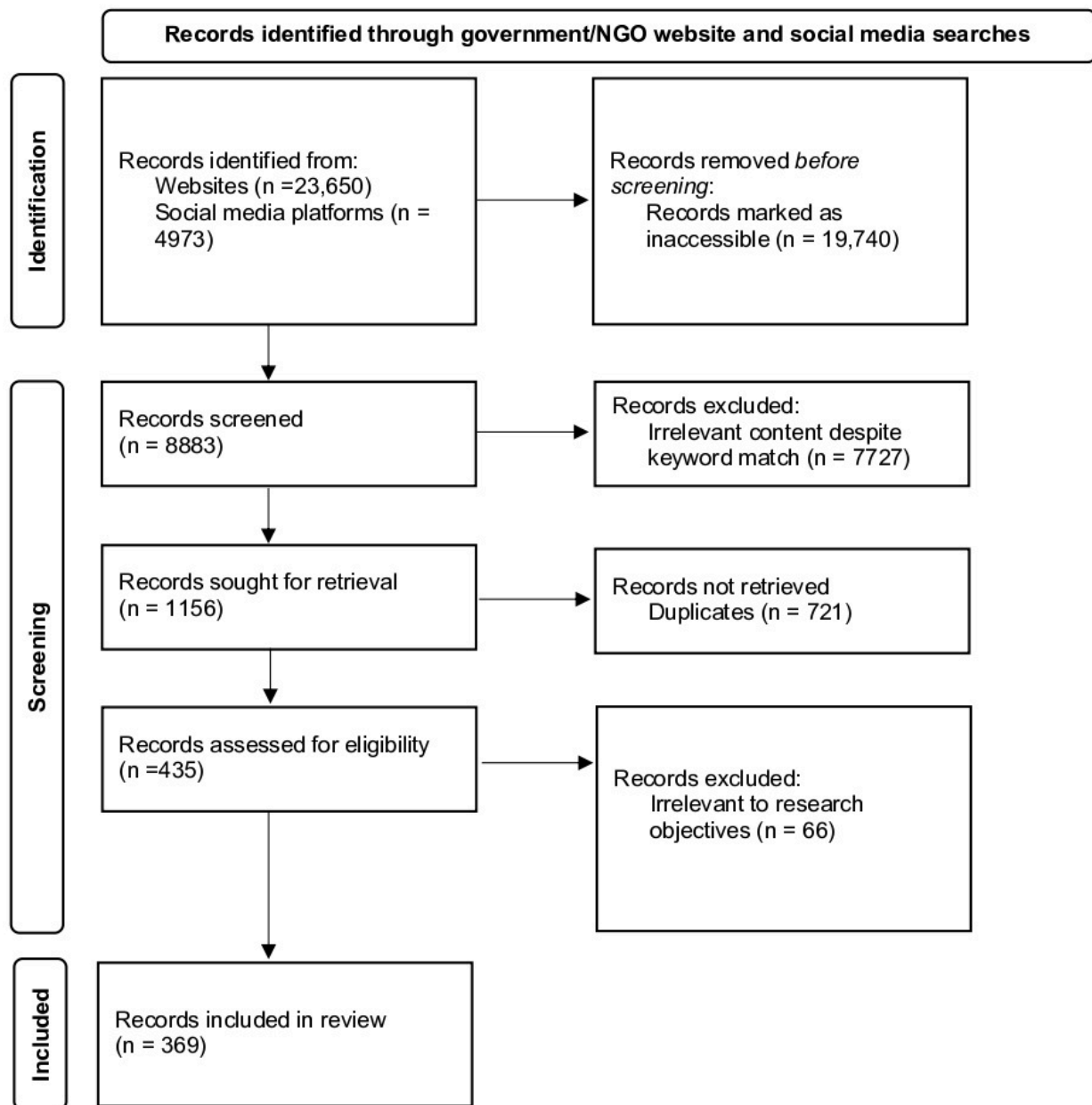


Figure 1

See image above for figure legend

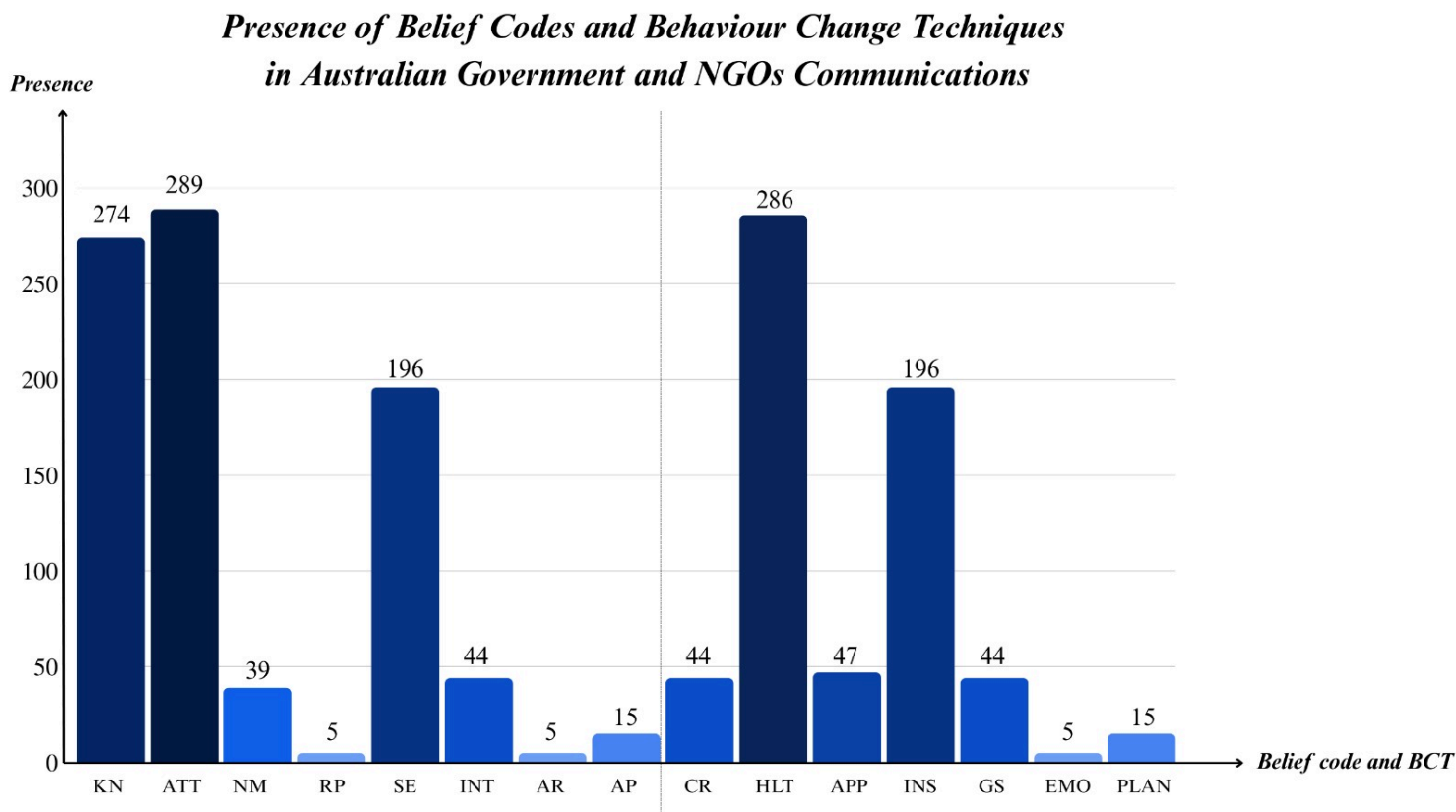


Figure 2

Distribution of belief_based constructs and behaviour change techniques

Supplementary Files

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- [Appendix1ContentAnalysisandCoding.docx](#)