

HEALTH

Downloaded from <https://www.canterburywellbeing.org.nz/our-wellbeing/health/> on 10/12/2023 3:58 AM

Good health is crucial to the wellbeing of individuals, their families, and their communities. By keeping healthy, people are more able to lead rich and rewarding lives. People who are less healthy may find it more difficult to participate in sports and recreation, or arts and cultural activities, or simply to complete the tasks of daily living. They may also struggle to socialise with their family, friends and community [1].

Health and wellbeing are strongly influenced by a wide range of factors, both within and beyond the health system. Factors largely beyond the health system include environmental, social, and person-centred factors, many of which are reflected across the domains of the Canterbury Wellbeing Index [2-5].

Health is considered in this domain in terms of health status (self-reported health, acute medical admission rates, and proportion of the population accessing mental health services) and a number of factors that influence health status. The latter includes both behavioural factors (smoking, obesity, physical activity, and hazardous drinking) and health system factors (access to primary health care).

Key trends within health

There are ten indicators reported within this domain, and together, these indicators suggest a mixed pattern of effects on the wellbeing of greater Christchurch residents.

Self-rated health allows people to weigh up the different aspects of health that they consider most important. In the 2020 Canterbury Wellbeing Survey, eight out of ten greater Christchurch respondents reported that their health was good, very good or excellent – a significantly lower proportion than in 2019. Year 10 students' smoking in Canterbury and New Zealand has been in steady decline since the early 2000s (0.9% of year 10 survey respondents in the Canterbury DHB region smoke every day in 2021). However, the proportion of Year 10 survey respondents in the Canterbury DHB region who vape every day has increased substantially, and statistically significantly, from 1.1 percent in 2015 to 9.5 percent in 2021.

The five indicators sourced from the New Zealand Health Survey (smoking, obesity, physical activity, hazardous drinking, and unmet need for primary care) all show a pattern for the Canterbury DHB region that is similar to New Zealand overall. The prevalence of adult smoking in the Canterbury DHB region (12.7% in 2020) continues to be in gradual decline, broadly consistent with the pattern for New Zealand overall. Adult obesity in the Canterbury DHB region has also been in gradual decline since 2016/17. In 2019/20 approximately one out of four Canterbury respondents were obese. The proportion of Canterbury DHB region respondents indicating that they are physically active has not changed over the last five years and is similar to New Zealand overall: about half of respondents report at least 150 minutes of moderate-intensity or equivalent physical activity per week. The proportion reporting drinking alcohol at hazardous levels in the Canterbury DHB region also appears to be similar to New Zealand overall, and has not decreased significantly in recent years. One out of five respondents in Canterbury and New Zealand drinks alcohol at a level that may be considered hazardous. The proportion of Canterbury DHB region respondents reporting unmet need for primary care has increased year-on-year since 2014/15 (23.2%) increasing ten percentage points to 33.4 percent in 2019/20, a statistically significant difference.

The age-standardised rate of acute medical admissions is lower in the Canterbury DHB region than in New Zealand overall. Canterbury DHB's rate has increased in line with the New Zealand rate over the last ten years but remains approximately 30 percent lower than the rate for New Zealand overall. Finally, the proportion of the overall population accessing mental health services (combined Non-Government Organisations, primary mental health, and specialist mental health services) in the

Canterbury DHB region has increased substantially over the last nine years. The picture varies by age group, with both a larger proportion accessing services and a greater rate of increase in this proportion for those aged 20 to 64 years.

Key equity issues within health

It is well known that both health status and access to the factors that support or promote health, are unevenly distributed within the population. Some population groups (for example, on the basis of ethnicity or socioeconomic deprivation) are disproportionately affected by reduced access to health determinants and by health system factors that influence the accessibility and quality of care [6,7].

While the majority of greater Christchurch respondents reported good, very good or excellent self-rated health in the 2020 Canterbury Wellbeing Survey (80.2%), a higher proportion of Europeans (81.0%) reported good, very good or excellent health compared with Māori (71.8%) respondents.

In the Canterbury DHB region, the smoking prevalence for both Māori and Pacific respondents across the New Zealand Health Surveys from 2011-14 to 2017-20 is substantially higher than for all respondents. While the smoking prevalence for Māori has declined ten percentage points since 2014-17 (39.3%), the prevalence for Māori remains substantially, and statistically significantly, higher than for European/Other respondents in 2017-20 (29.9% and 14.2%, respectively).

Adult obesity is also unevenly distributed within the Canterbury DHB population. In the 2017-20 New Zealand Health Surveys, the prevalence of adult obesity was highest for Pacific respondents (50.5%, down from 77.8% in 2011-14); followed by Māori respondents (35.4%), European/Other respondents (25.5%), and was lowest for Asian respondents (7.6%).

Approximately two out of five (40.8%) Māori respondents in the Canterbury DHB region indicated an unmet need for primary health care in the 2017 to 2020 New Zealand Health Surveys, compared with one third (33.6%) for European/Other respondents, although the difference is not statistically significant. In the Canterbury DHB region, the age-standardised acute medical admission rate per 100,000 population, all ages, for both Māori and Pacific peoples is substantially higher than the rate for the total Canterbury population (increasing notably since approximately 2016). However, the data do not provide insight as to the drivers of these differences by ethnic group (e.g. differences in disease burden and/or by other factors, such as service provision or access).

There is an increasing proportion of the population in the Canterbury DHB region accessing mental health services, and the proportions differ between Māori, Pacific, and the overall (total) Canterbury DHB population. Among those aged 0 to 19 years, service utilisation by Māori is above the total population level, and by Pacific is below. Among those aged 20 to 64 years, the most notable difference is the higher access rates for Māori compared with the total Canterbury DHB population, with Pacific being similar to the total Canterbury DHB population. The data do not provide insight as to what extent the differences by ethnic group are driven by disease burden and/or by other factors, such as service provision, affecting access. However, the higher proportion of Māori in Canterbury accessing services suggests that this population has a greater burden of mental health disorder, compared to the total Canterbury DHB population. National data also show that Pacific people have both a greater burden of mental illness than the general population and low access to services relative to need.

What this means for wellbeing

The health indicators for greater Christchurch present a mixed picture and most results are similar to those for New Zealand overall. Many of the results are not supportive of individual and community wellbeing (for example obesity, physical activity, and hazardous drinking). In addition, the indicator breakdowns demonstrate persisting inequities for some population groups.

The relationship between the health indicators and wellbeing is complex. Two important examples are acute medical admissions and access to mental health care services. The overall relationship between increasing rates of acute medical admissions and the wellbeing of the Canterbury DHB population is unclear. While improved access to health care may support improved wellbeing, increased service utilisation may also represent a deterioration in the health and wellbeing status of the population. Acute medical admissions are likely to be amenable to addressing the wider factors that influence health and by the provision of good care in the community [8]. Receiving care in the community that results in avoiding hospital admission is a positive outcome for most people. Lower admission rates are achieved through positive influences on the determinants of health or the provision of good community health care.

The relationship between increased mental health service access and wellbeing is similarly complex. It is relatively common for a person to experience mental health problems at some time in their life, and timely and equitable access to health care services

is important for good health and wellbeing. However, increased mental health service access may reflect an increase in mental health burden in the population, with the initial and ongoing impacts of events such as the Canterbury earthquakes and Christchurch mosque attacks of March 2019 being important factors in the picture in Canterbury.

Indicators in this domain

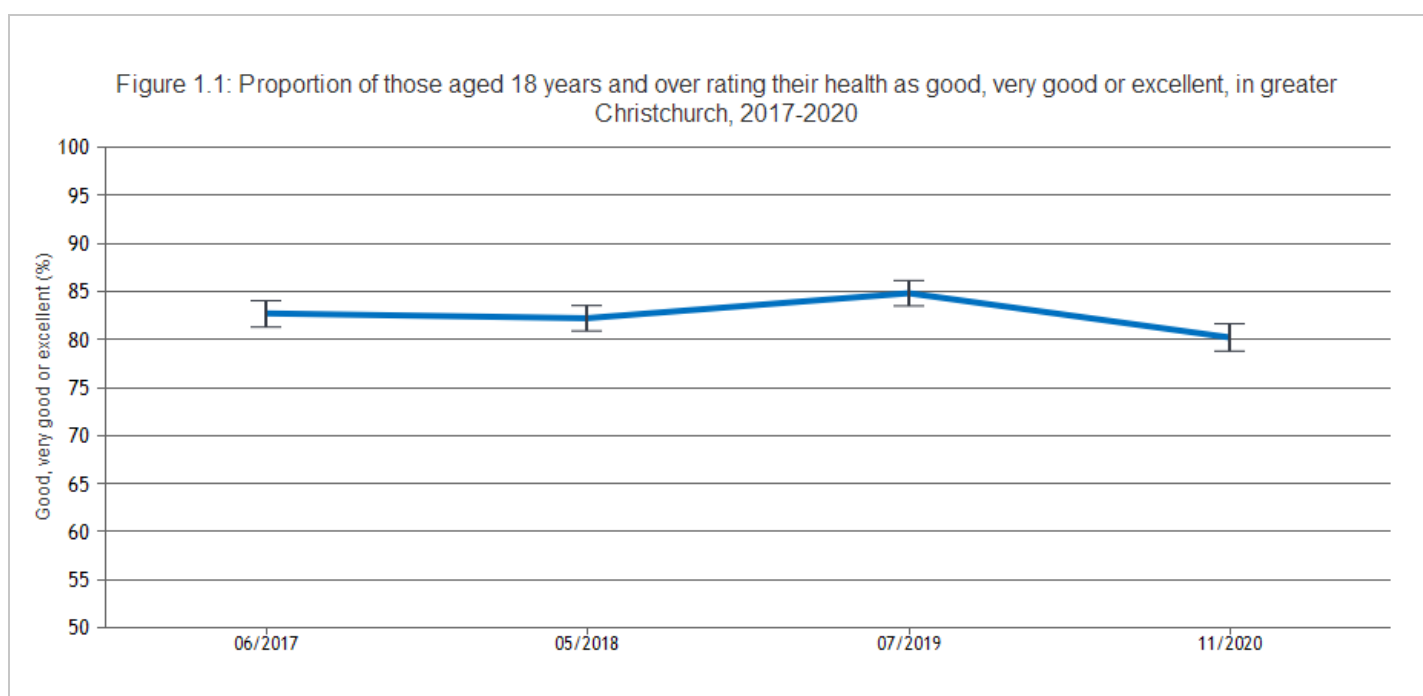
- **Self-rated health**
- **Smoking and vaping — Year 10**
- **Smoking — Adults**
- **Obesity**
- **Physical activity**
- **Hazardous drinking**
- **Unmet need**
- **Acute medical admissions**
- **Mental health service access**

SELF-RATED HEALTH

Self-rated health allows people to weigh together the different aspects of health that they consider most important [9]. In many health surveys, self-rated health is measured by a single question [9] and studies have found only very small differences in responses between different question wordings; suggesting that most single-question measures of health status tap into the same concept [10]. Self-rated health provides information in addition to standard clinical assessments of health status.

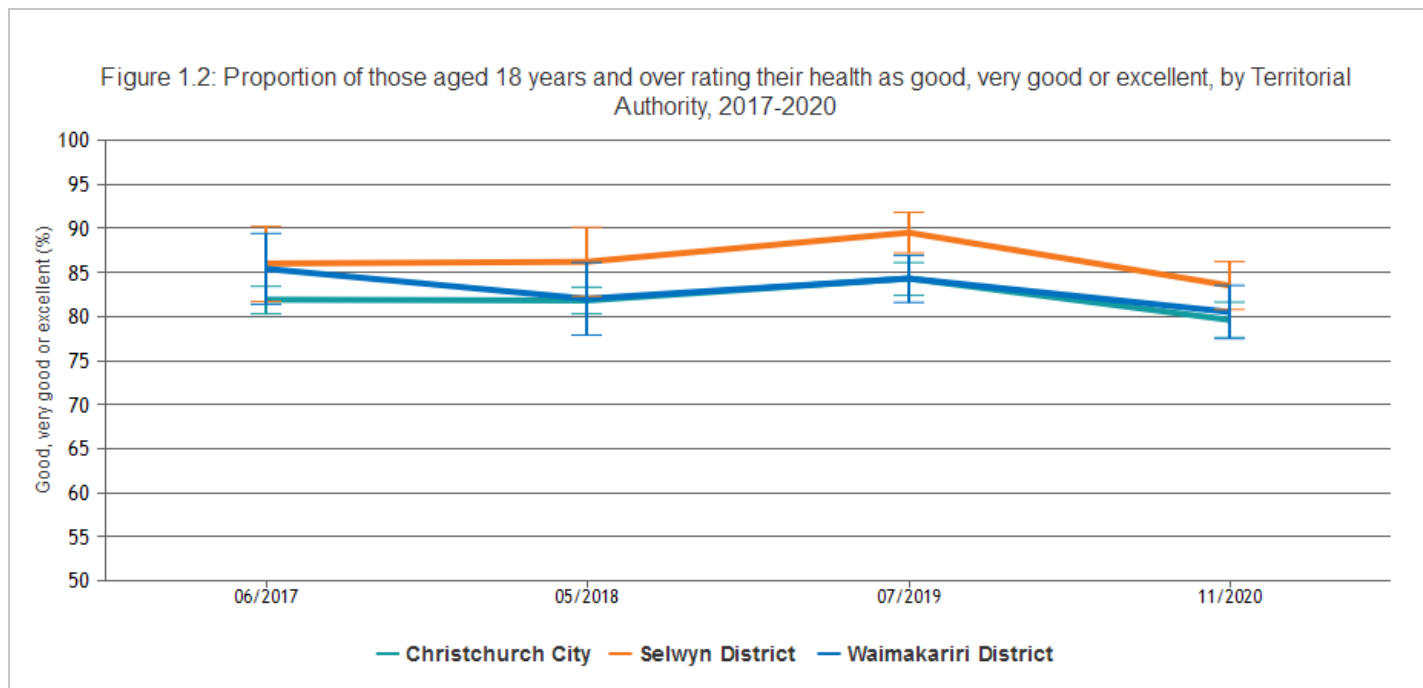
The Canterbury Wellbeing Survey has included the question, 'In general, how would you rate your health', since 2017 [11]. The question is scored using a five-category response format: poor–excellent.

This indicator presents the proportion of those 18 years and over rating their health as good, very good, or excellent, in the 2017 to 2020 Canterbury Wellbeing Surveys.



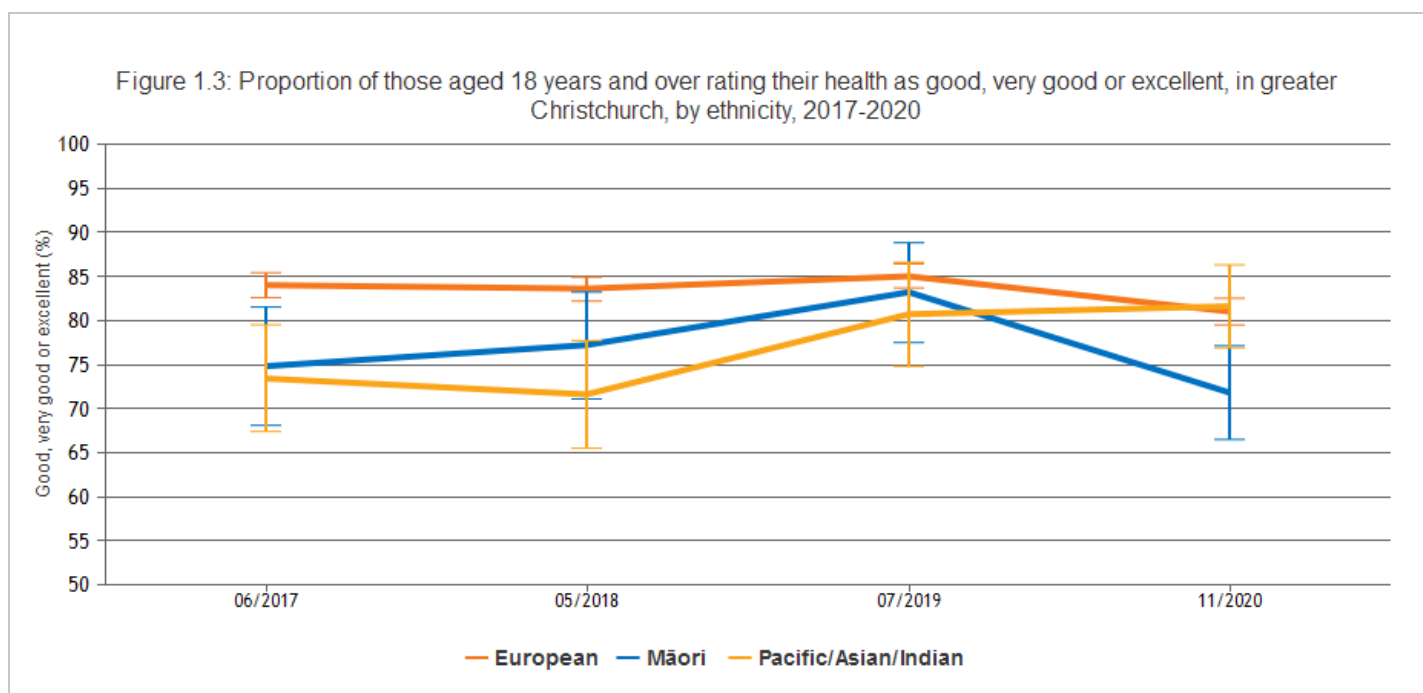
The figure shows that the proportion of respondents rating their health as good, very good or excellent in the 2020 Canterbury Wellbeing Survey was 80.2 percent. This proportion is statistically significantly lower than 2019 (84.8%).

Breakdown by Territorial Authority



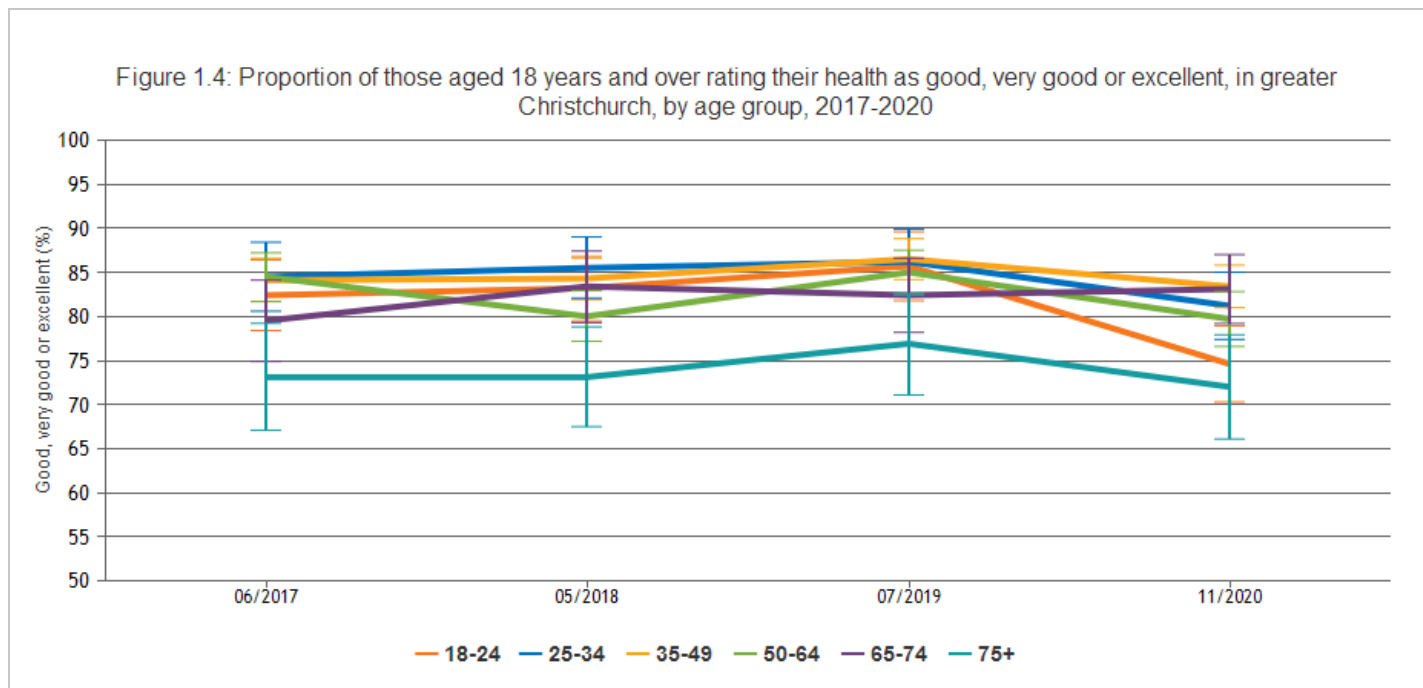
The figure shows no statistically significant differences in the proportion of respondents rating their health as good, very good or excellent in the 2017, 2018, 2019, and 2020 Canterbury Wellbeing Surveys, by Territorial Authority (Christchurch City, 79.6%; Selwyn District, 83.5%; and Waimakariri District, 80.5%, in 2020).

Breakdown by ethnicity



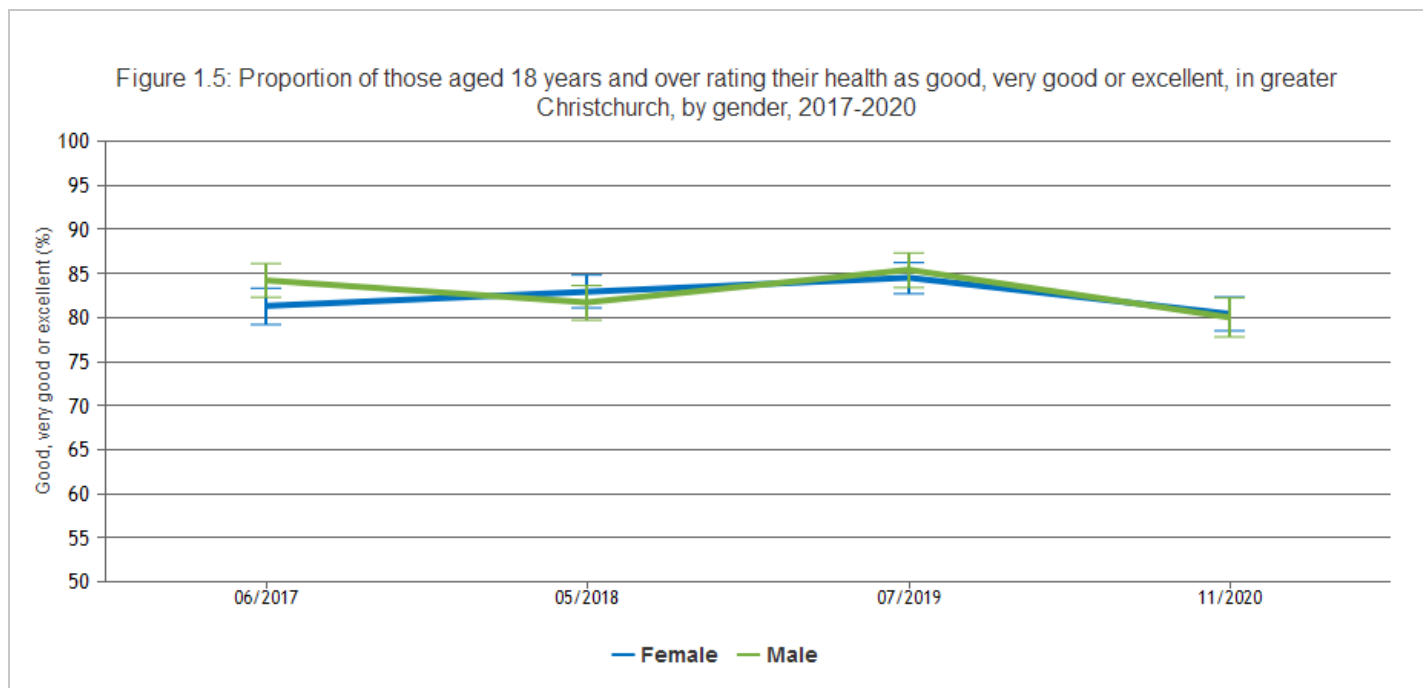
The figure shows the proportion of respondents rating their health as good, very good or excellent, for European respondents, Māori respondents, and for Pacific/Asian/Indian respondents (81.0%, 71.8%, and 81.6%, respectively, in 2020). European respondents had better self-rated health (a statistically significantly higher proportion rating their health as good, very good, or excellent), than Pacific/Asian/Indian respondents in 2017 and 2018, and Māori respondents in 2017 and 2020. In 2020, a significantly higher proportion of Pacific/Asian/Indian respondents rated their health as good, very good or excellent than Māori respondents, however in previous years there were no statistically significant differences between these groups.

Breakdown by age



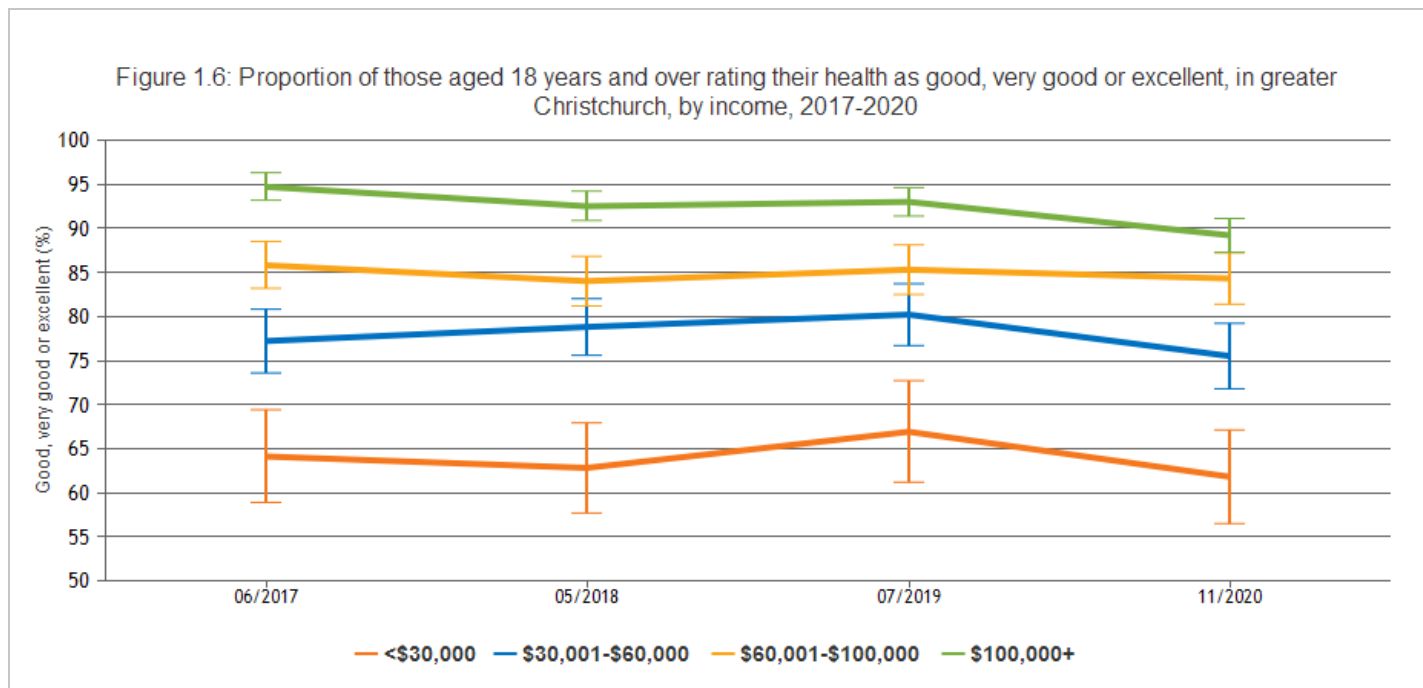
The figure shows a pattern of generally similar self-rated health (proportion rating their health as good, very good or excellent) for the age groups 18 to 24 years, 25 to 34 years, 35 to 49 years, 50 to 64 years, and 65 to 74 years, for 2017, 2018, 2019 and 2020 (all falling into the range 79.5% to 86.5%). Of note, the proportion for the 75+ years age group was statistically significantly lower than for the 35 to 49 years age group at all timepoints and was statistically significantly lower than for some other age groups at certain timepoints: 50 to 64 years age group in 2017, and 65 to 74 years age group in 2018 and 2020. There was a statistically significant decrease in self-rated health among 18 to 24 year-olds between 2019 and 2020 (85.7% rating their health as good, very good or excellent in 2019 compared to 74.6% in 2020).

Breakdown by gender



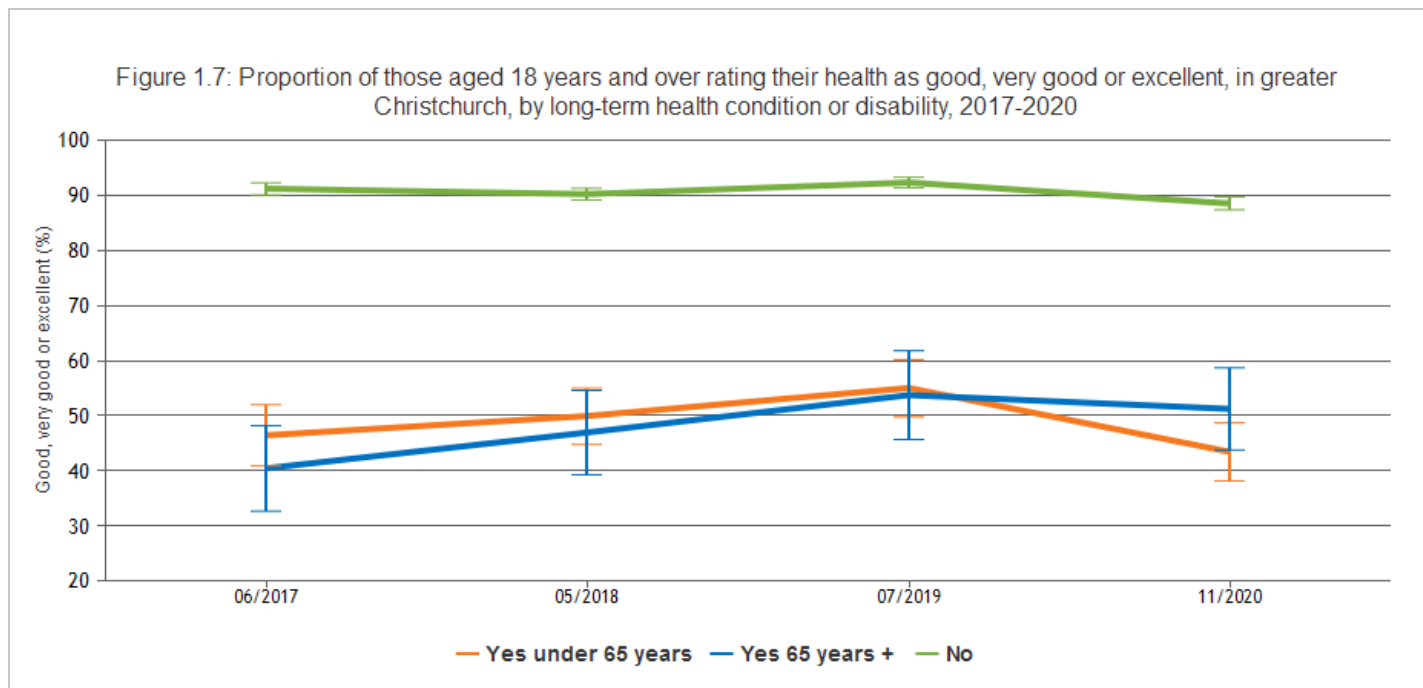
The figure shows a pattern of generally similar self-rated health (proportion rating their health as good, very good or excellent) for female and male respondents, in 2017, 2018, 2019, and 2020 (no statistically significant differences).

Breakdown by income



The figure shows that the proportion of respondents rating their health as good, very good, or excellent increases with increasing annual household income. The differences between the four income groups were all statistically significant in 2017 and 2020 and all but one comparison (\$30,000–\$60,000 vs. \$60,000–\$100,000) was statistically significant in 2018 and 2019. In 2020, most respondents from the \$100,000+ income group (89.2%) rated their health as good, very good or excellent, compared with 61.8 percent of those from the <\$30,000 income group (a substantial and statistically significant difference).

Breakdown by disability



The figure shows that respondents with a disability or long-term health condition (irrespective of age) indicated poorer self-rated health (a statistically significantly smaller proportion rating their health as good, very good or excellent) compared with those without a disability or long-term health condition over the time period from 2017 to 2020. There is no statistically significant difference in self-rated health between those with a disability or long-term health condition who are aged under 65 years and those who are aged 65 years and over at any timepoint (43.4% and 51.2% in 2020, respectively). Between 2019 and 2020 there was a statistically significant decrease in the proportion of respondents with a disability or long-term health condition who are aged under 65 years rating their health as good, very good or excellent, however no significant change was observed among those without a disability or long-term health condition, or those with a disability or long-term health condition who are aged 65 years and over.

Data Sources

Source: Te Whatu Ora Waitaha Canterbury - formerly the Canterbury District Health Board.

Survey/data set: Canterbury Wellbeing Survey to 2020. Access publicly available data from Te Mana Ora | Community and Public Health website at www.cph.co.nz/your-health/wellbeing-survey/

Source data frequency: Annually.

Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

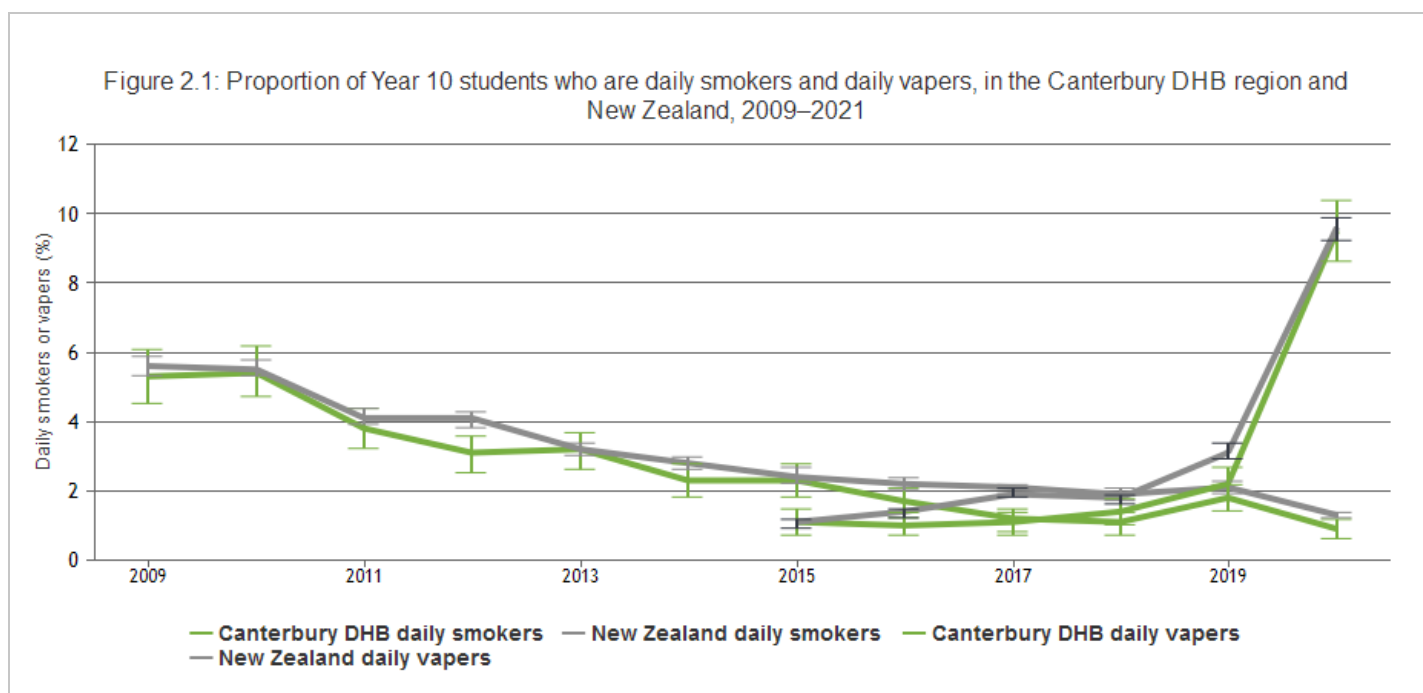
SMOKING AND VAPING — YEAR 10

Almost all cigarette smoking begins before 18 years of age (on average, by 15 years of age in New Zealand) [12-16]. International evidence has found that virtually no progressions to daily smoking occur in adulthood [14,16].

Smoking causes more loss of health in New Zealand than any other risk factor [17] and up to two-thirds of regular smokers will die as a direct result of their smoking [18]. Smoking contributes to six of the eight leading causes of death worldwide (ischaemic heart disease, cerebrovascular disease, lower respiratory infections, chronic obstructive pulmonary disease, tuberculosis, and lung cancer) [19].

Reducing youth smoking initiation is a critical component of tobacco control strategies. Therefore, monitoring key patterns and trends in tobacco use among youth (as well as use of other new tobacco products) is critical to reducing the overall burden of tobacco-caused morbidity and mortality.

This indicator presents the proportion of Year 10 students (aged 14 or 15 years) who are daily smokers, in the Canterbury DHB region and for New Zealand overall. The indicator uses data from the ASH Year 10 Snapshot survey, part of the New Zealand Youth Tobacco Monitor. In addition, from 2015, the Snapshot survey has included questions about the frequency of use of e-cigarettes by Year 10 students. The proportion of Year 10 students who use e-cigarettes daily (daily vapers) has been incorporated into this indicator (2015-2021). Note that e-cigarettes may or may not contain nicotine.



The figure shows that the proportion of Year 10 students (aged 14 or 15 years) in the Canterbury DHB region who smoke every day has declined steadily over time. The decline in Canterbury was consistent with the national trend to 2015, before declining further to a statistically significantly lower level than the national figure in 2017 and 2018 (1.1% for Canterbury and 1.9% for New Zealand in 2018). However, the proportion of daily smokers in Canterbury then increased between 2018 and 2021 to a level similar to New Zealand (0.9% for Canterbury and 1.3% for New Zealand in 2021). By this measure, the proportion of Year 10 students (aged 14 or 15 years) in the Canterbury DHB region who smoke every day is low by international standards [19]. The figure also shows that the proportion of Year 10 students (aged 14 or 15 years) in the Canterbury DHB region who vape every day has increased dramatically (and statistically significantly) from 1.1 percent in 2015 to 9.5 percent in 2021. The proportion of Year 10 students who vape every day has also increased statistically significantly for New Zealand overall, from 1.1 percent in 2015 to 9.6 percent in 2021.

The figure also shows that the proportion of Year 10 students (aged 14 or 15 years) in the Canterbury DHB region who vape every day has increased statistically significantly from 1.1 percent in 2015 to 2.2 percent in 2019. The proportion of Year 10 students who vape every day has also increased statistically significantly for New Zealand overall, from 1.1 percent in 2015 to

3.1 percent in 2019. Further data points are required to ascertain any ongoing patterns or trends in youth smoking and vaping in New Zealand.

Data Sources

Source: Action on Smoking and Health (ASH).

Survey/data set: ASH Year 10 Snapshot survey to 2021. Custom data request for Canterbury DHB region.

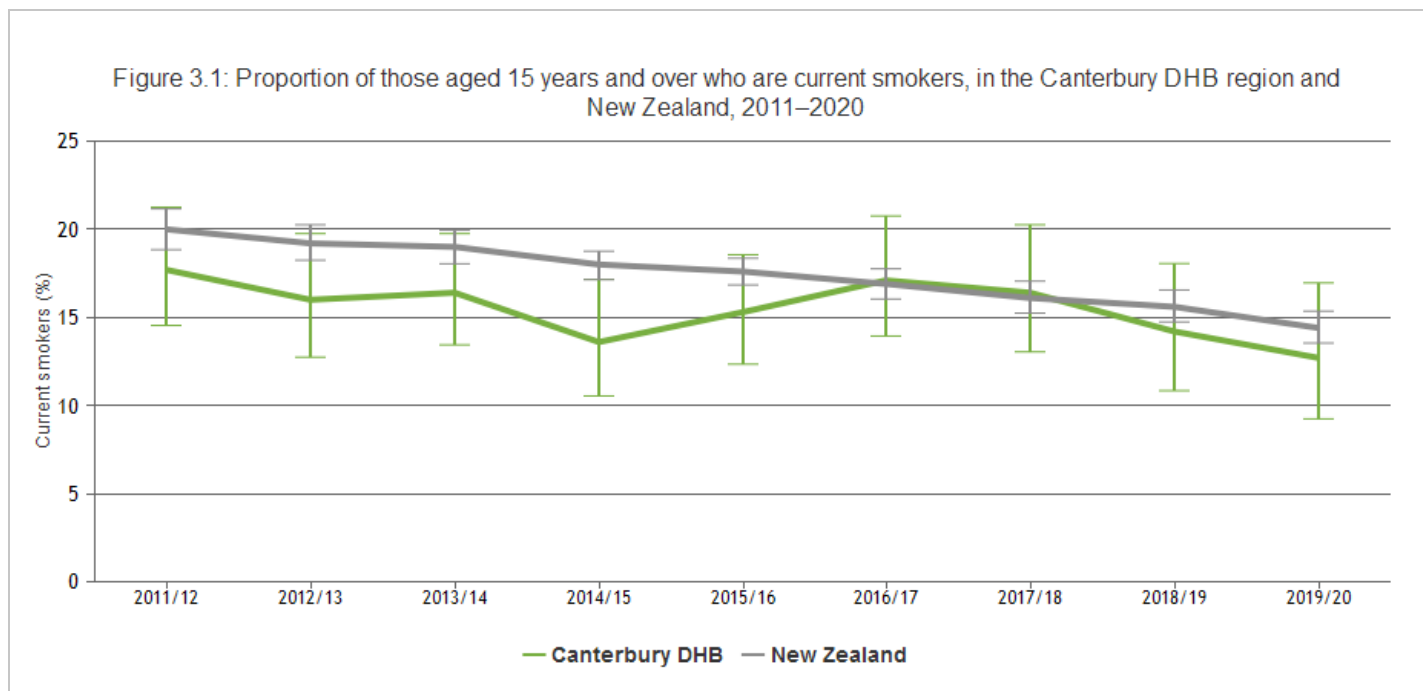
Source data frequency: Annually. Note: The ASH 10 Year 10 Snapshot survey was not conducted in 2020 due to COVID-19 restrictions.

Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

SMOKING — ADULTS

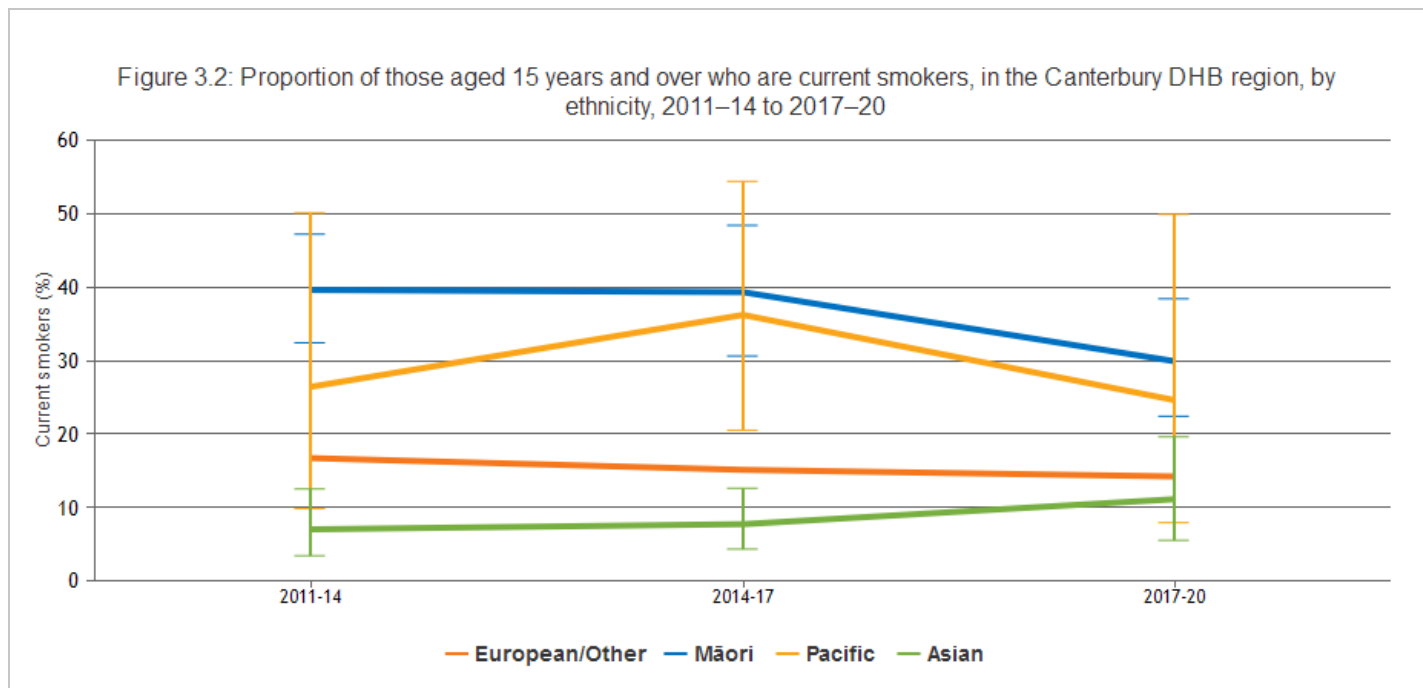
Up to two-thirds of regular smokers will die as a result of their smoking [18]. Smoking causes more loss of health than any other risk factor [17] and contributes to six of the eight leading causes of death worldwide (ischaemic heart disease, cerebrovascular disease, lower respiratory infections, chronic obstructive pulmonary disease, tuberculosis and lung cancer) [19].

This indicator presents the proportion of those 15 years and over who are current smokers, based on New Zealand Health Survey data.



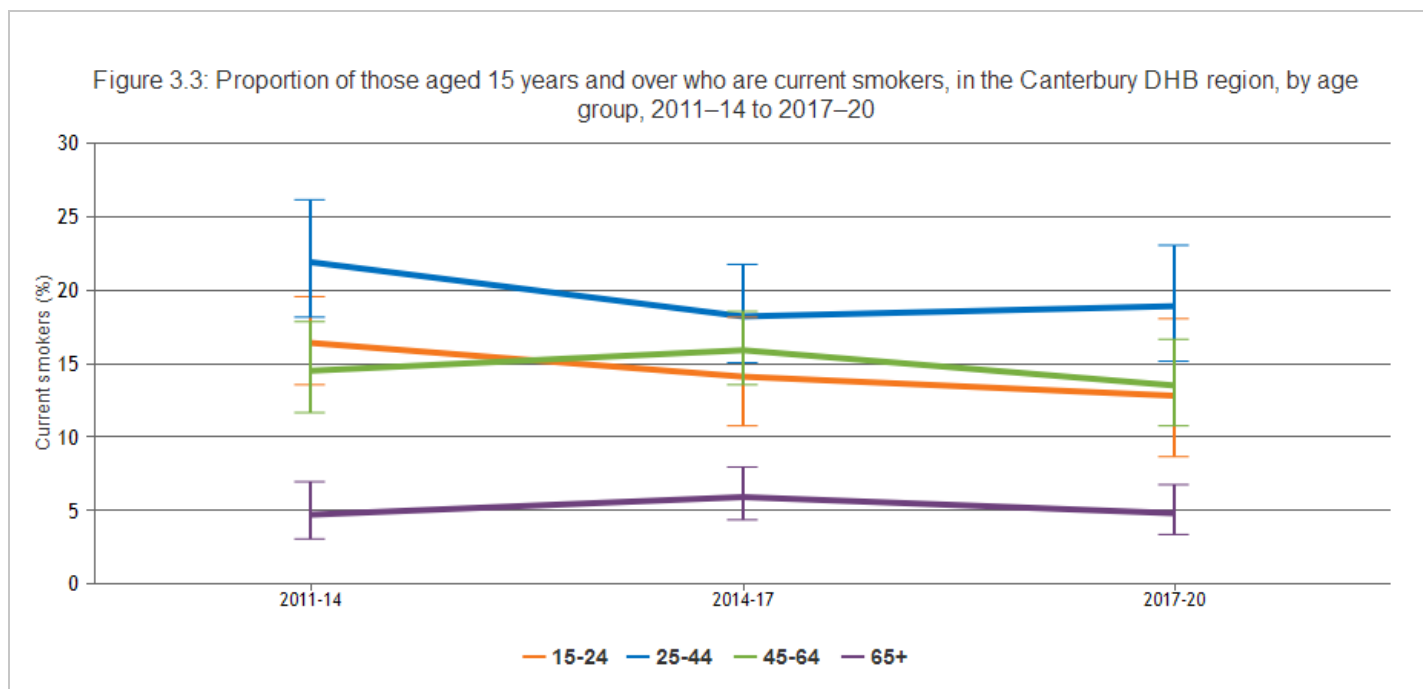
The proportion of Canterbury DHB region respondents (15 years or older) who have reported being current smokers has fluctuated in recent years. While the prevalence has been lower than for New Zealand overall for most of the years shown in the time series, the difference between the Canterbury and New Zealand proportion has not been statistically significant at any timepoint (except for 2015). There appears to be an overall downward trend in the prevalence of current smoking in the Canterbury DHB region, however trend analysis is not available.

Breakdown by ethnicity



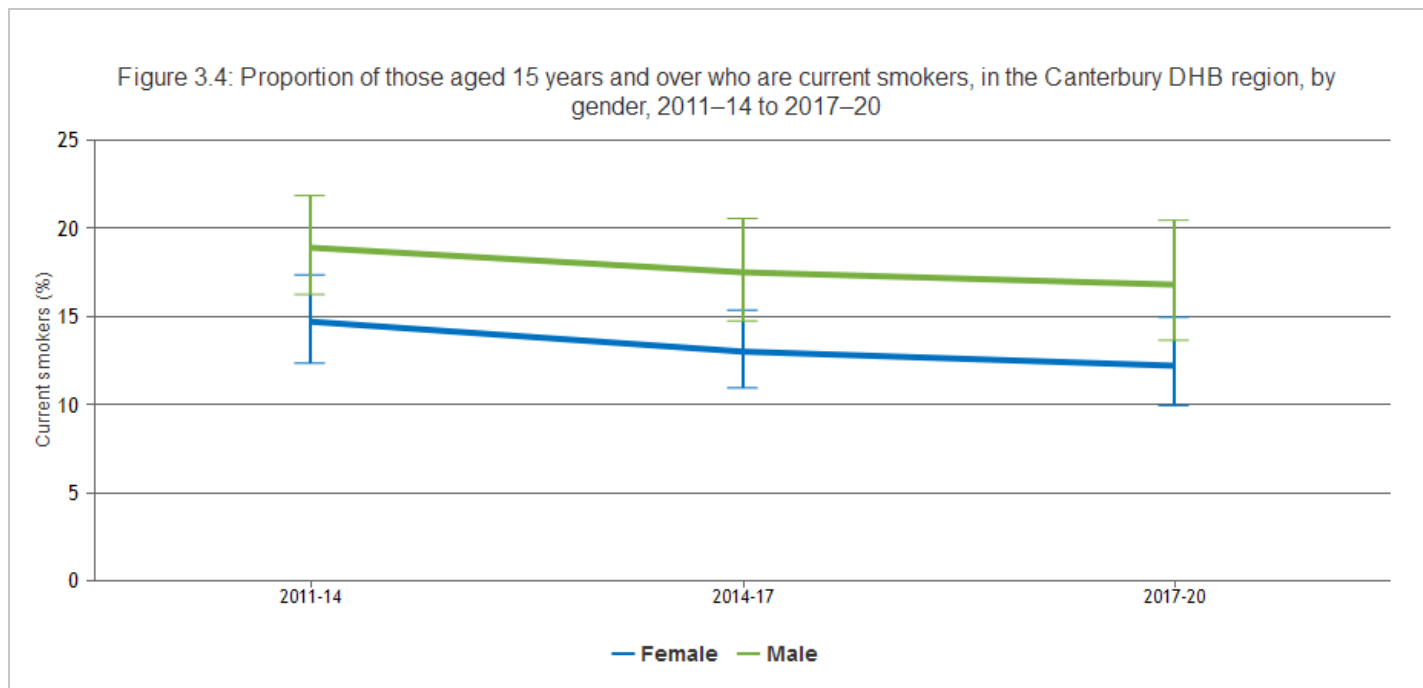
Across the Canterbury DHB region, the smoking prevalence for both Māori and Pacific respondents has decreased between 2014-17 and 2017-20 (39.4% to 29.9% for Māori and 36.5% to 24.6% for Pacific). The decreases for Māori and Pacific are not statistically significant, however, the precision of the estimates is low due to small sample sizes. The smoking prevalence for Māori remains statistically significantly higher than the European/Other (14.2%) and Asian groups (11.1%) in 2017-20. The differences by ethnicity are broadly consistent with the pattern for New Zealand overall [20].

Breakdown by age



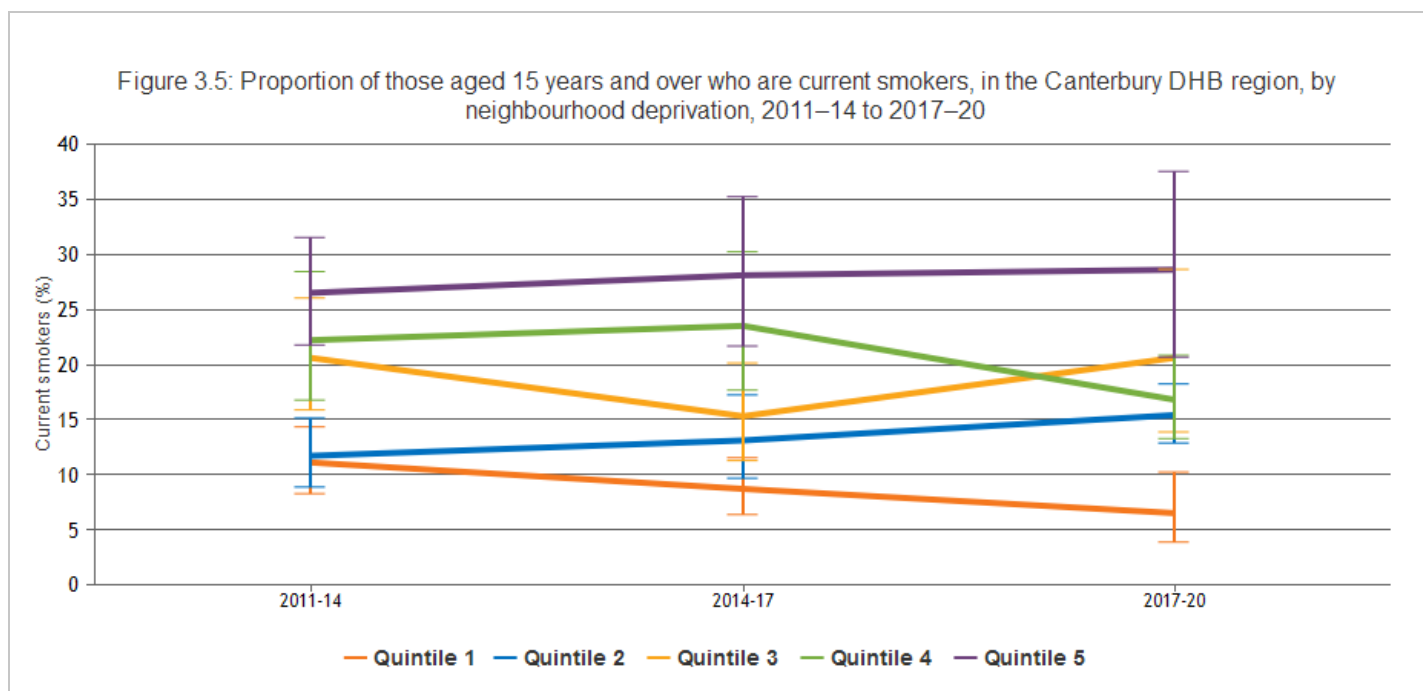
The figure shows that the smoking prevalence for respondents in the Canterbury DHB region is highest among those aged 25 to 44 years (18.9% in 2017-2020); statistically significantly higher than the prevalence for those aged 65+ years (4.8%), for the years shown in the time series.

Breakdown by gender



The figure shows that the smoking prevalence for respondents in the Canterbury DHB region is not statistically significantly different for females compared with males, for the years shown in the time series.

Breakdown by deprivation



The figure shows that the smoking prevalence for respondents in the Canterbury DHB region is strongly associated with socioeconomic deprivation (i.e. smoking prevalence increases as neighbourhood deprivation increases). The differences in smoking prevalence between Canterbury respondents living in neighbourhoods that have the least deprived NZDep18 scores compared with the most deprived NZDep18 scores are substantial (for 2017–20, Quintile 1, 6.5%; Quintile 2, 15.4%; Quintile 3, 20.6%; Quintile 4, 16.8%; and Quintile 5, 28.6%). For the Canterbury DHB region (and for New Zealand overall, data not shown), smoking prevalence is statistically significantly higher for those living in the most deprived (Quintile 5) neighbourhoods compared to the least deprived (Quintile 1) neighbourhoods (and higher than for Quintile 2 and Quintile 3, in 2014–17).

Data Sources

Source: Ministry of Health.

Survey/data set: New Zealand Health Survey to 2020. Access publicly available data from the Ministry of Health website https://minhealthnz.shinyapps.io/nz-health-survey-2020-21-annual-data-explorer/_w_224d6220/#!/explore-indicators

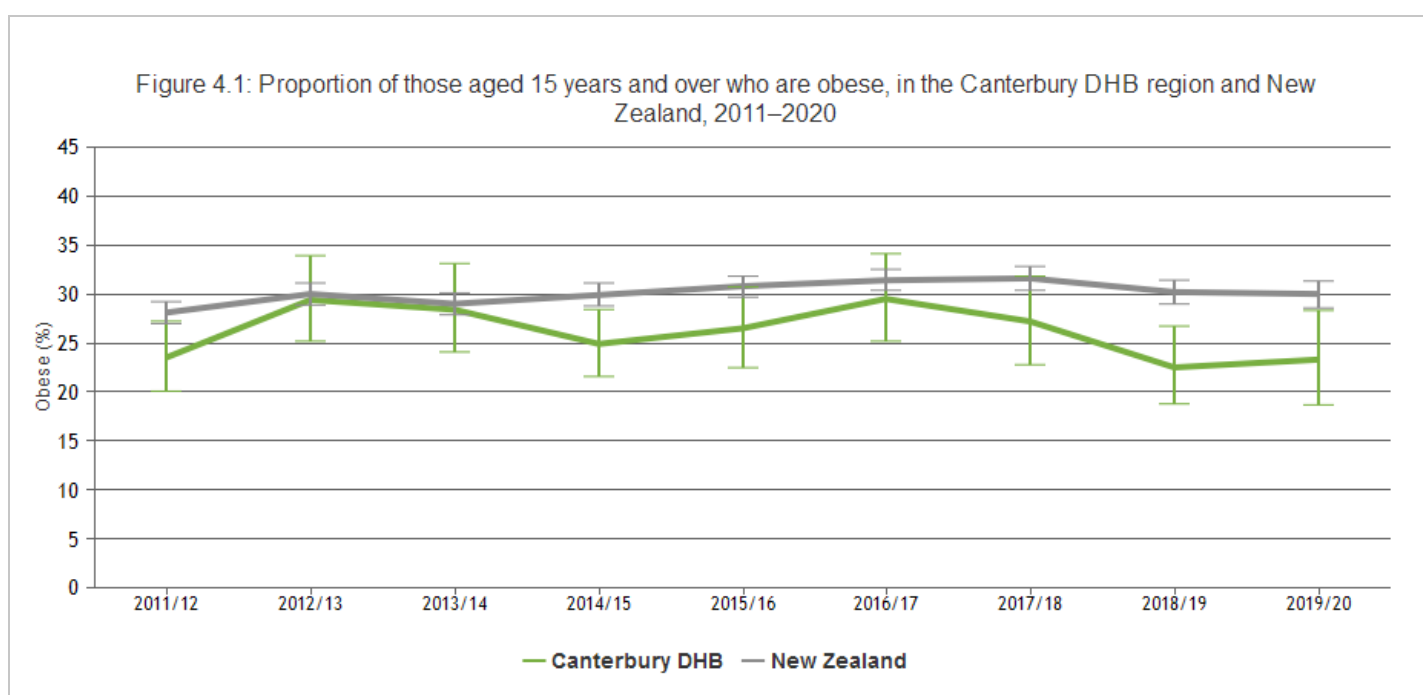
Source data frequency: Survey conducted continuously with data reported annually. Regional results (pooled data) released every 3 years.

Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

OBESITY

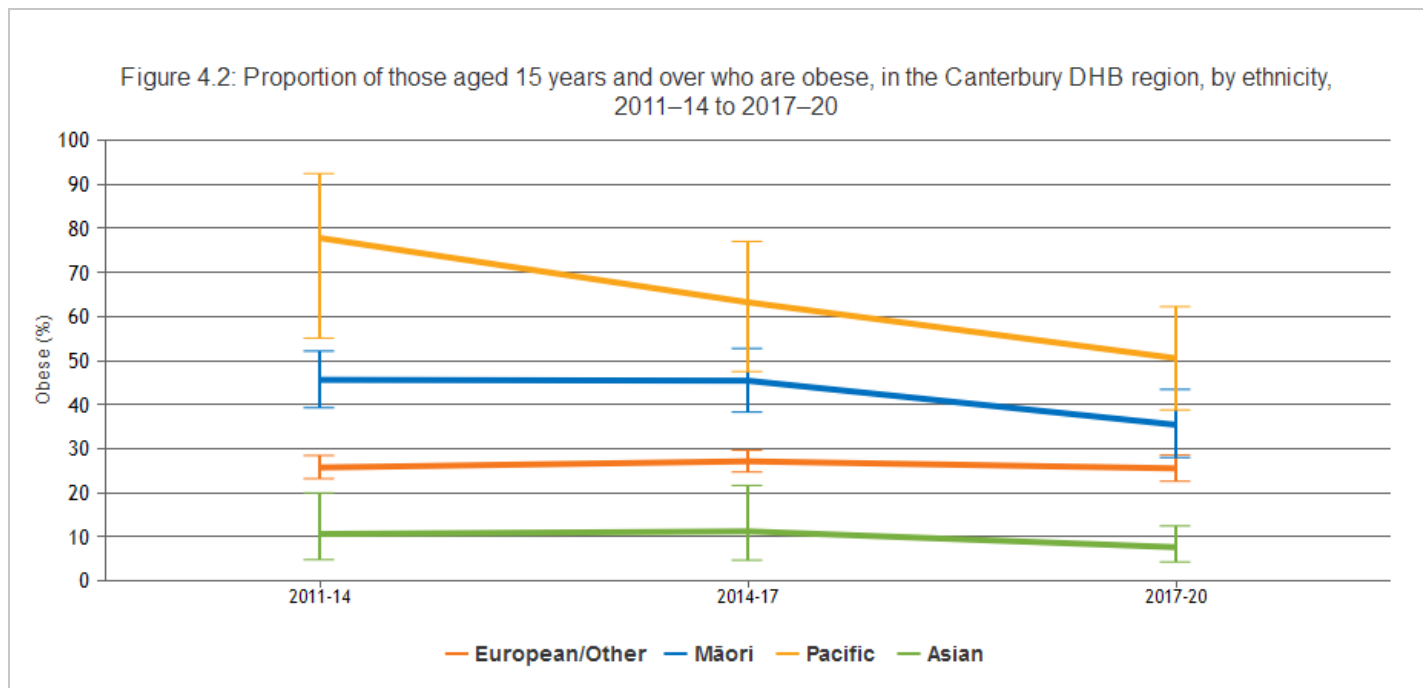
Obesity is an excessively high amount of body fat in relation to lean body mass, defined as having a Body Mass Index (BMI, calculated as kg/m^2) of 30+, or equivalent for those aged under 18 years [22]. Obesity is associated with an increased risk of a number of health conditions, including type 2 diabetes, ischaemic heart disease, high blood pressure, some cancers, some forms of arthritis, and stroke [23]. Rates of obesity have increased in almost all countries in the past three to four decades and New Zealand now has one of the highest rates of obesity in the world [24,25]. Most of this increase has been attributed to increased access to foods that are more processed, affordable, and effectively marketed [26]. Energy-dense and nutrient-poor foods have become the most affordable way to meet daily calorie needs compared to nutrient-rich and high-quality foods, resulting in low income groups generally having a poorer diet than high income groups [27]. Policies and programmes that make it easier to eat healthily and exercise regularly are required to reduce obesity at the population level.

This indicator presents the proportion of those 15 years and over who are obese (Body Mass Index, calculated as kg/m^2 , of 30+, or equivalent for those aged <18 years), using New Zealand Health Survey data.



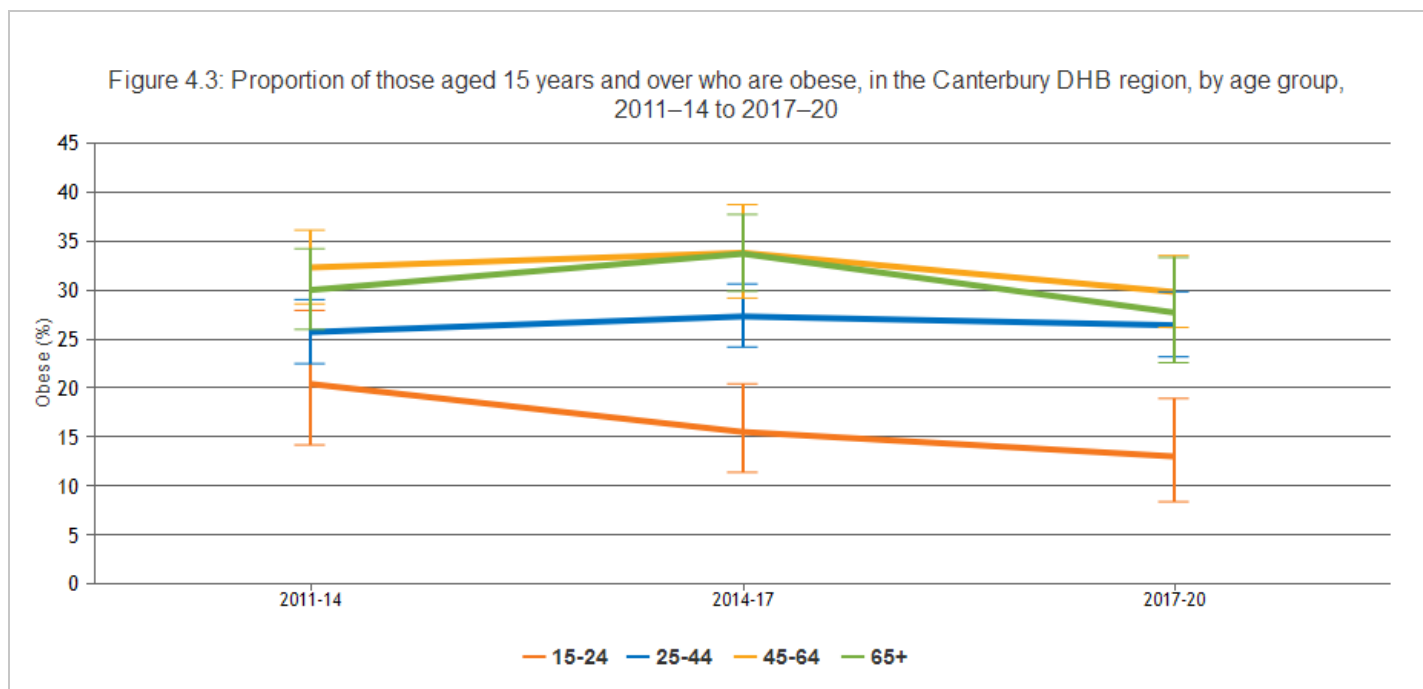
The figure shows that approximately a quarter of adult respondents (23.3%) were obese across the Canterbury DHB region in 2019/20. This proportion is statistically significantly lower than the proportion for New Zealand overall (30%). The proportion of respondents aged 15 years and over who are obese in New Zealand increased statistically significantly between 2011/12 and 2017/18 but has declined marginally since. The proportion of Canterbury respondents aged 15 years and over who are obese has also declined since 2017/18, however, the differences between timepoints are not statistically significant.

Breakdown by ethnicity



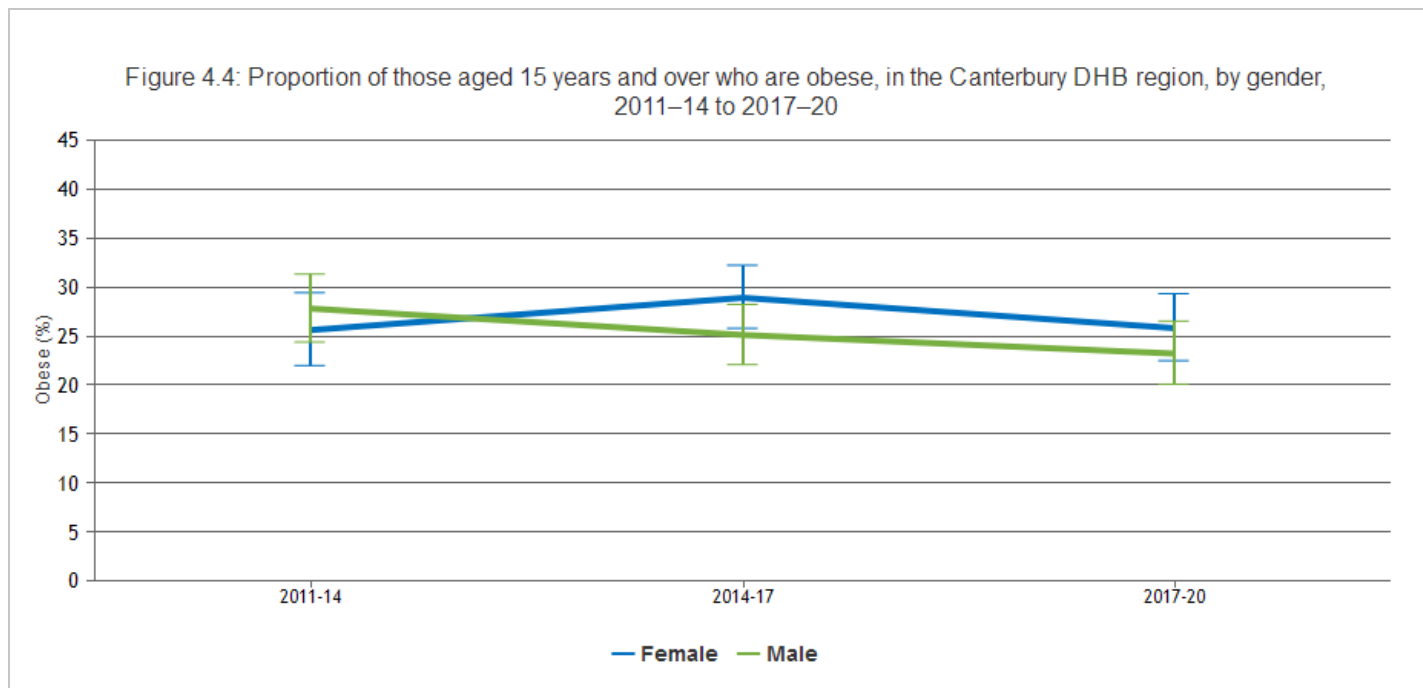
The figure shows that the proportion of Canterbury DHB region respondents, aged 15 years and over, who were obese was highest for Pacific people over the time series shown, compared with Māori, Asian, and European/Other respondents (in 2017–2020, Pacific, 50.5%; Māori, 35.4%; European/Other 25.5%, and Asian, 7.6%). The proportion of adult Māori and Pacific respondents who are obese has declined over the time series shown (notably for Pacific people), although the differences are not statistically significant.

Breakdown by age



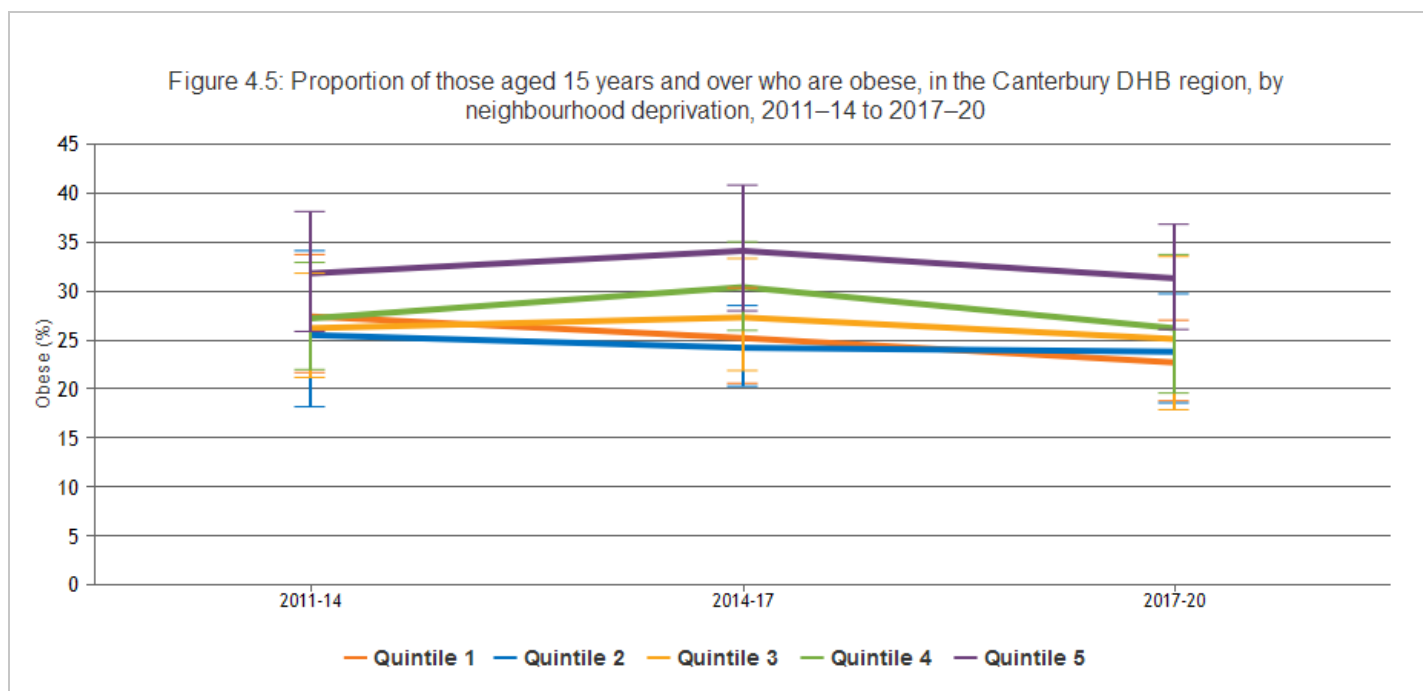
The figure shows that the proportion of respondents aged 15 years and over who are obese in the Canterbury DHB region is higher for the older age groups, in particular for those aged 25 to 44 years (26.4%), 45 to 64 years (29.8%), and those aged 65+ years (27.7%) in 2017-20 (i.e. a statistically significantly higher proportion for all of the older age groups than for those aged 15 to 24 years (13.0%), in both the 2014-17 and 2017-20 time periods).

Breakdown by gender



The figure shows that statistically similar proportions of female and male respondents, aged 15 years and over, are obese in the Canterbury DHB region (25.8% and 23.2% respectively, for 2017–20).

Breakdown by deprivation



The figure indicates that adult obesity in the Canterbury DHB region is associated with socioeconomic deprivation. The differences indicate that respondents (aged 15 years and over) who live in neighbourhoods that have the least deprived NZDep18 scores are less likely to be obese compared with respondents who live in neighbourhoods with the most deprived NZDep18 scores (for 2017–20, Quintile 1, 22.7%; Quintile 2, 23.8%; Quintile 3, 25.1%; Quintile 4, 26.2%; and Quintile 5; 31.3%). However, the differences are not statistically significant.

Data Sources

Source: Ministry of Health.

Survey/data set: New Zealand Health Survey to 2020. Access publicly available data from the Ministry of Health website

https://minhealthnz.shinyapps.io/nz-health-survey-2020-21-annual-data-explorer/_w_0bb7535a/#!/explore-indicators

Source data frequency: Survey conducted continuously with data reported annually. Regional results (pooled data) released every 3 years.

Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

PHYSICAL ACTIVITY

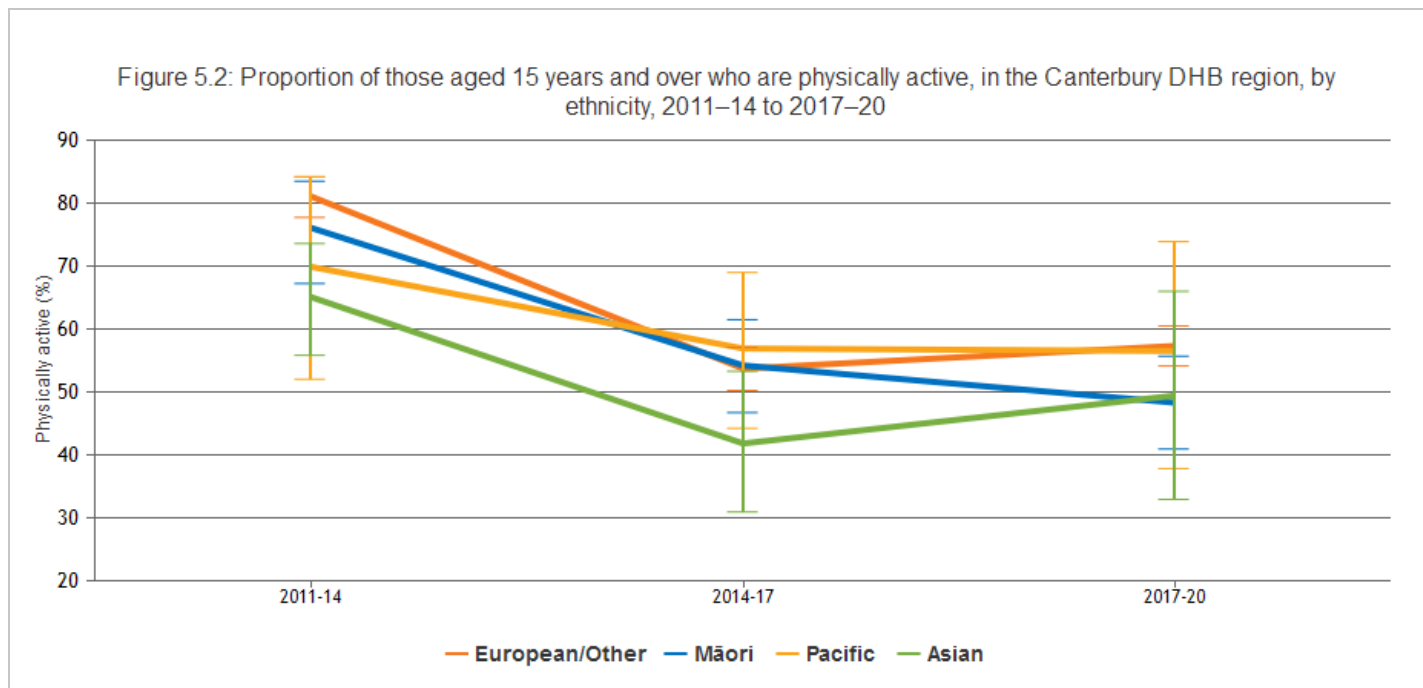
Regular physical activity is one of the most important things that people can do for their health. The benefits of physical activity include reduced risk of excessive weight gain in adults, reduced risk of cardiovascular disease, reduced risk of type 2 diabetes and metabolic syndrome, reduced risk of some cancers, maintaining/improving bone density and muscle function, preventing falls, improving mental health and mood, improved cognitive function, reduced risk of dementia, and improving/maintaining the capacity to carry out the activities of daily living [28]. Overall, physical activity can increase individuals' chances of living longer and increase the levels of individual and community wellbeing [28].

This indicator presents the proportion of those 15 years and over who report that they are physically active in the New Zealand Health Survey. Being physically active is defined as undertaking at least 30 minutes of brisk walking or other moderate-intensity physical activity (or equivalent vigorous activity) for at least 10 minutes at a time, on at least five days per week (such as 150 minutes of moderate-intensity or equivalent physical activity per week) [29,30].



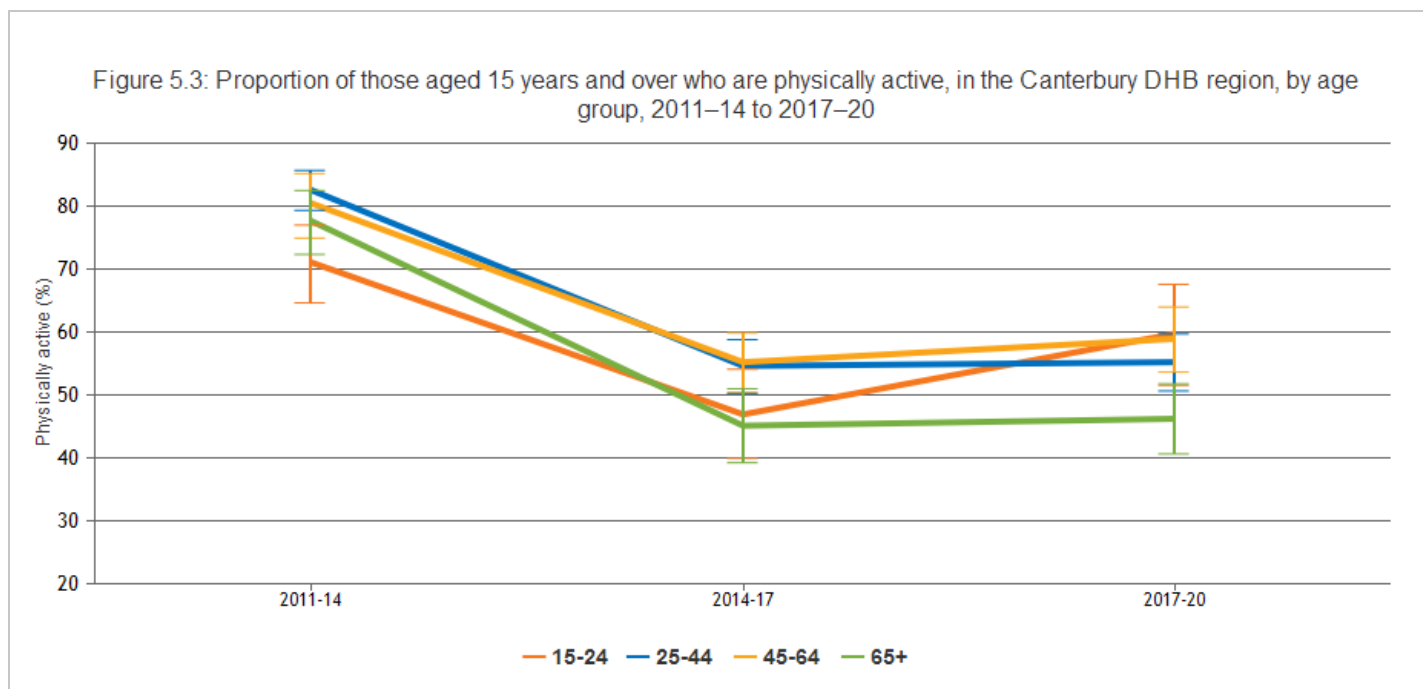
The figure shows that the proportion of respondents aged 15 years and over who indicated being physically active (at least 150 minutes of moderate-intensity or equivalent physical activity per week), was statistically similar in the Canterbury DHB region and New Zealand, over the period 2014/15 to 2019/20 (55.7% and 52.6% respectively, 2019/20). During the time period 2011/12–2014/15, the New Zealand Health Survey recorded notably higher levels of physical activity for respondents from the Canterbury DHB region, compared with respondents from across all of New Zealand. The reason for this picture is unclear, and the possibility of systematic error should be considered (for example sampling error or response bias).

Breakdown by ethnicity



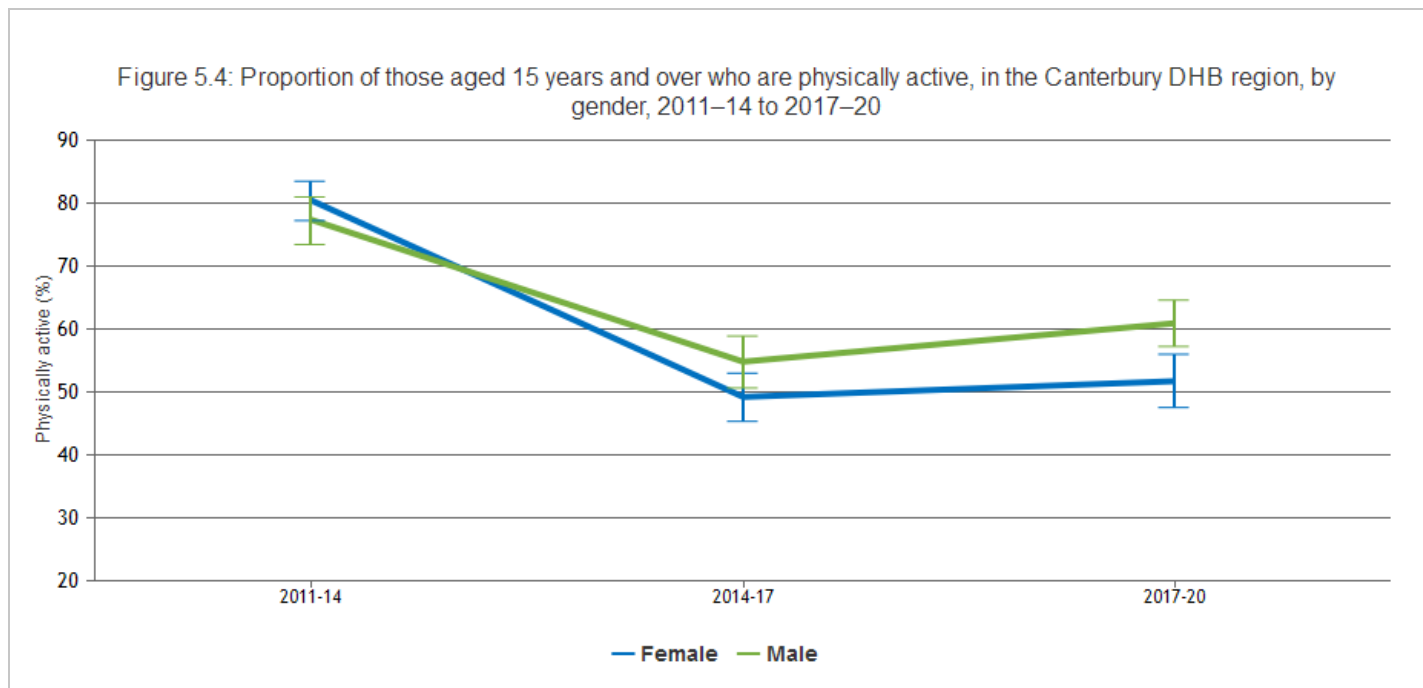
The figure shows the proportion of Māori, Pacific, Asian, and European/Other respondents, aged 15 years and over in the Canterbury DHB region, who indicated being physically active (at least 150 minutes of moderate-intensity or equivalent physical activity per week) for the period 2011–14 to 2017–20. There were no statistically significant differences in the proportion of respondents who indicated being physically active across the different ethnic groups, over the time series shown (Māori, 48.3%; Pacific, 56.5%; Asian, 49.4%; European/Other, 57.3%, for 2017–20).

Breakdown by age



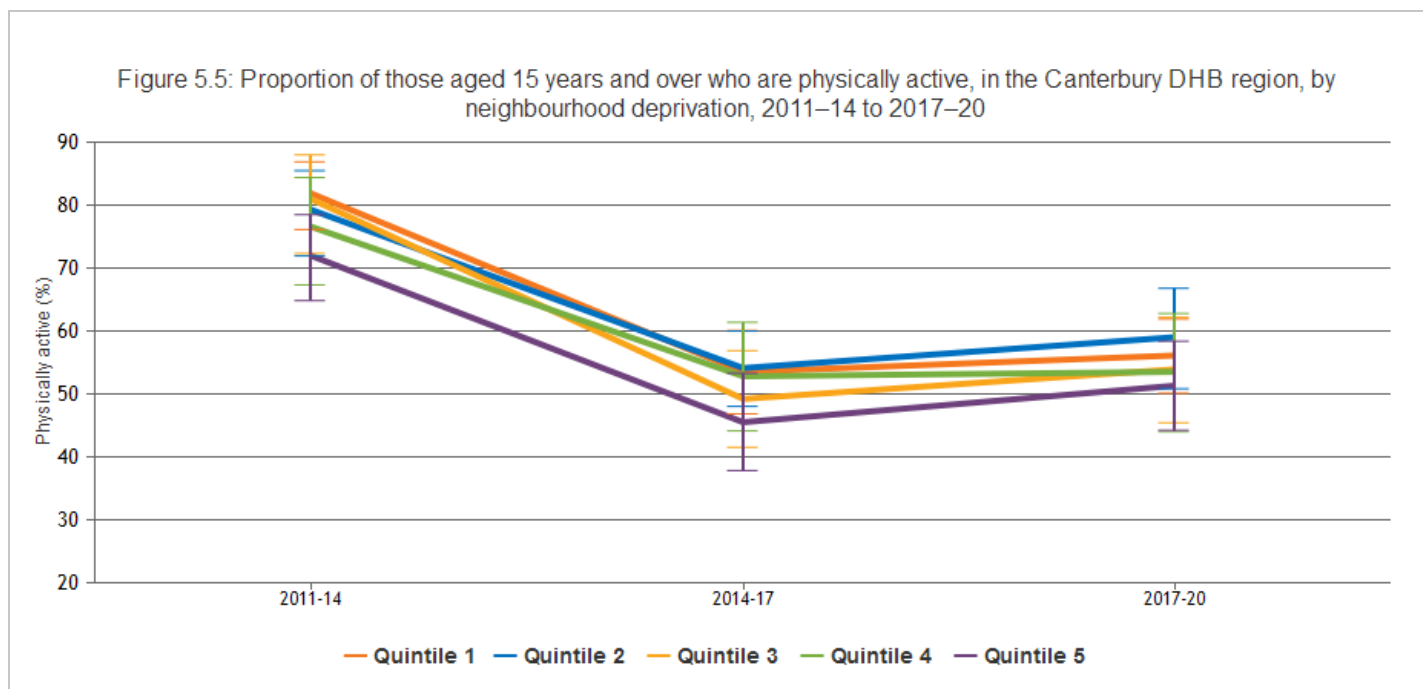
The figure shows a pattern of higher proportions of respondents being physically active (at least 150 minutes of moderate-intensity or equivalent physical activity per week) for the three younger age groups (15–24 years, 59.7%; 25–44 years, 55.2%; and 45–64 years, 58.9%, 2017–20) compared with the oldest age group (65+ years, 46.2%, 2014–17). However, the differences are not statistically significant in 2017–20.

Breakdown by gender



The figure shows that similar proportions of female and male respondents aged 15 years and over in the Canterbury DHB region indicated being physically active (at least 150 minutes of moderate-intensity or equivalent physical activity per week), for the periods 2011–14 and 2014–17. However, for 2017–20, the proportion of females who were physically active (51.7%) was statistically significantly less than that for males (60.9%).

Breakdown by deprivation



The figure shows the proportion of respondents aged 15 years and over in the Canterbury DHB region, who indicated being physically active (at least 150 minutes of moderate-intensity or equivalent physical activity per week), for the period 2011–14 to 2017–20, by level of neighbourhood deprivation. The differences in the proportions of respondents who reported being physically active, from neighbourhoods that have the least deprived NZDep18 scores compared with the most deprived NZDep18 scores, are not statistically significant (for 2017–20, Quintile 1, 56.1%; Quintile 2, 59.0%; Quintile 3, 53.9%; Quintile 4, 53.5%; Quintile 5, 51.3%).

Data Sources

Source: Ministry of Health.

Survey/data set: New Zealand Health Survey to 2020. Access publicly available data from the Ministry of Health website https://minhealthnz.shinyapps.io/nz-health-survey-2020-21-annual-data-explorer/_w_c2718a23#!/explore-indicators

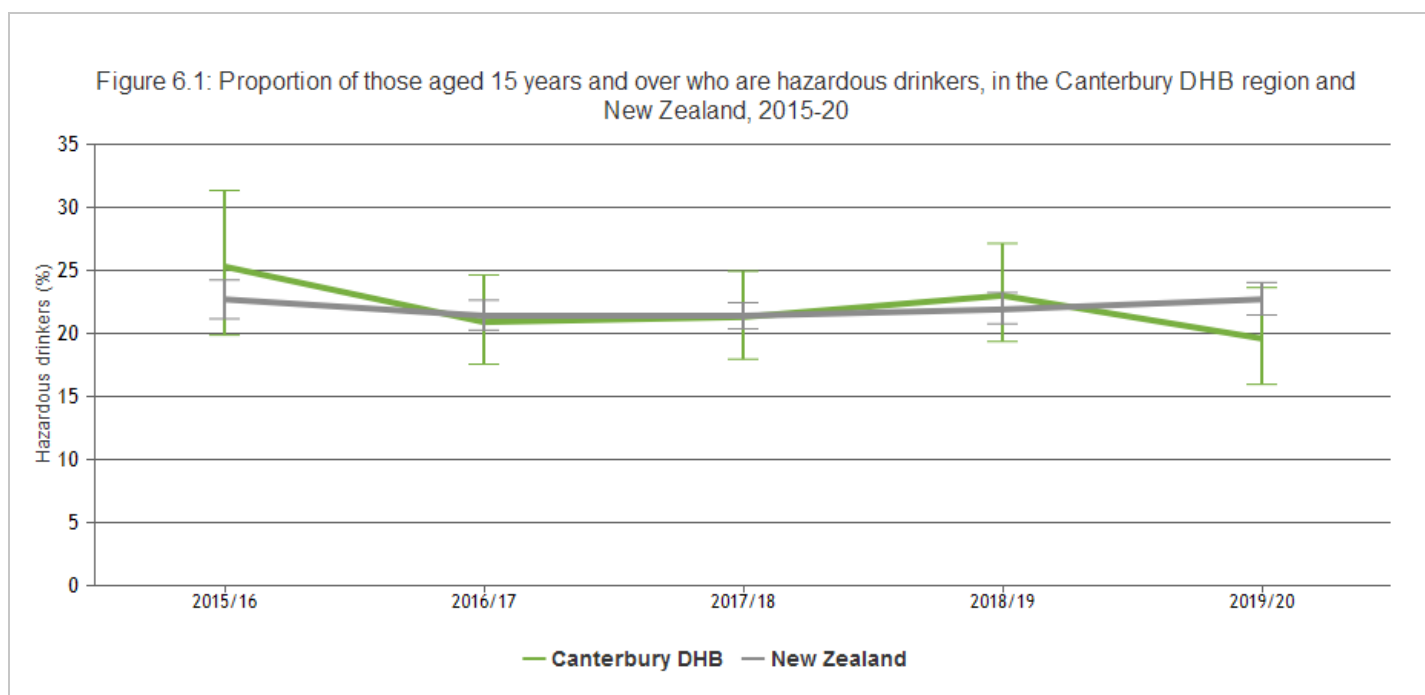
Source data frequency: Survey conducted continuously with data reported annually. Regional results (pooled data) released every 3 years.

Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

HAZARDOUS DRINKING

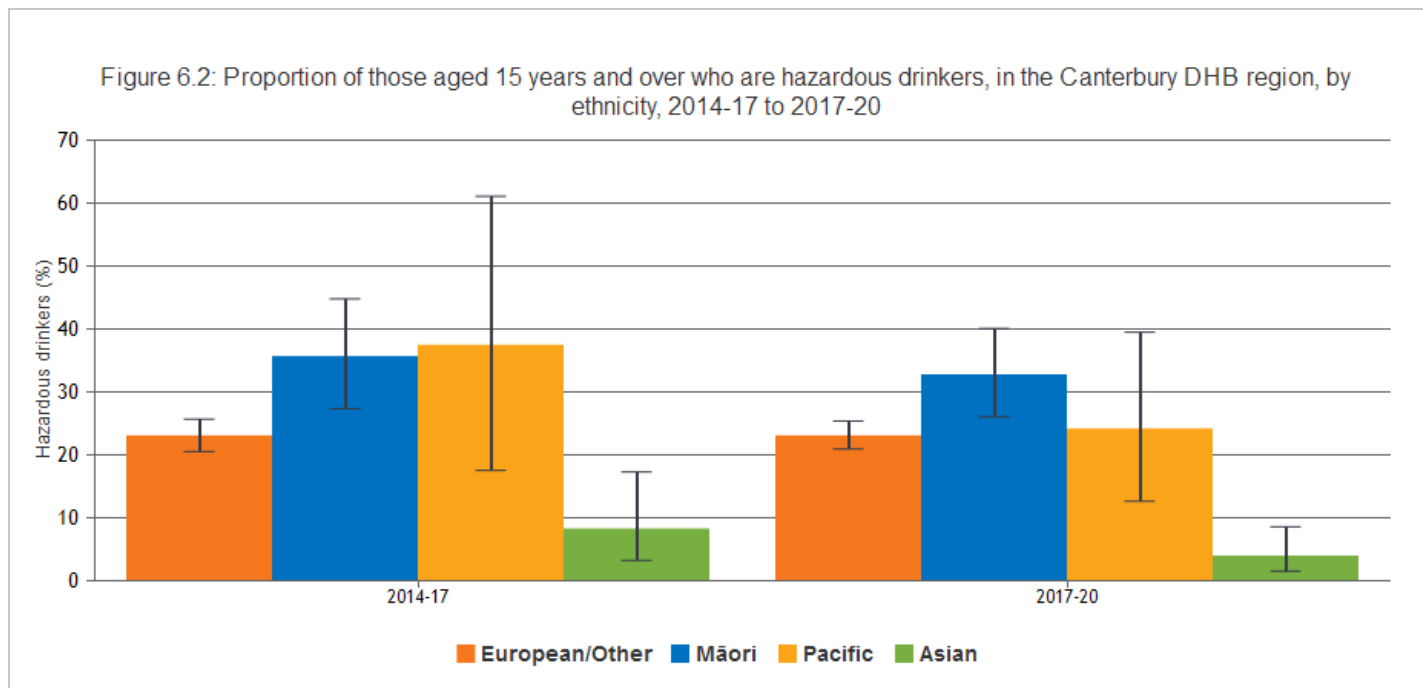
Alcohol is the most commonly used recreational drug in New Zealand, and approximately one-in-five people over the age of 15 drink alcohol at levels that may be considered hazardous [31]. Hazardous drinking refers to an established drinking pattern that carries a risk of harming the drinker's physical or mental health, or having harmful social effects on the drinker or others [32,33]. Alcohol is causally related to over 60 different health conditions and for almost all of these conditions, heavier alcohol use means higher risk of disease or injury (the level of consumption that minimises health loss is zero) [34-36]. It is estimated that between 600 and 1,000 people die from alcohol-related causes each year in New Zealand [37].

This indicator presents the proportion of those 15 years and over who are hazardous drinkers, using New Zealand Health Survey data, 2016/17 and 2017/18. Hazardous drinking is defined as a score of 8 or more on the 10-question Alcohol Use Disorders Test (AUDIT) [32].



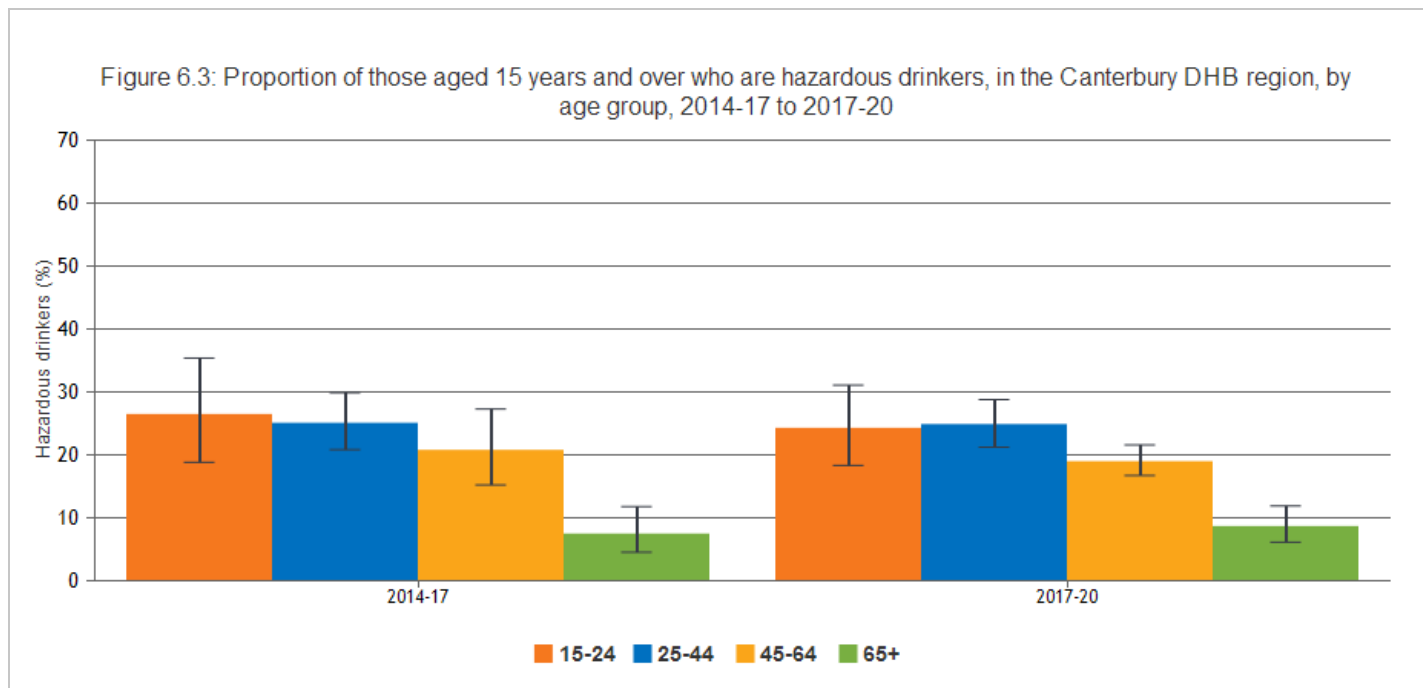
The figure shows that in the Canterbury DHB region and New Zealand, approximately one-in-five respondents over the age of 15 drink alcohol at levels that may be considered hazardous.

Breakdown by ethnicity



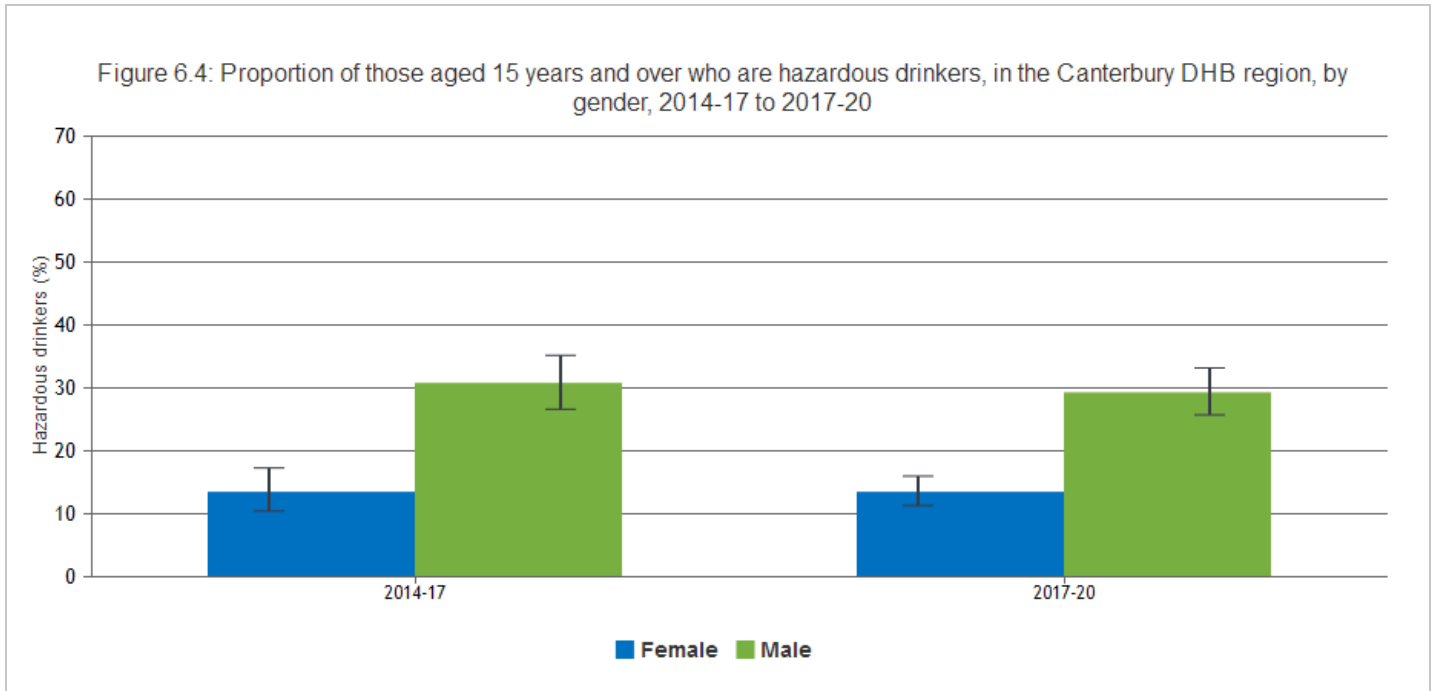
The figure shows the proportion of Māori, Pacific, Asian, and European/Other respondents, aged 15 years and over in the Canterbury DHB region, who indicated that they drink alcohol at levels that may be considered hazardous, for the period 2014–17 to 2017–20 (Māori, 32.8%; Pacific, 24.2%; Asian, 4%; European/Other, 23.1%, for 2017–20). For both the 2014–17 and 2017–20 timepoints, the proportion of Māori respondents reporting hazardous drinking was statistically significantly higher than for the Asian, and European/Other groups. Pacific respondents reported hazardous drinking at similar levels to that of Māori respondents. The proportion of Asian respondents, aged 15 years and over in the Canterbury DHB region, who indicated that they drink alcohol at levels that may be considered hazardous was statistically significantly lower than for Pacific, Māori, and European/Other respondents, for both 2014-17 and 2017-20. Note: the time series for the pooled data for this indicator is currently limited to two timepoints due to sample size limitations.

Breakdown by age



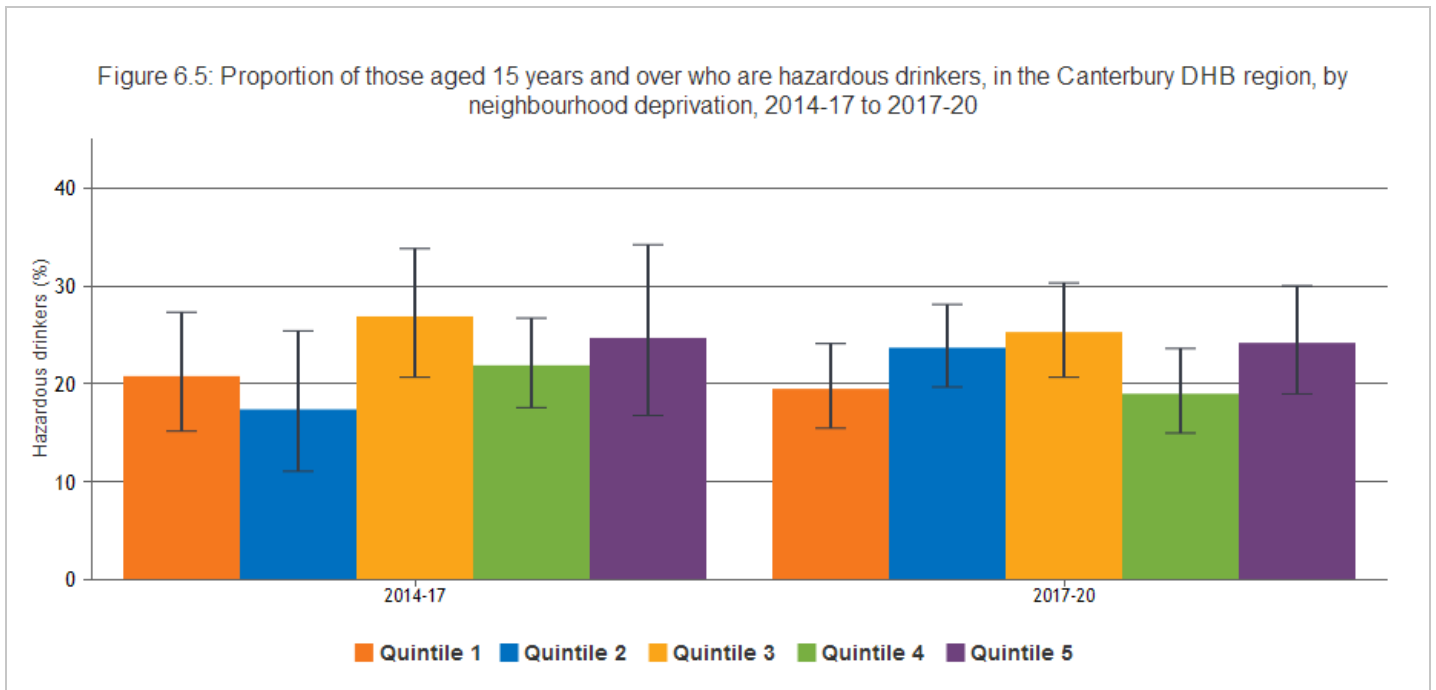
The figure shows the proportion of Māori, Pacific, Asian, and European/Other respondents, aged 15 years and over in the Canterbury DHB region, who indicated that they drink alcohol at levels that may be considered hazardous, for the period 2014–17 to 2017–20 (Māori, 32.8%; Pacific, 24.2%; Asian, 4%; European/Other, 23.1%, for 2017–20). For both the 2014–17 and 2017–20 timepoints, the proportion of Māori respondents reporting hazardous drinking was statistically significantly higher than for the Asian, and European/Other groups. Pacific respondents reported hazardous drinking at similar levels to that of Māori respondents. The proportion of Asian respondents, aged 15 years and over in the Canterbury DHB region, who indicated that they drink alcohol at levels that may be considered hazardous was statistically significantly lower than for Pacific, Māori, and European/Other respondents, for both 2014-17 and 2017-20. Note: the time series for the pooled data for this indicator is currently limited to two timepoints due to sample size limitations.

Breakdown by gender



The figure shows that the proportion of respondents, aged 15 years and over in the Canterbury DHB region, who indicated that they drink alcohol at levels that may be considered hazardous, is statistically similar for the 15 to 24 years, 25 to 44 years, and 45 to 64 years age groups, for the periods 2014–17 and 2017–20. However, the proportion of respondents aged 65+ years who indicated that they drink alcohol at levels that may be considered hazardous was statistically significantly lower than for all other age groups in both time periods.

Breakdown by deprivation



The figure shows the proportion of respondents, aged 15 years and over in the Canterbury DHB region, who indicated that they drink alcohol at levels that may be considered hazardous, by NZDep18 deprivation score. The differences in hazardous drinking between Canterbury respondents living in neighbourhoods that have the least deprived NZDep18 scores (Quintile 1) compared with the most deprived NZDep18 scores (Quintile 5) are not statistically significant.

Data Sources

Source: Ministry of Health.

Survey/data set: New Zealand Health Survey to 2020. Access publicly available data from the Ministry of Health website https://minhealthnz.shinyapps.io/nz-health-survey-2020-21-annual-data-explorer/_w_c2718a23/#!/explore-indicators

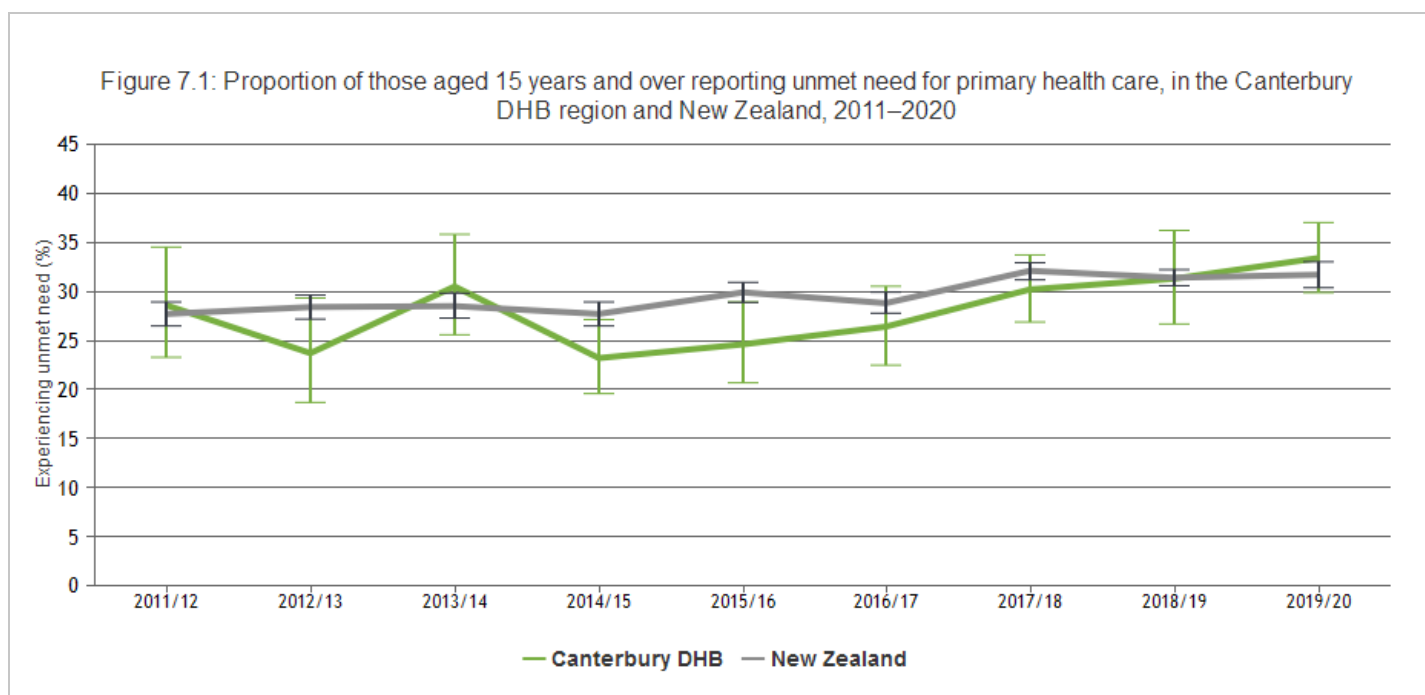
Source data frequency: Survey conducted continuously with data reported annually. Regional results (pooled data) released every 3 years.

Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

UNMET NEED

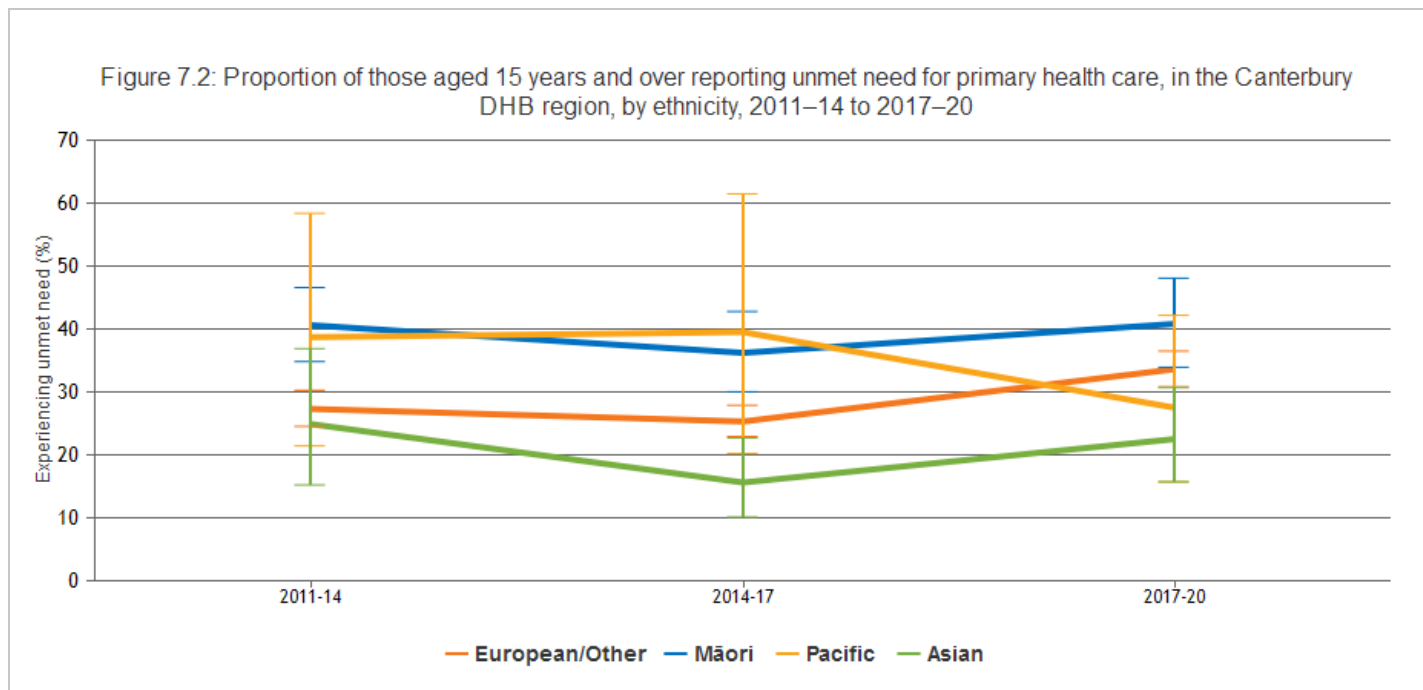
Primary health care services such as general practices and medical centres are usually the first point of contact with the health system. Good access to primary care is particularly important for vulnerable groups, including those who experience socioeconomic disadvantage [38]. The availability, coordination, and appropriateness of services, as well as funding arrangements, all influence how easily people can access the health and disability services they need [39,40].

This indicator presents the proportion of those 15 years and over reporting unmet need for primary health care as recorded in the New Zealand Health Survey. Unmet need in this context is defined as people having experienced one or more of the following types of unmet need for primary health care in the last 12 months: unable to get an appointment at their usual medical centre within 24 hours; unmet need for GP services due to cost and/or lack of transport; unmet need for after-hours services due to cost and/or lack of transport.



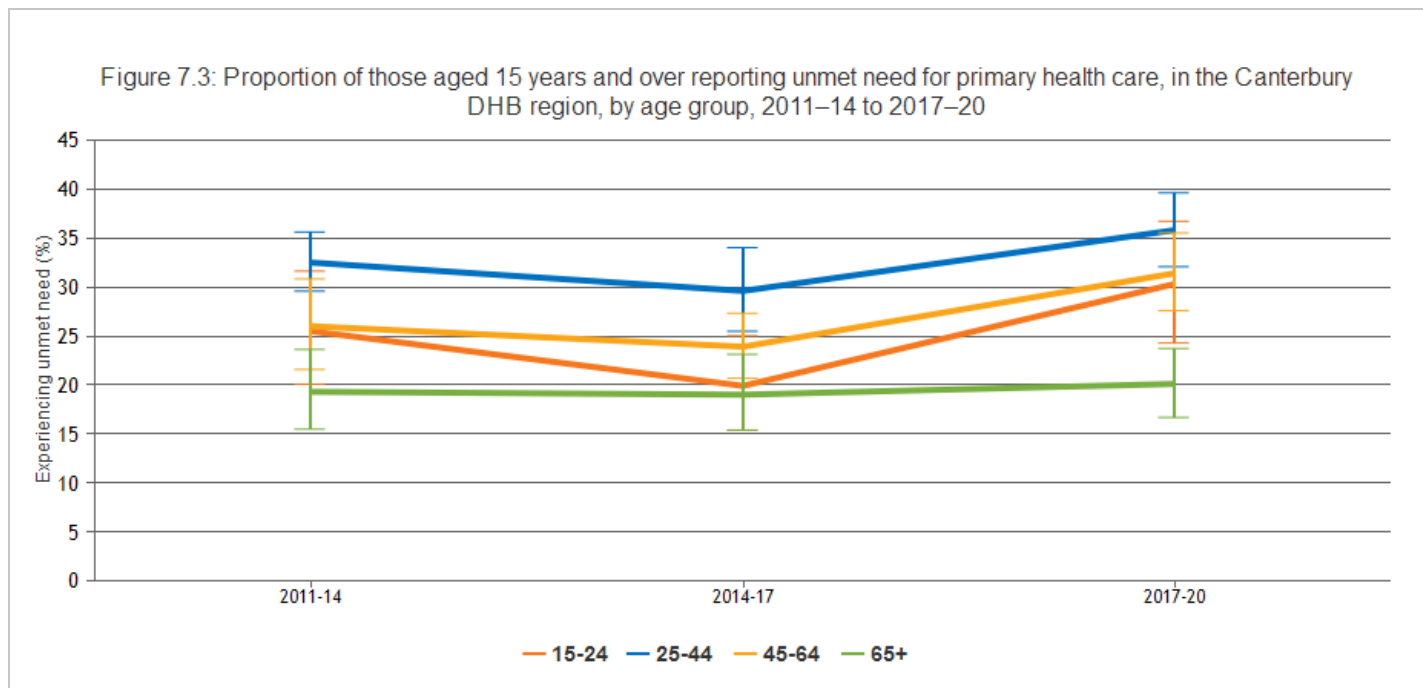
The figure shows, on average, about one-in-three Canterbury DHB region respondents reported experiencing some form of unmet need for primary care in 2019/20. The proportion of Canterbury DHB region respondents reporting unmet need for primary care has increased year-on-year since 2014/15 (23.2% in 2014/15 increasing to 33.4% in 2019/20, a statistically significant difference). Unmet need for primary care in the Canterbury DHB region was statistically similar to New Zealand overall, over the time series shown.

Breakdown by ethnicity



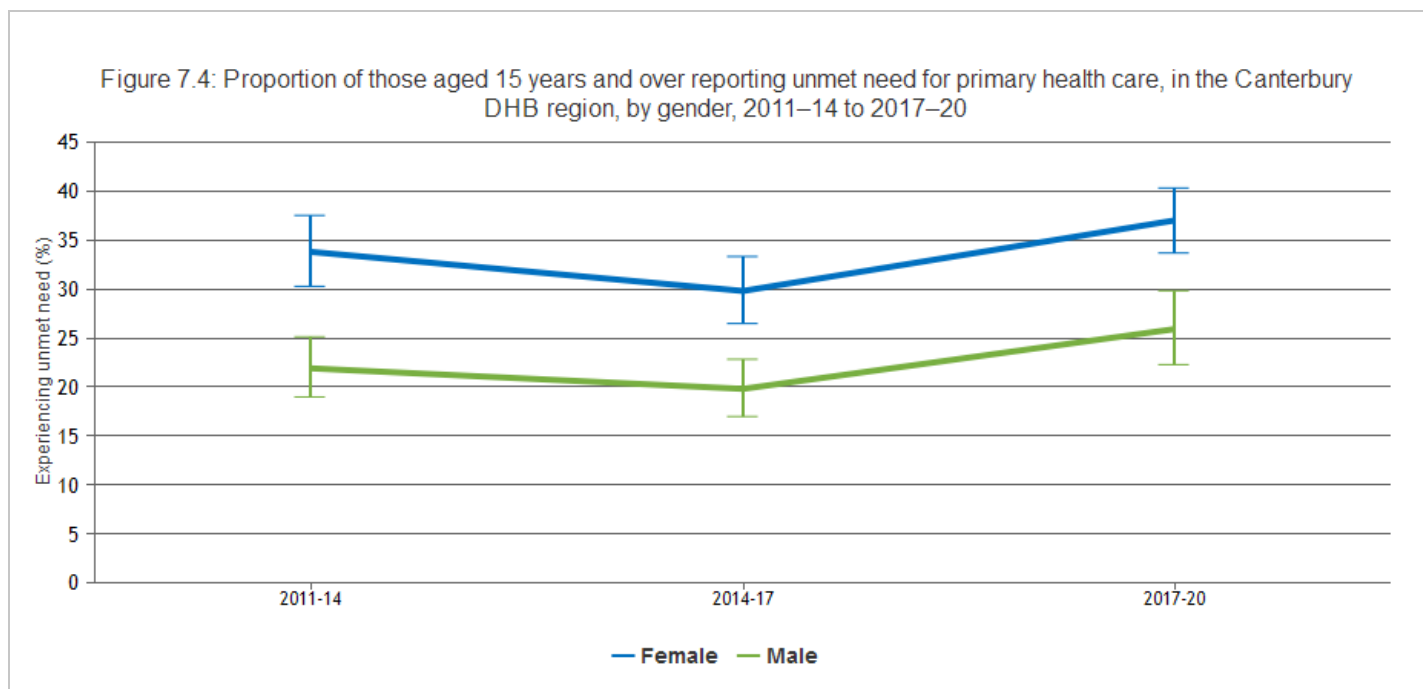
Approximately two out of five Māori respondents in the Canterbury DHB region (40.8%) indicated an unmet need for primary health care during the period 2017–20, compared with one third 33.6% for European/Other respondents in the Canterbury DHB region, although this difference is not statistically significant. Asian respondents had a lower prevalence of unmet need for primary health care compared with Māori, Pacific, and European/Other respondents, over the time series shown. In 2017/20, Asian respondents had a statistically significantly lower prevalence of unmet need compared with Māori respondents (22.5% vs. 40.8%). Overall, the pattern of unmet need for primary health care by ethnicity appears relatively stable over the time series shown (with the possible exception of Pacific respondents), although the precision of the estimates is low due to small sample sizes.

Breakdown by age



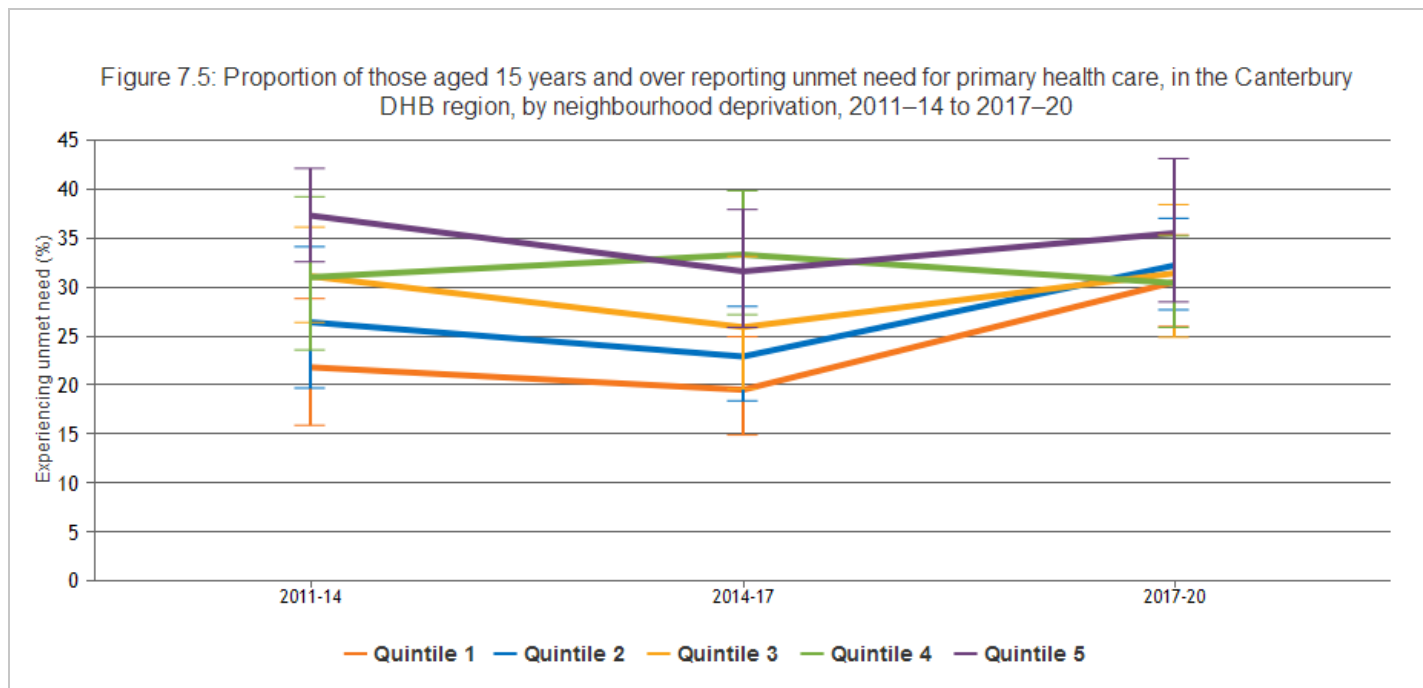
The figure shows a pattern of relatively higher unmet need for primary care (proportion of respondents aged 15 years and over reporting unmet need for primary health care in the past 12 months) for the 25 to 44 years age group in the Canterbury DHB region. In 2017-20, the proportion of respondents in the 25 to 44 years age group reporting unmet need (35.8%) was statistically significantly higher than for older people (65+ years, 20.1%).

Breakdown by gender



The figure shows a pattern of a higher level of unmet need for primary care (proportion of respondents aged 15 years and over reporting unmet need for primary health care) for female respondents compared with male respondents in the Canterbury DHB region. The proportion of female respondents indicating unmet need for primary care increased statistically significantly between 2014-17 and 2017–20, from 29.8 percent to 37.0 percent. The increase in the proportion of male respondents indicating unmet need for primary care was similar but not statistically significant (19.8% in 2014–17 increasing to 25.9% in 2017–20). The differences between female and male respondents are statistically significant at all timepoints shown.

Breakdown by deprivation



The figure shows that adult respondents living in the most socioeconomically deprived neighbourhoods of the Canterbury DHB region had statistically significantly higher rates of unmet need for primary health care in the past 12 months in the time periods 2011–14 and 2014–17 (37.3% and 31.6%) compared with those living in the least deprived neighbourhoods (21.8% and 19.5%). However, the pattern of unmet need for primary care, by neighbourhood deprivation, appears to have changed in 2017–20, and the difference between the most and least socioeconomically deprived neighbourhood groups is no longer statistically significant (35.5% and 30.5% for quintiles 5 and 1, respectively, 2017–20).

Data Sources

Source: Ministry of Health.

Survey/data set: New Zealand Health Survey to 2020. Access publicly available data from the Ministry of Health website https://minhealthnz.shinyapps.io/nz-health-survey-2020-21-annual-data-explorer/_w_0bb7535a/#!/explore-indicators

Source data frequency: Survey conducted continuously with data reported annually. Regional results (pooled data) released every 3 years.

Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

ACUTE MEDICAL ADMISSIONS

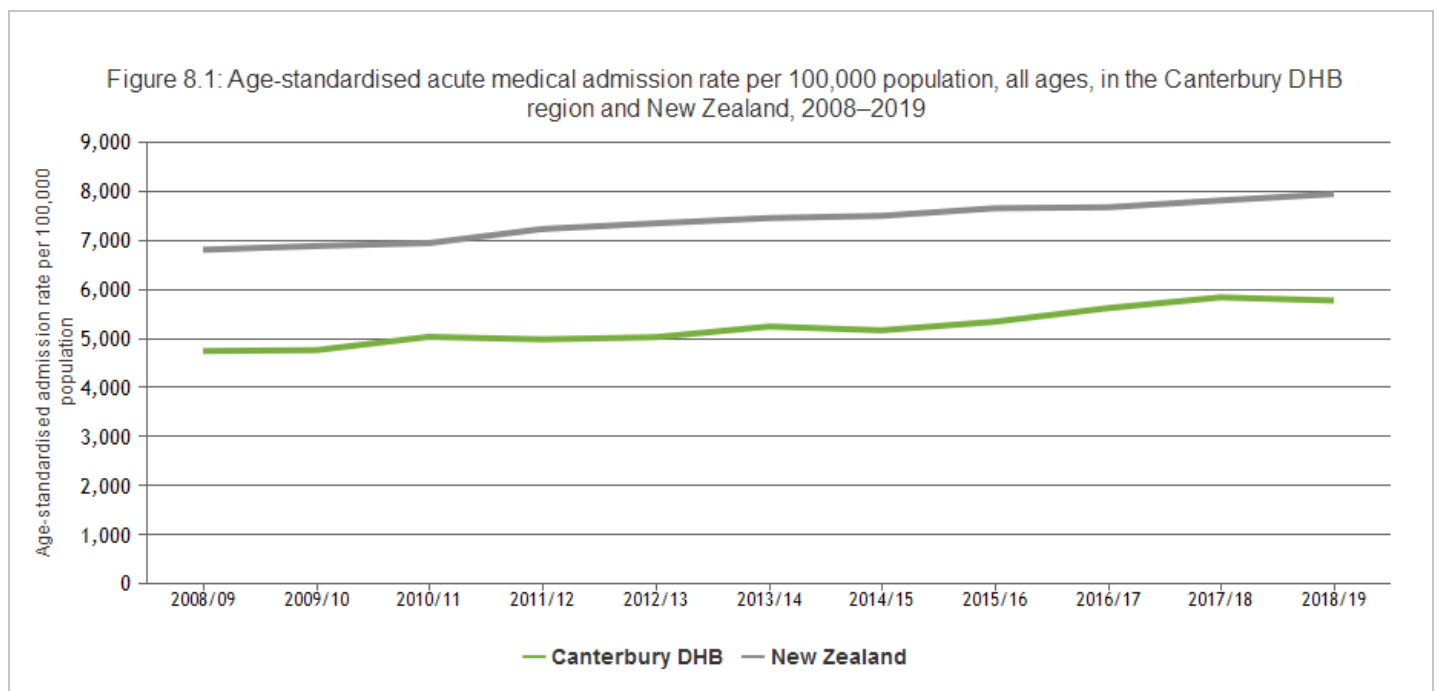
In an acute medical admission, a person is admitted to a hospital because they require urgent specialist attention, for any of a wide range of medical or frailty-related conditions.

An increase in acute medical admission rates may reflect improved access to health care but is more likely to represent a deterioration in the health status of the population and/or lost or underexplored opportunities to both protect against risk factors for developing long-term conditions and support people to manage those conditions by providing good care in the community (mainly through organised general practice) [8].

The most likely drivers of change in acute medical admission rates include: changes to provision of primary and community health care services [41]; demographic changes (for example an ageing population or changes in the proportions in different ethnic groups); shifts in the socioeconomic status of the population; changes in the prevalence of disease [42], including due to changes in risk factors such as smoking and alcohol consumption [43]; changes in the social context, such as increased expectations from patients; and other unknown factors [8].

Canterbury has had a long-standing primary care-led acute demand programme (Acute Demand Management Services, ADMS) that has focused on hospital admission avoidance, and 34,000 people were managed in the community in 2018/19 via the ADMS. The impact of this programme has been to enable a lower level of hospital admissions in Canterbury.

This indicator presents the age-standardised rate of acute medical admissions per 100,000 population, for all ages, in the Canterbury DHB region and New Zealand, 2008–2019.



The figure shows that the age-standardised rate of acute medical admissions has been steadily increasing over time in Canterbury DHB, and in New Zealand overall (Canterbury DHB, 4,743/100,000 and New Zealand, 6,809/100,000 in 2008/09 compared with Canterbury DHB, 5,772/100,000 and New Zealand, 7,945/100,000 in 2018/19). During the period 2008/09 to 2018/19, Canterbury DHB has maintained a lower age-standardised acute medical admission rate than New Zealand overall ($\approx 30\%$ difference).

Data Sources

Source: Canterbury District Health Board.

Survey/dataset: National Minimum Dataset, NZ Statistics population projections for population based funding.

Source data frequency: Annually.

Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

MENTAL HEALTH SERVICE ACCESS

It is relatively common for a person to experience a mental health disorder at some time in their life [44-46]. About 20 percent of the population may be experiencing a mental health disorder at any time [17,45,47]. Individuals with mental health disorders are at greater risk for decreased quality of life, educational difficulties, lowered productivity and poverty, homelessness, social problems, vulnerability to abuse, additional physical health problems, stigma, and suicide [44,45,48].

The first Blueprint for Mental Health Services in New Zealand [49] was based on an estimated three percent of the population needing access to publicly funded specialist mental health services in any six month period. Subsequently, the definition of the mental health and addiction sector has been broadened to include primary and community care and the delivery of responses beyond those most severely affected, acknowledging the impact of less severe mental health and addiction issues on people's health and day-to-day functioning [50]. Earlier access to services may reduce a person's progression to more severe conditions. With this transformation it is noted that more than three percent of the population will need to access newly integrated services [50].

Mental health care in New Zealand has undergone a transformation over the last several decades, moving from an institutional model to a model centred on engagement with services in community settings [45]. In recent years, record numbers of people have accessed mental health and addiction services across New Zealand [45,46]. This increase is consistent with international trends and has occurred in the context of population growth, growing social awareness, and increasingly open discussion of mental health issues.

Disasters such as the Canterbury earthquakes have well-documented negative impacts on mental health [51-53] with an estimated five to ten percent of the population likely to experience a deterioration in their psychological health and to seek or require intervention in the long term [54]. These impacts relate both to the immediate effects of the disaster and to ongoing or secondary stressors, such as a continued lack of infrastructure [55,56].

International literature suggests that approximately eight percent of those affected by mass shootings - such as the March 2019 Christchurch mosque attacks - may have moderate symptoms, and two percent chronic dysfunction [57]. The impact on individuals will be influenced by aspects including pre-existing risk factors, level of exposure to the incident, and different coping strategies [57].

This indicator presents the proportion of the population accessing mental health services (combined Non-Government Organisations, primary mental health, and specialist mental health services) in the Canterbury DHB region.

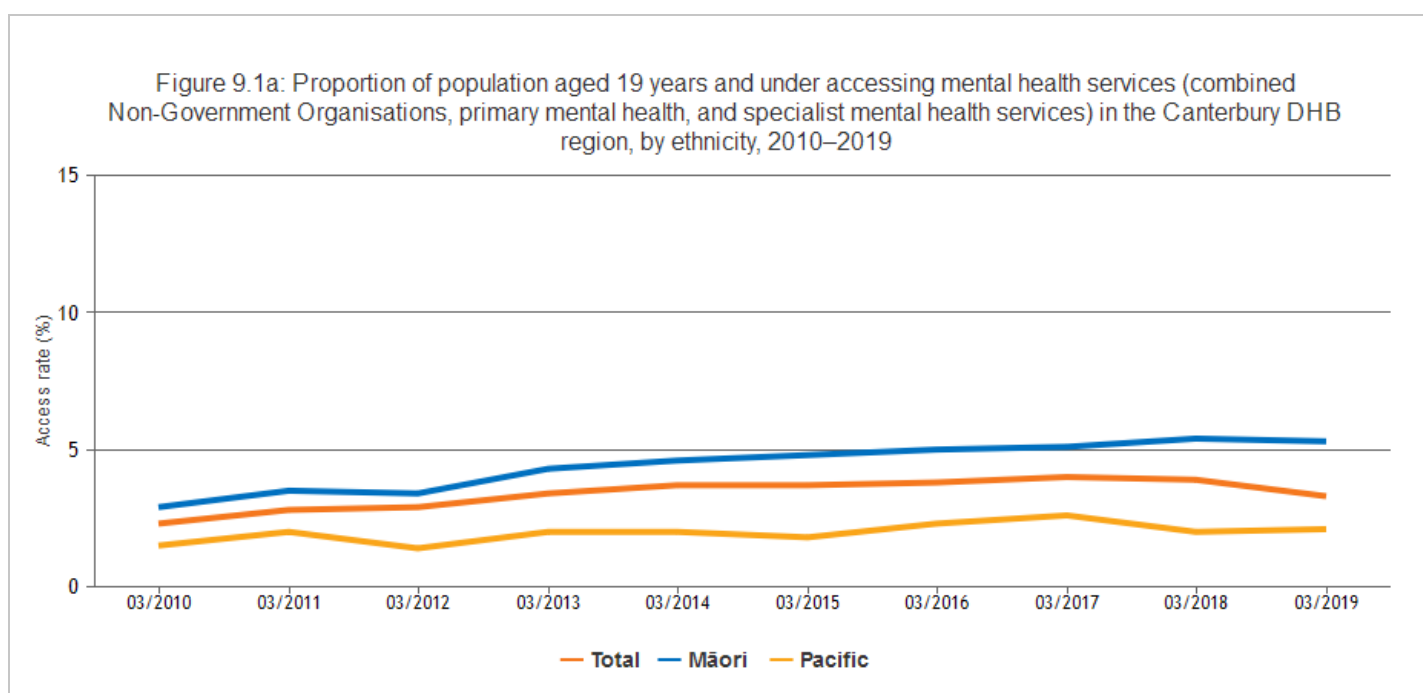


Figure 9.1b: Proportion of population aged 20 to 64 years accessing mental health services (combined Non-Government Organisations, primary mental health, and specialist mental health services) in the Canterbury DHB region, by ethnicity, 2010–2019

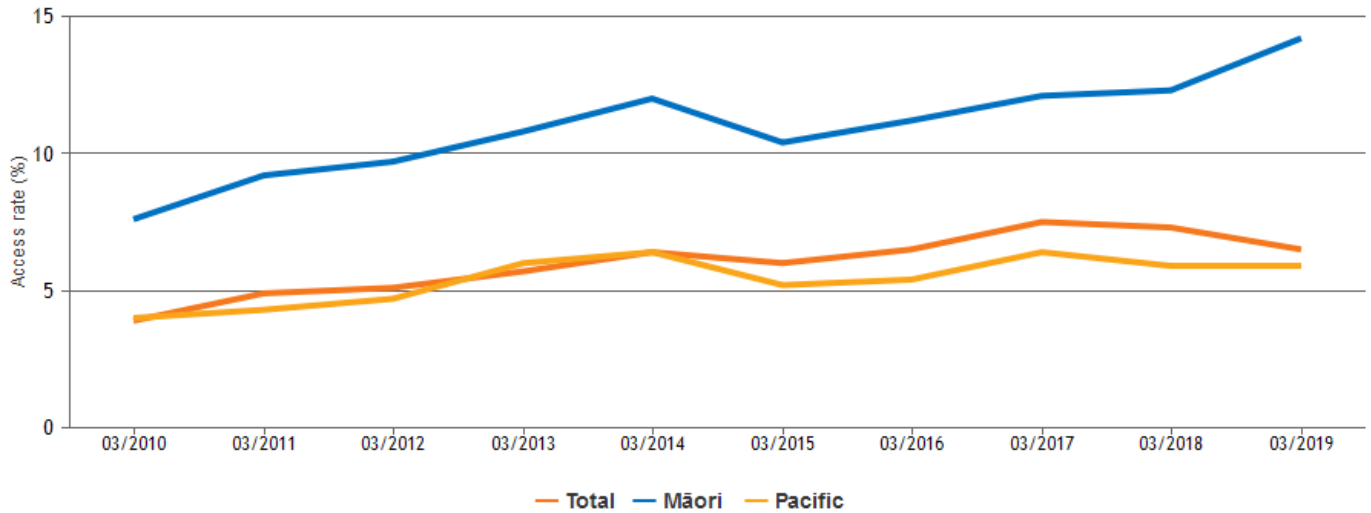
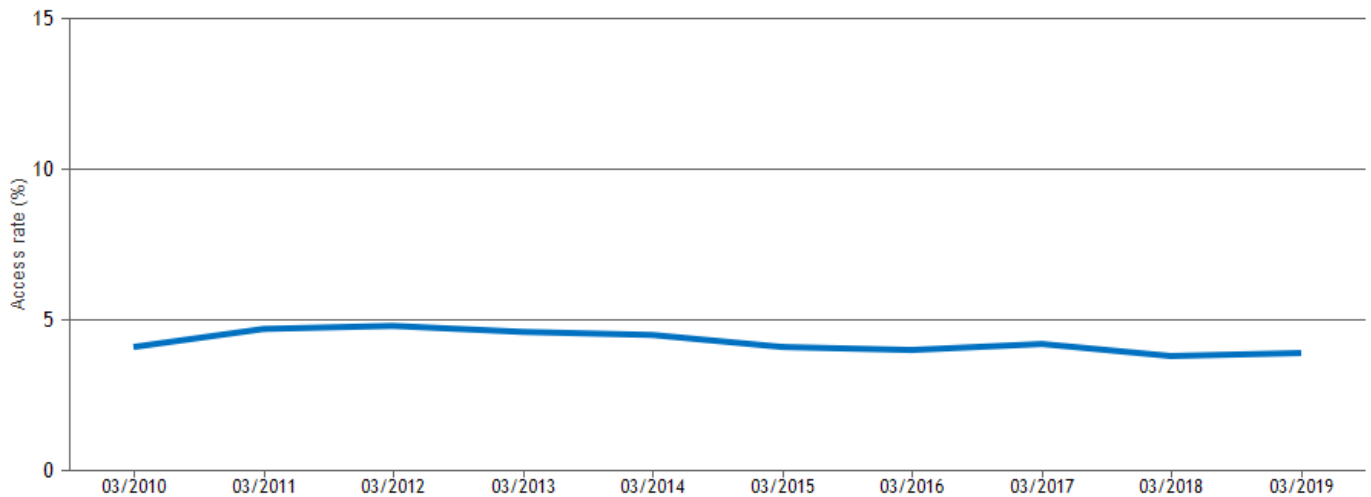


Figure 9.1c: Proportion of population aged 65 years and over accessing mental health services (combined Non-Government Organisations, primary mental health, and specialist mental health services) in the Canterbury DHB region, 2010–2019



The figures show that the proportion of the Canterbury DHB population accessing mental health services (combined Non-Government Organisations, primary mental health and specialist mental health services) has increased substantially over time. The picture varies by age group, with both a larger proportion accessing services and a greater rate of increase in this proportion for 20 to 64-year-olds (3.9% and 6.5% in March 2010 and March 2019, respectively) compared to 0 to 19-year-olds (2.3% and 3.3% in March 2010 and March 2019, respectively). Without national or other District Health Board data as comparators, it is difficult to determine from these data to what extent the increase in access is due to the impact of the Canterbury earthquakes, however an increase in mental health and addiction issues following natural disasters is well recognised [51-54]. The data time-series presented (to end March 2019) will not reflect the impact of the 15 March Christchurch mosque attacks on mental health service access.

The proportion of the population accessing mental health services differs between Māori, Pacific, and the total Canterbury DHB population. Service access for Māori and Pacific people appears notably different, both from each other, and in relation to the total Canterbury DHB population.

Among those aged 0 to 19 years, service access by Māori is above the total Canterbury DHB population level, and by Pacific is below. Among those aged 20 to 64 years, the most notable difference is the gap between Māori and the total population, with Pacific being similar to the total Canterbury DHB population. The data do not provide insight into the extent the differences by

ethnic group are driven by disease burden and/or other factors, including service factors affecting access, such as cultural appropriateness. The proportion of Māori in Canterbury accessing services suggests that this population has a greater burden of mental disorder compared to the total population, and this pattern is also seen nationally [47]. For Pacific people, national data indicate both a higher burden of mental illness than the general population and low access to services relative to need, particularly for Pacific children and adolescents [47,50].

Figure 9.1c also shows that the mental health service use in Canterbury for those aged 65 years and over has been consistently below five percent of the population over the period 2010 to 2019.

Data Sources

Source: Canterbury District Health Board.

Survey/data set: Administrative data to 2019. Custom data request for Canterbury DHB region.

Source data frequency: Annually.

Metadata for this indicator is available at <https://www.canterburywellbeing.org.nz/index-data>

REFERENCES

- 1 Marmot M, Allen J, Bell R, Bloomer E, Goldblatt P (2012) WHO European review of social determinants of health and the health divide. *Lancet* 380: 1011-1029.
- 2 Keefe V, Reid P, Ormsby C, Robson B, Purdie G, et al. (2002) Serious health events following involuntary job loss in New Zealand meat processing workers. *International Journal of Epidemiology* 31: 1155-1161.
- 3 Howden-Chapman P, Matheson A, Crane J, Viggers H, Cunningham M, et al. (2007) Effect of insulating existing houses on health inequality: cluster randomised study in the community. *BMJ* 334: 460.
- 4 Ross CE, Wu C-I (1995) The Links Between Education and Health. *American Sociological Review* 60: 719-745.
- 5 McKee-Ryan F, Song Z, Wanberg CR, Kinicki AJ (2005) Psychological and physical well-being during unemployment: a meta-analytic study. *J Appl Psychol* 90: 53-76.
- 6 Cormack DM, Harris RB, Stanley J (2014) Investigating the Relationship between Socially-Assigned Ethnicity, Racial Discrimination and Health Advantage in New Zealand. *PLoS ONE* 8: e84039.
- 7 Robson B, Harris R (2007) *Hauora: Māori Standards of Health IV. A study of the years 2000–2005*; Robson B, Harris R, editors. Wellington: Te Rōpū Rangahau Hauora a Eru Pōmare.
- 8 Hider P (1998) *Acute medical admissions: a critical appraisal of the literature*. New Zealand Health Technology Assessment Clearing House.
- 9 Peter M. Fayers, Hays RD, editors (2005) *Assessing Quality of Life in Clinical Trials: Methods and Practice*. 2 ed. Oxford: UK: Oxford University Press. 467 p.
- 10 Idler EL, Benyamini Y (1997) Self-rated health and mortality: a review of twenty-seven community studies. *J Health Soc Behav* 38: 21-37.
- 11 CDHB (2017) *Canterbury Wellbeing Survey, June 2017: Report prepared by Nielsen for the Canterbury District Health Board and partnering agencies*. Christchurch: Canterbury District Health Board.
- 12 Health Promotion Agency (2020) Smokefree facts and figures. Retrieved from <https://www.smokefree.org.nz/smoking-its-effects/facts-figures>.
- 13 Ministry of Health (2019) *Annual Data Explorer 2018/19: New Zealand Health Survey* [Data File]. Retrieved from <https://minhealthnz.shinyapps.io/nz-health-survey-2018-19-annual-data-explorer/>.
- 14 National Center for Chronic Disease Prevention and Health Promotion (US) (2014) *The Health Consequences of Smoking—50 Years of Progress: A Report of the Surgeon General. Patterns of Tobacco Use Among U.S. Youth, Young Adults, and Adults*. Atlanta (GA): Office on Smoking and Health, Centers for Disease Control and Prevention (US).
- 15 U.S. Department of Health and Human Services (USDHHS) (1994) *A report of the Surgeon General: Preventing tobacco use among young people*. Atlanta, GA: Department of Health and Human Services, Public Health Service, Centers for Disease Control and Prevention, National Center for Chronic Disease Prevention and Health Promotion, Office on Smoking and Health.
- 16 U.S. Department of Health and Human Services (USDHHS) (2012) *Preventing Tobacco Use Among Youth and Young Adults: A Report of the Surgeon General*. Atlanta (GA): Centers for Disease Control and Prevention (US).
- 17 Ministry of Health (2013) *Health Loss in New Zealand: A report from the New Zealand Burden of Diseases, Injuries and Risk Factors Study, 2006–2016*. Wellington: Ministry of Health.
- 18 Banks E, Joshy G, Weber MF, Liu B, Grenfell R, et al. (2015) Tobacco smoking and all-cause mortality in a large Australian cohort study: findings from a mature epidemic with current low smoking prevalence. *BMC Medicine* 13: 38.
- 19 World Health Organization (2015) *WHO report on the global tobacco epidemic, 2015: Raising taxes on tobacco*. Geneva: WHO. ISBN 978 92 4 069460 6.
- 20 Ministry of Health (2018) *Regional Data Explorer 2014–17: New Zealand Health Survey* [Data File].
- 21 Ministry of Health (2017) *Methodology Report 2016/17: New Zealand Health Survey*. Wellington: Ministry of Health.
- 22 WHO (2007) *Global Database on Body Mass Index*. Geneva: World Health Organization.
- 23 Ministry of Health (2017) *Clinical Guidelines for Weight Management in New Zealand Adults*. Wellington: Ministry of Health, Clinical Trials Research Unit.
- 24 Ministry of Health (2018) Obesity. Retrieved from www.health.govt.nz/our-work/diseases-and-conditions/obesity

- 25 Ministry of Health (2016) *Annual Update of Key Results 2015/16: New Zealand Health Survey*. Wellington: Ministry of Health.
- 26 Swinburn BA, Sacks G, Hall KD, McPherson K, Finegood DT, et al. (2011) The global obesity pandemic: shaped by global drivers and local environments. *Lancet* 378: 804-814.
- 27 Drewnowski A (2009) Obesity, diets, and social inequalities. *Nutr Rev* 67 Suppl 1: S36-39.
- 28 Physical Activity Guidelines Advisory Committee (2018) *2018 Physical Activity Guidelines Advisory Committee Scientific Report*. Washington, DC: U.S. Department of Health and Human Services.
- 29 McLean G, Tobias M (2004) *The New Zealand Physical Activity Questionnaire: Report on the validation of the NZPAQ-long and NZPAQ-short form physical activity questionnaires*. Wellington: Sport and Recreation New Zealand.
- 30 Craig CL, Marshall AL, Sjoström M, Bauman AE, Booth ML, et al. (2003) International physical activity questionnaire: 12-country reliability and validity. *Med Sci Sports Exerc* 35: 1381-1395.
- 31 Ministry of Health (2018) Annual Data Explorer 2017/18: New Zealand Health Survey [Data File].
- 32 Babor TF, Higgins-Biddle JC, Saunders JB, Monteiro MG, World Health Organization (2001) *AUDIT: the alcohol use disorders identification test: guidelines for use in primary health care*. Geneva: World Health Organization.
- 33 Ministry of Health (2013) Hazardous drinking in 2011/12: Findings from the New Zealand Health Survey. Retrieved from [www.moh.govt.nz/NoteBook/nbbooks.nsf/0/81BF301BDCF63B94CC257B6C006ED8EC/\\$file/12-findings-from-the-new-zealand-health-survey.pdf](http://www.moh.govt.nz/NoteBook/nbbooks.nsf/0/81BF301BDCF63B94CC257B6C006ED8EC/$file/12-findings-from-the-new-zealand-health-survey.pdf)
- 34 Braillon A, Dubois G (2005) Alcohol and public health. *Lancet* 365: 1387.
- 35 Health Promotion Agency (2016) *Alcohol – the Body and Health Effects: A brief overview*. Wellington: Health Promotion Agency.
- 36 GBD 2016 Alcohol Collaborators (2018) Alcohol use and burden for 195 countries and territories, 1990-2016: a systematic analysis for the Global Burden of Disease Study 2016. *Lancet* 392: 1015-1035.
- 37 Connor, J., Kydd, R., Shield, K., & Rehm, J. (2015). The burden of disease and injury attributable to alcohol in New Zealanders under 80 years of age: marked disparities by ethnicity and sex. *N Z Med J*, 128(1409), 15-28.
- 38 Hall JJ, Taylor R (2003) Health for all beyond 2000: the demise of the Alma-Ata Declaration and primary health care in developing countries. *Med J Aust* 178: 17-20.
- 39 Winnard D, Crampton P, Cumming J, Sheridan N, Neuwelt P, et al. (2008) *Population Health – Meaning in Aotearoa New Zealand? A discussion paper to support implementation of the Primary Health Care Strategy*. Auckland: Auckland Regional Public Health Service.
- 40 Neuwelt P, Matheson D, Arroll B, Dowell A, Winnard D, et al. (2009) Putting population health into practice through primary health care. *NZ Med J* 122: 98-104.
- 41 Schluter PJ, Hamilton GJ, Deely JM, Ardagh MW (2016) Impact of integrated health system changes, accelerated due to an earthquake, on emergency department attendances and acute admissions: a Bayesian change-point analysis. *BMJ Open* 6: e010709.
- 42 Galenkamp H, Deeg DJH, de Jongh RT, Kardaun JWPF, Huisman M (2016) Trend study on the association between hospital admissions and the health of Dutch older adults (1995–2009). *BMJ Open* 6: e011967.
- 43 Canning UP, Kennell-Webb SA, Marshall EJ, Wessely SC, Peters TJ (1999) Substance misuse in acute general medical admissions. *QJM: An International Journal of Medicine* 92: 319-326.
- 44 Kessler RC, Angermeyer M, Anthony JC, R DEG, Demyttenaere K, et al. (2007) Lifetime prevalence and age-of-onset distributions of mental disorders in the World Health Organization's World Mental Health Survey Initiative. *World Psychiatry* 6: 168-176.
- 45 Ministry of Health (2017) *Office of the Director of Mental Health Annual Report 2016*. Wellington: Ministry of Health.
- 46 Ministry of Health (2018) PRIMHD: Mental health data. Retrieved from www.health.govt.nz/nz-health-statistics/national-collections-and-surveys/collections/primhd-mental-health-data
- 47 Oakley Browne MA (2006) Lifetime prevalence and lifetime risk of DSM-IV disorders. In: Oakley Browne MA, Wells JE, Scott KM, editors. *Te Rau Hinengaro: The New Zealand Mental Health Survey*. Wellington: Ministry of Health.
- 48 Kessler RC, Foster CL, Saunders WB, Stang PE (1995) Social consequences of psychiatric disorders, I: Educational attainment. *American Journal of Psychiatry* 152: 1026–1032.
- 49 The Mental Health Commission (1998) *Blueprint for Mental Health services in New Zealand. How things need to be*. Wellington: The Mental Health Commission.
- 50 The Mental Health Commission (2012) *Blueprint II Improving mental health and wellbeing for all New Zealanders. How things need to be*. Wellington: The Mental Health Commission.

- 51 Cerdá M, Tracy M, Galea S (2011) A prospective population based study of changes in alcohol use and binge drinking after a mass traumatic event. *Drug & Alcohol Dependence* 115: 1-8.
- 52 Fergusson DM, Horwood J, Boden JM, Mulder RT (2014) Impact of a Major Disaster on the Mental Health of a Well-Studied Cohort. *JAMA Psychiatry* 71: 1025-1031.
- 53 Galea S, Nandi A, Vlahov D (2005) The epidemiology of post-traumatic stress disorder after disasters. *Epidemiol Rev* 27: 78-91.
- 54 Gluckman P (2011) *The psychological consequences of the Canterbury earthquakes*. Wellington: Office of the Prime Minister's Science Advisory Committee.
- 55 Kessler RC, McLaughlin KA, Koenen KC, Petukhova M, Hill ED, et al. (2012) The importance of secondary trauma exposure for post-disaster mental disorder. *Epidemiology and Psychiatric Sciences* 21: 35-45.
- 56 Lock S, Rubin GJ, Murray V, Rogers MB, Amlot R, et al. (2012) Secondary stressors and extreme events and disasters: a systematic review of primary research from 2010-2011. *PLoS Curr* 4.
- 57 Kerdemelidis M, Reid MC. (2019) *Wellbeing recovery after mass shootings: information for the response to the Christchurch mosque attacks 2019. Rapid literature review*. Christchurch, New Zealand: Planning and Funding, Canterbury District Health Board.

FIND OUT MORE

> **New Zealand Health Survey**

This annual survey is conducted by the Ministry of Health and contains many indicators of health for adults and children available at both national and regional level.

> **Canterbury DHB annual report**

The 2018/19 annual report from the Canterbury DHB includes data on a number of health issues.

> **Health indicators**

A Ministry of Health-funded, Massey University website that provides data at a regional level on a number of health-related indicators, including hospital use, cancer, and alcohol harm.

> **Mana Ake - Stronger for Tomorrow**

This is an initiative to promote wellbeing and positive mental health for children in school years 1-8 across Canterbury.

> **Christchurch Alcohol Action Plan**

The Christchurch Alcohol Action Plan 2017-2021 includes strategies and actions aimed at reducing alcohol harm across Christchurch. The Plan is informed by New Zealand and international evidence, local data, and by what our stakeholders and communities are saying about alcohol-related harm and how best to reduce it.