

What does the 2019/20 NZ Health Survey tell us about progress towards a Smokefree Aotearoa?

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The latest NZ Health Survey data continues to show encouraging reductions in smoking prevalence. However, progress remains inadequate to achieve the Smokefree Aotearoa 2025 goal with persisting disparities in smoking, particularly for Māori and Pacific peoples. The Government urgently needs to introduce a comprehensive action plan, including measures to reduce the continued marked disparities in smoking. E-cigarette use and vaping has increased over the last three to four years, though its contribution to reducing smoking prevalence is not yet clear. There is no evidence that increased e-cigarette use among 15-17 year olds is slowing the decline in smoking among young adults.

Introduction

Last year we provided an analysis of 10 key points about smoking and vaping from the 2018-19 NZ Health Survey (NZHS). Here we update that analysis with 2019-20 survey (data available at:

<https://minhealthnz.shinyapps.io/nz-health-survey-2019-20-annual-data-explorer/>). We report prevalences for smoking, e-cigarette (EC) use and related measures among a representative sample of NZ adults aged > 15 years in surveys in 2006/7 and each year from 2011/12 to 2019/20.

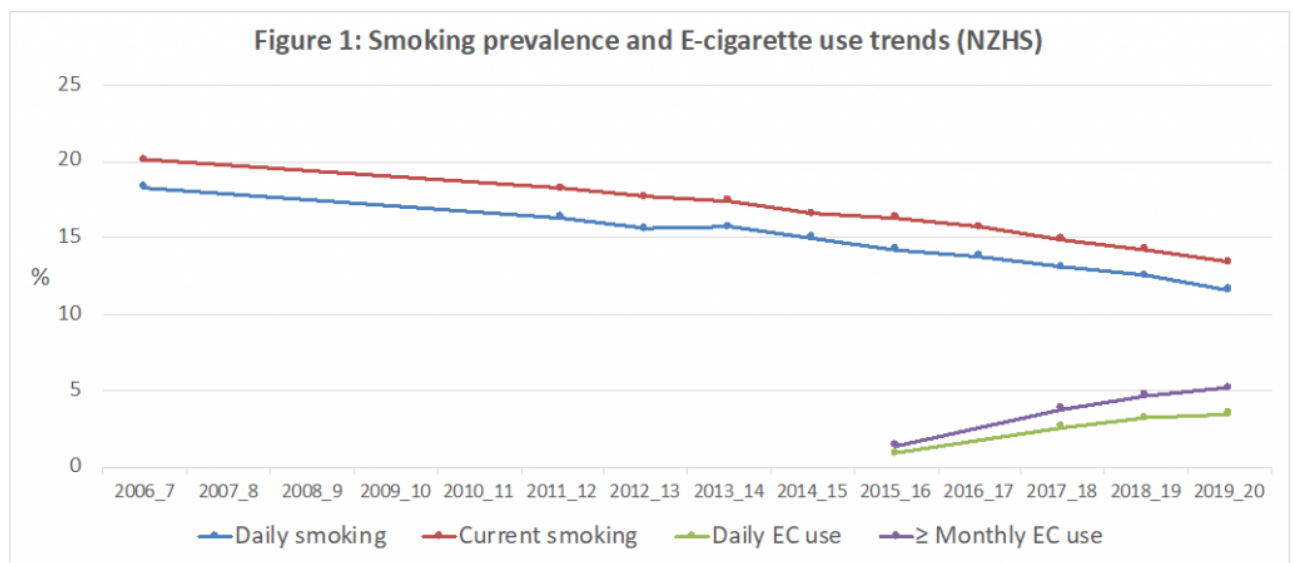
There are important caveats to the data we present. Firstly, random variation or differences in the composition of the sampled population can result in figures varying quite substantially from one year to the next, particularly for sub-group analyses. We present crude (unadjusted) prevalences so trends reported do not take into account differences due to changes in the demographics (e.g. age structure, ethnicity distributions) of the populations between surveys. It is therefore best to review data over several years to determine trends, rather than putting too much emphasis on the findings from one year. In addition, confidence limits (estimates of the range within which the true value lies) for prevalences are not available in the NZHS data explorer so the degree of uncertainty of estimates is not presented.

Key findings

1. Overall smoking prevalence and e-cigarettes use trends

Overall daily smoking prevalence in 2019/20 was 11.6% (464,000 smokers) and was 13.4% for current smoking (535,000 smokers). This is a reduction in prevalence of just under 1% and around 20,000-25,000 people who smoke for these measures since 2018/19.

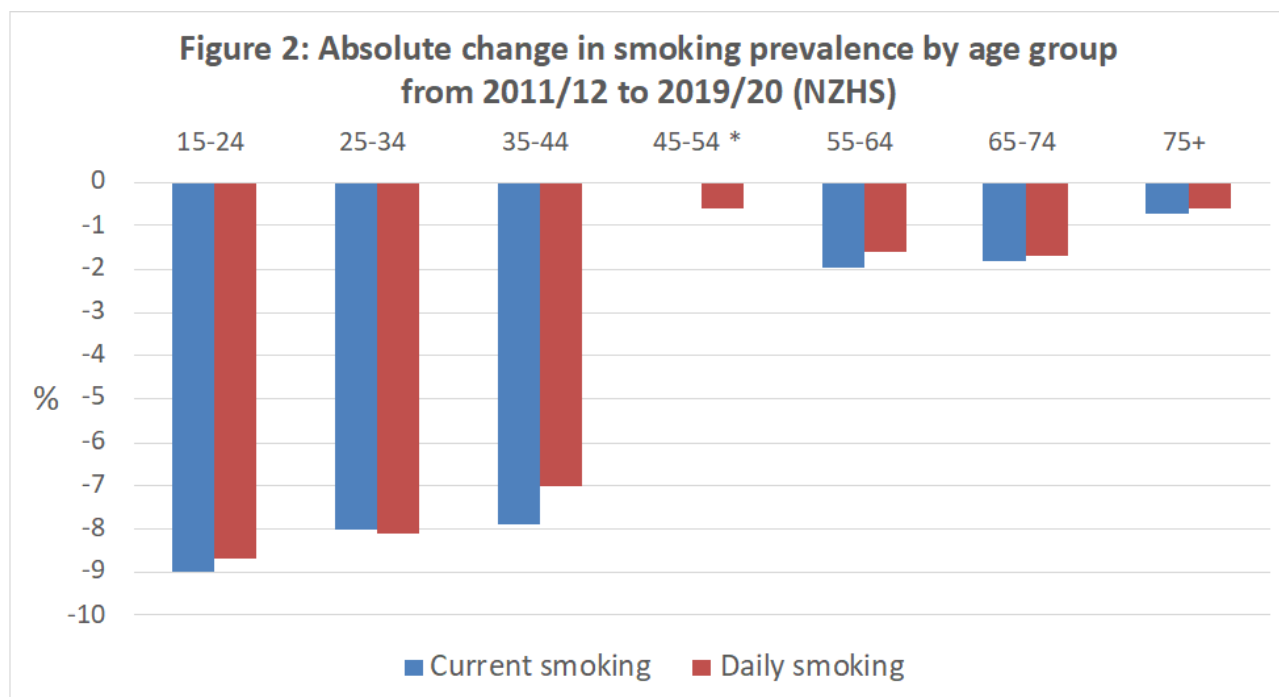
Figure 1 shows trends in smoking prevalence in 2006/7, and each year between 2011/12 and 2019/20, and for regular e-cigarette (EC) use since 2015/16.



There has been a steady but unspectacular decline in current and daily smoking prevalence by an average of about 0.6% in absolute terms per year from 2011/12 to 2019/20. At this rate of decline, daily smoking prevalence would be 8.0% by the 2025/26 survey, and current smoking prevalence 9.8%, and the Smokefree Aotearoa 2025 goal (minimal smoking prevalence by 2025), would not be achieved.

There were substantial increases in all measures of ECs/vaping use in the overall population between 2015/16 and 2019/20 with the proportion that has ever tried ECs increasing from 16.2% to 23.9%, regular use (at least monthly) increasing from 1.4% to 5.2% (210,000 people), and daily use from 0.9% to 3.5% (139,000 people). E-cigarette use increased markedly from 2015/16 to 2018/19, but grew more slowly or plateaued between 2018/19 and 2019/20. The increase in EC use since 2015/16 does not appear to be associated with an acceleration in the decline in smoking prevalence.

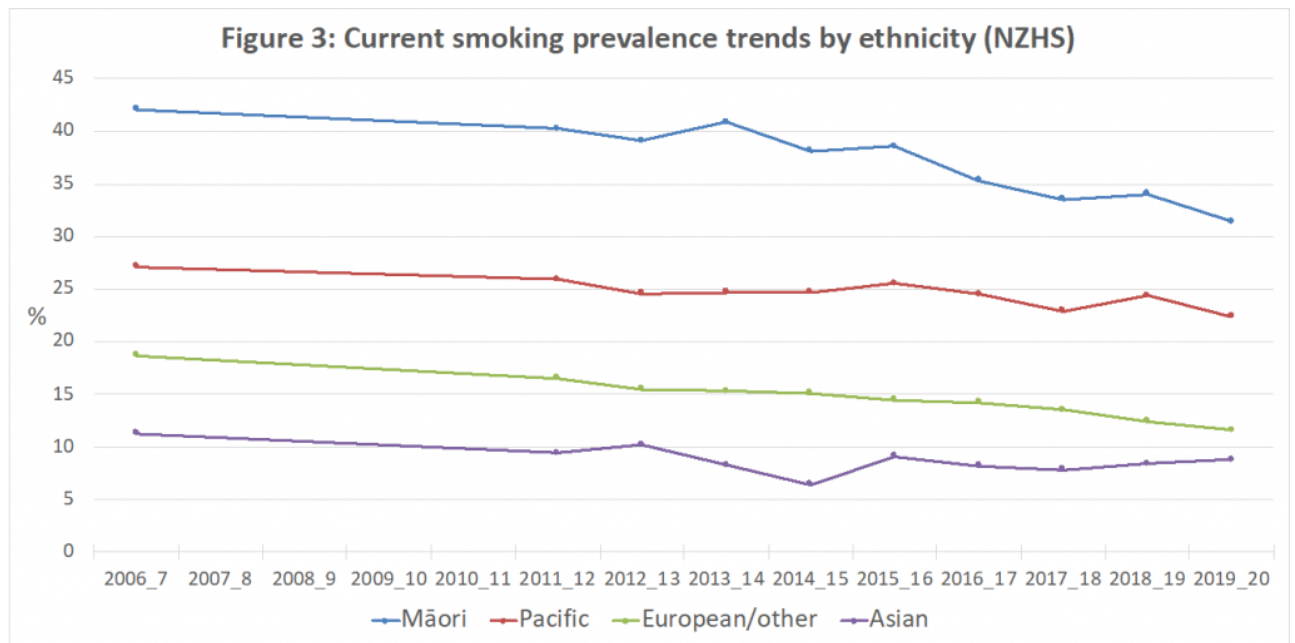
The reduction in smoking prevalence has been uneven by age group. Absolute reductions in current smoking prevalence from 2011/12 to 2019/20 were between 7.9% and 9% in 15-24, 25-34 and 35-44 year olds (relative reductions 29-42%), but were only between 0% and 2% (relative reductions 0-20%) in the 45 years and over age groups (figure 2).



* Note the figures for 45-54 as the prevalences in the baseline year (2011/12) are out of step with subsequent years. The reduction for this age group is about 4% for both measures from 2012/13.

2. Smoking prevalence trends among Māori

Figure 3 shows the trends in current smoking prevalence by ethnicity. Very substantial disparities in smoking by ethnicity persist. Māori daily smoking prevalence in 2019/20 was 28.7% (145,000 smokers) and current smoking prevalence 31.4% (158,000 smokers). Māori were three times (prevalence ratio 3.02, 95% CI 2.62-3.49, adjusted for age and gender) more likely than non-Māori to be daily smokers. The absolute difference in daily smoking prevalence between Māori and European/others narrowed by only 3.9% (from 23.7% to 19.8%) between 2011/12 and 2019/20.



Daily and current smoking prevalence among Māori decreased by an average of around 1.1% per year in absolute terms from 2011/12 to 2019/20; however the decline between 2011/12 and 2015/16 averaged only 0.4% for current smoking and 0.6% per year for daily smoking whilst from 2015/16 to 2019/20 it increased to 1.8% and 1.7% per year respectively.

If the rate of decline seen between 2011/12 and 2019/20 continued to 2025/26, current smoking prevalence among Māori would be 24.8% and daily smoking prevalence 21.9%. If the rate of decline continued at the higher rate that has occurred since 2015/16, the 2025/26 figures would be 19.6% current smoking and 18.5% daily smoking.

Based on these data, although the rate of decline in smoking prevalence among Māori appears to have accelerated since 2015/16, the Smokefree Aotearoa 2025 goal is still nowhere near on track to be achieved for Māori.

3. Smoking prevalence trends among Pacific peoples

Pacific daily smoking prevalence in 2019/20 was 18.3% (49,000 smokers) and current smoking prevalence 22.4% (59,000 smokers). Pacific peoples were more than 1.5 times (prevalence ratio 1.57, 95% CI 1.21-2.04, adjusted for age and gender) more likely than non-Pacific people to be daily smokers. The absolute difference in daily smoking prevalence between Pacific people and European/others widened by 2.6% (from 9.4% to 12.0%) between 2011/12 and 2019/20.

Daily and current smoking prevalence among Pacific peoples decreased by between 0.4% and 0.5% per year in absolute terms from 2011/12 to 2019/20 (figure 3). However between 2011/12 and 2015/16 there was minimal change in daily or current smoking prevalence whilst from 2015/16 to 2019/20 the reduction was 0.8% per year for current smoking prevalence and 1.1% per year for daily smoking.

If the average annual rate of decline between 2011/12 and 2019/20 continued to 2025/26, current smoking prevalence among Pacific peoples would be 19.8% and daily smoking prevalence 15.1%, whereas if the rate of decline seen from 2015/16 to 2019/20 continued these figures would be 17.7% for current smoking and 11.7% for daily smoking by 2025/26.

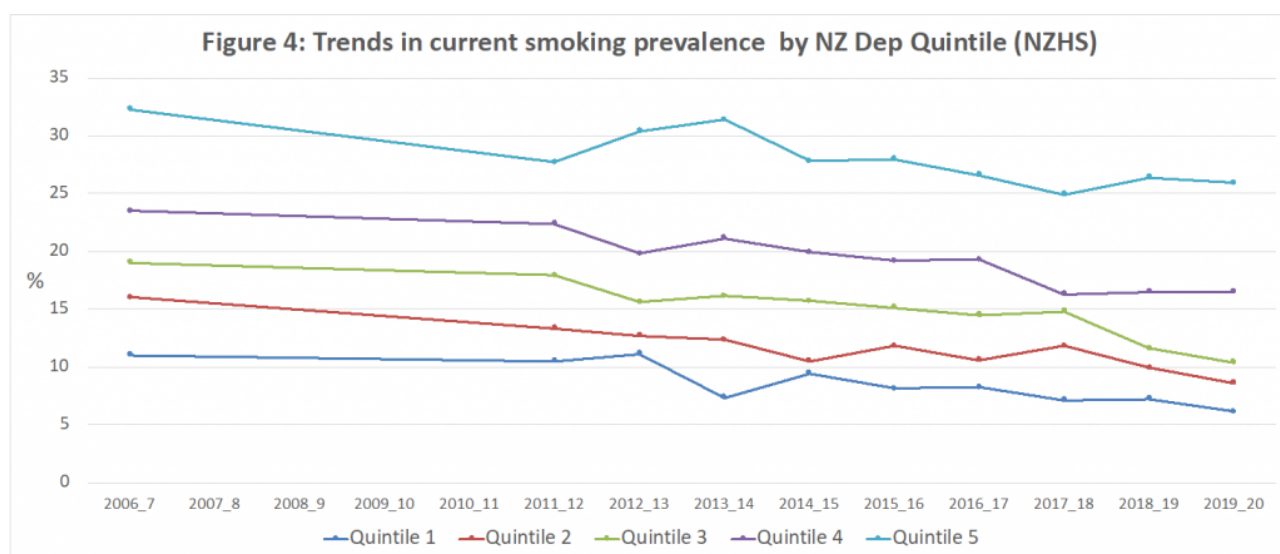
These figures show that smoking prevalence among Pacific peoples is still high and the Smokefree Aotearoa 2025 goal is not on track to be achieved for Pacific peoples.

4. Smoking by socio-economic status

There are also large disparities in smoking by socio-economic status measured by NZDep, an indicator of neighbourhood deprivation (figure 4).

Current smoking prevalence in 2019/20 was over four times (prevalence ratio 4.48, 95% CI 3.34-6.00, adjusted for age, gender and ethnicity) higher among the most deprived quintile of the population (quintile 5: 25.9%, 197,000 smokers) than the least deprived quintile (quintile 1: 6.1%, 49,000 smokers). Daily smoking was over five times higher (prevalence ratio 5.53, 95% CI 3.94-7.75, adjusted for age, gender and ethnicity) in the most deprived quintile (23.6%, 181,000 smokers) than in the least deprived quintile (4.6%, 37,000 smokers).

The absolute difference in daily smoking prevalence between the people living in NZDep quintile 1 and quintile 5 widened by 1.9% (from 17.1% to 19.0%) between 2011/12 and 2019/20. Smoking prevalence among the two most deprived quintiles of the population (quintiles 4 and 5) have changed little since 2017/18 (figure 4). These findings suggest that the most deprived New Zealanders will miss the Smokefree Aotearoa 2025 goal by a very large margin .



5. Mean numbers smoked and proportion of heavy smokers among daily smokers

The mean number of cigarettes smoked per day among all daily smokers has declined steadily over the last 13 years (11.5 in 2006/7 and 9.4 in 2019/20), and among Māori daily smokers from 11.7 in 2011/12 to 9.8 in 2019/20. The proportion and number of all daily smokers who are heavy smokers is low and decreasing, declining steadily from 10.7%, (66,000 smokers) in 2006/7 to 6.2% (29,000 smokers) in 2019/20, and similarly among Māori daily smokers from 9.7% (16,000) in 2006/7 to 5.6% (8000 smokers) in 2019/20.

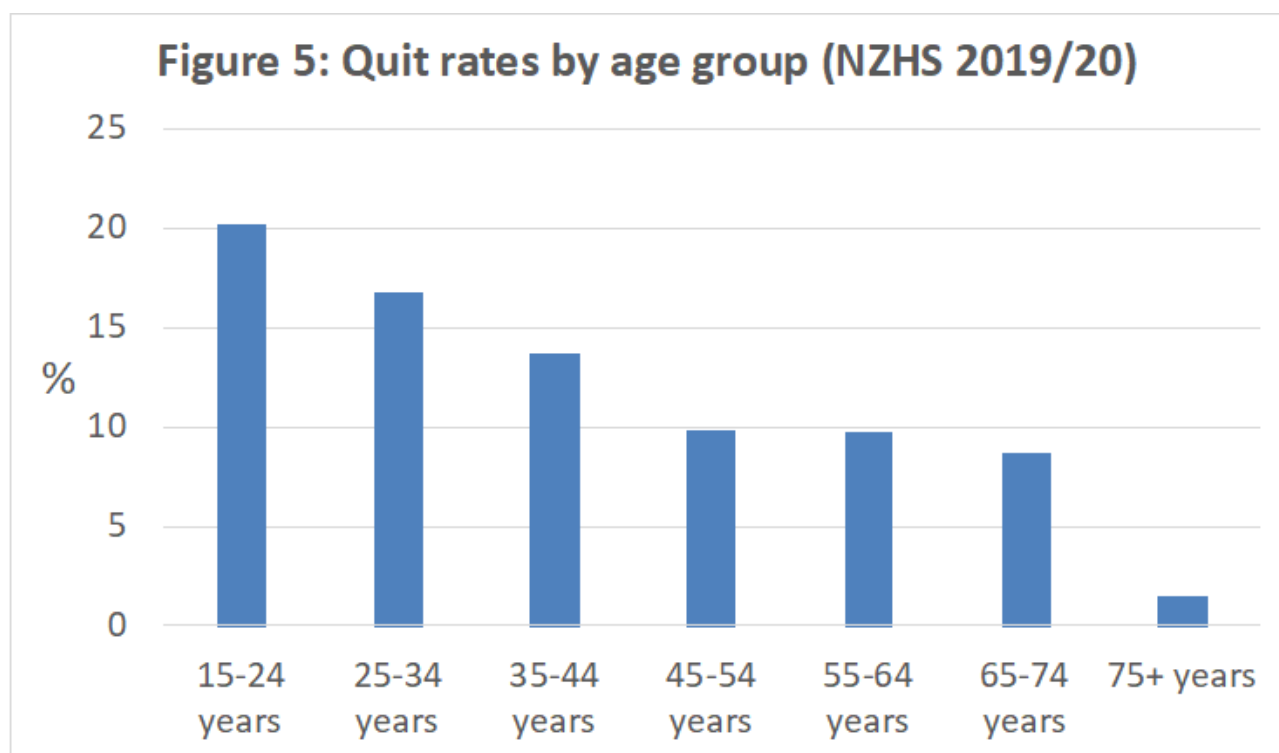
6. Quit rates

Quit rates were estimated in the NZHS from the number of people who reported that they

had quit smoking in the last year and had been quit for at least a month. These figures will over-estimate long term quit rates as some recent quitters will subsequently relapse to smoking. Also self-reported figures may estimate true quit rates.

Quit rates among all daily smokers were 13.7% in 2019/20 (representing 73,000 recent quitters) and were highest among smokers of European/other ethnicity (16.7%) and those living in the least deprived areas (quintile 1: 28.3%). They were lower among Māori (9.1%), Pacific (8.9%) and smokers living in the most deprived areas (quintile 5: 9.7%). The estimated quit rate among all smokers fluctuated between 9.8% and 13.7% between 2011/12 and 2019/20, but was 11.9% or higher since 2016/17.

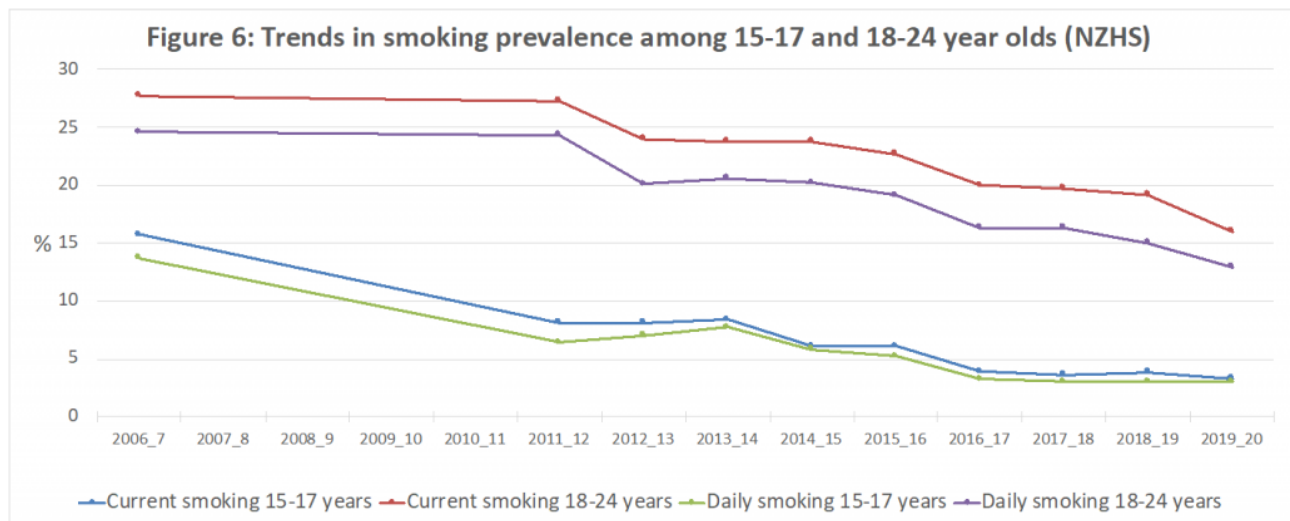
There was a marked disparity by age group in 2019/20 (figure 5), with recent quitting decreasing with age.



7. Smoking among adolescents and young adults

Daily smoking prevalence was 3.0% (5,000 smokers) and current smoking prevalence 3.3% (6,000 smokers) in 2019/20 among 15-17 year olds. Current smoking prevalence roughly halved between 2006/7 (15.7%) and 2011/12 (8.1%) in this age group, an absolute reduction of about 1.5% per year (figure 6). Prevalence then halved again by 2016/17 (3.9%), a reduction of about 0.8% per year. Since then, current smoking prevalence has remained more or less the same. The patterns of prevalence over time were very similar for daily smoking.

The figures suggest that smoking is now relatively uncommon among 15-17 year olds. Data on smoking by ethnicity in this age group are not available in the data explorer. The ASH Snapshot survey of Year 10 students (14-15 years) found substantial disparities in smoking prevalence by ethnicity, with daily smoking prevalence 2.1% overall, but 5.8% among Māori students in 2019 [1].



Daily smoking prevalence among 18-24 year olds was 12.9% (61,000 smokers) and current smoking prevalence 16.0% (75,000 smokers) in 2019/20. Current smoking prevalence did not change greatly between 2006/7 (27.7%) and 2011/12 (27.3%), but since then has declined at an average of 1.4% per year (figure 6). The patterns of changes in prevalence over time were similar for daily smoking.

Figures for smoking among young adults by ethnicity are not available in the NZHS data explorer but in the 2018 census daily smoking prevalence among 20-24 year olds was 15.6% overall (data from HPA Tobacco Control Data Repository), but 28.9% among Māori and 21.1% among Pacific peoples.

8. Detailed trends and patterns of use of e-cigarettes

The figures in the NZHS data explorer are for prevalence of EC use in the whole population. E-cigarette use is not reported by smoking status (e.g. current, ex, never smoker), which is a major limitation. For example, as most EC use occurs among current smokers or recent quitters (except, possibly, for people aged < 25 years), comparing prevalence of use without taking into account smoking prevalence is not very meaningful. Detailed data on prevalence and patterns of e-cigarette use among people who smoke and recent quitters in 2018 are available through the NZ ITC project [2].

Patterns of regular and daily EC use in 2019/20 by age group and in relation to current smoking prevalence are shown in figure 7. Regular use was most common among people aged < 25 years, but daily use was most common among 25-34 year olds. Regular and daily use was progressively less common in absolute terms and as a proportion of current smoking prevalence among older age groups (figure 7). The ratio of regular or daily use to current smoking was much higher among 15-17 year olds than in other age groups (e.g. daily use: current smoking = 0.70, the next highest ratio was 0.34 among 25-34 year olds) .

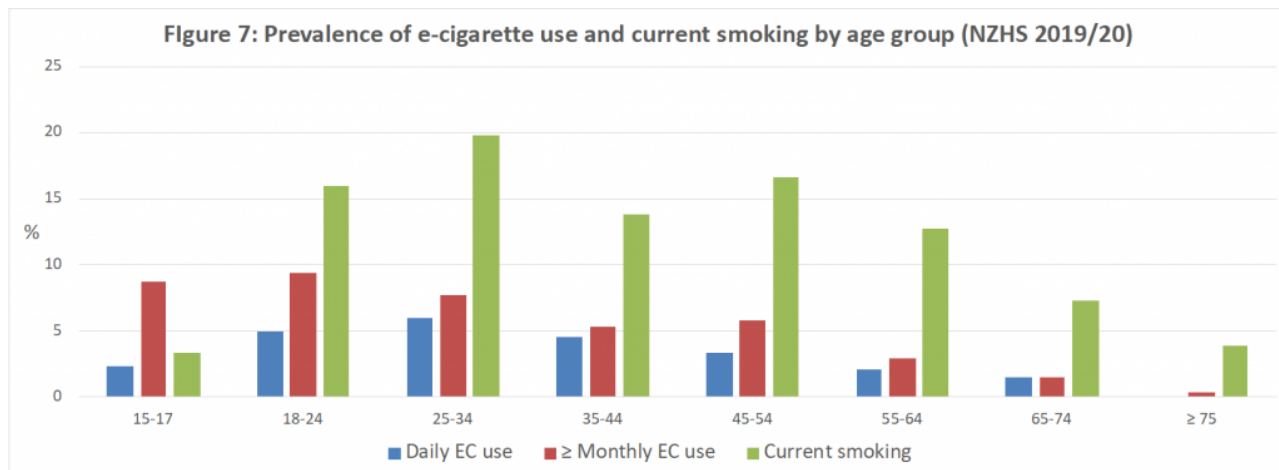
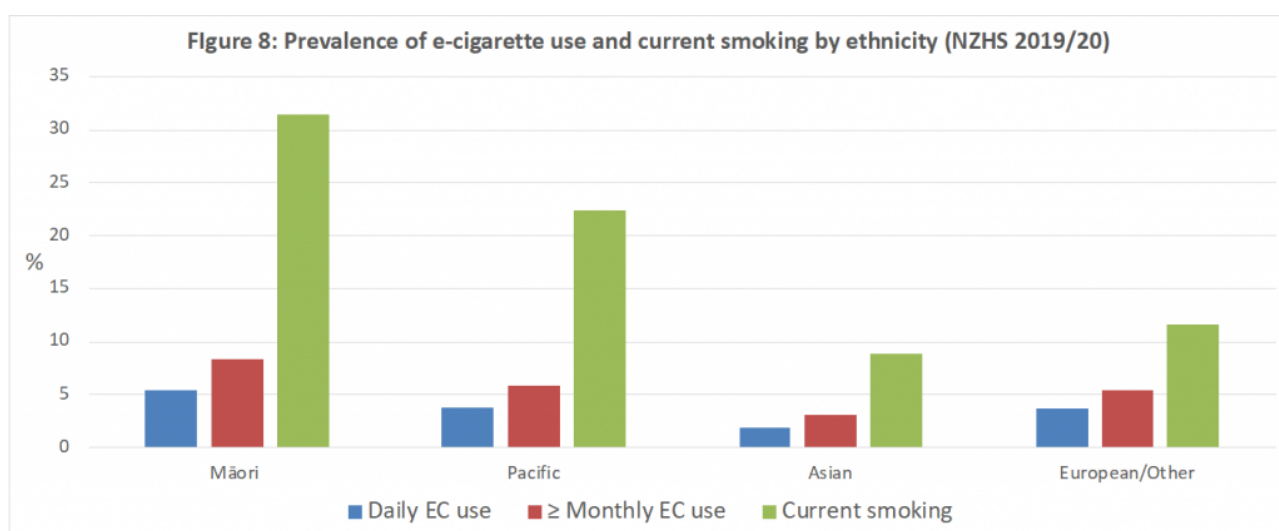
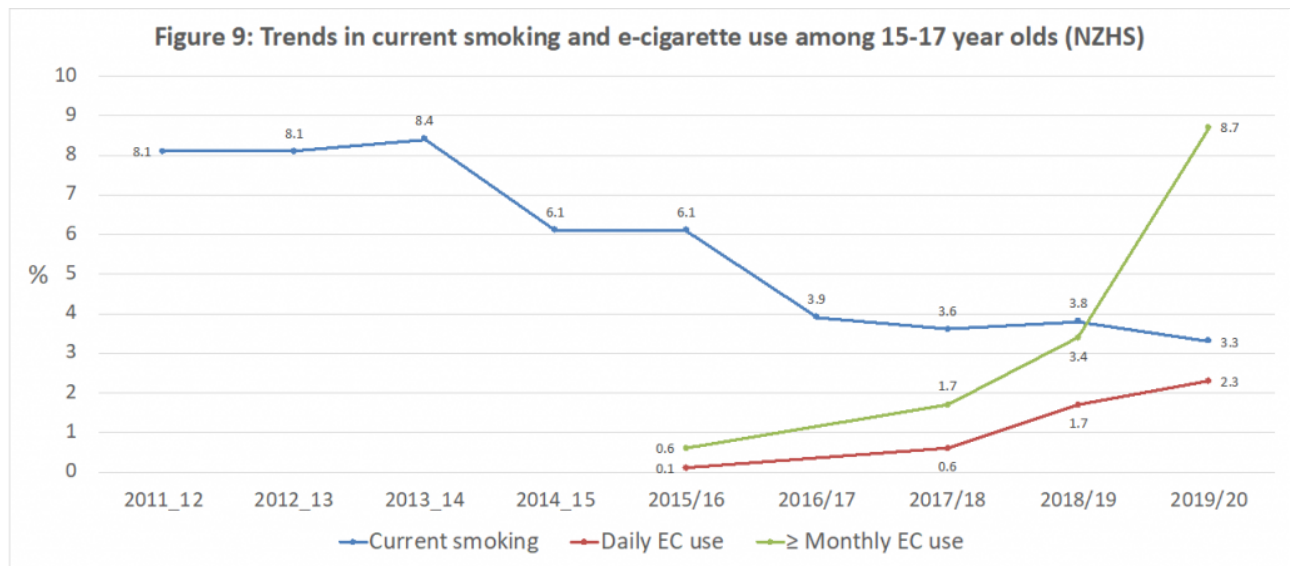


Figure 8 shows patterns of regular and daily EC use in 2019/20 by ethnicity. Whilst Māori had the highest prevalence of regular and daily EC use, the highest ratio of regular and daily EC use to current smoking prevalence was among European/other people. For example, the daily EC use to smoking ratio in European/other people was 0.32 compared with 0.17 for Māori and Pacific peoples, suggesting EC use was more common among European/other ethnicity smokers.

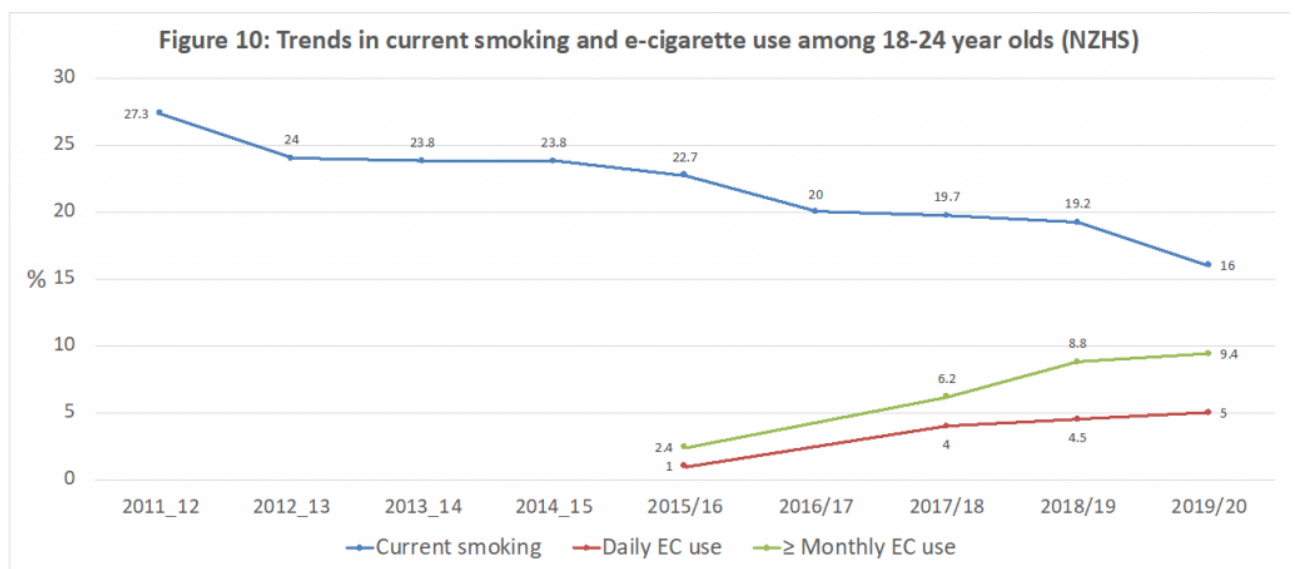


There is great interest in and concern about EC use among young people i.e., whether it is increasing, and if so whether it is associated with increased smoking uptake. Figures 9 and 10 show trends in smoking and EC use since 2011/12.

Figure 9 shows that the period between 2017/18 and 2019/20, when regular and daily EC use increased most rapidly, coincided with current smoking prevalence remaining largely unchanged.



There was a similar increase in regular and daily vaping from 2015/16 and 2019/20 among 18-24 year olds (figure 10). This increase coincided with a continued reduction in current smoking prevalence, with no evidence that this decline is levelling.



Commentary

The 2019/20 NZHS data show that the steady decrease in current and daily smoking prevalence since 2006/7 is continuing. However, there is no evidence that the rate of decline is accelerating, which is crucial if the Smokefree Aotearoa 2025 goal is to be achieved. Quit rates among smokers have not changed greatly since the smokefree goal was adopted. Smoking prevalence is declining more rapidly and quit rates are higher among people aged <45 years compared to older age groups.

Substantial disparities in smoking persist by ethnicity and socio-economic status. The Smokefree Aotearoa goal was adopted following advocacy by Māori leaders and a report of the Māori Affairs Select Committee [3]. However, despite the best efforts of many working in the smokefree sector, and smoking prevalence among Māori and Pacific peoples declining more rapidly in the last four years than in the previous four years, more needs to

be done to eliminate these disparities for Māori, Pacific and people living in more deprived areas. On current trends, the goal of minimal smoking prevalence by 2025 will be missed by a wide margin for these groups.

A positive finding is the reduction over time in intensity of smoking among smokers with evidence of a continuing decline in the mean numbers of cigarettes smoked and the proportion of heavy smokers. These data do not suggest that the proportion of heavily addicted smokers is increasing as smoking prevalence decreases over time, as has been predicted by some tobacco control experts [4]. Rather these findings suggests that levels of addiction may even be reducing among smokers, and so quitting might become easier for them. However, this is by no means certain as quit success could be affected by many other factors. For example, it might be reduced by stress related to the COVID pandemic and associated economic hardships.

Another positive finding is that the NZHS data shows declining prevalence in smoking among 18-24 year olds since 2011/12. However, the finding that almost one in six young adults were current smokers and over one in eight daily smokers in 2019/20, a much higher prevalence than among 15-17 year olds, suggests that substantial uptake of smoking occurs in the 18-24 years age group. The 2018 NZ census data shows that smoking prevalence is particularly high for Māori and Pacific young adults. These findings suggest that a stream of new young adults continue to be added to the pool of smokers in Aotearoa. Interventions to reduce the appeal of smoking among young people, particularly Māori and Pacific young adults, and to protect them from the risk of becoming addicted to smoking should therefore remain a high priority if the Smokefree 2025 goal is to be achieved and sustained.

There has been an increase in EC use in the whole population since 2015/16. The NZHS data on EC use is difficult to interpret, given it could not be examined alongside smoking status in the data explorer. It is also difficult to determine the causes of changes in health-related behaviours like smoking from trends in population surveys due to methodological challenges, and multiple potential influences on trends.

Examination of trends in smoking prevalence do not suggest that the increase in EC use since 2015/16 has been accompanied by any acceleration in the long-standing decline in overall smoking prevalence (figure 1). Hence, uptake of ECs does not yet seem to have greatly enhanced progress towards the Smokefree Aotearoa 2025 goal. However, smoking prevalence declines among Māori and Pacific people have been greater since 2015/16 than in the preceding four years. Increasing use of ECs may have contributed to this change, though it is difficult to disentangle the impacts of ECs from those of other interventions such as annual tobacco tax increases and the implementation of standardised packs and enhanced health warnings in 2018. The impact of ECs needs to be monitored further and investigated using more sophisticated analyses, particularly to assess the effects of changes introduced in November 2020 through the Smokefree Environments and Regulated Products Act 1990 [5].

The evidence from the NZHS that suggests EC use is less common among older smokers is supported by the NZ ITC study which found EC use was commonest among young adult smokers and recent quitters [2]. These findings suggests that health promotion and regulatory interventions could be targeted at increasing older smokers use of ECs for quitting or as a substitute for smoking, particularly as this age group is where prevalence reductions and quit rates are lowest. The finding in the NZHS data that EC use may be less common among Māori smokers was not supported by the NZ ITC data.

There have been concerns expressed about increasing use of ECs among adolescents and its possible impact on subsequent smoking uptake. The 2019/20 NZHS data confirms that trial, regular and daily use of ECs continues to increase among 15-17 year olds and 18-24 year olds. This finding is concerning as although ECs are less likely to be substantially less harmful than smoking, they will have some risks, and protecting young people and non-smokers from addiction to nicotine products is a priority. However, it is reassuring that the increase in EC use among young people has not coincided with increases in adolescent or young adult smoking, as would be anticipated if vaping was acting as a 'gateway' to smoking, and the decline in smoking among young adults has continued at the same rate.

In conclusion, the 2019/20 NZHS data provide more evidence that progress towards Smokefree Aotearoa is inadequate and that intensified efforts are needed to reach the goal. The Government has promised that it will introduce a comprehensive action plan for Smokefree 2025. This is an urgent priority and should include comprehensive measures that will discourage smoking uptake and encourage and support smoking cessation, particularly for Māori and Pacific peoples. The plan should include population-based 'game-changer' measures to tackle policy and intervention areas that are currently unaddressed, such as greatly reducing the supply of tobacco products and regulating smoked tobacco products (e.g. removing most or all of the nicotine and flavours and additives to make tobacco products less addictive and appealing) as set out in the ASAP strategy [6].

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