

# BMJ Open New Zealand policy experts' appraisal of interventions to reduce smoking in young adults: a qualitative investigation

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## ABSTRACT

**Objectives** Reducing smoking in young adults, particularly young Māori and Pacific, is vital for reducing tobacco harm and health inequalities in New Zealand (NZ). We investigated how NZ policy experts appraised the feasibility and likely effectiveness of interventions designed to reduce smoking prevalence among 18–24 year olds.

**Design** We used a qualitative design, conducting semistructured interviews and applying thematic analysis.

**Participants** We interviewed 15 key informants, including politicians, senior policy analysts and leading tobacco control advocates. Participant selection was based on seniority and expertise and ensuring diverse perspectives were represented.

**Interventions** We examined nine interventions that could either promote greater mindfulness or introduce barriers impeding smoking uptake: smoke-free outdoor dining and bars; no tobacco sales where alcohol is sold; social marketing campaigns; real life stories (testimonials); life skills training; raise purchase age to 21; tobacco-free generation; smokers' licence; make tobacco retail premises R18.

**Results** The policies perceived as more effective denormalised tobacco; made it less convenient to access and use; highlighted immediate disadvantages (eg, impact on fitness); aligned with young people's values; and addressed the underlying causes of smoking (eg, stress). Participants highlighted some political barriers and noted concerns that some interventions might widen ethnic disparities. Exceptions were social marketing campaigns and extending smoke-free regulations to include outdoor areas of cafes and bars, which participants saw as politically feasible and likely to be effective.

**Conclusions** Our findings suggest the merit of an approach that combines social marketing with regulation that makes accessing and using tobacco less convenient for young adults; however, political barriers may limit the regulatory options available in the short term. Strategies to support self-determination and address the underlying causes of smoking in young people warrant further investigation. Determining policy acceptability to Māori and Pacific, and likely effectiveness for these populations, should be key priorities.

## INTRODUCTION

Tobacco is the leading cause of preventable morbidity and mortality<sup>1</sup> and a key driver of

## Strengths and limitations of this study

- This is the first study to explore the perceived effectiveness and feasibility of policy options for reducing smoking in young adults (aged 18–24) in New Zealand (NZ).
- Key informants were influential experts in senior roles with political, policy and/or community expertise, with a diversity of perspectives and political allegiances represented.
- Participants' appraisal included consideration of political feasibility, a key context-specific variable that can only be gauged qualitatively.
- The study included a limited set of participants whose views may not reflect those held by the wider NZ tobacco control community.
- The appraisal of policy options was specific to NZ; although broad themes may be generalisable to other jurisdictions, detailed findings may be context-specific.

health disparities between ethnic and socioeconomic groups in New Zealand (NZ) and elsewhere.<sup>2–3</sup> Uptake of regular smoking commonly occurs in adolescence; however, in high-income countries, uptake increasingly occurs later in the life course, in young adulthood.<sup>4–5</sup> In NZ, despite implementation of all the MPOWER policies recommended by the WHO,<sup>6</sup> smoking prevalence is highest among young adults, and prevalence in 20–24-year-old Māori, at 40%, is nearly double that of Europeans (21%).<sup>7</sup> Pacific 20–24 year olds also have higher smoking prevalence than the general population, at 29%.<sup>7</sup> Reducing tobacco use among young adults is therefore of vital importance for reducing smoking-related harm and health disparities in the population as a whole, and for achieving NZ's Smokefree 2025 goal, to reduce tobacco use and availability to minimal levels by 2025.<sup>8</sup>

This study was part of a research programme exploring 'informed choice' as it applies to smoking among young adults. Analyses of tobacco industry documents show that, for

many decades, tobacco companies have promoted the idea that smokers make ‘informed choices’ to smoke.<sup>9</sup> This reasoning implies smokers understand the risks they face and accept these as personally relevant, thus exonerating the tobacco companies from responsibility for the harms their products cause.<sup>10</sup> The research programme set out to test tobacco companies’ assertions and explore the policy implications of ‘informed choice.’

The first two phases used qualitative and quantitative methods to investigate smoking uptake in 18–24-year olds and the extent to which young people make genuinely informed choices to smoke.<sup>11–13</sup> In line with themes identified in a recent systematic review of North American research on smoking initiation in young adults,<sup>14</sup> we found that structural and environmental factors have a strong influence on smoking uptake. Specifically, young adults often start smoking in social situations, where smoking is perceived as ‘normal’, and the disinhibiting effects of alcohol further facilitate smoking uptake. We established that most young adult smokers in NZ understand that smoking is harmful, but have a poor understanding of addiction and greatly underestimate the likelihood they will become long-term smokers.<sup>12</sup> Because they believe they will be able to quit easily, young people generally do not see the health risks of smoking as personally relevant. Very few young adults make an active choice to become smokers, but instead drift into smoking in social and environmental contexts that undermine rational risk assessment.<sup>11</sup> These themes were relevant to young adults of all backgrounds; however, previous research indicates that environmental influences are heightened for socioeconomically disadvantaged youth, due to social environments in which smoking is highly normalised and often ‘embedded in processes of social inclusion within a context of wider social exclusion.’<sup>15</sup>

Given this context, we wanted to identify intervention opportunities that would address barriers to ‘informed choice,’ and explore the likely effectiveness and feasibility of those intervention options. Although there is a growing empirical evidence base for what works to decrease smoking overall—including taxation, smoking bans in public places and mass media campaigns<sup>16</sup>—there is also a need to explore possible ‘next generation’ interventions for preventing and reducing smoking in young adults specifically, given the high smoking prevalence and increasing uptake in this age group.

In NZ, there is also a need for research and ongoing evidence of impact focused on Māori and Pacific populations, to identify strategies that are likely to reduce stark ethnic disparities in smoking prevalence. Indigenous self-determination has been posited as a key determinant of health for indigenous peoples and a requirement for reversing the ongoing harms of colonisation, which include high rates of tobacco use among indigenous peoples.<sup>17 18</sup> Self-determination at the family level has also been recognised as a key pathway to health and well-being for Pacific communities living in NZ.<sup>19</sup> For these reasons, including

Māori and Pacific key informants in the research was a priority.

We aimed to inform debate about possible interventions to reduce smoking in the 18–24 age-group by capturing and disseminating the insights of those with technical, political and/or community knowledge. A secondary aim was to stimulate and inform conversations about the acceptability and likely effectiveness of ‘mainstream’ tobacco control interventions for Māori and Pacific populations.

## METHODS

### Development of policy options

Drawing on their backgrounds in public health and law, Chapman and Liberman questioned the concept of ‘informed choice’ and set out the conditions that must be in place for a genuinely informed choice to occur.<sup>10</sup> Based on findings from our previous qualitative research with 18–24-year old smokers,<sup>11 13</sup> we adapted Chapman and Liberman’s ‘informed choice’ framework and developed potential interventions to address the barriers to informed choice identified in earlier research phases. These included: (1) cognitive immaturity, (2) normalisation of smoking, particularly in social settings, (3) decision-making impaired by alcohol, (4) social anxiety and/or lack of alternative stress management tools, (5) tendency not to personalise health messages and (6) poor understanding of addiction. Intervention options included variants of established strategies (eg, social marketing ideas; extension of smoke-free laws) and more novel proposals that have not, to our knowledge, yet been implemented in any country, for example, a smokers’ licence, proposed by Chapman and Liberman,<sup>10</sup> and Berrick’s ‘tobacco-free generation’ proposal.<sup>20</sup> These proposals were tested using an online survey of young adults<sup>12</sup> and those considered most likely to be effective were selected for further consideration in the current study and are outlined in [table 1](#). Some address the fact that young people seldom make a conscious choice to become smokers and involve environmental changes to make the healthy choice the easy choice. Others aim to ensure young people are more mindful and better informed about smoking’s risks. We excluded interventions already implemented or planned in NZ (eg, plain packaging, tax increases, a point of sale display ban, a ban on tobacco advertising and sponsorship).

### Participants

We interviewed 15 key informants, comprising politicians (n=5), senior policy analysts (n=4) and leading tobacco control advocates (n=7). Five identified as Māori and three as Pacific; all had leadership roles in promoting, developing or implementing tobacco control policy. Their views were therefore well informed and likely to be influential.

Participants were purposively selected for seniority,

**Table 1** Intervention options appraised

Intervention objective	Intervention	Barriers to informed choice that this intervention could support
Decoupling alcohol and tobacco	1. Smoke-free outdoor dining and bars Not allowing smoking in any parts of bars, clubs, cafes or restaurants (ie, making all inside and outside areas smoke-free). People wishing to smoke would have to leave the bar and go to an area where smoking was allowed. These areas could be a minimum distance (eg, 100m) away from bars.	Normalisation of smoking in social settings Decision-making impaired by alcohol
	2. No tobacco sales where alcohol is sold Not allowing tobacco to be sold wherever alcohol is sold; people could not buy tobacco from vending machines at bars or from off-licences. Supermarkets, dairies and other stores would not be permitted to sell <i>both</i> alcohol and tobacco.	Decision-making impaired by alcohol
Social marketing and persuasion	3. Social marketing campaigns Using social marketing campaigns to: 1. Discourage people from offering tobacco to young adults by showing it as something that real friends would not encourage others to use. 2. Expose how tobacco companies have deliberately targeted young people. 3. Show how being addicted causes people to lose control over things they would like to do as the need to smoke interrupts their activities. 4. Communicate social risks of smoking, for example by focussing on the smell of smoking and the risk this odour poses to people's social attractiveness.	Tendency not to personalise health messages Poor understanding of addiction Normalisation of smoking
	4. Real life stories (testimonials) Using education programmes to show 'real' smokers who talk about the diseases their smoking has caused. Asking young people who have lost family members to illnesses caused by smoking to talk about their experiences.	Tendency not to personalise health messages
Skill development	5. Life skills training Providing education programmes in settings such as colleges and workplaces so young people learn skills in assertiveness, independent decision-making and stress management. These programmes would help young people learn other skills for dealing with stress and promote social skills to facilitate meeting and interacting with others.	Social anxiety and/or lack of alternative stress management tools
Restrictions on tobacco purchase	6. Raise purchase age to 21 Increasing the age at which tobacco can be legally purchased from 18 to 21. No one under the age of 21 would be permitted to buy tobacco.	Cognitive immaturity Normalisation of smoking
	7. Tobacco-free generation Increasing the legal age at which tobacco can be purchased every year so that people born after 2000 would never be old enough to buy tobacco. This proposal would progressively increase the legal purchase age; that is, in 2018 it would be 18, in 2019 it would be 19, in 2020 it would be 20 and so on.	Cognitive immaturity Normalisation of smoking
	8. Smokers' licence Requiring smokers to have a licence before they can buy tobacco. This proposal would require smokers to demonstrate that they know and accept all the harms smoking causes and understand that smoking is addictive.	Poor understanding of addiction
Restrictions on retail availability	9. Tobacco retail premises R18 Making all stores that sell tobacco products R18 (or R21 if the purchase age is increased). This proposal would mean that no one under the age of 18 (or 21) would be able to enter that store.	Cognitive immaturity Normalisation of smoking

expertise, and diversity of roles, ethnicity and political allegiance, though all were sympathetic to the Smoke-free 2025 goal. In total, we approached 19 potential participants; of these, four refused or were unavailable due to illness, travel or perceived conflict of interest.

Because of our interest in identifying interventions particularly relevant to Māori and Pacific young adults, quotations are attributed to participants according to their ethnicity: M (Māori); P (Pacific) and NZEO (NZ European/Other), followed by a code number (eg, M1).

### Procedure

The interviews were conducted by qualified and experienced interviewers, JB and EST. Their role as tobacco control researchers was known to the participants and, in a minority of cases, the interviewer and participant were known to each other prior to the interview. We interviewed participants in person (n=9) or, in cases where a face to face meeting was impractical, by phone (n=6), in October–November 2015. Interviews were guided by a semistructured interview schedule and ranged from 37 to 75 min. Our questions covered

**Table 2** Perceived effectiveness, political feasibility and overall prioritisation of options

	Perceived effectiveness	Perceived political feasibility	Overall prioritisation
1. Smoke-free outdoor dining and bars	High	High (at local government level)	High
2. No tobacco sales where alcohol is sold	Moderate/high	Low	Moderate
3. Social marketing campaigns	Moderate/high	High	High
4. Real life stories (testimonials)	Low/moderate	High	Moderate
5. Life skills training	Mixed views	High	Moderate
6. Raise purchase age to 21	Mixed views	Low	Moderate/low
7. Tobacco-free generation	High	Moderate	Moderate
8. Smokers' licence	Low	Low	Low
9. Tobacco retail premises R18	High/moderate	Low	Low

interpretations of 'informed choice' claims, perceptions of the appropriate balance between educational and regulatory measures and appraisal of the likely effectiveness and feasibility of the nine potential tobacco control interventions outlined in table 1. This paper analyses data elicited during exploration of the last of these topics, which included participants' prioritisation of their 'top three' interventions. Analysis of the former topics is provided elsewhere.<sup>21</sup>

Prior to the interview, we sent an information sheet and consent form to participants. Because we wanted to explore participants' unprompted views on 'informed choice', we shared our framework and a brief outline of the nine policy options to be discussed with participants part-way through the interview. We mailed these materials to participants interviewed by phone, but asked them not to open the information pack until prompted during the interview.

With participants' permission, interviews were recorded and professionally transcribed, then independently coded by JH and JB and analysed thematically, following Braun and Clarke's approach.<sup>22</sup> We collated participants' 'top three' interventions (see online supplementary file 1), which guided the 'overall prioritisation' presented in table 2, column three. Columns one and two were based on a qualitative assessment of the overall weight of opinion; 'mixed views' indicates that polarised opinions made this impossible.

## RESULTS

There was broad agreement on two options that were seen as both politically feasible and effective in reducing young adult smoking: (1) making outdoor areas of bars, cafes and restaurants smoke-free (Option 1) and social marketing campaigns focused on immediate risks of smoking or industry denormalisation (Option 3). Views on the other options were more mixed and prioritisation often involved a trade-off between perceived effectiveness and political feasibility. Table 2 summarises these results.

## Decoupling alcohol and tobacco

Currently, smoking is not allowed in indoor areas of bars, cafes or restaurants in NZ, but many have outdoor areas where smoking is permitted. These spaces are often covered and heated, with attractive lighting and seating and are sometimes perceived as 'the best seats in the house' (NZEO 3).

Almost all participants agreed that extending smoke-free laws to cover outdoor areas (Option 1) was likely to be effective because it would remove social cues to smoke and have a strong denormalising effect. Participants said '[It] would be one way of really normalising non-smoking' (NZEO 6) and '[It would mean] the idea of smoking isn't in [young people's] face all the time' (M3). Participants argued this intervention would help those trying to quit and would reduce uptake, particularly of 'social smoking', because it would make smoking a hassle: 'Oh God, if you have to walk away all the time and do it, then why would I bother even starting?' (M1). Participants also commented that the current laws make smoking (which often occurs on or near footpaths) very visible to passers-by, and extending smoke-free laws could reduce this visibility. 'It would work... so that children didn't see smoking if they were around those sorts of places too' (NZEO 6).

Participants saw extension of smoke-free areas as a low-cost policy that had been successfully implemented elsewhere (eg, in parts of Australia) and could be justified in terms of amenity value for non-smokers: 'Why should a non-smoker who wants to enjoy the outside, the al fresco thing, have to endure the smoke?' (NZEO 3). It was seen as politically feasible since it would be supported by non-smokers, who are the majority and, importantly, it would not require national legislation but could be implemented instead through local government by-laws: 'I don't think there's a willingness [by central government] to change anything in legislation, but certainly there is at council [local government] level' (NZEO 5).

Several participants commented that arguments advanced by the hospitality industry before the indoor

smoking ban was introduced in 2004 would likely be raised again, for example, that people would drink and smoke at home, bars would close and jobs would be lost. But participants argued that attitudes to smoke-free bars had changed rapidly following the 2004 law change, and the predicted unintended effects had not occurred. They envisaged a similar scenario if smoke-free rules were extended to outdoor areas. 'I think initially there'd be an outcry about it, but given that we've been able to implement having smoke-free inside, I don't see any problem with us also having smoke-free outside' (NZEO 4).

Despite majority support, some participants questioned how effective the policy would be in provincial areas and in population groups that tend to socialise in private settings: 'I mean, look at Masterton. No one goes to bars; they just stay home and drink...In the towns, no one goes out anymore' (M5). Others raised concerns about unintended personal safety risks that could arise if people (in particular, intoxicated young people) were forced to go some distance from a venue, separated from their friends, in order to smoke.

Most participants supported banning tobacco sales on licenced premises as a further measure to decouple tobacco and alcohol and reduce the chances of people purchasing tobacco when under the influence of alcohol. However, a ban on selling tobacco wherever alcohol is sold (Option 2), which would affect convenience stores, supermarkets and off-licences, was generally seen as 'too interventionist' (NZEO 7) and not politically feasible in the current environment.

### Social marketing and persuasion

Many participants thought social marketing (Option 3), if executed well, could motivate behaviour change in priority groups and reframe how young adults perceive tobacco. Social marketing was perceived as 'a way of countering the [tobacco industry] marketing and social phenomena that support tobacco use and smoking uptake; you're fighting fire with fire' (NZEO 1).

Participants supported social marketing campaigns that focused on the immediate risks of smoking (eg, unattractive smell or loss of fitness) and on exposing how tobacco companies have deliberately targeted and manipulated young people. Several thought industry denormalisation strategies were potentially powerful because 'people get really upset when they feel they've been duped, especially young people' (NZEO 6). One commented:

We are in a time of young people starting to kind of question the status quo around the power of big companies, and if there's a sense they're being used just to achieve profit for a large company, then there's potentially a useful message in there (NZEO 4).

Participants thought that industry denormalisation coupled with young people's desire to be self-determining (rather than manipulated by corporations) could lead to more young people remaining smoke-free. Two

participants thought this approach might be particularly effective for Māori and saw parallels between colonisation and the exploitation of indigenous peoples by tobacco companies:

I think that could really work for Māori if you were to do it in the context around identity and culture and some of our historical grievances—there's some similarity around being taken advantage of (M3).

However, a minority (including Māori) thought industry denormalisation was unlikely to be effective in NZ because 'we don't have a huge industry presence here' (M2).

Most were sceptical about the effectiveness of health messages for young adults, since these messages were unlikely to be seen as personally and immediately relevant. Several participants wanted to see greater emphasis on the benefits of being smoke-free, as opposed to the risks of smoking.

Participants thought social marketing campaigns had to be very carefully crafted and communicated via appropriate channels (eg, social media) to obtain impact. They saw peer delivery (Option 4) as one way of making messages (and messengers) more relevant: 'the younger they are, the realer they are, the more they hit home' (NZEO 1). Some participants were concerned about the high costs of campaign development, which one saw as 'hugely expensive and need[ing] to constantly be updated' (M1). Aside from fiscal constraints, however, participants did not see any impediments to the immediate implementation of this option.

### SKILLS DEVELOPMENT

Many participants, particularly Māori and Pacific key informants, supported life skills development in young people, for example, stress management, assertiveness and goal setting (Option 5). They saw stress and low self-esteem as key drivers of smoking: 'These kids have got so much going on, so they don't care about themselves' (P2). 'Every young person I know who smokes...they either don't give up because of stress or they don't want to give up because it's their one opportunity to get outside, to...do something that brings them some stress relief' (M5).

Some participants thought that life skills programmes would 'build up' young people (P1) and provide 'basic skills for going out into the world' (M5). They argued development of life skills could also address other risk behaviours and considered a wider strengths-based approach important for individuals' personal success and potential as future leaders:

I do think total focus on tobacco is not what it's all about. We want to actually—we want find young people who are going to lead the country and the world, and you have to give them the tools to be able to do that. So it's, yeah, it's giving our young ones more tools (M1).

Many participants also saw a life skills approach as more positive and holistic than specific antismoking initiatives and one that acknowledges the importance of self-determination. However, one felt this measure was 'just not focused enough' (NZEO 2) while another argued that any educational approach focuses on individuals rather than the social change required: 'You're teaching them to put up with the shit in their community. It takes it back to the individual, and not that wider societal responsibility to actually have a community that's easy to be healthy in' (M3).

Among those who supported a life skills approach in theory, some doubted whether such programmes would reach and engage 18–24-year olds, and many argued that these interventions should be delivered earlier in the life course. However, two participants pointed out that a recent change in NZ's workplace health and safety laws could provide a platform for encouraging (or requiring) employers to provide health promotion programmes for their employees and a work environment free from social pressure to smoke.

#### OTHER OPTIONS

There was strong support, particularly among Māori and Pacific key informants, for reducing the retail availability of tobacco, to resolve a troubling 'mixed message' (NZEO 5). Participants pointed out the contradiction implicit in government efforts to reduce smoking while allowing tobacco to be sold anywhere like a 'normal' consumer item.

We can't be giving our young people messages around health and how it's not good for you when we actually allow it to be sold in our communities everywhere... Those two things don't sit together well (M3).

Options 2 (not allowing tobacco to be sold where alcohol is sold) and 9 (making tobacco retail premises R18) would reduce the number of tobacco retailers. However, most participants felt these supply-side interventions were not currently politically feasible in NZ due to the likely resistance of the retail sector: 'They'll put up a fight about that, I'm sure' (M2). In addition, participants noted that any intervention requiring central government legislation was politically 'difficult' under the current government, which 'likes to have a less regulatory approach rather than more regulatory approach' (NZEO 5). Overall, participants supported options to reduce the retail availability of tobacco, but were not optimistic these would be implemented: 'I'd love to see accessibility limited, but I don't think it will happen' (P2).

Some participants strongly supported age restrictions (eg, Option 6, raising the legal age of purchase to 21 and Option 7 tobacco-free generation) while others felt ambivalent. On the one hand, they argued any intervention that made tobacco harder for young people to access

was worth considering, particularly if it denormalised tobacco:

I think that [raising the legal age of purchase] points much more strongly towards the severity of smoking and it says that as a nation and a government we realise how dangerous this product is... That's a clear marker for young people (M1).

On the other hand, many participants (particularly Māori and Pacific) saw such 'top down' policies as easy for young people to circumvent, for example, by obtaining tobacco through older family members or friends. For this reason, they were sceptical about the likely effectiveness of these measures, particularly for Māori and Pacific young people, who have greater exposure to smoking within their families and communities. Participants also doubted the political feasibility of these options saying that inconsistency between legal ages for drinking and smoking would be an impediment: 'It would be possible to do this if the age for drinking was also raised, but I think that it would be otherwise a bit of a struggle' (NZEO 4).

Some key informants were concerned about 'criminalising' young people who did not comply with restrictions. This concern was raised particularly in relation to the 'smokers' licence' (Option 8), which was also seen by many as a costly and impractical intervention, with the potential to 'help the industry's cause' (M3) by placing the onus on the individual. There were concerns about a smokers' licence 'making [smokers] social outcasts' (P2) or, conversely, providing a rite of passage that young people 'aspire to achieve' (NZEO 3). Several participants wanted to see restrictions placed on the industry or the product, rather than on individuals.

Key informants were generally more supportive of the 'tobacco-free generation' proposal than a smokers' licence or one-off increase in the legal age of purchase, because they could envisage this initiative as a community-driven, rather than top-down, approach:

You're not selling a regulation or a—you're really selling an idea of a smoke-free generation...I think it's something you could get a really strong political and social movement around. I think it's a very powerful story there (NZEO 2).

Māori and Pacific key informants consistently noted the importance of self-determination and autonomy and wanted to see interventions that strengthened young people and their ability to direct their own lives. For one Māori participant, this perspective related to a personal philosophy about how change occurs: 'I have a philosophy that says that you can't change people. They have to change themselves [and they do so]... because they believe that what's being promoted to them is the right thing to do' (M4). This quote suggests that young people may resist 'top down' regulation unless they view the regulation as aligned with their own values and beliefs. Other participants echoed this idea and argued that communicating the rationale behind policy changes and gaining

buy-in from young people is vital: ‘... you [need to] make a song and dance about what you’re trying to do...so they can click and register why it is that it’s happening’ (P3). Participants implied that even when behaviour is required by law, individuals can choose to withhold their compliance. Regulatory approaches were seen as likely to fail unless attention was paid to framing and communicating the regulatory change in such a way that it was embraced by young people, rather than resisted.

## DISCUSSION

Participants saw two of the nine interventions they appraised as both politically feasible and likely to reduce smoking in NZ young adults: (1) making outdoor areas of bars, cafes and restaurants smoke-free and (2) social marketing focused on immediate risks of smoking or industry denormalisation. In addition, Māori and Pacific participants, in particular, supported life skills education to address the underlying causes of smoking and wanted to see restrictions on the retail availability of tobacco. However, few participants saw retail restrictions or other legislative options as politically feasible in the current environment (despite most supporting these ideas in principle), and lack of political will to introduce new legislation was an overarching theme. More generally, participants stressed the importance of complementary interventions that work synergistically to deter smoking uptake among non-smokers and support cessation among smokers. Analysis of perceived strengths and weaknesses of the nine interventions also revealed a broader concept—self-determination—that may be relevant to several interventions and important for reducing smoking in young adults, particularly Māori and Pacific.

Empirical evidence of effectiveness is unavailable for novel policies that have yet to be implemented and only emerging for those recently introduced; further, little is known about how population interventions impact on Māori and Pacific young people. In the absence of such evidence, capturing expert appraisal of the strengths and weaknesses of possible interventions provides a valuable contribution to policy debate. As far as we are aware, this is the first study to explore the perceived acceptability and effectiveness of measures to reduce smoking in young adults. A particular strength is the high calibre and diversity of key informants, including leading Māori and Pacific voices. Although the findings are based on participants’ perceptions (which may or may not prove to be correct), our informants—politicians, tobacco control advocates and senior policy analysts—were knowledgeable and influential, and their perceptions provide rich insights into how NZ policy could evolve. At the same time as our sample composition is a strength, it is also a limitation, as we cannot generalise our findings to other stakeholders or jurisdictions. Nonetheless, given global disparities in smoking prevalence among indigenous people our findings could inform international efforts to reduce inequalities caused by smoking.

Our findings are largely congruent with studies among other populations and with research estimating the effects of specific measures. For example, previous studies have concluded that extending smoke-free regulations to include outdoor areas of bars and clubs could be effective in reducing smoking in young adults,<sup>13</sup> and even in 2012, there was majority public support for this measure in NZ.<sup>23</sup> However, international findings on how such measures influence young adult smoking are yet to emerge. Of the other regulatory options, only raising the legal age of tobacco purchase to 21 has an international precedent. Some US states and cities have implemented this policy, with strong public support<sup>24</sup> and promising emerging results.<sup>25</sup> Nonetheless, some participants queried whether this measure could increase ethnic inequalities in NZ, as underage access to tobacco is more prevalent in Māori and Pacific communities.<sup>26</sup> Our finding that most participants saw industry denormalisation as promising aligns with international evidence documenting the effectiveness of these campaigns.<sup>27</sup> In contrast, the Ministry of Health view,<sup>28</sup> also based on consumer research,<sup>29</sup> is that industry denormalisation is unlikely to be successful in NZ. Further research is needed to resolve these apparently contradictory findings.

More generally, our findings reflect wider research suggesting that self-determination—the ability to have a voice, to participate and to exercise control over one’s destiny<sup>30</sup>—is critical to reducing tobacco use in young people, particularly Māori and Pacific. The importance of self-determination is recognised in ‘by Māori, for Māori’ initiatives, where Māori have played a key role in determining their response to the tobacco epidemic, with strong input by smokers in some instances. Available evidence, although limited, suggests such community-led initiatives have been successful in engaging Māori and Pacific peoples and supporting behaviour change.<sup>31–33</sup> Participants suggested young people resist policies they see as imposing on their autonomy and are more likely to accept those that support their autonomy and align with their values. This finding is consistent with previous research highlighting young people’s strong aversion to didactic approaches<sup>34</sup> and concern about their smoking harming others<sup>27 34–36</sup> and is also consistent with views of policy experts internationally.<sup>37</sup> Framing interventions according to values that appeal to young people may promote greater acceptance and voluntary compliance.

Our findings support earlier research that shows smoking may be symptomatic of low self-esteem, stress and marginalisation, particularly among disadvantaged young people.<sup>13 15</sup> Social cognitive theory suggests people’s belief in their capabilities to exercise control over events that affect their lives is a key determinant of health behaviour.<sup>38</sup> Interventions to support personal agency, such as life skills education, may thus help reduce the burden of tobacco harm in disadvantaged communities, particularly if applied early in the life course.<sup>39–41</sup> Nonetheless, evidence on the effectiveness of life-skills development is mixed.<sup>42</sup> Interventions that enhance personal

agency should not replace measures designed to reduce tobacco's appeal, availability or affordability. Overall, participants' views suggest the merit of a comprehensive approach that creates an environment where tobacco is difficult to access and use and supports policy measures with social marketing and skill building interventions.<sup>43</sup>

This study collates experts' insights into the likely effectiveness of interventions to reduce young adult smoking and, crucially, which options the New Zealand government might potentially adopt. While our findings cannot provide definitive answers, we hope it will stimulate much needed debate and guide further research. In particular, our findings highlight the need for further preintervention and postintervention research exploring how the measures examined could influence young adults and priority subgroups, both positively and negatively. Further research into the role of self-determination, both at collective and individual levels, may help inform interventions to reduce smoking harm, particularly in Māori and Pacific communities.

## CONCLUSION

Preventing and reducing smoking in young adults, particularly young Māori and Pacific, is vital to reduce tobacco harm and health inequalities in NZ. Our findings highlight the perceived effectiveness of complementary interventions that change young people's choice environment, align with their values and address underlying causes of smoking, such as stress. Unfortunately, many options appraised as effective were either not seen as feasible in NZ's current political environment or could potentially widen ethnic disparities. Exceptions included extending current smoke-free regulations to include outdoor areas of bar and cafes and social marketing focusing on immediate harms or industry denormalisation. Given the stark ethnic disparities in tobacco use in NZ, assessing policy acceptability to Māori and Pacific, and likely effectiveness for these populations, should be a key priority. Communities most affected by the tobacco epidemic must continue to be active participants in finding solutions and should be listened to and supported by mainstream policy makers and services.

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