CHRONIC CONDITIONS AND RELATED RISK FACTORS AMONG ABORIGINAL PEOPLE IN NSW

Findings from Australian Health Surveys

NSW GOVERNMENT

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EXECUTIVE SUMMARY

The Australian Bureau of Statistics (ABS) released the third National Aboriginal and Torres Strait Islander Health Survey (NATSIHS) in December 2019. This survey brings together information on chronic conditions and their risk factors. Key findings for Aboriginal respondents in NSW are:

- More than half (51%) had one or more chronic conditions that posed a significant health problem
- One in 20 (5%) reported having a chronic condition involving heart, stroke or vascular disease
- Between 2012–13 and 2018–19, there was an increase in the number of current long-term conditions, with fewer reporting one long-term health condition and more reporting three or more long-term health conditions
- Even though Aboriginal people in NSW reported more long-term health conditions, more Aboriginal people rated their own health as excellent/very good compared to fair/poor
- Aboriginal people in NSW had more selected risk factors for chronic conditions compared to non-Aboriginal people in NSW
- More than one in four (29%) of those aged 2 years and over reported having mental and behavioural conditions
- More than one in four (30%) of those aged 18 years and over reported high or very high psychological distress
- More than one in five (23%) of those aged 18 years and over had high blood pressure
- More than seven in 10 (74%) of those aged 15 years and over were overweight or obese
- More than three in 10 (39%) of those aged 18 years and over were current daily smokers

These results indicate a continuing need to target modifiable risk factors such as smoking, alcohol use and mental health conditions to prevent chronic conditions and premature mortality among Aboriginal people.

BACKGROUND

Aboriginal people are the first peoples of Australia and have strong cultures and communities. The resilience of Aboriginal people provides the foundation upon which to build further efforts to improve Aboriginal health. In the last two decades there have been important improvements in some health outcomes for Aboriginal people in NSW, however, disparities still exist.[1]

In this report, Aboriginal and Torres Strait Islander people are referred to as Aboriginal people in recognition that Aboriginal people are the original inhabitants of NSW. Aboriginal people in NSW experience a higher prevalence of chronic conditions compared with non-Aboriginal people, particularly at younger ages, which has a major impact on the wellbeing of families and communities.[2,3] For example, chronic conditions, including cardiovascular disease, account for approximately 70% of the health disparity between Aboriginal and non-Aboriginal people.[4]

Multiple inter-related factors contribute to the health disparity and improving health outcomes calls for an understanding of the social determinants of Aboriginal health, including historical factors, education, employment, housing, environmental factors, social and cultural capital, and racism.[5] A recognition of these factors is also important for addressing common risk factors for chronic conditions, such as smoking, high body mass and alcohol misuse.[3]

Monitoring progress in health outcomes for Aboriginal people and improving health policy is supported by accurate information and reliable statistics on Aboriginal health.[6] A range of information on key health indicators for Aboriginal people living in NSW is publicly available;[1,3,7,8,9] however, NATSIHS is the only source of data in NSW that provides information on both chronic health conditions and their risk factors.

The ABS released the 2018–19 NATSIHS in December 2019. The survey brings together information on chronic conditions, risk factors, and social and emotional well-being. The 2018–19 NATSIHS collected information on a number of topics for the first time, including mental health conditions and number of chronic conditions. A hearing test was also incorporated into the survey methodology for the first time. The survey design and large sample size makes this one of the most reliable sources of information on chronic conditions and associated risk factors for Aboriginal people.

This report describes results from the 2018–19 NATSIHS for Aboriginal people living in NSW. Where available, results from previous NATSIHSs are included to provide information on trends in chronic conditions and related risk factors. Corresponding results from the NSW Population Health Survey are also included for comparison, as well as relevant results from the 2017–18 National Health Survey (NHS) for non-Aboriginal people living in NSW.

METHODS

Study population

NSW participants in the National Aboriginal and Torres Strait Islander Health Surveys, Aboriginal participants in the NSW Population Health Survey (2013–2018), and non-Aboriginal NSW participants in the 2017–18 National Health Survey.

Data sources

This report used published aggregate data from the National Aboriginal and Torres Strait Islander Health Surveys, NSW Population Health Survey and non-Aboriginal NSW participants in the 2017–18 National Health Survey (Table 1).

Table 1. Data sources

Survey	Sample size (NSW)*
National Aboriginal and and Torres Strait Islander Health Survey, Australia, 2018–19[2]	1,540
Australian Aboriginal and Torres Strait Islander Health Survey: First Results, 2012–13[10]	2,105
National Aboriginal and Torres Strait Islander Health Survey: Australia, 2004–05[11]	1,585
NSW Population Health Survey, 2013 to 2018[9]	302†
National Health Survey, 2017–18[12]	4,273‡

*Includes Aboriginal people in fully or adequately responding households
†Based on the number of Aboriginal people who responded to the 'self-rated health' survey item
‡Includes both Aboriginal and non-Aboriginal people living in NSW

Definitions

Appendix 1 contains descriptions of key terms. Further information on how guidelines and measures were used to assess health risk factors in NATSIHS can be found in the 'Assessing Health Risk Factors' Appendix on the ABS website.[13]

Data preparation

Variable correspondence checks were carried out to assess the comparability of chronic conditions, health characteristics and risk factors across survey years.

Statistical analysis

Difference in proportions was assessed using z tests for health characteristics where only two data points were available.

Comparable data points from the 2004–05, 2012–13 and 2018–19 NATSIHSs were analysed using a semi-Bayesian approach to simulate 10,000 samples based on the estimated proportions and standard errors. Linear regression models were fit to each sample to estimate the average annual percentage change over the time period; 95% credible intervals for the average annual percentage change were calculated.

The Chi-square test of homogeneity was used to test if the distribution of health characteristics with ordered categories differed across survey years.

Differences are reported when statistically significant at $p = 0.05$. Further details of the statistical analysis are described in Appendix 2.

RESULTS

Health status

In 2018–19, more than half (51%) of Aboriginal people had one or more chronic conditions that posed a significant health problem (Appendix 3, Table 2), including:

- One in 20 (5%) Aboriginal people who reported having a condition involving heart, stroke or vascular disease
- More than one in five (24%) Aboriginal people who reported having hypertension
- More than one in 20 (6%) Aboriginal people who reported having diabetes mellitus
- More than one in 100 (1.5%) Aboriginal people who reported having kidney disease
- More than two in 50 (4.5%) Aboriginal people who reported having chronic obstructive pulmonary disease
- More than one in four (29%) Aboriginal people aged 2 years and over who reported having mental and behavioural conditions

In the same year (Appendix 3, Table 2):

- More than one in 10 (13%) Aboriginal people reported having ear/hearing problems
- More than one in three (38%) Aboriginal people reported having eye/sight problems
- More than one in four (28%) Aboriginal people reported having a disability or restrictive long-term health condition
- More than one in four (30%) Aboriginal people aged 18 years and over had high or very high psychological distress

Health risk factors

In 2018-19 (Appendix 3, Table 2):

- More than one in five (23%) Aboriginal people aged 18 years and over had high blood pressure
- More than seven in 10 (74%) Aboriginal people aged 15 years and over were overweight or obese
- More than three in 10 (39%) Aboriginal people aged 18 years and over were current daily smokers
- More than one in 10 (13%) Aboriginal people aged 15 years and over met the recommended physical activity guidelines
- Less than three in 100 (2.7%) Aboriginal people, including children, met the recommended daily fruit and vegetable consumption guidelines

Change from 2012–13 to 2018–19

Between 2012-13 and 2018-19 (Appendix 3 Tables 2-3):

- The proportion of Aboriginal people rating their own health as very good or excellent increased by 7% (39% vs 47%)
- The proportion of Aboriginal people with one current long-term condition decreased by 4.2% (21% vs 16%)

Trends from 2004–05 to 2018–19

In the period 2004 to 2018–19 (Appendix 3 Table 4):

- The proportion of Aboriginal people rating their own health as excellent or very good remained stable
- The proportion of Aboriginal people with three or more current long-term health conditions decreased at an average of 0.5% per year
- The proportion of Aboriginal people with one current long-term health condition remained stable

Comparison to the NSW Population Health Survey (PHS)

Compared to the 2017–2018 NSW PHS which reports estimates for people 16 years and over:

- The proportion of Aboriginal people who ate adequate amounts of fruit on a daily basis was 18.1% higher for the 2018–19 NATSIHS (43% vs 25%)
- The proportion of Aboriginal people who were current daily smokers was 16% higher for the NATSIHS (39% vs 23%)

The estimates from the 2017–2018 NSW PHS were similar to the 2018–19 NATSIHS for other comparable health risk factors and characteristics (Appendix 3 Table 5).

Aboriginal and non-Aboriginal people

Comparing the results of the 2017–18 National Health Survey and 2018–19 NATSIHS (Appendix 3 Table 6):

- The proportion of Aboriginal people aged 15 years and over who were overweight or obese was 8% higher than non-Aboriginal people (74% vs 65%)
- The proportion of Aboriginal people aged 18 years and over who exceeded single occasion risk guidelines for alcohol consumption was 15% higher than non-Aboriginal people (54% vs 39%)
- The proportion of Aboriginal people aged 18 years and over who exceeded lifetime risk guidelines for alcohol consumption was slightly higher than non-Aboriginal people of the same age-group (20% vs 16%)
- The proportion of Aboriginal people aged 18 years and over who were current daily smokers was 26% higher than non-Aboriginal people of the same age-group (39% vs 13%)

DISCUSSION

This report summarises results from the 2018–19 NATSIHS for Aboriginal people living in NSW and describes trends in chronic conditions and related risk factors by comparing results with the NATSHIS carried out in 2012–13 and 2004–05. Results for Aboriginal people living in NSW from the 2018–19 NATSIHS are also compared with results from the 2017–18 NSW PHS and with results for non-Aboriginal people living in NSW from the 2017–18 NHS.

Findings from the 2018–19 NATSIHS indicate while 46% of Aboriginal people living in NSW rated their own health as very good or excellent, the majority (51%) reported living with one or more chronic conditions that posed a significant health problem: 5% report having a condition involving heart, stroke or vascular disease, 29% of those aged 2 years and over reported having mental or behavioural conditions, 30% of those aged 18 and over reported high or very high psychological distress and 25% reported having hypertension; 3 in 4 (74%) Aboriginal people living in NSW were overweight or obese and 39% were current daily smokers. The health of Aboriginal people living in NSW remained relatively stable between 2004–05 and 2018–19; and compared to 2012–13, a greater proportion of Aboriginal people rated their own health as 'excellent or very good' in 2018–19. The estimate of current daily smoking from the 2018–19 NATSIHS (39%) was higher than reported in the NSW PHS (23%). Rates of daily smoking and overweight and obesity were higher among Aboriginal people than non-Aboriginal people living in NSW (39% vs 13%, and 74% vs 65% respectively).

The strength of the 2018–19 NATSIHS is that it concurrently collects information on chronic conditions and risk factors for these conditions. This enables the examination of both health conditions and risk factors for these conditions for Aboriginal people living in NSW. The large sample size of the NATSIHS increases our confidence in the results, however the NATSIHS only occurs every 6–8 years.

The limitations of this study are:

- While information from the previous NATSIHS surveys (2004–05 and 2012–13) are available for a range of health characteristics, changes in survey design and methodology, including changes to national health guidelines, means that only certain characteristics were able to be compared.
- Information on some chronic conditions is not released by the ABS at a jurisdictional level. Importantly, information on cancer among Aboriginal people is not available.
- The analysis of changes over time relied on the published estimates and confidence intervals rather than using the raw data, which is not available. Choices in sample selection may also introduce bias: the ABS surveys (NATSIHS and NHS) exclude people who are usually residents of hospitals or nursing home and results may therefore underestimate the prevalence of those conditions and risk factors associated with ageing.
- Results from the 2011 and 2016 Censuses showed large increases in the count of Aboriginal people living in NSW that could not be explained by demographic factors such as births, deaths and migration: one possible reason for this increase may be a change in peoples' propensity to identify as Aboriginal.[11] This analysis did not account changes in the reported Aboriginal population over time.
- Published survey estimates for Aboriginal people from the NATSIHS, NSW PHS, and NHS are crude rates that do not take into account the age of the population. As the Aboriginal population is younger than the non-Aboriginal population, and chronic conditions are associated with increasing age, it is likely that Aboriginal people are more affected by chronic conditions than this analysis suggests.

The increase in the rate of Aboriginal people with multiple long-term health conditions is consistent with a recent study that found more Aboriginal people in NSW live with two or more chronic health conditions compared to non-Aboriginal people.[15] Although the life expectancy of Aboriginal people has increased over the past decade[16] and ageing is associated with an increased risk of chronic conditions,[17] Aboriginal people are still more likely to suffer from multiple long-term health conditions, and at a much younger age, than non-Aboriginal people.[18]

Risk factors for chronic health conditions need to be understood in the wider context of the social determinants of health. For example, Aboriginal people are a socioeconomically disadvantaged group in the NSW population, which in itself is associated with increased smoking behaviour and increased alcohol misuse.[19] Therefore, although risk factors are reported as individual behaviours, they are influenced by historical, social, economic and environmental factors that operate at the community level.[1] Social, environmental and economic factors that contribute to the poorer health experienced by Aboriginal people include poverty, inequitable community social capital, education, employment and housing.[1]

People with multiple long-term health conditions face challenges including accessing health care, communicating with health care professionals, and being involved in decision making.[17] These challenges are exacerbated for Aboriginal people as inequities in social determinants of health make it difficult to access timely, culturally safe and appropriate care. Barriers to accessing health care by Aboriginal people include discrimination and lack of cultural safety. Aboriginal people are more likely to experience discrimination and racism in health care settings.[20-22] The harmful effects associated with discrimination and racism negatively impacts future health-seeking behaviour which may impact the management of chronic conditions and increases the risk of premature death and disability.[20]

There is a need to address mental health with more than one in four Aboriginal people living in NSW reporting mental and behavioural conditions and a similar proportion reporting high or very high psychological distress. The 2011 Australian Burden of Disease Study found mental health conditions and substance use disorders, such as anxiety, depression and alcohol use disorders, to be the greatest contributors to the total burden of disease in Aboriginal people,[21] while in NSW between 2014 and 2018, the standardised death rate from suicide was 1.7 times higher among Aboriginal people than non-Aboriginal people.[19] There is an association between mental health conditions and other physical chronic health conditions: people with physical chronic health conditions are more likely than other people to have mental health conditions, and people with mental health conditions are more likely to have physical chronic health conditions.[23] This is due to a range of factors, including lifestyle and health-risk factors, treatment-related factors, and barriers to accessing and interacting with the health care system.[21,24]

Smoking prevalence rates for Aboriginal people in NSW vary depending on data sources used and differing methodologies. The NATSIHS, which uses face-to-face interviews, reported a higher prevalence of smoking among Aboriginal people than the NSW PHS, which uses telephone interviews. Estimates from the NSW PHS survey combine data from 2017 and 2018, which may account for some of the variation, however, both surveys demonstrate a large disparity in smoking rates between Aboriginal and non-Aboriginal people. The Australian Burden of Disease Study found 23% of the difference in health outcomes between Aboriginal and non-Aboriginal people could be attributed to tobacco use.[23]

Long-term harmful use of alcohol is also a major risk factor for cardiovascular disease and other chronic health conditions such as diabetes, liver disease and cancer.[6] Binge drinking contributes to injuries, transport accidents, violence and suicide.[6] Findings from the NHS and the NATSIHS showed that Aboriginal adults in NSW were 1.4 times more likely to exceed single occasion risk guidelines for alcohol consumption compared to non-Aboriginal adults. This is consistent with findings from the 2011 Australian

Burden of Disease Study showed that harmful alcohol use accounted for 8% of the difference in health outcomes between Aboriginal and non-Aboriginal people.[23]

One in twenty Aboriginal people living in NSW reported having a chronic condition involving heart, stroke or vascular disease, and just under one in ten reported having hypertension. Risk factors for cardiovascular disease such as smoking, harmful use of alcohol, and physical inactivity are also risk factors for mental health conditions.[23] There is a need to target these modifiable risk factors to reduce premature mortality and morbidity from chronic conditions.

CONCLUSION

Chronic health conditions are the leading cause of illness, disability and death among Aboriginal people. The frequent coexistence of several chronic health conditions, such as cardiovascular disease and mental health conditions, demonstrates the need for a more integrated approach to health service planning and delivery. The findings from the NATSIHS show that, although Aboriginal people in NSW are living with more chronic health conditions over time, self-assessed health among Aboriginal people is improving, suggesting these conditions are being better managed. There continues to be a need to target modifiable risk factors such as smoking, alcohol use and mental health conditions to prevent chronic conditions among Aboriginal people.

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APPENDIX 1 – DEFINITIONS

Adequate daily fruit and vegetable intake

The definition of adequate daily fruit and vegetable intake is in accordance with the National Health and Medical Research Council's 2013 Australian Dietary Guidelines.[28]

Adequate physical activity

The definition of adequate physical activity is in accordance with the 2014 Australian Physical Activity and Sedentary Behaviour Guidelines (2014).[29]

Alcohol consumption

The definition of risky alcohol consumption is in accordance with the National Health and Medical Research Council's 2009 Australian Guidelines to Reduce Health Risks from Drinking Alcohol.[30]

Body Mass Index

Body Mass Index (BMI) is a simple index of weight-for-height, commonly used for defining whether a person is underweight, normal weight, overweight or obese. People were classified as underweight/normal weight or overweight/obese based on their BMI score as recommended by the World Health Organization's BMI Classification.[31]

Chronic condition

The ABS defines a chronic condition as a long-term health condition that poses significant health problems, is preventable, and has been the focus of population health surveillance efforts.[32] The survey item 'number of selected chronic conditions' counts those with the following long-term health conditions:

- Arthritis
- Asthma
- Back problems (dorsopathies)
- Cancer (malignant neoplasms)
- Chronic obstructive pulmonary disease (COPD)
- Diabetes mellitus
- Heart, stroke and vascular disease
- Kidney disease
- Mental and behavioural conditions
- Osteoporosis

People reporting diabetes mellitus and/or particular types of heart, stroke and vascular disease (angina, a heart attack, other ischaemic heart diseases, stroke or other cerebrovascular diseases) were included in the count of 'number of selected chronic conditions' regardless of whether the condition was current and/or long-term.

Current long-term health condition

The ABS defines a current long-term health condition as 'an illness, injury or disability which was current at the time of the interview and which had lasted at least six months, or which the person expected to last for six months or more'.[32]

People reporting diabetes and/or particular types of heart, stroke and vascular disease (angina, heart attack, other ischaemic heart diseases, stroke or other cerebrovascular diseases) were included in the count of 'selected current long-term conditions' regardless of whether the condition was current at the time of the interview.

High blood pressure (measured)

People aged 18 years and over were asked to provide a blood pressure reading, voluntarily taken by the interviewer at the time of interview.[10] Blood pressure was considered high if the reading was equal to or higher than 140/90 mmHg.

Psychological distress

Psychological distress is based on scores from the modified Kessler Psychological Distress Scale (K5). Scores between 5 and 11 indicate low/moderate psychological distress and scores between 12 and 15 indicate high/very high psychological distress.[33]

APPENDIX 2 – STATISTICAL ANALYSIS

Two-year comparisons

Where only two data points were available, a test statistic (z) for the difference in proportions was calculated using the formula:

$$z = \frac{|p_1 - p_2|}{SE(p_1 - p_2)}$$

where:

p_1 = the estimated proportion for a characteristic from the NATSIHS 2018–19,

p_2 = the estimated proportion for the same characteristic from either the NHS 2017–18 or the NATSIHS 2012–13,

$SE(p_1 - p_2)$ = the standard error of the difference between two estimates =

$$SE(p_1 - p_2) = \sqrt{[SE(p_1)]^2 + [SE(p_2)]^2}$$

and

$$SE(p_i) = \frac{RSE(p_i) \times p_i}{100}$$

for i =1,2

Where the relative standard error (RSE) was unknown, it was calculated from the margin of error (MOE) using the formula:

$$RSE(p_i) = \frac{\frac{MOE(p_i)}{1.96} \times 100}{p_i}$$

for i =1,2

If the value of the test statistic (z) is greater than 1.96, there is good evidence of a statistically significant difference in proportions at the 95% confidence level.

Confidence intervals were constructed by adding or subtracting the MOE from the estimate.

Multi-year comparisons

Comparable data points from the 2004–05, 2012–13 and 2018–19 NATSIHSs were analysed using linear regression. Linear regression uses the least squares method to calculate a straight line that best fits the data. The slope of the line (β_1) is an estimate of the average annual percentage change over the time period. This approach considers information contained in the series of proportions, rather than considering each time point separately.

To do this, 10,000 samples based on the estimated proportions and standard errors were simulated. The parameters were assumed to be normally distributed. Linear regression models based on each of the simulated samples were then fit using the regression equation:

$$\hat{Y}_i = \beta_0 + \beta_1 X_i + \varepsilon_i$$

where:

$\hat{Y}_i$ = the estimated proportion for observation i

β_0 = the y-intercept

β_1 = the regression slope

X_i = the time period (year) for observation i

ε_i = the random error for observation

The estimated distribution of the regression slope was obtained from the 10,000 models to calculate a 95% credible interval.

Comparing the distributions of ordered categorical variables

The Chi-square (X^2) test was calculated using the formula:

$$\chi_c^2 = \sum \frac{(O_i - E_i)^2}{E_i}$$

where:

- c = the degrees of freedom
- O = the observed value for category i
- E = the expected value for category i
- $\sum$ = the summation symbol

APPENDIX 3 – RESULTS TABLES

Table 2. Selected health characteristics of Aboriginal people living in NSW, 2012–13 and 2018–19*

Survey item	2012–13		2018–19			
	%	95% CI	%	95% CI	% change	P-value
HEALTH STATUS						
Self-assessed health status						
Excellent	13.8	10.5, 17.1	16.4	12.8, 20.0	+2.6	0.29
Very good	25.6	21.9, 29.3	29.9	25.3, 34.5	+4.3	0.15
Good	33.6	29.4, 37.8	29.8	25.3, 34.3	-3.8	0.23
Fair	19.1	29.4, 37.8	14.3	11.4, 17.2	-4.8	0.03
Poor	7.9	5.5, 10.3	9.1	6.2, 12.0	+1.2	0.53
Excellent/very good	39.4	35.5, 43.3	46.5	41.9, 51.1	+7.1	0.02
Fair/poor	27	23.3, 30.7	23.8	20.1, 27.5	-3.2	0.23
Number of current long-term conditions						
No current long-term condition	27.1	23.8, 30.4	29.5	25.7, 33.3	+2.4	0.35
One	20.5	17.6, 23.4	16.3	13.4, 19.2	-4.2	0.04
Two	14.7	12.4, 17.0	13.6	10.7, 16.5	-1.1	0.56
Three or more	37.7	34.1, 41.3	40.3	36.7, 43.9	+2.6	0.32
Has one or more current long-term health conditions	–	–	70.6	66.7, 74.5	–	–
Selected current long-term conditions						
Arthritis	–	–	13.2	11.2, 15.2	–	–
Asthma	–	–	18.6	15.3, 21.9	–	–
Back problems	–	–	13.6	11.5, 15.7	–	–
Cancer	–	–	1.1	0.4, 1.8	–	–
Chronic obstructive pulmonary disease	–	–	4.5	3.1, 5.9	–	–
Diabetes mellitus	–	–	6.3	4.7, 7.9	–	–
Ear/hearing problems	–	–	13.4	11.3, 15.5	–	–
Eye/sight problems	–	–	38.1	34.7, 41.5	–	–
Heart, stroke and vascular disease	–	–	5.0	3.6, 6.4	–	–
Hypertension	–	–	8.7	6.8, 10.6	–	–
Kidney disease	–	–	1.5	0.5, 2.5	–	–
Mental and behavioural conditions	–	–	28.6	24.8, 32.4	–	–
Osteoporosis	–	–	3.1	1.9, 4.3	–	–

Survey item	2012–13		2018–19			
	%	95% CI	%	95% CI	% change	P-value
Number of selected chronic conditions						
No selected chronic conditions	–	–	49.3	45.5, 53.1	–	–
One	–	–	27.4	24.1, 30.7	–	–
Two	–	–	11.7	9.2, 14.2	–	–
Three or more	–	–	11.8	9.7, 13.9	–	–
Has one or more selected chronic conditions	–	–	51.1	47.4, 54.8	–	–
Psychological distress						
Low/moderate psychological distress (5-11)	–	–	68.5	64.1, 72.9	–	–
High/very high psychological distress (12-15)	31.2	26.5, 35.9	29.9	25.6, 34.2	-1.3	0.69
Disability status						
Has a disability or restrictive long-term health condition	–	–	28.3	25.0, 31.6	–	–
Has a profound/severe core activity limitation	–	–	8.2	6.1, 10.3	–	–
Does not have a disability or restrictive long-term health condition	–	–	71.8	68.4, 75.2	–	–
HEALTH RISK FACTORS						
Body Mass Index						
Underweight/normal	–	–	26.0	21.2, 30.8	–	–
Overweight/obese	70.6	66.4, 74.8	73.6	68.7, 78.5	+3.0	0.36
Blood pressure						
Low/normal blood pressure	–	–	68.5		–	–
High blood pressure	–	–	23.1	19.2, 27.0	–	–
Alcohol consumption						
Did not consume alcohol in the last 12 months/have never consumed	–	–	23.3	19.4, 27.2	–	–
Consumed alcohol in the last 12 months	–	–	74.0	69.9, 78.1	–	–
Did not exceed single occasion risk guidelines	–	–	20.1	16.0, 24.2	–	–
Exceeded single occasion risk guidelines	55.3	51.8, 58.8	53.8	48.6, 59.0	-1.5	0.64
Did not exceed lifetime risk guidelines	–	–	27.4	22.8, 32.0	–	–
Exceeded lifetime risk guidelines	17.7	14.9, 20.5	19.8	15.3, 24.3	+2.1	0.44
Consumed alcohol in the last week	–	–	47.4	42.6, 52.2	–	–
Physical activity						
Met guidelines	–	–	12.8	9.2, 16.4	–	–
Did not meet guidelines	–	–	87.4	83.8, 91.0	–	–
No physical activity in the last week	–	–	22.3	17.8, 26.8	–	–

Survey item	2012–13		2018–19			
	%	95% CI	%	95% CI	% change	P-value
Daily fruit and vegetable consumption						
Adequate daily fruit consumption	–	–	43.0	38.5, 47.5	–	–
Adequate daily vegetable consumption	–	–	4.7	2.7, 6.7	–	–
Adequate daily fruit or adequate daily vegetable consumption	–	–	44.3	39.9, 48.7	–	–
Adequate daily fruit and adequate daily vegetable consumption	–	–	2.7	1.2, 4.2	–	–
Inadequate daily fruit and vegetable consumption	–	–	96.6	95.1, 98.1	–	–
Smoker status						
Current daily smoker	–	–	38.7	33.9, 43.5	–	–
Ex-smoker	–	–	25.2	20.9, 29.5	–	–
Never smoked	–	–	34.3	29.6, 39.0	–	–

*Comparable data for 2012–13 were only available for self-assessed health status, number of current long-term conditions, and certain values of alcohol consumption, BMI and psychological distress.

Table 3. Changes in selected health characteristics of Aboriginal people living in NSW, 2004–05, 2012–13, and 2018–19

Survey item	2004–05		2012–13		2018–19			
	%	95% CI	%	95% CI	%	95% CI	Average annual change (%)	95% credible interval
Self-assessed health								
Excellent/very good	42.7	37.4, 48.0	39.4	35.5, 43.3	46.5	41.9, 51.1	0.23	-0.28 to 0.72
Good	34.2	30.0, 38.4	33.6	29.4, 37.8	29.8	25.3, 34.3	-0.30	-0.73 to 0.13
Fair/poor	23.1	19.4, 26.8	27.0	23.3, 30.7	23.8	20.1, 27.5	0.08	-0.31 to 0.45
Number of current long-term conditions								
0	31.1	28.2, 34.0	27.1	23.8, 30.4	29.5	25.7, 33.3	-0.14	-0.47 to 0.20
1	17.5	14.3, 20.7	20.5	17.6, 23.4	16.3	13.4, 19.2	-0.06	-0.37 to 0.25
2	14.8	12.5, 17.1	14.7	12.4, 17.0	13.6	10.7, 16.5	-0.08	-0.35 to 0.18
3 or more	46.9	41.2, 52.6	37.7	34.1, 41.3	40.3	36.7, 43.9	-0.51	-1.00 to -0.02

Table 4. Changes in the distribution of proportions in categorical health characteristics, 2012–13 to 2018–19

Survey item	2012–13	2018–19	
	N	N	P-value
HEALTH STATUS			
Self-assessed health status			<0.001
Excellent	17,700	29,600	
Very good	32,700	54,000	
Good	43,700	53,700	
Fair	24,500	25,900	
Poor	10,100	16,500	
Excellent/very good	50,400	84,000	<0.001
Fair/poor	34,600	43,000	
Number of current long-term conditions			<0.001
No current long-term condition	54,500	134,000	
One	41,100	74,400	
Two	29,500	31,900	
Three or more	75,800	32,100	

Table 5. Selected health characteristics from the 2018–19 NATSIHS and the 2017–2018 NSW PHS (Aboriginal respondents)

Survey item	2018 NSW PHS		2018–19 NATSIHS			
	%	95% CI	%	95% CI	% difference	P-value
Body Mass Index						
Overweight/obese	72.7	64.7, 80.7	73.6	68.7, 78.5	+0.9	0.85
Smoker status*						
Current daily smoker	22.7	17.5, 27.9	38.7	33.9, 43.5	+16.0	<0.001
Ex-smoker	27.0	21.9, 32.1	25.5	20.9, 29.5	-1.8	0.66
Never smoked	38.3	32.6, 43.9	34.3	29.6, 39.0	-4.0	0.28
Daily fruit and vegetable consumption						
Adequate daily fruit consumption	24.9	17.3, 32.4	43.0	38.5, 47.5	+18.1	<0.001
Adequate daily vegetable consumption	3.8	0.2, 7.4	4.7	2.7, 6.7	+0.9	0.67

*NSW PHS data on smoking status combines data from 2017 and 2018

Table 6. Selected health risk factors for Aboriginal and non-Aboriginal people living in NSW (2017–18 and 2018–19)

Survey item	Aboriginal people		Non-Aboriginal people			
	%	95% CI	%	95% CI	% difference	P-value
Body Mass Index						
Overweight/obese	73.6	68.7, 78.5	65.4	63.6, 67.2	+8.2	0.002
Alcohol consumption						
Exceeded single occasion risk guidelines	53.8	48.6, 59.0	38.9	37.0, 40.8	+14.9	<0.001
Exceeded lifetime risk guidelines	19.8	15.3, 24.3	15.7	14.1, 17.3	+4.1	0.09
Smoker status						
Current daily smoker	38.7	33.9, 43.5	13.3	12.3, 14.3	+25.4	<0.001