E-cigarette use and related attitudes and beliefs in New Zealand

EVIDENCE FROM THE 2016 AND 2018 INTERNATIONAL TOBACCO CONTROL (ITC) NEW ZEALAND SURVEYS

FEBRUARY 2021



ASPIRE2025













ABOUT THIS REPORT

In March 2017, the New Zealand Government made a commitment to implement measures to increase accessibility of less harmful alternative nicotine products to accelerate progress towards achieving the 'endgame' goal of becoming a smokefree nation by 2025. In August 2020, Parliament passed new legislation regulating the sale and supply of vaping products. While e-cigarettes have gained popularity and are recognized for their potential contribution to achieving the Smokefree Aotearoa goal, detailed information on the use and perceptions of these products remains limited.

This report summarises evidence from the International Tobacco Control (ITC) Policy Evaluation Project on patterns of use, knowledge, attitudes, and beliefs about e-cigarettes (ECs) in New Zealand. Since 2002, the ITC Project has conducted longitudinal cohort surveys in 29 countries to evaluate the impact of key tobacco control policies of the World Health Organization Framework Convention on Tobacco Control (WHO FCTC). Findings based on data collected from smokers and recent ex-smokers in New Zealand between 2016 and 2018 are presented in context with data from smokers in up to 11 other ITC Project countries.

Together, findings show that:

- A significant and growing number of smokers and ex-smokers are using ECs.

 Overall, 77% reported ever use of vaping products in 2018, up from 59% in 2016-17.
- Prevalence of EC use is higher among ex-smokers than smokers, with 23% of ex-smokers reporting daily use in 2018, compared to 8% of smokers.
- Prevalence of current EC use is higher among young adults compared to those in older age groups, with current use among young adults aged 18-24 years (42%) at least twice as high as those aged 25-44 years (21%) and 45+ years (17%) in 2018.
- Most smokers and ex-smokers are using ECs to try and quit or reduce their smoking. In 2018, the most common reasons for vaping were to help quit smoking (78%) or to cut down on smoking (81%).
- The most common motivator for vaping among current EC users is lower cost, while the most common barrier for vaping is the perception of lower satisfaction. In 2018, 91% of current EC users said that they vaped to save money. Among those who have ever tried ECs, 68% overall said that ECs were less satisfying than smoking cigarettes.
- While a majority of smokers have tried ECs, a much smaller number are currently vaping. In 2018, among smokers who tried to quit in the past year, 80% had ever tried an EC. However, only 26% reported current (at least monthly) use and 12% reported daily use.
- The most common reasons for smokers stopping use of ECs are related to product performance. The top reasons smokers stopped vaping were because they had decided to quit smoking without any cessation aids (63%), because ECs were not satisfying enough (63%), the belief that ECs would not help to quit smoking (56%), and the perception that ECs did not reduce cravings to smoke (52%).
- Ever and daily use of ECs was higher in New Zealand smokers and ex-smokers compared to 10 other high income countries.

The results suggest that EC awareness and use is increasing among both people who smoke and smokers who have recently quit, and that they have the potential to contribute to reducing smoking prevalence and support New Zealand's progress toward becoming a smokefree nation. The findings highlight the importance of considering evidence-based strategies to encourage EC use for quitting or as substitutes for smoking, particularly among middle-aged and older smokers, while discouraging uptake among youth and non-smokers.

BACKGROUND

Since e-cigarettes (ECs) became available on the market in the early 2000s, product use and sales have rapidly increased in many countries. An estimated 35 million people worldwide used ECs in 2016, up from 7 million in 2011. The global market for ECs was estimated to be \$15.7 billion in 2018, and is projected to increase to \$40.0 billion by 2023. ^{1, 2} Governments in different countries have taken diverse approaches to regulate the use, sales, and marketing of ECs. ^{3,4} There is ongoing debate regarding whether ECs are effective in encouraging cigarette smokers to quit or cut down on smoking, whether ECs may lead to smoking among non-smoking youth who would not have otherwise started smoking, and overall, whether ECs can contribute to reducing smoking prevalence, thereby helping to achieve the endgame goal of eliminating the use of smoked tobacco products.

In March 2011, the New Zealand Government adopted a bold 'endgame' goal to achieve minimal smoking prevalence and availability of tobacco products by 2025, thereby making the nation smokefree. Since then, progress towards a Smokefree Aotearoa has been inadequate, particularly for Māori and Pacific peoples. Mid-term smoking prevalence targets for the overall population and for Māori and Pacific peoples were missed in 2018.

Similar to trends observed in many other countries, EC use has becoming increasingly popular in New Zealand in recent years. For example, New Zealand Health Survey data shows that the prevalence of daily EC use among adults increased from 0.9% in 2015-16 to 3.2% in 2018-19.⁵ The growth in EC sales and use in New Zealand and worldwide has stimulated a vigorous debate about whether ECs and vaping could contribute to reducing smoking prevalence and help achieve the Smokefree Aotearoa goal.

The evolving market structure and regulatory framework for e-cigarettes in New Zealand

Prior to 2017, nicotine-containing ECs and e-liquids were prohibited for sale in New Zealand but both could be bought online and imported for personal use. Advertising of these products was not permitted. Specialist vape stores were allowed to sell non-nicotine containing ECs and e-liquids. In March 2017, the Government announced its intent to relax this policy and introduce legislation to increase the availability of ECs. Following this announcement, there was a tacit policy that stores would not be prosecuted for selling ECs. Consequently, there was an increase of availability of nicotine-containing ECs and e-liquids sold largely through specialist vape shops.

In March 2018, a court ruling was issued that allowed the sale of heated tobacco products (HTPs). From this date, there was a tacit policy that stores would also not be prosecuted for selling nicotine-containing ECs and e-liquids. As a result, ECs and other alternative nicotine products became more available and were increasingly sold from dairies (local stores), convenience stores, supermarkets and gas stations; as well as specialist vape stores, with minimal regulatory controls. For example, marketing of ECs was permitted and became widespread, including advertising on television. There was no regulation of product standards, flavours and constituents, nicotine concentration or packaging.

In 2018, the Ministry of Health endorsed ECs for their potential contribution to reducing disparities in smoking and for achieving New Zealand's Smokefree 2025 goal.⁶

However, increasing availability of ECs led to concerns that this would result in increasing use by adolescents. There were growing calls for more restrictive regulation of ECs and vaping

products and debate within the smokefree and public health communities, and more widely about what form legislation or regulations should take. Legislation to introduce a regulatory framework for alternative nicotine delivery products was presented to Parliament in February 2020.^{7,8} In August 2020, the New Zealand Parliament passed new regulations for the sale, marketing and supply of vaping and smokeless tobacco products under the Smokefree Environments and Regulated Products (Vaping) Amendment Act.⁹ The Act aimed to strike a balance between making safe alternative nicotine products available to smokers as a harm reduction tool while preventing uptake among youth and non-smokers. Some provisions will come into force immediately, others will be subject to regulations that have yet to be determined.¹⁰

This report presents evidence on patterns of EC use and knowledge, attitudes, and beliefs about ECs among smokers and recent ex-smokers in New Zealand from 2016 to 2018, prior to the introduction of the Smokefree Environments and Regulated Products (Vaping) Amendment Act. The report does not include findings about vaping among Māori and non-Māori people who smoke and recent quitters; those will be presented in a separate report.

METHODS

The findings presented in this report come from two waves of the ITC New Zealand surveys (2016-17 and 2018). Data were collected by Computer Assisted Telephone Interview (CATI) surveys with current smokers and recent ex-smokers aged 18 years or older who took part in the New Zealand Health Survey (NZHS) in 2015-16 and/or 2016-18. Current smokers were those who had smoked more than 100 cigarettes in their lifetime and currently smoked at least monthly, and recent ex-smokers were smokers who indicated at the time of their NZHS interview they had guit smoking within the previous year.

The ITC New Zealand Wave 1 Survey was conducted from August 2016 to April 2017 among 910 current smokers (of whom 326 were Māori) and 245 ex-smokers (60 Māori). The Wave 2 survey was conducted from June to December 2018 among 726 smokers (308 Māori) and 294 ex-smokers (86 Māori).

All analyses were conducted with weighted data so that reported estimates are representative of the population of smokers and ex-smokers in New Zealand.

Data from all ITC New Zealand Survey participants are presented, with comparisons between smokers vs. ex-smokers. Percentage estimates were adjusted for age, sex, and time-in-sample (number of survey waves completed by participants). All analyses were conducted using SAS-callable SUDAAN (Version 11.0) to account for the sampling design.

The report also presents cross-country comparisons of awareness, use, reasons for use and discontinuing use, and perceived harmfulness, addictiveness, and cost of ECs in New Zealand and up to 11 high-income ITC countries. Data on awareness, use, and perceptions of ECs are presented by country, and smoking status (current smokers vs. recent exsmokers defined as those who had quit smoking in the last 2 years). Data on reasons for use and discontinuation of ECs are presented by country and restricted to current smokers. Data are presented for current vapers with the exception of the European countries, where data are presented for ever vapers due to the low prevalence of current vapers. Cross-

ⁱ Note that the 2018 results for New Zealand in the cross-country figures may vary slightly from the 2018 results for the New Zealand-only analyses that are presented in this report and a published paper by Edwards et al.¹³ Variations are due to differences in adjustment methods (to account for differences with those other countries), and differences in the data used to compute New Zealand-only estimates (based on country-level data) and cross-country estimates (based on pooled data to ensure comparability across multiple countries).

country comparisons are based on data from the latest survey wave available in each country and were adjusted for demographics (sex and age), smoking frequency (daily vs. non-daily), and time-in-sample.

More information about the ITC New Zealand Project is available at: https://www.otago.ac.nz/wellington/departments/publichealth/research/otago577201.html.

The ITC New Zealand Surveys and full details of the sampling and survey methods which are described in the Wave 1 and Wave 2 ITC New Zealand Technical Reports are available online: https://itcproject.org/countries/new-zealand/. 11, 12 Further information about the ITC Project including copies of individual country surveys is available at: https://www.itcproject.org.

Further details of the New Zealand findings in this report have been published in a journal article. ¹³ This is available online: https://www.mdpi.com/1660-4601/17/18/6629

FINDINGS

Findings from the ITC New Zealand Sample

Awareness and use of e-cigarettes

Overall trends in awareness and use of ECs from 2016-17 to 2018

Overall, there was a high level of awareness of ECs in 2016-17 (94%) and 2018 (98%). There was a substantial increase in ever use of vaping products between 2016-17 (59%) and 2018 (77%) in the whole sample (data not shown), with large increases among smokers and exsmokers (see Figure 1).

Awareness and use of ECs among smokers and ex-smokers

There were no significant differences in awareness and ever use of vaping products among smokers and ex-smokers. However, current (at least monthly) EC use was substantially higher among ex-smokers. For example, in 2018, current use was 29% for ex-smokers vs. 20% for smokers, whilst differences in daily use were more substantial (23% vs. 8%, respectively). Similar trends were also evident for current and daily use among ex-smokers vs. smokers in 2016-17 (see Figure 1).

Figure 1. Percentage of smokers and ex-smokers who are aware of and use ecigarettes at Waves 1 (2016-17) and 2 (2018), by smoking status

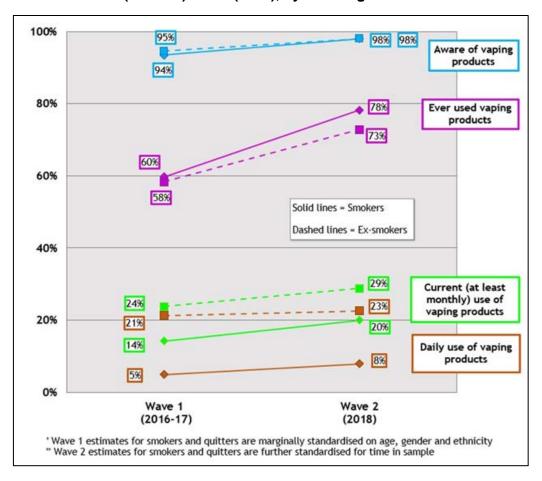
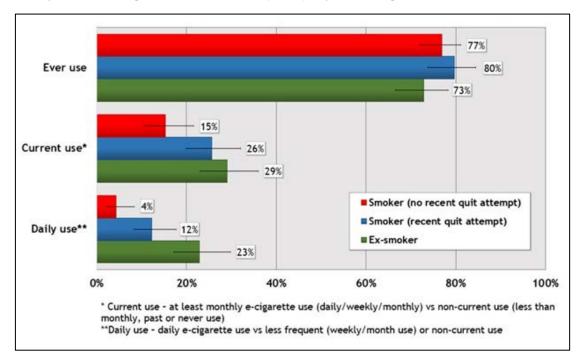


Figure 2 presents findings for smokers and ex-smokers, with smokers further stratified into those who had tried to quit in the last year. Ever use of ECs was similar in all three groups. However, current use of ECs was significantly higher among ex-smokers (29%) and smokers who had tried to quit in the last year (26%) compared to smokers who had not tried to quit (15%). Daily use varied across all three groups. It was much lower (4%) among smokers who had not made a recent quit attempt compared to smokers who had tried to quit in that period (12%); but was higher still among ex-smokers (23%).

Figure 2. Percentage of smokers and ex-smokers who reported ever use, current use, and daily use of e-cigarettes at Wave 2 (2018), by smoking status



Use of ECs among males and females

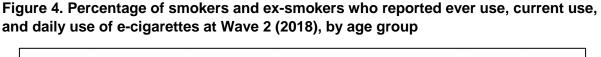
In 2018, approximately three-quarters of female (77%) and male (76%) participants reported ever using ECs. Current use of ECs was higher among males (27%) than females (18%), as was daily EC use (13% vs. 10%, respectively) (see Figure 3).

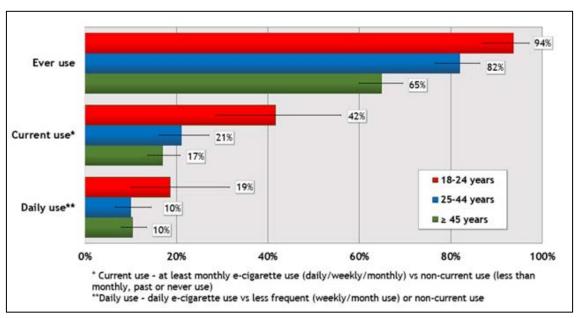
76% Ever use 77% 27% Current use* 18% ■ Males ■ Females 13% Daily use** 10% 0% 20% 40% 60% 80% 100% * Current use - at least monthly e-cigarette use (daily/weekly/monthly) vs non-current use (less than monthly, past or never use) **Daily use - daily e-cigarette use vs less frequent (weekly/month use) or non-current use

Figure 3. Percentage of smokers and ex-smokers who reported ever use, current use, and daily use of e-cigarettes at Wave 2 (2018), by gender

Use of ECs by age

Overall, prevalence of EC use was highest among young adults (18-24 years). Ever use of ECs was significantly higher among young adults (94%) than adults aged 45 and older (65%). Current and daily use of ECs was nearly twice as high among young adults compared to older adults. For example, 42% of young adults currently used ECs, compared to 21% of adults aged 25-44 years and 17% of those aged 45 years and older (see Figure 4).





Use of ECs by socio-economic status

Cigarette smoking in New Zealand is much higher among low socio-economic status (SES) groups, and smoking is an important cause of health inequalities. Use of ECs by SES has been little studied in New Zealand. SES was measured using NZDep (an area–based measure of SES based on nine census variables) based on current place of residence. Current use of ECs was highest among participants living in areas within the two most highly deprived quintiles of deprivation (see Figure 5). Ever use and daily use of ECs did not vary greatly by SES (data not shown, available in published study by Edwards et al.¹³).

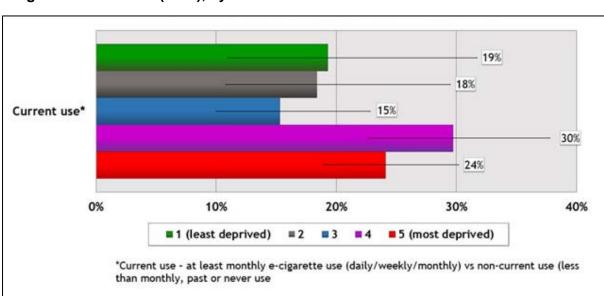


Figure 5. Percentage of smokers and ex-smokers who reported current use of e-cigarettes at Wave 2 (2018), by socio-economic status

Types of EC products used and place of purchase

Current (at least monthly) EC users were asked about their use of flavoured ECs, the type of vaping device they used, and the location of their last EC, e-liquid or cartridge purchase.

A majority of current EC users (86%) reported use of third generation (rechargeable with a refillable tank) devices, and 14% used second generation pre-filled devices; 81% were currently using a nicotine-containing e-cigarette or e-liquid.

The number of flavours used by current users in the last 30 days was approximately evenly split between one flavour (37%), two flavours (30%), and three or more flavours (33%).

The most commonly used flavour among current EC users was fruit (39%), followed by tobacco (24%), and candy/sweet/dessert (17%). Menthol/mint (11%) was the least commonly used flavour.

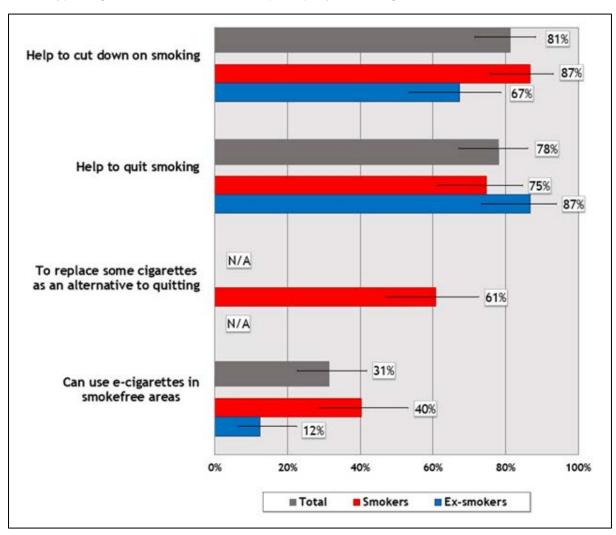
Vape shops were the most common location of last EC purchase (56%) among current EC users, followed by the internet (15%), and tobacconist (10%). Local convenience stores were the least common location of last purchase (5%).

Reasons and motivators for EC use

Current (at least monthly) vapers were asked about four possible reasons and five possible motivators for using ECs or vaping.

The most common reasons given for using ECs were to cut down on smoking (81%) or to help quit smoking (78%). Not surprisingly, more smokers (87%) than ex-smokers (67%) cited EC use as a way to cut down on smoking. However, a substantial percentage of smokers also said they vaped to replace some cigarettes as an alternative to quitting (61%). Among all participants, the least common reason for using ECs was that they could vape in smokefree areas (31%), with again unsurprisingly this being much more common among smokers than ex-smokers (see Figure 6).

Figure 6. Most commonly cited reasons for e-cigarette use among current (at least monthly) e-cigarette users at Wave 2 (2018), by smoking status



The most common motivator for EC use was saving money (91%), followed by enjoyment of using ECs (72%), ECs being more acceptable than smoking to people around you (64%), ECs being less harmful to others around you than smoking (62%), and ECs being less bad for their health (60%) (see Figure 7).

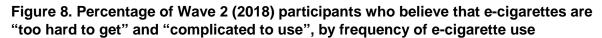
91% Save money by using e-cigarettes instead of smoking 89% 72% Enjoy using e-cigarettes 77% 64% E-cigarettes more acceptable than smoking to people around you 66% 61% 62% E-cigarettes less harmful to other people around you than smoking 60% 68% 60% E-cigarettes may be less bad for health 65% 100% 20% 40% 60% 0% 80% **■ Total** Smokers Ex-smokers

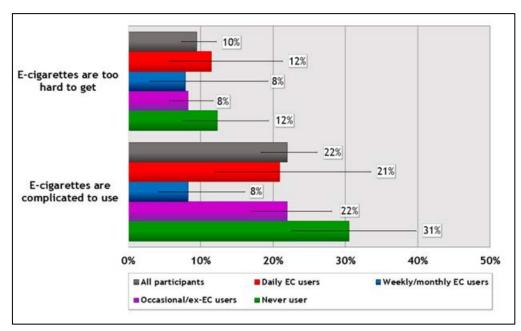
Figure 7. Most commonly cited motivators for e-cigarette use among current (at least monthly) e-cigarette users at Wave 2 (2018), by smoking status

Attitudes and beliefs about e-cigarettes and vaping

Participants who were aware of ECs were asked about some possible perceived barriers to vaping, and their beliefs about the addictiveness and harmfulness of ECs relative to cigarettes.

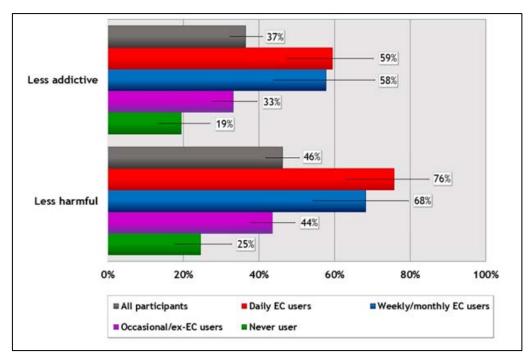
Regarding potential barriers to EC use, only a small proportion of all participants agreed that ECs were too hard to get (10%) or too complicated to use (22%). Responses were generally similar across different user sub-groups (based on frequency and history of EC use), except never users were more likely to be believe ECs were too complicated to use (see Figure 8).





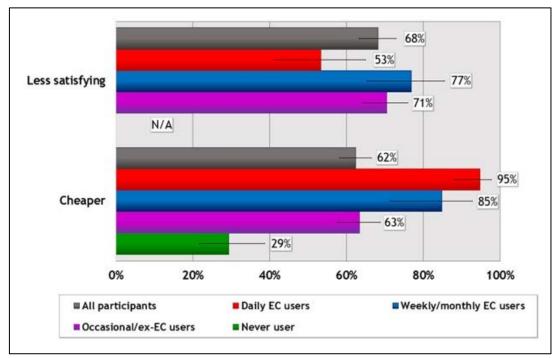
The proportion of participants who thought vaping with nicotine ECs was less addictive than smoking cigarettes was 37%. This belief was most common among daily users (59%) and weekly/monthly users (58%) compared to occasional/ex-users (33%), or never users (19%). Around half of all participants (46%) thought ECs were less harmful than smoking cigarettes; however, just over three-quarters of daily users (76%) and two-thirds of weekly/monthly users (68%) thought vaping was less harmful than smoking, whilst this belief was much less common among occasional/ex-users (44%) and never users (25%) (see Figure 9).

Figure 9. Percentage of Wave 2 (2018) participants who believe that nicotinecontaining e-cigarettes are "less addictive" and "less harmful" than smoking cigarettes, by frequency of e-cigarette use



Among participants who had ever tried ECs, most believed ECs to be less satisfying than smoking cigarettes. This belief was less common among daily users but was still present for over half (53%) of this group. Most participants thought vaping with e-cigarettes was cheaper than smoking cigarettes (62%), including nearly all daily users (95%). However, only 29% of never users expressed this belief (see Figure 10).

Figure 10. Percentage of Wave 2 (2018) participants who believe that e-cigarettes are "less satisfying" and "cheaper" than smoking cigarettes, by frequency of e-cigarette use



Reasons for stopping vaping

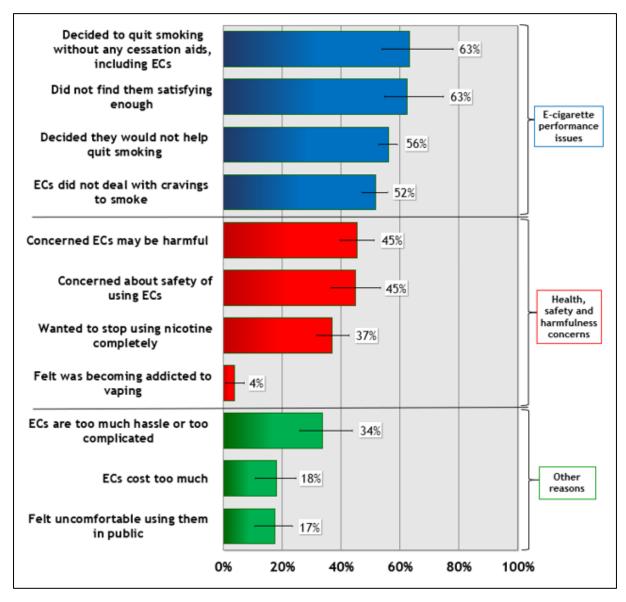
Smokers who reported any EC use in the past year but were not currently vaping were asked about 11 possible reasons they stopped using ECs.

EC performance issues were identified as the most common reason for stopping use of ECs. More than half of smokers reported that they stopped ECs because they decided to quit smoking without any cessation aids, including ECs (63%); they did not find ECs satisfying enough (63%); they decided ECs would not help them quit smoking (56%); and ECs did not help them with cravings to smoke (52%) (see Figure 11).

More than one-third of smokers reported that they stopped vaping because they were concerned about product harm (45%) and safety (45%), because they wanted to stop using nicotine completely (37%), and because they were too much hassle or complicated to use (34%) (see Figure 11).

The least common reasons for stopping vaping were the high cost of ECs (18%), feeling uncomfortable using them in public (17%), and feeling that they were becoming addicted to vaping (4%) (see Figure 11).





New Zealand Findings in an International Context

This section presents findings on awareness, patterns of use, reasons for use and discontinuing use, and beliefs about ECs and vaping among smokers and ex-smokers in New Zealand in comparison to those in up to 11 high-income ITC countries.

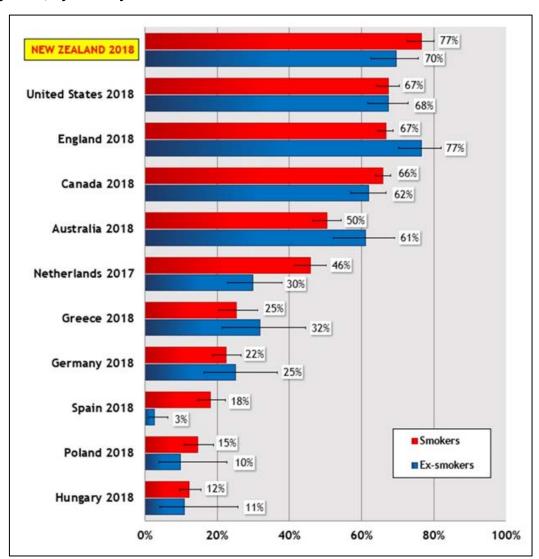
Awareness of e-cigarettes

Compared to 10 other high-income ITC countries, awareness of ECs was similarly high in New Zealand as in four English-speaking countries (Canada, US, UK and Australia) – all 98% or higher in smokers and ex-smokers - but substantially higher than in six non-English-speaking European countries (59-90% smokers and 66-90% for ex-smokers).

Patterns of EC use

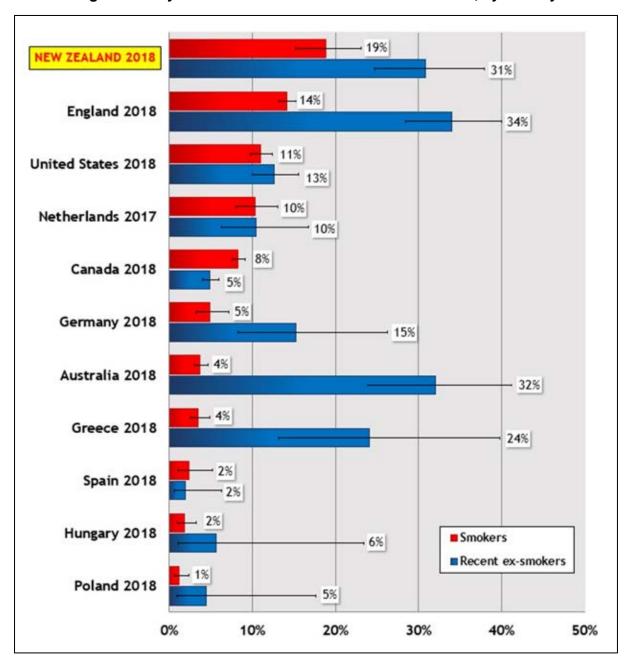
Trial (ever use) of ECs was highest among New Zealand smokers, and second highest among ex-smokers compared to 10 other ITC countries (see Figure 12).

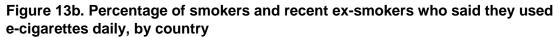
Figure 12. Percentage of smokers and ex-smokers who said they had tried an e-cigarette, by country

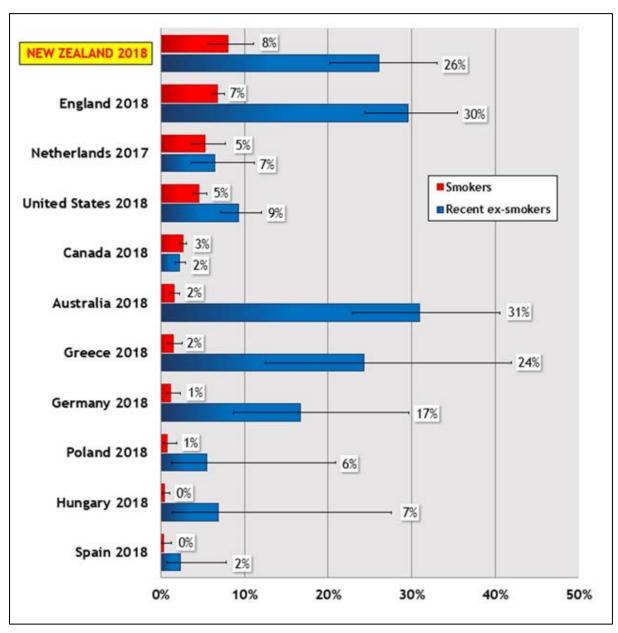


In cross-country comparisons with the 10 other high-income ITC countries, New Zealand had the highest prevalence of current and daily use of ECs among smokers and the third highest (marginally less than England and Australia) among ex-smokers (see Figures 13a and 13b).

Figure 13a. Percentage of smokers and recent ex-smokers who said they currently use an e-cigarette daily/at least once a week/at least once a month, by country



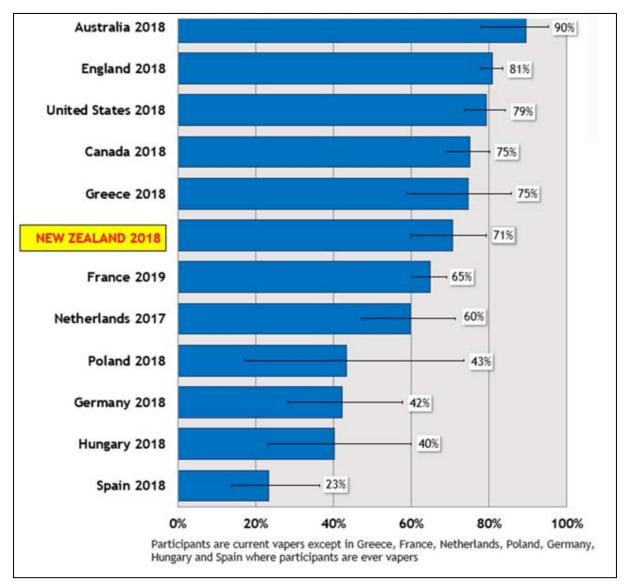




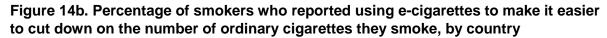
Reasons and motivators for EC use

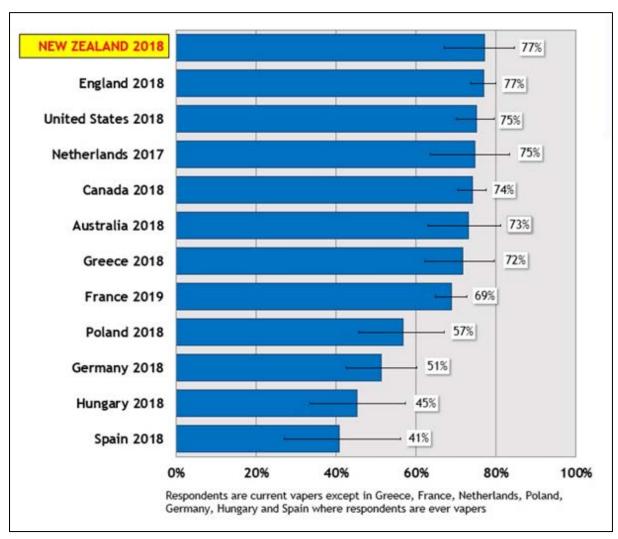
The proportion of smokers stating that they were using ECs to quit was lower in New Zealand than in the other four English-speaking ITC countries, but was higher than all but one (Greece) of seven non-English speaking European ITC countries (see Figure 14a).

Figure 14a. Percentage of smokers who reported using e-cigarettes to help them quit cigarette smoking, by country



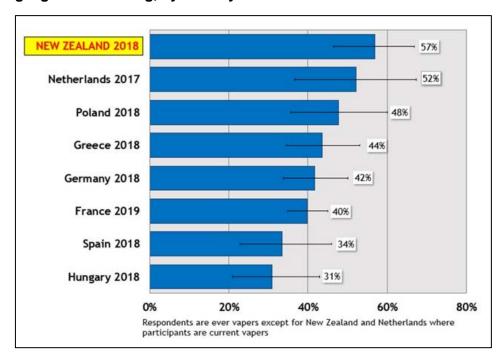
In contrast, the proportion of smokers who reported using ECs to make it easier to cut down on the number they smoked was highest in New Zealand (and England) compared to 10 other high income ITC countries (see Figure 14b).





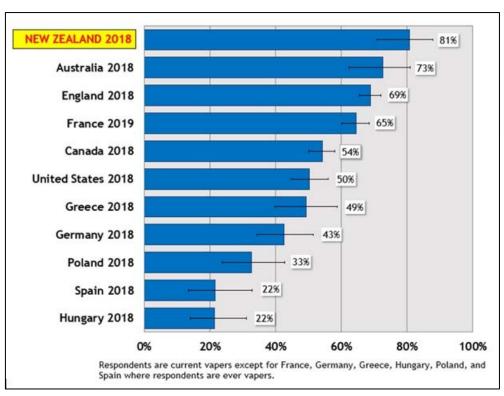
The proportion of smokers who reported using ECs as an alternative to quitting ("replacing some of your ordinary cigarettes with an e-cigarette or vaping device means you don't have to give up smoking ordinary cigarettes altogether") was highest in New Zealand compared to seven ITC countries in Europe (see Figure 14c).

Figure 14c. Percentage of smokers who reported using e-cigarettes as an alternative to quitting cigarette smoking, by country



The proportion of smokers who were current EC users who reported that saving money was a motivator for using ECs was highest in New Zealand compared to 10 other ITC countries (see Figure 15).

Figure 15. Percentage of smokers who reported that they saved money by using e-cigarettes instead of smoking cigarettes, by country



Beliefs about ECs and vaping

The proportion of smokers and ex-smokers who believed that ECs are less addictive than cigarettes was relatively high in New Zealand compared to other ITC countries (Figure 16a). Beliefs that ECs were less harmful than cigarettes were less common among New Zealand participants than in three out of four of the English-speaking ITC countries, but higher than in all but one (Netherlands) of seven non-English speaking European ITC countries (see Figure 16b).

Findings of a recent study based on data from the ITC New Zealand Surveys indicate that a substantial proportion of smokers and ex-smokers (39%) and never users (49%) believe that ECs are as or more harmful than smoking.¹³

Figure 16a. Percentage of smokers and recent ex-smokers who said that using e-cigarettes or e-liquids that contain nicotine was much less/somewhat less addictive compared to smoking ordinary cigarettes, by country

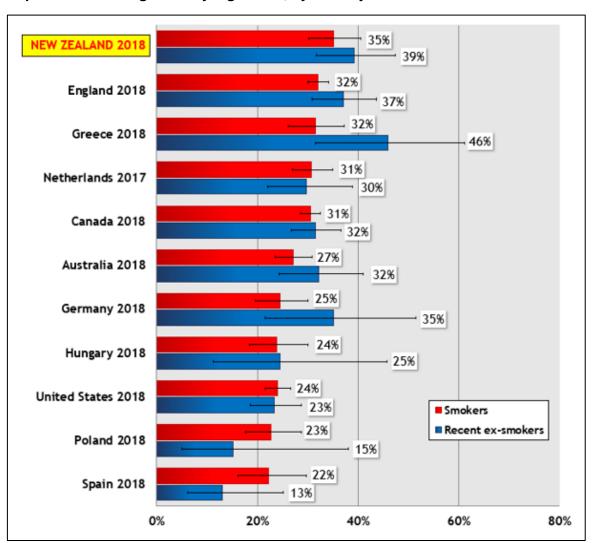
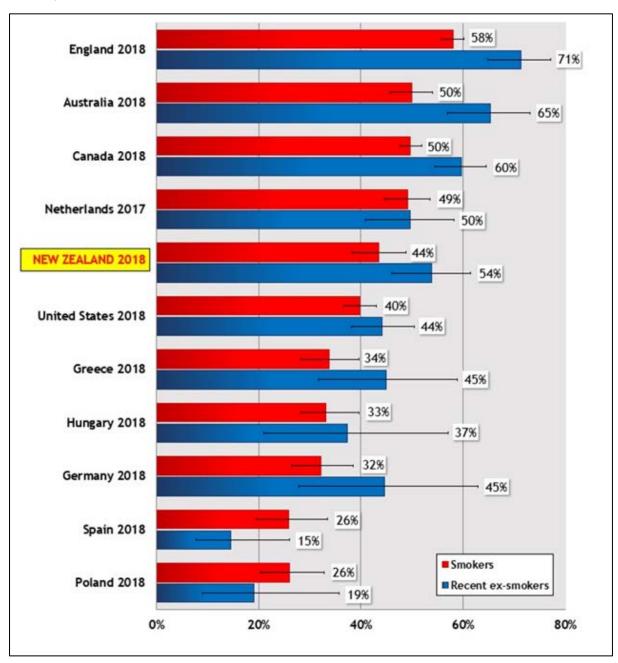
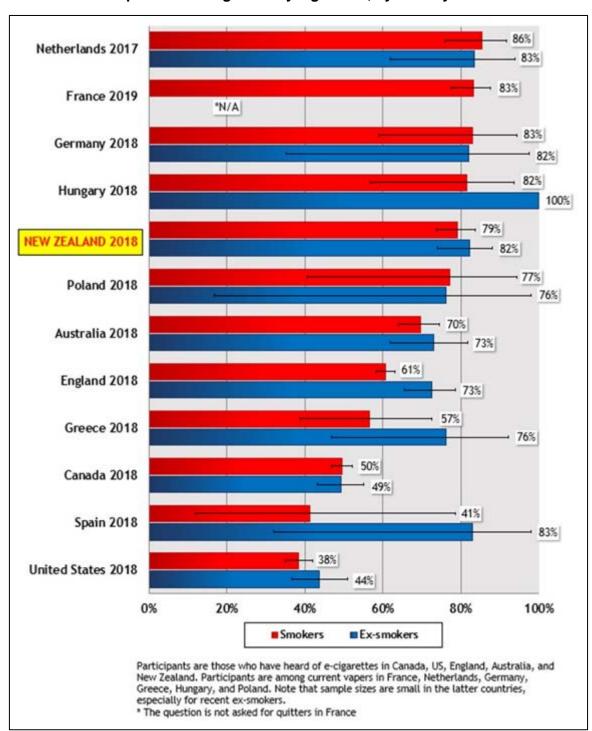


Figure 16b. Percentage of smokers and recent ex-smokers who said that e-cigarettes were much less harmful/somewhat less harmful than smoking ordinary cigarettes, by country



The proportion of all participants who had heard of ECs and believed ECs are cheaper than smoking was similar to in other countries with high levels of this belief among smokers and ex-smokers; and higher than in other ITC countries including Canada, Australia and England (Figure 17).

Figure 17. Percentage of smokers and ex-smokers who said that using e-cigarettes are a lot/a bit cheaper to smoking ordinary cigarettes, by country



Reasons for stopping vaping

The proportion of smokers who said that they stopped using ECs because they were not satisfying, did not help with cravings to smoke, were too much hassle or complicated to use, or cost too much was lower in New Zealand compared to four other ITC countries. The proportion of participants who said that they stopped using ECs because they felt uncomfortable using them in public was also lower in New Zealand than in three out of four ITC countries. A similar proportion of participants said they stopped vaping because of safety concerns or because ECs were not going to help them to quit smoking in New Zealand and other ITC countries. Feeling addicted to vaping was the least common reason for stopping EC use among participants in all ITC countries, with the lowest proportion in New Zealand (see Figure 18).

■ Canada 2018 13% 6% ■ United States 2018 You felt yourself becoming 12% ■ England 2018 addicted to vaping 6% ■ Australia 2018 ■ New Zealand 2018 49% You were concerned about 44% the safety of using them 48% (overheating, 38% spilling/leaking liquids, etc.) 43% E-cigarettes cost too much 21% 54% E-cigarettes are too much 40% hassle or too complicated 38% 32% You decided that they were 659 not going to help you quit 59% smoking 58% 63% You felt uncomfortable using them in public 35% 67% 68% They didn't help deal with 70% cravings to smoke 69% 46% 87% You didn't find them 81% satisfying enough 76% 70% 100% 0% 20% 40% 60% 80%

Figure 18. Reasons for stopping vaping among current smokers, by country

Summary of Key Findings

We found a high level of awareness and use of ECs among people who smoke or who have recently quit in New Zealand, with prevalence of use generally higher than in other high-income countries. E-cigarette use was markedly higher among recent quitters than among current smokers; EC use was also higher among young adults than among older adults. Most respondents were using ECs to try and quit or reduce their smoking, although a substantial proportion also stated they were using ECs as an alternative to quitting smoking. The most common motivator for vaping among current EC users was the lower cost of ECs, while the most common barrier was the perception that ECs were less satisfying. A higher proportion of smokers in New Zealand said that they were using ECs to cut down on smoking, as an alternative to quitting, and to save money compared to smokers in other countries.

While most people who smoked had tried ECs (78%), a much smaller proportion (20%) are currently vaping. The most common reasons that formerly vaping smokers gave for stopping their use of ECs were related to product performance, such as their belief that ECs were not satisfying enough or would not help them to quit smoking.

Potential Policy Approaches and Future Research

Findings from the ITC New Zealand Surveys suggest the need to strengthen efforts to improve the effectiveness of ECs for reducing smoking prevalence to achieve a Smokefree Aotearoa by 2025 by:

- Restricting the marketing of EC products among younger age groups whilst promoting their use to support older people who smoke to quit smoking.
- Implementing evidence-based public education programmes to correct
 misperceptions about ECs that may act as barriers to their use by people who smoke
 (e.g., education about the potential harms and benefits of ECs relative to cigarettes),
 targeted especially to groups with high smoking prevalence, including Māori and
 Pacific peoples.
- Implementing price and tax measures that maintain price differentials between tobacco and EC products and that continue to encourage smokers to consider vaping to quit or switch away from smoking cigarettes.
- Investing in tobacco control research to inform policy, including comprehensive studies on vaping-related behaviours and beliefs, particularly among youth and young adults who are a critical population for prevention of smoking uptake; and monitoring patterns of vaping and the impact of EC use on smoking and quitting in the context of a rapidly evolving marketplace.

Conclusion

Results from the ITC New Zealand Surveys suggest that EC awareness and use is increasing among people who smoke or who have recently quit, and that they have the potential to contribute to reducing smoking prevalence and support the achievement of a smokefree nation by 2025. The findings highlight the importance of considering evidence-based strategies to encourage EC use for quitting or as substitutes for smoking, particularly among middle-aged and older smokers, while discouraging uptake among youth and non-smokers.

These results add to global research evidence on patterns of vaping and may inform the ongoing debate over the most appropriate regulatory framework for vaping products. The ITC Project will continue to evaluate the impact of the 2020 Smokefree Environments and Regulated Products (Vaping) Amendment Act in New Zealand.

Acknowledgements:

This report was prepared through a collaboration between the ITC New Zealand team at the University of Otago: Richard Edwards, Ellie Johnson, James Stanley, Maddie White, and Andrew Waa, and the ITC Project team at the University of Waterloo: Janet Chung-Hall, Eunice Ofeibea Indome, Gang Meng, Lorraine Craig, and Geoffrey T. Fong. Graphic design for the cover page was provided by Sonya Lyon of Sentrik Graphic Solutions Inc. The ITC New Zealand Project was supported by grants from the Health Research Council of New Zealand (GA215F15 / 072) and the Canadian Institutes of Health Research (FDN-1448477). We acknowledge support from the Ministry of Health NZHS team for access to NZHS participants and Research NZ for data collection. Additional support is provided to Geoffrey T. Fong from a Senior Investigator Award from the Ontario Institute for Cancer Research.

Suggested citation:

ITC Project. E-cigarette use and related attitudes and beliefs: Evidence from the 2016 and 2018 ITC New Zealand Surveys. University of Waterloo, Waterloo, Ontario, Canada. February 2021.

References

- ¹ Euromonitor International. Smokeless tobacco and vapour products. 2018. Available at: https://www.euromonitor.com/smokeless-tobacco-and-vapour-products.
- ² Euromonitor International. Growth in vapour products. 2017. Available at: https://blog.euromonitor.com/growth-vapour-products/.
- ³ Kennedy RD, Awopegba A, De León E, et al. Global approaches to regulating electronic cigarettes. Tob Control 2017;26:440-445. https://doi.org/10.1136/tobaccocontrol-2016-053179.
- ⁴ Gravely S, Driezen P, Ouimet J, et al. Prevalence of awareness, ever-use and current use of nicotine vaping products (NVPs) among adult current smokers and ex-smokers in 14 countries with differing regulations on sales and marketing of NVPs: cross-sectional findings from the ITC Project. Addiction 2019;114:1060– 1073. https://doi.org/10.1111/add.14558.
- ⁵ Ministry of Health. Annual Data Explorer 2018/19: New Zealand Health Survey. Available at: https://minhealthnz.shinyapps.io/nz-health-survey-2018-19-annual-data-explorer/.
- ⁶ New Zealand Ministry of Health. Position statement on vaping. 2018. Available at: https://www.health.govt.nz/our-work/preventative-health-wellness/tobacco-control/vaping-and-smokeless-tobacco.
- ⁷ New Zealand Parliament. Smokefree Environments and Regulated Products (Vaping) Amendment Bill; New Zealand Parliament: Wellington, 2020.
- 8 Ministry of Health. Fact sheet: Smokefree Environments and Regulated Products (Vaping) Amendment Bill; New Zealand Ministry of Health: Wellington, 2020.
- ⁹ New Zealand Parliament. Smokefree Environments and Regulated Products (Vaping) Amendment Act 2020 (2020/62). New Zealand Parliament: Wellington, 2020. Available at: https://www.parliament.nz/en/pb/bills-and-laws/bills-proposed-laws/document/BILL_94933/smokefree-environments-and-regulated-products-vaping.
- ¹⁰ Edwards R, Hoek J, Waa A. E-cigarettes, vaping and a Smokefree Aotearoa: where to next? N Z Med J. 2020;133(1517):14-17.
- ¹¹ ITC Project. ITC New Zealand Wave 1 Survey (2016-2017) Technical Report; University of Waterloo and University of Otago, Wellington: Waterloo, Ontario, Canada, 2017. Available at: https://www.otago.ac.nz/wellington/departments/publichealth/research/otago682211.html.
- ¹² ITC Project. ITC New Zealand Wave 2 Survey (2018) Technical Report; University of Waterloo and University of Otago, Wellington: Waterloo, Ontario, Canada, 2019. Available at: https://www.otago.ac.nz/wellington/departments/publichealth/research/otago682211.html.
- ¹³ Edwards R, Stanley J, Waa AM, White M, Kaai SC, Ouimet J, et al. Patterns of use of vaping products among smokers: Findings from the 2016–2018 International Tobacco Control (ITC) New Zealand Surveys. Int J Environ Res Public Health. 2020;17(18), 6629. https://doi.org/10.3390/ijerph17186629.