



ASIAN HEALTH in Aotearoa AUG 2024

Findings from the New Zealand Health Survey 2002–2021

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The Asian Network Inc. (TANI)

Publisher

The Asian Network Inc. (TANI)

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August 2024

ISBN

Softcover: 978-0-473-71167-2

PDF: 978-0-473-71168-9

Suggested citation

Wu Z, Wong SF, Scragg R. 2024. Asian Health in Aotearoa: Findings from the New Zealand Health Survey 2002–2021. The Asian Network Inc.

FOREWORD

Professor Sir Ashley Bloomfield
University of Auckland



This report is an important milestone for Asian Health in Aotearoa New Zealand. It is the first report to comprehensively analyse data from the New Zealand Health Survey over a 20-year period, and provide comparisons not just with other ethnic groups, but also between South Asian, Chinese and other Asian participants.

Effective public health action relies on not just good data, but good intelligence. It is one thing to collect information – and the value of the New Zealand Health Survey is hard to overstate in this regard – but most important is the intelligence and knowledge that is generated from such surveys. Knowledge forms the basis for action, in this case the development of policies and programmes intended to protect and improve health and address any inequalities identified.

Some of the findings outlined in the report are encouraging, including low rates of smoking and comparatively low rates of harmful use of alcohol among Asian populations. Other findings are concerning and should prompt action: lower rates of fruit and vegetable consumption and physical activity; higher rates of discrimination on the basis of ethnicity; and lower rates of primary care enrolment.

The majority of Asian adults in Aotearoa have lived here for more than ten years, and many of their (and their children's) health behaviours and exposure to health risks have changed over the last 20 years. Programmes and initiatives to improve the health of Asian populations in New Zealand need to take this into account.

The trend information in the report is arguably the most useful: "Trends are your friend", as I regularly tell students! Those trends and the other analyses in the report provide information and knowledge for action. As such, Asian Health in Aotearoa is a timely and important contribution and I congratulate the authors and The Asian Network Inc on its publication.

Professor Sir Ashley Bloomfield

University of Auckland



FOREWORD

Dr Kumanan Rasanathan
Executive Director,
Alliance for Health Policy and Systems Research,
WHO, Geneva, Switzerland



It is a great pleasure to see this report on recent New Zealand Health Surveys, focusing on the health of Asian peoples in Aotearoa. Congratulations to The Asian Network Inc. (TANI) and the authors for continuing the work they started twenty years ago with their pioneering analysis of the 2002-2003 New Zealand Health Survey. Like its predecessors, this report is essential reading for all who care about health and health inequalities in Aotearoa – for health workers, policy-makers, programme managers, and communities alike.

The consideration of the trends since 2002-2003 is a welcome addition. While much has changed for Asian communities in Aotearoa over this period, this report shows that much remains the same. Most Asian New Zealanders enjoy relatively good health and there are persisting positive trends in terms of tobacco, alcohol and substance use. But worryingly, the challenges of inadequate nutrition, low levels of physical activity, and poor access to primary care identified twenty years ago remain with little improvement, or even deterioration. Of greatest concern is the persisting racism that Asian peoples in Aotearoa experience, which has substantive impacts on their health.

Many of the trends predicted during the early work on the health of Asian peoples in Aotearoa in the 2000s have come to pass. Asian peoples in New Zealand have now predominantly been resident more than ten years, or born in the country, resulting in waning of the healthy immigrant effect (mostly responsible for the comparatively positive health indicators for Asian peoples) with acculturation often leading to increasing levels of health risk factors. The diversity of peoples collected under the term “Asian” in Aotearoa continues to increase and there is a need for future reports to shed greater light on communities who do not identify as Chinese or Indian.

This report again confirms the need to avoid complacency or assumptions about the health of Asian peoples in Aotearoa. Thanks to organizations like The Asian Network Inc. (TANI), more is known than twenty years ago about their health status and challenges. But despite some progress, there is still insufficient policy and programming for the specific health challenges of Asian peoples, or to combat racism, which is the key structural determinant underlying many of these challenges.

The 2023 Census reported that over 17% of the population identifies with an Asian ethnic group. I hope that the nuanced analysis in this report, including the clear evidence of lack of progress on challenges over two decades, will be a catalyst for more substantive engagement in the New Zealand health and health-related sectors to improve the wellbeing of Asian peoples in Aotearoa.



**World Health
Organization**

FOREWORD

Rt Hon Chris Hipkins
Leader of the Opposition



The Asian population is the fastest growing group of ethnicities in Aotearoa New Zealand. Despite this, New Zealand has historically lacked Asian health-specific data and research compared to other ethnic groups.

It is for that reason that I welcome the findings of this investigation into Asian health with great pleasure.

Off the back of the New Zealand Health Survey data collected between 2002-2021, the authors of this report have been able to identify trends, which will in turn assist researchers and health professionals to identify risks, and officials to develop mitigation policies.

This report and its findings will go far to close knowledge gaps and provide a more accurate outlook and predictions on Asian health. The analysed data will allow public health officials to know where to better insert Asian health on the public health agenda, intervene and provide culturally-appropriate services.

We know that Asian ethnic groups tend to have a lower rate of access to public health services. We can, and must do better to meet these needs and ensure no population, or person, is missed out within the public health system.

I thank the Asian Network Inc for this contribution, and for their ongoing work to develop the Asian health narrative in New Zealand.



Rt Hon Chris Hipkins
Leader of the Opposition



A MESSAGE FROM

Vishal Rishi
CEO of The Asian Network Inc. (TANI)



As we commemorate our 22nd anniversary as an organisation, we are also gearing up to address the growing health and social care needs of Asian Communities. Unfortunately, there is still no government national plan or strategy for Asian communities, and there is a lack of emphasis on comprehending their unique health needs within the mainstream approach. In such a scenario, it becomes even more crucial to share and analyse data to create awareness of Asian Health needs within the system and push governments to act on the data they collect.

We took the initiative to commission this report, the findings of which are significant to the New Zealand health system and policymakers. The report uses New Zealand Health Survey (NZHS) data to provide an updated and comprehensive overview of the health status of Asian people in New Zealand, highlighting the trends in Asian health between 2002 and 2021. It also offers a current snapshot of the health status in 2019-20 and 2020-21.

Over the last two decades, Asians in New Zealand have generally enjoyed good health. However, the rapidly growing Asian population in New Zealand could present unique challenges, particularly in supporting the communities to understand and access, health and disability services in a timely and culturally appropriate manner.

Some worrying trends could have negative consequences, especially about lifestyle-related risk factors such as alcohol consumption and obesity and the Asian population's ability to deal with such health concerns. Another trend that affects the health and well-being of Asians is the increase in racism. From 2011-12 to 2020-21, the prevalence of racially motivated attacks has increased for South Asians from 16% to 24% and for Chinese from 32% to 41%. The experience of racism is known to have significant health impacts, particularly a negative long-term effect on mental health. Mental health issues and suicide affecting Asians in NZ have been a growing and relatively hidden problem in the past. Compared to other groups, Asians are less likely to seek professional support via mainstream services, whether from a doctor, another health professional, or an organisation. These trends suggest that the "healthy migrant effect" may decline over time, deteriorating the situation.

This report is an analysis of New Zealand Health Survey data for Asian communities, shedding light on critical issues that require attention to improve community health outcomes. It provided a segregated analysis of different Asian population groups, highlighting the variation of health needs and experiences. However, despite its importance, no government agency was willing to fund this report, and TANI had to use its reserve funds to support this work. New Zealand's health agencies need to do more to use available data and insights to manage the needs of Asian communities effectively. A data-driven approach will help in understanding the unique requirements of Asian communities, enabling informed decision-making and investments.

We hope and encourage all those working to improve health outcomes for Asian communities to act on this comprehensive report and we call for the government to embed Asian Health needs within the new health system systematically.

The **A**  **Asian Network**
Incorporated

ACKNOWLEDGEMENTS

The Asian Network Incorporated (TANI) appreciates Professor Robert Scragg and his team, co-authors Sally Wong and Dr. Zhenqiang Wu, for their exhaustive work of reviewing the literature, compiling and analysing the data, and crafting this report. We acknowledge Stats NZ for providing access to the data used in this report. This data was provided under conditions designed to keep individual information secure in accordance with the requirements of the Statistics Act 1975. The opinions presented are those of the authors and do not necessarily represent an official view of Stats NZ. We also acknowledge the staff at the Ministry of Health, and in particular the NZ Health Surveys Team, who supported provision of the data. A special thanks to Dr. Grace Wong for providing valuable input and reviewing and proofreading the report.



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ABBREVIATIONS

AAPI	Asian American Pacific Islander	MOH	Manatū Hauora Ministry of Health
ADHD	Attention deficit hyperactivity disorder	NZ	Aotearoa New Zealand
B4SC	<i>B4 School Check</i>	NZDep	New Zealand Index of Deprivation
BMI	Body mass index	NZHS	<i>New Zealand Health Survey</i>
CI	Confidence interval	PHO	Primary Health Organisation
CMH	Cochran-Mantel-Haenszel	PPS	Probability-proportional-to-size
DHB	District Health Board	PSU	Primary sampling unit
DMFT	Decayed, missing, or filled primary teeth due to caries	RR	Relative risk
ED	Emergency department	SA1	Statistical Area 1
GP	General practitioner	SADAI	<i>South Asian Diet and Activity Intervention</i>
GUINZ	<i>Growing Up in New Zealand</i>	SES	Socioeconomic status
HIV	Human immunodeficiency virus	STI	Sexually transmitted infection
HRC	Human Rights Commission	T1D	Type 1 diabetes
IOTF	International Obesity Task Force	T2D	Type 2 diabetes
MELAA	Middle Eastern, Latin American, African	UK	United Kingdom
		US, USA	United States of America
		WHO	World Health Organisation
		Youth19	<i>Youth19 Rangatahi Smart Survey</i>



EXECUTIVE SUMMARY

BACKGROUND

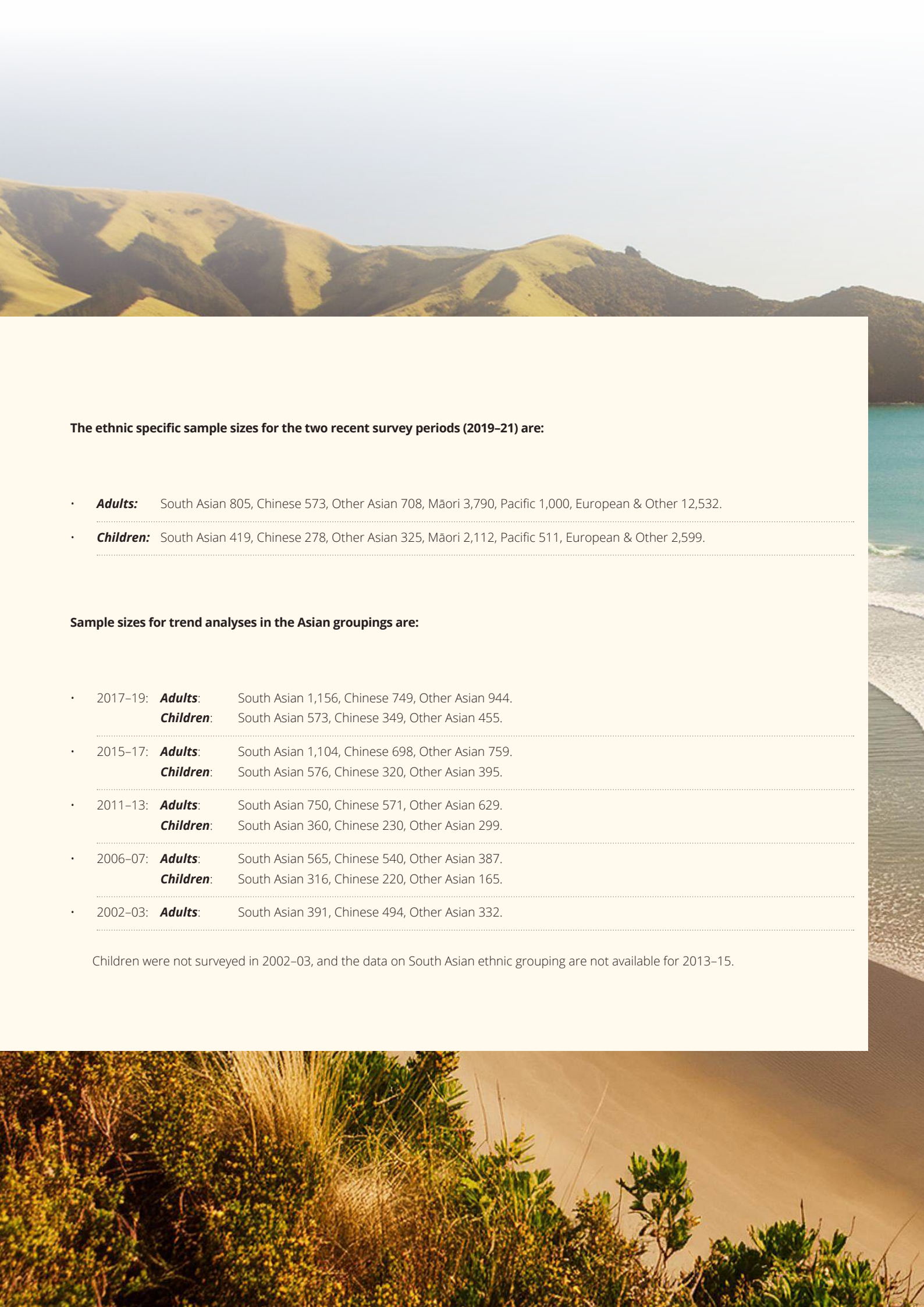
Aotearoa New Zealand (NZ) is fortunate in having a large ongoing health survey which recruits a representative sample of the resident population. Called the *New Zealand Health Survey* (NZHS) and carried out under the direction of Manatū Hauora Ministry of Health, it recruits sufficiently large numbers of participants, both adults and children, to allow for comparisons between the main ethnic groups in NZ. The survey became continuous in 2011, providing annual updates of the health status of the NZ population.

The first NZHS to oversample Asian people was in 2002–03, and the large number of participants allowed for comparisons between three Asian ethnic groupings in New Zealand: South Asian, Chinese, and Other Asian. Data on Asian participants is now available to examine trends in health status over a period of almost 20 years.

This report provides a current picture of the health status of the NZ population using data collected in the 2019–20 and 2020–21 annual survey periods from the following six ethnic groupings: South Asian, Chinese, Other Asian, Māori, Pacific, and European & Other. Comparisons have also been made between South Asian, Chinese, and Other Asian participants to identify any trends in the Asian community during 2002–03 to 2019–21.

METHODS

All health surveys in this report have used a 3-stage, stratified complex sampling method to oversample Māori, Pacific, and Asian participants to allow for ethnic-specific analyses of all three ethnicities, along with European & Other participants. Participants are weighted by the inverse of their sampling probability so that collectively those who are surveyed represent the total resident New Zealand population. Face-to-face interviews were carried out in the homes of participants. Information on the following topics is included in this report: demographic status, health behaviours, health conditions, and health service utilisation. Information was collected for children aged 0–14 years and adults aged ≥15 years.



The ethnic specific sample sizes for the two recent survey periods (2019–21) are:

- **Adults:** South Asian 805, Chinese 573, Other Asian 708, Māori 3,790, Pacific 1,000, European & Other 12,532.
- **Children:** South Asian 419, Chinese 278, Other Asian 325, Māori 2,112, Pacific 511, European & Other 2,599.

Sample sizes for trend analyses in the Asian groupings are:

- 2017–19: **Adults:** South Asian 1,156, Chinese 749, Other Asian 944.
Children: South Asian 573, Chinese 349, Other Asian 455.
- 2015–17: **Adults:** South Asian 1,104, Chinese 698, Other Asian 759.
Children: South Asian 576, Chinese 320, Other Asian 395.
- 2011–13: **Adults:** South Asian 750, Chinese 571, Other Asian 629.
Children: South Asian 360, Chinese 230, Other Asian 299.
- 2006–07: **Adults:** South Asian 565, Chinese 540, Other Asian 387.
Children: South Asian 316, Chinese 220, Other Asian 165.
- 2002–03: **Adults:** South Asian 391, Chinese 494, Other Asian 332.

Children were not surveyed in 2002–03, and the data on South Asian ethnic grouping are not available for 2013–15.

RESULTS



Sociodemography

Asian population

- The proportion of NZ children with Asian ethnicity doubled from 9% in 2006–07 to 17% in 2019–21, with increases in all three Asian ethnic groupings (South Asian, Chinese, Other Asian).
- The proportion of NZ adults with Asian ethnicity also increased substantially from 6% in 2002–03 to 15% in 2019–21, with increases in all three Asian ethnic groupings.

Age

- For both children and adults, all three major Asian ethnic groupings, as for Māori, are distributed more towards the younger age groups compared to European & Other.

Living years in NZ

- The proportion of Asian adults living in NZ for more than ten years or born in NZ increased significantly from 2002–03 to 2019–21 in all three major Asian ethnic groupings (South Asian 37%–52%, Chinese 27%–64%, Other Asian 26%–56%).

Education and Income

- Asian adults are highly educated, with those in all three Asian ethnic groupings being more likely to have a university (bachelor or postgraduate) degree than non-Asian adults. The proportion with bachelor or higher degrees increased gradually from 2006–07 in all three Asian ethnic groupings up to 2015–17, when it stabilised.
- Asian adults have a similar distribution of high household income categories as European & Other, and higher than Māori and Pacific peoples.
- South Asian and Other Asian adults, as well as Māori and Pacific people, tend to reside in areas of high deprivation compared to European & Other. Since the 2002–03 survey, the proportion living in high-deprivation areas has reduced in each Asian ethnic grouping.

- The proportion of Asian adults receiving government income support (South Asian 12%, Chinese 13%, Other Asian 16%) is significantly lower than for non-Asian groups (Māori 39%, Pacific 29%, European & Other 34%), and has declined substantially since 2002–03 in all three Asian ethnic groupings.

Ethnic discrimination

- Asian adults, Māori and Pacific peoples were more likely to think constantly about their ethnicity than European & Other, with no significant improvement since 2011–12.
- Chinese adults (41%) were most likely to have ever been a victim of an ethnically motivated verbal attack, followed by Māori (30%), South Asian (24%), and Other Asian (23%). There has been an increase in the prevalence of ethnically motivated attacks from 2011–12 to 2020–21 for South Asian (from 16%) and Chinese (from 32%).
- Asian adults (South Asian 16%, Chinese 13%, Other Asian 12%), along with Māori (18%) and Pacific (13%), were more likely to have been treated unfairly because of their ethnicity in NZ, at work when applying for a job, or while renting or buying a house, compared with European & Other (5%). There has been no significant improvement since 2011–12.

Health behaviours and risk factors

Nutrition

- For both children and adults, all three Asian ethnic groupings, along with Māori and Pacific, had lower proportions of people who consumed the recommended fruit and vegetable intake (≥ 5 servings per day) than European & Other. The proportion of those who consumed the recommended fruit and vegetables has gradually decreased over the survey years for each Asian ethnic grouping.
- South Asian and Other Asian children were more likely to consume takeaway food than European & Other. The proportion of each Asian ethnic grouping consuming fast food $\geq$ once per week has increased since 2006–07.
- The caregivers of children in all three Asian groupings generally reported a similar level of poor food security to caregivers of European & Other children, while Māori and Pacific children had worse food security.

Physical activity

- Children from Asian and non-Asian communities generally had similar proportions participating in active transport (walking, cycling, skating or similar) to and from school. These patterns have changed little since 2006–07 in all three Asian ethnic groupings.
- Adults from all three Asian ethnic groupings, along with Māori and Pacific adults, are less likely to be physically active, and more likely to be sedentary than European & Other. In all Asian ethnic groupings, the proportion of adults who were physically active has changed little from 2002–03, although the proportion who were sedentary has generally decreased since then.

Smoking and vaping

- South Asian, Chinese, and Other Asian women were less likely to report being current or daily smokers than European & Other, while the prevalence in men was similar for all three Asian groupings and European & Other. The proportion of current smokers among Asian men and women has generally decreased since 2002–03.
- Similarly, both men and women in all three Asian ethnic groupings were less likely to report being current or daily vapers than European & Other. However, there has been an increase in vaping by Asian men and women since 2015–16.

- In the 2015–16 survey, the proportion living in a house where people smoke inside was similar for all three Asian groupings and European & Other, but higher in Māori and Pacific adults. This proportion has decreased significantly since 2002–03 in the households of Chinese and Other Asian adults.

Alcohol

- Women and men from South Asian, Chinese, Other Asian, Māori and Pacific peoples were less likely to drink alcohol than European & Other. South Asian, Chinese, and Other Asian adults who drank alcohol were less likely to binge drink and less likely to report hazardous drinking, than Māori, Pacific, and European & Other adults. Overall, the Asian community drinks alcohol the least often and in the smallest amounts.
- However, the prevalence of both drinking alcohol and hazardous drinking has increased within each Asian ethnic grouping since 2002–03.

Cannabis

- South Asian, Chinese, and Other Asian adults were less likely to use cannabis than Māori, Pacific, and European & Other adults. However, cannabis use among South Asian adults has increased since 2011–13.

Body size

- Prevalences of obesity and overweight were similar among children aged 2–14 years for South Asian, lower for Chinese and Other Asian children, and higher for Māori and Pacific children, when compared to European & Other. Childhood obesity patterns have changed little from 2006–07 in all three Asian ethnic groupings.
- The prevalence of obesity in adults was higher in all three Asian ethnic groupings compared to European & Other, and has gradually increased in both Asian women and men since 2002–03.

Acculturation

- A longer period of residence in NZ among Asian people was associated with being more likely to drink alcohol, and less likely to be sedentary, but other lifestyle measurements were not related to length of residence in NZ.



Health conditions

Children

- The most common health conditions in Asian children (combined) were eczema (17%) and asthma (7%).
- Eczema was more common in Chinese and Other Asian children than European & Other.
- Asthma prevalence was similar in children from all three Asian ethnic groupings, and higher in Māori and Pacific children, compared with European & Other.

Adults

- The most common health conditions in Asian adults (combined) aged ≥25 years were chronic pain (12%), hypertension (10%), high cholesterol (8%), arthritis (7%), and diabetes (6%).
- The prevalence of chronic conditions among Asian adults generally remained stable over the survey periods from 2002–03 to 2019–21.

Increased risk of condition in Asian adults (adjusting for age and gender)

- ▶ Hypertension was more common in South Asian, Māori, and Pacific adults, and lower in Chinese, compared to European & Other.

- ▶ High blood cholesterol was more common in South Asian, Māori, and Pacific adults, compared to European & Other.
- ▶ Diabetes was more common in South Asian, Other Asian, Māori, and Pacific adults, but similar in Chinese, compared to European & Other.

Decreased risk of condition in Asian adults (adjusting for age and gender)

- ▶ Asthma was less common in South Asian, Chinese, and Other Asian adults, and more common in Māori, compared to European & Other.
- ▶ Arthritis was less common in South Asian, Chinese, and Other Asian adults, and more common in Māori, compared to European & Other.
- ▶ Chronic pain was less common in Chinese and Other Asian adults, and similar in South Asian, compared to European & Other.
- ▶ Depression was less commonly reported by South Asian, Chinese, Other Asian, and Pacific adults, compared to European & Other.

Health service utilisation

Primary health care

- Asian adults were less likely to have a usual health practitioner or service to visit when unwell (South Asian 90%, Chinese 90%, Other Asian 90%), compared to non-Asian adults (Māori 94%, Pacific 97%, European & Other 97%). However, there has been an improvement of this measure in Chinese and Other Asian adults since 2002–03.
- South Asian adults were more likely to have measures and tests for weight/height, blood cholesterol, and diabetes at their usual primary health care provider, than European & Other.
- Over the survey periods, there was a general trend for increased assessment of cardiovascular risk factors in all Asian participants, such as measuring weight/height, checking blood pressure, and discussing smoking with practice staff.

Secondary health care

- The proportion of children attending a public hospital in the last 12 months was similar for all Asian ethnic groupings (South Asian 23%, Chinese 24%, Other Asian 22%), and European & Other (25%). In South Asian and Chinese children, this proportion has increased since 2006–07.
- The proportion of adults who attended a public hospital in the last 12 months was lower for Chinese (16%) and Other Asian people (17%), and similar in South Asian (21%), compared to European & Other (28%).
- The proportion of adults who attended a private hospital in the last 12 months was lower in all Asian ethnic groupings (South Asian 4%, Chinese 3%, Other Asian 3%) than European & Other (8%).

Oral health

- Among children, a lower proportion of South Asian (77%), Chinese (84%), and Other Asian (83%) visited oral health care worker in the last 12 months than European & Other (93%).
- The proportion of adults having a regular dental check-up at least every two years is lower in all three Asian ethnic groupings (South Asian 19%, Chinese 28%, Other Asian 29%) than European & Other (45%). There has been no improvement in the proportion from 2006–07.

Acculturation

- The proportion of Asian adults who used health services was the highest among those who had lived in NZ for more than 10 years or were born in NZ.



CONCLUSIONS



1. Sociodemography

The Asian population in NZ continues to increase, being 17% of children and 15% of adults in Aotearoa in 2019–21. However, government income support received by Asian adults has declined substantially since 2002–03 so that they are not receiving the same level of support as non-Asian ethnicities. Further, Asian adults continue to experience high levels of ethnic discrimination, unchanged from 2011–12.

2. Health behaviours

The health behaviour pattern in Asian people is mixed.

Of major concern is the low level of fruit and vegetable intake by both Asian children and adults, which has progressively decreased since 2011–13, while fast food intake by Asian children has increased over the same time period. Further, Asian adults are less likely to be physically active, and more likely to be sedentary, than European & Other adults. The proportion of Asian adults who are physically active has not changed since 2002–03, although the proportion who are sedentary has declined since then.

These patterns are being manifested in obesity levels, which are higher in Asian adults than European & Other, and have gradually increased in both men and women since 2002–03.

In contrast, Asian adults have the lowest tobacco smoking levels in NZ, and smoking by both men and women continues to decline. As well, vaping and consumption of alcohol and cannabis are lowest among Asian adults, although use of these has increased in recent years.

3. Health conditions

The above health behaviour patterns are likely to contribute to the increased risk of cardiometabolic disease among Asian adults. These include increased risks of hypertension, high blood cholesterol, and diabetes among South Asians, and increased hypertension in Other Asians, compared with European & Other.

Pleasingly, several chronic conditions – asthma, arthritis, chronic pain, and depression – are less common in Asian adults than in European & Other.

4. Health service utilisation

Asian adults are less likely to have a usual primary health care service provider, and use public hospital or oral health care services, than European & Other adults. This pattern appears partly to be related to time in NZ, as access to these services is lowest among Asian adults who have lived less than 5 years in NZ. Efforts are needed to address this disparity.



1. BACKGROUND



The *New Zealand Health Survey* (NZHS) is a survey that collects information on the health and wellbeing of the people in Aotearoa New Zealand (NZ). It first began in 1992 and became an annual survey in 2011, enabling continuous monitoring of the health of New Zealanders.¹

The NZHS recruits a nationally representative sample of the resident population each year. The NZHS is funded by Manatū Hauora Ministry of Health (MOH), which annually publishes detailed reports of the main findings. However, these typically analyse Asian participants as a single “Asian” ethnic grouping and do not provide more detailed information on individual Asian communities in NZ, particularly for the Indian and Chinese communities, which are now large enough for their own specific analyses.

This report was commissioned by The Asian Network Inc (TANI) to update the information of the health status of Asian people in NZ. It compares data collected in the NZHS from 2002 to 2021 and is an update to the previous 2016 report entitled *Asian Health in Aotearoa 2011–2013*, which used the NZHS data then available.²

In this report, Asian participants have been compared with the three other main ethnic groups in NZ – Māori, Pacific peoples, and European & Other – using data for the two most recent surveys (for the years 2019–21). Comparisons have also been made among South Asian, Chinese, and “Other Asian” participants to identify any time trends among these Asian communities between the various survey periods since 2002–03.



1.1 The Asian diaspora in NZ

The wider Asian community in NZ comprises many subgroups from across Asia. In the NZ health context, “Asian” refers to people who are of ethnic groups that originate from East Asia (e.g. China, Japan, Korea), Southeast Asia (e.g. Cambodia, Indonesia, Laos, Malaysia, Philippines, Thailand, Vietnam), and South Asia (e.g. Afghanistan, Bangladesh, India, Nepal, Pakistan, Sri Lanka). It does not include Central Asia or West Asia (i.e. “the Middle East”).^{3,4} Consequently, Asian peoples in NZ vary in culture, language, religion, politics, birthplace, time lived in NZ, and therefore, health needs. Despite this, there are similarities – for example, Asians, along with Māori and Pacific communities, generally share a common collective approach to family and social structures.

1.1.1 Sociodemography



The most recent nation-wide demographic data available at the time of preparing this report are from the 2018 Census, although the 2023 Census data are expected to be released in the near future. The 2018 Census indicates that Asians in NZ make up 15.1% of the population, a percentage that is exceeded only by those identifying as Māori (16.5%) and European (70.2%). Note that these data are based on total responses, i.e. people who identify with more than one ethnicity are counted more than once.⁴ Asian was the fastest growing ethnic group according to the 2018 Census,⁴ with the Asian population projected to reach 26% of the NZ population by 2043.⁵ The Asian ethnicities with the highest numbers in 2018 were Chinese (247,770 people or 35.0% of the Asian population), Indian (239,193 or 33.8%), Filipinx (72,612 or 10.3%), Korean (35,664 or 5.0%), and Japanese (18,141 or 2.6%).

The total number of people identifying as Asian in 2018 grew by 50.0% from 2013. This was followed closely by the MELAA (Middle Eastern, Latin American, African) grouping (49.8% increase), Māori (29.6% increase), and Pacific peoples (29.0%).⁴ Asian ethnic groups experiencing a growth of at least 50% were Indian (54.1% increase), Filipinx (80.0% increase), Vietnamese (51.4% increase), Pakistani (88.1% increase), Afghani (53.6% increase), and Nepalese (127.9% increase).⁴

1.1.1.1 Age

The median age of Asians in NZ in 2018 was 31.3 years, significantly lower than that of Europeans (41.4 years) and significantly higher than for Māori (25.4 years) and Pacific peoples (23.4 years).⁴ The most common age groups for Asians in NZ were 20–24 years (8.8%), 25–29 years (11.6%), 30–34 years (11.4%), and 35–39 years (9.5%).⁴

1.1.1.2 Gender

According to the 2018 Census, 50.7% of Asians in NZ identified as female and 49.3% as male.⁴ There are currently no national-level statistics available for other genders, although these data were collected as part of the 2023 Census.⁶

1.1.1.3 Location

Auckland has the highest Asian population (442,674 or 62.6%), and large numbers also live in Canterbury (66,672 or 9.4%), Wellington (65,601 or 9.3%), Waikato (43,755 or 6.2%), and Bay of Plenty (22,122 or 3.1%).⁴

1.1.1.4 Years lived in NZ

The majority of Asian people who live in NZ were born elsewhere (75.8%).⁵ Of those born overseas, more than half (53.3%) have been living in NZ for less than 10 years.⁵

1.1.1.5 Education and income

Along with Māori and Pacific peoples, Asians in NZ have significantly lower incomes than Europeans.⁷ The 2022 Human Rights Commission (HRC) report into the Pacific pay gap found that in 2021, for every dollar made by a Pākehā man, Asian men earned just over 86 cents and Asian women earned 83 cents.⁸ There is also evidence that Indian and South Asian high school students are more likely to live in poverty compared to European, Chinese, and East Asian students.⁹

As a group, Asians in NZ have higher than average educational qualifications, which suggests that individual and structural racism (along with English language proficiency) may play a part in this economic disparity.^{10,11}

1.2 “Healthy migrant effect” and acculturation

Asian migrants to NZ are generally of good health, better than the locally born Asian population. This is known as the “healthy migrant effect”. The effect appears to diminish with acculturation and increased length of stay in NZ, and for subsequent generations that are born in NZ.¹² “Acculturation” refers to the processes and outcomes of migration and cross-cultural contact experienced by migrants.¹³ In the NZ context, acculturation refers to the consequences of the Asian population’s exposure to the dominant NZ European culture on traditional Asian health related attitudes, behaviour, and practices. In NZ and other countries such as Australia, USA, UK, and Canada, acculturation can have a variety of effects on health behaviours, both positive and negative, as discussed below in this report.



2. LITERATURE REVIEW

This section is a summary of recent literature relating to key topics that are covered in the NZHS and this report. It updates the previous report published 2016,² which covered literature up to and including 2015. Therefore only literature and results published 2016 onwards were considered.

A literature search was conducted using PubMed, using the following MeSH term search: "Health"[Mesh] AND ("East Asian People"[Mesh] OR "Southeast Asian People"[Mesh] OR "South Asian People"[Mesh] OR "Asian"[Mesh]). Manual searches on specific topics were then carried out using PubMed and Google Scholar to identify any articles missed, as well as grey literature (e.g. government and other reports, planning documents, theses).



2.1 Health behaviours and risk factors



2.1.1 Children

In the NZHS “child” is defined as children aged 0–14 years. Results from surveys of adolescents are also reported here. Much of the NZ data described in this section comes from the following studies and/or datasets:

- **Growing Up in New Zealand** (GUINZ) is a cohort study that follows, from before birth, more than 6,000 children and their families recruited from the Auckland and Waikato regions in 2009–10.¹⁴
- The **B4 School Check** (B4SC) began in 2008. The B4SC is offered to all children aged four years nationwide, although some are more likely to miss out than others, e.g. Māori children, Pacific children, and children from poorer socioeconomic backgrounds.¹⁵ The B4SC aims to identify and address any concerns – health, behavioural, social, and developmental – and includes vision, hearing, oral health, height, and weight checks.¹⁶
- The **Youth19 Rangatahi Smart Survey** (Youth19) is the latest iteration of the Youth2000 survey series and was last conducted in 2019. It surveyed 7,721 high school students (aged 13–18 years) from the Auckland, Tai Tokerau/Northland, and Waikato regions.¹⁷ Of these, 40.8% were under 15 years old.¹⁸

2.1.1.1 Oral health

Asian children, as well as Māori and Pacific children, have a higher level of dental caries than European & Other.^{19–21} When compared in the GUINZ study to European & Other children, Asian children had a DMFT (decayed, missing, or filled primary teeth due to caries) incidence rate ratio of 2.64, second highest after Pacific children (3.06).¹⁹ It is thought that the high incidence of dental caries in Asian children is associated with the high consumption of sugar and refined starch, such as white rice, congee, and noodles.¹⁹ Analysis of B4SC data found that Asian children (aged 4 years) reported greater caries experience than European & Other and MELAA children but less than Pacific and Māori children, and that caries experience increased with level of deprivation.²¹ Previous analysis of the NZHS found that Asian and European & Other children used non-fluoride toothpaste more often than Māori and Pacific children.²² A secondary analysis of 2009 **New Zealand Oral Health Survey** data found that Māori and Pacific adolescents (aged 12–14 years) reported greater caries experience than Asian adolescents.^{23,24} Results were not reported for different Asian ethnicities.

The NZ data on poor oral health among Asian children are consistent with international reports. In North Carolina (USA), a study of oral health behaviours in children found that Asian children (as a grouping along with Indigenous and Other children) were least likely to have favourable oral health behaviours.²⁵ In Canada, acculturation is associated with a range of different oral health behaviours – Asian children of highly acculturated parents were found to be more likely to consume sugar, but also reported a higher frequency of toothbrushing than children of less acculturated parents.²⁶

The prevalence of dental caries in children is high in Asia, higher than other parts of the world other than Africa.²⁷ The prevalence

of dental caries in Asia is 40–97% for East Asia, 27–75% for South Asia, and 25–95% for Southeast Asia.^{28,29} Dental caries was also found to be prevalent in preschool children in Hong Kong (55% for 5-year-old children), and higher prevalence was associated with boys, lower socioeconomic status (SES), and lower parental levels of dental knowledge. This prevalence is lower than that of mainland China (70%)^{30,31} but the same as Taiwan (56%).³² However, the DMFT index of Taiwanese children declined significantly from 2.8 to 2.3 between 2010 and 2020.³³ The prevalence of caries in children was particularly high in Cambodia,³⁴ Philippines,³⁵ and Vietnam.³⁶ Ninety-five percent of dental caries in Hong Kong preschool children was found to be untreated.³⁷

2.1.1.2 Nutrition

Asian children in Auckland, along with Māori and Pacific children, consumed sugar-sweetened beverages more frequently than European children.³⁸ Similar results were found in the GUINZ study, where 47.5% of Asian infants (aged 9 months) had been given unhealthy drinks (fruit juices, soft drinks, tea or coffee), significantly higher than European & Other (26.6%) but lower than Māori (54.6%) or Pacific infants (61.1%).³⁹ Additionally, infants (aged 9 months) of Asian mothers were found to consume ultra-processed foods and drinks more frequently than children of European mothers.⁴⁰ At 54 months in the same survey, a lower percentage of Asian (27.5%), Māori (27.3%), and Pacific children (26.4%) consumed the recommended amount of fruit per day compared to European & Other children (43.9%).³⁹ This difference was not found with vegetable consumption, with 35.5% of Asian children reporting eating two or more servings of vegetables per day compared with 37.4% European & Other children.³⁹ Results were not reported for different Asian ethnicities.

International research supports the NZ data. In the US, Asian American children were found to be less likely to eat fruit and vegetables than white and Latine children.^{41,42} Another study found that Asian children were less likely to be obese and to eat more fruit if their mothers were US-born, compared to mothers who were recent immigrants.⁴²

In Asia itself, mean daily fruit intake in South Asia and East Asia is particularly low,⁴³ with girls in South Asia also reporting low intake of both fruit and vegetables⁴⁴ – 97% of girls did not consume the recommended daily servings of fruit and 90% did not consume the recommended daily servings of vegetables.⁴⁵ In North-west Sri Lanka, the average fruit and vegetable intake was approximately half the daily recommended amount, and less than 20% of preschool children met the recommended daily servings.⁴⁶ In the Philippines, it was found children had low vegetable consumption overall, and many consumed inadequate amounts of nutrients – particularly children of low SES.⁴⁷ In contrast, a global meta-analysis of national school health surveys found that consumption of vegetables by South and East Asian adolescents was high compared to other regions.⁴³

2.1.1.3 Food insecurity

In NZ, higher odds of food insecurity were found in Asian, Māori, and Pacific infants compared to European and Other infants in the GUINZ study,⁴⁸ with 38.6% of mothers/primary caregivers of Asian infants (aged 9 months) reporting that they were forced to buy cheaper food to pay for other things in the past 12 months.³⁹ This was lower than for Māori (61.7%) and Pacific (65.4%), but higher than for European & Other (30.2%).³⁹ At 54 months, the prevalence of needing to buy cheaper food decreases for all ethnicities except European & Other, with 20.8% of mothers/primary caregivers of Asian children reporting this need – the lowest of all the major ethnic groups.³⁹ Mothers/primary caregivers of Asian infants (aged 9 months) also reported going without fresh fruit and vegetables less often (10.3%) than Māori (19.3%) and Pacific (29.8%), but more often than European & Other (6.6%).³⁹ Results were not reported for different Asian ethnicities in these younger age groups.

The Youth19 study found that 16% of Indian and 15% of South Asian high school students (aged 13–18 years) reported that their parents often worried about having enough money for food, which was higher than the percent reported by East Asian (10%), Chinese (8%), and European students (8%).⁹ A 2021 national survey of high school students by the Ministry of Social Development – *Youth Health and Wellbeing Survey – What About Me?* – found that 20.2% of Asian students (aged 12–18 years) reported that they or their family worried about having enough money to buy food sometimes.⁴⁹ This was significantly lower than for Māori (35.0%) and Pacific students (37.9%), but not significantly different from European (18.3%) or MELAA students (20.4%).⁴⁹

In the US, analysis of *Early Childhood Longitudinal Study* results found that children in a food-insecure household were more likely to be Asian/other, non-Hispanic Black, or Hispanic.⁵⁰ A school-based study of American adolescents (aged 12–19 years) found that Asians, along with other minority racial/ethnic groups, had higher levels of food insecurity than white adolescents;⁵¹ while in a Californian survey, it was found that there was a significant relationship between low acculturation and food insecurity for Chinese, Korean, and Vietnamese American families.⁵²

Worldwide, South Asia has the highest burden of food insecurity for children under 15, and within Asia, South Asia has the highest prevalence of food insecurity for families (with at least one child under 15 years).⁵³ Pakistan, Afghanistan, Cambodia, and the Philippines all have a particularly high prevalence of families (with at least one child under 15 years) living with moderate or severe food insecurity.⁵³

2.1.1.4 Physical activity

Analyses of national *Active NZ Youth Survey* data (2017–2018) found that Asian children (aged 5–17 years) in NZ were least likely to have sufficient levels of physical activity compared to other ethnicities,⁵⁴ although the NZ Physical Activity Report Card (a matrix of indicators derived from several studies, including NZHS, GUINZ, the *Active NZ Youth Survey*, among others) showed that Asian children had a significantly higher prevalence of active transport than both Māori and NZ European children.⁵⁵ The 2022 *Active NZ Youth Survey* found that while Asian children had the lowest levels of participation in physical activity compared to other major ethnic groups, participation has been increasing since 2018 and is currently at its highest.⁵⁶ The 2022 *Active NZ Youth Survey* also included results for Chinese and Indian children as well as the larger Asian grouping – both Chinese and Indian children were less likely to meet weekly physical activity guidelines than European and Māori children.⁵⁷ Another study based in Auckland and Dunedin also found that Asian children (aged 4–12 years) were significantly less physically active than European & Other children.⁵⁸ In a survey of Auckland school children (aged 8–12 years), South Asian children and Chinese/Korean/Southeast Asian children were found to have lower levels of weekly physical activity than NZ European children.⁵⁹

Analysis of *National Health and Nutrition Examination Survey* data found that Asian children (aged 2–17 years) in the US had the lowest physical activity of all the racial/ethnic groups studied.⁶⁰ In the US, Asians are often grouped with Pacific peoples (a group known as Asian American Pacific Islander, or AAPI). A study found that AAPI, Latine, and Indigenous adolescents (aged 10–17 years) had larger declines in physical activity from the school year to the summer compared with other racial/ethnic groups.⁶¹ However, AAPI adolescents also showed high levels of active transport during the summer, higher than other racial/ethnic groups, and higher than during the school year.⁶¹ In the UK, a study found that South Asian children (aged 6–8 years)

were more sedentary than white British children.⁶² In contrast, a study of South Asian and white British children (aged 11 months – 5 years) in England found there was no difference in physical activity.⁶³

In Asia, several studies have found that children and adolescents in many Asian countries, such as China, Indonesia, and Thailand, have low levels of physical activity.⁶⁴ It is thought that this may be due to problems associated with increasingly industrialised environments, a lack of public spaces such as parks, poorly maintained footpaths, and changes in lifestyle behaviours.^{64,65} In China, children had high levels of sedentary behaviour as well as low levels of physical activity, although this varied by gender, age, and location.⁶⁶ Studies in Bangladesh found that only 50% of children (aged 4–7 years)⁶⁷ and 66% of adolescents (aged 13–17 years) met the recommended amount of physical activity.⁶⁸ For adolescents, this was lower for girls, for those with mothers of low SES, and for those not using active transport to school.⁶⁸

2.1.1.5 Body size

The prevalence of obesity in young NZ children (aged 4 years) has decreased overall, as measured as part of the B4SC.^{69,70} The number of children at or above the 85th, 95th, and 99.7th body mass index (BMI) percentiles showed significant decreases, with Pacific and Asian children showing the biggest decreases at or above the 85th percentile.⁷⁰ Asian children also showed the largest decrease in the 95th and 99.7th BMI percentiles.⁷⁰ When analysed by subgroup, Chinese children showed greater decreases overall than Indian children.⁶⁹ In the GUINZ study, Asian children showed a lower prevalence of obesity than Māori and Pacific children and the same prevalence as European and Other children at both 4 years old⁷¹ and 8 years old.⁷² In a study using Southern District Health Board (DHB) data, Asian children (aged 0–19 years) were less likely to be overweight or obese than other ethnicities.⁷³

In the US, Asian children in 5th grade (aged 10–11 years) and 8th grade (aged 13–14 years) were found to have a higher BMI z-score than non-Hispanic white children.⁵⁰ Analysis of *National Health and Nutrition Examination Survey* data found that Asian American children (aged 2–17 years) had the lowest lean body mass and muscle mass of all the racial/ethnic groups studied.⁶⁰ It also found that Asian American boys with higher levels of acculturation were more likely to be obese.⁶⁰

South Asian and Black children in England have higher levels of obesity than white children, which may be due to cultural factors as well as deprivation.⁷⁴ Shorter sleep duration was associated with higher BMI z-score for South Asian children aged 18 months, and later sleep onset was associated with higher BMI z-score for South Asian children aged 36 months.⁶³

In contrast to Asian children in NZ, the prevalence of childhood obesity in Asia has increased,^{75–77} although the prevalence in Asia

varies. Prevalence in South Asian children (in Bangladesh, India, Maldives, Nepal, and Pakistan) under 5 years was relatively low compared to high income countries.⁷⁸ Southeast Asian countries with low prevalence in under 5-year-olds include Philippines, Cambodia, Myanmar, and Laos.⁷⁵ Studies in Bangladesh have found that the childhood obesity was 0.5% in under 5-year-olds⁷⁸ and 8.2% in children aged 4–7 years.⁶⁷ In the older age group, the obesity prevalence in South Korean children was 15% (aged 6–18 years) and 9.8% (aged 2–18 years),⁷⁷ and 10.1% in children (aged 6–17 years) in China.⁷⁶ In Thanhhoa city, Vietnam, primary school-age children had an obesity prevalence of 14.3%.⁷⁹ In many countries, boys had higher prevalence of obesity compared to girls.^{67,76–79}



Photo by Callum Hill on Unsplash

2.1.1.6 Sleep

Studies in NZ on sleep have found a range of results. It was found that children of Asian mothers were more likely to get inadequate sleep than children of European mothers,⁸⁰ and Asian adolescents (aged 13–17 years) reported an average of 45 minutes less sleep than NZ Europeans.⁸¹ In contrast, another study found that sleep duration was similar for Asian, Māori, and European children.⁵⁸ Asian, Māori, and Pacific children were found to have a significantly later sleep onset and offset



compared to European children,⁵⁸ and Asian teenagers reported later sleep onset as well as a more “eveningness” chronotype than NZ European teenagers.⁸¹ No results were found for the different Asian ethnicities.

In the US, Asian, Black, and Latine children (aged 6–12 years and 4–11 years) were all observed to have a shorter sleep duration than white children.⁸² Sleep duration was found to vary with SES – Asian and Latine children attending private schools had longer sleep duration.⁸² Racial discrimination was also found to impact sleep.⁸³ Asian, Black, and Latine adolescents (aged 13–15 years) that suffered daily discrimination experienced more disturbed sleep and more next-day daytime dysfunction.⁸³ However, Asian, Black, and Latine adolescents (aged 13–17 years) showed that they were better able to cope with discrimination (i.e. better active coping behaviours and better wellbeing) when they had slept longer and better the previous night.⁸⁴

Several studies across Asia found many children did not get the recommended amount of sleep – 79% of children (aged 4–7 years) in Bangladesh,⁶⁷ 82.5% of children (aged 3–5 years) in Japan,⁸⁵ and 81.2% of children (aged 5–14 years) in Singapore.⁸⁶ In India, poor sleep quality was found to be correlated with poor school performance in children (aged 6–12 years),⁸⁷ and longer sleep duration was found to be associated with healthier weight behaviours and reduced obesity risk in China.⁸⁸ Studies in South Korea,⁸⁹ China,⁹⁰ and Singapore⁹⁰ found that children who had a higher load of homework and/or tutoring classes had a shorter sleep duration and higher risk of sleep deprivation and depression.

2.1.1.7 Summary

The current literature on the health behaviours and risk factors of Asian children in NZ is mixed, with relatively low levels of obesity when compared with children of other major ethnic groups but poorer levels of oral health, nutrition, food security, and physical activity than European & Other children. These results are generally supported by international data, particularly for Asian children in the US and UK. Poor levels of oral health and physical activity appear to be an issue for Asian children worldwide.

There are several large studies on the health behaviours and risk factors that are covered in the NZHS, but while they include Asian children, they often do not include analyses of Asian subgroups. Further research that includes Asian subgroups, both original research and additional analyses of existing data, could provide valuable insights into disparities among children of different Asian ethnicities that would be obscured by aggregated data.⁹¹





2.1.2 Adults

In the NZHS “adult” is defined as people aged 15+ years, thus some results from surveys of adolescents have also been included here.

2.1.2.1 Racial and ethnic discrimination

Racial and ethnic discrimination against Asians in NZ has a historical basis that goes back to the 1800’s with campaigns against Chinese people, poll taxes, and restrictions on immigration and residency affecting Chinese, Indian, and other Asian peoples.^{92–94} Racism against Asians in NZ crosses over with xenophobia, and Asians are often seen as ‘forever foreigners’, ‘perpetual foreigners’, or ‘perpetual migrants’.^{95,96}

Asians in NZ have reported the highest prevalence of discrimination, greater than or equal to that experienced by Māori.^{97–100} This is further compounded by the fact that Asians in NZ often do not report racism due to cultural barriers,¹⁰¹ leading to probable underreporting. There was a rise in public, in-school, and online racism and bullying targeting Chinese and Asian people in NZ due to the COVID-19 pandemic.^{96,99,102} Despite research showing that less than 5% of people made a formal report after experiencing racism⁹⁹ there was a 30% rise in calls to the HRC.⁹⁵ Race related complaints from Asian people were three times higher from February to June 2020 compared with the previous five month period.¹⁰³ This led to an HRC campaign specifically targeting racism against Asians in NZ¹⁰³ and a short term grant to Asian Family Services for increased mental health support.¹⁰⁴ In a study of anti-Asian discrimination during the COVID-19 pandemic, half of the participants reported clinically significant levels of depression.¹⁰⁵ Depression was associated with younger age and personal experiences of racism, but there were no differences for gender.¹⁰⁵ No results were found for the different Asian ethnicities.

In the US, chronic everyday discrimination was found to be associated with higher levels of bodily pain in Chinese and Japanese women, and discrimination was a significant predictor of pain in Chinese women.¹⁰⁶ For Asian Americans and other racial/ethnic minorities in the US, racial discrimination is also associated with higher BMI and worse cardiovascular outcomes,¹⁰⁷ higher risk of substance use disorders,¹⁰⁸ alcohol use,¹⁰⁹ and higher risk of depression and other mood and anxiety disorders.^{108,110–112} There was also a significant increase in mental distress as well as physical health symptoms caused by COVID-19-related racial discrimination in Asian Americans.^{109,111–114} Increased levels of stress caused by COVID-19-related racial discrimination suffered by Chinese American parents also then in turn affected their children’s mental health.¹¹⁵

A study on Indian, Bangladeshi, Pakistani, Black African, and Black Caribbean people in the UK found that the cumulative effect of racism had a negative long term effect on mental health.¹¹⁶ A study of refugees and asylum seekers in the UK (of varying ethnicities, including Pakistani) found that racial discrimination was one of the factors influencing access to primary health care.¹¹⁷ Black and Asian people were also found to be less likely to receive bystander cardiopulmonary resuscitation,¹¹⁸ and have a higher rate of maternal death during pregnancy.¹¹⁹

Studies have also investigated the role of racial/ethnic discrimination and xenophobia on health in Asia. In South Korea, discrimination was associated with poorer mental health in North Korean refugees.^{120–122} A review in Singapore highlights the lack of research into health disparities between the major racial groups,¹²³ despite the history of racism towards Malay and Indian people.^{123,124} In China, ethnic minorities have been found to suffer from income disparities,¹²⁵ along with employment and wage discrimination,¹²⁶ which in turn impacts health. In Japan, discrimination has also led to income disparities for Korean people who reside there,¹²⁷ and racism and xenophobia have been found to contribute to HIV (human immunodeficiency virus) health disparities in Filipinx, Latine, and other immigrants.¹²⁸ People from Indigenous communities in Attappadi, Kerala, India, reported discrimination at health care centres while also experiencing reduced access.¹²⁹

2.1.2.2 Smoking

Results from the 2018 NZ Census showed that Asians have the lowest smoking prevalence in NZ (6.8%) when observed as a whole. Asian men have a significantly higher smoking prevalence (11.0%) than Asian women (2.8%). This difference occurs for all Asian ethnicities. Those most likely to report regular smoking were men identifying as Korean (14.6%), Vietnamese (14.4%), Thai (13.4%), or Chinese (12.6%).⁴ In the national Year 10 survey, smoking prevalence for Asian youth (aged 14–15 years) in NZ is very low, with only 0.3% of 14- and 15-year-olds reporting smoking daily in 2022.¹³⁰ This is significantly lower than the daily smoking prevalence of European/Pākehā, Māori, and Pacific youth.¹³⁰

The smoking prevalence for Asians in the US also is the lowest (5.4%) of all the ethnic/racial groups.^{131,132} However, within the Asian American group, smoking prevalence is high among



Korean Americans compared with other subgroups.¹³³ Indian people in California were found to have higher prevalence of smokeless tobacco use (e.g. chewing tobacco) compared to smoking.¹³⁴ Multiple studies have found that acculturation decreases the prevalence of smoking of Asian American men, while increasing the smoking prevalence of Asian American women.^{135–137} Similarly, in the UK, Asian people have the lowest prevalence of current smoking (7.8%) when compared to other ethnicities, and Chinese people had a lower prevalence (5.2%) than the larger Asian group.¹³⁸ When analysed by gender, 13.0% of Asian men in the UK reporting current smoking, a significantly higher percentage than Asian women (2.6%).¹³⁸

In Asia, all countries report higher smoking prevalence in men. According to the 2019 *Global Burden of Disease Study*, smoking prevalence ranges between 1.8% (Sri Lanka) to 10.2% (Japan) for women, while for men it ranges from 20.6% (Singapore) to 58.3% (Indonesia).¹³⁹ There may be underreporting for the female population in Asian countries, as many believe it to be socially unacceptable.¹³⁶ For example, in South Korea, there is a discrepancy between women's self-reported smoking prevalence and smoking prevalence utilising cotinine testing, possibly due to the fact that married women are socially restricted from smoking.¹³³

The smoking prevalence in South Asian countries is lower overall compared to other parts of Asia, but chewing tobacco is a significant issue – 83% of all chewing tobacco users (274 million people worldwide in 2019) live in South Asia.¹⁴⁰ Use of chewing tobacco is particularly high in India and Bangladesh; in Bangladesh use is prevalent in both men (22.0%) and women (25.4%).¹⁴⁰

2.1.2.3 Vaping

Similar to smoking, the 2020 *Health and Lifestyles Survey* (a national survey of health and lifestyle behaviours and attitudes that occurs every two years) shows that the prevalence of vaping in Asian adults in NZ is lower (5.4% current vapers) than all other major ethnicities.¹⁴¹ The prevalence of vaping has continued to increase in adults of all ethnicities, although the prevalence of smoking has also fallen over the same time period.¹⁴¹ Asian youth (aged 14–15 years) in NZ also report a significantly lower daily vaping prevalence (2.3%) than that of European/Pākehā, Māori, and Pacific youth.¹³⁰ There were no results found for the different Asian ethnicities.

The prevalence of vaping among Asian people in the US has been reported as low, significantly lower than that of non-Hispanic white people,¹³² although it is increasing.¹⁴² However, a recent review of vaping in Asian Americans found differing results based on location, with the highest prevalence found in places where there are higher numbers of Asian Americans, such as California and Hawai'i.¹⁴²

Recent reviews of surveys in Asia suggest ever-tried vaping prevalence is lower overall than in other regions, although it is increasing.¹⁴³ Studies have reported increasing use of vapes in China,^{144,145} Vietnam,¹⁴⁶ Malaysia¹⁴⁷, Thailand,¹⁴⁸ and Japan.¹⁴⁹ Vaping is banned in several countries in Asia, including India,¹⁵⁰ Bhutan,¹⁵⁰ Cambodia,¹⁵¹ Thailand,¹⁵¹ and Singapore,¹⁵¹ and is currently being considered in other countries such as Bangladesh.¹⁵⁰

2.1.2.4 Alcohol

Current evidence shows that Asians in NZ report a lower prevalence of alcohol consumption when compared to the other major ethnic groups. In the national 2019/20 *Alcohol Use in NZ Survey*, Asians were less likely to report recent (i.e. last week) consumption of alcohol (30.2%) than the other major ethnicities, and Asian women were less likely to report recent consumption of alcohol (26.8%) than Asian men (33.6%).¹⁵² Similarly, results from the 2020 *Health and Lifestyles Survey* found that Asians in NZ were more likely to report never drinking (38.1%) than the other major ethnicities.¹⁴¹ There was also a disparity in gender with Asian women more likely to report never drinking (46.9%) than Asian men (29.0%).¹⁴¹ A recent survey of 1,052 Asian people in NZ, commissioned by Asian Family Services and the NZ Drug Foundation, found that 73.1% reported drinking in the past year, which is higher than other surveys but less than the general population.¹⁵³ Compared to the aggregated Asian grouping, the survey found that South Korean people had a higher prevalence of past-year alcohol use (86.1%), and Indian people had lower prevalence (66.0%).¹⁵³ Men were also more likely to report past-year drinking than women.¹⁵³ The national *Attitudes and Behaviour towards Alcohol Survey* (2013/14–2015/16) found that a higher percentage of Asians adults reported at least one harmful drinking-related experience (21%) than European & Other people (15%).¹⁵⁴ The Asian Family Services/NZ Drug Foundation survey found that 70.1% of Asian people reported no harmful drinking related experiences.¹⁵³

The 2021 *Youth Health and Wellbeing Survey – What About Me?* found that Asian high school students (aged 12–18 years) were less likely to report ever drinking alcohol (47.4%) than Māori (77.4%) and European students (71.9%).⁴⁹ Of those that had drunk alcohol, 38.5% of Asian students reported binge drinking at least once during the past four weeks, significantly less than Māori (54.8%) and European students (48.5%).⁴⁹

There is also evidence that drinking is used to help cope with the stress of migration and acculturation.¹⁵⁵ The previous NZHS analysis found that Asian adults who were born in NZ or had lived in NZ for more than 10 years were more likely to drink alcohol than those living in NZ for less than 10 years.² A similar pattern in Asian NZ adults is seen in Asian NZ young people, with those born in or living in NZ for more than 5 years being more likely to drink alcohol than newer migrants.¹⁵⁶

Asian people in the US reported lower levels of alcohol consumption compared with other ethnic/racial groups, for both binge drinking and heavy drinking.^{157,158} There are differences in drinking prevalence between different Asian ethnicities – Japanese, Korean, and multi-ethnic Asian Americans reported higher prevalences of drinking compared to Chinese and Vietnamese Americans.¹⁵⁹ Acculturation also makes a difference to drinking behaviour, although this is not consistent across drinking outcomes.¹⁵⁸ A significant correlation was found between acculturation level and alcohol consumption, but no correlation was found between acculturation and drinking-related problems.¹⁶⁰ Racism related to COVID-19 was found to significantly predict severity of alcohol use.¹⁰⁹

Acculturation was also found to be correlated with drinking habits for Indian and Pakistani people in the UK, with higher drinking levels reported by second generation immigrants than first generation.¹⁶¹ However, Indian, Pakistani, and Bangladeshi had lower levels of alcohol consumption than white British people.¹⁶¹

Drinking behaviours and patterns vary across Asian countries,¹⁶² although overall prevalence is generally lower than in NZ.¹⁶³ However, when analysing alcohol consumption of people who drink it was found that similar amounts are consumed in NZ (10.69 L of pure alcohol), China (13.1 L), and India (14.6 L).¹⁶⁴

High levels of alcohol-related harm have been reported in Asian countries. In China, a study comparing the prevalence of experiencing alcohol-related harm in Yi and Han men and women found that it ranged from 62.1% to 75.3% in the total population, differing by both gender and ethnicity.¹⁶⁵ Another study carried out in Thailand, Sri Lanka, India, Vietnam, and Laos found that 50–73% of participants reported being harmed by alcohol at least once in the past year.¹⁶⁶ In Vietnam, rural and low SES households are both key target groups for alcohol-related harm reduction strategies.¹⁶⁷ Studies in Japan and India also examined the types of harm – one in five Japanese residents experiencing harm, with the type of harm dependent on the person's relationship with the drinker.¹⁶⁸ In India, over two thirds of participants experienced harm, with psychological harm most prevalent, followed by financial harm, then physical harm.¹⁶⁹

2.1.2.5 Illicit drug use

Previous analyses of the NZHS found that Asians in NZ are around five times less likely to use cannabis than other major ethnic groups.¹⁷⁰ Of the 13,026 people who participated in the 2022/23 *NZ Drug Trends Survey* (an anonymous opt-in survey recruited via social media), only 2% identified as Asian,¹⁷¹ which is lower than the proportion of the NZ population identifying as Asian by a large margin. A study of gay and bisexual men found that illicit drug use was less common in Asian men compared with other major ethnicities.¹⁷² A recent survey of 1,052 Asian people in NZ, commissioned by Asian Family Services and the NZ Drug Foundation, found that one in five used some form of illicit drugs in the past year.¹⁵³ Compared with the aggregated Asian group, Filipinx and Other Asian (Asian people who do not identify as Chinese, Indian, Filipinx, or South Korean) people had a higher prevalence and Chinese people had a lower prevalence.¹⁵³ Younger Asians were more likely to report drug use than older Asians – the 18–24-year-old group were more likely to report drug use than the 45–54-year-old age group – and those born in NZ were also more likely to report drug use than those born overseas.¹⁵³

The 2021 *Youth Health and Wellbeing Survey – What About Me?* found that Asian high school students (aged 12–18 years) were significantly less likely to report trying cannabis (15.0%) than Māori (42.0%), Pacific (25.7%), and European students (27.4%).⁴⁹ Youth19 survey results found that a smaller proportion of Asian adolescents (aged 13–18 years) used cannabis weekly or more often compared with Māori, Pacific, and Pākehā/other adolescents.¹⁷³ The percentage of Asian adolescents reporting weekly or more frequent cannabis use has not changed significantly since 2001.¹⁷³ Asian high school students (aged 13–18 years) were also less likely to report huffing or sniffing glue/bleach/petrol/aerosol cans/similar (18.7%), misusing prescription drugs (7.8%), smoking synthetic cannabis (3.0%), or using other drugs that can cause a high or trip (6.7%) than Māori (prescription drugs, synthetic cannabis, other drugs) and European students (synthetic cannabis).⁴⁹

Recent analyses on the *National Survey on Drug and Health* in the US found that Asian adults had a lower prevalence of marijuana, prescription drug, and illicit drug use than white, Black, and Hispanic adults.¹⁷⁴ However, a study comparing past-month substance use in 2016 and 2020 also found that incidence rate in Asian people increased markedly over this period compared to that of white people, particularly for cocaine and tranquiliser misuse.¹⁷⁵ Studies using other datasets also reported analysis by Asian ethnicity. A study comparing Filipinx, Chinese, Vietnamese, and Other Asian people found that Filipinx people had the highest prevalence of substance use, and Vietnamese had the lowest prevalence.¹⁷⁶ A study comparing more Asian subgroups found that multiracial Asian Americans were most likely to report substance use, and Chinese and Vietnamese people were



the least likely.¹⁷⁷ Both studies found that acculturation was positively correlated with drug use, with those born in the US and those with higher English proficiency being more likely to report drug use.^{176,177}

Cannabis/marijuana has been used traditionally in some Asian countries as medicine as well as fibre and food, including parts of China,¹⁷⁸ India,¹⁷⁹ Pakistan,¹⁷⁹ Bangladesh,¹⁸⁰ Nepal,¹⁸¹ Japan,¹⁸² and Thailand.¹⁸³ It is currently banned in a number of countries, including Japan,¹⁸⁴ Bangladesh,¹⁸⁰ Malaysia,¹⁸⁵ and the Philippines.¹⁸⁴ In India, some forms of cannabis are permitted (e.g. bhang), and others are illegal (e.g. charas, ganja).¹⁸⁶ Cannabis seeds are still used in traditional Chinese medicine,¹⁸⁷ and medical marijuana is permitted in South Korea,¹⁸⁴ Taiwan,¹⁸⁸ and Singapore.¹⁸⁴ Thailand legalised cannabis for medical use in 2018¹⁸⁹ and decriminalised cannabis in 2022.¹⁹⁰ This legal change began a move towards harm reduction and rehabilitation rather than criminalisation for those who use drugs.¹⁹¹ However it has recently (September, 2023) been reported that the Thai government intends to return to permitting it for medical use only.¹⁹²

In India, the national report *Magnitude of Substance Use in India 2019* stated that cannabis use is 2.8% and opioids use is 2.1%.¹⁹³ The prevalence of opioid use, in particular, is three times higher than the global average.¹⁹³ Cannabis is the most commonly used illicit drug in Nepal, followed by tranquilisers and then opiates.¹⁹⁴ In Japan, ever use of illicit drugs is thought to be 2–3%, with the most commonly used illicit drugs being methamphetamine and organic solvents.¹⁹⁵ Wastewater epidemiology in Vietnam found that methamphetamine was the main illicit drug being used, followed by heroin.¹⁹⁶

2.1.2.6 Gambling

Although gambling for leisure is common in NZ, gambling related harm is a long-standing issue. Results from the national 2020 *Health and Lifestyles Survey* reported that Asians were the least likely to participate in gambling activities in the last 12 months compared to other groups (Māori, Pacific, European & Other), much lower (49.8%) than the national average (69.3%).¹⁴¹ In contrast to this, results from the *New Zealand Asian Responsible Online Gambling Report 2022* released by Asian Family Services reported that 84.6% of survey participants took part in internet gambling or online gaming (which often includes elements of gambling, such as loot boxes) in the previous 12 months.¹⁹⁷ Additionally, 73.8% of participants bought lotto or instant scratch tickets online.¹⁹⁷ A previous Asian Family Services report (2021) found that 74.7% of survey participants participated in gambling activities in the previous 12 months,¹⁹⁸ an increase from 66% reported in 2020.¹⁹⁹

Asians in NZ, along with Māori and Pacific, are at higher risk for risky gambling than European/Other adults.²⁰⁰ Despite this, there has been a decrease during 2012–2020 in Asians reporting

having some degree of concern with the level of gambling in their community.¹⁴¹ Asians were more likely to be moderate risk/problem gamblers and experience some degree of individual gambling harm than European & Other.²⁰⁰ However, Asians were the least likely of all groups to recognise early signs of gambling harm and were the least likely to contact a gambling problem service.¹⁵⁵ Harmful gambling tends to be underreported by Asians in NZ, often due to stigma and embarrassment.²⁰¹

Asians Americans, along with other ethnic/racial minorities in the US, have a higher risk of gambling disorder.²⁰² Gambling is socially accepted in many Asian cultures in the US, and gambling can be seen as way out of poverty among Southeast Asian refugees.²⁰³ However gambling addiction is highly stigmatised, which generally increases barriers to seeking help.²⁰⁴ Other drivers of gambling in Asian Americans include social and cultural loss due to immigration, stress, and the struggle of integration into American society.²⁰⁵

The prevalence of current gambling in Asia ranges from 41.8% to 81.1%.²⁰⁶ In India, studies found that the current gambling prevalence ranged from 19.5% to 45.4%,^{207,208} and current and lifetime gambling were associated with alcohol use disorder, interpersonal violence, and work-related problems.²⁰⁸ The prevalence of problem gambling in Asia ranges from 0.5% to 5.8%, generally higher than other parts of the world.^{206,209–211} Men were found to have a higher prevalence of problem gambling than women in studies conducted in Macau,²¹² India,²⁰⁷ Japan,²¹³ South Korea,²¹⁴ and Thailand.²¹⁵ The prevalence of current gambling was found to be higher in rural populations compared to urban populations in India,²⁰⁸ and problem gambling was higher in less populated areas compared to more populated areas in Japan.²¹³ In Hong Kong, it was found that those who partook in illegal gambling were more likely to be problem gamblers.²¹⁶

2.1.2.7 Oral health

Previous analysis of the NZHS found that Asian adults had a higher likelihood of self-rating their oral health as excellent, very good, or good than other major ethnicities.²¹⁷ In contrast, Asian adults had the highest prevalence of using non-fluoride toothpaste compared to Māori, Pacific, and European & Other.²² A secondary analysis of 2009 *New Zealand Oral Health Survey* data found that Māori and Pacific adolescents (aged 15–17 years) reported greater caries experience than Asian adolescents.^{23,24} Two studies of oral self-care among dependent older adults found that Asian older adults were more likely to brush twice daily than NZ European & Other, Māori, and Pacific older adults.^{218,219} Asian and Pacific older adults were also less likely to have all teeth removed and wear dentures.^{218,219} There were no results found for the different Asian ethnicities.

There are significant inequities when it comes to the oral health of Asian American and Pacific peoples in the US.²²⁰ In New York, many Asian Americans had poor self-rated oral health, did

not receive annual oral health examinations, and did not have dental insurance. Forty-two percent of South Asian people did not receive annual oral health examinations, followed by 31% of East Asian people, and 19% of Southeast Asian people.²²¹ Males, as well as those that had limited English language skills and lower education levels, were less likely to receive annual oral health examinations.²²¹ A study of older Chinese, Indian, Korean and Other Asian Americans in Texas also found that many had poor self-rated oral health, did not utilise preventative dental services, and did not have dental insurance.²²² Again, those with limited English language skills were more like to not have dental insurance and more likely to have poor self-rated oral health.²²² Another study of older Korean Americans had many of the same findings.²²³

In the UK, several studies have found that Asian and Black populations tend to have better oral health than white British.²²⁴ Indian, Pakistani, Bangladeshi, and Chinese people were less likely to be edentulous than white British people,²²⁴ and Asian and Black people had lower prevalence of caries than white British people.²²⁵

Poor oral health is a major public health issue for Asian countries. According to the *Global Burden of Disease* study, South Asia and Southeast Asia are the top two regions in the world for incidence rate of caries in permanent teeth, and East Asia was the top region in the world for the prevalence of caries in permanent teeth.²²⁶ Results of China's *4th National Oral Health Epidemiological Survey* found that many people in China had poor oral health, with the prevalence of caries being above 50% in all age groups.²²⁷ Periodontal disease was also common, with severity positively associated with age.²²⁷ Fewer than 50% of participants brushed their teeth twice a day. In Taiwan, the prevalence of dental caries is high in both children and adults. Treatment for caries is negatively associated with age – the highest is in children 5–9 years, and declines through the 15–19 year age group to the lowest level in the 85-year plus age group.²²⁸ Adults in Cambodia also have a high prevalence of dental caries, with 80% of adults (aged 34–55 years) having dental caries.³⁴

2.1.2.8 Nutrition

A study of South Asian migrants in NZ found that the majority did not consume the recommended amount of fruit and vegetables.²²⁹ While there was a significant decrease in the consumption of green leafy vegetables in women and new migrants post-migration, the consumption of fruit significantly increased for men and women no matter the length of residence.^{229,230} There were no results found for other Asian subgroups.

In the US, it was found that many Asian Americans were also not consuming the recommended amount of fruit and vegetables, and there were significant associations between fruit and vegetable consumption and self-rated health.²³¹ South Asians

in Great Britain consumed fewer servings per day of fruit and vegetables compared to white British people.¹⁶¹ A study in Australia, comparing Asian-born women and Australian-born women, found that Asian-born women ate less vegetables, dairy, and meat than Australian-born women, and duration of time in Australia was positively associated with increased vegetable intake.²³² Similarly, a study of Sikh and Hindu communities in Canada found that duration of time in Canada was positively associated with increased consumption of fruit, vegetables, and meat.²³³

In Asia, fruit and vegetable intake varies between regions and countries. A systematic review of fruit and vegetable consumption in South Asia found that people in almost all South Asian countries were consuming lower than the WHO recommended amount of fruit and vegetables.²³⁴ Additionally, two-thirds of the studies analysed found that women had a lower fruit and vegetable intake than men.²³⁴ Among East Asian countries, two-thirds of countries met the recommendations for vegetable intake, compared with 29% of South Asian countries and 27% of Southeast Asian countries.²³⁵

2.1.2.9 Physical activity

Asian adults, along with Pacific adults and adults older than 65 years, are less likely to be physically active than other demographic groups in NZ.²³⁶ Analysis of national *Active NZ Survey* data found that Asian young adults (aged 18–24 years) had lower odds of meeting physical activity recommendations when compared to Pākehā.²³⁷ When analysed by ethnicity and gender, it was found that Asian women and Pacific women had the lowest odds of meeting physical activity recommendations.²³⁷ The 2022 *Active NZ Survey* results included results for Chinese and Indian participants, as well as the larger Asian grouping. While 26% of Asian adults met the physical activity guidelines overall – significantly lower than European adults (34%) – more Indian adults met the guidelines (31%) than Chinese adults (24%).⁵⁷

In the US, Indian people have lower levels of physical activity than other ethnic groups, with studies showing that only 51.8% of South Asian migrants are physically active.²³⁸ Acculturation was found to be positively associated with increased physical activity for Asian people in the US – those born in the US and those who spoke more English at home reported higher levels of moderate-to-vigorous physical activity.²³⁹ This was also found in the UK, with second generation South Asians reporting less physical activity than white British, but more than first generation South Asians.²⁴⁰

Levels of physical activity in Asian countries vary widely. The WHO found that for adults aged 18+ years, physical inactivity ranged from 12% (women in China) to 41% (women in South Korea) in East Asia, 12% (men in Nepal) to 44% (women in India) in South Asia, and 10% (women in Cambodia) to 49% (women in



the Philippines) in Southeast Asia.²⁴¹ In South Asia, many issues limit physical activity for women, including social and cultural issues, as well as lack of time, facilities, pollution, and security concerns.²⁴² A study in Bangladesh found that people living in both urban and rural areas had low physical activity. However, those living in urban areas were more inactive than those living in rural areas, and women were generally more inactive than men.²⁴³ In contrast, both men and women in Nepal report high levels of physical activity, mainly due to many working in labour-intensive jobs.²⁴⁴ In Japan, a study on middle-aged and older Japanese people found that 40% had insufficient levels of physical activity in a typical week.²⁴⁵

2.1.2.10 Body size

When using the standard BMI cutoffs, in NZ non-Indian Asian people have the lowest proportion overweight/obese compared to other major ethnic groups.²⁴⁶ In contrast, Indian people overall had a significantly higher proportion of overweight/obese than non-Indian Asian people, with Indian women also having a higher proportion of overweight/obese than European women.²⁴⁶ A study of South Asian migrants in NZ also found that BMI increases with longer duration of residence in NZ.²²⁹

In the US, similar results were found, with Asian immigrants overall having the lowest overweight/obesity prevalence compared with other racial/ethnic groups, but when analysed by subgroup, Indian immigrants had the highest overweight/obesity prevalence.²⁴⁷ Chinese Americans had a higher percentage of healthy weight individuals than South Asian and Filipinx Americans, and a lower percentage of obese individuals than white, South Asian, and Filipinx Americans.²⁴⁸ Body weight in Asian Americans is associated with level of acculturation – those living in the US longer than 20 years had a higher BMI than those living for fewer than 20 years, and those born in the US had a higher BMI than those born overseas.²⁴⁹ The *Health Survey for England* found that Chinese men and women were least likely to be overweight and obese, and Pakistani women, along Black Caribbean and Black African women were most likely to be overweight or obese.²⁵⁰

There has been a marked increase since the 1970s in BMI across Asia, including South Asian, East Asian, and Southeast Asian countries.²⁵¹ South Asian individuals tend to have higher body fat and lower lean mass for any given BMI compared with other ethnicities.^{238,252} In India, obesity affects more than 135 million people, with a higher prevalence in women and also urban populations.²³⁸ In China, a higher prevalence of obesity was found in men than women,²⁵³ and in women it was found to be associated with increased age and lower SES.²⁵⁴

2.1.2.11 Sleep

The *NZ Attitudes and Values Survey* (a national longitudinal survey of social attitudes, personality, and health outcomes)

found that Asian people, as well as Europeans, reported short sleep duration less often than Māori and Pacific people.²⁵⁵ Previous analysis of the NZHS found that Asian people had the lowest prevalence of reporting any sleep complaints, and Māori people the highest, compared to Pacific and European.²⁵⁶ There were no results found for the different Asian ethnicities.

In the US, studies have found that Asian Americans, along with Black Americans, have poorer sleep quality and lower sleep duration than non-Hispanic white Americans.^{257–260} This disparity is impacted by racial discrimination, mental health, and cultural attitudes towards sleep.²⁵⁷ When analysed by subgroup, East Asian people have been found to have better sleep outcomes than Southeast Asian Americans.²⁵⁷ Chinese Americans were more likely to get adequate sleep than Filipinx and Other Asians, and were less likely to report poor sleep quality than Indian people.²⁶¹ Length of residence in the US and acculturation also impacts sleep, with recent immigrants reporting better sleep than those who had resided in the US longer,²⁶² and first generation immigrants reporting better sleep quality than following generations.²⁵⁷ Acculturative stress has also been found to be associated with an increase in sleep disturbance.²⁶³

A global review of sleep reported that adults in East and Southeast Asia, along with people in Central and Southern America, North Africa and West Asia, and urban North America were more likely to report poor quality sleep than people in Europe, Japan, Australia, and non-urban North America.²⁵⁹ In China, poor sleep was more common in women, ranging across the age-groups from adolescents to older adults (65+ years).^{264–266} Mental health conditions (e.g. anxiety, depression), co-morbidities (e.g. hypertension, coronary heart disease), low income, low education level, and older age were associated with poorer sleep.^{264–266} Similarly, low income and unemployment were associated with poorer sleep in older adults in Japan.²⁶⁷ In Bangladesh, rural populations were more likely to sleep for a short duration than urban.²⁶⁸ In Singapore, Chinese Singaporeans were more likely to report adequate sleep duration than Malay and Indian Singaporeans.²⁶⁹ Other than possible cultural differences in sleep attitudes, it was also noted that Chinese people in Singapore are more likely to be of higher SES.²⁶⁹ Age, mental health, stress, and shift work were also associated with poor sleep quality and shorter sleep duration.²⁷⁰

In Japan, China, Singapore, and Korea, short and long sleep duration was associated with increased mortality risk,²⁷¹ and in Taiwan short sleep duration and poor sleep quality was associated with coronary heart disease risk.²⁷² A study of students in China found that short sleep duration, poor sleep quality, and insomnia symptoms were associated with suicidal ideation.²⁷³

2.1.2.12 Summary

The current literature on the health behaviours and risk factors of Asian adults in NZ is mixed. These results are generally supported by international data, particularly from Asian adults in the US and UK. Racial and ethnic discrimination is high, particularly from 2020 onwards. There are relatively low levels of smoking, vaping, alcohol use, and illicit drug use compared to other major ethnic groups, although evidence for gambling levels is mixed. For gambling, in particular, stigma may play a part in reporting. Poor levels of nutrition and physical activity were reported, and obesity results varied – South Asian people had a higher prevalence of obesity than other Asian ethnicities.

For some topics, such as oral health, illicit drug use, nutrition, and sleep, there were limited data for Asian adults in NZ. There were also limited results for the health behaviours and risk factors for adults of different Asian ethnic groups. Where this occurred, it generally involved behaviours and risk factors that are associated with cardiometabolic conditions, which are known to be higher for South Asian people. However, international studies have shown that increased prevalences of risk factors have also been found for other Asian subgroups, so further research that includes Asian subgroups, both original research and additional analyses of existing data, would be valuable.



2.2 Health conditions



2.2.1 Children

In the NZHS “child” is defined as children aged 0–14 years.

2.2.1.1 Rheumatic fever and rheumatic heart disease

This section includes results from both child and adult surveys as rheumatic fever mainly starts in childhood.

Studies on rheumatic fever and rheumatic heart disease show that Asians in NZ are less likely to be hospitalised for acute rheumatic fever or rheumatic heart disease than Māori, Pacific, and European & Other people.^{274,275} Asians in NZ also had a lower mortality rate from rheumatic heart disease than Māori, Pacific, and European & Other, although the average age of death was lower than that of the European & Other ethnic group.²⁷⁴ There were no results found for the different Asian ethnicities.

In the US, AAPI have a higher prevalence of rheumatic fever than other major ethnic groups.^{276,277} Other studies of rheumatic heart disease in the US²⁷⁸ and Australia²⁷⁹ include results for Asians but do not draw any conclusions based on ethnicity/race.

A recent review of rheumatic heart disease in Asia²⁸⁰ concluded that although its prevalence has decreased since 1990, there is significant inequity – economically disadvantaged Asian countries carry the majority of the burden. The overall prevalence in Asia was 9% lower than the global estimate, while mortality was 41% higher.²⁸⁰

Notably, women have a higher prevalence of rheumatic heart disease than men. Although vast improvements have been made since the 1990's, South Asia still has high levels of rheumatic heart disease,^{281–283} with the highest prevalence being in Pakistan and the lowest in Bangladesh.²⁸¹ The prevalence of rheumatic heart disease was also found to be higher in rural areas than urban in China and South Asia,^{281,284} and higher in low socioeconomic areas in China, Malaysia, and South Asia.^{281,284,285}

2.2.1.2 Diabetes

The NZHS does not differentiate between type 1 diabetes (T1D) and type 2 diabetes (T2D), so results for both conditions in children are presented here.

Type 1 diabetes

The prevalence of T1D in NZ Asian children is significantly lower than that of other major ethnic groups, with European & Other being the highest.²⁸⁶ There were no results found for the different Asian ethnicities.

In the US, Asian youth²⁸⁷ and AAPI youth^{288,289} have a lower incidence of T1D than non-Hispanic white, Black, and Hispanic youth.^{287,288} South Asians with T1D in England were more susceptible to retinopathy than white Europeans, but less susceptible to neuropathy.²⁹⁰ Additionally, South Asian people in England have been found to have better glycaemic control, higher systolic blood pressure, and a lower total to HDL cholesterol ratio than South Asians in India.²⁹⁰

Internationally, India and China have the highest and fourth highest number of cases of T1D, respectively, although they rank much lower when measured per 100,000 population.²⁹¹ Within Asia, the Maldives has the highest incidence rate, followed by Taiwan and India.²⁹¹ These rates, however, are much lower than that of the UK, US, NZ, and Australia.²⁹¹

Type 2 diabetes

South Asian children, along with Māori and Pacific children, are disproportionately affected by early onset T2D.²⁹² In Auckland, incidence of T2D in children was the highest in Māori and Pacific, with Asian/Middle Eastern (7%/year) and Pacific children (6%/year) showing the greatest increase in incidence between 1995 and 2015.²⁹³

In children and youth under 16 years old in England and Wales, Asian girls were found to have the highest prevalence of T2D compared to all other groups.²⁹⁴ In this study, the Asian participant group was primarily identified as South Asian.²⁹⁴ Additionally, it was found that South Asian children and youth who presented with T2D generally did so at lower body mass indices than that of white children and youth.²⁹⁵

The prevalence of paediatric T2D in Asian countries is increasing with urbanisation. Countries with increases of T2D in children include China,²⁹⁶ India,²⁹⁷ Bangladesh,²⁹⁸ and Hong Kong.²⁹⁹ In India, the prevalence of prediabetes/T2D was higher in adolescent boys than girls (aged 10–19 years).³⁰⁰ It has also been noted that higher proportions of children diagnosed with T2D in Taiwan, India, and Japan are of normal weight compared to children in Europe and the US.³⁰¹

2.2.1.3 Asthma

Despite worldwide increases in asthma frequency,³⁰² asthma in NZ children (aged 2–14 years) has declined over the last 10 years.³⁰³ Previous analysis of the NZHS found that Asian children, along with European & Other children, have a lower prevalence of medicated asthma than Māori and Pacific children.³⁰³ However, Māori, Pacific, and Asian children (under 15 years) were hospitalised for asthma at a significantly higher rate (per 100,000 people per year) than European & Other.³⁰⁴ There were no results found for the different Asian ethnicities.

In the US, some studies have found that Asian children have the same or lower prevalence of asthma compared with non-Hispanic white children.^{305,306} Another study found that Asian children, along with non-Hispanic Black and Hispanic children, had a higher risk of asthma than non-Hispanic white children.³⁰⁷ When analysed by subgroup, Filipinx American children were found to have no significant difference in asthma prevalence to non-Hispanic white children, whereas Chinese, Indian, and other Asian children had a lower prevalence.³⁰⁶ In the UK, South Asian children have been found to have poorer asthma outcomes than white children.^{308,309} However, another study also found South Asian children to be at lower risk for a future attack than white British children.³¹⁰ In Australia, children born in Asia had a lower risk of asthma than Asian children born in Australia,³¹¹ while Asian children born in Australia showed no significant difference in risk for asthma compared to non-Asian children.³¹¹

Prevalences of childhood asthma in Asia are generally lower than other parts of the world. The recent Global Asthma Network Phase I study found that prevalence of lifetime-ever asthma for 6- and 7-year-olds ranged from 0–2.9% in India, 5.6–8.3% in Sri Lanka, 6.1% in Bangkok, and 14.5% in Taiwan.³¹² In comparison, the same study found a higher prevalence in Auckland (19.2%), Costa Rica (29.3%), and Bilbao, Spain (22.7%).³¹² The prevalence of lifetime-ever asthma for 13- and 14-year-olds ranged from 0.3–7.9% in India, 10.5–12.6% in Sri Lanka, 8.8% in Bangkok, and 14.2% in Taiwan;³¹² while a higher prevalence was found in Auckland (22.6%), Nicaragua (20.1%), and Bilbao, Spain (29.9%).³¹² In Indonesia, the prevalence of wheezing in children (aged 6–7 years) and adolescents (aged 13–14 years) was also low (4.6%).³¹³ However, use of inhalation therapy was also low, reported at <30% of those with asthma.³¹³ In China, it was found that asthma is more common in children aged 5–9 years, boys, and in urban areas.³¹⁴

2.2.1.4 Eczema

Analysis of GUINZ data found that children of Asian, Māori, and Pacific mothers had increased odds of having eczema between the age of 9 months and 2 years than children of European mothers.³¹⁵ Previous analysis of the NZHS found that Pacific children (aged 0–14 years) had a higher prevalence of being diagnosed with eczema than Māori, Asian and European & Other children.³¹⁶ Pacific and Māori people (aged 0–24 years)

were hospitalised for eczema and dermatitis at a higher rate than Asian and MELAA people, all of whom were hospitalised at a significantly higher rate than European & Other people.³¹⁶ The hospitalisation rate for eczema and dermatitis increased significantly as SES decreased.³¹⁶ There were no results found for the different Asian ethnicities.

In the US, Asian American and non-Hispanic Black children were also found to have a significantly higher risk of eczema compared with non-Hispanic white and Hispanic children.³⁰⁷ In the UK, Asian and Black children (aged <2 years, 2–11 years, and 12–17 years) had a higher incidence rate of new-onset eczema and higher prevalence of active eczema than white British children.³¹⁷ Another study found that Pakistani British children were more likely to be diagnosed with eczema than white British children, although this difference was not significant when other risk factors were taken into account.³¹⁸ In Australia, studies have found that Asian children born in Australia showed significant increased risk for eczema compared to non-Asian children.^{311,319} Australian Asian children born in Asia had a lower risk of eczema than Australian Asian children born in Australia,^{311,319} and Asian children in Singapore had a lower prevalence of early-onset eczema than Asian children in Australia.³²⁰

In Asia, the *Global Asthma Network Phase I* study measured eczema prevalence in children 6–7 years and 13–14 years.³¹² Prevalence of lifetime-ever eczema for 6- and 7-year-olds ranged from 2.2–11.2% in India, 3.8–6.2% in Sri Lanka, 28.6% in Bangkok, to 22.9% in Taiwan.³¹² In comparison, the study found a higher prevalence in Auckland (31.4%) and Spain (37.4–47.5%). Prevalence of lifetime-ever eczema for 13- and 14-year-olds ranged from 2.1–21.9% in India, 7.1–9.4% in Sri Lanka, 17.4% in Bangkok, to 15.3% in Taiwan.³¹² The study found a similar prevalence in Auckland (18.8%) and higher prevalence in parts of Spain (30.4–38.4%) and Khartoum, Sudan (28.5%). In China, lifetime-ever eczema ranges from 10.0–30.0% in children aged 3–12 years.³²¹ Low birthweight was associated with increased risk of eczema in Vietnam, with 6.7% of children (aged 6 years) being diagnosed with eczema.³²²

2.2.1.5 Autism

In Auckland, 19.5% of autistic children and youth (under 20 years old) who are enrolled with MOH Disability Support Services are Asian.³²³ Of these, Chinese people made up the largest Asian subgroup, followed by Indian, Filipinx, and Korean.³²³ This percentage is significantly lower than the 26% of Aucklanders who identified as Asian in 2018,³²⁴ but Asians in NZ generally underutilise Disability Support Services for a number of reasons.³²³ A recent NZ-wide study noted that there are few estimates of the prevalence of autism in NZ, and found that the proportion of autistic people (aged 0–24 years) identifying as Asian (12%) was lower than the proportion of Asian people (aged 0–24 years) in the NZ population (16%).³²⁵ This was also the case

for Māori and Pacific people.³²⁵ There were no results found for the different Asian ethnicities.

Asian children in the US, like other minority children, have a lower prevalence of being diagnosed with autism despite meeting diagnostic criteria.^{326,327} However, other studies have found that AAPI children are overrepresented in school-based autism identification.^{328,329} It was hypothesised that this may be due to over aggregation of diverse ethnic groups.³³⁰ It has also been noted that Asian, Black, Pacific and Indigenous children receive fewer outpatient services when compared to white children, and are more reliant on school-based services.³³¹ In the UK, Asian children, along with Black and other Minority Ethnic children were less likely to be diagnosed with autism than British white children.^{332,333} They are also less likely to access appropriate services,^{332,333} and a study in 2015 noted that cultural factors added an extra element of complexity to achieving successful consultations with parents from ethnic minority backgrounds.³³³ In Australia, children born to Asian women in Western Australia had a lower prevalence of autism diagnosis than Caucasian women.³³⁴

Research on autism in Asia has been limited in the past, however this is increasing.^{326,335–337} The prevalence of autism in Asia has generally been estimated to be lower than in the US,^{338,339} although the prevalence in Japan and South Korea is higher than globally.^{335,340} Studies have shown that autism has a greater stigma in China,³³⁹ Japan,³⁴¹ South Korea,^{342,343} and India³⁴⁴ compared with the US. There is also strong stigma in Vietnam³³⁷ and Malaysia.³⁴⁵

2.2.1.6 Attention deficit hyperactivity disorder

Previous analysis of NZHS data found that South Asian and Pacific children had a significantly lower prevalence of attention deficit hyperactivity disorder (ADHD) compared with European & Other.² There were no significant differences for Chinese or other Asians.² However, it was found that Asian children were least likely to be dispensed medication for ADHD, followed by Pacific, Māori, and then European & Other.³⁴⁶ There were no results found for the different Asian ethnicities.

In the US, several publications report that the prevalence of ADHD in non-Hispanic Asian children is significantly lower than other major ethnic groups.^{347–350} Possible reasons given for this include underreporting by parents (due to cultural differences) and underreporting by teachers (due to racial bias). Asian children, along with Black children and Hispanic children, were also found to have lower access to ADHD treatment compared with white children.^{348,350,351}

Within Asia, a 2018 review estimated the prevalence of ADHD in Chinese children and adolescents to be 6.5% in mainland China, 6.4% in Hong Kong, and 4.2% in Taiwan.³⁵² A similar prevalence was found in India (6.3%),³⁵³ Japan (6.5%),³⁵⁴ Sri Lanka (6.5%),³⁵⁵ and slightly higher in South Korea (8.5%).³⁵⁶ Studies generally

found that boys had a higher prevalence than girls, although this may be due to underdiagnosis in girls.³⁵⁷

2.2.1.7 Mental health

Mental health issues and suicide affecting Asians in NZ have been a relatively hidden problem in the past,¹⁰ and there have been more public efforts to highlight them in recent years.^{358–362} Previous analysis of the NZHS found that in Asian, Māori, and Pacific children, the associated odds of being diagnosed with a mental health condition increased as the number of experiences of vicarious racism increased.³⁶³ A study that followed five successive cohorts of Year 9 students (cohorts began in 2013–2017; each was followed for three years), obtained from New Zealand's *Integrated Data Infrastructure*, found that 9.7% of Year 9 students with anxiety, depression, and/or indeterminant anxiety or depression identified as Asian.³⁶⁴ This percentage is slightly lower than the 11.0% of Year 9 students that identified as Asian in 2018.³⁶⁵

Asian high school students (aged 12–18 years), along with students of other major ethnic groups, have reported significantly declining emotional wellbeing scores since 2007.^{49,366} In 2007, 75.0% of Asian high school students reported having good emotional wellbeing,⁹ dropping to 63.1% in 2021.⁴⁹ Mental health was highlighted in the Youth19 report on South Asian, East Asian, Chinese, and Indian high school students.⁹ This found that many students (aged 13–18 years) reported significant distress, both emotional and mental. Mental health was of particular concern for female students of all Asian ethnic groupings, as well as Chinese and East Asian (inclusive of participants identifying as East Asian and Southeast Asian) students of all genders. Those of Chinese and East Asian descent also reported lower access to health care than Indian, South Asian, and European participants.⁹

The 2021 *Youth Health and Wellbeing Survey – What About Me?* found that 23.3% of Asian high school students (aged 12–18 years) reported experiencing serious distress in the previous 30 days, which was significantly lower than that reported by Māori (35.5%) and MELAA students (43.8%), but not significantly different from that reported by Pacific (25.3%) or European students (28.4%). A high percentage of Asian students also reported feeling overwhelmed (40.2%), like life is not worth living (36.2%), deliberate self-hurt or harm (28%), serious suicidal ideation (21.8%), and suicide attempts (11.1%) in the previous 12 months.⁴⁹ While these percentages were significantly lower than reported by Māori students (all indicators) and European students (some indicators), they are still concerning high.⁴⁹ The prevalence of Asian students reporting suicide attempts in the past year increased significantly from 4.4% in 2019 to 11.1% in 2021.^{49,366}

In the US, Asian children are less likely to be diagnosed with and receive treatment for depression than other major ethnicities.^{349,350} Some studies found they were more likely to



be diagnosed with anxiety,³⁴⁹ and others found they were less likely to be diagnosed with anxiety.³⁵⁰ AAPI and Latine children of immigrants had significantly higher depression scores compared to children of non-immigrants.³⁶⁷ Studies in the UK also found differing results; Asian children (aged 5 years) had more emotional difficulties than white children, and Asian and Black children (aged 11 years) had lower emotional difficulties than white children.³⁶⁸ A study of adolescents (aged 11–14 years) in England also found that Asian adolescents were significantly less likely to report emotional mental health difficulties than white adolescents.³⁶⁹

Analysis of 2019 *Global Burden of Disease* data found that South Asia and the East Asia & Pacific region had the highest number of adolescents (aged 10–19 years) with mental health conditions.³⁷⁰ Depression and anxiety were common among children and adolescents (aged 8–18 years) in China, with 13.1% reporting depressive symptoms and 22.3% reporting anxiety symptoms.³⁷¹ Children and adolescents who had experienced adverse childhood experiences (such as physical abuse, verbal abuse, sexual abuse, physical neglect, and household dysfunction) had a significantly higher prevalence of depression and suicidal ideation,^{371,372} and female children and adolescents were more likely to report depression and anxiety symptoms than males.³⁷¹ In South Korea, the prevalence of depression in children (under 15 years) increased between 2002 and 2015.³⁷³ Male children had a higher prevalence of depression than female children.³⁷³ A review of depression in children and adolescents in India found a wide variation in prevalence, ranging from 0.1% to 68%.³⁷⁴ In Singapore, it was found that children who had been diagnosed with anxiety or depression were more likely to have a parent who also reported a mood or anxiety disorder.³⁷⁵

2.2.1.8 Summary

The current literature on the health conditions of Asian children in NZ shows lower prevalence of rheumatic fever, T1D, asthma, autism, and ADHD than most other ethnicities. Results were mixed for eczema, mental health and for T2D. South Asian children were disproportionately affected by early onset T2D compared to other Asian and European children. For mental health, results varied by study, with one reporting higher mental distress in girls and Chinese and East Asian high school students of all genders. These results are generally supported by international data, with some exceptions – most notably being eczema results in the US, UK, and Australia, and rheumatic fever results in the US and Asia.

There were no results found for health conditions of children of different Asian ethnicities other than T2D and mental health. Further research that includes Asian subgroups, both original research and additional analyses of existing data, could provide valuable insights into disparities among children of different Asian ethnicities that could be obscured by aggregated data.⁹¹





2.2.2 Adults

2.2.2.1 Cardiovascular disease

Indian people in NZ, in particular Indian men, have a higher risk of cardiovascular disease than Europeans.^{376,377} In comparison, Chinese and Other Asians (i.e. non-Chinese non-Indian identifying Asians) have a lower risk than Europeans.³⁷⁶ A recent study on the cardiovascular profile of Filipinx people in NZ found that the prevalence of cardiovascular risk factors was higher for those who had been in NZ for more than three years, were male, and were smokers.³⁷⁸

Several NZ studies have found that Indian people have a high risk of cardiovascular disease itself.^{246,376} Additionally, Indian people have the highest rates of hospitalisation for ischaemic heart disease of all groups (Māori, Pacific, European, Other Asians),³⁷⁷ and, along with Māori and Pacific patients, present with ischaemic heart disease at a younger age than Europeans.³⁷⁹ Despite Asians in NZ having a low mortality rate from cardiovascular disease overall,³⁸⁰ South Asians are disproportionately affected. Indians in NZ also have a higher rate of mortality from ischaemic heart disease than non-Indian Asians and Europeans.³⁷⁷ NZ-born Indians also have the highest cardiovascular mortality rates when compared to other Asian subgroups.¹²

Similar results have also been found in the US. The acute myocardial infarction hospitalisation rate was higher for Asian Americans than other main ethnic groups, as was the in-patient mortality rate from acute myocardial infarction.³⁸¹ Recent studies also found that Filipinx and Indian people had a higher cardiovascular disease prevalence and cardiovascular risk when compared to other Asian subgroups in the US (i.e. Chinese, Japanese, Korean, Vietnamese).^{382,383} South Asian people have higher proportional atherosclerotic cardiovascular disease mortality rates compared to other Asian ethnicities and non-Hispanic white people in the US,³⁸⁴ and Indian, Chinese, and Filipinx men and women have higher proportional ischaemic heart disease mortality compared to South Korean and Vietnamese men.³⁸⁵

In the UK, cardiovascular risk and cardiovascular disease are generally high for South Asians compared with white Europeans.^{386,387} South Asians in the UK were also found to have poorer stroke outcomes than white Europeans,³⁸⁸ although South Asians were found to have a lower prevalence of atrial fibrillation despite a higher incidence of stroke.³⁸⁹ South Asians with T2D

had a higher risk all-cause mortality and CVD incidence and mortality compared with white Europeans with T2D.³⁹⁰

Acculturation and duration of residence are associated with cardiovascular health in Asian migrants. US studies show that longer time lived in the US and higher acculturation were associated with greater cardiometabolic risk in Chinese and Korean Americans.³⁹¹ Longer duration of residence in the US also was associated with higher levels of subclinical atherosclerosis for South Asian Americans.³⁹² In Australia, higher levels of acculturation were associated with an increase in cardiovascular risk factors for Chinese migrants.³⁹³ In contrast, lower levels of acculturation in the US were associated with increased cardiometabolic risk for South Asians;³⁹⁴ and shorter duration of residence in the UK was also associated with increased risk of cardiometabolic disease in South Asian people living there.³⁹⁵

Internationally, India and China have the highest burdens for death from cardiovascular disease.³⁹⁶ Asia also has a higher proportion of premature death due to cardiovascular disease compared with Europe and the US.³⁹⁷ The subtypes of cardiovascular disease occur at different rates across Asia. In East Asia, stroke is the most common, while in South Asia ischaemic heart disease is the most common.³⁹⁷

Mortality from stroke is also higher in Asia than places such as Australia, Europe and the US.³⁹⁸ The overall mortality from stroke in Asia varies between countries, with the lowest being Japan and the highest Mongolia.³⁹⁸ There are also differences within countries. For example, northern China has a higher prevalence of stroke compared to southern China,^{398,399} and prevalence is also higher in rural areas.³⁹⁹ Hypertension is the leading risk of stroke in Asia, though other notable risk factors include T2D and smoking.³⁹⁸

2.2.2.2 Hypertension

Previous analyses of NZHS data have found that Asian people in NZ were less likely to have hypertension than Māori, Pacific, or European people.⁴⁰⁰ However, South Asians were more likely to need treatment for hypertension and high cholesterol than other Asian subgroups and the European & Other group.²

Asians in the US are more likely to have undiagnosed hypertension compared to the general population,^{401,402} and are more likely to need treatment for hypertension at lower body mass indices than non-Hispanic white people.^{401,403} Asians born in the US were more likely to self-report having hypertension than new migrants, although the prevalence of hypertension in migrants increased with the length of residency in the US.^{137,404} It is also worth noting that new Asian migrants were more likely to be at risk from morbidity and death from undiagnosed hypertension compared to Asians born in the US.⁴⁰¹ A recent study highlights the importance of disaggregation of the Asian category for Asian Americans from other racial/ethnic groups, in order to best

address inequities in blood pressure management.⁴⁰⁵ In the UK, a review of patients with multiple health conditions found that Asian people were more likely to have better control of their blood pressure than other major ethnicities.⁴⁰⁶

The prevalence of hypertension has been increasing in Asia and is now higher than in other regions.^{407,408} This increase is attributed to the ageing population as well as changes in lifestyle in Asia.⁴⁰⁹ In China, men have a higher prevalence of hypertension than women,⁴¹⁰ and prevalences are highest in northern, northeast, and southwest China.³⁹⁹ A review of hypertension in Southeast Asia found that 1 in 3 people had hypertension, and there was a higher prevalence for males, low education levels, and/or low SES.⁴¹¹ The prevalence of hypertension in India is also high, although it varies across the country, and is higher in urban areas and men.^{412,413} However, it was also found that treatment and control of blood pressure for women with hypertension in India was less adequate when compared to men.⁴¹⁴

2.2.2.3 Diabetes

Numerous studies⁴¹⁵ and previous analyses of NZHS data⁴¹⁶ show Asians, along with Māori and Pacific people, have a higher prevalence of T2D compared to Europeans, and South Asians have a significantly higher prevalence than Chinese or Other Asians (i.e. non-South Asian non-Chinese identifying Asians).² Indian people, in particular, have a high prevalence of T2D when compared to NZ Europeans.^{246,416} This has been echoed in analysis of Auckland and Waitematā DHB statistics, where the Indian population had higher mortality rates from T2D compared with other Asian ethnic groups.⁴¹⁷

Asian people in the US have a higher prevalence of diagnosed and undiagnosed T2D compared to white Americans,^{402,418} and Chinese, Filipinx, and South Asian Americans have a higher prevalence of prediabetes and diabetes than white Americans, even while using Asian-adjusted BMI threshold for weight classification.²⁴⁸ When comparing Asian ethnicities, Filipinx, Indian, and other South Asian Americans have a higher prevalence of T2D compared to Chinese and Korean Americans.^{248,419} Asian Americans are less likely to participate in T2D management than white,⁴²⁰ and Black and Hispanic Americans;⁴¹⁹ although, higher levels of acculturation among them were associated with increased T2D management.⁴¹⁸ A recent review in the UK found that South Asian people with T2D presented at significantly lower body mass indices than white people, and that South Asians and Black people have an average onset age of 10–12 years younger than that of white Europeans and other Asian people.^{421,422}

Studies in Asia attribute the increased susceptibility to T2D to genetic factors as well as increasing industrialisation, and increasing degrees of obesity, insulin resistance and endothelial dysfunction.⁴²³ India and China have a particularly high incidence of T2D compared with the rest of the world, and an increasing prevalence over the past 40 years.^{238,424} Significant increases in

T2D prevalence have also been found in Japan,⁴²⁵ South Korea,⁴²⁵ Bangladesh,⁴²⁶ Pakistan,⁴²⁷ Singapore,⁴²⁸ Malaysia,⁴²⁹ Indonesia,⁴³⁰ Vietnam,⁴³⁰ and Thailand.⁴³⁰ Generally, the prevalence of T2D was found to be higher in urban populations and those of older age. In India, the prevalence of T2D was higher in populations with higher SES,⁴¹³ whereas in Japan higher prevalence of T2D was found to be associated with low SES.^{431,432}

2.2.2.4 Asthma

Previous analysis of the NZHS found that a lower proportion of Asian people with asthma in NZ report it being treated with medication than Māori, Pacific, and European & Other ethnicities.³⁰⁴ However, it is estimated that 5–10% of asthma patients have severe asthma.⁴³³ Asian and Pacific people have a lower prevalence of severe asthma and severe eosinophilic asthma compared to Māori people.⁴³⁴ In cases of severe eosinophilic asthma, Asian and Pacific patients were found to have less frequent acute exacerbations than Māori patients.⁴³⁴ There were no results found for the different Asian ethnicities.

In the UK, South Asian and Black people with asthma are at higher risk of hospital admission and are more likely to attend the emergency department than white Europeans.⁴³⁵ A study in Scotland found that Pakistani men and women had the worst outcomes for asthma-related hospital admission or death.⁴³⁶ Indian patients also had significantly worse outcomes compared to white patients, while Chinese patients had the best outcomes overall.⁴³⁶ In the US, Asian Americans had no difference in asthma risk compared to non-Hispanic white and other Hispanic people, and had a lower risk of asthma than Puerto Rican Hispanic and Black people.⁴³⁷

Internationally, South Asia, followed by high income North America (i.e. Canada, USA), and then East Asia, has the highest asthma burden.⁴³⁸ South Asia (particularly India), also showed the highest number of asthma-related deaths, followed by Southeast Asia (particularly Indonesia).⁴³⁸ Despite this, South Asia has a comparatively lower incidence rate of asthma diagnosis compared to Southeast Asia.⁴³⁸ In China, asthma prevalence is higher in women than men – although there is a switch during puberty, as boys have higher prevalence than girls during childhood years.³¹⁴

2.2.2.5 Arthritis

Osteoarthritis

Osteoarthritis is the most common form of arthritis in NZ and affects about 11% of adults.⁴³⁹ Asian people have been found to be least likely to have osteoarthritis, followed by Pacific, Māori, and European people.⁴³⁹ There were no results found for the different Asian ethnicities.

In the US, Chinese Americans have a lower prevalence of hip osteoarthritis than white Americans.⁴⁴⁰ Asian, Hispanic, and Black



Americans have been found to be less likely to receive hip and knee replacement surgeries than European Americans.⁴³⁹

Within Asia, the prevalence of knee and hip osteoarthritis appears to vary by region and is generally higher than in other parts of the world. It is possible that areas of high prevalence may be due to high amounts of physical labour in these regions.⁴⁴⁰ A recent review found that radiographic knee osteoarthritis ranged from 20% (men in China) up to as high as 70.8% in Japan, and symptomatic knee osteoarthritis ranged from 4.4% (men in South Korea) to 27% (women in China).⁴⁴⁰ In comparison, the Netherlands had the lowest levels of radiographic knee osteoarthritis (6.5%), and Italy had the lowest levels of symptomatic knee osteoarthritis (5.4%).⁴⁴⁰

Gout

Research on gout in Asians in NZ has been limited in the past, although Asians have been included in analyses as part of a non-Māori non-Pacific grouping. This group had a significantly lower gout prevalence than Māori and Pacific people.^{441,442} This is despite findings that Han Chinese and other Asian ethnic groups have been found to have a higher prevalence of gout overseas.⁴⁴³

Asian Americans are diagnosed with gout at a significantly higher prevalence than other ethnic/racial groups in the US,⁴⁴⁴ and experience higher rates of emergency department use and hospitalisation for gout along with Black Americans.⁴⁴⁵ Gout has been found to occur at high rates in Filipinx,⁴⁴⁶ Hmong,⁴⁴⁷ and Japanese⁴⁴⁸ Americans. Genetic variations that are associated with gout and gout-related comorbidities have been found to occur in higher frequencies among people of Han Chinese,⁴⁴⁹ Hmong,⁴⁵⁰ Filipinx,⁴⁴⁶ Vietnamese,⁴⁵¹ Korean,⁴⁵² and Japanese⁴⁵² descent, all of which have significant populations in the US.

Despite this, the prevalence of gout is relatively low in China,⁴⁵³ although it is increasing⁴⁵³⁻⁴⁵⁵ and appears to be manifesting as both common gout and early-onset gout.^{454,456} Gout has also been found to be increasing in South Korea,⁴⁵⁷ Hong Kong,⁴⁵⁸ India,⁴⁵⁹ and many other countries.⁴⁶⁰ At a regional level, East Asia and Southeast Asia have been found to have lower than expected years lived with disability due to gout and South Asia had higher than expected years lived with disability, when analysed by sociodemographic index.⁴⁶⁰

Rheumatoid arthritis

Rheumatoid arthritis is an autoimmune disease that causes joint inflammation, pain, and swelling. Previous analysis of the NZHS found that Asian women have a significantly higher prevalence than Asian men.⁴⁶¹ This was the case for all major ethnicities analysed. Asian women also had a higher prevalence of rheumatoid arthritis than Māori and Pacific women, but lower prevalence than NZ European women.⁴⁶¹

In the US, Asian people were found to have lower prevalence of rheumatoid arthritis than other ethnic/racial groups.⁴⁶² Asian American women had higher prevalences than men, and all ethnic/racial groups were found to have increasing prevalences between 1995 and 2014.⁴⁶²

In Asia, the prevalence of rheumatoid arthritis is low, at less than 1% in India, Pakistan, South Korea, Japan, and China.⁴⁶³

2.2.2.6 Chronic pain

Chronic pain is accepted as part of the ageing process in many Asian cultures, and as such, many people who experience chronic pain do not seek medical help.⁴⁶⁴ These cultural beliefs have also been found to persist in Asian immigrants.⁴⁶⁵

A study of patients at the Waitematā Pain Services in Auckland found that Asian, Māori, Pacific, and MELAA people were underrepresented.⁴⁶⁶ A previous study also found that Māori and Asian people were likely to underreport chronic pain.⁴⁶⁷ Asian patients, along with Pacific and Māori patients, were also found to be more likely to catastrophise about their pain than European and MELAA patients.⁴⁶⁶ There were no results found for the different Asian ethnicities.

In the US, chronic everyday discrimination was found to be associated with higher levels of bodily pain in Chinese and Japanese women, and discrimination was a significant predictor of pain in Chinese women.¹⁰⁶ Lower acculturation was associated with greater experimental pain sensitivity in Asian Americans.⁴⁶⁸ Those who had higher levels of acculturation had a higher pressure pain threshold and higher heat pain tolerance.⁴⁶⁸ A study of pain and pain management in South Asian people in England found there were cultural aspects to pain and their concerns about pain medication, and that doctors could more effectively communicate about pain and pain management using a “cultural humility” model.⁴⁶⁹

Chronic pain prevalence among adults in Asia ranges from 7.1% to 90.8%, and common barriers to better chronic pain management include cultural values and low access to analgesics.⁴⁶⁴ In China, studies have found that chronic pain prevalence ranges from 31.5% to 57.3%, with prevalence being higher in those of low SES and older individuals.⁴⁷⁰⁻⁴⁷² One study found chronic pain to be higher in women,⁴⁷² another in men.⁴⁷¹ It also varies with geographical location, with chronic pain prevalence in Heilongjiang, Chongqing, Guizhou, Sichuan, and Fujian provinces being severe.⁴⁷³ Chronic pain prevalence was also found to be higher in older people and women in Japan,⁴⁷⁴ India,⁴⁷⁵ and Singapore.⁴⁷⁶ In the Philippines, it was found that women, patients of younger age, or higher SES were more likely to catastrophise about their pain.⁴⁷⁷



2.2.2.7 Mental health

Asians in NZ are more likely to seek counsel about their mental health from friends and family rather than from their primary health care provider.¹⁹⁹ Compared to other groups, Asians are less likely to seek professional support via mainstream services, whether it be from a doctor, other health professional, or organisation.¹⁹⁹ It is therefore unsurprising that Asians are less likely to report mental distress⁴⁷⁸ or be diagnosed with depression and anxiety when compared to other groups – even though they are more likely to be at risk for those conditions.⁴⁷⁹ Results from the *NZ Attitudes and Values Survey* found that Asian people, along with Māori and Pacific people, were more likely to be at risk for depression and anxiety than European people.⁴⁷⁹ There is also strong association between experiences of racism and poor maternal mental health for Asian, Māori, and Pacific people.⁴⁸⁰ Use of specialist maternal mental health services by Asian people is also low.⁴⁸¹

In a study of anti-Asian discrimination during the COVID-19 pandemic, half of the participants reported clinically significant levels of depression.¹⁰⁵ Depression was associated with younger age and personal experiences of racism, but there were no differences for gender.¹⁰⁵

Mental health is also impacted by discrimination based on other factors, such as sexuality or gender identity, which then in turn can compound with racial discrimination.⁴⁸² Asian transgender people reported high levels of psychological distress, which were associated with high levels of discrimination from health services for being Asian and/or transgender.⁴⁸³

Young Asians in NZ report high levels of symptoms of depression and anxiety.^{156,484} Asian female youth, in particular, report high frequencies of significant depressive symptoms,³⁶⁶ and young Asians also have high prevalence of intentional injury.^{9,417} Youth suicide mortality rates are high, particularly for males, despite Asians in NZ having a relatively low mortality rate as a group.^{10,417} Asians have the lowest overall rate of suicide of all ethnic groups in NZ.⁴⁸⁵ Suicide rates for Asians in NZ vary by gender, age group, and SES.^{10,485,486} Asian men generally had higher rates of suicide than women,⁴⁸⁵ and rates were highest for Asian people living in the most deprived areas.⁴⁸⁶

Asian immigrants to the US, along with Latine and Black immigrants, have a particularly low prevalence of accessing mental health care.⁴⁸⁷ However, acculturation and duration of residence in the US are associated with increased use of mental health services – studies have found that Asian people who are US-born and/or more acculturated are significantly more likely to access mental health services compared to Asian people who foreign-born and/or less acculturated.^{487–489} Asians in the US were found to be particularly unlikely to seek mental health

services when experiencing significant gambling problems.²⁰⁴ Stigma is often considered to be a barrier to seeking help.²⁰⁴

Analysis of 2019 *Global Burden of Disease* data found that China and India have the highest numbers of people with diagnosed major depressive disorder and anxiety disorders.⁴⁹⁰ When calculated by rate, the Asian countries with the highest rate of major depressive disorder are Bangladesh and Nepal, followed closely by India and Malaysia.⁴⁹⁰ Internationally the suicide rate of people in Asian countries is very high, particularly those in South Korea, Mongolia, India, Sri Lanka, and Japan.⁴⁹¹

2.2.2.8 Summary

The current literature on the health conditions of Asian adults in NZ shows higher prevalence of cardiometabolic conditions for Indian and South Asian people than non-South Asian and NZ European people. Recently documented increases in mental distress in Asian people, coupled with low use of traditional reporting methods generates mixed results for mental health. These results are generally supported by international data, particularly for Asian adults in the US and UK.

The limited data in NZ suggests that other health conditions, such as asthma, arthritis, and chronic pain, are less common in Asian adults than in other ethnic groups. There were also limited results for Asian subgroups other than cardiometabolic results for South Asian people. However, international studies have shown that high prevalences have been found for other Asian subgroups, so further research that includes Asian subgroups, both original research and additional analyses of existing data, would be valuable.



2.3 Health service utilisation

Asians have the lowest prevalence of accessing health care and social support services of all ethnicities in NZ, including primary health care, chronic pain services, mental health care, screening, and oral health care.^{479,492–494}

Low rates of access are thought to be due to several reasons, including length of residence, cultural differences, lack of awareness of services, lack of appropriate services, insufficient capacity where appropriate services are available, and racism and discrimination.^{494,495} Furthermore, current resources aimed at helping Asian people navigate the health system often presume knowledge that Asian migrants may not have.⁴⁹⁶ This lack of accessible information was found to affect both the perception of and engagement with Te Whatu Ora and health services.⁴⁹⁶

There are several Asian targeted health services available in NZ, most notably Asian Family Services (nationwide), Asian Health Services (Te Whatu Ora Waitematā), and Asian Mental Health Service (Te Whatu Ora Te Toka Tumai Auckland). These services reported an increase in Asians seeking support for mental health over the last five years,⁴⁹⁷ particularly in 2020,⁴⁹⁸ such that demand may outstrip capacity.¹⁰ Other effective services are only available locally (e.g. Asian Smokefree Communities in Te Whatu Ora Waitematā area), or certain regions (e.g. The Asian Network Inc in Auckland and Hamilton).⁴⁹⁹

Additionally, people who are classified as Asian using the definition outlined in this document may not identify as Asian, so may not be aware of services that are available to them.⁵⁰⁰

2.3.1 Primary health care

Previous analysis of the NZHS has found that Asians in NZ are least likely to have a usual health care provider, and least likely to visit the doctor when unwell.² Waitematā and Auckland DHB results also show that Asians have the lowest Primary Health Organisation (PHO) enrolment of all ethnic groups.⁴¹⁷ New migrants were less likely to access health care; the shorter the length of residence in NZ, the lower the frequency of health care access.² Given that more than half have been living in NZ for less than 10 years, this is a concern.

The *NZ Attitudes and Values Survey* found that for all major ethnic groups, general practitioner (GP) satisfaction level was the best indicator of the level of satisfaction with health care access.⁵⁰¹ Previous analysis of the NZHS found that Asian and Māori people were less likely to have trust and confidence in their GP than Pacific and European & Other people.²¹⁷ This was also the case for the *NZ Attitudes and Values Survey*, which found

that Asian and Māori people had lower levels of satisfaction in their GP than European people.⁵⁰¹

The *NZ Patient Experience Survey*, a quarterly national survey of adult patients (aged 15+ years) about their most recent primary care experience, also found a range of differences by ethnicity.⁵⁰² It showed that Asian adults, along with Māori and Pacific adults were less likely to feel that their cultural or spiritual needs were met, less likely to have their name pronounced properly, less likely to have their family/whānau involved in discussions, less likely to be involved in decisions about medication, and less likely to feel they were treated fairly by their primary health care provider than European/Other adults.⁵⁰² In contrast with previous NZHS analyses, the *NZ Patient Experience Survey* found that Asian adults had similar levels of trust and confidence in their most recent primary health care professional as European & other adults.⁵⁰²

Youth19 results found that 64% of Chinese and 65% of East Asian high school students (aged 13–18 years) visited a GP in the past year, a lower percentage than Indian (82%), South Asian (83%), and European (81%) students.⁹ Students of all analysed Asian ethnic groupings reported a lower percentage of being able to talk privately with a healthcare provider (29–34%) than European students (39%).⁹ They were also less likely to be assured of confidentiality when visiting a health provider (32–37%) than European students (44%).⁹ East Asian students were also more likely to report an instance of not being able to see a health professional in the past year (21%) than students of other Asian ethnicities (18%), and European students (18%).⁹ The 2021 *Youth Health and Wellbeing Survey* – What About Me? found that 18.2% of Asian high school students (aged 12–18 years) reported an instance of not being able to see a health professional in the past year, which was significantly lower than that reported by Māori students (24.6%), although similar to that reported by Pacific, European, and MELAA students.⁴⁹

A 2023 study found that Asian and Pacific mothers were more likely to visit a GP while pregnant than NZ Europeans, but were less likely to have their first-choice lead maternity carer.⁵⁰³ When their children were aged 2 years, Asian and Māori mothers were less likely to be satisfied with their GP than NZ Europeans.⁵⁰³

Despite this, childhood immunisation levels (for 8 months and 2 years) for Asians in NZ are above the 95% target.⁴¹⁷ At age 8 months, Asian children had a higher prevalence of timely first immunisations than other major ethnic groups.⁵⁰³ At age 2 years, Asian and Pacific children were more likely to be fully immunised than NZ European children.⁵⁰³ It was also found that discouragement against immunisation had no effect on the immunisation prevalence of Asian and Pacific children, but had a negative effect on immunisation of NZ European and Māori children.⁵⁰³

2.3.2 Secondary health care

2.3.2.1 Emergency department

Asian people in NZ, particularly newer migrants, have been found to have disproportionately increased utilisation of emergency departments (EDs) for conditions that are better suited to treatment in a primary care setting, such as asthma and other respiratory illnesses.^{504,505} This higher presentation at EDs has been explained by recent Asian immigrants (i.e. arrival in NZ five or less years ago) being uncertain of the best place to seek treatment.^{505,506} This is also evident in the low levels of enrolment in PHOs, and illustrates the lack of success in providing appropriate information to those unfamiliar with the NZ health system.

It has also been found that high ED use is associated with higher odds of an adverse pregnancy outcome, of which Asian mothers have the highest odds of all major ethnicities in NZ.⁵⁰⁷

The incidence rates of Asian infants presenting to the ED in Counties Manukau DHB with influenza or human metapneumovirus were higher than European & Other infants, but lower than Māori and Pacific infants.⁵⁰⁸ For other respiratory viruses, Asian infants had the lowest, or equal lowest, incidence rates – however, they were also less likely to be tested than other major ethnicities.⁵⁰⁸

Asian and Pacific children (aged 0–14 years) were twice as likely to present to the ED for food-induced anaphylaxis than Māori or NZ European children.⁵⁰⁹ Nuts and cow's milk were the most common reasons for presentation for Asian children.⁵⁰⁹ Mean age of presentation for food-induced anaphylaxis for Asian children was the same as for Māori and Pacific children, and lower than that of NZ European children.⁵⁰⁹ Asian children also showed the greatest rate increase (between 2006–2015) in presentation for food-induced anaphylaxis.⁵⁰⁹

2.3.2.2 Hospital care

Asian people in NZ, along with Māori and Pacific people, face inequities when it comes to hospital care. Inequities can occur at multiple points, including hospital admissions, level of treatment in hospital, medication management, and discharge and follow-up care.

The *NZ Patient Experience Survey* of most recent hospital in-patient experience found that Asian adults, along with Māori and Pacific adults were less likely to feel like their cultural needs were met and less likely to have their name pronounced properly than European/Other adults.⁵¹⁰ In contrast to primary care experience, the *NZ Patient Experience Survey* found that Asian adults were more likely to have family/whānau included in discussions about care than Māori and European/Other adults.⁵¹⁰ Asian adults were also more likely to feel that doctors

listened to their views and concerns and more likely to be given privacy to talk about their condition and treatment than Māori and European/Other adults.⁵¹⁰

In a study of patient and system delay and ST-elevation myocardial infarction, Indian and Māori patients were more likely to have a delay of more than an hour between onset of cardiac symptoms and first medical contact.⁵¹¹ While Māori patients were also more likely to self-transport to hospital (also associated with longer delay), this was not the case for Indian patients.⁵¹¹

Indian people had the highest rates of hospitalisation for ischaemic heart disease of all groups (Māori, Pacific, European, Other Asians).³⁷⁷ Despite this, they had the lowest risk of death from ischaemic heart disease after being hospitalised.³⁷⁹ Indian patients admitted to hospital for acute coronary syndromes had a higher likelihood of receiving an angiogram (within 30 days of admission) or revascularisation when compared to Māori and Pacific patients, but the same as NZ European & Other patients.⁵¹²

Asian people, along with other non-European ethnicities, have reduced access to hospital-level care for stroke, including early swallow assessments, carotid imaging, treatment in an acute stroke unit.⁵¹³ However non-Europeans, particularly Asian and Pacific people, were more likely to be followed up by their GP after discharge from hospital.⁵¹³ Another study found that there has been a significant increase in 30-day ischaemic stroke survival following hospital treatment for Asian and Pacific people.⁵¹⁴ It was suggested that for Asian patients, that this increase may be due to lower initial levels of treatment for very mild stroke at a primary care level.⁵¹⁴

Older Asian people were significantly less likely to receive a publicly-funded hip and knee total joint replacement than all other ethnicities in NZ.^{439,515,516} It is unknown whether this difference is due to lower rates of osteoarthritis in NZ's Asian population, or this is due to barriers of access.⁴³⁹ It was hypothesised that some of this difference may be due to prospective patients travelling back to their country of origin to have the procedure done.⁵¹⁶ Asian patients, along with Māori and Pacific patients, were found to be more likely to have an extended length of stay in hospital following hip surgery and/or knee surgery.⁵¹⁷

In Counties Manukau DHB, Asian infants were more likely to present to the emergency department (ED) with influenza or human metapneumovirus than European & Other infants, however there was no difference in rates of hospitalisation following presentation compared with European & Other despite this higher rate.⁵⁰⁸



2.3.3 Oral health

Previous analyses of the NZHS found that Asian adults had the lowest prevalence of seeing a dental health worker in the previous year.²¹⁷ A small study of Chinese migrants in Wellington showed low access to dental services, with cost, language, lack of knowledge and information, and transport being key barriers.⁵¹⁸

A NZ qualitative study included perspectives from Chinese and Korean people about their use of traditional medicine for dental care and oral health, such as using Chinese medicines or other traditional remedies for toothache, mouth ulcers, sore throats, or other smaller ailments.⁵¹⁹

Regionally, Asian special needs patients in Auckland DHB were underrepresented in the referrals to a Special Needs Dentistry specialist, while NZ Europeans were overrepresented.⁵²⁰ A 2023 study in Canterbury also found that Asian adolescents were underrepresented in oral health service utilisation.⁵²¹

2.3.4 Barriers

Recently immigrated (living in NZ for less than 5 years) Pakistani women reported having difficulty accessing information about GP registration and medical centres.⁵²² The most common solution was receiving help with enrolment from friends or relatives (56%), followed by internet searches (24%).⁵²²

A study analysing 293 GP websites found that they lacked relevant and reliable information for Asian people navigating the NZ health system.⁴⁹⁶ This finding was reiterated by interviews, with participants reporting that they found navigating and understanding primary care services difficult, which in turn influenced their overall perception and engagement with NZ health services.⁴⁹⁶

A study of Pakistani mothers' experiences with the NZ health system found that parents were willing to take their children to visit a GP when they needed, but were less likely to go themselves due to the cost.⁵²³ When they did visit a GP, some reported being dissatisfied as they felt like they weren't listened to or taken seriously, or that they did not receive a prescription or further testing and had to seek treatment options elsewhere.⁵²³ Other barriers they identified included lack of rapport with GPs and nurses, issues with transportation, and long wait times for GP appointments, which led to increased use of emergency departments and after-hours clinics.⁵²³

Older Asian immigrants also reported significant difficulties with navigating an unfamiliar health system.⁵²⁴ Commonly raised access issues include transport, costs, and communication issues.⁵²⁴ Older Chinese and Korean migrants in NZ also expressed a preference to seek out health care services when

visiting their home country, where they are more familiar with the health system.^{518,525} Older Asian immigrants in NZ have been found to have low access to cancer screening, injury care, and mental health care.⁵²⁴

Use of mental health care services is particularly low for Asians in NZ. Compared to other groups, Asians are less likely to seek professional support, whether it be doctor or other health professional or organisation.¹⁹⁹ Cultural stigma likely plays a part in this, along with other cultural differences e.g. believing mental health issues are not a reason to seek support.^{10,479,495} Other factors include health care professionals not recognising signs of mental distress mental health – mental distress may present differently among the different subgroups, genders, and age groups.⁴⁹⁵ Language differences may be of particular importance both in terms of English language proficiency and cultural language differences – for example there is no word for “depression” in Cambodian Khmer,⁵²⁶ and no word to describe “mental health” in Vietnamese.⁵²⁷ Stigma, shame, and “losing face” are also key barriers to disclosing and seeking help for addictions, such as alcohol, drugs, and gambling.^{153,201}

Cultural barriers also exist when it comes to screening. Cervical screening is a key issue, with Asian women having the lowest coverage by a significant margin – only 60.9% in 2019.⁵²⁸ A review of cervical cancer patients revealed that over 85% had either never been screened or had been screened infrequently.⁵²⁹ Waitemata DHB also reported that Asian breast screening coverage is lower than the NZ average.⁴¹⁷ Aspects identified by stakeholders for improvement included increasing awareness of screening programmes, increasing understanding of the programmes themselves, and increasing the availability of ethnically appropriate smear takers.⁵³⁰

The recent national evaluation of breast and cervical Screening Support Services identified Asian people as a priority for cervical screening.⁵³¹ The introduction of self-sampling in the recent Time to Screen campaign is an avenue for increasing screening rates.⁵³² Recent research by Brewer et al. found that self-sampling increases the likelihood of HPV screening for Asians in NZ, as well as Māori and Pacific.⁵³³ Despite this, the **Time to Screen** campaign does not include Asians as one of the priority populations for free screening,⁵³⁴ and the 2023 clinical practice guidelines for cervical screening do not mention Asian people at all.⁵³⁵

Reproductive health care, sexual health care and screening are the other areas of difficulty for the Asian population in NZ. This includes screening for HIV and other STIs. Sexuality and sexual health are not often discussed openly in Asian homes,⁴⁸⁴ and Asian immigrants have been found to be reluctant to talk about sexual practices with their GP – a key barrier to sexual health care and screening.^{505,536} Poor access to sexual health services has been reported to be associated with abortion among young Asians.⁴⁸⁴ Higher levels of acculturation and increased duration

of residence in NZ are associated with increases in testing and use of sexual health services.^{505,536}

Other barriers to accessing health care include experiencing discrimination for reasons such as sexuality or gender identity. Many Asian transgender people in NZ reported experiencing discrimination for being transgender and/or Asian in health care settings.⁴⁸³

2.3.5 Summary

Current literature on service usage shows Asian people generally have the lowest prevalence of accessing primary health care of all ethnicities in NZ. Oral health care and screening were low, although immunisations were high. Hospital-level care results were a mix of positive and negative. Key barriers to access included cultural differences, lack of awareness of services, cost, lack of appropriate services, insufficient capacity where appropriate services are available, and racism and discrimination. There were limited results for Asian subgroups, so further research that includes Asian subgroups, both original research and additional analyses of existing data, would be valuable.



Photo by David Billings on Unsplash

3. METHODS

This report is based on data collected in the NZHS, which provides information about the health and wellbeing of New Zealanders. These surveys have been carried out by the MOH intermittently from 1992–93 and annually since 2011. Data analysed in this report cover ten surveys and span six data analysis periods (Table 1A), with the aim of monitoring ethnic differences and trends in health measures among the Asian population from 2002–03 to 2020–21. Full details of the methods used in the NZHS have been published.^{1,537–547}



Table 1A

Survey periods and participant ages for the New Zealand Health Surveys analysed in this report.

Data Analysis Period	Survey period	Children aged 0–14 years		Adults aged ≥15 years	
		Interviewed participants	Response rate	Interviewed participants	Response rate
2002–03 ⁵³⁸	Sep 2002 – Jan 2004	NA [¶]	NA [¶]	12,529	72%
2006–07 ⁵³⁹	Oct 2006 – Nov 2007	4,921	71%	12,488	68%
2011–13 ^{537,540}	July 2011 – June 2012	4,558	85%	12,596	79%
	July 2012 – June 2013	4,485	85%	13,009	80%
2013–15 ^{541,542}	July 2013 – June 2014	4,699	85%	13,309	80%
	July 2014 – June 2015	4,754	83%	13,497	79%
2015–17 ^{543,544}	July 2015 – June 2016	4,721	80%	13,781	80%
	July 2016 – June 2017	4,668	80%	13,598	80%
2017–19 ^{545,546}	July 2017 – June 2018	4,723	79%	13,869	80%
	July 2018 – June 2019	4,503	79%	13,572	80%
2019–21 ^{1,547}	July 2019 – June 2020	3,290	74%	9,699	75%
	July 2020 – June 2021	2,954	74%	9,709	77%

**, In the current report, the analysis excluded the 2013–14 and 2014–15 surveys due to the absence of subcategories for South Asian ethnic grouping; [¶], Children were not included in the 2002–03 survey.*

3.1 Target population

The target population for the NZHS is the NZ “usually resident” population living in private accommodation. This was expanded slightly since 2011–12 to include also people living in non-private accommodation.

3.2 Sample selection

There have been small but important changes in the method of sample selection since the 2002–03 survey, although the aim of the method of each survey was to recruit a representative sample of resident New Zealanders.

For 2015–16 to 2020–21 surveys, a multi-stage, stratified, probability-proportional-to-size (PPS) sampling design was used to select participants from an area-based sample and a list-based electoral roll sample. The aim of this approach was to increase the sample sizes for Māori, Pacific, and Asian ethnic groups.

A three-stage selection process was used to achieve the area-based sample.

The area-based sample was targeted at the ethnic groups of interest by assigning higher probabilities of selection to areas in which these groups were more concentrated. The first stage was to randomly select primary sampling units (PSUs, groupings of one or more meshblocks) used by Stats NZ Tatauranga Aotearoa for household surveys, within each former DHB area with probability proportional to their size (the counts of occupied dwellings from the Census), modified using a targeting factor to give higher selection probabilities of PSUs with more Pacific or Asian people. The second stage was to randomly select approximately 21 households using systematic sampling with equal probability in each selected PSU. The third stage was to randomly select one adult (aged 15 years or over) and one child (aged from birth to 14 years if any in the household) from each selected household. Any aged-care facilities in the selected PSUs were included in the area-based sample by first dividing them into ‘accommodation units’, which were then treated as households in the sampling process. Students away from home in university hostels and boarding schools were eligible via their family’s house, if they still considered this to be their home.

A three-stage selection process was used to achieve the electoral roll sample.

The electoral roll was used to increase the sample size of the Māori ethnic group. The first stage was to randomly select a sample of PSUs within each former DHB area, with a probability proportional to the number of addresses on the electoral roll containing a person who had self-identified as Māori. The second stage consisted of randomly selecting a systematic sample of 14 addresses from each selected PSU, or all addresses if there were fewer than 14. The third stage involved randomly selecting one adult (aged 15 years or over) and one child (aged from birth to 14 years, if there were any children in the household) from each selected address.

Previous surveys: The sample design used for the 2011–12 to 2014–15 surveys was slightly different than for the recent years. The key difference was in the first stage selection units, which were census meshblocks rather than Stats NZ’s household surveys frame PSUs. There were also some associated changes to the selection probabilities and the number of dwellings selected from each meshblock. In addition, the 2002–03 and 2006–07 surveys also used a multi-stage, stratified, PPS sampling design, but only to select participants from area-based sample (and no list-based electoral roll sample). For more details on the sample design of those surveys, please refer to the publications elsewhere.^{2,538,539,548,549}

3.3 Data collection

In all surveys, face-to-face interviews were conducted in the homes of participants, with the interviewer entering responses directly into a laptop via computer-assisted personal interviewing (CAPI) software. Data for some sensitive questions were collected via computer-assisted self-interviewing (CASI), whereby adult respondents entered their responses directly into a tablet computer. Trained interviewers administered the questionnaire to participants. The number of interviewed participants and response rate of each survey are shown in Table 1A.

Since 2017–18, electronic showcards with predetermined response options on a computer have been used to help improve respondent engagement and accuracy of their responses. In the 2020–21 survey, due to COVID-19 restrictions, a small number of interviews were conducted via computer-assisted video interviewing (CAVI).

Most of the core questions for both adults and children were drawn from the main topic areas included in the 2006–07 and 2011–12 surveys. Core topics included health conditions, health status, health behaviours and risk factors, health care services, sociodemographics, and health measurements. In addition, modules on specific topics were added to collect further detailed information, which were cycled through the surveys from 2011–12. These modules are summarised in Table 1B.

Table 1B
New Zealand Health Survey module topics from 2011–12 to 2020–21

Year	Child module topic(s)	Adult module topic(s)
2011–12	Health service utilisation and patient experience	Health service utilisation and patient experience Problem gambling Racial discrimination
2012–13	Child development Food security Exposure to second-hand smoke	Alcohol use Tobacco use Drug use
2013–14*	Long-term conditions Health status Disability status Living standards Housing quality Exposure to second-hand smoke	Long-term conditions Health status Disability status Living standards Housing quality

Year	Child module topic(s)	Adult module topic(s)
2014–15*	Child development Food security Rheumatic fever	Sexual and reproductive health Biomedical tests Rheumatic fever (under 25 years)
2015–16	Child development Food security Exposure to second-hand smoke Rheumatic fever	Tobacco use Rheumatic fever (under 25 years)
2016–17	Behavioural and developmental problems Rheumatic fever	Mental health and substance use Rheumatic fever (under 25 years) Racial discrimination
2017–18	Health service utilisation and patient experience	Health service utilisation and patient experience Understanding health and health care
2018–19	Dietary habits Functional difficulties	Dietary habits Functional difficulties Alcohol use
2019–20	Household food security Dietary habits Functional difficulties	Household food security Dietary habits Alcohol use
2020–21	Functional difficulties Child development Household food security	COVID-19 Racial discrimination

**, In the current report, the analysis excluded the 2013–15 surveys due to the absence of subcategories for South Asian ethnic grouping. This table was adapted from Content Guide 2020–21 New Zealand Health Survey.⁵⁵⁰*

3.4 Ethnicity

Ethnicity was self-defined, and participants were allowed to choose their affiliation with more than one ethnic group. The following priority rules were used for this report:

- If any Asian ethnicities were recorded, the participant was assigned to 'Asian'.
- If Māori was recorded, the participant was assigned to 'Māori'.
- If any Pacific ethnicities were recorded, the participant was assigned to 'Pacific'.
- If European was recorded, the participant was assigned to 'European'.
- All remaining participants were assigned to 'Other'.

The latter two ethnic groups were combined into 'European & Other' for data analyses. The Asian sample was further assigned, based on the coding available from the MOH, into three groupings, with the following order of priority: South Asian (Indian, Fiji-Indian, Pakistani, Sri Lankan, Bengali, Nepali and Afghani), Chinese, and Other Asian.¹⁵

The numbers of participants who provided questionnaire data for surveys from 2002–03 to 2020–21 surveys are shown in Table 2A for children aged 0–14 years, and in Table 2B for adults aged ≥15 years.

Table 2A

Number of child participants (aged 0–14 years) with questionnaire measurements – by five data analysis periods from 2006–07 to 2019–2021 surveys.

Survey	Ethnic grouping					
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other
2006–07 survey						
All genders	316	220	165	1,947	537	1,736
Girls	162	127	81	1,019	289	911
Boys	154	93	84	928	248	825
2011–13 surveys combined						
All genders	360	230	299	3,140	939	4,074
Girls	190	120	155	1,616	468	2,102
Boys	170	110	144	1,524	471	1,972
2015–17 surveys combined						
All genders	576	320	395	3,292	824	3,982
Girls	290	156	203	1,721	423	2,046
Boys	286	164	192	1,571	401	1,936
2017–19 surveys combined						
All genders	573	349	455	3,184	820	3,845
Girls	282	185	232	1,624	425	2,012
Boys	291	164	223	1,560	395	1,833
2019–21 surveys combined						
All genders	419	278	325	2,112	511	2,599
Girls	222	142	174	1,094	262	1,356
Boys	197	136	151	1,018	249	1,243

Table 2B

Number of adult participants (aged ≥15 years) with questionnaire measurements – by six data analysis periods from 2002–03 to 2019–21 surveys.

Survey	Ethnic grouping					
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other
2002–03 survey						
All genders	391	494	332	4,093	890	6,329
Women	207	290	209	2,671	561	3,720
Men	184	204	123	1,422	329	2,609
2006–07 survey						
All genders	565	540	387	3,131	890	6,975
Women	270	322	247	1,934	511	3,931
Men	295	218	140	1,197	379	3,044
2011–13 surveys combined						
All genders	750	571	629	5,181	1,495	16,979
Women	380	324	378	3,262	925	9,768
Men	370	247	251	1,919	570	7,211
2015–17 surveys combined						
All genders	1,104	698	759	5,464	1,395	17,959
Women	534	376	446	3,265	818	10,099
Men	570	322	313	2,199	577	7,860
2017–19 surveys combined						
All genders	1,156	749	944	5,486	1,462	17,644
Women	565	417	557	3,379	865	9,932
Men	591	332	387	2,107	597	7,712
2019–21 surveys combined						
All genders	805	573	708	3,790	1,000	12,532
Women	379	297	375	2,362	607	7,202
Men	426	276	333	1,428	393	5,330

3.5 Data processing and analysis

The New Zealand Index of Deprivation 2018 (NZDep2018) is the primary summary measure of the level of socioeconomic deprivation for each neighbourhood. It was developed by Atkinson et al.⁵⁵¹ The measures of socioeconomic deprivation are from the 2018 Census of Population and Dwellings variables and include the following dimensions of deprivation: communication, income, employment, qualifications, owned home, support, living space and living condition. The early version of NZDep2013 was used between 2014–15 and 2018–19 surveys, and NZDep2006 was used between 2006–07 and 2013–14 surveys, and NZDep2001 was used for 2002–03 survey. In this report, the NZDep quintiles are reported, where quintile 1 represents the top 20% of small areas with the lowest levels of deprivation (the least deprived areas) and quintile 5 represents the 20% of small areas with the highest level of deprivation (the most deprived areas). In NZDep2018, these small areas were constructed based on a new Stats NZ geography known as Statistical Area 1 (SA1), which comprises clusters of one or more meshblocks and typically encompass 100 to 200 usual residents. SA1 served as the starting point for creating small areas. Previous versions of NZDep utilized Stats NZ's meshblocks as the building blocks for small areas, with the aim of creating small areas having at least 100 persons usually resident, where possible.

BMI was calculated using the standard formula: Weight (kg)/Height (m)². The World Health Organisation (WHO) classifications for overweight (BMI 25.0–29.9) and obesity (BMI ≥30.0) were applied to European participants. For Asian people, the classification of overweight was BMI 23.0–24.9 and of obesity was BMI ≥25.0, as used in the previous Asian Health in Aotearoa report.² For Māori and Pacific people, the classification of overweight was BMI 26.0–31.9 and of obesity BMI ≥32.0.⁵⁵² For children, the age- and gender-specific classifications for obesity, overweight and thinness from the International Obesity Task Force (IOTF) were used.⁵⁵³

The datasets provided by the MOH included survey weights to produce representative estimates for the target population.¹ Final calibrated weight and 100 replicate weights were produced for every respondent in the survey using the jackknife statistical method to adjust standard errors for any design effects arising from the clustered sampling, where multiple dwellings were sampled within each selected PSU.¹ When data from two surveys were combined, survey weights were halved so that the weighted analyses represent the size of the NZ population.

All percentages (proportions) presented in this report were weighted to ensure they were representative estimates of the total population of either children (aged 0–14 years) or adults (aged 15 years or over). For certain indicators, the applied age groups were a subset of the aforementioned age groups, as indicated in the relevant sections. In addition, all percentages in the text, tables and figures were unadjusted prevalences.

For ethnic difference tables, the adult and child datasets from the combined 2019–20 and 2020–21 surveys were analysed to compare characteristic differences across six ethnic groupings: South Asian, Chinese, Other Asian, Māori, Pacific, and European & Other. First, an overall Cochran-Mantel-Haenszel (CMH) General Association test was conducted to assess the distribution of the categorical variable of interest among the six ethnic groupings after controlling for age and gender. Second, for variable distributions that significantly differed across ethnic groupings, a two-ethnic grouping comparison test was conducted to determine if there were significant differences between an ethnic grouping and European & Other (as reference) after controlling for age and gender. Mantel-Haenszel common relative risks (RRs) for binary variables were also calculated for selected two-ethnic grouping comparisons, adjusting for age and gender (as appropriate). Standard errors and 95% confidence intervals (95% CIs) were calculated using the replicate weight Jackknife method.

For trend analyses across surveys, comparisons within each Asian ethnic grouping (South Asian, Chinese, Other Asian) were made using all available data from the 2006–07 to 2020–21 surveys for children aged 0–14 years, and from the 2002–03 to 2020–21 surveys for adults aged 15 years and older. Similarly, an overall CMH General Association test, adjusting for age and gender (as appropriate), was conducted to assess the distribution of the categorical variable of interest across survey years after controlling for age and gender, and two-survey grouping comparisons (2019–2021 surveys as reference) were performed if there were overall differences. In all figures, the error bars are 95% CIs.

Statistical significance is measured at 5% significance level. Multiple testing was not adjusted in the current report; therefore, p-values between 0.05 and 0.01 need to be interpreted with caution. Data were analysed using SUDAAN (version 11.0.4, Research Triangle Park, NC) and SAS 9.4 (SAS Institute Inc, Cary, NC, USA).

4. RESULTS

The child and adult datasets from the combined 2019–20 and 2020–21 surveys have been analysed to compare six ethnic groupings: South Asian, Chinese, Other Asian, Māori, Pacific, and European & Other. The percent in each ethnic grouping is shown in Figure 1. In addition, comparisons within the Asian ethnic group, between South Asian, Chinese, and Other Asian, were made using all available data from the 2006–07 to 2020–21 for children aged 0–14 years, and from the 2002–03 to 2020–21 for adults aged 15 years and older. This was done for selected variables to monitor time trends in health measures among the Asian population. Text, tables, and figures are shown for each of the following sections: Asian population, sociodemography, health behaviours and risk factors, chronic health conditions, and health service utilisation. Values shown are weighted to represent the target population within the relevant total NZ population, unless otherwise stated.



4.1 Asian population

The Asian population, for both children and adults, increased substantially over the survey periods, rising from 8.5% of the child population in 2006–07 to 17.3% in 2019–21; and in adults, the Asian percent grew from 6.3% of the adult population in 2002–03 to 15.0% in 2019–21. These increases were observed across all three Asian ethnic groupings (Figure 2).

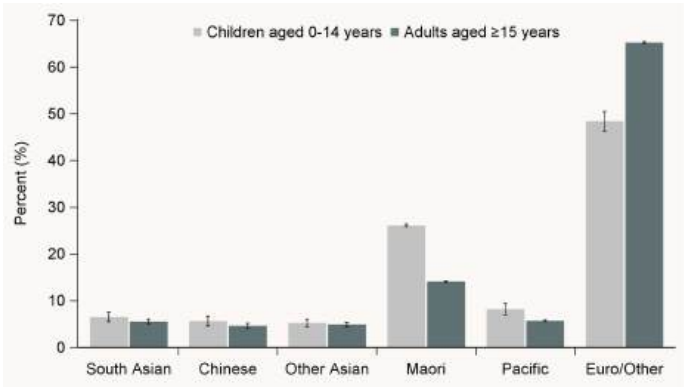


Figure 1
Weighted percent (95%CI) of children aged 0–14 years and adults aged ≥15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

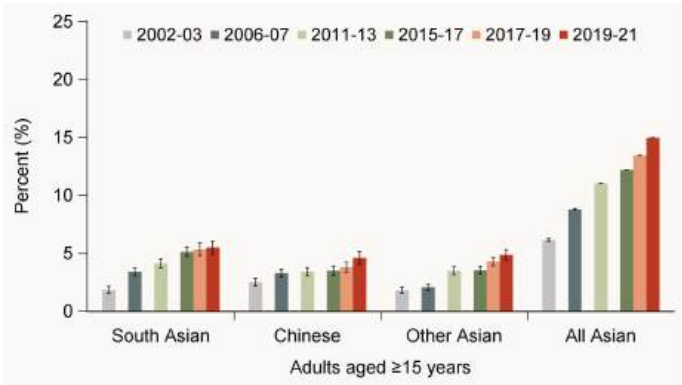
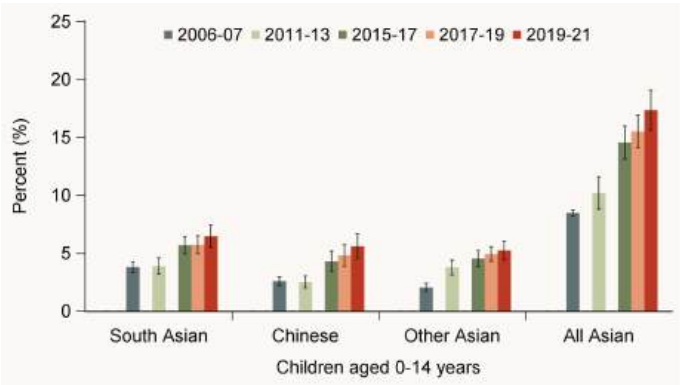


Figure 2
Weighted percent (95%CI) of children aged 0–14 years and adults aged ≥15 years – trends between 2002–03 and 2019–21 surveys by Asian ethnic grouping.

4.2 Sociodemography

4.2.1 Demographics

The demographic variables reported in the following section include age distribution, gender, years lived in NZ, and sexual identity.

4.2.1.1 Age distribution

2019–21 child and adult surveys: the age distribution varied between all six ethnic groupings for both children and adults (adjusted $p < 0.001$), and all three Asian ethnic groupings were distributed more towards the younger age groups than European & Other for both children and adults (Tables 3A.1 & 3B.1). Among children, the proportion of aged 0–4 years remained unchanged among South Asians and Chinese people, but the proportion increased from 2006–07 (17.8%) to 2019–21 (38.3%) surveys in Other Asian people (Figure 3A.1). Among adults, the trend in the proportion of individuals under the age of 35 years was different for South Asians and Chinese, with an increase in South Asian people (from 43.1% to 54.5%), but a decrease in Chinese people (from 54.0% to 43.3%) from 2002–03 to 2019–21 (Figure 3B.1).

4.2.1.2 Gender

2019–21 child and adult surveys: the gender distribution was similar across all six ethnic groupings in children (adjusted $p = 0.47$, Table 3A.1), but varied among adults (adjusted $p < 0.001$, Table 3B.1) with a lower proportion of women among South Asian (41.3%) and Chinese (44.8%), compared with European & Other (51.8%, Table 3B.1), after adjusting for age. The proportions of girls or women in each Asian ethnic grouping did not change across child and adult surveys (all adjusted $p > 0.05$, Figures 3A.1 & 3B.1), aside from a decrease in the proportion of adult Chinese women from 2002–03 to 2019–21 (56.2% vs 44.8%, adjusted $p < 0.001$, Figure 3B.1).

4.2.1.3 Years lived in NZ

2019–21 adult surveys: the distribution of years lived in NZ varied across six ethnic groupings (adjusted $p < 0.001$), with a lower proportion of people who had lived in NZ >10 years or were born in NZ in all three Asian communities (ranging from 52.0% to 64.3%) compared with European & Other (93.1%, all adjusted $p < 0.001$, Table 3B.1) people. Over the period from 2002–03 to 2019–21, the weighted proportion who had lived in NZ >10 years or were born in NZ showed a general pattern of increase in each Asian ethnic grouping, from 36.7% to 52.0 in South Asian (adjusted $p < 0.001$), 27.0% to 64.3% in Chinese (adjusted $p < 0.001$), and 25.8% to 56.0% in Other Asian (adjusted $p < 0.001$, Figure 3B.1) people.

4.2.1.4 Sexual identity

2019–21 adult surveys: the proportion of self-identifying as gay/lesbian/bisexual/other was lower among South Asian (2.4%) and Other Asian (3.2%) adults, along with Pacific adults (2.8%), while similar in Chinese (4.2%) and Māori (6.6%) adults, compared to European & Other (4.1%) (Table 3B.1).

Asian time trends: From 2015–17 to 2019–21, the proportion of self-identifying as gay or lesbian/bisexual/other was unchanged for all three Asian ethnic groupings (adjusted p value > 0.05 , Figure 3B.1).



Table 3A.1

Distribution of demographic variables in children aged 0–14 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Age (year), mean	\$6.1	‡6.3	‡6.4	§7.1	7.3	7.4	<0.001
Age group (year), %							<0.001
0–4	‡41.0	‡37.0	‡38.3	§32.0	29.1	29.4	
5–9	32.0	36.0	33.4	33.8	34.6	34.1	
10–14	27.0	27.0	28.2	34.2	36.3	36.6	
Gender, %							0.47
Boys	50.0	47.4	50.4	51.9	50.6	51.9	
Girls	50.0	52.6	49.6	48.1	49.4	48.1	

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender (as appropriate), † <0.05, ‡ <0.01, § <0.001.

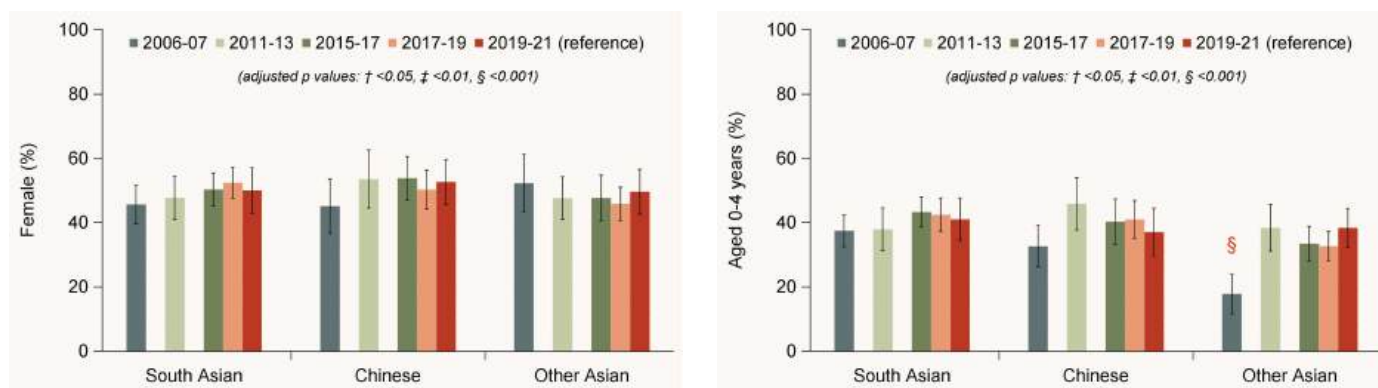


Figure 3A.1

Weighted percent (95%CI) of demographic variables in children aged 0–14 years – trends from 2006–07 to 2019–2021 surveys, by Asian ethnic grouping.

Table 3B.1

Distribution of demographic variables in adults aged ≥15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Age (years), mean	\$36.7	\$40.0	\$37.9	\$39.5	\$39.4	49.4	<0.001
Age groups (years), %							<0.001
15–24	\$16.7	\$14.6	\$24.2	\$24.5	\$24.2	12.8	
25–34	37.8	28.7	22.9	21.9	19.7	14.7	
35–44	21.1	27.6	22.7	15.7	18.4	13.5	
45–54	11.6	10.1	13.7	15.8	17.0	16.9	
55–64	8.0	9.4	9.0	12.6	11.5	17.2	
65–74	3.1	6.3	6.0	6.5	6.6	14.0	
75+	1.7	3.4	1.5	3.0	2.7	11.0	
Gender, %							<0.001
Men	\$58.7	\$55.2	54.1	48.9	44.5	48.2	
Women	41.3	44.8	45.9	51.1	55.5	51.8	
Years lived in NZ, %							<0.001
<5	\$25.4	\$16.9	\$29.3	\$0.1	†7.6	4.0	
5–10	22.6	18.8	14.7	0.3	5.5	2.9	
>10 or NZ born	52.0	64.3	56.0	99.7	87.0	93.1	
Sexual identity							<0.001
Heterosexual or straight	\$97.6	95.8	†96.8	93.4	\$97.2	95.9	
Gay/lesbian/bisexual/other	2.4	4.2	3.2	6.6	2.8	4.1	

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender (as appropriate), † <0.05, ‡ <0.01, § <0.001.

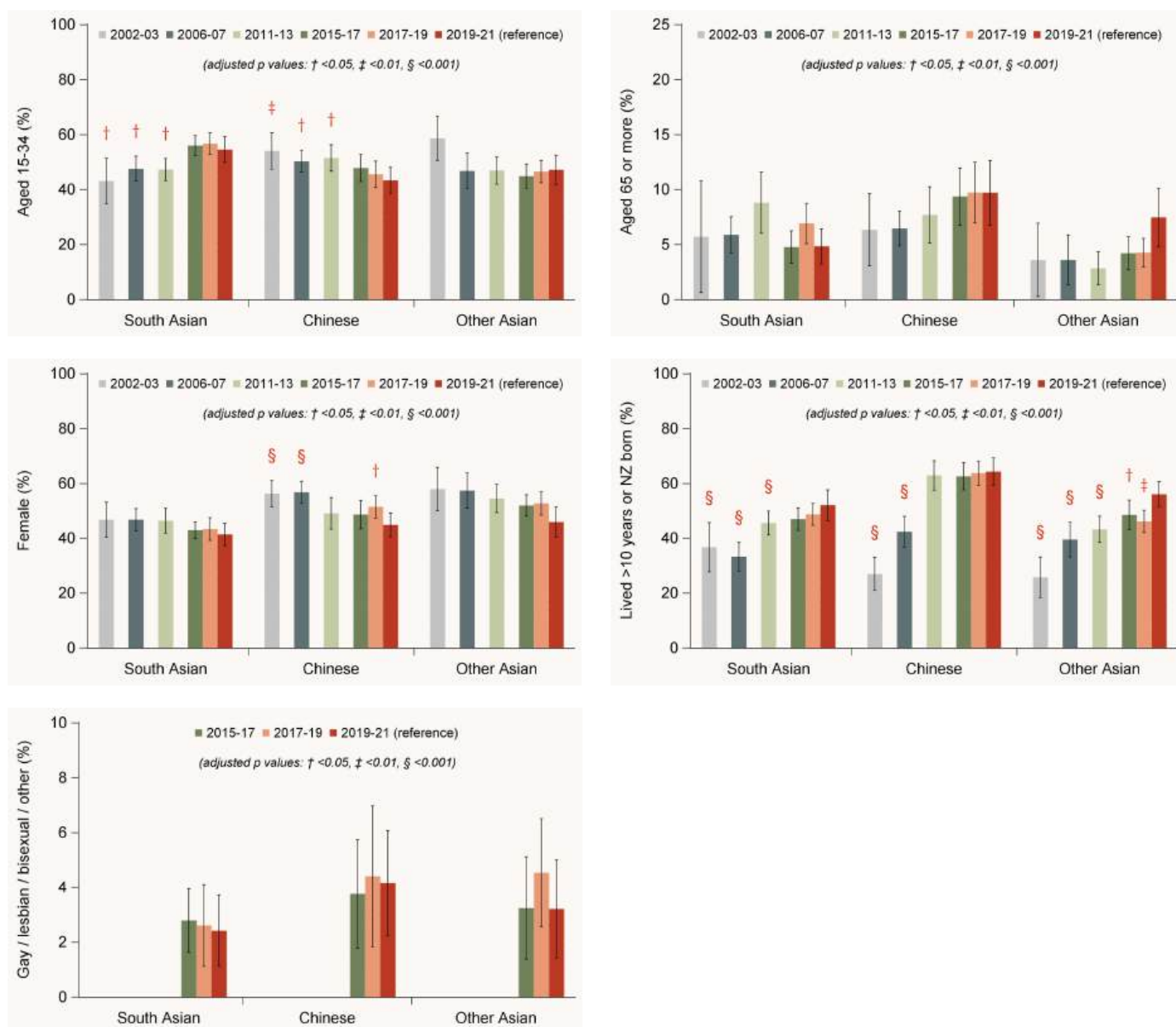


Figure 3B.1

Weighted percent (95%CI) of demographic variables in Asian adults aged ≥15 years – trends from 2002-03 to 2020-2021 surveys, by Asian ethnic grouping

4.2.2 Education and income

4.2.2.1 Socioeconomic status

2019–21 adult surveys: the NZDep2018 distribution varied across the six ethnic groupings (adjusted $p < 0.001$). South Asian and Other Asian communities were more likely to reside in areas with lower SES compared to European & Other people. In contrast, Chinese people were less likely to live in areas with lower SES deciles (Table 3B.2).

Asian time trends: Since 2002–03, the proportion in the 4th and 5th quintiles of NZDep significantly improved in each Asian ethnic grouping, with the largest improvement in Chinese people (from 46.2% in 2002–03 to 22.0% in 2019–2021, adjusted $p < 0.001$, Figure 3B.3).

4.2.2.2 Education

2019–21 adult surveys: adults of all three Asian ethnic groupings were more likely to have a university (bachelor or postgraduate) degree (Chinese 59.1%, South Asian 47.5%, Other Asian 47.2%) than European & Other (28.4%), Māori (13.4%) or Pacific (10.1%) adults (adjusted $p < 0.001$, Table 3B.2).

Asian time trends: The proportion of adults with a university (bachelor or postgraduate) degree increased from 2006–07 to 2019–21 surveys for each Asian grouping (adjusted $p < 0.05$), with the most significant improvement in Chinese (21.5%), followed by other Asians (15.5%) and South Asian (12.1%) adults. The increase in the trend stabilised for each Asian grouping from 2015–17 (Figure 3B.3).

4.2.2.3 Household income

2019–21 adult surveys: South Asian, Chinese, and Other Asian communities generally were distributed more towards high household income categories, along with European & Other, and Māori and Pacific communities more towards low household income categories (Table 3B.2).

Asian time trends: The proportion of household income $> 100,000$ NZD increased significantly since the 2006–07 survey for each Asian grouping: from 18.6% to 47.2% in South Asian,

10.5% to 43.6% in Chinese, 12.3% to 47.4% in Other Asian (all adjusted $p < 0.001$), in part due to the continuing inflation that occurred over the survey periods (Figure 3B.3).

4.2.2.4 Government support

2019–21 adult surveys: the likelihood of receiving government income support was lower in all three Asian groupings (adjusted $RR = 0.60$, 95% $CI = 0.49–0.75$ in South Asian, adjusted $RR = 0.55$, 95% $CI = 0.44–0.68$ in Chinese, adjusted $RR = 0.72$, 95% $CI = 0.60–0.86$ in Other Asian people), and higher in Māori (adjusted $RR = 1.61$, 95% $CI = 1.51–1.72$) and Pacific (adjusted $RR = 1.23$, 95% $CI = 1.08–1.40$) people than in European & Other people (Figure 3B.2, Appendix 1), after adjusting for age and gender.

Asian time trends: Since the 2006–07 survey, the proportion receiving government support declined in South Asian (from 23.2% to 11.7%, adjusted $p < 0.01$), Chinese (from 22.4% to 12.6%, adjusted $p < 0.01$) and Other Asian (from 30.2% to 15.8%, adjusted $p < 0.001$) people (Figure 3B.3).

4.2.2.5 Health insurance

2019–21 adult surveys: South Asian and Other Asian people, along with Māori and Pacific people had a lower proportion of having health insurance (ranging from 17.1 to 34.8%, adjusted RR ranging from 0.42 to 0.86) than European & Other people (38.4%), who were similar to Chinese people (43.2%, adjusted $RR = 1.06$, Table 3B.2, Figure 3B.2 and Appendix 1).

Asian time trends: The proportion of having health insurance was stable for all three Asian ethnic groupings from 2002–03 to 2019–21 (adjusted $p > 0.05$, Figure 3B.3).

Table 3B.2

Distribution of socioeconomic status in adults aged ≥15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
NZDep2018 quintile, %							<0.001
1 & 2 (least deprived)	\$12.9	\$29.5	\$13.5	\$9.7	\$5.7	23.9	
3 & 4	21.8	32.3	18.8	12.1	10.5	22.1	
5 & 6	17.4	16.3	23.1	15.7	13.8	22.1	
7 & 8	25.9	14.4	22.5	23.3	20.4	19.3	
9 & 10 (most deprived)	22.0	7.5	22.1	39.2	49.6	12.7	
Highest qualification, %							<0.001
High School only	\$26.5	\$23.3	\$31.6	\$59.7	\$61.0	39.3	
Trade, certificate, etc.	26.0	17.6	21.1	26.9	28.9	32.4	
Bachelor degree	27.1	39.8	34.2	9.5	7.5	17.7	
Postgraduate degree	20.4	19.3	13.0	3.9	2.6	10.7	
Household income (in the last 12 months) *, %							<0.001
< \$30,000	5.5	\$7.7	6.7	\$12.5	\$9.1	10.4	
\$30,001 – 50,000	9.6	14.0	9.3	15.0	13.7	13.2	
\$50,001 – 70,000	15.6	18.6	15.8	14.9	18.9	12.3	
\$70,001 – 100,000	22.0	16.1	20.9	19.6	20.0	17.1	
> \$100,000	47.2	43.6	47.4	37.9	38.3	47.0	
Receive government income support, %	\$11.7	\$12.6	\$15.8	\$39.1	\$29.2	34.3	<0.001
Have health insurance, %	†34.8	43.2	‡33.7	\$22.2	\$17.1	38.4	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender, † <0.05, ‡ <0.01, § <0.001; *, not adjusted for inflation.

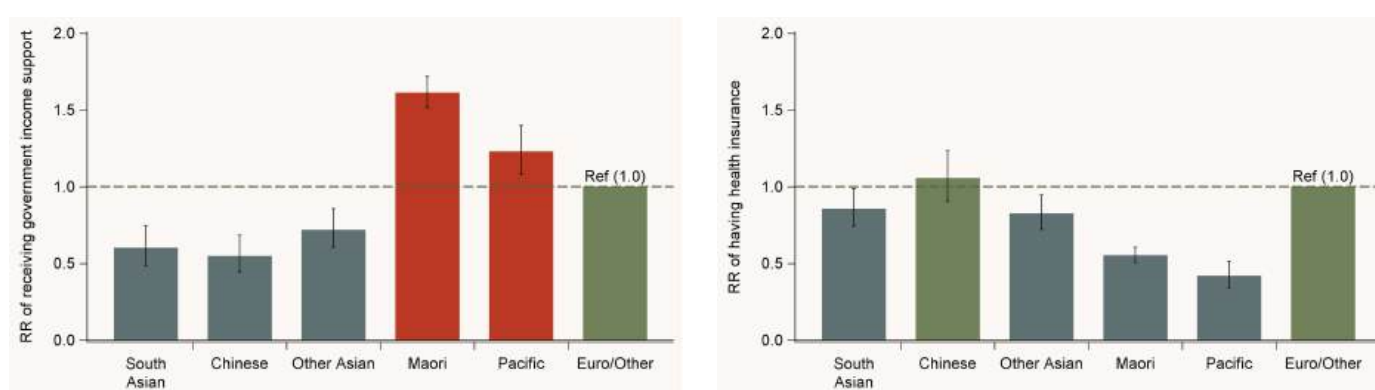


Figure 3B.2

Age- and gender-adjusted relative risks (95%CI) of receiving government income support and having health insurance for main ethnic groupings compared with European & Other, among adults aged ≥15 years – 2019–20 and 2020–21 surveys combined.

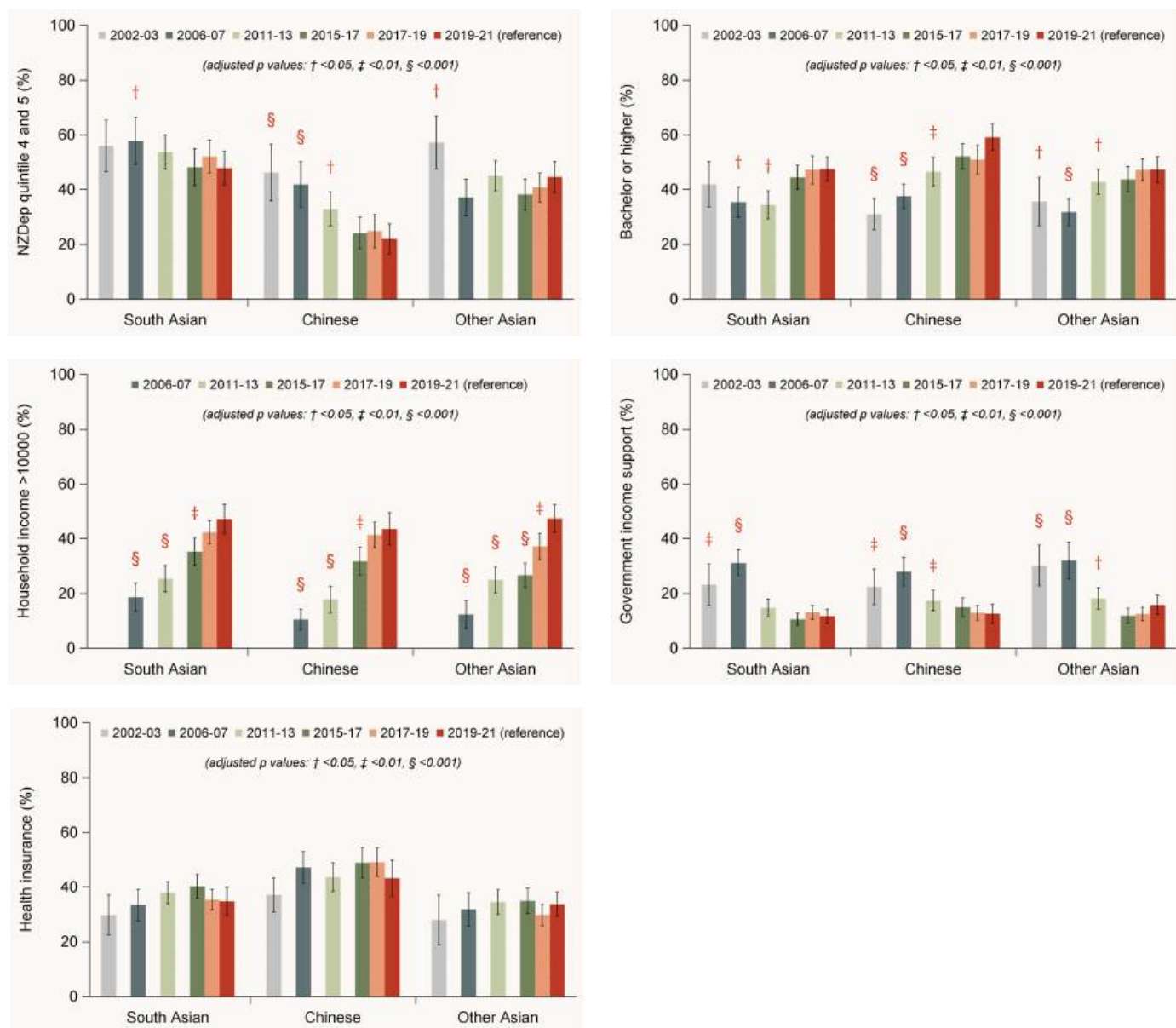


Figure 3B.3

Weighted percent (95%CI) of socioeconomic status (SES) variables in adults aged ≥15 years – trends from 2002-03 to 2019-21 surveys, by Asian ethnic grouping.

4.2.3 Ethnic discrimination

2020–21 adult survey: Pacific (30.9%) and Other Asian (23.7%) people were most likely to think constantly about their ethnicity, followed by Chinese (18.5%) and Māori (16.7%) people, compared with European & Other (2.5%, all adjusted $p < 0.001$, Table 3B.3). Chinese adults (41.2%) were the most likely of all ethnic groupings to have ever been a victim of an ethnically motivated verbal attack, followed by Māori (29.6%), South Asian (23.8%), and Other Asian (23.2%) adults, compared with European & Other (13.9%, all adjusted $p < 0.01$, Table 3B.3). All Asian adults (South Asian 16.0%, Chinese 13.3, Other Asian 11.8%), along with Māori (18.3%) and Pacific (13.4%) adults, were more than two times likely to have been treated unfairly because of their ethnicity in NZ (adjusted RR ranging from 2.26 to 3.49, all adjusted $p < 0.01$),

at work when applying for a job, or while renting or buying a house, compared with European & Other (5.1%) (Table 3B.3 & Appendix 2).

Asian time trends: From 2011–12 to 2020–21 adult surveys, the proportion of constantly thinking about their ethnicity was similar in each Asian grouping (adjusted $p > 0.05$, Figure 3B.4). There was an increase in the proportion of ethnically motivated attacks among Chinese adults (from 27.3% in 2015–16 to 41.2% in 2020–21, adjusted $p < 0.05$, Figure 3B.4), while the proportion of being treated unfairly when renting or buying a house because of their ethnicity in NZ was similar for all three Asian ethnic groupings across surveys (all adjusted $p > 0.05$, Figure 3B.4).

Table 3B.3

Distribution of thinking about own ethnicity, and reactions by other people to ethnicity, in adults aged ≥ 15 years – 2020–21 survey, by ethnic grouping

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Frequency of thinking about own ethnicity, %							<0.001
Never	31.2	29.8	26.9	22.5	18.7	47.8	
Yearly	11.2	8.4	13.4	12.0	10.2	17.6	
Monthly	10.7	20.3	12.7	16.6	9.7	14.4	
Weekly	15.9	14.9	15.3	16.8	12.2	11.9	
Daily or hourly	15.5	8.0	7.9	15.4	18.1	5.8	
Constantly	15.4	18.5	23.7	16.7	30.9	2.5	
Victim of ethnically motivated attack, %	23.8	41.2	23.2	29.6	16.7	13.9	<0.001
Verbal attack	23.7	40.3	23.0	28.8	16.3	13.2	<0.001
Physical attack	2.2	7.3	1.9	7.0	3.4	2.6	<0.001
Treated unfairly because of ethnicity, %	16.0	13.3	11.8	18.3	13.4	5.1	<0.001
By health professional	2.7	3.0	2.3	8.4	5.4	1.8	<0.001
At work or refused job	11.9	9.3	9.1	8.0	8.2	3.1	<0.001
Renting/buying house	8.0	3.6	2.4	8.6	4.0	1.0	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender, † <0.05, ‡ <0.01, § <0.001.

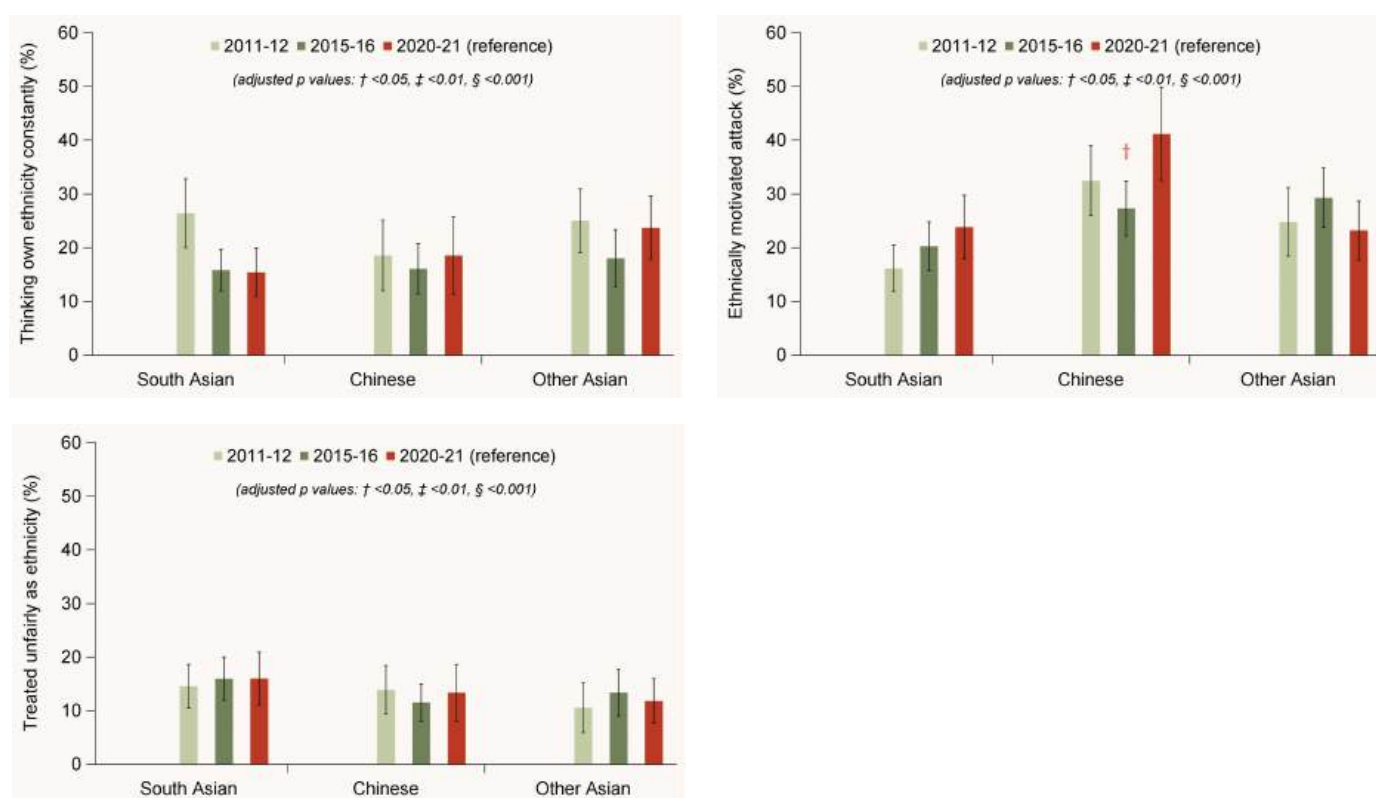


Figure 3B.4

Weighted percent (95%CI) of consistently thinking about own ethnicity, being a victim of ethnically motivated attack, and being treated unfairly because of ethnicity in adults aged ≥15 years– trends in 2011–12, 2015–16, and 2020–21 surveys, by Asian ethnic grouping.

4.3 Health behaviours and risk factors

The variables reported in the following section cover the general areas of nutrition, physical activity, tobacco smoking, alcohol drinking, cannabis, sexual identity, body size, and acculturation to lifestyle (the association between these variables and length of residence in NZ).

4.3.1 Nutrition

4.3.1.1 Children

2019–21 child surveys: the proportion of children who had ever been breastfed was similar in South Asian (91.0%), Chinese (91.7%), and Other Asian (90.1%) children, but lower in Māori (86.0%) and Pacific (82.5%) children, compared to European & Other (90.2%). The proportion having breakfast at home every day (a protective factor against obesity) was similar (adjusted $p > 0.05$) in all three Asian groupings (South Asian 85.4%, Chinese 90.4%, Other Asian 87.4%), but lower in Māori (73.9%) and Pacific (64.6%) children, compared to European & Other (84.4%) (Table 4A.1).

The proportion of children eating fruit two or more times a day was lower for all three Asian groupings (South Asian 58.2%,

Chinese 66.3%, Other Asian 62.7%) and Pacific children (66.7%), compared to European & Other (73.8%); while Māori children (72.1%) were similar (adjusted $p > 0.05$) to the latter. A similar pattern was seen for the proportion eating vegetables three or more times a day and the proportion eating fruits & vegetables five or more times a day, which were lower for all three Asian groupings, along with Māori and Pacific children, compared to European & Other (adjusted $p < 0.001$, Table 4A.1).

The frequency of fizzy/soft drink consumption in the last week (a risk factor for obesity) was higher for Māori and Pacific children, and similar (adjusted $p > 0.05$) for all three Asian groupings, compared to European & Other. The frequency of fast food consumption in the last week (another risk factor for obesity) was lower for South Asian (90.9%) and Other Asian (94.4%) children, but higher for Māori (98.6%) and Pacific (96.6%) children than European & Other children (96.1%), while Chinese children were

not significantly different to the latter (adjusted $p>0.05$, Table 4a.1).

The caregivers of children of all three Asian groupings generally reported a similar proportion of poor food security compared to caregivers of European & Other children, while the responses by caregivers of Māori and Pacific children indicated lower food security (Table 4A.2).

Asian time trends: From 2006–07 to 2019–21, the proportion of children who had ever been breastfed, had breakfast at home every day, and had fizzy/soft drink consumption in the last week were similar for all three Asian ethnic groupings (Figure 4A.1). However, there

was a significant decrease in the proportion of children consuming the recommended fruit and vegetable intake (>5 serving a day) in South Asian children from 2011–13 to 2019–21 (from 35.1% to 25.6%, adjusted $p<0.05$), and a significant increase in the proportion of fast food consumption in the last week among South Asian (from 51.9% to 90.8%, adjusted $p<0.001$), Chinese (from 63.6% to 93.8%, adjusted $p<0.001$), and Other Asian children (from 62.5% to 94.4%, adjusted $p<0.001$) across the 2006–07 to 2020–21 surveys (Figure 4A.1).

Table 4A.1

Nutritional behaviour patterns of children aged 0–14 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Ever breastfed (0–14 years), %	91.0	91.7	90.1	§86.0	§82.5	90.2	<0.001
Breakfast every day (2–14 years), %	85.4	90.4	87.4	§73.9	§64.6	84.4	<0.001
Fruit 2+ servings a day (2–14 years), %	§58.2	†66.3	†62.7	72.1	†66.7	73.8	<0.001
Vegetables 3+ servings a day (2–14 years), %	§16.4	§23.5	§21.0	§34.5	§24.0	44.8	<0.001
Fruit & vegetables 5+ servings a day (2–14 years), %	§25.6	†36.9	§23.9	§43.2	§34.4	52.9	<0.001
Fizzy drink times a week, %							<0.001
0	47.0	51.6	47.2	§30.7	§26.0	45.5	
1–2	43.7	42.6	46.9	52.3	56.8	48.5	
≥3	9.4	5.8	5.9	17.0	17.2	6.0	
Fast food times a week, %							<0.001
0	†9.1	6.2	†5.6	§2.4	§3.3	3.9	
1–2	85.2	89.1	87.9	87.2	79.0	93.5	
≥3	5.6	4.7	6.5	10.4	17.6	2.7	

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender, † <0.05, ‡ <0.01, § <0.001.

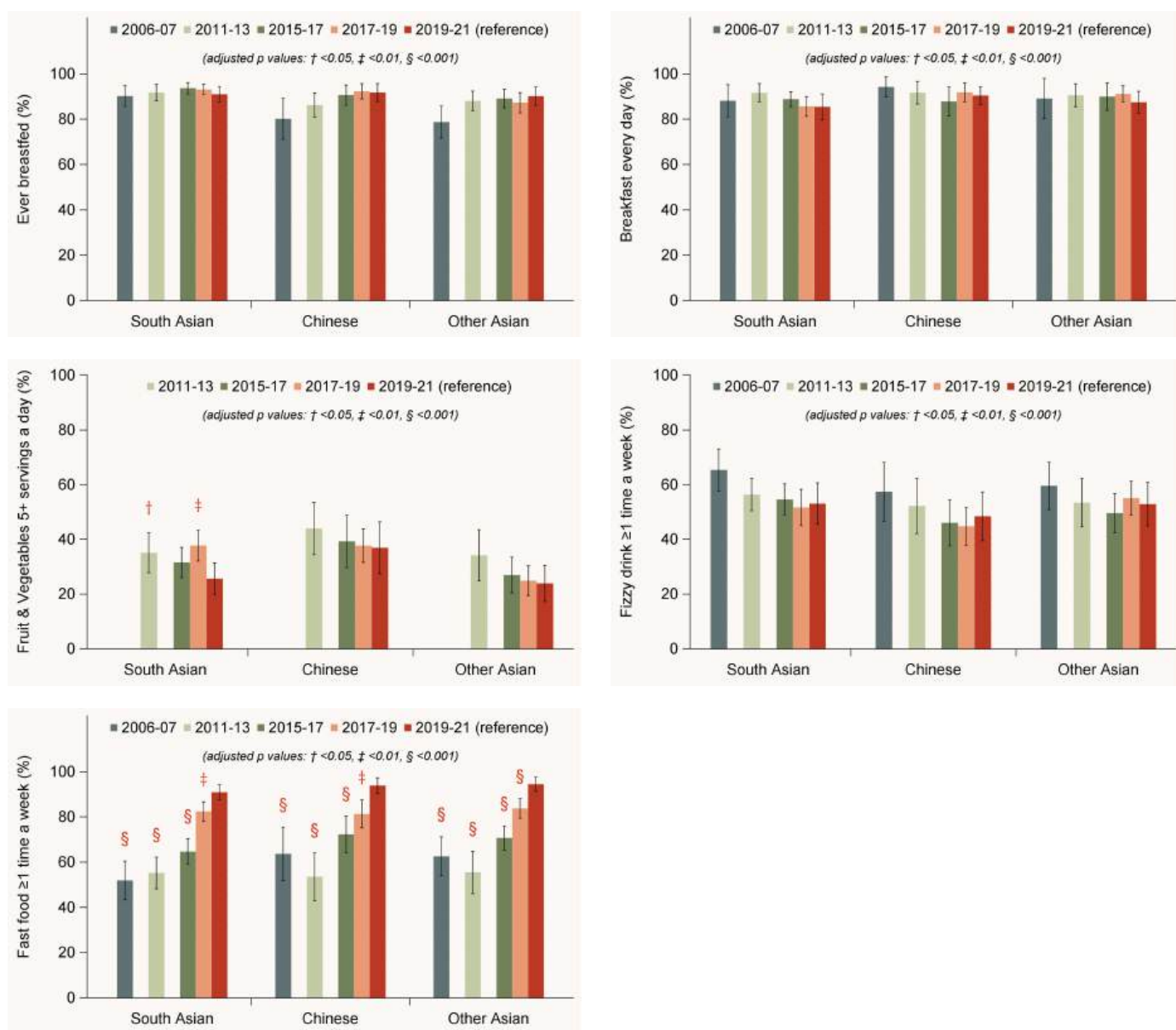


Figure 4A.1

Weighted percent (95%CI) of nutritional behaviours by children aged 0-14 years – trends from 2006-07 to 2019-21 surveys, by Asian ethnic grouping.

Table 4A.2

Household food insecurity of children aged 0–14 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Can afford to eat properly – always, %	89.1	90.5	86.6	\$72.7	\$64.1	86.7	<0.001
Food runs out – often/sometimes, %	9.5	6.6	13.3	\$28.1	\$44.9	9.8	<0.001
Eat less – often/sometimes, %	9.4	6.5	10.8	\$24.6	\$36.5	10.3	<0.001
Variety of foods limited – often/sometimes, %	16.6	†15.4	21.5	\$38.3	\$51.5	21.1	<0.001
Rely on others – often/sometimes, %	6.2	6.0	5.2	\$18.1	\$26.3	6.1	<0.001
Use food grants – often/sometimes, %	5.7	4.8	3.7	\$21.0	\$30.9	5.8	<0.001
Stressed because of not having enough money for food – often/sometimes, %	10.6	9.4	11.9	\$28.1	\$39.5	13.7	<0.001
Stressed as can't provide food for social occasions – often/sometimes, %	8.3	‡6.4	12.7	\$23.2	\$33.3	11.9	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender, † <0.05, ‡ <0.01, § <0.001.

4.3.1.2 Adults

2019–21 adult surveys: the proportion of women who ate fruit two or more times a day was lower (adjusted $p < 0.05$) for South Asian (42.8%), Other Asian (42.8%), Māori (49.7%), and Pacific (49.0%) women, but similar for Chinese women (50.3%), compared to European & Other (57.1%); and among men it was similar across all six ethnic groupings (adjusted $p = 0.26$). The proportion of adults eating vegetables three or more times per day was lower in all three Asian ethnic groupings, for both women and men, and also lower in Māori women and Pacific women and men, compared to European & Other. Consequently, the proportion of women and men (combined) who ate five or more serves of fruit and vegetables per day was lower in South Asian (27.7%), Chinese (31.5%), and Other Asian (26.0%) adults, and also lower for Māori (37.1%) and Pacific (33.3%) adults, compared to European & Other (45.2%) (Table 4B.1).

Asian time trends: From 2002–03 to 2019–21 adult surveys, there was a general decrease in the proportion of women and men eating the recommended number of servings of fruits and/or vegetables per day in all three Asian ethnic groupings (all adjusted $p < 0.05$, Figure 4B.1).

Table 4B.1

Weighted percent meeting the recommended daily serves of fruit and vegetable intake in adults aged ≥15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Fruit 2+ a day, %							
All genders	43.8	45.4	‡42.5	§45.8	‡44.2	52.4	<0.001
Women	‡42.8	50.3	§42.8	‡49.7	‡49.0	57.1	<0.001
Men	44.5	41.4	42.1	41.7	38.2	47.2	0.26
Vegetables 3+ a day, %							
All genders	§33.3	§34.8	§28.5	§50.3	§39.7	58.9	<0.001
Women	§36.2	§42.9	§33.4	§53.2	§42.1	64.5	<0.001
Men	§31.2	§28.2	§24.2	47.2	§36.7	52.9	<0.001
Fruit & vegetables 5+ a day, %							
All genders	§27.7	‡31.5	§26.0	§37.1	§33.3	45.2	<0.001
Women	§30.2	‡39.6	§27.4	§41.1	§37.6	51.7	<0.001
Men	‡26.0	‡24.8	‡24.9	33.0	‡27.8	38.2	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender (as appropriate), † <0.05, ‡ <0.01, § <0.001

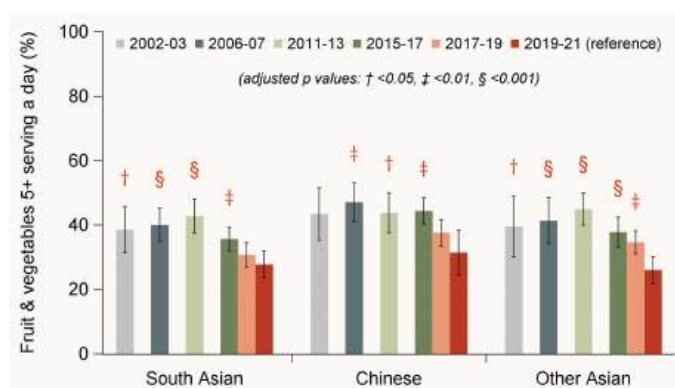
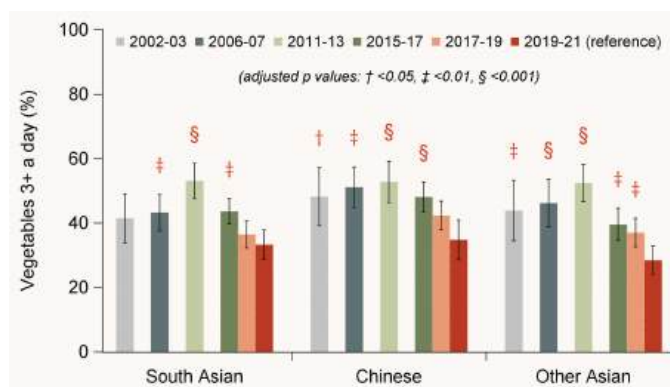
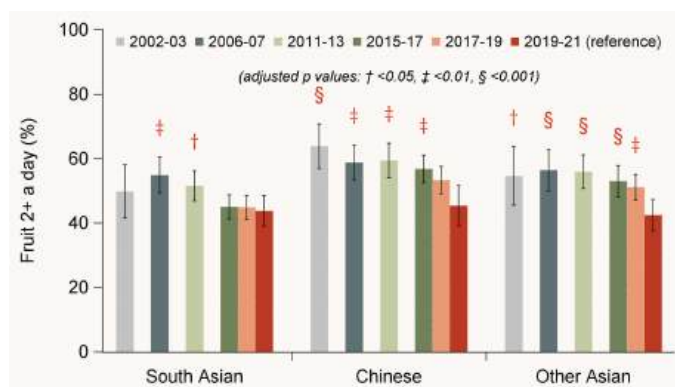


Figure 4B.1

Weighted percent (95%CI) meeting the recommended daily servings of fruit and/or vegetable intake in adults aged ≥15 years – trends from 2002–03 to 2019–21 surveys, by Asian ethnic grouping.

4.3.2 Physical activity

4.3.2.1 Children

Transport to and from school

2019–21 child surveys: The prevalence of active transport (walk, bike, skate, or similar) to and from school in children aged 5–14 years was similar in all six ethnic groupings (adjusted $p=0.051$). The prevalence of walking to and from school was similar in all six ethnic groupings (adjusted $p=0.41$). However, European & Other children were more likely to bike to and from school than other ethnic groupings. Compared to European & Other children, South Asian, Chinese, Other Asian and Pacific children were similar in their use of a car to get to and from school, while Māori children used a car less for this purpose. The school bus was used by a smaller proportion of South Asian (7.4%), Other Asian (8.1%) and Pacific (8.4%) children than European & Other (16.6%), who were similar to Chinese (10.7%) and lower than Māori (21.5%) children after adjusting for age and gender. Compared with Chinese and European & Other children, all other ethnic groupings were similar in their use of public transport to and from school (all adjusted $p>0.05$, Table 5A.1).

Asian time trends: From 2006–07 to 2019–21, there was a generally similar prevalence of active transport to and from school in children aged 5–14 years in all three Asian ethnic groupings (adjusted $p>0.05$, Figure 5A.2), except for a significant decrease in Other Asian children from 53.7% in 2017–19 to 41.0% in 2019–21 (adjusted $p<0.01$, Figure 5A.2).

Physical punishment

2019–21 child surveys: the proportion of children aged 5–14 years given physical punishment in the last 4 weeks was similar for all Asian ethnic groupings (1.9% in South Asian, 3.9% in Chinese, 3.2% in Other Asian) compared to European & Other (2.0%), who were lower than Māori (5.1%) and Pacific (8.0%) children (Table 5A.2).

Asian time trends: No significant trend in the prevalence of physical punishment given to children was observed over the survey periods from 2011–13 to 2019–21 (adjusted $p>0.05$, Figure 5A.2).

Sleep duration

2019–21 child surveys: The proportion of children usually meeting sleep duration recommendations in a 24-hour period was lower in South Asian (71.5%), Other Asian (69.0%), along with Māori (73.4%) and Pacific (58.2%) children, and similar in Chinese (84.3%) when compared to European & Other (83.3%) (Table 5A.3).

Asian time trends: No significant difference in the proportion of usually meeting sleep duration recommendations was observed between 2017–19 and 2019–21 (adjusted $p>0.05$, Figure 5A.3).

Table 5A.1

Usual method of transport to and from school for children aged 5–14 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Active transport (walk, bike, skate, or similar), %	37.7	47.5	41.0	40.1	37.5	45.3	0.051
Walk	35.9	45.0	37.4	33.8	34.1	34.3	0.41
Bike	\$4.5	\$2.4	\$6.2	\$8.3	\$2.6	12.7	<0.001
Skate	\$0.4	\$1.1	4.4	\$4.5	5.3	8.1	<0.001
Car	70.5	59.6	68.2	†58.1	67.3	63.3	0.01
School bus	†7.4	10.7	†8.1	†21.5	†8.4	16.6	<0.001
Public transport	1.9	3.8	6.1	2.1	5.1	3.7	0.02

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender, † <0.05, ‡ <0.01, § <0.001.

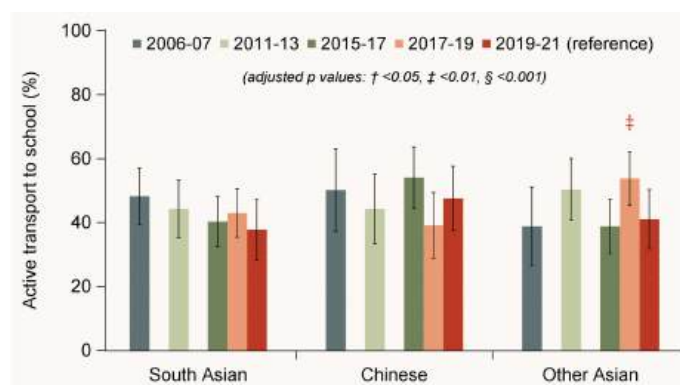


Figure 5A.1

Weighted percent (95%CI) of active transport to school by children aged 0–14 years – trends from 2006–07 to 2019–21 surveys, by Asian ethnic grouping.

Table 5A.2

Percent of children aged 5–14 years given physical punishment in last 4 weeks – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Physical punishment in last 4 weeks, %	1.9	3.9	3.2	\$5.1	\$8.0	2.0	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender, † <0.05, ‡ <0.01, § <0.001.

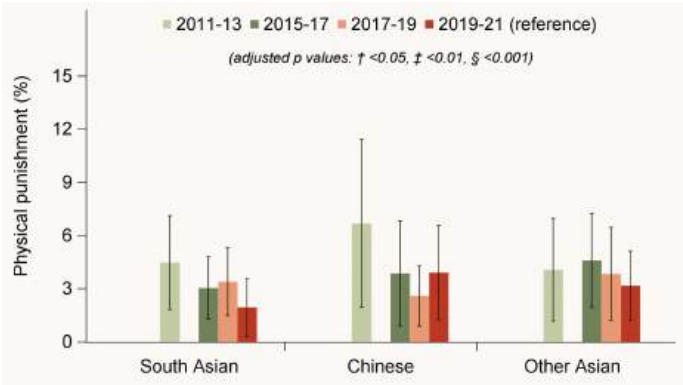


Figure 5A.2

Weighted percent (95%CI) of physical punishment in the last 4 weeks for children aged 0–14 years – trends from 2011–13 to 2019–21 surveys, by Asian ethnic grouping.

Table 5A.3

Weighted percent of children aged 0–14 years usually meeting sleep duration recommendations in a 24-hour period – 2019–20 and 2020–21 surveys combined, by ethnic grouping

Meet sleep duration recommendations	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
All genders, %							<0.001
Yes	71.5	84.3	69.0	73.4	58.2	83.3	
No	28.5	15.7	31.0	26.6	41.8	16.7	

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; *, Recommended hours of sleep are: Newborn (0–3 months): 14 to 17 hours, Infant (4–11 months): 12 to 15 hours, Toddler (1–2 years): 11 to 14 hours, Preschool (3–4 years): 10 to 13 hours, School age (5–13 years): 9 to 11 hours, Teens (14 years): 8 to 10 hours; p-value compared with European & Other – adjusting for age and gender, † <0.05, ‡ <0.01, § <0.001.

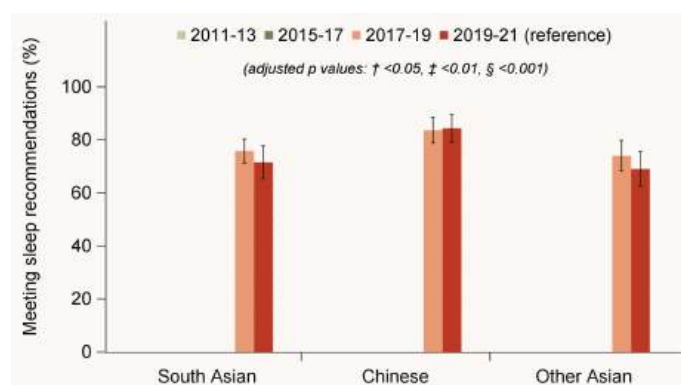


Figure 5A.3

Weighted percent (95%CI) of children aged 0–14 years usually meeting sleep duration recommendations in a 24-hour period – trends from 2017–19 to 2019–21 surveys, by Asian ethnic grouping.

4.3.2.2 Adults

2019–21 adult surveys: Being physically active was defined as doing at least 30 minutes of moderate activity, or 15 minutes of vigorous (aerobic) activity, on 5 of the previous 7 days, and being sedentary was defined as less than 30 minutes of any physical activity (walking, moderate, and vigorous) in the last seven days. There was a significantly lower proportion of Chinese (42.6%), South Asian (46.2%), Other Asian (46.5%), Pacific (45.9%), and Māori (54.9%) adults that were physically active compared with European & Other (55.7%) (combined women and men, all adjusted $p < 0.01$, Table 5B.1). All three Asian ethnic groupings of either gender, aside from Other Asian men, were more likely to be sedentary, as were Māori and Pacific people, compared with European & Other (adjusted $RR > 1.0$, Figure 5B.1 & Appendix 3).

The adjusted likelihood of usually meeting sleep duration recommendations in a 24-hour period was lower in Other Asian (66.7%, adjusted $RR = 0.89$), along with Māori (61.1%, adjusted $RR = 0.82$)

and Pacific (57.8%, adjusted $RR = 0.78$) adults, and similar in South Asian adults (77.0%), when compared to European & Other (70.7%), after adjusting for age and gender (Table 5B.2, Appendix 3).

Asian time trends: From 2002–03 to 2019–21, there was no significant change in the proportion of Asian adults being physically active. However, the proportion being sedentary significantly declined in South Asian (from 23.9% in 2002–03 to 15.8% in 2019–21, adjusted $p < 0.01$) and Chinese (from 25.5% in 2006–07 to 16.2% in 2019–21, adjusted $p < 0.001$) adults, and remained stable in Other Asian adults (all adjusted $p > 0.05$, Figure 5B.2). From 2017–19 to 2019–21, the proportion meeting sleep duration recommendations in a 24-hour period was similar for each Asian ethnic grouping (all adjusted $p > 0.05$, Figure 5B.3)

Table 5B.1

Weighted percent of physical activity patterns in the last 7 days for adults aged ≥ 15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Physically active, %							
All genders	\$46.2	\$42.6	\$46.5	†54.9	\$45.9	55.7	<0.001
Women	‡43.3	43.8	\$40.4	†50.1	\$41.0	52.0	<0.001
Men	\$48.3	\$41.7	‡51.7	60.0	‡52.0	59.6	<0.001
Sedentary, %							
All genders	\$15.8	\$16.2	12.5	\$13.5	\$18.2	11.5	<0.001
Women	\$20.3	16.5	15.5	\$15.6	\$20.2	13.0	<0.001
Men	‡12.6	‡16.0	10.1	†11.3	‡15.7	9.8	0.002

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender (as appropriate). † <0.05, ‡ <0.01, § <0.001.

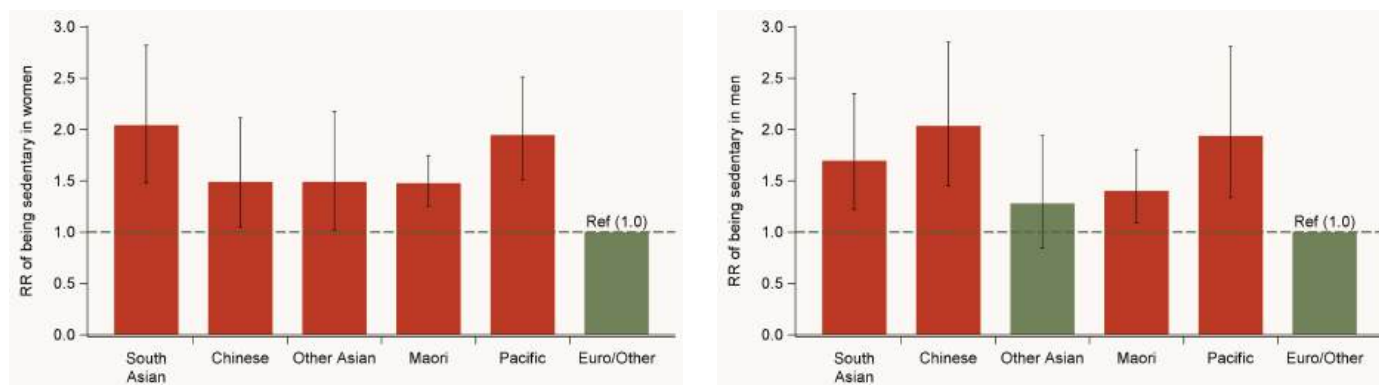


Figure 5B.1

Age- and gender-adjusted relative risks (95%CI) of being physically active and sedentary in women and men for main ethnic groupings compared with European & Other, among adults aged ≥ 15 years – 2019–20 and 2020–21 surveys combined.

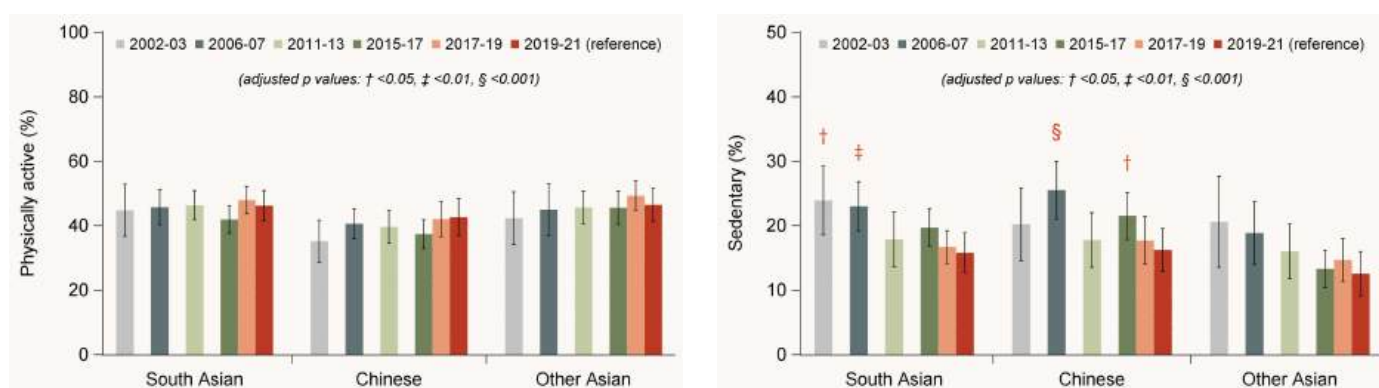


Figure 5B.2

Weighted percent (95%CI) of adults aged ≥ 15 years being physically active and sedentary in the last 7 days – trends from 2002–03 to 2019–21 surveys, by Asian ethnic grouping.

Table 5B.2

Weighted percent of adults aged ≥ 15 years usually meeting sleep duration recommendations in a 24-hour period – 2019–20 and 2020–21 surveys combined, by ethnic grouping

Meeting sleep duration recommendations	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
All genders, %							<0.001
Yes	77.0	†78.9	§66.7	§61.1	§57.8	70.7	
No	23.0	21.1	33.3	38.9	42.2	29.3	

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; *, Recommended hours of sleep are: Aged 15–17 years: 8 to 10 hours, Aged 18–64 years: 7 to 9 hours, Aged 65+ years: 7 to 8 hours; p-value compared with European & Other – adjusting for age and gender, † <0.05, § <0.01, § <0.001.

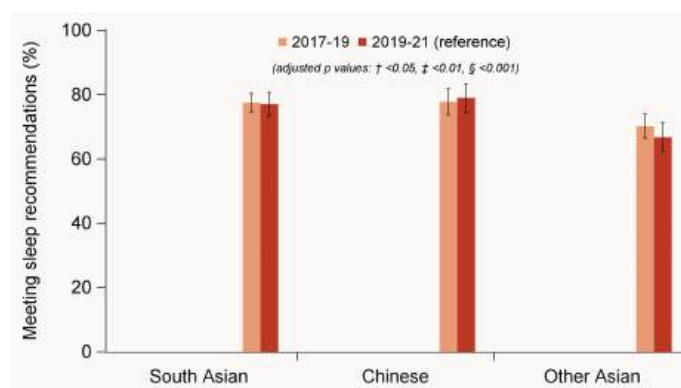


Figure 5B.3

Weighted percent (95%CI) of adults aged ≥ 15 years usually meeting sleep duration recommendations in a 24-hour period – trends from 2017–19 to 2019–21 surveys, by Asian ethnic grouping.



Photo by Yoann Lebeunier on Unsplash

4.3.3 Smoking and vaping

4.3.3.1 Adult smoking and vaping

2019–21 adult surveys: the proportion of current smokers was lower in South Asian (1.6%), Chinese (2.7%) and Other Asian (2.7%) women, compared to European & Other women (8.9%), while Māori (31.5%) and Pacific (18.1%) women were higher than the latter (Figure 6B.1). The proportion of current smokers among men was similar in all three Asian groupings (ranging from 11.6% to 12.8%) compared to European & Other (10.3%), and lower than in Māori (27.4%) and Pacific (23.8%) (Table 6B.1, Figure 6B.1, Figure 6B.2). A similar pattern by ethnic grouping was seen in the proportion of daily smokers in women and men. Asian women and men were less likely to smoke 11 or more cigarettes per day (South Asian 0.8%, Chinese 1.2%, Other Asian 0.5%), than any other ethnic grouping (Māori 9.2%, Pacific 3.9% (Table 6B.2), European & Other 3.4%, Table 6B.2). Overall, the Asian community reported smoking least often, and in the smallest amounts.

The likelihood of being a current vaper was lower in South Asian (RR=0.18, 95%CI=0.06–0.60) and Other Asian (RR=0.28, 95%CI=0.10–0.80) women, while similar in Chinese (RR=0.47, 95%CI=0.16–1.36) and Pacific (RR=0.81, 95%CI=0.56–1.18) women, and higher in Māori women (RR=1.44, 95%CI=1.19–1.73), compared to European & Other (6.0%) after adjusting for age; and a similar pattern by ethnic grouping was observed in the relative risk of being current vaper in men (Figure 6B.2, Appendix 4).

Asian time trends: From 2002–03 to 2019–21, there was no change in the prevalence of current smoking by women and men in all three Asian ethnic groupings (all adjusted $p > 0.05$, Figure 6B.3), aside for a decrease in Other Asian men (adjusted $p < 0.05$, Figure 6B.3). However, we observed a steady increase in the prevalence of current vapers in women and men from 2015–16 survey to 2019–21, especially in South Asian men (from 1.1% to 6.0%) and Chinese men (from 1.5% to 7.9%) (adjusted $p < 0.05$, Figure 6B.4), although not in Other Asian men.

Table 6B.1

Weighted percent of adults aged ≥15 years tobacco smoking and vaping – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Current smokers, %							
All genders	‡7.5	8.2	8.2	§29.5	§20.6	9.6	<0.001
Women	§1.6	§2.7	§2.7	§31.5	§18.1	8.9	<0.001
Men	11.6	12.7	12.8	§27.4	§23.8	10.3	<0.001
Daily smokers, %							
All genders	‡5.7	§5.3	†5.9	§25.6	§16.5	8.0	<0.001
Women	§1.1	§1.3	§1.3	§28.3	§14.4	7.8	<0.001
Men	8.8	8.5	9.7	§22.9	§19.2	8.2	<0.001
Current vapers, %							
All genders	§4.1	†5.8	§4.6	§13.5	9.1	6.8	<0.001
Women	§1.4	†3.3	§2.2	§11.6	6.6	6.0	<0.001
Men	§6.0	7.9	†6.6	§15.3	12.1	7.7	<0.001
Daily vapers, %							
All genders	§3.0	‡2.7	§2.1	§8.9	5.8	4.5	<0.001
Women	§0.8	1.9	§1.0	§7.7	4.4	3.5	<0.001
Men	‡4.5	‡3.3	‡3.0	†10.3	7.7	5.5	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender (as appropriate), † <0.05, ‡ <0.01, § <0.001.

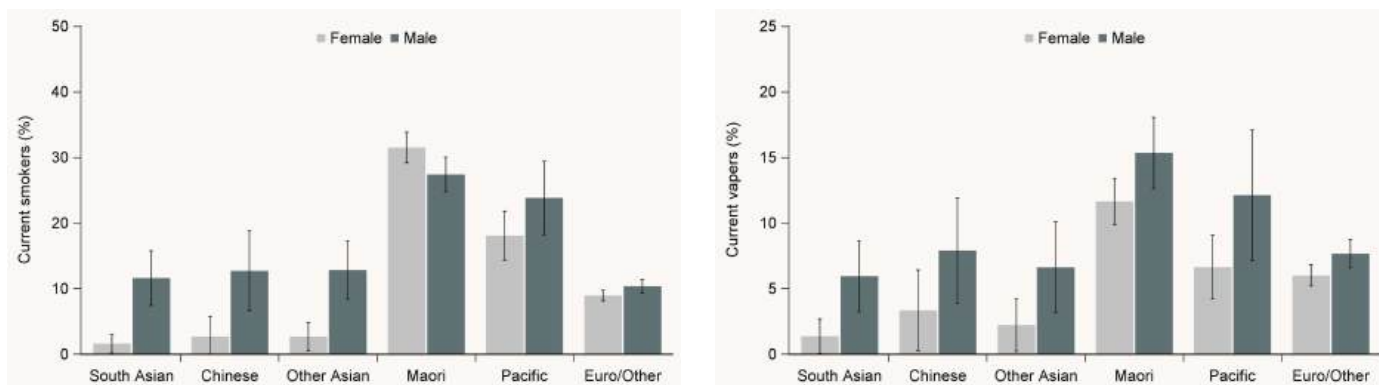


Figure 6B.1

Weighted percent (95%CI) of current smokers and current vapers in adults aged ≥15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping and gender.

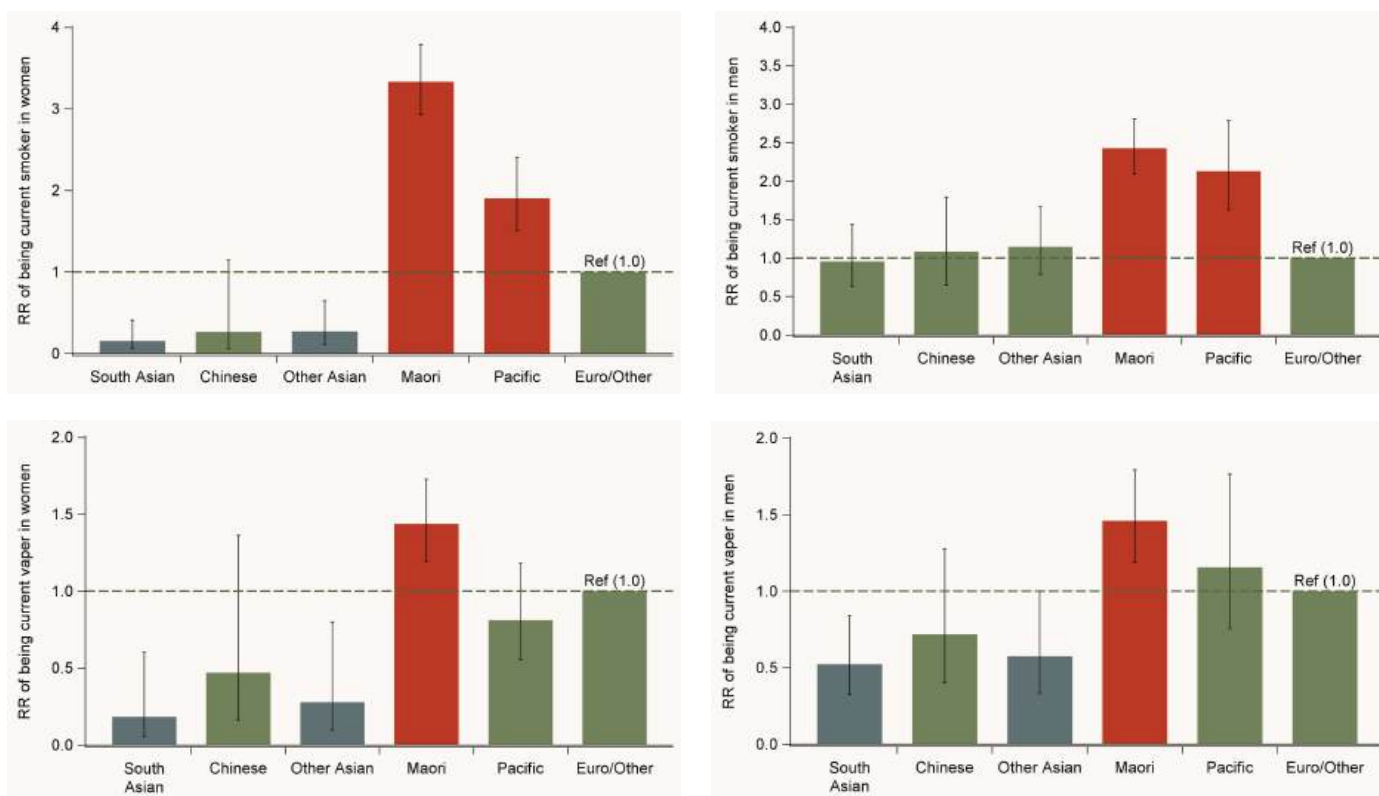


Figure 6B.2

Age- and gender-adjusted relative risks (95%CI) of current smokers and current vapers in women and men for main ethnic groupings compared with European & Other, among adults aged ≥15 years – 2019–20 and 2020–21 surveys combined.

Table 6B.2

Frequency of tobacco smoking in adults aged ≥15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
All genders, %							<0.001
>20	50.1	50.0	50.0	51.6	50.6	50.6	
11–20	0.7	1.2	0.5	7.6	3.5	2.8	
1–10	6.7	7.0	7.7	20.5	16.5	6.2	
Ex-smoker	8.4	12.4	10.7	28.6	18.0	30.8	
Never smoker	84.1	79.4	81.2	41.8	61.3	59.5	
Women, %							<0.001
>20	50.0	50.0	50.0	51.0	50.4	0.4	
11–20	0.0	0.1	0.0	7.1	2.8	2.5	
1–10	1.7	2.6	2.7	23.6	14.9	6.0	
Ex-smoker	2.8	7.8	5.9	28.8	15.5	28.0	
Never smoker	95.5	89.5	91.5	39.5	66.4	63.0	
Men, %							<0.001
>20	50.2	50.0	50.0	52.1	50.8	0.9	
11–20	1.3	2.2	0.9	8.1	4.5	3.1	
1–10	10.2	10.6	11.9	17.2	18.6	6.4	
Ex-smoker	12.4	16.2	14.8	28.4	21.1	33.9	
Never smoker	76.0	71.1	72.4	44.2	55.0	55.8	

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender (as appropriate), † <0.05, ‡ <0.01, § <0.001.

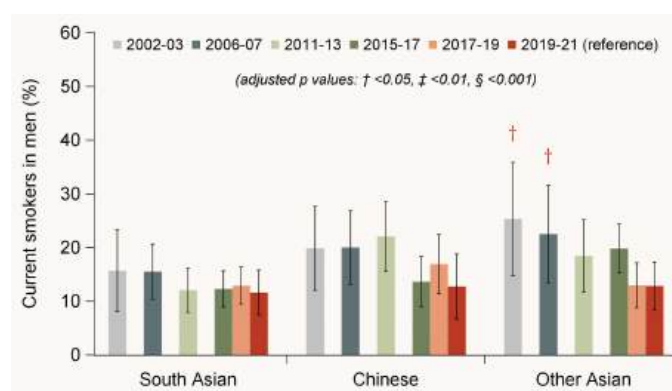
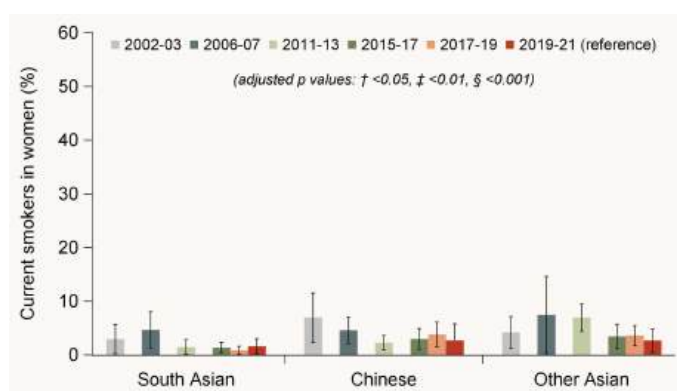


Figure 6B.3

Weighted percent (95%CI) of adults aged ≥15 years being current smokers – trends from 2002–03 to 2019–21 surveys, by Asian ethnic grouping and gender.

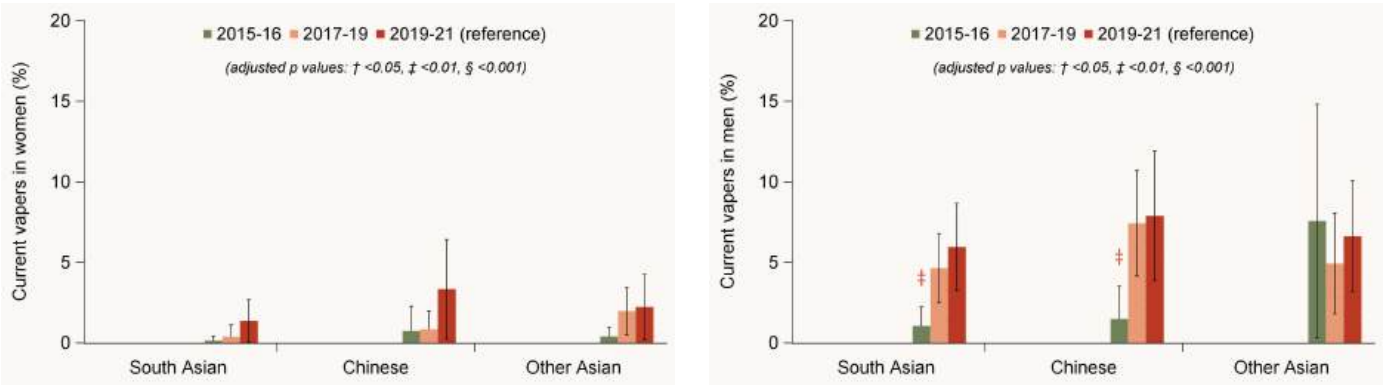


Figure 6B.4

Weighted percent (95%CI) of adults aged ≥15 years being current vapers – trends from 2015–16 to 2019–21 surveys, by Asian ethnic group and gender.

4.3.3.2 Passive smoking

2015–16 adult surveys: the pattern for passive smoking reflected the above patterns for smoking by ethnic grouping. For adults, the proportion reporting smoking inside the house was similar among South Asian (4.7%), Chinese (4.7) and Other Asian (4.6%) adults, but higher for Māori (13.2%) and Pacific (10.6%) adults, compared to European & Other (5.2%) (Table 6B.3).

Asian time trends: From 2002–03 to 2015–16, there was a decrease in the reporting of smoking inside the house by Chinese (from 16.5% to 4.7%) and Other Asian (from 22.0% to 4.6%) adults (Figure 6B.5).

Table 6B.3

Weighted percent of adults aged ≥15 years living in a house where people smoke inside (including sometimes) – 2015–16 survey, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
People smoke inside house, %	4.7	4.7	4.6	§13.2	†10.6	5.2	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender, † <0.05, ‡ <0.01, § <0.001.

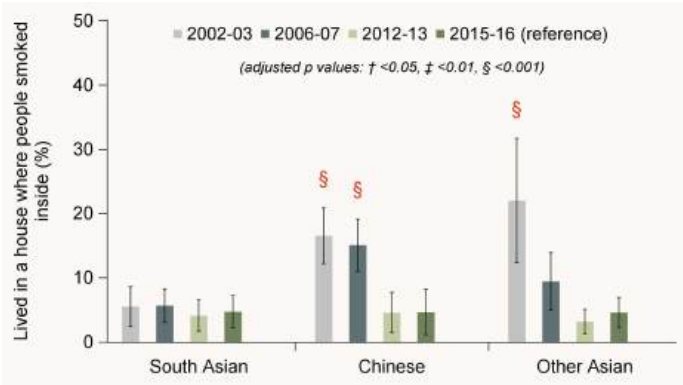


Figure 6B.5

Weighted percent (95%CI) of adults aged ≥15 years living in a house where people smoke inside (including sometimes) – trends from 2002–03 to 2015–16 surveys, by Asian ethnic grouping.

4.3.4 Alcohol

2019–21 adult surveys: the frequency of drinking alcohol in the last 12 months was lowest among the Asian and Pacific communities, intermediate in Māori, and highest in European & Other (Table 7B.1, Table 7B.2 & Figure 7B.1). For both women and men combined, the proportion who had no alcohol in the last 12 months was highest in South Asians (45.3%), followed by Pacific (39.4%), Other Asians (37.5%), Chinese (34.1%), Māori (17.7%), and European (14.4%) adults. Asian women and men who drank alcohol in the last 12 months were more likely to have only 1–2 drinks (Chinese 81.0%, Other Asian 67.7%, South Asian 60.8%), and least likely to have 10 or more drinks, on a typical day, than any other ethnic grouping (Table 7B.3). Overall, the Asian community drinks alcohol least often, and in the smallest amounts.

For both women and men combined, the prevalence of hazardous drinking among people who drank in the last 12 months (Alcohol Use Disorders Identification Test (AUDIT) score ≥ 8) was lowest in Chinese (5.4%), followed by Other Asian (8.7%) and South Asian (13.7%) adults, compared to European & Other (24.1%), while Māori (42.6%) and Pacific (39.8%) adults were

higher than the latter. This pattern was similar for women and men separately (Table 7B.4).

Asian time trends: From 2002–03 to 2015–16, the prevalence of drinking alcohol in the last 12 months was unchanged for South Asian adults, and increased in Chinese (from 49.8% in 2002–03 to 65.9% in 2019–21, adjusted $p < 0.01$) and Other Asian (from 56.1% in 2015–17 to 62.6% in 2019–21, adjusted $p < 0.05$) adults (Figure 7b.2). The proportion of hazardous drinking significantly increased in South Asian adults from 2002–03 (6.0%) to 2019–21 (13.7%, adjusted $p < 0.01$), but remained unchanged in Chinese and Other Asian adults (Figure 7B.2).

Table 7B.1

Weighted percent of adults aged ≥ 15 years drinking alcohol in the last 12 months – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Drinking alcohol in last 12 months, %	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
All genders	\$54.7	\$65.9	\$62.6	\$82.4	\$60.6	85.6	<0.001
Women	\$39.8	\$53.7	\$56.4	\$79.6	\$53.2	83.7	<0.001
Men	\$65.3	\$75.8	\$68.0	†85.2	\$69.9	87.6	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender (as appropriate), † <0.05, ‡ <0.01, § <0.001.

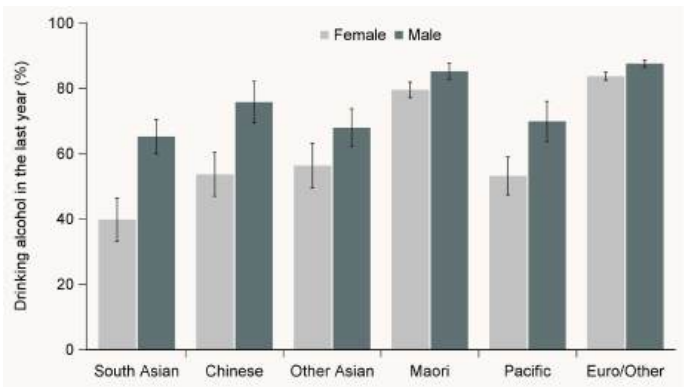


Figure 7B.1

Weighted percent (95%CI) of adults aged ≥ 15 years drinking alcohol in the last 12 months – 2019–20 and 2020–21 surveys combined, by ethnic grouping and gender.

Table 7B.2

Frequency of alcohol intake in last 12 months by adults aged ≥15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Frequency of alcohol drinking	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
All genders, %							<0.001
4+/week	\$2.7	\$6.5	\$2.3	\$10.5	\$3.6	21.7	
2–3/week	10.1	11.5	9.2	16.1	9.6	23.7	
2–4/month	17.3	15.6	13.1	18.1	14.6	17.8	
Monthly or less often	24.7	32.2	37.9	37.5	32.9	22.4	
Not in last 12 months	45.3	34.1	37.5	17.7	39.4	14.4	
Women, %							<0.001
4+/week	\$1.9	\$5.0	\$1.3	\$6.0	\$2.4	16.8	
2–3/week	4.8	6.7	7.3	14.0	7.3	21.0	
2–4/month	12.0	9.1	9.3	17.7	8.9	17.8	
Monthly or less often	21.1	32.8	38.3	41.9	34.5	28.2	
Not in last 12 months	60.2	46.4	43.7	20.4	46.9	16.3	
Men, %							<0.001
4+/week	\$3.3	\$7.7	\$3.1	\$15.3	\$5.1	26.8	
2–3/week	13.7	15.4	10.9	18.4	12.4	26.6	
2–4/month	21.0	20.9	16.3	18.6	21.6	17.9	
Monthly or less often	27.2	31.8	37.5	33.0	30.9	16.3	
Not in last 12 months	34.7	24.2	32.2	14.8	30.1	12.4	

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender (as appropriate), † <0.05, ‡ <0.01, § <0.001.

Table 7B.3

Number of alcohol drinks consumed on a typical day by adults aged ≥15 years who drank in the last 12 months – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Alcohol drinks per day	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
All genders, %							<0.001
10+	\$3.3	\$4.2	\$1.7	\$23.3	\$25.1	4.0	
7–9	4.4	0.9	2.1	10.8	11.8	4.9	
5–6	6.1	4.2	6.9	14.1	16.3	9.5	
3–4	25.4	9.8	21.6	22.7	19.1	26.0	
1–2	60.8	81.0	67.7	29.1	27.7	55.6	
Women, %							<0.001
10+	\$0.0	\$4.7	\$0.1	\$20.3	\$18.9	1.9	
7–9	3.1	0.9	1.8	10.6	13.1	3.9	
5–6	2.5	2.8	5.0	13.1	12.4	6.7	
3–4	11.0	8.9	22.5	22.9	18.3	22.3	
1–2	83.4	82.6	70.6	33.1	37.4	65.1	
Men, %							<0.001
10+	†4.7	\$3.9	\$2.9	\$26.3	\$31.0	6.1	
7–9	5.0	0.9	2.2	11.0	10.6	5.8	
5–6	7.6	4.9	8.2	15.1	20.1	12.3	
3–4	31.6	10.3	21.0	22.4	19.9	29.8	
1–2	51.1	80.0	65.7	25.3	18.3	45.9	

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender (as appropriate), † <0.05, ‡ <0.01, § <0.001.

Table 7B.4

Hazardous drinking (AUDIT score ≥ 8) by adults aged ≥ 15 years who drank in the last 12 months – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Hazardous drinking, %	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
All genders	§13.7	§5.4	§8.7	§42.6	§39.8	24.1	<0.001
Women	‡7.4	§2.4	§5.6	§34.3	‡27.3	15.0	<0.001
Men	§16.4	§7.2	§10.9	§50.8	§52.0	33.5	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender (as appropriate), † <0.05, ‡ <0.01, § <0.001.

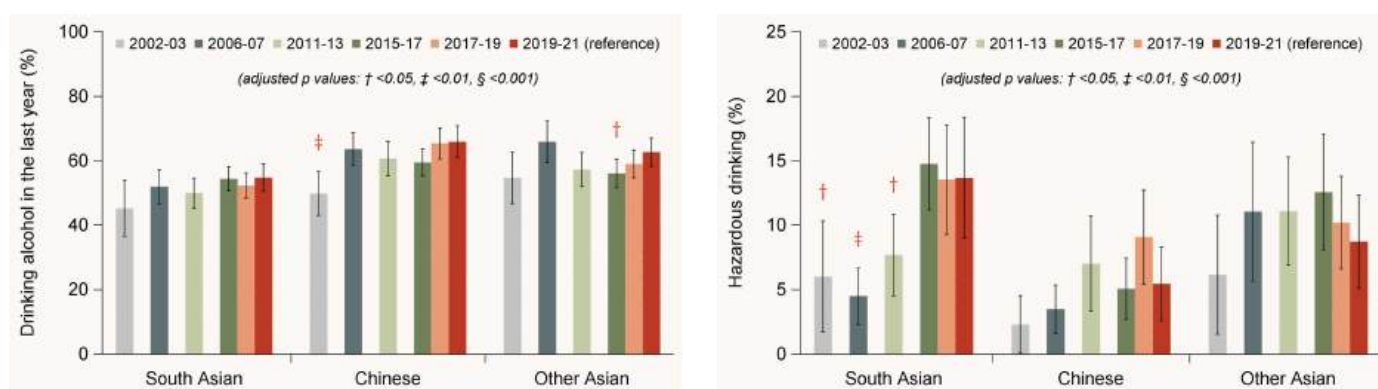


Figure 7B.2

Weighted percent (95%CI) of drinking alcohol in the last 12 months and hazardous drinking in adults aged ≥ 15 years – trends from 2002–03 to 2019–21 surveys, by Asian ethnic grouping.

4.3.5 Cannabis

2019–21 adult surveys: the prevalence of cannabis use in the last 12 months was lower among the Asian and Pacific communities, compared to European & Other, while the prevalence among Māori was higher than the latter (Table 8B.1, Figure 8B.1). The prevalence of weekly or daily cannabis use was lower in all Asian women and men, similar in Pacific, and higher in Māori, compared to European & Other (Table 8B.1).

Asian time trends: From 2011–13 to 2019–21, the prevalence of cannabis use in the last 12 months was unchanged for Chinese and Other Asian adults, and increased in South Asian adults (from 1.3% in 2011–13 to 5.2% in 2019–21, adjusted $p < 0.01$) (Figure 8B.2).

Table 8B.1

Weighted percent of cannabis use in the past 12 months in adults aged ≥ 15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Used cannabis in past 12 months, %							
All genders	\$5.2	\$3.0	\$3.2	\$31.7	‡13.6	14.1	<0.001
Women	\$2.7	\$2.8	\$1.3	\$26.3	12.0	10.3	<0.001
Men	\$7.0	\$3.2	\$4.8	\$37.3	‡15.6	18.2	<0.001
Used cannabis weekly or daily, %							
All genders	\$1.7	\$0.6	\$0.2	\$12.7	3.3	3.7	<0.001
Women	‡0.4	‡0.6	\$0.0	\$9.7	2.1	1.9	<0.001
Men	‡2.6	\$0.6	\$0.4	\$15.8	5.0	5.7	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender (as appropriate), † <0.05, ‡ <0.01, § <0.001.

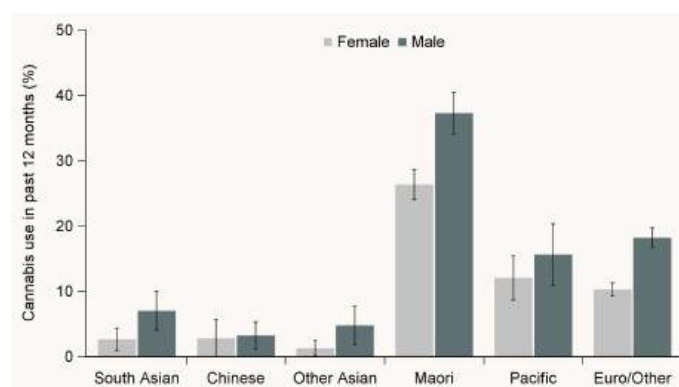


Figure 8B.1

Weighted percent (95%CI) of cannabis use in the past 12 months in adults aged ≥ 15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping and gender.

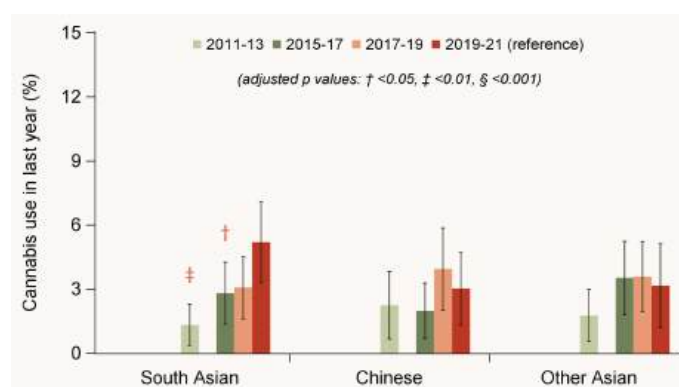


Figure 8B.2

Weighted percent (95%CI) of cannabis use in the past 12 months in adults aged ≥ 15 years – trends from 2011–13 to 2019–21 surveys, by Asian ethnic grouping.



4.3.6 Gambling

No new data on gambling have been collected in NZ Health Surveys since 2011–12. See prior report Asian Health in Aotearoa 2011–2013 for previous results.²

4.3.7 Body Size

4.3.7.1 Children

2019–21 child surveys: The mean values of all anthropometry measures, including height, weight, waist circumference and BMI, in children aged 2–14 years, are described in Table 9A.1. The mean height for girls and boys combined was lower for children in each Asian ethnic grouping, similar in Māori children, and higher in Pacific children, compared to European & Other. The mean weight and mean waist circumference for girls and boys combined were lower in Chinese and Other Asian children, similar in South Asian children, and higher in Māori and Pacific children, compared to European & Other. The mean BMI was lower in Chinese children, similar in South Asian and Other Asian children, and higher in Māori and Pacific children than in European & Other.

The prevalences of obesity and overweight, based on the IOTF criteria, were similar for children aged 2–14 years for South Asian children, lower for Chinese and Other Asian children, and higher for Māori and Pacific children, compared to European & Other (Table 9A.2). The perception of children's weight by caregivers, for children aged 2–14 years, reflected the measured BMI values within each ethnic grouping, with a similar perception of overweight among caregivers of South Asian (4.9%) and Chinese (5.3%) children, a lower perception of overweight in caregivers of Other Asian children (4.2%), and a higher perception of overweight among caregivers of Māori (9.3%) and Pacific (16.0%) children, compared to caregivers of European & Other children (7.0%, Table 9A.3).

Asian time trends: From 2006–07 to 2019–21, there was no significant change in the prevalence of obesity and perception of overweight in both girls and boys, except that the perception of overweight in Chinese boys significantly declined from 2017–19 (17.3%) to 2019–21 (11.2%, adjusted $p < 0.01$, Figures 9A.1 & 9A.2).

Table 9A.1

Adjusted mean anthropometry measurements in children aged 2–14 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping and gender.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Height (cm), mean							
All genders	\$128.8	†130.0	\$127.7	133.0	\$135.0	132.1	<0.001
Girls	‡128.0	130.1	\$125.2	132.3	\$134.7	131.1	<0.001
Boys	†129.6	†129.6	130.2	133.7	135.2	133.1	<0.001
Weight (kg), mean							
All genders	32.4	†31.8	‡30.8	\$37.6	\$43.4	33.6	<0.001
Girls	32.1	31.3	‡29.7	\$37.4	\$43.0	33.0	<0.001
Boys	32.6	32.3	32.1	\$37.8	\$43.7	34.2	<0.001
Waist circumference * (cm), mean							
All genders	63.6	‡61.5	‡61.3	\$67.3	\$72.6	64.0	<0.001
Girls	62.2	‡59.9	60.1	\$65.8	\$70.5	62.5	<0.001
Boys	65.1	63.0	†62.5	\$68.7	\$74.3	65.4	<0.001
BMI (kg/m²), mean							
All genders	18.1	†17.5	17.7	\$19.7	\$22.0	18.1	<0.001
Girls	18.1	†17.3	17.6	\$19.8	\$22.1	18.1	<0.001
Boys	18.1	17.8	17.7	\$19.6	\$21.9	18.2	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; *, aged 5–14 years only; p-value compared with European & Other – adjusting for age and gender (as appropriate), † <0.05, ‡ <0.01, § <0.001.

Table 9A.2

Weighted percent of obesity, overweight, normal weight and thin (based on IOTF cut-offs) in children aged 2–14 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping and gender.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
All genders, %							<0.001
Obese	6.9	‡3.3	†4.6	§15.4	§34.7	7.0	
Overweight	15.3	12.7	19.1	25.9	31.4	15.1	
Normal weight	66.2	75.6	63.7	57.1	32.9	74.2	
Thin	11.5	8.4	12.6	1.5	1.0	3.7	
Girls, %							<0.001
Obese	3.3	§0.4	3.8	§15.9	§35.3	6.7	
Overweight	20.1	10.7	16.6	27.4	33.0	17.4	
Normal weight	68.8	81.8	69.4	55.2	30.3	71.3	
Thin	7.8	7.2	10.2	1.5	1.4	4.6	
Boys, %							<0.001
Obese	10.6	6.6	† 5.3	§15.0	§34.1	7.3	
Overweight	10.5	15.0	21.8	24.5	29.8	13.0	
Normal weight	63.6	68.5	57.7	58.9	35.4	76.9	
Thin	15.3	9.9	15.2	1.5	0.7	2.8	

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender (as appropriate), † <0.05, ‡ <0.01, § <0.001.

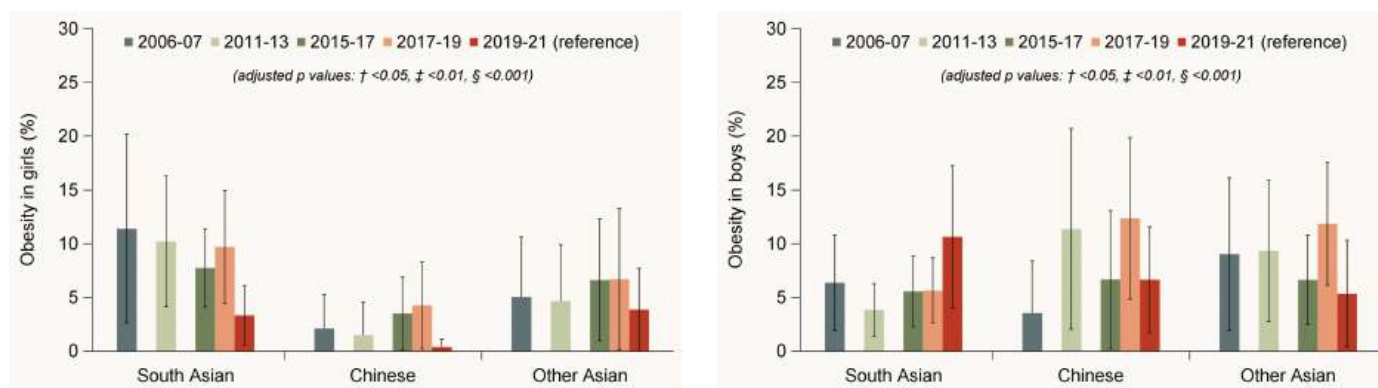


Figure 9A.1

Weighted percent (95%CI) of obesity in children aged 2–14 years – trends from 2006–07 to 2019–21 surveys, by Asian ethnic grouping and gender.

Table 9A.3

Perception of child's weight by caregiver, for children aged 2–14 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping and gender.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
All genders, %							<0.001
Overweight	4.9	5.3	†4.2	†9.3	‡16.0	7.0	
Neither	87.4	83.2	79.9	85.3	77.1	86.2	
Underweight	7.8	11.6	15.9	5.4	6.9	6.8	
Girls, %							<0.001
Overweight	4.2	4.8	4.4	†9.1	†15.7	6.4	
Neither	89.1	91.8	80.7	88.5	76.6	88.3	
Underweight	6.8	3.4	14.9	2.4	7.7	5.3	
Boys, %							0.02
Overweight	5.5	†5.8	4.0	9.5	†16.2	7.5	
Neither	85.7	73.6	79.2	82.3	77.6	84.3	
Underweight	8.8	20.6	16.9	8.3	6.2	8.2	

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender (as appropriate). † <0.05, ‡ <0.01, § <0.001

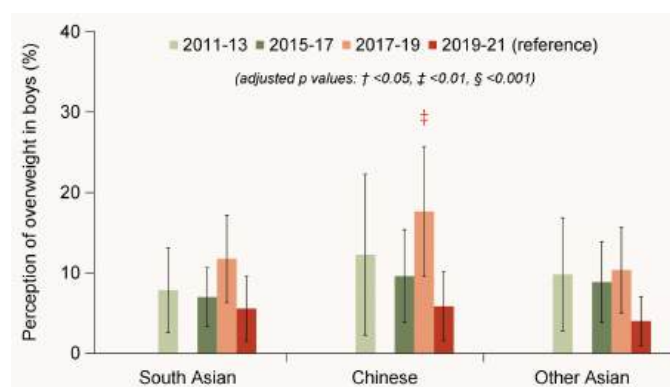
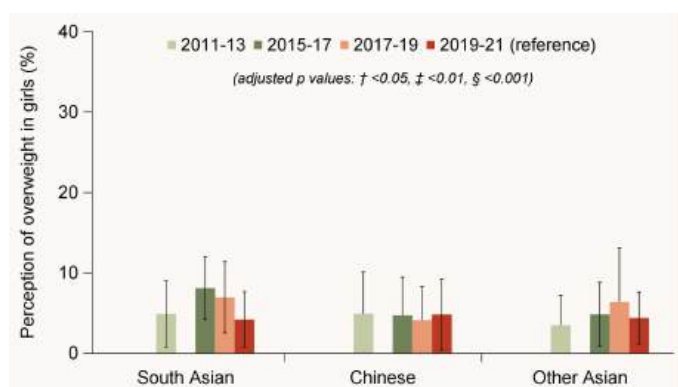


Figure 9A.2

Weighted percent (95%CI) of perception of overweight in children aged 2–14 years – trends from 2011–13 to 2019–21 surveys, by Asian ethnic grouping and gender.

4.3.7.2 Adults

2019–21 adult surveys: the mean values of all anthropometry measures – height, weight, waist circumference, and BMI – were significantly lower for women and men in all three Asian ethnic groupings, and higher in Māori and Pacific, compared to European & Other women and men, aside for waist circumference in South Asian people, which was similar to that for European & Other, and height in Māori and Pacific which was lower (Table 9B.1). The prevalence of obesity, based on ethnic-specific definitions (see Methods section), was higher in all three Asian ethnic groupings, and also higher for Māori and Pacific people, compared to European & Other (Table 9B.2).

Asian time trends: From 2002–03 to 2019–21, the prevalence of obesity (based on ethnic-specific criteria) in both women and men increased significantly in each Asian ethnic grouping (Figure 9B.1).

Table 9B.1

Adjusted mean anthropometry measurements in adults aged ≥15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping and gender.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Height (cm), mean							
All genders	\$164.0	\$165.6	\$162.0	\$169.6	†169.6	170.3	<0.001
Women	\$157.0	\$159.7	\$155.9	163.3	163.6	163.9	<0.001
Men	\$171.0	\$171.8	\$168.3	‡176.1	‡175.6	176.9	<0.001
Weight (kg), mean							
All genders	\$73.2	\$68.8	\$68.3	\$90.5	\$101.2	80.3	<0.001
Women	\$67.1	\$60.6	\$60.8	\$84.8	\$96.6	74.4	<0.001
Men	\$79.6	\$76.8	\$76.0	\$96.3	\$105.7	86.5	<0.001
Waist circumference (cm), mean							
All genders	90.9	\$84.1	\$85.8	\$98.4	\$104.8	90.9	<0.001
Women	86.9	\$78.0	\$79.8	\$94.6	\$101.9	85.8	<0.001
Men	95.4	\$90.1	\$92.0	\$102.3	\$107.4	96.2	<0.001
BMI (kg/m²), mean							
All genders	†27.2	\$25.0	\$25.9	\$31.3	\$35.2	27.7	<0.001
Women	27.3	\$23.8	\$25.0	\$31.7	\$36.0	27.7	<0.001
Men	27.2	\$26.0	‡26.8	\$30.9	\$34.2	27.6	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender (as appropriate). † <0.05, ‡ <0.01, § <0.001.

Table 9B.2

Weighted percent of obesity (ethnic specific definitions) in adults aged ≥ 15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping and gender.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
All genders, %							<0.001
Obese	§64.7	§41.4	§50.4	§38.7	§58.0	29.5	
Overweight	16.8	21.1	18.7	33.6	28.0	36.3	
Normal	18.5	37.5	30.9	27.7	14.0	34.2	
Women, %							<0.001
Obese	§65.2	‡32.4	§40.0	§41.3	§60.1	30.5	
Overweight	18.8	17.8	19.6	28.9	25.4	31.4	
Normal	15.9	59.8	40.4	29.8	14.5	38.1	
Men, %							<0.001
Obese	§64.4	§48.6	§59.5	§36.0	§55.5	28.4	
Overweight	15.3	23.7	17.8	38.4	31.1	41.6	
Normal	20.3	27.7	22.6	25.6	13.4	30.0	

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender (as appropriate), † <0.05, ‡ <0.01, § <0.001.

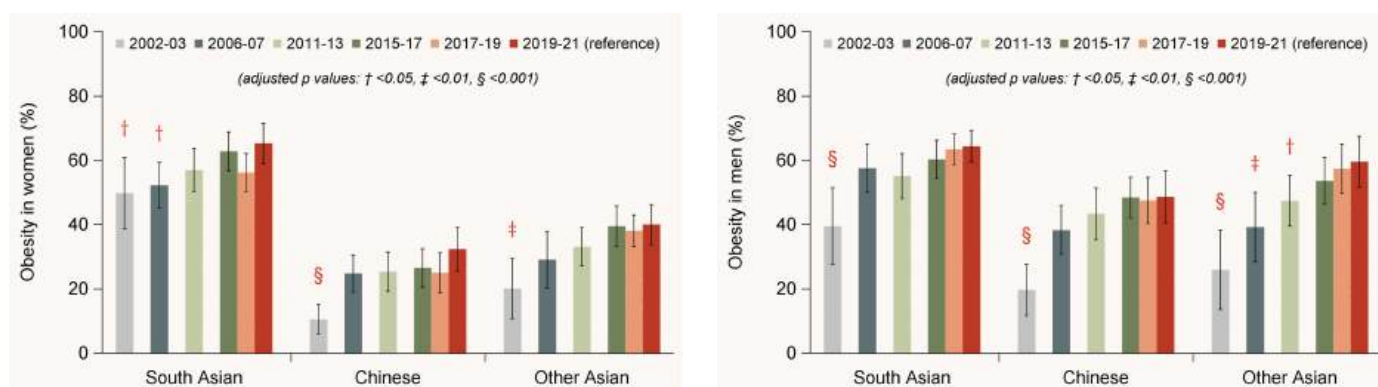


Figure 9B.1

Weighted percent (95%CI) of obesity in adults aged ≥ 15 years – trends from 2002–03 to 2019–21 surveys, by Asian ethnic grouping and gender.

4.3.8 Acculturation to lifestyle

2019–21 adult surveys: The association between the number of years lived in NZ and selected key factors was examined in Asian participants, to explore if any were related to increasing length of exposure to the NZ environment. The prevalence of Asian participants who drank alcohol in the last 12 months was higher in those who were born in NZ or had lived for more than 10 years in NZ (63.0%) compared to those who had lived 5–10 years in NZ (55.4%, adjusted $p < 0.05$, Table 10B.1). The prevalence of being sedentary in the last 7 days was lower in those who were born in NZ or had lived for more than 10 years in NZ (13.0%) compared to those who had lived 5–10 years in NZ (18.9%, adjusted $p < 0.05$, Table 10B.1). All other variables – frequency of fruit and vegetable intake, physical activity, smoking, and BMI – were not significantly related to duration of time lived in NZ.

Table 10B.1

Association between lifestyle and years lived in New Zealand among Asian adults aged ≥ 15 years – 2019–20 and 2020–21 combined.

Variable	Years lived in NZ			Overall test #, adjusted p value
	<5 years	5–10 years	>10 years or born in NZ	
Nutrition, %				
Fruit 2+ a day	40.4	43.1	45.6	0.93
Vegetables 3+ a day	31.4	30.8	32.9	0.89
Fruit & vegetables 5+ per day	22.7	27.9	30.8	0.18
Physical activity, %				
Active	49.7	44.1	43.7	0.38
Sedentary	16.1	†18.9	13.0	0.03
Drank alcohol in last 12 months, %	59.6	‡55.4	63.0	0.01
Current Smoker, %	6.6	7.5	8.6	0.26
BMI (ethnic specific definitions), %				0.95
Obese	49.5	53.4	54.2	
Overweight	19.2	18.9	18.5	
Normal weight	31.3	27.7	27.3	

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with living year in NZ >10 years or born in NZ – adjusting for age and gender, † <0.05, ‡ <0.01, § <0.001.

4.4 Health conditions

The prevalences reported in this section are based on self-reports by survey participants, and have not been validated against medical records.

4.4.1 Children

2019–21 child surveys: The most frequent health conditions (lasting > 6 months) in all Asian children combined were eczema (17.1%) and asthma (6.7%). The prevalence of asthma was similar in all three Asian ethnic groupings (5.8% in South Asian, 5.4% in Chinese, 9.1% in Other Asian), and higher in Māori (17.0%) and Pacific (15.4%) children, compared to European & Other children (9.6%) (Table 11A.1, Figure 11A.1). The prevalence of eczema was similar in South Asian children (12.4%), and higher in Chinese (20.4%), Other Asian (19.3%), Māori (18.3%), and Pacific (20.1%) children, compared to European & Other children (12.0%) (Table 11A.1, Figure 11A.1, and Appendix 5).

Other chronic health conditions, such as diabetes, rheumatic heart disease, and a range of neuropsychological conditions,

were rare in all ethnic groupings and did not vary greatly between them (Table 11A.1). However, the rating by caregivers that the overall health of their child was Excellent, was similar for South Asian children (52%), and lower for caregivers of Chinese (42.3%), Other Asian (46.6%), Māori (45.2%), and Pacific (44.5%) children, when compared to caregivers of European & Other children (56.4%) (Table 11A.2).

Asian time trends: From 2011–13 to 2019–21, there was no significant change in the prevalence of asthma and eczema among children aged 0–14 years (Figure 11A.2). The current health status rating of Very Good or Excellent by caregivers of all Asian ethnic groupings did not change from 2006–07 to 2019–21.

Table 11A.1

Weighted percent of long-term health conditions (diagnosed and currently using medication) that has lasted, or is expected to last, for more than 6 months in children aged 0–14 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Asthma, %	5.8	5.4	9.1	\$17.0	†15.4	9.6	<0.001
Eczema, %	12.4	‡20.4	†19.3	\$18.3	‡20.1	12.0	<0.001
Diabetes, %	0.0	0.0	0.0	0.1	0.1	0.1	0.28
Rheumatic heart disease, %	0.0	0.0	0.0	0.0	0.2	0.0	0.70
Autism spectrum disorder*, %	0.6	\$0.0	1.2	0.5	0.7	0.9	0.002
Depression*, %	†0.0	†0.0	0.4	0.4	0.5	0.6	0.04
Anxiety disorder*, %	\$0.0	\$0.0	0.8	1.5	‡0.3	1.9	<0.001
ADD or ADHD*, %	†0.5	\$0.0	1.4	†1.2	2.4	2.3	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; *, Includes children aged 2–14 years and currently using medication or having counselling; ADD, attention deficit disorder; ADHD, attention deficit hyperactivity disorder; p-value compared with European & Other – adjusting for age and gender; † <0.05; ‡ <0.01; \$ <0.001.

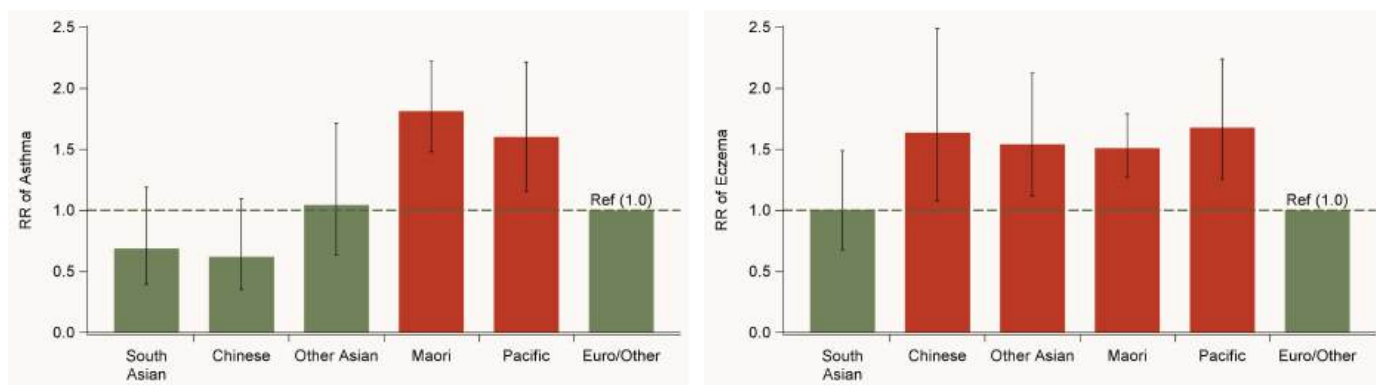


Figure 11A.1

Age- and gender-adjusted relative risks (95%CI) of having asthma or eczema for main ethnic groupings compared with European & Other, among children aged 0–14 years – 2019–20 and 2020–21 surveys combined.

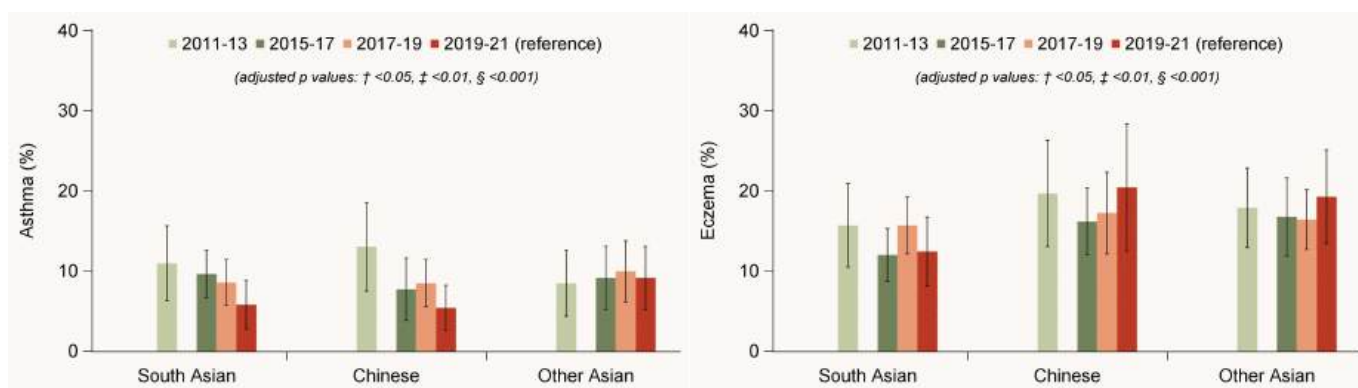


Figure 11A.2

Weighted percent of asthma and eczema (diagnosed and currently using medication) that has lasted, or is expected to last, for more than 6 months in children aged 0–14 years – trends from 2011–13 to 2019–21 surveys, by Asian ethnic grouping.

Table 11A.2

Current health status of children aged 0–14 years, reported by primary caregiver – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Current health status, %							<0.001
Excellent	52.0	‡42.3	§46.6	§45.2	§44.5	56.4	
Very Good	35.6	45.4	41.3	37.4	30.6	33.0	
Good	10.8	11.4	12.1	13.1	21.0	8.7	
Fair or Poor	1.7	0.9	0.0	4.3	3.9	1.9	

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender, † <0.05, ‡ <0.01, § <0.001

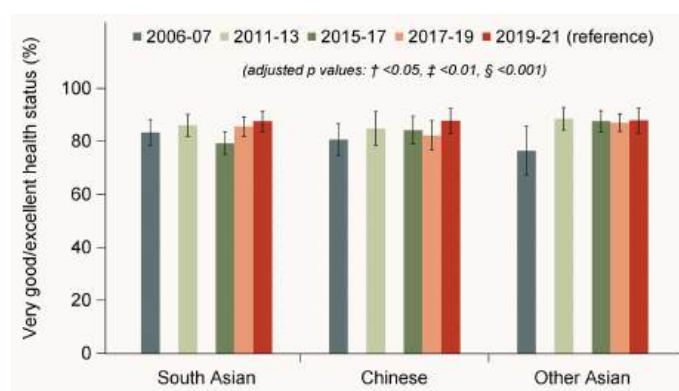


Figure 11A.3

Weighted percent (95%CI) of Very Good or Excellent current health status of children aged 0–14 years, reported by primary caregiver – trends from 2006–07 to 2019–21 surveys, by Asian ethnic grouping.

4.4.2 Adults

2019–21 adult surveys: Table 11B.1 shows unadjusted weighted prevalences of a number of health conditions by six ethnic groupings. The p-values are from comparisons adjusting for age and gender. Appendix 6 reports the RR (95%CI) of chronic conditions when compared to European & Other, after adjusting for age and gender. The most prevalent chronic health condition in all Asian adults (combined) aged 25 years or more was chronic pain (12.1%), followed by hypertension (9.5%), high cholesterol (8.3%), arthritis (6.9%) and diabetes (6.2%). Adults between the ages of 15 and 24 were omitted due to their typical lower prevalence of these long-term conditions. The main results are summarised below.

4.4.2.1 Cardiovascular disease

Adjusting for age and gender, South Asian (adjusted RR=1.37, 95%CI=1.01–1.85), Māori (adjusted RR=1.37, 95%CI=1.26–1.50), and Pacific people (adjusted RR=1.45, 95%CI=1.20–1.75) each had a higher risk of being on medication for hypertension, while Chinese adults had a lower risk (adjusted RR=0.68, 95%CI=0.49–0.96) and Other Asian adults had a similar risk (adjusted RR=0.93, 95%CI=0.67–1.30), compared to European & Other (Figure 11B.1). Similarly, South Asian (adjusted RR=1.71, 95%CI=1.28–2.30), Māori (adjusted RR=1.31, 95%CI=1.13–1.52), and Pacific people (adjusted RR=1.56, 95%CI=1.31–1.86) each had a higher risk of being on medication for high cholesterol, while Chinese (adjusted RR=1.07, 95%CI=0.74–1.55) and Other Asian (adjusted RR=1.25, 95%CI=0.88–1.78) adults had a similar risk, compared to European & Other (Figure 11B.1 and Appendix 6).

The risk of total cardiovascular disease was higher in Māori adults (adjusted RR=1.16, 95%CI=1.02–1.32) and lower in Chinese adults (adjusted RR=0.49, 95%CI=0.31–0.77) compared to European & Other, after adjusting for age and gender. The adjusted risks of heart attack, heart failure and stroke in all three Asian ethnic groupings were not significantly different to European & Other. However, the adjusted risk of angina was higher in South Asian adults (adjusted RR=2.50, 95%CI=1.44–4.36), lower in Chinese adults (adjusted RR=0.18, 95%CI=0.04–0.73) and similar in Other Asian adults (adjusted RR=0.76, 95%CI=0.34–1.71), when compared to European & Other (Figure 11B.1 and Appendix 6).

4.4.2.2 Diabetes

The risk of being on medication for diabetes was 3-fold higher in South Asian and Other Asian adults, 2-fold in Māori adults, 4-fold in Pacific adults compared to European & Other, while not significantly different in Chinese adults than the latter (Figure 11B.1 and Appendix 6).

4.4.2.3 Asthma

The prevalence of asthma was lower in all three Asian ethnic groupings (4.1% in South Asian, 4.1% in Chinese, 5.4% in Other Asian), and similar in Pacific (14.5%) adults, when compared to European & Other (11.9%), but higher in Māori adults (18.3%) (Table 11B.1). The adjusted RRs were consistent with the weighted prevalence of asthma (Figure 11B.1 and Appendix 6).

4.4.2.4 Bone conditions and chronic pain

The risk of arthritis was lower in all three Asian groupings (adjusted RR ranging from 0.57–0.58), similar in Pacific people (adjusted RR=0.99), but higher in Māori people (adjusted RR=1.55), compared to European & Other, after adjusting for age and gender (Figure 11B.1 and Appendix 6). This was mainly due to low risk of osteoarthritis in all non-European groupings, aside for Māori people who also had an increased risk of rheumatoid arthritis and gout, after adjusting for age and gender. Other Asian and Pacific adults also had a higher adjusted risk of gout than European & Other (Table 11B.1 & Appendix 6). The adjusted risk of chronic pain was lower in Chinese and Other Asian adults, similar in South Asian and Pacific adults, but higher in Māori adults, compared to European & Other (Figure 11B.1 and Appendix 6).

4.4.2.5 Depression and psychological distress

The prevalence of self-reported depression was less common in Chinese, South Asian, Other Asian, and Pacific adults, compared to European & Other and Māori adults (Table 11B.1, Figure 11B.1 and Appendix 6). The distribution of the K10 psychological distress score was towards a lower score frequency in Chinese and Other Asian adults, similar in South Asian and Pacific adults, but towards a higher score in Māori adults, when compared to European & Other (Table 11B.2).

4.4.2.6 .Health status and disability

South Asian (9.0%) and Other Asian (6.8%) adults were less likely to report their health status as Fair or Poor, and Māori adults (20.4%) and Pacific (19.5%) were more likely, compared to European & Other (10.9%), who were similar to Chinese (11.1%) (Table 11B.2). The prevalence of disability was lower in Chinese and Other Asian adults, similar in South Asian adults, and higher in Māori and Pacific adults, compared to European & Other (Table 11B.3).

4.4.2.7 Asian time trends

From 2002–03 to 2019–21, the prevalence of chronic conditions did not significantly vary within each Asian ethnic grouping (Figure 11B.2). The prevalence of K10 psychological distress score >15 was stable in South Asian and Chinese adults from 2006–07 to 2019–21, but significantly declined in Other Asian adults from 20.4% in 2017–19 to 12.7% in 2019–21 ($p < 0.05$, Figure 11B.3). The prevalence of self-reported Excellent health status declined in South Asian (from 22.6% in 2011–13 to 18.3% in 2019–21) and Other Asian (from 22.3% in 2011–13 to 14.0% in 2019–21) adults, while remained stable in Chinese adults from 2006–07 to 2019–21 (Figure 11B.3). The prevalence of disability in each Asian ethnic grouping did not vary between recent surveys: 2018–19 to 2019–21 (Figure 11B.4).



Photo by Tom Sakai on Unsplash

Table 11B.1

Weighted percent of long-term health conditions in adults aged ≥25 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Hypertension, %	10.9	‡7.2	10.4	§18.6	‡19.3	21.1	<0.001
High cholesterol, %	‡8.8	7.1	8.9	‡11.2	§12.8	13.2	<0.001
Cardiovascular disease, %	6.9	§4.1	6.0	†11.7	9.6	14.7	<0.001
Heart attack	2.1	‡0.5	†0.7	3.1	2.2	3.7	<0.001
Angina	†3.2	§0.3	1.3	‡3.2	2.0	3.5	<0.001
Heart failure	0.5	†0.5	0.5	§2.6	2.4	2.2	<0.001
Stroke	1.1	0.6	0.6	1.9	1.8	2.2	0.09
Other heart disease	3.3	‡2.9	3.5	6.9	5.3	9.2	0.008
Diabetes, %	§7.2	3.1	§8.3	§7.2	§12.9	4.3	<0.001
Asthma, %	§4.1	§4.1	§5.4	§18.3	14.5	11.9	<0.001
Arthritis, %	§5.8	§7.3	§7.7	§19.5	15.8	22.4	<0.001
Rheumatoid	1.5	§0.5	1.4	‡3.4	2.8	3.0	<0.001
Osteoarthritis	§2.2	§3.7	§3.5	9.9	§4.7	14.3	<0.001
Gout	0.9	2.1	3.1	§5.4	§7.8	2.6	<0.001
Chronic pain, %	13.2	‡12.0	§11.1	§26.2	22.4	22.6	<0.001
Hysterectomy*, %	8.1	†4.3	8.8	11.7	†4.8	15.0	0.037
Depression, %	‡3.2	‡3.2	‡1.9	8.7	‡3.9	9.0	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; *, Women aged 20 years and over; p-value compared with European & Other – adjusting for age and gender (as appropriate), † <0.05, ‡ <0.01, § <0.001.

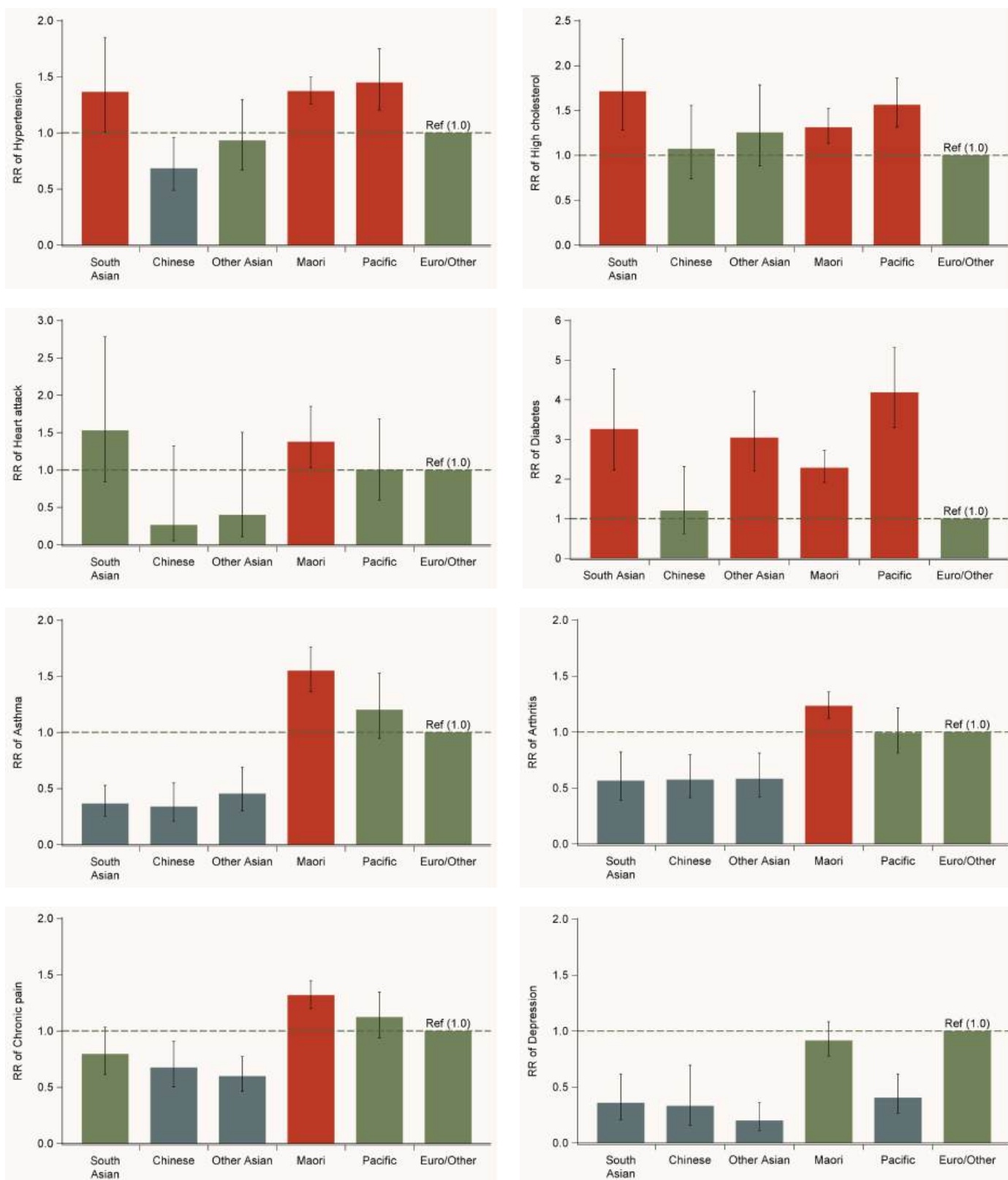


Figure 11B.1

Age and gender adjusted relative risk (95%CI) of being on medication for hypertension, being on medication for high serum cholesterol, having a previous heart attack, being on medication for diabetes, having asthma, having chronic pain, having arthritis, or receiving treatment for depression, for main ethnic groupings compared with European & Other among adults aged ≥ 25 years in the 2019–20 and 2020–21 surveys combined.

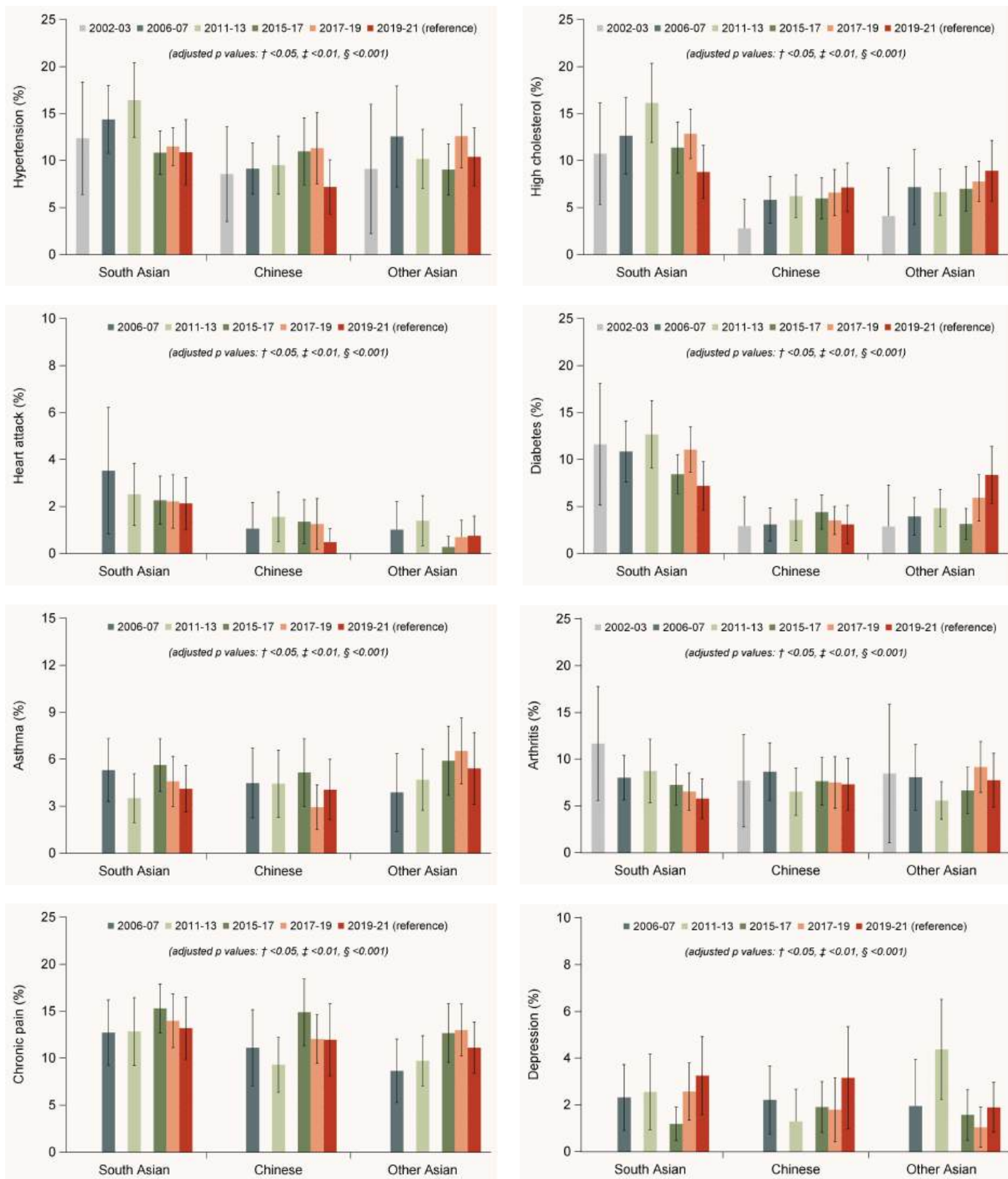


Figure 11B.2

Weighted percent (95%CI) of being on medication for hypertension, being on medication for high serum cholesterol, having a previous heart attack, being on medication for diabetes, having asthma, having arthritis, or receiving treatment for depression compared to European & Other, adjusting for age and gender in adults aged ≥ 25 years – trends from 2002-03 to 2019-21 surveys by Asian ethnic grouping.

Table 11B.2

Self-reported K10 psychological distress score and current health status of adults aged ≥15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Psychological distress score, %							<0.001
Low (10–15)	77.0	§87.3	§84.9	§66.7	71.1	78.9	
Moderate (16–21)	15.4	9.0	10.4	18.6	17.6	13.4	
High (22–29)	5.8	2.3	2.8	9.5	8.3	5.5	
Very high (30–50)	1.9	1.3	1.9	5.2	3.0	2.2	
Overall health status, %							<0.001
Excellent	‡18.3	11.3	‡14.0	§8.6	§12.2	14.3	
Very Good	35.8	42.4	42.3	32.9	35.0	43.5	
Good	36.9	35.2	37.0	38.1	33.3	31.3	
Fair or Poor	9.0	11.1	6.8	20.4	19.5	10.9	

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender, † <0.05, ‡ <0.01, § <0.001

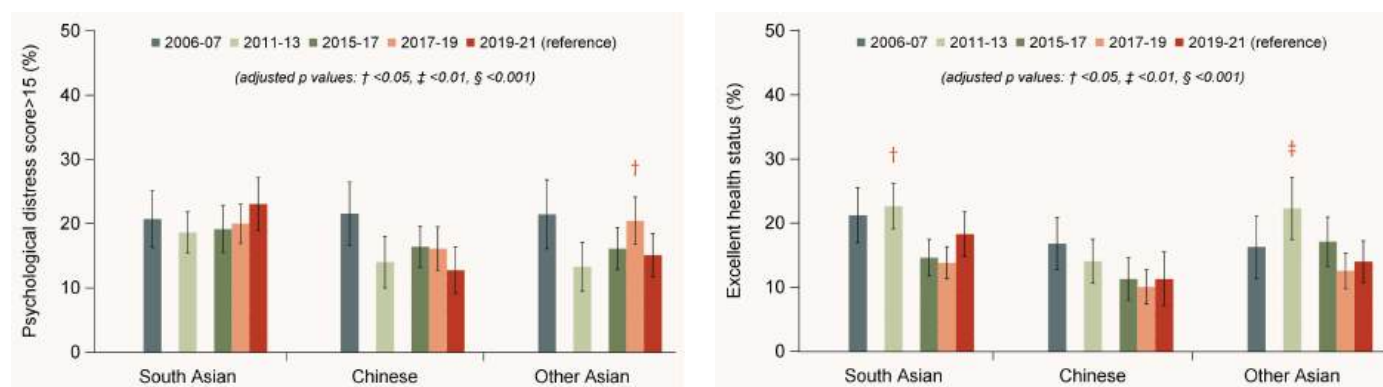


Figure 11B.3

Weighted percent (95%CI) of self-reported K10 low psychological distress score and Excellent current health status of adults aged ≥15 years – trends from 2006–07 to 2019–21 surveys, by Asian ethnic grouping.

Table 11B.3

Weighted percent of disability in adults aged ≥15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Disability*, %							<0.001
Yes	4.3	†3.9	§2.8	§11.9	†9.1	8.7	
No	95.7	96.1	97.2	88.1	90.9	91.3	

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; *, at least a lot of difficulty seeing or hearing (even with glasses or hearing aids), walking or climbing stairs, remembering or concentrating, self-care, or communicating, as measured by the Washington Group Short Set. p-value compared with European & Other – adjusting for age and gender, † <0.05, ‡ <0.01, § <0.001.

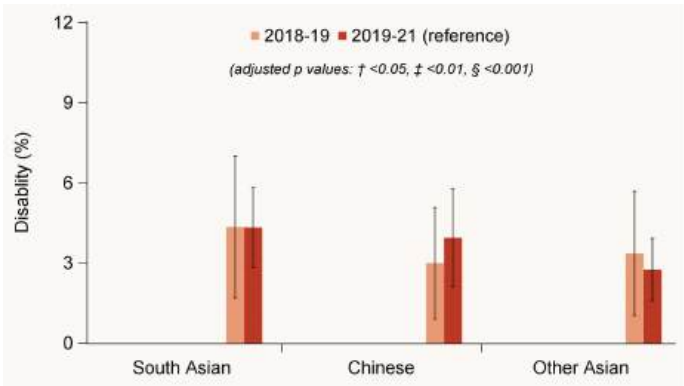


Figure 11B.4

Weighted percent (95%CI) of disability of adults aged ≥15 years – trends from 2018–19 to 2019–21 surveys, by Asian ethnic grouping.

4.5 Health service utilisation

The variables on health service utilisation reported in the following section cover the general areas of primary health care, secondary health services, oral health, and acculturation (the association between these variables and length of residence in NZ).

4.5.1 Primary health care

4.5.1.1 Children

2019–21 child surveys: Results for questions about the **primary health care provider** of children are shown in Table 12A.1.

The percent of children who had a usual health practitioner or service that they could attend when unwell was similar in all Asian groupings (97.4% in South Asian, 96.4% in Chinese, 96.7% in Other Asian) and in Pacific (96.9%) compared to European & Other (98.7%). The apparent difference between Māori (97.4%) and European & Other should not be over-interpreted as it is smaller than the other ethnic differences and is most likely only significant ($p < 0.05$) because of the larger Māori sample size (Table 12A.1). Of those who had a usual health practitioner, nearly all children ($\geq 99.8\%$) attended a family practice or GP clinic when unwell, with the remainder mainly attending a private accident and emergency clinic or other clinic. In addition, there was no significant difference between ethnic groupings in the proportion attending a family practice or GP clinic when unwell (adjusted $p = 0.19$), attending a private accident and emergency clinic (adjusted $p = 0.84$) or other clinic (adjusted $p = 0.44$). There was no significant difference between ethnic groupings in the proportion being unable to be seen by their practice within 24 hours when they wanted to (adjusted $p = 0.10$).

Results for questions about the **type of practitioner** seen in the last 12 months by children are shown in Table 12A.2. About three-quarters of children saw a family doctor (or GP) in the last 12 months, and this prevalence was similar for all ethnic groupings (adjusted $p = 0.12$). The proportion of unmet need for seeing a GP due to cost, transport or childcare was similar in all Asian groupings (3.6% in South Asian, 2.2% in Chinese, 2.3% in Other Asian), while higher in Māori (5.2%) and Pacific (9.1%) children, compared to European & Other (2.1%). The prevalence of seeing a practice nurse only was lower in Pacific children (19.9%), while similar in all Asian groupings and Māori children (ranging from 25.7% in Other Asian to 27.2% in South Asian), compared to European & Other (29.1%). The prevalence of seeing a medical specialist in the last 12 months (2019–20 survey data only) was lower in South Asian (13.9%) and Pacific (13.7%) children, while similar in Chinese (17.2%), Other Asian (16.5%) and Māori (23.9%) children, compared to European & Other (24.7%).

Compared with European & Other, South Asian children were less likely to have seen an osteopath (0.4% vs 3.3%, adjusted $p < 0.01$), occupational therapist ($< 0.1\%$ vs 1.2%, adjusted $p < 0.01$), speech therapist (0.5% vs 2.0%, adjusted $p < 0.01$), or social worker/counsellor (0.4% vs 7.3%, adjusted $p < 0.001$). Chinese and Other Asian children were less likely to have seen all listed other health care workers (all adjusted $p < 0.05$) compared to European & Other children, except for the proportion seeing a speech therapist in Chinese children and seeing a physiotherapist, occupational therapist, or speech therapist in Other Asian children. Māori children were less likely to have seen an osteopath in the last 12 months than European & Other children, and Pacific children were also less likely to have seen pharmacist, chiropractor, or osteopath in the last 12 months than European & Other children.

Asian time trends: From 2006–07 to 2019–21, there were no significant changes in the proportion of South Asian and Chinese children who had a usual health practice or service to see when unwell, while there was an increase in Other Asian children (from 86.8% in 2006–07 to 96.7% in 2019–21, adjusted $p < 0.01$, Figure 12A.1). From 2011–13 to 2019–21, the proportion of those unable to be seen within 24 hours by a practice when they wanted to in the last 12 months was stable in South Asian and Other Asian children, but increased in Chinese children (from 9.1% in 2011–13 to 16.9% in 2019–21, adjusted $p < 0.05$, Figure 12A.2). Across all available surveys, there were no significant changes in the proportion within each Asian ethnic groupings of children who had seen a family doctor, or had seen medical specialist (Figure 12A.3). The level of unmet need for seeing a GP gradually decreased from 2011–13 to 2019–21, although the trend was not significant across surveys within each Asian ethnic grouping. The prevalence of only seeing a practice nurse significantly increased in Chinese children from 2006–07 (14.0%) to 2019–21 (26.9%) (adjusted $p < 0.01$, Figure 12A.3).

Table 12A.1

Having a usual primary care provider to see when unwell, and have health care services provided, for children aged 0–14 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Have usual health practice or service to see when unwell, %	97.4	96.4	96.7	†97.4	96.9	98.7	0.048
Health care services provided*							
GP clinic	99.8	99.9	100	99.9	99.8	99.9	0.19
Private A & E clinic	0.2	0.0	0.0	0.0	0.0	0.0	0.84
Other clinic	0.0	0.1	0.0	0.0	0.2	0.1	0.44
Unable to be seen within 24 hours by practice when wanted to, in last 12 months, %	12.4	16.9	12.0	17.6	18.5	16.1	0.10

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; *, In children who have a regular (usual) health practice or service; p-value compared with European & Other – adjusting for age and gender, † <0.05, ‡ <0.01, § <0.001.

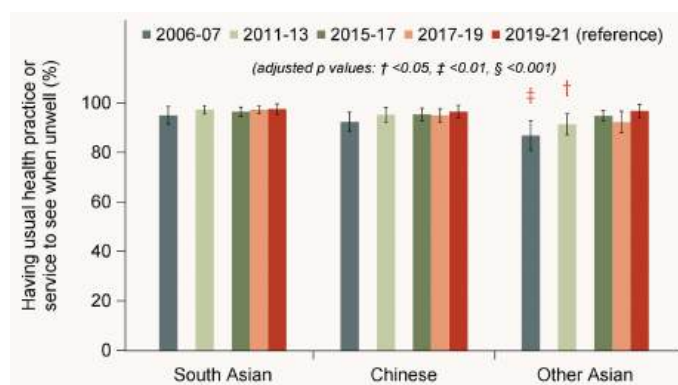


Figure 12A.1

Weighted percent (95%CI) of having a usual health practice or service to see when unwell in children aged 0–14 years – trends from 2006–07 to 2019–21 surveys, by Asian ethnic grouping.

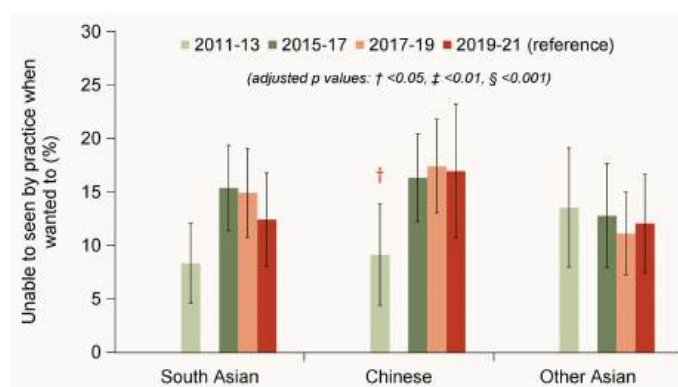


Figure 12A.2

Weighted percent of being unable to be seen within 24 hours by practice when wanted to in last 12 months in children aged 0–14 years – trends from 2011–13 to 2019–21 surveys, by Asian ethnic grouping.

Table 12A.2

Type of practitioner seen in the last 12 months by children aged 0–14 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Family doctor (GP), %	73.9	68.1	70.0	66.4	70.2	70.6	0.12
Unmet need for GP due to cost, transport or childcare, %	3.6	2.2	2.3	\$5.2	\$9.1	2.1	<0.001
Practice nurse only, %	27.2	26.9	25.7	26.7	†19.9	29.1	0.015
Medical specialist*, %	§13.9	17.2	16.5	23.9	§13.7	24.7	<0.001
Other health care workers*, %							
Pharmacist	8.3	§1.6	\$2.0	10.3	†7.4	12.3	<0.001
Physiotherapist	2.1	§0.9	1.8	4.0	4.2	5.5	0.007
Chiropractor	2.8	§0.2	§0.0	2.8	§0.3	3.3	<0.001
Osteopath	‡0.4	§0.4	†0.8	†1.7	‡0.3	3.3	0.003
Dietitian	1.9	§0.0	‡0.3	1.5	1.5	1.9	<0.001
Optometrist	7.2	†3.3	\$2.0	6.1	4.1	7.9	0.002
Occupational therapist	‡0.0	‡0.0	0.9	0.9	1.3	1.2	0.002
Speech therapist	‡0.5	1.0	1.4	3.5	2.9	2.0	0.011
Social worker/counsellor	§0.4	§0.2	\$1.2	7.2	3.5	7.3	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; *, 2019–20 survey; p-value compared with European & Other – adjusting for age and gender, † <0.05, ‡ <0.01, § <0.001.

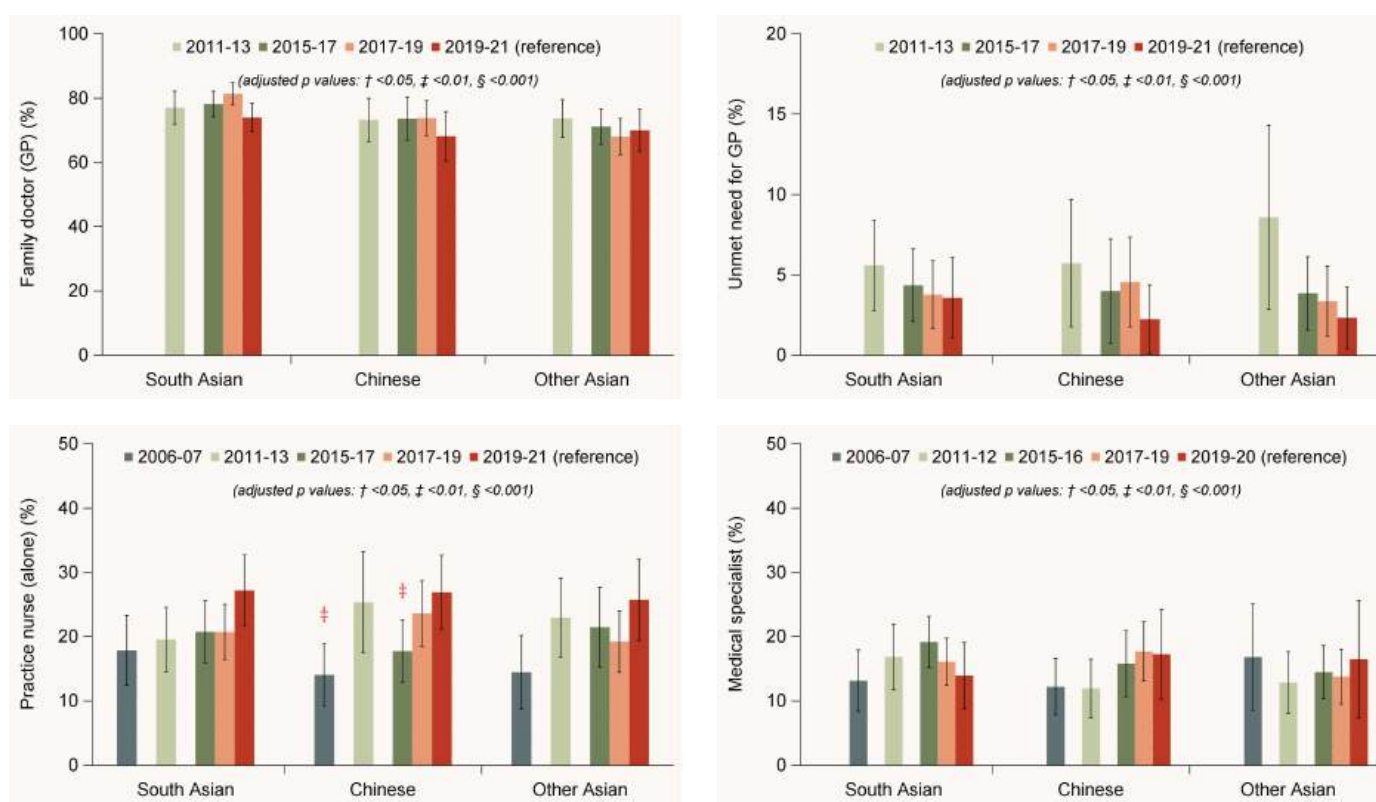


Figure 12A.3

Weighted percent (95%CI) of type of practitioner seen in the last 12 months in children aged 0–14 years – trends from available surveys, by Asian ethnic grouping.

4.5.1.2 Adults

2019–21 adult surveys: Results for questions about the **primary care provider** of adults are shown in Table 12B.1. The proportion of adults who had a usual health practitioner or service, that they could attend when unwell, was lower in South Asian (90.0%), Chinese (89.5%), and Other Asian (89.5%) adults, and similar in Māori (94.4%) and Pacific (96.5%) adults, when compared to European & Other (96.5%). Of those who had a usual health practitioner, nearly all adults (98.1%–99.9%) attended a family practice or GP clinic when unwell. A lower proportion reported being unable to be seen by practice from the practice within 24 hours when they wanted to (over the last 12 months) in South Asian (17.6%), Chinese (16.5%), and Other Asian (12.4%) adults, similar in Pacific adults (19.5%), and higher in Māori adults (27.1%), when compared to European & Other (21.5%).

Results for the **prevention services** provided by the usual practice are shown in Table 12B.1 and Appendix 7. Compared to European & Other, South Asians adults were more likely to have had weight/height measures (adjusted RR=1.29), tests for blood cholesterol (adjusted RR=1.42) and diabetes (adjusted RR=1.58); Chinese adults were less likely to have had a blood pressure check (adjusted RR=0.86); and Other Asian adults more likely (adjusted RR=1.21) to have had a test for diabetes. Māori and Pacific adults were more likely to have had weight and height measured, had checks for high blood pressure and tests for cholesterol and diabetes, and be given a “Green Prescription”, than European & Other adults.

Practice staff were more likely to discuss risk factors related to cardiovascular disease and diabetes (e.g., nutrition, weight and exercise) with South Asian people, along with Māori and Pacific people, than with European & Other (Table 12B.1). Smoking was more likely to be discussed by practice staff with Māori and Pacific people, and less likely with South Asian and Chinese people, compared to European & Other, which reflected the variation in smoking proportion in each ethnic grouping (Figure 6B.1). Health food/nutrition and exercise/physical activity were more likely to be discussed by practice staff with South Asian, Māori and Pacific adults, with a similar percent in Chinese and Other Asian adults, compared to European & Other (Table 12B.1, Appendix 7).

Results for questions about the **type of practitioner** seen in the last 12 months by adults are shown in Table 12B.2. The proportion of adults who saw a family doctor or GP in the last 12 months was lower for Chinese (62.5%), Other Asian (66.5%), Māori (73.5%), and Pacific (71.9%) adults, and similar in South Asian adults (73.5%), compared to European & Other (79.3%);

and there was a similar pattern by ethnic grouping for the proportion seeing a practice nurse, except for a higher proportion in Pacific adults, than European & Other. Compared with European & Other (35.4%), the proportion of seeing a medical specialist was lower in all other ethnic groupings (ranging from 16.2%–28.2% vs 35.4%).

As reported above for children, in the last 12 months, Asian adults were generally less likely to have seen a wide range of other health care workers, including pharmacists, physiotherapists, chiropractors, osteopaths, and social workers or counsellors, than European & Other (Table 12B.2). The pattern for Māori and Pacific adults was most similar to that for Asian adults, with lower proportions seeing a wide range of health practitioners than European & Other, except for a higher proportion of Māori adults seeing social workers or counsellors.

Asian time trends: From 2002–03 to 2019–21, there was little change in the pattern for having a health practice or service to see when unwell in South Asian adults, while there was a significant improvement in Chinese (from 70.7% in 2002–03 to 89.5% in 2019–21, adjusted $p<0.001$) and Other Asian adults (from 80.7% in 2006–07 to 89.5% in 2019–21, adjusted $p<0.01$, Figure 12B.1). The proportion unable to be seen within 24 hours by their practice, when they wanted to, increased in South Asian (from 11.2% in 2011–13 to 17.6% in 2019–21, adjusted $p<0.01$) and Chinese adults (from 10.8% in 2011–13 to 16.5% in 2019–21, adjusted $p<0.05$), but remained stable in Other Asian adults from 2006–07 to 2019–21 (Figure 12B.2). There was generally an increased trend over the survey periods for an improved assessment of cardiovascular risk factors in all Asian participants, such as measuring weight/height and blood pressure, discussing smoking with practice staff, and being vaccinated (Figure 12B.3 and Figure 12B.4).

The main trend in the proportion of Asian participants seeing health practitioners was the increased proportion who saw a practice nurse in the last 12 months, which increased in all three Asian ethnic groupings from 2006–07 to 2011–13 (Figure 12b.5). Otherwise, there was no significant change between survey periods, aside for an increase from 2006–07 to 2019–20 in the percent of South Asian adults seeing a medical specialist (from 18.2% to 22.8%, adjusted $p<0.05$, Figure 12B.5).

Table 12B.1

Having a usual primary care provider to see when unwell, and services provided by them in the last 12 months, for adults aged ≥15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Have health practice or service to see when unwell, %	†90.0	‡89.5	§89.5	94.4	96.6	96.5	<0.001
Practice seen when unwell, %							
GP clinic	†99.9	†99.8	98.1	99.4	99.3	99.4	<0.001
Private A & E clinic	0.0	0.0	0.5	0.1	0.5	0.0	0.48
Other clinic	†0.1	0.2	1.1	0.3	0.2	0.5	0.14
Unable to be seen within 24 hours by practice when wanted to, in last 12 months	†17.6	‡16.5	§12.4	§27.1	19.5	21.5	<0.001
Service provided, %							
Weight/height measurement	§55.5	42.7	45.5	§56.8	§60.0	47.2	<0.001
Blood pressure test	68.8	‡58.1	62.6	§72.6	‡73.8	74.2	<0.001
Cholesterol test	§40.6	33.2	30.9	§37.8	§40.7	41.6	<0.001
Diabetes test	§35.2	29.3	†28.7	§34.1	§39.8	31.9	<0.001
Flu vaccination	25.2	25.5	24.2	24.0	29.3	36.2	0.06
Other vaccination	10.9	7.9	7.1	8.6	7.7	10.2	0.11
Green prescription	1.2	1.6	1.0	§3.1	2.0	1.4	0.001
Practice staff discussed, %							
Smoking	†9.7	†7.7	11.2	§29.6	§22.1	10.8	<0.001
Health food/nutrition	†17.4	11.6	15.9	§24.3	§31.1	12.5	<0.001
Weight	14.3	†9.7	12.9	§24.8	§31.7	14.4	<0.001
Exercise/physical activity	†20.0	12.9	16.8	§23.5	§25.9	15.1	<0.001
Teeth/oral health	2.4	2.6	3.6	§5.9	§7.1	2.3	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender, † <0.05, ‡ <0.01, § <0.001.

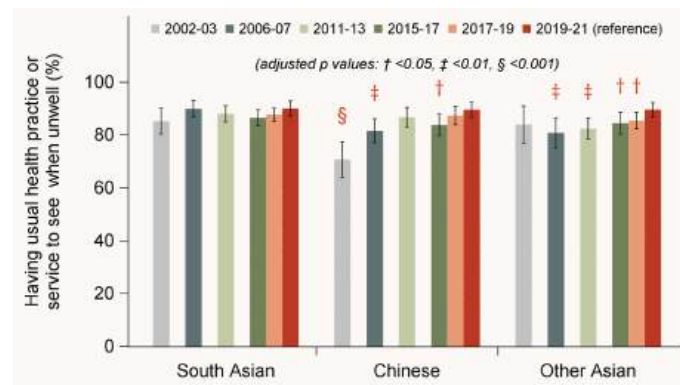


Figure 12B.1

Weighted percent (95%CI) of having a usual health practice or service to see when unwell in adults aged ≥ 15 years – trends from 2002-03 to 2019-21 surveys, by Asian ethnic grouping.

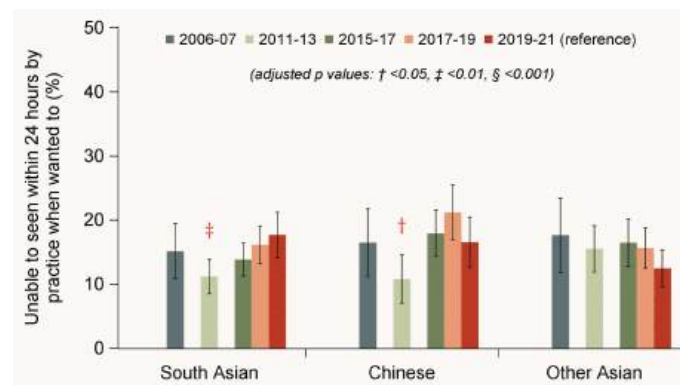


Figure 12B.2

Weighted percent (95%CI) of being unable to be seen within 24 hours by practice when wanted to in last 12 months in adults aged ≥ 15 years – trends from 2006-07 to 2019-21 surveys, by Asian ethnic grouping.

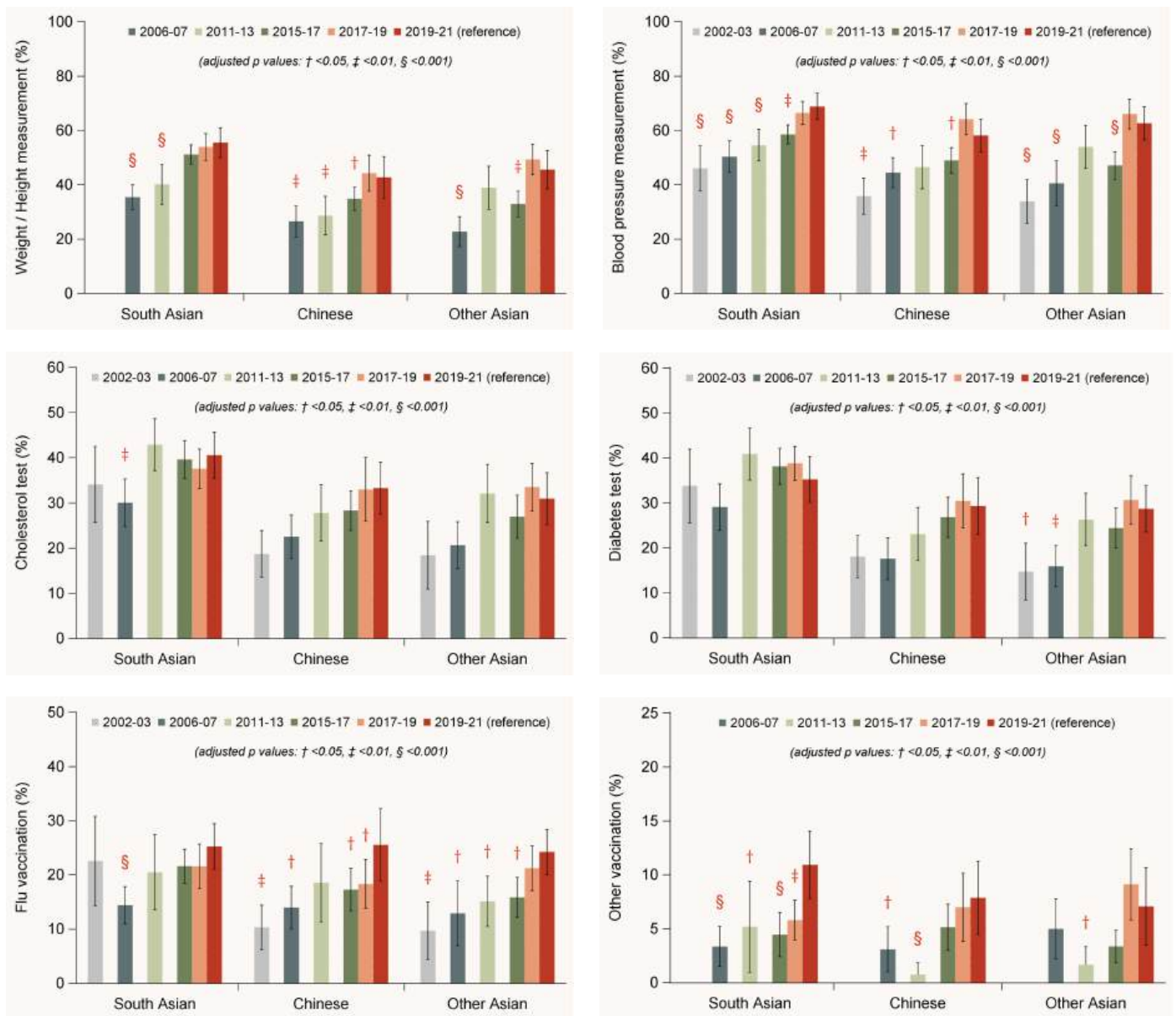


Figure 12B.3

Weighted percent (95%CI) of prevention services provided by the usual practice in adults aged ≥15 years – trends from 2006-07 to 2019-21 surveys, by Asian ethnic grouping.

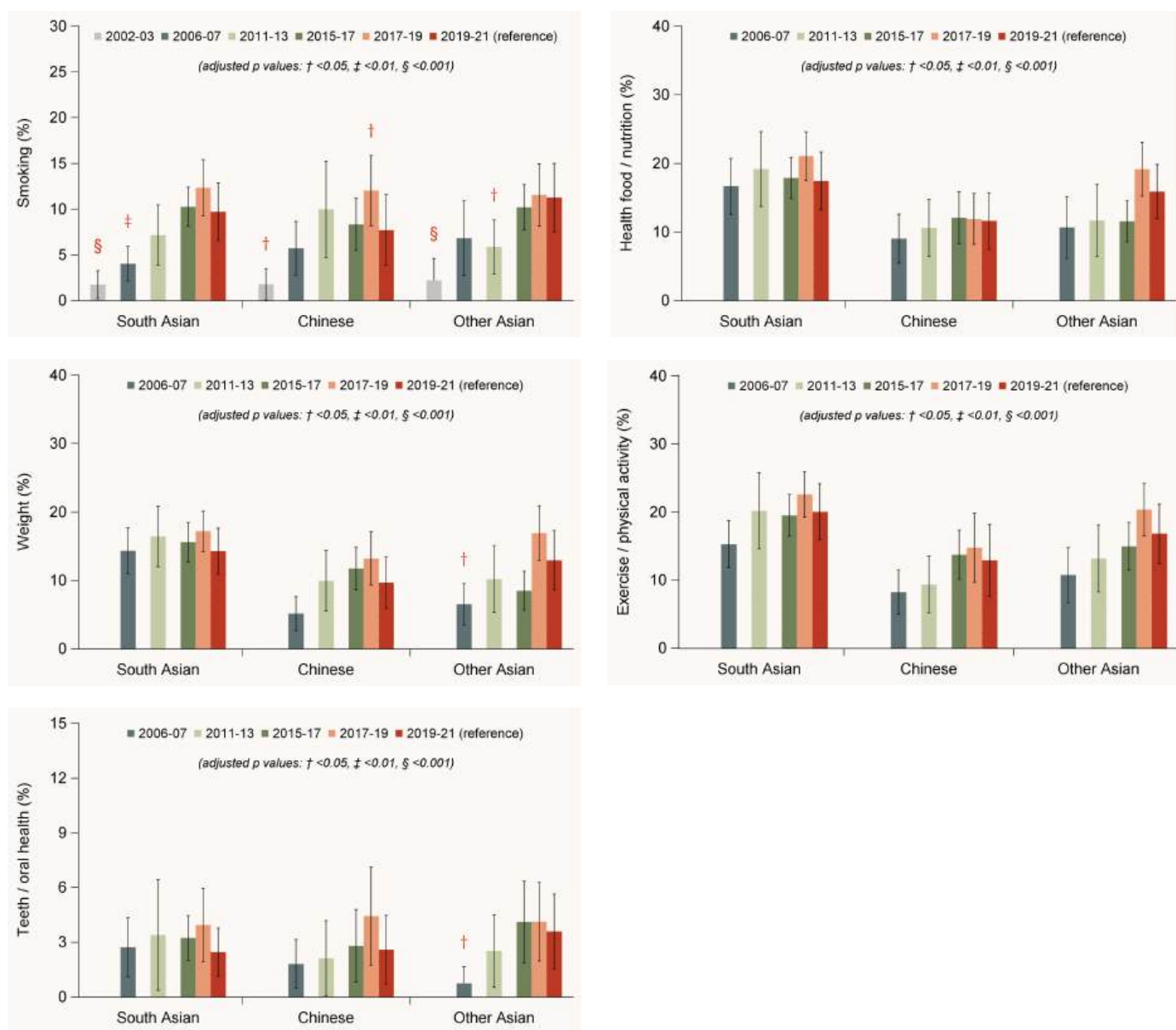


Figure 12B.4

Weighted percent (95%CI) of practice staff discussing risk factors in the last 12 months in adults aged ≥15 years – trends from 2006–07 to 2019–21 surveys, by Asian ethnic grouping.

Table 12B.2

Type of practitioner seen in the last 12 months by adults aged ≥15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Family doctor (GP), %	73.5	\$62.5	\$66.5	†73.5	†71.9	79.3	<0.001
Nurse, %							
Practice nurse	46.2	‡35.5	39.2	‡49.1	\$53.0	50.4	<0.001
Medical specialist	‡22.8	\$16.2	\$18.7	‡28.2	\$22.4	35.4	<0.001
Other health care workers, %							
Pharmacist	†17.3	\$7.8	\$14.4	21.1	19.6	23.5	<0.001
Physiotherapist	15.1	\$7.6	\$11.4	†16.0	‡13.6	18.1	<0.001
Chiropractor	\$4.2	\$3.4	\$3.9	7.7	\$3.3	7.9	<0.001
Osteopath	\$1.3	\$1.0	\$0.9	†3.8	\$0.5	5.0	<0.001
Dietitian	‡1.0	1.3	†0.9	†3.3	3.1	2.1	0.001
Optometrist	‡10.5	\$8.2	12.5	\$11.9	\$7.7	20.9	<0.001
Occupational therapist	0.6	1.1	0.5	1.6	1.4	1.7	0.23
Speech therapist	0.1	0.4	‡0.0	0.4	0.5	0.2	0.01
Social worker/counsellor	‡5.5	\$2.3	\$3.3	†12.0	‡6.8	8.0	<0.001
Midwife for women aged 15–44	15.0	10.7	8.8	13.4	11.3	12.4	0.23

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender, † <0.05, ‡ <0.01, \$ <0.001.

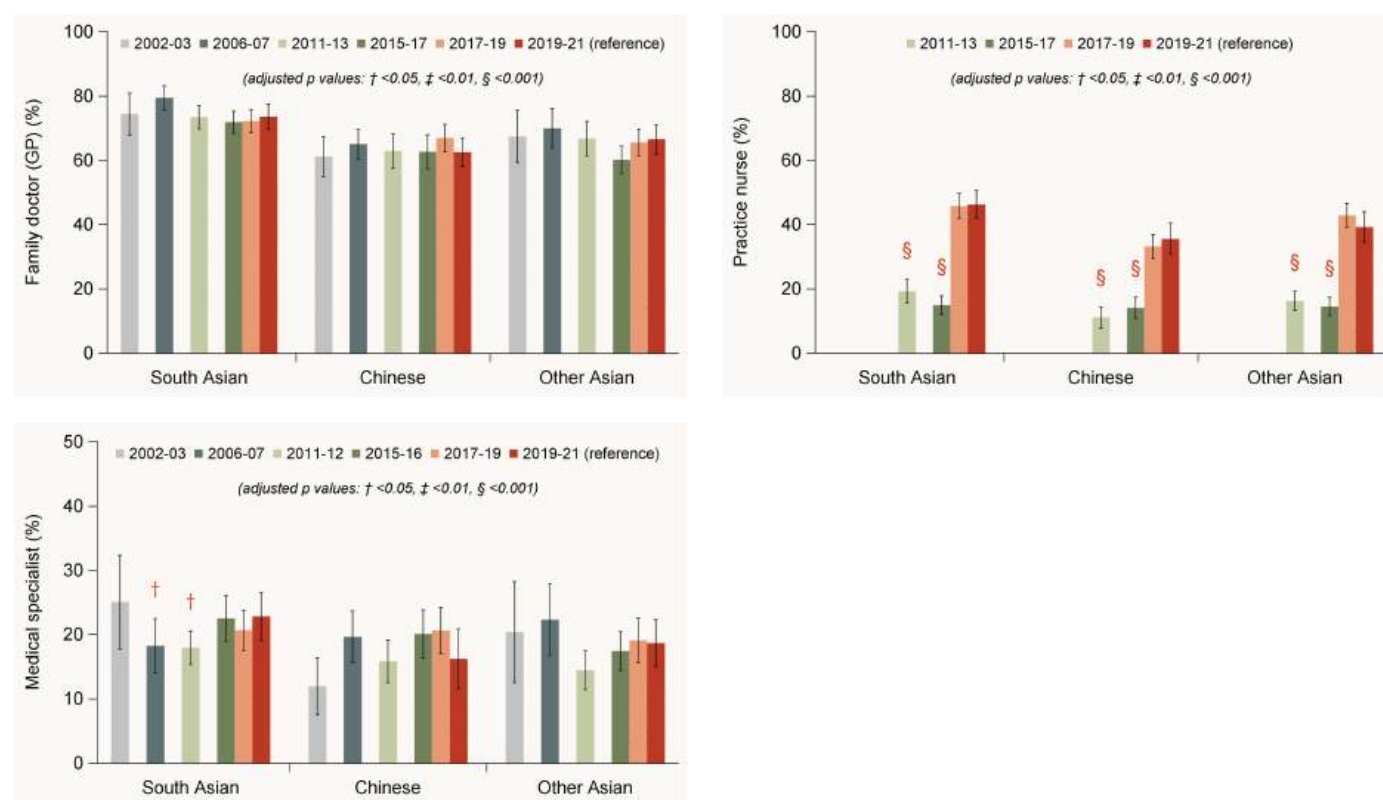


Figure 12B.5

Weighted percent (95%CI) of type of practitioner seen in the last 12 months in adults aged ≥15 years – trends from 2002–03 to 2019–21 surveys, by Asian ethnic grouping.

4.5.2 Secondary health care

4.5.2.1 Children

2019–21 child surveys: The proportion of children who attended a public hospital in the last 12 months did not vary between ethnic groupings when compared with European & Other (Table 13A.1). The proportion of Asian children who attended an emergency department, out-patient clinic, had day treatment, or were admitted as in-patients was similar to that for European & Other, aside for a lower proportion of South Asian children attending an out-patient clinic (6.8% vs 11.3%, adjusted $p < 0.01$) and lower proportion of Chinese children having day treatment (1.2% vs 2.7%, adjusted $p < 0.05$, Table 13A.1).

Pacific children were also less likely to have attended an out-patient clinic, while Māori children were more likely to have attended an emergency department, when compared with European & Other children. In contrast, a very low proportion of children ($\leq 2.6\%$ in all ethnic groupings) attended a private hospital in the last 12 months, with a lower proportion in South Asian and Māori children, and similar in Chinese, Other Asian, and Pacific children, compared to European & Other children (Table 13A.1).

Asian time trends: From 2006–07 to 2019–21, the proportion of children attending a public hospital increased in South Asian (from 12.6% in 2006–07 to 22.5% in 2019–21, adjusted $p < 0.01$) and Chinese children (from 13.3% in 2006–07 to 24.0% in 2019–21, adjusted $p < 0.05$) (Figure 13A.1). In contrast, the proportion of attending a private hospital decreased in South Asian (from 2.0% in 2017–19 to 0.3% in 2019–21, $p < 0.05$) and Chinese children (from 5.9% in 2017–19 to 1.8% in 2019–21, $p < 0.05$) (Figure 13A.1).



Photo by Peter V. Schindler on Unsplash

Table 13A.1

Weighted percent of children aged 0–14 years who used secondary health care (hospital) services in the last 12 months – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Public hospital, %	22.5	24.0	22.4	27.9	19.6	25.0	0.02
Emergency department	13.1	15.4	9.7	†16.4	12.2	12.7	0.02
Out-patient	‡6.8	7.3	10.2	10.3	§5.0	11.3	0.003
Day-patient	4.2	† 1.2	4.1	2.8	1.8	2.7	0.12
Admitted as in-patient	‡2.7	2.7	†2.4	6.2	3.5	4.8	<0.001
Private hospital, %	§0.3	1.8	1.5	†1.1	2.6	2.2	0.001
In-patient	0.0	1.1	0.4	0.1	0.7	0.4	0.13
Day-patient	§0.1	‡0.2	0.6	†0.6	†0.5	1.5	<0.001
Specialist appointment	0.2	†0.2	0.6	0.6	1.5	0.8	0.19

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender; † <0.05, ‡ <0.01, § <0.001.

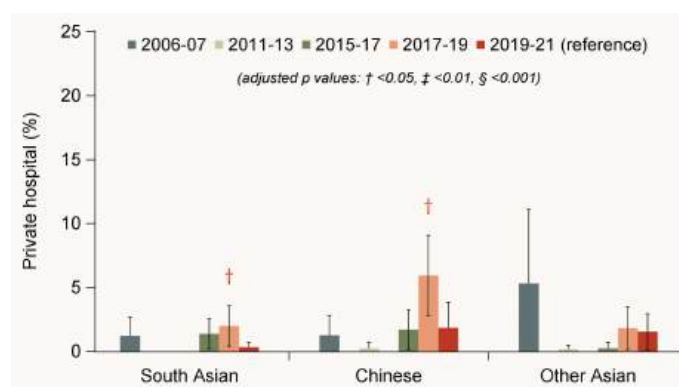
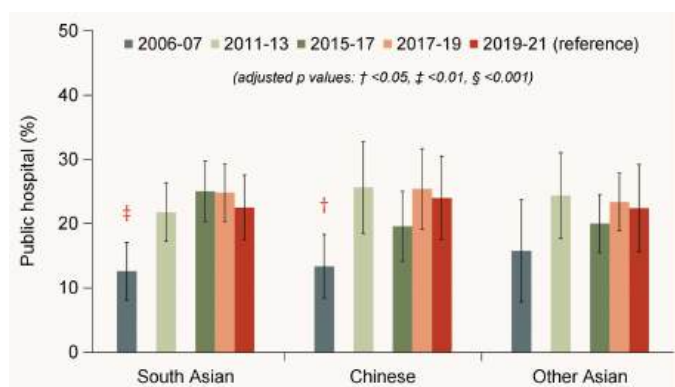


Figure 13A.1

Weighted percent (95%CI) of children aged 0–14 years who used a service at or been admitted to a public and private hospital in the last 12 months – trends from 2006–07 to 2019–21 surveys, by Asian ethnic grouping.



4.5.2.2 Adults

2019–21 adult surveys: The proportion of adults who attended a public hospital in the last 12 months was lower in Chinese (15.7%), and Other Asian (17.3%) adults, and higher in Māori adults (32.7%), compared with European & Other (28.4%), who were similar to South Asian (20.6%) and Pacific (27.3%) adults (Table 13B.1). All three Asian groupings generally were less likely to use most types of public hospital services – emergency department, out-patient, in-patient – compared to European & Other, except for South Asian adults who had a similar proportion to the former of attending out-patients and being admitted as in-patient. All three Asian groupings, along with Māori and Pacific adults, were less likely to use private hospitals in the last 12 months than European & Other (all adjusted $p < 0.01$, Table 13B.1).

Asian time trends: From 2006–07 and 2019–21, the pattern of hospital attendance by Asian adults did not significantly change, except for an increased trend in the proportion of attending public hospital in the last 12 months among South Asian adults (from 14.0% in 2006–07 to 20.6% in 2019–21, adjusted $p < 0.05$). There was no significant variation in the proportion attending a private hospital in the last 12 months among South Asian and Chinese adults, while there was a significant increase in Other Asian adults (from 0.2% in 2011–13 to 2.5% in 2019–21, adjusted $p < 0.01$, Figure 13B.1).

Table 13B.1

Weighted percent of adults aged ≥15 years who used secondary health care (hospital) services in the last 12 months – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Public hospital, %	20.6	\$15.7	\$17.3	\$32.7	27.3	28.4	<0.001
Emergency department	†10.5	‡7.9	\$6.9	\$20.1	16.9	14.0	<0.001
Out-patient	9.0	\$5.6	†8.4	‡15.4	10.1	14.9	<0.001
Day-patient	3.1	3.2	4.8	5.4	4.8	5.8	0.19
Admitted as in-patient	6.7	‡3.9	\$2.9	‡9.2	8.0	8.1	<0.001
Private hospital, %	‡3.7	‡3.4	\$2.5	\$4.3	\$3.1	8.2	<0.001
In-patient	\$0.2	†0.7	\$0.4	‡1.1	†0.8	2.3	<0.001
Day-patient	1.6	\$1.0	‡1.4	\$1.5	‡1.5	3.6	<0.001
Specialist appointment	2.4	2.0	\$0.8	\$2.2	\$1.0	4.2	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender; † <0.05, ‡ <0.01, \$ <0.001.

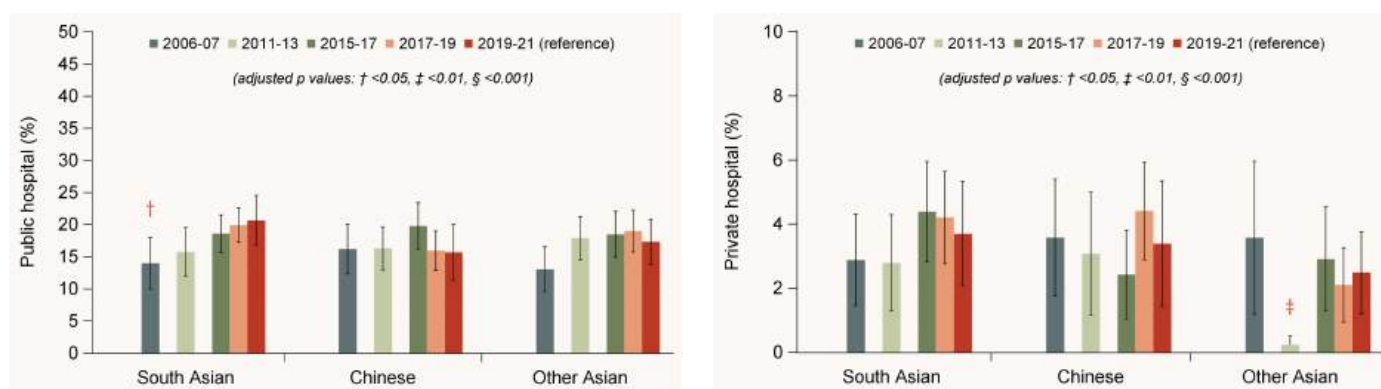


Figure 13B.1

Weighted percent (95%CI) of adults who had been admitted to a public and private hospital in the last 12 months – trends from 2006–07 to 2019–21 surveys, by Asian ethnic grouping.

4.5.3 Oral health

4.5.3.1 Children

2019–21 child surveys: The proportion of children with teeth removed by a dental health care worker because of tooth decay, an abscess or infection in children aged 1–14 years was similar in all three Asian ethnic groupings (South Asian 9.2%, Chinese 10.3%, Other Asian 9.6%), while higher in Māori (13.0%) and Pacific (17.0%) children, compared to European & Other (8.8%) (Table 14A.1). The proportion of children who had never visited a dentist or oral health care worker in their lifetime was higher in all Asian groupings, as well as in Pacific, but was similar for Māori, when compared to European & Other (Table 14A.2).

Asian time trends: From 2006–07 to 2019–21, the proportion of all Asian children who had never seen a dental health care worker in their lifetime increased in South Asian from 16.4% in 2015–17 to 22.6% in 2019–21 (adjusted $p < 0.01$), and was unchanged in Chinese and Other Asian children from 2006–07 to 2019–21 (all adjusted $p > 0.05$, Figure 14A.2).

Table 14A.1

Percent of children aged 1–14 years with teeth been removed by a dental health care worker because of tooth decay, an abscess or infection – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Teeth extracted due to decay in lifetime, %	9.2	10.3	9.6	‡13.0	‡17.0	8.8	0.007

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender; † <0.05, ‡ <0.01, § <0.001.

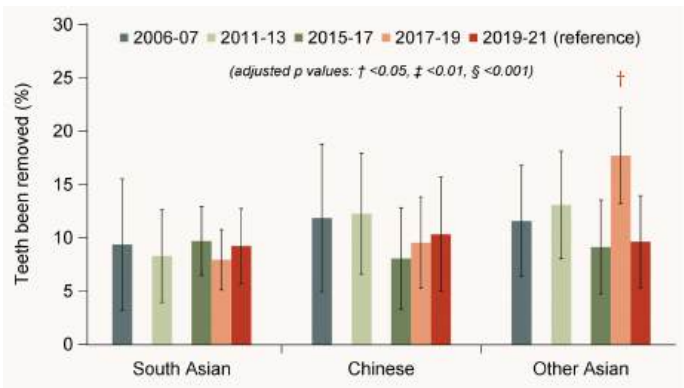


Figure 14A.1

Weighted percent (95%CI) of teeth been removed in lifetime in children aged 1–14 years – trends from 2006–07 to 2019–21 surveys, by Asian ethnic grouping.

Table 14A.2

Time since last visiting a dental health care worker, for any reason, for children aged 1–14 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
How long has it been since last visiting a dental health care worker (year), %							<0.001
Never seen a dental health care worker	\$22.6	†15.7	‡17.5	10.3	†13.6	7.5	
Within the past year	60.0	67.0	68.3	76.1	70.5	79.5	
Within the past two years	12.2	13.7	12.0	11.7	14.2	11.9	
Two or more years	5.2	3.7	2.2	1.9	1.6	1.2	

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender; † <0.05, ‡ <0.01, § <0.001.

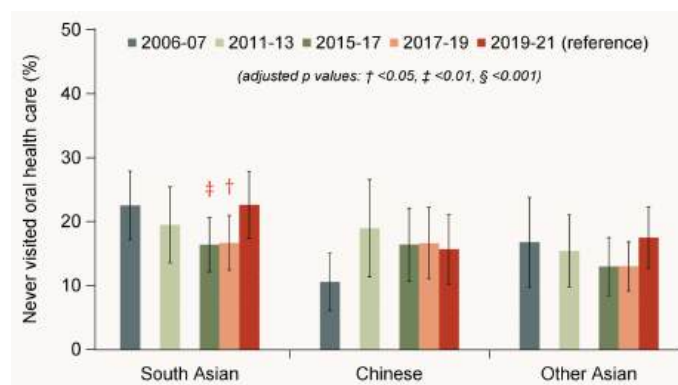


Figure 14A.2

Weighted percent of never visiting a dental health care worker in their lifetime, for children aged 1–14 years – trends from 2006–07 to 2019–21 surveys, by Asian ethnic grouping.



4.5.3.2 Adults

2019–21 adult surveys: The proportion of adults who had visited oral health care worker in the last 12 months was lower in South Asian (25.0%), Chinese (38.3%), Other Asian (32.5%), Māori (38.9%), and Pacific (33.3%) adults compared with European & Other (49.7%) (Table 14B.1). All non-European adults were also less likely to have had regular dental check-ups every two years compared to European & Other (Table 14B.1). The proportion of adults who needed to see dentist in last 12 months, but could not, was similar in all three Asian groupings (21.6% in South Asian, 19.7% in Chinese, 20.8% in Other Asian) compared to European & Other adults (19.0%), who were significantly lower than Māori (35.2%, adjusted $p < 0.001$) and Pacific (33.2%, adjusted $p < 0.001$) adults.

The risk of adults having three or more teeth removed, at the time of interview, because of decay or infection was similar in South Asian (adjusted RR=0.79, 95%CI=0.62–1.01) and Chinese (adjusted RR=0.90, 95%CI=0.69–1.17) adults, and higher in Other Asian (adjusted RR=1.41, 95%CI=1.16–1.71), Māori (adjusted RR=2.15, 95%CI=1.98–2.32), and Pacific (adjusted RR=1.65, 95%CI=1.45–1.87) adults, compared to European & Other, after adjusting for age and gender (Table 14B.2, Figure 14B.2).

Asian time trends: from 2002–03 to 2019–21, the proportion of adults who visited oral health care services in last 12 months did not change in South Asian adults, but increased in Chinese adults (from 19.8% in 2002–03 to 38.3% in 2019–21, adjusted $p < 0.001$) and decreased in Other Asian adults (from 40.9% in 2011–13 to 32.5% in 2019–21, adjusted $p < 0.05$, Figure 14B.1). The pattern of having regular dental check-ups at least every two years for all three Asian groupings did not change between the 2002–03 and 2019–21 survey periods (Figure 14B.1).

Table 14B.1

Oral health care services used by adults aged ≥15 years – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Visited oral health care worker in last 12 months	\$25.0	‡38.3	\$32.5	\$38.9	\$33.3	49.7	<0.001
Needed to see dentist in last 12 months but could not*	21.6	19.7	20.8	\$35.2	\$33.2	19.0	<0.001
Have regular dental check-ups at least every 2 years	\$19.2	\$28.3	\$29.1	\$24.7	\$18.1	44.6	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; *, 2015–17 surveys; p-value compared with European & Other – adjusting for age and gender; † <0.05, ‡ <0.01, § <0.001.

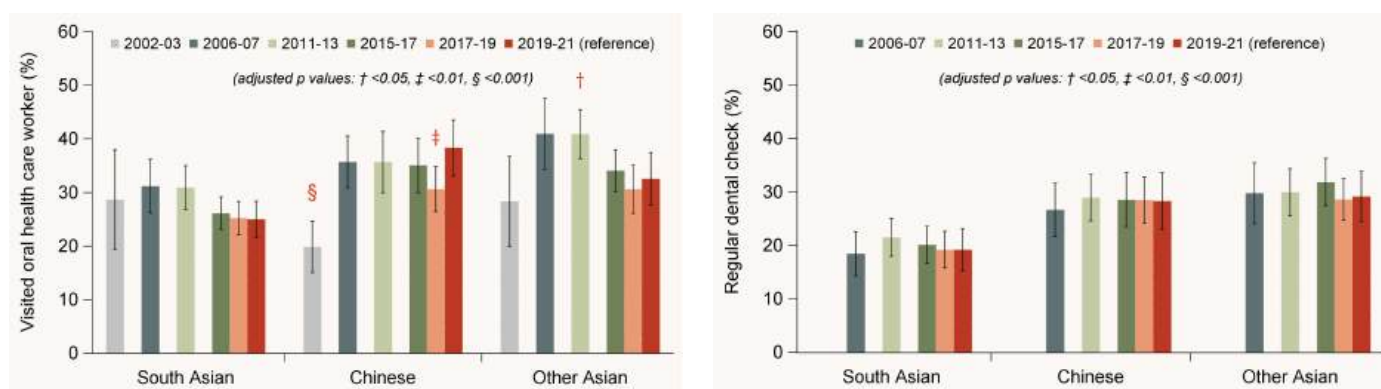


Figure 14B.1

Weighted percent (95%CI) of adults aged ≥15 years using oral health care services in the last 12 months – trends from 2006–07 to 2019–21 surveys, by Asian ethnic grouping.

Table 14B.2

Number of teeth removed from adults aged ≥ 15 years by a dental health care worker because of tooth decay, abscess, infection, or gum disease – 2019–20 and 2020–21 surveys combined, by ethnic grouping.

Variable	Ethnic Grouping						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Number of teeth removed							<0.001
0	\$72.7	‡65.2	\$61.2	\$50.3	\$49.3	57.2	
1	11.3	13.1	10.7	10.1	15.7	12.6	
2	6.7	9.0	9.2	9.4	11.6	8.9	
3–5	7.2	7.8	12.8	15.2	14.2	11.4	
6–31	2.1	4.8	6.2	14.6	9.0	9.4	
All	0.0	0.0	0.0	0.4	0.2	0.5	
Three or more teeth removed, %	†9.3	12.7	‡19.0	\$30.2	\$23.4	21.3	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with European & Other – adjusting for age and gender; † <0.05, ‡ <0.01, § <0.001.

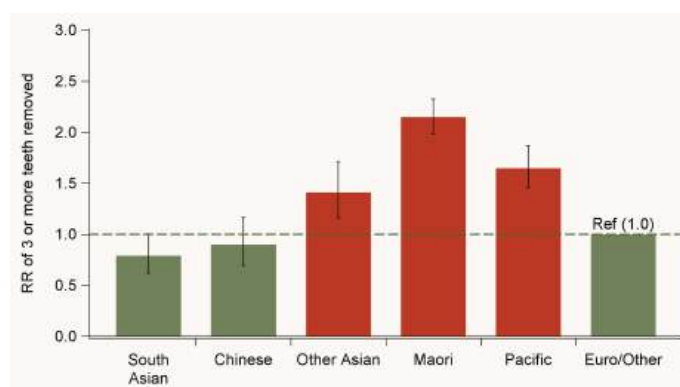


Figure 14B.2

Age- and gender-adjusted relative risks (95%CI) of having 3 or more teeth removed, for main ethnic groupings compared with European & Other, among adults aged ≥ 15 years – 2019–20 and 2020–21 surveys combined.

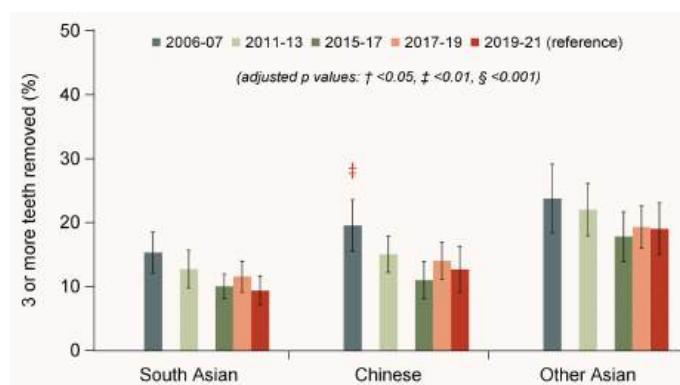


Figure 14B.3

Weighted percent (95%CI) of having 3 or more teeth removed in adults aged ≥ 15 years – trends from 2006–07 to 2019–21 surveys, by Asian ethnic grouping.

4.5.4 Acculturation to health services

2019–21 adult surveys: The association between the number of years lived in NZ and use of health services was explored in Asian adults to determine if any were related to increasing length of exposure to the NZ environment. The proportion of Asian participants who used health services was substantially higher among those who had lived in NZ for more than 10 years or were born in NZ. This was particularly the case for having a usual health practice or service to see when unwell, and for seeing a family doctor in the last 12 months, after adjusting for age and gender (Table 15B.1). The

proportion of Asian adults visiting oral health care workers in the last 12 months was lower in those who had lived in NZ for less than 5 years, compared to those who had lived in NZ for more than 10 years or were born in NZ, after adjusting for age and gender. Similarly, the proportion of using a private hospital was the highest in people who were living in NZ for more than 10 years or born in NZ. In contrast, the use of a public hospital in the last 12 months was not related to years lived in NZ (adjusted $p=0.36$).

Table 15B.1

Association between use of health services and years lived in New Zealand among Asian adults aged ≥ 15 years –2019–20 and 2020–21 surveys combined.

Variable	Years lived in NZ			Overall test #, adjusted p value
	<5 years	5–10 years	>10 years or born in NZ	
Have health practice or service to see when unwell	§71.5	§91.9	§96.6	<0.001
Practitioner seen in last 12 months				
Family doctor (GP)	§54.6	§62.0	§75.3	<0.001
Practice nurse	§29.5	40.0	45.5	<0.001
Secondary health care in last 12 months				
Public hospital	15.6	17.6	19.2	0.36
Private hospital	§1.1	2.3	4.4	0.001
Visited oral health care worker in last 12 months	§17.2	§25.9	39.4	<0.001

%, weighted percent; #, Overall CMH General Association test adjusting for age and gender; p-value compared with >10 years or born in NZ – adjusting for age and gender, † <0.05, ‡ <0.01, § <0.001.

4.6 Summary of main results

In the results summarised below, all comparisons between South Asian, Chinese, Other Asian, Māori, Pacific, and European & Other are based on the combined data from the 2019–20 and 2020–21 surveys, unless otherwise stated. All p-values have been adjusted for age and gender as appropriate. When there is an inconsistency between the weighted proportion and adjusted relative risk, we report the age and gender-adjusted RRs and 95% CIs; otherwise, we report the unadjusted weighted prevalence and adjusted p values. All comparisons across different survey periods (2006–07 to 2019–21 for children and 2002–03 to 2019–12 for adults) are limited to the three Asian ethnic groupings (South Asian, Chinese, and Other Asian).



Sociodemography

Asian population

- The proportion of NZ children with self-defined Asian ethnicity more than doubled, from 8.5% in 2006–07 to 17.3% in 2019–21, with increases in all three Asian ethnic groupings.
- The proportion of NZ adults with self-defined Asian ethnicity also increased substantially from 6.3% in 2002–03 to 15.0% in 2019–21, with increases in all three Asian ethnic groupings.

Age

- For both children and adults, all three major Asian ethnic groupings, along with Māori, were distributed more towards the younger age groups compared to European & Other.

Living years in NZ

- The proportion of Asian adults living in NZ for more than ten years or born in NZ increased significantly from 2002–03 to 2019–21 in all three major Asian ethnic groupings (South Asian 36.7%–52.0%, Chinese 27.0%–64.3%, Other Asian 25.8%–56.0%).

Sexual identity

- South Asian and Other Asian adults were less likely to identify as gay/lesbian/bisexual/other than Chinese, Māori, and European & Other adults. The proportion identifying so was unchanged in all Asian ethnic groupings from 2015–17 to 2019–21.

Education and income

- Asian adults are highly educated, with those in all three Asian ethnic groupings being more likely to have a university (bachelor or postgraduate) degree than non-Asian adults. The proportion with bachelor or higher degree increased gradually from 2006–07 in all three Asian ethnic groupings up to 2015–17 when it stabilised (Figure 3B.3).
- Asian adults had a similar distribution of high household income categories compared to European & Other, and higher than Māori and Pacific peoples. The proportion of household income >100,000 NZD increased significantly since 2006–07 for each Asian grouping (all adjusted $p < 0.001$, Figure 3B.3), in part due to the continuing inflation that has occurred over the survey periods).
- South Asian and Other Asian adults, as well as Māori and Pacific people, tend to reside in areas of high deprivation compared to European & Other. Since the 2002–03 survey,

the proportion living in high-deprivation areas has reduced in each Asian ethnic grouping.

- The proportion of Asian adults receiving government income support in 2019–21 (South Asian 11.7%, Chinese 12.6%, Other Asian 15.8%) was significantly lower than for non-Asian groups (Māori 39.1%, Pacific 29.2%, European & Other 34.3%), and has declined substantially since 2002–03 in all three major Asian ethnic groupings (from 23.2% in South Asian, from 22.4% in Chinese, and from 30.2% in Other Asian, Figure 3B.3).
- South Asian and Other Asian adults, along with Māori and Pacific people, had a lower likelihood of having health insurance, ranging from 17.1 to 34.8%, than European & Other people (38.4%), who were similar to Chinese (43.2%). There was no significant change in the proportion with health insurance since the 2002–03 survey for all three Asian ethnic groupings (Figure 3B.3).

Ethnic discrimination

- All Asian adults (ranging from 15.4% to 23.7%), Māori (16.7%) and Pacific peoples (30.9%) were more likely to think constantly about their ethnicity than European & Other (2.5%) in 2020–21, with no significant improvement since 2011–12 (Figure 3B.4).
- Chinese adults (41.2%) were most likely to have ever been a victim of an ethnically motivated verbal attack, followed by Māori (29.6%), South Asian (23.8%) and Other Asian (23.2%). There was an increase in the prevalence of ethnically motivated attacks from 2011–12 to 2020–21 for South Asian (from 16.1%) and Chinese (from 32.4%) adults.
- Asian adults (South Asian 16.0%, Chinese 13.3%, Other Asian 11.8%), along with Māori (18.3%) and Pacific (13.4%), were more likely to have been treated unfairly because of their ethnicity in NZ, at work when applying for a job, or while renting or buying a house, compared with European & Other (5.1%). There has been no significant improvement since 2011–12 (Figure 3B.4).

Health behaviours and risk factors

Nutrition

- For children, all three Asian ethnic groupings had similar proportions (90.1%–91.7%) of being breastfed compared to European & Other (90.2%), and higher than Māori (86.0%) and Pacific (82.5%) children.
- For both children and adults, all three Asian ethnic groupings, along with Māori and Pacific, had lower proportions of

people who consumed the recommended fruit and vegetable intake (≥ 5 servings per day) than European & Other. The proportion of those who consumed the recommended fruit and vegetables has gradually decreased over the survey years for each Asian ethnic grouping (Figure 4A.1 and Figure 4B.1).

- For children, all three Asian ethnic groupings had a similar distribution of fizzy drink consumption per week compared to European & Other, and were lower than Māori and Pacific children.
- For children, both South Asian and Other Asian were more likely to consume takeaway food than European & Other. The proportion of each Asian ethnic grouping consuming fast food once or more per week has increased since 2006–07 (Figure 4A.1).
- For children, the caregivers of all three Asian groupings generally reported a similar prevalence of poor food security compared to caregivers of European & Other children, while the responses by caregivers of Māori and Pacific children indicated lower food security (Table 4A.2).

Physical activity

- Children from Asian and non-Asian communities generally had similar proportions participating in active transport (walking, cycling, skating or similar) to get to and from school. However, Asian children along with Māori and Pacific children, had a lower proportion biking to and from school than European & Other children. These patterns have changed little since 2006–07 in all three major Asian ethnic groupings.
- Adults from all three Asian ethnic groupings, along with Māori and Pacific adults, were less likely to be physically active, and more likely to be sedentary than European & Other. The proportion physically active in all Asian ethnic groupings has changed little from 2002–03 to 2019–21. However, the proportion of adults who were sedentary has generally decreased since the 2002–03 survey among all Asian ethnic groupings.
- Children from all three Asian ethnic groupings had a similar probability of physical punishment in the last 4 weeks, ranging from 1.9% to 3.9%, compared to European & Other (2.0%), who were lower than for Māori (5.1%) and Pacific (8.0%) children. There has been no change in the proportion receiving physical punishment since 2011–13 in all three Asian ethnic groupings.
- Adults from the Chinese community were more likely to meet sleep duration recommendations in a 24-hour period (78.9%), while Other Asian (66.7%), Māori (61.1%) and Pacific (57.8%) adults were less likely, compared to European

& Other (70.7%). Sleep patterns have not changed from 2017–19 in all Asian ethnic groupings.

Smoking and vaping

- Women of South Asian, Chinese, and Other Asian adults were less likely to report being current or daily smokers than European & Other, while the prevalence in men was similar for all three Asian ethnic groupings and European & Other. There was a decreasing trend of being a current smoker among Asian men and women over the survey periods from 2002–03 to 2019–21.
- Similarly, both men and women from South Asian, Chinese, and Other Asian adults were less likely to report being current or daily vapers than European & Other. However, there has been an increasing trend in the proportion of current vapers among Asian men and women from 2015–16 to 2019–21 (Figure 6B.4).
- In the 2015–16 survey, the proportion living in a house where people smoke inside (including sometimes) was similar for all three Asian ethnic groupings and European & Other, but higher in Māori and Pacific adults. This proportion has decreased significantly since 2002–03 in the households of Chinese and Other Asian adults.

Alcohol

- Women and men from South Asian, Chinese, Other Asian, Māori and Pacific peoples were less likely to drink alcohol than European & Other. South Asian, Chinese, and Other Asian adults who drank alcohol were less likely to binge drink and less likely to report hazardous drinking, than Māori, Pacific, and European & Other adults. Overall, the Asian community drinks alcohol the least often and in the smallest amounts.
- However, there was an increasing trend in the prevalence of drinking alcohol and hazardous drinking in the last 12 months within each Asian ethnic grouping from 2002–03 to 2019–21 (Figure 7B.2).

Cannabis

- South Asian, Chinese, and Other Asian adults were less likely to have used cannabis in past 12 months, and cannabis weekly or daily, than Māori, Pacific, and European & Other adults. However, there was an increasing trend of cannabis use in last 12 months among South Asian adults.

Body size

- The prevalences of obesity and overweight, based on the IOTF criteria, were similar for children aged 2–14 years for

South Asian, lower for Chinese and Other Asian children, and higher for Māori and Pacific children, when compared to European & Other. The obesity pattern in girls and boys has changed little from 2006–07 in all three Asian ethnic groupings (Figure 9A.1).

- The mean values of all anthropometry measures – height, weight, waist circumference and BMI – were significantly lower for women and men in all three Asian ethnic groupings, when compared non-Asian groups, aside for waist circumference in South Asians which was similar to that for European & Other (Table 9B.1). However, the prevalence of obesity was higher in all three Asian ethnic groupings compared to European & Other (Table 9B.2). The prevalence of obesity in Asian women and men has gradually increased from 2002–03 to 2019–21 (Figure 9B.1).

Acculturation

- A longer period of residence in NZ among Asian people was associated with being more likely to drink alcohol, and less likely to be sedentary, but other lifestyle measurements were not related to years lived in NZ.

Health conditions

Prevalence

- The most prevalent health conditions in Asian children (combined) aged 0–14 years were eczema (17.1%) and asthma (6.7%).
- The most prevalent health condition in Asian adults (combined) aged 25 years or more was chronic pain (12.1%), followed by hypertension (9.5%), high cholesterol (8.3%), arthritis (6.9%) and diabetes (6.2%).

Children

- Children from all three Asian ethnic groupings had a similar likelihood of being diagnosed with asthma (currently using medication) than European & Other, and lower risk than Māori and Pacific children. The asthma prevalence tended to decrease in South Asian and Chinese over time, although there was no statistical difference in all Asian ethnic groupings between surveys.
- Children from Chinese and Other Asian ethnic groupings had a higher risk of being diagnosed with eczema (currently using medication) than European & Other. There were no significant trends in prevalence from 2011–13 to 2019–21 in Asian ethnic groupings.

Adults

- South Asian (RR=1.37), Māori (RR=1.37), and Pacific (RR=1.45) adults had a higher adjusted risk of hypertension, and Chinese had a lower adjusted risk (RR=0.68) compared to European & Other. South Asian (RR=1.71), Māori (RR=1.31), and Pacific (RR=1.56) adults had a higher adjusted risk of high cholesterol compared to European & Other.
- The likelihood of being on medication for diabetes was significantly higher in South Asian (RR=3.26) and Other Asian (RR=3.05) adults compared with European & Other.
- The likelihood of being on medication for asthma was significantly lower in South Asian (RR=0.37), Chinese (RR=0.34) and Other Asian (RR=0.45) adults compared with European & Other.
- The adjusted risk of being on medication for arthritis was lower in all Asian ethnic groupings (RR ranging from 0.57–0.58) compared with European & Other. The adjusted risk of chronic pain was lower in Chinese (RR=0.68) and Other Asian (RR=0.60) adults than European & Other.
- Self-reported depression was less common in all three Asian ethnic groupings, and in Pacific, compared to European & Other.
- South Asian and Other Asian adults were less likely to report their overall health as Fair or Poor, compared to European & Other (Table 11B.2). The prevalence of disability was lower in Chinese and Other Asian adults, compared to European & Other (Table 11B.3).
- The prevalence of chronic conditions among Asian adults mostly remained stable over the survey periods between 2002–03 and 2019–21, and no clear pattern was identified in all three major Asian ethnic groupings. However, the proportion reporting Excellent health status declined in South Asian (from 22.6 in 2011–13 to 18.3 in 2019–21) and Other Asian (from 22.3% in 2011–13 to 14.0% in 2019–21).

Health service utilisation

Primary health care

- Asian children had a similar proportion having a usual health practitioner or service that they could attend when unwell (South Asian 97.4%, Chinese 96.4%, Other Asian 96.7%), compared to European & Other (98.7%). The proportion was stable in South Asian and Chinese children from 2006–07 to 2019–21, but significantly improved in Other Asian children since 2006–07. Of those who had a usual health practitioner, nearly all children (≥99.8%) attended a family practice or GP clinic when unwell.

- Asian children had a similar level of unmet need for attending a GP in the last 12 months because of cost, transport, or childcare (South Asian 3.6%, Chinese 2.2%, Other Asian 2.3%), as European & Other children (2.1%), but this unmet need was higher in Māori (5.2%) and Pacific (9.1%) children. The level of unmet need gradually decreased from 2011–13 to 2019–21, although the trend was not significant across surveys within each Asian ethnic grouping.
- Asian adults were less likely to have a usual health practitioner or service to visit when unwell (South Asian 90.0%, Chinese 89.5%, Other Asian 89.5%), compared to non-Asian adults (Māori 94.4%, Pacific 96.6%, European & Other 96.5%) in 2019–21. However, there has been a significant improvement of this measure in Chinese and Other Asian adults since 2002–03. Of those who had a usual health practitioner, nearly all adults (98.1%–99.9%) attended a family practice or GP clinic when unwell.
- South Asian adults were more likely, than European & Other, to have had measures/tests for weight/height (adjusted RR=1.29), cholesterol (Adjusted RR=1.42), and diabetes (adjusted RR=1.58) from staff at their usual primary health care provider (Table 12B.1 and Appendix 7).
- Over the survey periods, there was a general trend for increased assessment of cardiovascular risk factors in all Asian participants, such as measuring weight/height, checking blood pressure, and discussing smoking with practice staff (Figure 12B.3 and Figure 12B.4).

Secondary health care

- The proportion of children attending a public hospital in the last 12 months was similar for all Asian ethnic groupings (South Asian 22.5%, Chinese 24.0%, Other Asian 22.4%) and European & Other children (25.0%) in 2019–21. In South Asian and Chinese children, this proportion has increased since 2006–07.
- The proportion of adults who attended a public hospital in the last 12 months was lower for Chinese (15.7%) and Other Asian people (17.3%) compared to European & Other (28.4%), who were similar to South Asian (20.6%).
- The proportion of adults who attended a private hospital in the last 12 months was lower in all Asian ethnic groupings (South Asian 3.7%, Chinese 3.4%, Other Asian 2.5%) than European & Other (8.2%).
- There was no significant trend in the proportion of adults in each of the three Asian ethnic groupings attending either public or private hospitals from 2006–07 to 2019–21, except for a gradual increase in the proportion of South Asian who attended public hospital.

Oral health

- Among children, a lower proportion of South Asian (77.4%), Chinese (84.3%), and Other Asian (82.5%) visited oral health care worker in the last 12 months than European & Other (92.5%).
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- Among adults, South Asian (25.0%), Chinese (38.3%) and Other Asian people (32.5%) were also less likely to have visited oral health care worker in the last 12 months than European & Other (49.7%). The proportion increased in Chinese, decreased in Other Asian, while remained stable in South Asian adults from 2002–03 to 2019–21.
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- The proportion of adults having a regular dental check-up at least every two years was lower in all three Asian ethnic groupings (South Asian 19.2%, Chinese 28.3%, Other Asian 29.1%) than European & Other (44.6%) in 2019–21. There has been no improvement in the proportion from 2006–07.
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- The likelihood of having three or more teeth removed was higher in Other Asian adults (adjusted RR=1.41) compared to European & Other, who were similar to South Asian (Adjusted RR=0.79) and Chinese (adjusted RR=0.90) adults.
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Acculturation

- The proportion of Asian adults who used health services was the highest among those who had lived in NZ for more than 10 years or were born in NZ.
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5. DISCUSSION

The results in this report provide an overview of the health status of the South Asian, Chinese, and Other Asian communities in 2019–21, in comparison to the rest of the NZ population; as well as providing information on trends in health status among these Asian communities since 2002–03.



5.1 Sociodemography

As reported in the 2018 Census results, Asian was the fastest growing ethnic group in NZ. The proportion of NZHS adult participants identifying as Asian increased substantially from 6% in 2002–03 to 15% in 2019–21, with increases in all three Asian ethnic groupings. This is the same proportion of the NZ population identifying as Asian, as per the 2018 Census.⁴ For children, the proportion of NZHS participants identifying as Asian more than doubled from 2006–07 (8.5%) to 2019–21 (17.3%), with increases in all three Asian ethnic groupings.

The gender distribution for the Chinese and South Asian groupings showed a significantly lower proportion of females compared with European & Other in the 2019–21 surveys. The 2018 Census also showed that a lower proportion of the Asian population is female compared to male.⁴ There are currently no national-level statistics available for other genders, although these data were collected as part of the 2023 Census and are yet to be reported.⁶ South Asian and Other Asian adults were less likely to identify as gay/lesbian/bisexual/other than Chinese, Māori, and European & Other adults, with a similar proportion between the 2015–17 to 2019–21 surveys. There are currently no national-level statistics available for sexual identity, although these data also were collected in the 2023 Census.⁶

The age distribution of the three Asian populations, along with Māori and Pacific populations, remains relatively young when compared to the European & Other population, as also reported in the 2018 Census.⁴ The number of years lived in NZ continues to increase, with all three Asian ethnic groupings having a significant increase since 2002–03 in the proportion of those residing in NZ >10 years or being NZ-born.

Asian adults in NZ are highly educated, with all three major Asian ethnic groupings being more likely to have a university (bachelor or postgraduate) degree than non-Asian groups. This proportion has increased gradually since 2006–07. In contrast to the 2018 Census, Asian adults in the NZHS had a similar proportion of high household income categories (>100,000) as European & Other. Despite this, the proportion of Asian people receiving government support was significantly lower than European & Other in 2019–21, having declined substantially since 2002–03. This suggests underutilisation of government support systems, which may be due to lack of awareness of what support is available to them.

South Asian and Other Asian adults, as well as Māori and Pacific adults, tended to reside in areas of high deprivation compared to European & Other, although the proportion of all three Asian ethnic groupings residing in highly deprived areas has decreased significantly since 2002–03. South Asian and Indian high school students (aged 13–18 years) who participated in Youth19 also reported higher levels of neighbourhood deprivation (NZDep2018) compared to Chinese and East Asian students.⁹

5.2 Health behaviours and risk factors

5.2.1 Children

5.2.1.1 Food insecurity

Food insecurity is a social determinant of health that is linked to poorer health outcomes. As well as being linked to unhealthy nutrient intakes, it is also associated with a range of chronic illnesses. Food insecurity in the households of Asian children of all three ethnic groupings is at a similar level to European & Other, and lower than in the households of Māori and Pacific children. These results are in contrast to most other NZ studies, which found higher levels of food insecurity in families of Asian infants and children compared with European & Other.^{9,39,48} Additionally, Youth19 results found that Indian and South Asian high school students (aged 13–18 years) reported that their parents more frequently worried about having enough money for food than Chinese and European students.⁹ Thus, the significance of these findings is unclear and requires further monitoring.

5.2.1.2 Nutrition

NZ eating guidelines recommend that children eat a range of different foods, including ≥5 servings of fruit and vegetables per day (although this does vary with age), and limit takeaways and other foods that are high in fat, sugar, and salt.⁵⁵⁴

The proportion of Asian children who consumed the recommended fruit and vegetable intake (≥5) was lower than that of European & Other children. This was the case for children of all three Asian ethnic groupings, as well as for Māori and Pacific children. These results were consistent with results from the GUINZ study.³⁹ There has also been a decline in the proportion of Asian children consuming the recommended serving of fruit and vegetables since 2002–03.

Children of all three Asian ethnic groupings had a similar distribution of fizzy drink consumption compared to European & Other children, although lower than for Māori and Pacific children. This is in contrast to other NZ results, which found that Asian children were more likely to consume sugar-sweetened beverages more frequently than European children.^{38–40} Although, the latter results come from studies that are not nationally representative.

However, because of the importance of good nutrition in childhood for future health in adulthood, the above food patterns of reduced intake of fruit and vegetables and possible higher sugar-sweetened beverage intake by Asian children, coupled with the increase in prevalence of fast food consumption, is of concern and warrants attention.

5.2.1.3 Body size

While there is debate about the appropriateness of BMI as a predictor for body fat, particularly with respect to ethnicity, BMI is still important at a population level.⁷⁰ Despite the changes in food intake, patterns in body weight for both girls and boys changed little from 2006–07 to 2019–21 for all three Asian ethnic groupings. Chinese and Other Asian girls and boys generally had a similar prevalence of overweight and obesity to European & Other girls and boys. This is in contrast to other NZ results that have shown a decreasing trend in obesity in 4-year-old Asian children in the B4SC,⁷⁰ with Chinese children showing greater decreases overall than Indian children.⁶⁹ This difference, which could be age-related or due to the relatively small sample size (and statistical power to detect a trend) in Asian children in the NZHS, warrants further investigation.

5.2.1.4 Physical activity

The MOH guideline for physical activity for children (aged 5–17 years) is one hour of moderate to vigorous physical activity, accumulated throughout the day.⁵⁵⁵ For children, active transport to and from school can contribute a significant portion of daily physical activity. Children from Asian ethnic groupings and non-Asian ethnicities generally had similar proportions of active transport (walking, cycling, skating or similar) to get to and from school. However, children of Asian ethnic groupings, along with Māori and Pacific children, were less likely to bike to school. These patterns have changed little since 2006–07 survey in all three major Asian ethnic groupings. These results differ from the 2018 NZ Physical Activity Report Card (a matrix of indicators derived from several studies, including NZHS, GUiNZ, the *Active NZ Youth Survey*, among others), which found Asian children had a significantly higher prevalence of active transport than both Māori and NZ European children.⁵⁵ This difference could be due to road safety/traffic danger and other safety concerns (e.g. strangers, older kids), which another NZ study identified as key concerns for Asian parents.⁵⁵⁶

5.2.2 Adults

5.2.2.1 Racial and ethnic discrimination

Ethnic discrimination, or racism, is a known determinant of health.⁵⁵⁷ It negatively impacts health directly and can also impact accessing and receiving services. It occurs both structurally and individually, and particularly has an effect on mental health.⁹⁷

Ethnic discrimination was common in all three Asian ethnic groupings, as well as for Māori and Pacific participants. In 2020–21, Chinese adults (41.2%) were most likely of all ethnic groupings to have ever been a victim of an ethnically motivated verbal attack, followed by Māori (29.6%), South Asian (23.8%)

and Other Asian (23.2%). This proportion increased significantly for Chinese and South Asian people between 2011–12 and 2020–21, which was also shown in the increase in reports to the HRC in 2020.⁹⁵ Increases in racial discrimination and their effect on the mental health of Asian people were also reported in studies in NZ,¹⁰⁵ the US^{114,558} and UK⁵⁵⁹ over this time period.

Racism also disproportionately impacts the health of Asian and Māori children, with the frequency of reporting any experience of racism being significantly higher for parents/caregivers of both Asian and Māori children compared with European & Other children.⁵⁶⁰ Racism was independently associated in a NZ study (on previous NZHS data) with increased dissatisfaction with a child's medical centre, as well as unmet need for children's healthcare.⁵⁶⁰ This study also found that the higher the number of incidents of racism reported, the higher the unmet need.⁵⁶⁰

5.2.2.2 Smoking, vaping, alcohol use, and cannabis use

Adults of all three Asian ethnic groupings reported lower prevalences of smoking, vaping, alcohol use, and cannabis use than all other major ethnicities in almost every measure. These results are consistent with other results in NZ.^{4,49,141,152,173}

The prevalence of current smoking in Asian adults continued to decrease over the survey periods from 2002–03 to 2019–21. Women from all three Asian ethnic groupings were less likely to be current smokers or daily smokers than European & Other women, whereas the prevalence in men was similar for all three Asian ethnic groupings and European & Other. This discrepancy between men and women, also found in Asian populations around the world,¹³⁹ presents an opportunity for smoking cessation interventions in NZ Asian men. The prevalence of being exposed to second-hand smoke in the home also decreased significantly for Chinese and Other Asian adults.

While no association was found between smoking and length of residence in NZ, this may be of interest as an association has been found in the US.^{135–137} Further investigation into the tobacco use of different Asian ethnicities is also of interest. Studies in the US and Asia found that South Asians have a low smoking prevalence but a high prevalence of chewing tobacco.^{134,140} Despite the import and sale of chewing tobacco being prohibited in NZ, a 2013 study found that it was still accessible.⁵⁶¹ There is little other research on the use of chewing tobacco in NZ.

The prevalence of current vaping increased significantly from 2015–16 to 2019–21 in both Asian men and women. Despite this, men and women from all three Asian ethnic groupings remained less likely to be current or daily vapers than European & Other in 2019–21. While no association was found between vaping and length of residence in NZ, this is of interest and deserving of further investigation in the different Asian ethnicities, along with monitoring of vaping trends in Asian adults.

Adults of all three Asian ethnic groupings, along with Māori and Pacific adults, were less likely to drink alcohol than European & Other adults. They were also less likely to binge drink, and less likely to drink hazardously than Māori, Pacific, and European & Other adults. There appear to be some differences by Asian ethnic grouping, with a significant increase in prevalence of alcohol drinking for Chinese and Other Asian adults. South Asian adults showed a significant increase in prevalence of hazardous drinking. The difference in increases in drinking behaviour between the Asian ethnic groupings – particularly the significant increase in hazardous drinking in the South Asian grouping – warrants more investigation. There was also a difference in drinking behaviour associated with time of residence in NZ, with a longer period of residence increasing the likelihood of drinking alcohol – as also found in the US¹⁶⁰ and UK.¹⁶¹

There was an overall increasing trend in cannabis use for all three Asian ethnic groupings, with South Asian adults reporting a significant increase. However adults of all three Asian ethnic groupings were less likely to use cannabis than Māori, Pacific, and European & Other adults. While no association was found between cannabis use and length of residence in NZ, this has been observed in the US.^{176,177} Further research into different Asian ethnicities is also of interest, particularly given the increase in cannabis use in the South Asian grouping.

5.2.2.3 Nutrition

NZ eating guidelines recommend that adults eat a variety of nutritious foods every day, including ≥5 servings of fruit and vegetables per day.⁵⁶² Adults of all three Asian ethnic groupings, along with Māori and Pacific, had lower proportions of people meeting the recommended fruit and vegetable intake (≥5) than European & Other in 2019–21. This proportion gradually decreased over the survey years for adults of all three Asian ethnic groupings, which is of concern. However, a recently trialled intervention for South Asian migrants, South Asian Diet and Activity Intervention (SADAI), found that those who received the tailored digital intervention were three times more likely to eat more vegetables than those who received generally available information.⁵⁶³ This is further proof that a tailored approach can successfully deliver health messages to Asian migrant communities. Development of similar resources for other Asian subgroup should be considered.

5.2.2.4 Physical activity

The MOH guidelines for physical activity for adults are 2.5 hours of moderate or 1.25 hours of vigorous physical activity, accumulated throughout the week.⁵⁵⁵ Adults from all three Asian ethnic groupings, along with Māori and Pacific people, were less likely to be physically active, and more likely to be sedentary than European & Other. Physical activity levels in all three Asian groupings have changed little from 2002–03 to 2019–21; however, the sedentary proportion of adults has generally

decreased since 2002–03 in all three groupings. Increased length of residence in NZ was associated with a higher likelihood of physical activity by Asian people. The SADAI trial also found that South Asian migrants who received the tailored digital intervention were three times more likely to increase physical activity, such as walking, compared to those who received generally available information.⁵⁶³

5.2.2.5 Body size

The prevalence of obesity in Asian men and women gradually increased from 2002–03 to 2019–21 surveys, although Chinese and Other Asian men and women had lower mean BMI than all other ethnic groupings. When using ethnic-specific definitions, the prevalence of obesity for adults of all three Asian ethnic groupings (except Chinese women), as well as Māori and Pacific adults, was higher than that of European & Other adults. Given that South Asian people, compared with European people, tend to have lower lean mass and higher levels of body, abdominal, liver, and pancreatic fat for any given BMI level,²³⁸ the increasing trend in obesity is a concern.

These results were consistent with other NZ results²⁴⁶ as well as international data. South Asian people consistently had a higher overweight/obesity prevalence than Chinese people in the US²⁴⁸ and UK.²⁵⁰ There was also evidence that prevalence differed by gender.

5.2.2.6 Sleep

Sleep patterns have changed little from 2017–19 to 2019–21 in all three Asian ethnic groupings. Chinese adults were more likely to meet sleep duration recommendations in a 24-hour period (78.9%) compared to European & Other (70.7%). Other Asian adults (66.7%), along with Māori (61.1%) and Pacific adults (57.8%), were less likely to meet sleep duration recommendations when compared to European & Other. The *NZ Attitudes and Values Survey* found that Asian people, as well as Europeans, reported shorter sleep duration less often than Māori and Pacific people.²⁵⁵ This suggests that the larger Asian grouping is masking further discrepancies between different Asian ethnicities, which has been reported in the US.²⁶¹ Previous analysis of the NZHS found that reporting any sleep complaint was associated with poorer physical health – particularly diabetes – as well as mental health.²⁵⁶ More investigation into differences in sleep between the different Asian ethnicities is required.

5.2.2.7 Gambling

Problem gambling has not been included in the NZHS since 2011–12,⁵⁶⁴ and previous results can be found in the prior report *Asian Health in Aotearoa 2011–2013*.² This topic is significant for Asian people in NZ, and should therefore be included in the future.

5.3 Health conditions

Significant differences were found in the prevalence of several health conditions, both between ethnic groupings and over time, as described below. There have also been significant differences found for other conditions reported in other national and international studies that were not found in these analyses of NZHS results.

5.3.1 Children

The most prevalent chronic conditions in Asian children (combined) aged 6 months to 14 years were eczema (17.1%) and asthma (6.7%).

5.3.1.1 Eczema and asthma

Children from Chinese and Other Asian ethnic groupings had a higher risk of being diagnosed with eczema (currently using medication) than European & Other children. There were no significant trends in prevalence from 2011–13 to 2019–21 in all three Asian ethnic groupings. In contrast with the NZ results in this report of found similar eczema prevalences in South Asian and European & Other children, South Asian children in the UK were found to have a higher prevalence of eczema than white British children.³¹⁷ Asian children in Australia and USA were also found to have a higher risk of eczema than white children.^{307,311,319} However, Australian Asian children born in Australia had a higher risk of eczema than Australian Asian children born in Asia^{311,319} – so far, no research has been published on whether this is also the case for NZ.

Children from all three Asian ethnic groupings had a similar likelihood of being diagnosed with asthma (currently using medication) than European & Other, and lower risk than Māori and Pacific children. Asthma prevalence tended to decrease over time for South Asian and Chinese children, although there was no statistical difference between surveys within each of the three Asian ethnic groupings. The low prevalence of asthma in Asian children, consistent with international research,^{305,306,310,311} may be partially due to the very low smoking prevalence in Asian women, as asthma in children is associated with prenatal maternal smoking,⁵⁶⁵ and the low prevalence of exposure to second hand smoke in the home.

5.3.1.2 Mental health

There was a significantly lower prevalence of diagnosed anxiety or depression for South Asian and Chinese children when compared to European & Other children. Cultural differences and differences in presentation may hinder current methods of diagnosis. Other studies, including GUINZ and the 2021 *Youth Health and Wellbeing Survey – What About Me?*, also reported no significant differences in mental distress between NZ Asian children and adolescents when compared to European children and adolescents.^{49,566} Increasing levels of mental distress in Asian children and adolescents have been reported both in NZ^{9,49,566} and internationally.^{115,371,567,568} The 2021 *Youth Health and Wellbeing Survey – What About Me?* reported high levels of mental distress, including many Asian high school students (aged 12–18 years) reporting: feeling overwhelmed (40.2%), life is not worth living (36.2%), deliberate self-hurt or harm (28%), serious suicidal ideation (21.8%), and suicide attempts (11.1%) in the previous 12 months.⁴⁹ Studies in the US^{115,558} and Asia^{569,570} have also shown that the COVID-19 pandemic had a significant effect on Asian children and adolescents. These results show the importance of prioritising the mental health needs of Asian children and adolescents.

5.3.1.3 Autism and ADHD

Chinese children were also significantly less likely to be diagnosed with autism or ADHD than European & Other children, and South Asian children were significantly less likely to be diagnosed with autism than European & Other children. It is currently unknown whether this is due to differences in actual prevalence or in diagnosis rates. Asian children in the US were found to have a lower prevalence of ADHD^{347–350} and autism diagnosis,^{326,327} despite a proportion meeting diagnostic criteria but not being diagnosed. As with anxiety and depression, cultural barriers and differences in presentation may hinder diagnosis. More research is required in this area.

5.3.2 Adults

The most prevalent chronic health condition in Asian adults aged 25 years or more was chronic pain (12.1%), followed by hypertension (9.5%), high cholesterol (8.3%), arthritis (6.9%) and diabetes (6.2%). For adults, the prevalence of chronic conditions among Asian people has mostly remained stable between 2002–03 and 2019–21, and no clear trend was identified for all three major Asian ethnic groupings analysed.

5.3.2.1 Cardiometabolic conditions

South Asian adults, along with Māori and Pacific adults, had a higher risk of cardiometabolic conditions than European & Other adults, consistent with the well-documented increased mortality and hospitalisation from cardiovascular disease in NZ

South Asians.³⁷⁷ This included hypertension, high cholesterol, and diabetes. Other Asian adults had a higher adjusted risk of diabetes than European & Other adults, with no significant difference for other cardiometabolic conditions. Chinese adults had a lower adjusted risk of hypertension than European & Other adults, with no significant difference for other cardiometabolic conditions. These differences highlight the importance of disaggregation of the larger Asian ethnic grouping.

Although there was no overall change in the prevalence of hypertension in NZ between 2006–07 and 2019–21, hypertension in Asia is increasing.^{407,408} This is partially attributed to the ageing population; it should therefore be monitored as the Asian population in NZ ages. In the US, Asian new migrants are more likely to be at risk from morbidity and death from undiagnosed hypertension than US-born Asian people,⁴⁰¹ a further reason for ongoing monitoring of this condition.

The likelihood of having treatment for diabetes was significantly higher in South Asian, Other Asian, Māori, and Pacific adults compared with European & Other adults. Chinese adults had no significant difference in risk of having treatment for diabetes compared with European & Other adults. These results are consistent with other literature that shows that South Asian people have a high prevalence of T2D in NZ⁴¹⁵ and internationally.^{238,248,419} However studies also show high prevalence of T2D in non-South Asian ethnicities, including Filipinx^{248,419} and Chinese people.^{248,424} Future monitoring of these populations, along with other Southeast Asian and East Asian ethnicities, will be important to ensure any change in prevalence is identified as early as possible.

5.3.2.2 Arthritis and chronic pain

All three Asian ethnic groupings had a lower adjusted risk of having treatment for arthritis compared with European & Other people. While previous studies also show that Asian adults have a lower prevalence of osteoarthritis compared to European people in both NZ and the US,⁴³⁹ the prevalence of gout has been found to be higher in Asian people the US⁴⁴⁴ and internationally,⁴⁴³ as observed for Other Asians in NZ. A range of Asian ethnicities in the US have been shown to have high prevalence of gout, and genetic variations that are associated with gout and gout-related comorbidities have been found to occur in higher frequencies in people of Han Chinese,⁴⁴⁹ Hmong,⁴⁵⁰ Filipinx,⁴⁴⁶ Vietnamese,⁴⁵¹ Korean,⁴⁵² and Japanese⁴⁵² descent. Research on gout in Asians in NZ has been limited in the past, but these findings indicate further research is required.

Chinese and Other Asian adults had a significantly lower risk of chronic pain compared to European & Other adults. However, Asian people have been found to underreport chronic pain, likely for cultural reasons – chronic pain is accepted as part of the ageing process in many Asian cultures, and as such, many Asian people who experience chronic pain do not seek medical help.⁴⁶⁴

These cultural beliefs have also been found to persist in Asian immigrants.⁴⁶⁵

5.3.2.3 Mental health

Adults of all three Asian ethnic groupings, along with Pacific adults, were significantly less likely to be diagnosed with depression than European & Other adults. This is consistent with the NZHS mental health data in children in this report (above), but contrasts with reports of high levels of mental distress in Asian adults, young adults, and older adolescents in studies,^{105,571} reports,^{49,572} and in the media.^{360,361}

Mental health and mental health care issues for Asian people in NZ are multi-faceted. It is well known that Asian people are less likely to report mental distress⁴⁷⁸ or be diagnosed with depression and anxiety when compared to other groups – even though they are more likely to be at risk for those conditions.⁴⁷⁹ The cultural mismatch of collectivist Asian communities and the individual approach of traditional mental health services that are available is a key barrier to access.⁵⁷³ However, where tailored services are available they are utilised. Mental health counselling run by Asian Family Services increased 138% during COVID-19 compared to pre-pandemic levels, and their helpline recorded a three-fold increase in calls.³⁵⁹ There is, however, a lack of mental health professionals who can provide culturally appropriate and culturally safe care.³⁶¹ The lack of availability of appropriate services is also causing harm due to delaying mental health help-seeking.⁵⁷¹

5.4 Health service utilisation

5.4.1 Primary health care

Adults of all three Asian ethnic groupings were less likely to have a usual health practitioner or service to visit when unwell, compared to Māori, Pacific, and European & Other adults in 2019–21, although there has been a significant improvement since 2002–03 in the proportion of Chinese and Other Asian adults having a usual service provider. The current decreased access was greater in Asian people who had resided in NZ for less than 5 years. Newer migrants were less likely to have access to a primary health care practice, to health care practitioners, including family doctors and practice nurses compared to those had resided in NZ for longer.

Reassuringly, it was not the same case for Asian children. Children of all three major Asian ethnic groupings had a similar prevalence of having a usual health provider compared to European & Other children. These results are consistent with a previous NZ study, which reported that Pakistani mothers were willing to take their child to visit a GP when they were unwell,

but were less likely to go themselves.⁵²³ Having a usual health provider has significantly increased in Other Asian children since 2006–07, while remaining stable for South Asian and Chinese children since then.

Children of all three Asian ethnic groupings also had a similar level of unmet need for seeing a GP in the last 12 months due to cost, transport or childcare, as European & Other. This is consistent with Asian adults in the NZHS having a similar proportion living in high income households as European & Other. While the level of unmet need in Asian children gradually decreased between 2011–13 and 2019–21, this trend was not statistically significant.

There were no overall differences in visits to primary health care providers by Asian children compared to European & Other children. However, significant differences occurred in visits to medical specialist and other health care workers. Of note, a lower proportion of South Asian children visited a medical specialist in the last 12 months, compared to European & Other children.

When Asian adults did visit their usual primary health care services, a higher proportion of South Asian adults reported being measured or tested for weight/height, cholesterol, and diabetes, than did European & Other adults. This is reassuring, as South Asian adults have a higher prevalence of metabolic conditions compared to European & Other adults. There was an increase in the proportion of Asian adults of all three ethnic groupings being checked for hypertension and high blood cholesterol between 2002–03 and 2019–21.

Chinese and Other Asian adults, along with Māori and Pacific adults, were significantly less likely, while South Asian adults had a similar likelihood, of having visited a GP in the past 12 months, compared to European & Other adults. Adults of all Asian ethnic groupings had a lower probability of visiting medical specialists and other health care workers (including pharmacists, chiropractors, osteopaths, and social workers/counsellors) in the past 12 months than European & Other adults. Of note, Other Asian women reported a lower likelihood of visiting a midwife than European & Other women.

The NZ data on primary health care access among Asian people are consistent with international reports. In the US, Asian people, along with Black and Hispanic people, were less likely to have a usual source of care than white people.⁵⁷⁴ In a study of health-care beneficiaries, Korean people were significantly less likely to report a usual source of care than white people, and Chinese people were significantly more likely to report a usual source of care.⁵⁷⁵ Racial discrimination and racial profiling also had a negative effect on health care access and having a usual source of care for Asians in the US.^{576,577} Results for Asian people and migrants in the UK,^{578,579} Australia,⁵⁸⁰ and Canada⁵⁸¹ also showed lower access to primary health care. Being born in the US

and higher levels of acculturation were associated with higher utilisation of healthcare services compared to Asian people born overseas and having lower levels of acculturation.^{582,583}

5.4.2 Secondary health care

Children of all three Asian ethnic groupings had a similar probability of presenting to the emergency department as did European & Other and Pacific children. For adults, all three Asian ethnic groupings had a significantly lower probability of presenting to the ED compared to European & Other adults. This is in contrast to other NZ studies that have found high ED use by Asian people, particularly among newer migrants.^{504,505,508} Thus, the significance of these findings is unclear and they need further monitoring.

Children of all three Asian ethnic groupings had a similar probability of attending a public hospital in the last 12 months as European & Other children. In contrast, Chinese and Other Asian adults were less likely, and South Asian adults had a similar likelihood, of attending a public hospital over the same period, compared to European & Other adults. Adults of all three Asian ethnic groupings were also less likely to attend a private hospital in the last 12 months than European & Other adults. These discrepancies warrant further investigation into the factors and conditions influencing hospital use, as other NZ studies have also reported overall reduced access to hospital-level care.^{439,508,513}

Internationally, access to hospital care is mixed. In the US, Asian Americans had the lowest percentage of short-stay hospitalisation and outpatient care compared with all other racial groups.⁵⁸⁴ A study in Hawai'i found that Chinese and Japanese people had the lowest percentage of 30-day potentially-preventable readmission compared with white, native Hawaiian, and other Pacific people.⁵⁸⁵ In the UK, Pakistani people had a higher all-cause hospitalisation risk than white British people, but Indian, Bangladeshi, Chinese, and Asian Other people had a lower all-cause hospitalisation risk than white British people.⁵⁸⁶ In Scotland, South Asian people had a higher likelihood of avoidable hospital admission than white Scottish people.⁵⁸⁷

Mixed results regarding ED use have also been found in the US studies. Asian and Hispanic adults were just as likely to be admitted to emergency care as white adults in one study;⁵⁸⁸ Asian people had a lower percentage of ED use than all other racial groups in another;⁵⁸⁴ and a third study found that older Chinese Americans had high ED use that was associated with higher levels of education and acculturation, lower SES, lower self-perceived health status, and a history of cancer, CVD, stroke, or hip fracture.⁵⁸⁹ In the UK, a review of ethnic inequalities in healthcare for those with multiple health conditions found that Asian and Black children were more likely to be admitted

to the emergency department compared to white children.⁴⁰⁶ In Australia, lower health literacy was found to be significantly associated with higher ED use in Chinese immigrants.⁵⁹⁰

5.4.3 Oral health

Children and adults of all three Asian ethnic groupings were less likely to have visited an oral health care worker in the previous year, compared to European & Other children and adults. These results are consistent with those from previous NZ studies.^{518–521} However the likelihood of visiting an oral health care worker has increased for Chinese and Other Asian adults since 2002–03, a definite improvement.

Adults of all three Asian ethnic groupings, as well as Māori and Pacific adults, were less likely to have a regular dental check (at least every two years) than European & Other adults. There was no change in the likelihood of a dental check by Asian adults between the 2002–03 and 2019–21 surveys.

There was no difference in unmet need for oral health care between adults of the three Asian ethnic groupings and European & Other adults. This is consistent with the similar distribution of household income in Asian adults and European & Other in the NZHS. It is unclear if increases in dental check frequency would alter the likelihood of unmet need for oral health care in Asian adults.

There were marked differences between the three Asian ethnic groupings in the proportion of people with three or teeth removed. South Asian adults were significantly less likely, Other Asian adults were significantly more likely, and Chinese adults were similar in the likelihood of European & Other having three or more teeth removed. Despite this, South Asian adults had a lower proportion of having regular dental check-ups and having visited an oral health care worker in the last year compared to Chinese and Other Asian adults.

Asian people who have resided for less than 5 years in NZ were less likely to have access to an oral health care worker compared to those who have lived longer in NZ. Older Chinese immigrants have also been found to have lower rates of access to dental services in another NZ study.⁵²⁴

Further investigation is needed into the low use of oral care services by Asians in NZ. Differences in access between the different Asian ethnicities should be explored, as well as ways of increasing access to oral health care for new and recent migrants.

The NZ data on oral health care among Asian people are consistent with international results. Asian Americans, particularly males, those of lower education levels, and those with limited English skills, were less likely to receive annual dental

check.^{221,222} In the UK, Indian, Pakistani, and Bangladeshi people were less likely to be edentulous than white British people,²²⁴ and South Asians in NZ were less likely to have three or more teeth removed.



6. CONCLUSIONS

1. Sociodemography

The Asian population in NZ continues to increase, being 17% of children and 15% of adults in Aotearoa in 2019–21. However, government income support received by Asian adults has declined substantially since 2002–03 so that they are not receiving the same level of support as non-Asian ethnicities. Further, Asian adults continue to experience high levels of ethnic discrimination, unchanged from 2011–12.

2. Health behaviours

The health behaviour pattern in Asian people is mixed.

Of major concern is the low level of fruit and vegetable intake by both Asian children and adults, which has progressively decreased since 2011–13, while fast food intake by Asian children has increased over the same time period. Further, Asian adults are less likely to be physically active, and more likely to be sedentary, than European & Other adults. The proportion of Asian adults who are physically active has not changed since 2002–03, although the proportion who are sedentary has declined since then.

These patterns are being manifested in obesity levels, which are higher in Asian adults than European & Other, and have gradually increased in both men and women since 2002–03.

In contrast, Asian adults have the lowest tobacco smoking levels in NZ, and smoking by both men and women continues to decline. As well, vaping and consumption of alcohol and cannabis are lowest among Asian adults, although use of these has increased in recent years.

3. Health conditions

The above health behaviour patterns are likely to be contributing the increased risk of cardiometabolic disease among Asian adults. These include increased risk of hypertension, high blood cholesterol and diabetes among South Asian, and increased hypertension in Other Asian, compared with European & Other.

Pleasingly, several chronic conditions – asthma, arthritis, chronic pain, and depression – are less common in Asian adults than in European & Other.

4. Health service utilisation

Asian adults are less likely to have a usual primary health care service provider, and use public hospital or oral health care services, than European & Other adults. This pattern appears partly to be related to time in NZ, as access to these services is lowest among Asian adults who have lived less than 5 years in NZ. Efforts are needed to address this disparity.



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APPENDICES



Appendix 1

Age- and gender-adjusted relative risks (95%CI) of receiving government income support and having health insurance for main ethnic groupings compared with European & Other, among adults aged ≥15 years – 2019–20 and 2020–21 surveys combined.

Variable	Ethnic Grouping, RR (95%CI) *						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Receive government support	0.60 (0.49, 0.75)	0.55 (0.44, 0.68)	0.72 (0.60, 0.86)	1.61 (1.51, 1.72)	1.23 (1.08, 1.40)	1.00 (reference)	<0.001
Have health insurance	0.86 (0.74, 0.99)	1.06 (0.90, 1.23)	0.83 (0.72, 0.95)	0.55 (0.51, 0.61)	0.42 (0.34, 0.52)	1.00 (reference)	<0.001

*RR, relative risk; 95%CI, 95% confidence interval; *, adjusting for age and gender; #, Overall CMH General Association test adjusting for age and gender.*

Appendix 2

Age- and gender-adjusted relative risks (95%CI) of reactions by other people to ethnicity compared with European & Other, among adults aged ≥15 years – 2020–21 survey

Variable	Ethnic grouping, RR (95%CI) *						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Victim of ethnically motivated attack	1.63 (1.24, 2.14)	2.82 (2.23, 3.56)	1.61 (1.23, 2.10)	2.12 (1.86, 2.42)	1.19 (0.90, 1.57)	1.00 (reference)	<0.001
Verbal attack	1.69 (1.29, 2.23)	2.89 (2.25, 3.70)	1.66 (1.27, 2.18)	2.15 (1.88, 2.46)	1.21 (0.91, 1.61)	1.00 (reference)	<0.001
Physical attack	0.77 (0.25, 2.38)	2.61 (1.45, 4.70)	0.70 (0.22, 2.22)	2.80 (2.12, 3.70)	1.38 (0.61, 3.16)	1.00 (reference)	<0.001
Treated unfairly because of ethnicity	2.97 (2.06, 4.30)	2.50 (1.60, 3.92)	2.26 (1.56, 3.28)	3.49 (2.89, 4.20)	2.46 (1.82, 3.32)	1.00 (reference)	<0.001
By health professional	1.57 (0.53, 4.60)	1.72 (0.56, 5.24)	1.24 (0.45, 3.42)	4.38 (3.08, 6.21)	2.80 (1.66, 4.72)	1.00 (reference)	<0.001
At work or refused job	3.46 (2.33, 5.15)	2.73 (1.72, 4.34)	2.84 (1.84, 4.39)	2.49 (1.97, 3.15)	2.43 (1.59, 3.71)	1.00 (reference)	<0.001
Renting/buying house	7.15 (3.54, 14.5)	3.35 (1.26, 8.91)	2.48 (0.88, 6.99)	9.15 (5.71, 14.6)	3.94 (2.05, 7.57)	1.00 (reference)	<0.001

*RR, relative risk; 95%CI, 95% confidence interval; *, adjusting for age and gender; #, Overall CMH General Association test adjusting for age and gender.*

Appendix 3

Age- and gender-adjusted relative risks (95%CI) of physical activity in the last 7 days and usually meets sleep duration recommendations in a 24-hour period for main ethnic groupings compared with European & Other, among adults aged ≥15 years – 2019–20 and 2020–21 surveys combined.

Variable	Ethnic grouping, RR (95%CI) *						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Physically active	0.77 (0.70, 0.86)	0.74 (0.64, 0.85)	0.80 (0.71, 0.89)	0.95 (0.90, 1.00)	0.80 (0.72, 0.88)	1.00 (reference)	<0.001
Sedentary	1.87 (1.48, 2.35)	1.74 (1.39, 2.18)	1.39 (1.01, 1.91)	1.45 (1.25, 1.67)	1.94 (1.54, 2.44)	1.00 (reference)	<0.001
Meets sleep duration recommendations	1.02 (0.97, 1.08)	1.06 (1.01, 1.12)	0.89 (0.83, 0.95)	0.82 (0.79, 0.85)	0.78 (0.73, 0.84)	1.00 (reference)	<0.001

*RR, relative risk; 95%CI, 95% confidence interval; *, adjusting for age and gender; #, Overall CMH General Association test adjusting for age and gender.*

Appendix 4

Age- and gender-adjusted relative risks (95%CI) of tobacco smoking and vaping for main ethnic groupings compared with European & Other, among adults aged ≥15 years – 2019–20 and 2020–21 surveys combined.

Variable	Ethnic grouping, RR (95%CI) *						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Current smoker							
All genders	0.63 (0.44, 0.91)	0.74 (0.48, 1.15)	0.77 (0.56, 1.05)	2.85 (2.57, 3.17)	2.01 (1.64, 2.46)	1.00 (reference)	<0.001
Women	0.15 (0.06, 0.41)	0.26 (0.06, 1.15)	0.27 (0.11, 0.65)	3.33 (2.93, 3.79)	1.90 (1.50, 2.40)	1.00 (reference)	<0.001
Men	0.95 (0.63, 1.44)	1.08 (0.65, 1.79)	1.15 (0.79, 1.66)	2.43 (2.10, 2.81)	2.13 (1.63, 2.79)	1.00 (reference)	<0.001
Current vaper	1.00 (reference)						
All genders	0.41 (0.27, 0.61)	0.63 (0.40, 1.00)	0.46 (0.29, 0.73)	1.45 (1.25, 1.68)	0.99 (0.74, 1.32)	1.00 (reference)	<0.001
Women	0.18 (0.06, 0.60)	0.47 (0.16, 1.36)	0.28 (0.10, 0.80)	1.44 (1.19, 1.73)	0.81 (0.56, 1.18)	1.00 (reference)	<0.001
Men	0.52 (0.32, 0.84)	0.72 (0.40, 1.28)	0.57 (0.33, 1.00)	1.46 (1.19, 1.79)	1.16 (0.76, 1.76)	1.00 (reference)	<0.001

*RR, relative risk; 95%CI, 95% confidence interval; *, adjusting for age and gender; #, Overall CMH General Association test adjusting for age and gender.*

Appendix 5

Age- and gender-adjusted relative risks (95%CI) of health conditions for main ethnic groupings compared with European & Other, among children aged 0–14 years – 2019–20 and 2020–21 surveys combined.

Variable	Ethnic Grouping, RR (95%CI) *						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Asthma	0.69 (0.40, 1.19)	0.62 (0.35, 1.09)	1.04 (0.64, 1.71)	1.81 (1.48, 2.22)	1.60 (1.16, 2.21)	1.00 (reference)	<0.001
Eczema	1.00 (0.68, 1.49)	1.64 (1.08, 2.49)	1.54 (1.12, 2.12)	1.51 (1.27, 1.79)	1.68 (1.26, 2.24)	1.00 (reference)	<0.001

RR, relative risk; 95%CI, 95% confidence interval; *, adjusting for age and gender; #, Overall CMH General Association test adjusting for age and gender.

Appendix 6

Age- and gender-adjusted relative risks (95%CI) of long-term health conditions for main ethnic groupings compared with European & Other, among adults aged ≥15 years – 2019–20 and 2020–21 surveys combined.

Variable	Ethnic Grouping, RR (95%CI)						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Hypertension	1.37 (1.01, 1.85)	0.68 (0.49, 0.96)	0.93 (0.67, 1.30)	1.37 (1.26, 1.50)	1.45 (1.20, 1.75)	1.00 (reference)	<0.001
High cholesterol, %	1.71 (1.28, 2.30)	1.07 (0.74, 1.55)	1.25 (0.88, 1.78)	1.31 (1.13, 1.52)	1.56 (1.31, 1.86)	1.00 (reference)	<0.001
Cardiovascular disease, %	1.00 (0.67, 1.49)	0.49 (0.31, 0.77)	0.68 (0.42, 1.11)	1.16 (1.02, 1.32)	0.98 (0.76, 1.27)	1.00 (reference)	<0.001
Heart attack	1.53 (0.84, 2.78)	0.27 (0.05, 1.32)	0.40 (0.11, 1.50)	1.38 (1.03, 1.85)	1.00 (0.60, 1.69)	1.00 (reference)	<0.001
Angina	2.50 (1.44, 4.36)	0.18 (0.04, 0.73)	0.76 (0.34, 1.71)	1.53 (1.21, 1.93)	1.00 (0.49, 2.03)	1.00 (reference)	<0.001
Heart failure	0.58 (0.20, 1.68)	0.42 (0.12, 1.44)	0.39 (0.04, 3.67)	1.87 (1.41, 2.48)	1.80 (1.04, 3.12)	1.00 (reference)	<0.001
Stroke	1.60 (0.79, 3.25)	0.60 (0.14, 2.51)	0.57 (0.14, 2.32)	1.47 (1.02, 2.12)	1.50 (0.86, 2.63)	1.00 (reference)	0.09
Other heart disease	0.71 (0.38, 1.34)	0.51 (0.29, 0.88)	0.59 (0.28, 1.26)	1.05 (0.88, 1.26)	0.82 (0.55, 1.22)	1.00 (reference)	0.008
Diabetes, %	3.26 (2.22, 4.78)	1.20 (0.62, 2.31)	3.05 (2.20, 4.21)	2.28 (1.92, 2.72)	4.19 (3.30, 5.32)	1.00 (reference)	<0.001
Asthma, %	0.37 (0.25, 0.53)	0.34 (0.21, 0.55)	0.45 (0.30, 0.69)	1.55 (1.36, 1.76)	1.20 (0.94, 1.53)	1.00 (reference)	<0.001
Arthritis, %	0.57 (0.39, 0.82)	0.57 (0.41, 0.80)	0.58 (0.42, 0.81)	1.23 (1.12, 1.36)	0.99 (0.81, 1.21)	1.00 (reference)	<0.001
Rheuma	1.03 (0.39, 2.72)	0.32 (0.09, 1.11)	0.79 (0.27, 2.34)	1.60 (1.21, 2.10)	1.28 (0.66, 2.46)	1.00 (reference)	<0.001
Osteoarthritis	0.39 (0.25, 0.62)	0.51 (0.31, 0.83)	0.47 (0.24, 0.90)	1.04 (0.91, 1.19)	0.50 (0.36, 0.69)	1.00 (reference)	<0.001
Gout	0.60 (0.23, 1.52)	1.25 (0.65, 2.43)	1.73 (1.02, 2.93)	2.79 (2.16, 3.60)	4.26 (3.11, 5.82)	1.00 (reference)	<0.001
Chronic pain, %	0.80 (0.61, 1.03)	0.68 (0.50, 0.91)	0.60 (0.46, 0.77)	1.32 (1.20, 1.45)	1.12 (0.94, 1.35)	1.00 (reference)	<0.001
Hysterectomy*, %	1.18 (0.67, 2.08)	0.50 (0.16, 1.60)	1.01 (0.56, 1.80)	1.19 (0.95, 1.50)	0.54 (0.27, 1.08)	1.00 (reference)	0.037
Depression, %	0.36 (0.21, 0.62)	0.33 (0.16, 0.70)	0.20 (0.11, 0.36)	0.92 (0.77, 1.08)	0.41 (0.27, 0.62)	1.00 (reference)	<0.001

*, Women aged 20 years and over; the RR and 95%CI were adjusting for age and gender (as appropriate); Overall CMH General Association test adjusting for age and gender.

Appendix 7

Age- and gender-adjusted relative risks (95%CI) of usual practice providing prevention services in the last 12 months, for main ethnic groupings compared with European & Other, among adults aged ≥15 years – 2019–20 and 2020–21 surveys combined.

Variable	Ethnic Grouping, RR (95%CI) *						Overall test #, adjusted p value
	South Asian	Chinese	Other Asian	Māori	Pacific	European & Other	
Service provided							
Weight/height measure	1.29 (1.15, 1.43)	0.97 (0.81, 1.15)	1.02 (0.88, 1.19)	1.26 (1.18, 1.34)	1.34 (1.23, 1.45)	1.00 (reference)	<0.001
Blood pressure test	1.06 (0.99, 1.14)	0.86 (0.78, 0.95)	0.94 (0.86, 1.03)	1.08 (1.04, 1.12)	1.09 (1.02, 1.15)	1.00 (reference)	<0.001
Cholesterol test	1.42 (1.26, 1.60)	1.04 (0.90, 1.21)	1.02 (0.87, 1.19)	1.19 (1.12, 1.27)	1.26 (1.15, 1.38)	1.00 (reference)	<0.001
Diabetes test	1.58 (1.34, 1.86)	1.18 (0.97, 1.44)	1.21 (1.02, 1.43)	1.39 (1.28, 1.50)	1.59 (1.43, 1.77)	1.00 (reference)	<0.001
Flu vaccination	1.08 (0.91, 1.30)	0.96 (0.77, 1.21)	0.94 (0.78, 1.13)	0.91 (0.84, 0.99)	1.08 (0.95, 1.23)	1.00 (reference)	0.06
Other vaccination	1.08 (0.79, 1.48)	0.83 (0.54, 1.27)	0.69 (0.41, 1.18)	0.84 (0.70, 1.01)	0.76 (0.54, 1.07)	1.00 (reference)	0.11
Green prescription	0.88 (0.34, 2.30)	1.13 (0.33, 3.94)	0.70 (0.30, 1.61)	2.35 (1.65, 3.35)	1.41 (0.81, 2.48)	1.00 (reference)	0.001
Practice staff discussed							
Smoking	0.70 (0.49, 0.98)	0.60 (0.36, 1.01)	0.88 (0.62, 1.24)	2.37 (2.11, 2.67)	1.80 (1.49, 2.18)	1.00 (reference)	<0.001
Health food/nutrition	1.34 (1.05, 1.72)	0.92 (0.64, 1.32)	1.24 (0.96, 1.59)	1.87 (1.65, 2.12)	2.45 (2.08, 2.88)	1.00 (reference)	<0.001
Weight	1.11 (0.88, 1.40)	0.71 (0.48, 1.04)	0.95 (0.68, 1.35)	1.81 (1.60, 2.05)	2.31 (2.00, 2.66)	1.00 (reference)	<0.001
Exercise/physical activity	1.36 (1.11, 1.68)	0.87 (0.58, 1.32)	1.14 (0.87, 1.49)	1.59 (1.41, 1.80)	1.77 (1.50, 2.09)	1.00 (reference)	<0.001
Teeth/oral health	0.94 (0.53, 1.66)	1.07 (0.48, 2.36)	1.43 (0.75, 2.73)	2.43 (1.75, 3.37)	3.00 (2.12, 4.24)	1.00 (reference)	<0.001

*RR, relative risk; 95%CI, 95% confidence interval; *, adjusting for age and gender; #, Overall CMH General Association test adjusting for age and gender.*



ASIAN HEALTH in Aotearoa

AUG
2024

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The Asian Network Inc. (TANI)

Publisher

The Asian Network Inc. (TANI)

PO Box 27-550, Mt Roskill, Auckland 1041

<http://www.asiannetwork.org.nz/>

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August 2024

ISBN

Softcover: 978-0-473-71167-2 PDF: 978-0-473-71168-9

The  **Asian Network**
Incorporated

