

How young people in Aotearoa perceive vaping and the associated oral health risks

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ABSTRACT

AIMS: The use of electronic cigarettes (EC) among young people has escalated in Aotearoa and in other jurisdictions where they are available commercially. The rise in vaping among young people for lifestyle reasons rather than for smoking cessation is of concern, given the growing evidence of the harmful effects of vaping. Specifically, there is little known about how young people in Aotearoa perceive the effect of vaping on their oral health. This study aims to explore how young people in Aotearoa perceive risks of vaping on oral health.

METHODS: A cross-sectional online survey (n=237) was conducted to explore young people's (16–24 years) perceptions, current practices and attitudes regarding vaping and oral health.

RESULTS: Although most participants understood that vaping posed risks to their general health, they reported lower levels of perceived risk of vaping on oral health. Current vapers held significantly lower perceptions of both the addictiveness and harms associated with vaping. Participants reported that oral health professionals seldom asked them about their vaping status. Most participants were open to discussing with oral health professionals the effects of vaping on their oral health, suggesting that they would be less likely to vape if they knew it was bad for their oral health.

CONCLUSIONS: The findings indicate that there is a need for improved information for young people communicating the potential oral health risks of vaping and that oral health professionals are a way to disseminate this information.

The use of electronic cigarettes (EC) or vaping among young people has escalated, not just in Aotearoa, but globally, in jurisdictions where the products are accessible.¹ Although current regulations in Aotearoa prohibit the sale of vaping products to anyone under the age of 18 years, previous research has shown that vaping is becoming increasingly popular among adolescents (15–17 years old).² Over 40% of adolescents in Aotearoa have vaped at some point in their lives, and about 10% of them use EC daily.² The 2021/22 New Zealand Health Survey (NZHS) has revealed that young people have the highest rate of daily EC use (22.9%) among all age groups.³ The *Smokefree Environments and Regulated Products (Smoked Tobacco) Amendment Act* came into force in January 2023.⁴ This Act incorporates several provisions, including: to lower the maximum nicotine amount allowed in smoked tobacco products, reduce the number of tobacco sales locations and ensure that tobacco is never advertised to anyone who was born on or after January 1, 2009 (to create a “smokefree generation”). According to the most recent NZHS,³ smoking rates are continuing to fall, with less than 8% of adults smoking

daily in Aotearoa—a historic low. The advent of EC has been a contributor to this result but poses important collateral risks to young people who choose to vape for reasons other than to quit tobacco.

Recent studies suggest that EC use can be harmful to general and oral health. Information on young people's perceptions of vaping's effects on health indicate that it is seldom considered benign; yet, when compared to tobacco, the perceived risk to health is often dismissed or minimised.^{5–8} Research into the effects of vaping on oral health is beginning to emerge, with evidence indicating that the nicotine and other chemical compounds in EC liquids and vapour may be associated with oral health issues.^{1,9–15} Although a range of potential oral health effects have been reported, periodontal damage and irritation of the mouth and throat are the most commonly reported oral health effects.^{7,14–15} There is currently no research that we are aware of that describes how young people perceive the risk of vaping on their oral health in Aotearoa.

Vape products are highly accessible and affordable in Aotearoa. They have also been heavily promoted and evidence suggests that they are

being targeted to young people for lifestyle reasons.^{16–18} Vape product packaging and point-of-sale marketing provide very general warnings,^{17,19} with the potential effects on oral health never mentioned. In the interests of providing accessible, people-centred cessation support in healthcare facilities such as hospitals and dental clinics, patients are routinely asked if they smoke, but it is unclear whether they are also routinely asked if they vape.^{20–22}

Although many studies have been conducted to investigate people's knowledge and attitudes concerning vaping on general health, few have investigated the perceived risk of vaping on personal oral health.^{23–25} To date, it is unclear how young people in Aotearoa perceive the potential negative effects on their general and oral health. Oral health is among the most neglected areas of health for young people, and yet the impacts are financially and socially damaging. This work is the first in Aotearoa to focus on vaping and oral health in young people. The purpose of this study was to learn how young people (16–24 years old) perceive vaping and the associated oral health risks. This information could be useful to support national efforts to reduce uptake among non-smokers and vapers.

Methods

Study design

A cross-sectional online survey was conducted between August and September 2022 in Aotearoa. The questionnaire was delivered online using the Qualtrics platform and is described according to the Checklist for Reporting Results of Internet E-Surveys (CHERRIES) checklist.²⁶ The University of Auckland Human Participants Ethics Committee granted ethics approval for the research on 22 July 2022 for a three-year period (reference number UAHPEC 24713).

Sample

Inclusion criteria included young people who were aged between 16–24 years inclusive, living in Aotearoa, able to read and write in English and had access to the internet and an electronic device to complete the questionnaire.

Procedure

Participants were recruited through the distribution of flyers and emails to secondary schools and universities. Those interested in the study could either enter the website link to gain access to

the questionnaire or scan the QR code. Participants could only enter the questionnaire when they had read or downloaded the Participants Information Sheet and Consent Form and answered “agree” to the question “do you agree to take part in this survey?” The questionnaire was anonymous; no names or personal information were collected. The survey did not contain any randomised questions, and participants were allowed to go back and edit their responses before submitting the survey. At the completion of the questionnaire, participants had the option to enter a prize draw. Entries into the prize draw were not linked to the survey response and were stored separately from the questionnaire data.

Survey design

The survey instrument was developed by the research team based on a review of existing EC-related literature and measures. It consisted of 28 questions assessing participants' knowledge and practices regarding EC use and perceptions of the effects of vaping on oral health. The survey instrument consisted of six sections, each displayed on a separate page: demographics (three items), current vaping practices (five items), knowledge of EC products and their health risk (six items), EC and its oral health risks (six items), current oral health status (four items) and willingness to learn more about ECs' health risks (four items). No pre-validated scales were used, as none were deemed appropriate for this context. The questionnaire was pre-tested by researchers before being finalised. Adaptive questioning was used where appropriate to minimise the response burden. The questionnaire is available as Appendix 1.

Analysis

Questionnaire data were analysed and summarised using Excel and Statistical Package for the Social Sciences (IBM SPSS Statistics V.26) software. Survey data were analysed and summarised using descriptive quantitative analyses. Only questionnaires with 75% of the questions completed were included in the final sample. No time limit on the completion of the questionnaire was imposed, IP address information was not recorded and cookies were not used to assign identifiers to each computer. Completeness checks were completed after submission.

Results

Participants' characteristics

Of the 261 people who accessed the survey and consented to participate, 24 responses were excluded due to failure to meet the completion criteria. The total number of complete responses was 237 (completion rate = 90.8%). The total sample included 125 females (52.7%), and most participants (77.6%) identified themselves as European. Table 1 below shows the characteristics of the sample.

Vaping status

Our sample included those who had never vaped (never-users, $n=69$, 29.1%), those that do not currently vape but have in the past (ever-users, $n=87$, 36.7%) and current vapers (current-users, $n=81$, 34.2%). Participants who had previously vaped (ever-users) or who were currently vaping (current-users; $n=168$) were asked to identify where they obtained their vaping supplies. "Friends and family" were the most common source ($n=148$, 88.1%). A smaller proportion of participants reported obtaining supplies from physical ($n=77$, 32.5%) or online stores ($n=28$, 11.8%). Although it is illegal to sell vaping products to people under the age of 18 years, of the 106 participants who were current or ever-users and below the legal age (under 18 years at the time of the survey), 23.6% ($n=25$) reported purchasing their vapes from physical or online stores.

The majority of (ever and current) vapers ($n=168$) in our sample started vaping before the age of 18 years ($n=149$; 88.7%). The majority ($n=108$; 64.3%) stated that they started vaping due to curiosity and wanted to know what vaping felt like, and 48.8% ($n=82$) reported starting as a result of being influenced by friends and family.

General health risk perceptions of vaping

Participants were asked to select how much they agreed or disagreed with questions related to their perceptions of the health risks of vaping on a Likert scale from 1 (strongly disagree) to 5 (strongly agree; Table 2). Approximately two-thirds of participants agreed that vaping was just as addictive as tobacco smoking and that vape juice (e-liquids) may cause long-term health problems (65% and 68%, respectively), and less than half (42.2%) believed vaping to be safer than smoking.

Participants' perception of whether vaping is as addictive as tobacco smoking was not significantly associated with their current vaping status, $X^2(2, n=237) = 3.51, p=.173$. Current users were significantly more likely to agree that vaping is safer than smoking than ever and non-users, $X^2(2, N=237) = 10.93, p=.004$.

Current users were also significantly less likely to agree that vape juice contains chemicals that could cause long-term health issues than ever and non-users ($X^2(2, N=237) = 19.22, p<.001$).

Participants were asked to rate the addictiveness of vaping on a scale from 1 (not at all addictive) to 5 (extremely addictive), with a mean rating 3.7 ($SD=1.2$). The rating of vaping addictiveness was significantly higher in never-users ($M=4.04, SD=0.99$) compared to ever-users ($M=3.56, SD=1.30$) and current-users ($M=3.51, SD=1.19$; $F(2, 234) = 4.60, p=.011$).

The harmfulness of vaping was rated on a scale of 1 (not at all harmful) to 5 (extremely harmful) by participants, with a mean rating of 3.6 ($SD=1.0$). The ratings of the harmfulness of vaping were significantly lower in current-users ($M=3.15, SD=1.05$) than ever-users ($M=3.71, SD=0.99$), and never-users ($M=3.94, SD=0.80$; $F(2, 234) = 13.92, p<.001$).

Participants were also asked to select the body parts that could be adversely affected by vape use; 96.9% ($n=229$) selected the lungs, 58.6% ($n=139$) selected the brain, 55.7% ($n=132$) selected the heart and 51.4% ($n=122$) selected the mouth. Only 5 (2.1%) respondents indicated they did not believe vaping would affect any of the listed body parts. All five of these participants were current vapers.

Oral health risk perceptions of vaping

Participants were asked to identify what they perceived as the oral health risks of vaping (Table 3). The perceived risk to oral health most frequently identified by participants was dry mouth (64.1%).

Current oral health status and openness for health information on vaping

Participants were asked to rate their general oral health from 1 (extremely unhealthy) to 5 (extremely healthy)—the mean rating was 3.9 ($SD=0.9$). On average, participants rated their oral health as important (1=not at all important, 5=extremely important; mean rating=4.2, $SD=0.9$). The majority of participants ($n=177$; 74.7%) had visited a dental clinic within the past year for an examination or treatment. Only five participants (2.1%) had never had a prior examination or treatment. Only 11.7% of participants ($n=27$) reported that they had been asked about their vaping status when visiting an oral health professional.

In respect to the provision of information about

Table 1: Participant characteristics (n=237).

Characteristic	N	%
Age group		
16–17 years	156	65.8
18–24 years	81	32.4
Gender		
Female	125	52.7
Male	96	40.5
Another gender	12	5.1
Prefer not to say	4	1.7
Ethnicity		
European	184	77.6
Māori	50	21.1
Pacific Peoples	10	4.2
Asian	33	13.9
Middle Eastern, Latin American and African	3	1.3

Table 2: Participants' level of agreement or disagreement on general health risks of vaping (n=237).

Statements	n (%)		
	Disagree (rating 1 or 2)	Neither (rating 3)	Agree (rating 4 or 5)
Vaping is as addictive as smoking a cigarette	46 (19.4)	38 (16.0)	153 (64.5)
Vaping is safer than smoking a cigarette	48 (20.3)	89 (37.6)	100 (42.2)
Vape juice may cause long-term health problems	25 (10.5)	51 (21.5)	161 (68.0)

Table 3: Participants' perceptions of vaping's oral health risks (n=237).

Oral health risks	n (%)		
	Yes	No	Unsure
Tooth decay	115 (48.5)	35 (14.8)	87 (36.7)
Gum disease	119 (50.2)	30 (12.7)	88 (37.1)
Teeth staining	130 (54.9)	39 (16.5)	68 (28.7)
Dry mouth	152 (64.1)	21 (8.9)	64 (27.0)
Bad breath	113 (47.7)	62 (26.2)	62 (26.2)
Oral cancer	113 (47.7)	38 (16.0)	86 (36.3)

vaping on oral health, the majority (n=217; 93.9%) of participants had never asked their oral health professionals for EC-related health information. However, the majority (n=180; 76.0%) indicated that they would be happy to receive vaping-related health information from healthcare providers. Over half (n=130; 54.9%) reported they would prefer to acquire this type of information from social media platforms; 46.8% (n=111) would prefer to receive health information from their school or workplaces.

Overall, participants were moderately willing to discuss vaping with an oral health professional (mean rating=3.5, SD=1.1; 1=not at all willing, 5=extremely willing). Compared to current-users, non-current users (ever and never users) were more likely to agree that they would be less likely to vape if they believed vaping was detrimental to oral health, $\chi^2(2, N=230) = 32.07, p < .001$.

Discussion

This study was designed to provide a snapshot of young people's perceptions of the risks of vaping on oral health in Aotearoa. Results confirm that the majority of young people surveyed perceive vaping to be addictive and harmful to their general health. However, between groups' analyses reveal interesting discrepancies. Current users tended to have significantly lower perceptions of the health risks and addictiveness of vaping compared to ever or never users. This group were less likely to agree that vape liquid contains chemicals that could cause

long-term health issues.

Comparisons with tobacco were consistent with international studies. Vaping is widely perceived to pose health risks, but is inherently safer than smoking tobacco.^{24,27-31} The perception that vaping is safer is not surprising, given recent campaigns targeting smokers to "make the switch" to vaping. Until recently, the marketing of vape products has been largely unregulated, allowing retailers and the industry to capitalise on social media and others' media to promote sales. Young people have been heavily targeted in campaigns aimed not only at promoting people to switch to a safer product but to vape for lifestyle and social conformity or mental health reasons.

The majority of participants reported that vaping could negatively impact their lungs, demonstrating that young people have some appreciation of the risks of vaping. In the wake of the e-cigarette or vaping use-associated lung injury (EVALI) and COVID-19 outbreaks, there has been a heightened awareness of the respiratory risks associated with ECs, which may explain these findings.³²⁻³⁴ In contrast, perception of oral health effects of vaping was generally low. Our sample reported dry mouth followed by teeth staining as associated with vaping, compared to other risks such as oral cancers.

Moreover, vaping information was not consistently provided or sought from oral health professionals. This study has highlighted the potential need for wider dissemination of public health information demonstrating the potential

harmful effects of EC use generally, and as the evidence becomes available, on oral health. Oral health professionals rarely communicate to young people the risk of vaping. Previous research also found that most dental professionals fail to enquire about their patients' vaping status.³⁷ Martell and colleagues,²³ identified that if participants knew vaping was detrimental to oral health, this may influence their uptake. Our study found that young people would be happy to receive health information on vaping from their healthcare professionals, including oral health professionals.^{35,37}

The current study provides the first glimpse into perceptions of oral health risks of vaping in Aotearoa, but it is not without limitations. Firstly, although the survey was anonymous, there is potential for social desirability bias. It is possible that participants did not reveal all of their experiences or altered them to reflect what they felt comfortable sharing. Further, respondents with preconceived opinions or prejudices may self-select into the sample.³⁷ The generalisability of the results is also limited by an underrepresentation of Pacific peoples and gender-diverse communities.

It is clear that healthcare professionals, especially oral health professionals, are ideally positioned to actively engage in counselling and recording their patients' vaping status. Oral health professionals have a unique opportunity to provide health information about vaping to their patients. There are also opportunities for curriculum design to facilitate the future healthcare workforce with a better understanding of vaping's health risks and support to provide evidence-based health

information and cessation strategies.^{38,39}

The study findings also have implications for wider policy and regulation of ECs to prevent uptake among non-smokers and young people and prevent potential oral health harm. Vaping policies and regulations in Aotearoa could consider a precautionary principle, which emphasises the scientific uncertainty about the long-term health consequences of vaping and focusses on regulations that prohibit or reduce it. As the *Smokefree Environments and Regulated Products (Smoked Tobacco) Amendment Bill*⁴ bans the sale of tobacco to a "smokefree generation" born after January 1, 2009, the government could also take action to prevent our young people from starting vaping.

Conclusion

This study investigated young people's perceptions of the general and oral health risks of vaping in Aotearoa. Despite the study's limitations, the findings provide valuable insights that can inform future research and policy as more conclusive evidence of the potential health risks of vaping becomes available. The results showed that the majority of young people surveyed perceive vaping to be addictive and harmful to their general health, but their perceptions of the oral health effects of vaping were generally low. Although the current evidence for the health risks of vaping, in particular the oral health risks, is still inconclusive, it is essential that we continue to seek input from young people on factors that underpin decision-making around vaping.

COMPETING INTERESTS

Nil.

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Appendix 1: Part 1 survey.

Start of block: participant information
<p>Q1.1 Welcome to the survey! This survey will explore your perception and knowledge of vaping and its oral side effects. Here is the Participant Information Sheet for more information on this survey and the study. Please click on the Consent Form if you would like to keep a copy for yourself (you are not required to return the form as this survey is anonymous).</p>
<p>Q1.2 Please click “agree” below if you provide consent to participate:</p> <ul style="list-style-type: none"> ◦ Agree
Start of block: demographics
<p>Q2.1 How old are you?</p> <ul style="list-style-type: none"> ◦ 16–17 years old ◦ 18–24 years old
<p>Q2.2 Which ethnic group do you belong to? (Select all that apply)</p> <ul style="list-style-type: none"> ▣ NZ European ▣ Māori ▣ Samoan ▣ Cook Island Māori ▣ Tongan ▣ Niuean ▣ Chinese ▣ Indian ▣ Other such as Dutch, Japanese, Tokelauan. Please state:
<p>Q2.3 How do you describe yourself?</p> <ul style="list-style-type: none"> ◦ Male ◦ Female ◦ Another gender ◦ Prefer not to say
Start of block: vaping practice
<p>Q3.1 The following questions will ask about your experiences with vaping. Definitions: vaping— refers to the use of an electronic device that heats a liquid, turning it into an aerosol (vapour) which the user inhales.</p>

Appendix 1 (continued): Part 1 survey.

Vaping practice
<p>Q3.2 Have you ever vaped (even just once)?</p> <ul style="list-style-type: none"> ◦ Yes, I currently vape daily ◦ Yes, I currently vape at least once a week ◦ Yes, I currently vape but less than once a week ◦ I used to vape but have quit ◦ I have only tried vaping once or twice ◦ I have never vaped
<p>Q3.3 Where did/do you get your vape supplies from? (Select all that apply)</p> <ul style="list-style-type: none"> ▫ From family members ▫ From friends ▫ Online from internet suppliers/stores ▫ From a vape specialty store ▫ From a petrol station ▫ From a dairy ▫ Other (please specify
<p>Q3.4 How old were you when you first start vaping?</p> <ul style="list-style-type: none"> ◦ <14 years old ◦ 14–15 years old ◦ 16–17 years old ◦ >18 years old
<p>Q3.5 When you first tried vaping, what were the reasons for trying? (Select all that apply)</p> <ul style="list-style-type: none"> ▫ My friends or family members do it ▫ Flavours are good ▫ It's safer than smoking ▫ Wanted to quit smoking ▫ Vaping ads made me want to try it ▫ It's cool ▫ As a way of coping with stress ▫ I wanted to know what it was like ▫ Other (please specify)
Start of block: knowledge on vaping products and its health risk
<p>Q4.1 The following questions will ask about your views on vaping and its health risk. Definition: vape devices—vape devices are also known as e-cigarettes, which are battery-operated devices that people use to inhale an aerosol (vapour from vape juice). Typically, they include a battery, a refillable tank or a disposable vape juice cartridge.</p>

Appendix 1 (continued): Part 1 survey.

Knowledge on vaping products and its health risk
<p>Q4.2 Please indicate how much you agree or disagree with the following statement from 1 (strongly disagree) to 5 (strongly agree): vaping is as addictive as smoking a cigarette:</p> <ul style="list-style-type: none"> ◦ 1 Strongly disagree ◦ 2 Disagree ◦ 3 Neither agree nor disagree ◦ 4 Agree ◦ 5 Strongly agree
<p>Q4.3 Please indicate from 1 (not addictive at all) to 5 (extremely addictive) how addictive you believe vaping is:</p> <ul style="list-style-type: none"> ◦ 1 Not addictive at all ◦ 2 ◦ 3 ◦ 4 ◦ 5 Extremely addictive
<p>Q4.4 Please indicate how much you agree or disagree with the following statement from 1 (strongly disagree) to 5 (strongly agree): vaping is safer than smoking a cigarette?</p> <ul style="list-style-type: none"> ◦ 1 Strongly disagree ◦ 2 Disagree ◦ 3 Neither agree nor disagree ◦ 4 Agree ◦ 5 Strongly agree
<p>Q4.5 How harmful do you think vaping is to a person's physical health? *Physical health—physical health refers to the health of your body. It takes into account everything from the absence of illness to the level of physical fitness.</p> <ul style="list-style-type: none"> ◦ 1 Not harmful at all ◦ 2 ◦ 3 ◦ 4 ◦ 5 Extremely harmful

Appendix 1 (continued): Part 1 survey.

Knowledge on vaping products and its health risk
<p>Q4.6 Please indicate how much you agree or disagree with the following statement from 1 (strongly disagree) to 5 (strongly agree): vape juice contains chemicals that may cause long-term health problems: *Vape juice—vape juice is the liquid used in vape devices that gets turned into vapour. It also comes under other names such as e-juice, e-liquid and vape liquid. No matter the size or look of the vaping device, the production of vapour requires the presence of vape juice.</p> <ul style="list-style-type: none"> ◦ 1 Strongly disagree ◦ 2 Disagree ◦ 3 Neither agree nor disagree ◦ 4 Agree ◦ 5 Strongly agree
<p>Q4.7 Which of the following parts of body do you think that vaping has a negative impact on: (Select all that apply)</p> <ul style="list-style-type: none"> ▫ Lung ▫ Heart ▫ Brain ▫ Mouth ▫ None of above
Start of block: vaping and oral health
<p>Q5.1 The following questions will ask about your views on the risks of vaping on oral health.</p>
<p>Q5.2 Do you think vaping can contribute to tooth decay? *Tooth decay—permanently damaged areas in the hard surface of your teeth that develop into tiny openings or holes.</p> <ul style="list-style-type: none"> ◦ Yes ◦ No ◦ Unsure
<p>Q5.3 Do you think vaping is related to gum disease? *Gum disease—the inflammation of the gums that can go on to destroy the bone surrounding your teeth.</p> <ul style="list-style-type: none"> ◦ Yes ◦ No ◦ Unsure
<p>Q5.4 Do you think vaping can contribute to teeth staining? *Tooth staining—when the colour of your teeth changes. Teeth may darken, turn from white to different colours, or develop opaque or dark spots in places.</p> <ul style="list-style-type: none"> ◦ Yes ◦ No ◦ Unsure

Appendix 1 (continued): Part 1 survey.

Vaping and oral health
<p>Q5.5 Do you think vaping can contribute to dry mouth? *Dry mouth—dryness or a feeling of stickiness in your mouth, saliva that seems thick and stringy, dry, or sore throat and hoarseness, dry or grooved tongue.</p> <ul style="list-style-type: none"> ◦ Yes ◦ No ◦ Unsure
<p>Q5.6 Do you think vaping can contribute to bad breath? *Bad breath—is a persistent, unpleasant odour in exhaled breath.</p> <ul style="list-style-type: none"> ◦ Yes ◦ No ◦ Unsure
<p>Q5.7 Do you think vaping increases the risk of oral cancer? *Oral cancer—cancers of the mouth including lip cancer, jaw cancer and tongue cancer.</p> <ul style="list-style-type: none"> ◦ Yes ◦ No ◦ Unsure
Start of block: oral health practice
<p>Q6.1 The following questions will ask about your views on oral health and oral health behaviours.</p>
<p>Q6.2 How would you rate your current oral health on a scale from 1 (very poor) to 5 (extremely healthy)? *Oral health—the health of your teeth, gums and the parts of your face that help you to smile, speak and chew.</p> <ul style="list-style-type: none"> ◦ 1 Very poor ◦ 2 ◦ 3 ◦ 4 ◦ 5 Extremely healthy
<p>Q6.3 When was the last time you visited a dental clinic for check-up or treatment?</p> <ul style="list-style-type: none"> ◦ Never been to a dental clinic ◦ Last 12 months ◦ Last 24 months ◦ 2–5 years ago ◦ >5 years ago

Appendix 1 (continued): Part 1 survey.

Oral health practice
<p>Q6.4 Have you ever been asked if you vape or not when visiting a dental professional? *Dental professional—a person who has the training or expertise to provide care to your mouth and teeth (such as a dentist, dental hygienist, dental therapist, dental nurse, oral health therapist).</p> <ul style="list-style-type: none"> ◦ Yes ◦ No
<p>Q6.5 Have you asked any dental professionals about vaping and oral health?</p> <ul style="list-style-type: none"> ◦ Yes ◦ No
Start of block: attitudes and willingness
<p>Q7.1 Please indicate on a scale from 1 (not at all important) to 5 (extremely important) how important is it to you to have good oral health.</p> <ul style="list-style-type: none"> ◦ 1 Not at all important ◦ 2 ◦ 3 ◦ 4 ◦ 5 Extremely important
<p>Q7.2 Please indicate how willing you would be to discuss the impact of vaping on oral health with a dental professional on a scale from 1 (not at all willing) to 5 (extremely willing). *Dental professional—a person who has the training or expertise to provide care to your mouth and teeth (such as a dentist, dental hygienist, dental therapist, dental nurse, oral health therapist).</p> <ul style="list-style-type: none"> ◦ 1 Not willing at all ◦ 2 ◦ 3 ◦ 4 ◦ 5 Extremely willing
<p>Q7.3 Please indicate how much you agree or disagree with the following statement from 1 (strongly disagree) to 5 (strongly agree): I would be less likely to vape if I believed it was harmful to my oral health.</p> <ul style="list-style-type: none"> ◦ 1 Strongly disagree ◦ 2 Disagree ◦ 3 Neither agree nor disagree ◦ 4 Agree ◦ 5 Strongly agree

Appendix 1 (continued): Part 1 survey.

Attitudes and willingness
<p>Q7.4 Which of the following sources would you be happy to receive information on the health effects of vaping from: (Select all that apply)</p> <ul style="list-style-type: none"><input type="checkbox"/> Healthcare providers (such as GPs, nurses, oral health professionals, pharmacists, etc.)<input type="checkbox"/> Social media (such as Instagram, TikTok, etc.)<input type="checkbox"/> School/university/workplaces<input type="checkbox"/> Other (please specify)
Start of block: end of survey
<p>Q8.1 Please click “submit” below if you are ready. You will then be taken to a page where you can enter the prize draw and/or request a copy of the study results. Please be aware that once you submit your survey, you cannot withdraw from this study.</p> <ul style="list-style-type: none"><input type="radio"/> Submit
<p>Q8.2 Would you like to enter a prize draw for an Apple Airpods Pro or an Oral-B Genius 9000 Toothbrush? Your survey response still remains anonymous.</p> <ul style="list-style-type: none"><input type="radio"/> Yes<input type="radio"/> No
End of block: end of survey