

A Portrait of Health

Key Results of the 2006/07 New Zealand Health Survey



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MANATŪ HAUORA

Foreword

The New Zealand Health Survey is critical in providing reliable and up-to-date information on the health of New Zealanders and their use of health services.

The survey has produced a wealth of information that will continue to guide us as we plan for delivering health services to ensure we are meeting the needs of all New Zealanders. The survey tells us about our body size, our physical and mental health, our behaviours that can impact on health, and our use and experience of health care services.

This survey found that we are mostly in good health and we have excellent access to health care services. I'm encouraged to read that more people can see a GP when they need to, that daily smoking rates have decreased, and that the rate of increase in adult obesity is slowing.

The information gathered by the New Zealand Health Survey underpins the further development, implementation and evaluation of the Ministry's strategic policies and programmes, including some of the Health Targets. District Health Boards will also find the regional data useful for service planning, while researchers will want to conduct further analyses using the survey data.

This report, *A Portrait of Health*, is the first release of key descriptive findings from the 2006/07 New Zealand Health Survey, and includes comparisons with the previous health and nutrition surveys where possible.

Major innovations in the 2006/07 survey include a more efficient statistical design, a child health questionnaire, and an updated primary health care section. The 2006/07 survey extends and improves on earlier surveys while retaining comparability where possible.

The 2006/07 survey collected information on over 17,000 New Zealanders. I would like to acknowledge and thank all those who gave so freely of their time to answer a multitude of questions about their health and habits, and allowed themselves to be weighed and measured.

Although this information is of great relevance for policy and planning, the report cannot do justice to the richness of information potentially available from the survey. Rather, it is intended to draw the attention of users and encourage them to undertake or commission their own more detailed analyses once the confidentialised data set is available.

I invite readers to comment on the content of this report and how its findings might be translated into policy and improved health for New Zealanders.



Stephen McKernan
Director-General of Health
Ministry of Health

Authors

This report was written by Sarah Gerritsen, Dr Niki Stefanogiannis and Yvonne Galloway, with statistical analyses conducted by Miranda Devlin, Robert Templeton and Li-Chia Yeh. The authors are employed by Public Health Intelligence, the epidemiology group of the Ministry of Health.

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Dr Robert Clark (University of Wollongong, Australia), Robert Templeton (Public Health Intelligence), Alistair Gray (Statistics Research Associates) and Larry Hill (National Research Bureau Ltd).

Questionnaire content

Dr Martin Tobias, Maria Turley, Sarah Gerritsen, Dr Niki Stefanogiannis and Dr Jill McKenzie (Public Health Intelligence).

Independent Monitoring Group

Paul Brown (Statistics New Zealand), Dr Jackie Cumming (Victoria University of Wellington), Professor Chris Cunningham (Massey University), Associate Professor Robert Scragg (University of Auckland), Jeff Sheerin (Ministry of Social Development), Research Associate Professor J Elisabeth Wells (University of Otago) and Professor Peter Crampton (University of Otago).

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Executive Summary

The 2006/07 New Zealand Health Survey is the fourth national population-based health survey carried out by the Ministry of Health. The first Health Survey was in 1992/93, followed by surveys in 1996/97 and 2002/03.

The New Zealand Health Survey is particularly valuable as it collects information on New Zealanders' health that is not available through health system records. The 2006/07 Survey measured self-reported physical and mental health states (including diagnosed health conditions), modifiable risk and protective factors for health outcomes, and the use of health care services, for the non-institutionalised resident population of all ages.

The 2006/07 New Zealand Health Survey was carried out from October 2006 to November 2007, collecting information on 4921 children aged from birth to 14 years and 12,488 adults aged 15 years and over. The survey included 11,632 European/Other people, 5143 Māori, 1831 Pacific peoples and 2255 Asian people of all ages.

The survey results have been weighted in order to be representative of New Zealand's resident population living in permanent private dwellings. A final response rate of 68% was achieved for the adult questionnaire and 71% for the child questionnaire.

This report presents the key findings of the 2006/07 New Zealand Health Survey by gender, age group, ethnic group, neighbourhood deprivation and District Health Board area where possible. Results are compared with earlier surveys where possible for the total population and for Māori by gender.

Key findings for adult health

Overall, three out of five adults (60.6%) rated their own health as excellent or very good. European/Other men and women were more likely to report that their health was excellent or very good compared to all men and women in the population.

Use of primary health care services

Access to and the use of primary health care services by adults was high.

Nearly all adults (93.3%) had a primary health care provider (a general practice clinic, student health clinic, accident and medical centre or nurse clinic) they went to first when feeling unwell or injured, most of whom (84.7%) had seen a health care worker from this place in the previous 12 months.

The majority of adults had good experiences when they visited their primary health provider: 91.7% of adults who saw a primary health care provider in the previous 12 months reported that they had been treated with respect and dignity all of the time, 75.9% reported that their health care professional listened carefully to what they had to say all of the time, and 74.8% reported that their health care professional discussed their health care as much as they wanted all of the time.

From 2002/03 to 2006/07 there was a decrease in the proportion of men and women reporting an unmet need for general practitioner (GP) services. In 2006/07 6.3% of adults had been unable to see a GP when they needed to within the previous 12 months, with only 1.7% of adults reporting that they could not see a GP due to cost.

Increasingly, New Zealanders are using primary health care nurses (also known as practice nurses). In 2006/07 40.8% of adults had seen a primary health care nurse in the previous 12 months. There was an increase from 2002/03 to 2006/07 in the proportion of both men and women who saw a primary health care nurse alone (without seeing a GP at the same time) in the previous 12 months.

Public hospital use

One in twelve adults (8.4%) had used an emergency department at a public hospital in the previous 12 months, with young men aged 15–24 years the most likely to have used an emergency department.

One in five adults (18.3%) had used a service other than an emergency department at a public hospital in the previous 12 months, with Māori men and women more likely to have used a public hospital compared to men and women in the total population. For both men and women there was a significant increase in the use of public hospital services between 2002/03 and 2006/07, with the same pattern for Māori men and women.

Oral health

Half of adults (51.0%) had visited an oral health care worker in the previous 12 months, and a further 18% had visited an oral health care worker more than one year but less than two years before.

One in ten adults (10.0%) reported that they were unable to see an oral health care worker when they needed to in the previous 12 months. The main reason for this unmet need was cost, followed by an inability to get an appointment soon enough or at a suitable time.

Half of all adults (48.7%) had one or more teeth removed due to decay, abscess, infection or gum disease, with older adults and Māori and Pacific adults much more likely to have had a tooth removed.

Chronic health conditions

In 2006/07, two out of three adults (65.7%) had been diagnosed with a health condition that lasted, or was expected to last, six months or more. The most common health condition for adults was medicated high blood pressure (13.6%), followed by asthma (11.2%). Other common health conditions were ischaemic heart disease, arthritis, neck or back disorders, migraine and eczema.

The prevalence of nearly all health conditions increased as age increased, and were higher for Māori, compared to the total population.

Medicated high blood pressure and high cholesterol

Between 2002/03 and 2006/07 there was an increase in the prevalence of high blood pressure and high cholesterol for men (no increases for women). In 2006/07 one in seven adults (13.6%) had medicated high blood pressure and one in twelve adults (8.4%) had medicated high cholesterol.

Diabetes

Between 1996/97 and 2006/07 there was a small but not significant increase in the proportion of adults who were diagnosed with diabetes, but no change for Māori over this time period. In 2006/07, one in twenty adults (5.0%) had doctor-diagnosed diabetes, almost all of whom had type 2 diabetes.

Mental illness

One in ten adults (10.9%) had ever been diagnosed with a mood disorder (mostly depression), half of whom were taking medication for the condition at the time of the survey. One in twenty-three adults (4.3%) had ever been diagnosed with an anxiety disorder at the time of the survey. European/Other adults were more likely to be diagnosed with a mood or anxiety disorder than adults in the total population.

When answering a set of questions designed to detect psychological distress, one in fifteen adults (6.6%) were found to have a high or very high probability of a mood or anxiety disorder. Māori and Pacific adults were one and a half to two times more likely to have a high or very high probability of a mood or anxiety disorder compared to men and women in the total population.

Tobacco

In 2006/07 one in five adults (19.9%) were current smokers (including those who smoked less than daily). Māori adults had one and a half (for men) to two times (for women) the rate of smoking compared to men and women in the total population. Adjusted for age, 18.7% of adults smoked daily in 2006/07, which is a significant decrease from 23.4% of adults in 2002/03. This decreasing trend was also seen in Māori adults.

The 2006/07 New Zealand Health Survey also had a reliable measure of exposure to second-hand smoke in New Zealand homes. One in ten children (9.6%) and one in thirteen adult non-smokers (7.5%) were exposed to second-hand smoke in their home. Second-hand smoke exposure was more prevalent for children and young people, Māori children and adults, Pacific adults, and those living in neighbourhoods of high deprivation.

Hazardous drinking patterns

Overall, from 1996/97 to 2006/07 there was no change in the prevalence of hazardous drinking for adults. However, for Māori men there has been an increase since 2002/03 in hazardous drinking patterns.

In 2006/07 one in seven adults (17.7%), including half of men aged 18–24 years (53.6%), had a potentially hazardous drinking pattern.

Nutrition

From 1997 to 2006/07 there was an increasing trend in the prevalence of adequate fruit intake for both men and women, but a decline in the proportion of men and women who consumed the recommended three or more servings of vegetables a day. Adults living in areas of high neighbourhood deprivation were less likely than adults living in areas of low deprivation to meet the recommendations of two servings of fruit and three servings of vegetables per day.

Physical activity

Half of all adults (50.5%) reported that they were regularly physically active, meaning they did at least 30 minutes of physical activity a day on five or more days in the previous week. One in seven adults (15.0%) were sedentary, reporting less than 30 minutes of physical activity per week. From 2002/03 to 2006/07 there was an increase in sedentary behaviour for both men and women.

Body size

There was an increase in the prevalence of obesity for adults from 1997 to 2006/07, but the rate of increase appears to be slowing, with no statistically significant increase from 2002/03 to 2006/07 for both men and women. For Māori adults, there was no change in the prevalence of obesity from 1997 to 2006/07. In 2006/07 one in three adults (36.1%) were overweight and a further one in four (26.5%) were obese.

Key findings for child health

Overall, nine out of ten (87.2%) parents rated their child's health as excellent or very good.

Use of primary health care services

Access to and the use of primary health care services by children was very high. Nearly all children (97.4%) had a primary health care provider (a GP clinic, accident and medical centre or nurse clinic) that their parents took them to first when the child was feeling unwell or injured. In terms of attendance, 79.2% of children had seen a GP in the previous 12 months and 44.7% had seen a primary health care nurse in the previous 12 months.

Between 1996/97 and 2006/07 there was an increase in the proportion of under six-year-olds whose last visit to a GP was free (from 55.5% to 67.0%).

Few children (4.0%) were unable to see a GP when they needed to in the previous 12 months, with the main reason for this being an inability to get an appointment. Only 0.8% of children were unable to see a GP because of cost in the past 12 months. However, Māori children were more than twice as likely to be unable to see a GP because of cost compared to all children.

Public hospital use

In 2006/07, one in twelve children (8.2%) had used an emergency department at a public hospital in the previous 12 months, and one in five (18.2%) had used a service other than an emergency department at a public hospital.

Oral health

Use of oral health care services for children, particularly those aged 5–14 years, was high. Four out of five children aged 2–14 years (80.4%) had visited an oral health care worker in the past 12 months, and a further 9.4% had visited an oral health care worker more than one year but less than two years before. Pacific and Asian children were less likely to have seen an oral health care worker in the previous 12 months compared to children in the total population.

Nearly all children (92.4%) aged 2–4 years had never had a filling, but this decreased to half of children (48.2%) aged 5–9 years, and then to one in three children (29.6%) aged 10–14 years.

One in nine children aged 2–14 years (11.3%) had one or more teeth removed due to decay, abscess, infection or gum disease.

Chronic health conditions

New Zealand children are generally healthy. One in three children (36.5%) had been diagnosed by a doctor with a health condition that lasted or was expected to last six months or more.

Asthma was the most common health condition for children, with one in seven children aged 2–14 years (14.8%) taking medication for asthma. Other common health conditions for children were eczema (14.1%) and all types of allergies (6.2%).

Discipline

Physical punishment was one of the least used forms of discipline in the previous four weeks, with one in ten children aged from birth to 14 years (10.4%) having experienced physical punishment by their primary caregiver in that time period. Children aged 2–4 years, and Māori and Pacific boys were the most likely to experience physical punishment.

One in twenty-two primary caregivers (4.5%) considered physical punishment to be an effective form of discipline, and fewer than one in three who had used physical punishment in the previous four weeks (29.8%) considered it to be effective.

Infant feeding

Nine out of ten children (87.8%) were ever breastfed, for an average time of eight and a half months. 72.9% of under five year olds were exclusively breastfed at six weeks of age, declining steadily to 55.8% at three months, then declining further to 7.6% at six months. One in ten children (10.6%) were given solids earlier than recommended (before four months of age), with children living in areas of high deprivation the most likely to be given solids early.

Nutrition

Nine out of ten children (87.8%) ate breakfast at home every day in the previous week. Most children (63.6%) had at least one fizzy drink in the previous week, with 19.6% having had three or more fizzy drinks in that week. Most children (70.9%) ate fast food in the previous week, with 7.2% having eaten fast food three times or more during that week.

For these nutrition indicators, older children (10–14 years old), Māori and Pacific girls and boys, and children living in neighbourhoods of high deprivation had poorer nutritional behaviour compared to other children.

Physical activity

Less than half of children (47.0%) usually used active transport (walking, biking or another form of physical activity) to get to and from school. Parents reported the main reasons why their children did not use active transport to school were that they lived too far from school, they were concerned about traffic, and they were worried about other dangers aside from traffic.

Two out of three children (64.1%) aged 5–14 years usually watched two or more hours of television a day. Māori boys and girls were more likely to watch two or more hours of television a day compared to boys and girls in the total population.

Body size

Most New Zealand children aged 2–14 years (67.9%) had a body mass index in the normal range. One in five children (20.9%) were overweight and a further one in twelve (8.3%) were obese.

From 2002 to 2006/07 there was no change in the proportion of New Zealand school-aged children who were obese.

Conclusion

This survey found the majority of New Zealand children and adults are in good health and have excellent access to health care services. Most notably, the proportion of adults who were unable to see a GP when they needed to in the previous 12 months has halved and the daily smoking rate has dropped since 2002/03. Other positive trends were a slowing in the rate of increase of obesity in adults and no change in obesity for Māori adults since 1997. There was no change in the prevalence of obesity for children since 2002.

However, there were still a considerable number of children and adults who did not meet healthy behaviour recommendations (such as doing regular physical activity, eating well and being smokefree). There were also increased prevalences of some common health conditions, such as high blood pressure and high cholesterol for men since 2002/03, although this may be due to better detection and treatment in primary health care services.

Most concerning is the persistence of large disparities across a range of risk factors and health outcomes for Māori and Pacific peoples compared to the total population, and also for children and adults living in neighbourhoods of high socioeconomic deprivation compared to those living in neighbourhoods of low deprivation. Even though this survey showed significant improvements in access to health care services, reducing inequalities remains an important challenge for both the health system and wider society in New Zealand.

These key findings from the 2006/07 New Zealand Health Survey and the comparisons with earlier surveys, alongside other data sources, provide information for the further development of many health policies and programmes. Appendix 1 contains an overview of the key results from this survey.

A Portrait of Health is the first of many publications that utilises 2006/07 New Zealand Health Survey data. Policy analysts, planners, non-governmental organisations and academic researchers are encouraged to undertake or commission their own analyses of the Health Survey data.

Chapter 1: Introduction and Methods

Overview of the survey

The 2006/07 New Zealand Health Survey was carried out from October 2006 to November 2007, collecting information on over 17,000 New Zealanders (4921 children aged from birth to 14 years and 12,488 adults aged 15 years and over). The survey included 11,632 European/Other people, 5143 Māori, 1831 Pacific peoples and 2255 Asian people of all ages.

The New Zealand Health Survey measures self-reported physical and mental health status (including doctor-diagnosed health conditions), risk and protective behaviours for health outcomes, and the use of health care services, among the usually resident New Zealand population living in private dwellings.

A final response rate of 68% was achieved for the adult questionnaire and 71% for the child questionnaire, with good participation by Māori and Pacific peoples. All results have been weighted in order to be representative of New Zealand's estimated resident population living in permanent private dwellings at 31 June 2007.

This chapter answers the following questions:

- Why do a survey?
- What questions were asked?
- How were survey participants selected?
- Who agreed to take part?
- How does the survey represent the total population?
- What has been analysed and reported?
- What is the quality of these results?
- How can readers access more survey results?

Why do a survey?

The Ministry of Health repeats the New Zealand Health Survey at regular intervals to monitor changes in the health of the population. The 2006/07 New Zealand Health Survey is the fourth such survey. Previous New Zealand Health Surveys were conducted in 1992/93, 1996/97 and 2002/03.

The New Zealand Health Survey collects information that cannot be obtained more effectively or efficiently through other means, such as analyses of hospital administrative records, disease registries or epidemiological research. For most of the topics in this report the New Zealand Health Survey is the best source of information at a population level.

Objectives of the 2006/07 New Zealand Health Survey

The five objectives of the survey are to:

1. measure the health status of New Zealanders and the prevalence of selected health conditions

2. measure the prevalence of risk and protective factors associated with these health conditions
3. measure the use of health services, including barriers to accessing health services
4. examine differences between population groups (as defined by age, gender, ethnicity and socioeconomic position)
5. monitor trends in the health status, risk and protective factors and health service use of the population over time.

The New Zealand Health Survey is a key component of the New Zealand Health Monitor, an integrated programme of household surveys and cohort studies managed by Public Health Intelligence (PHI), which monitors the health of the New Zealand population (Ministry of Health 2005a). It is also an important element of the cross-sector Programme of Official Social Statistics led by Statistics New Zealand.¹

PHI, the epidemiology group of the Ministry of Health, developed the objectives and content of the 2006/07 New Zealand Health Survey, in consultation with stakeholders, an advisory group and an independent monitoring group. The data collection was carried out by a specialist survey company, National Research Bureau Ltd (NRB), which undertook the interviewing and prepared the data sets. PHI led the analysis and dissemination of the data.

What questions were asked?

The 2006/07 New Zealand Health Survey adult (15 years and over) and child (birth to 14 years) questionnaires are available online.² The questions asked to survey participants are also presented in the topic introductions throughout this report.

The content of the New Zealand Health Survey has remained the same over time, where possible, to allow for comparisons between surveys. However, some changes have been made between surveys to reflect current monitoring requirements and changes in definitions or health policy.

The main difference between the 2006/07 New Zealand Health Survey and previous Health Surveys is that this survey is the first to ask comprehensive questions on child health (the 1992/93 survey had a small number of questions regarding child health, and the 1996/97 survey included questions on child health service utilisation).

Child questionnaire

For the 2006/07 New Zealand Health Survey, the primary caregiver of each selected child participant, that is, the person with day-to-day responsibility for the care of the child, was invited to answer the child questionnaire. In over 90% of interviews, the primary caregiver was a biological parent (mostly the biological mother). For ease of reporting, primary caregivers are usually referred to as 'parents' throughout this report.

It is envisaged that future New Zealand Health Surveys will continue to include a comprehensive child health questionnaire, building on the content of the 2006/07 New Zealand Health Survey (Table 1.1).

1 *About Official Statistics*, www.statisphere.govt.nz/about-official-statistics/default.htm.

2 www.moh.govt.nz/moh.nsf/indexmh/portrait-of-health

Table 1.1: Summarised content of the 2006/07 New Zealand Health Survey child questionnaire (answered by the primary caregiver for children aged from birth to 14 years)

Module	Topics	Details
Health status and development	Chronic conditions, general health in past 4 weeks (physical and emotional/behavioural), family cohesion, discipline	Prevalence of ever-diagnosed condition, age at diagnosis, treatment, CHQ-PF28 general health questionnaire
Health service utilisation	Primary health care provider use, general practitioners, nurses, oral health care professionals, medical specialists, prescriptions, other health care professionals, telephone health advice, hospital use	Use in past 12 months, frequency of contact, reasons for visit, unmet need and barriers to access
Health risk and protective factors	Breastfeeding, eating breakfast at home, fizzy drink and fast food intake, active transport to school, television watching, exposure to second-hand smoke	Prevalence of risk and protective factors
Socio-demographics	Gender, age, ethnicity, language, country of birth, early childhood care and education, shared parenting arrangements, primary caregiver's relationship to child, age, education, income support, labour status, and household characteristics	Standard questions and classifications
Anthropometry	Height and weight measurements (if 2 years and over) and waist circumference measurements (if 5 years and over)	Using standardised equipment and procedures

Adult questionnaire

The adult questionnaire content is similar to earlier New Zealand Health Survey questionnaires (Table 1.2). Key differences between the 2002/03 and 2006/07 adult questionnaires are:

- a more detailed primary health care section, covering accessibility, comprehensiveness of services, and continuity and co-ordination of care by primary health care providers, as well as experiences of primary health care
- an expanded oral health care section
- additional questions on mental health conditions
- new chronic pain questions
- revised tobacco questions (to align with the New Zealand Tobacco Use Survey)
- replacement of the 2002/03 problem gambling screen with an internationally comparable screen (the Canadian Problem Gambling Index)

- addition of the Economic Living Standards Index (ELSI-SF) and New Zealand Index of Socioeconomic Deprivation for Individuals (NZiDep)³
- removal of the World Health Organization Long Form (WHO-LF) health status questions
- more detailed collection of household and family composition information
- updated anthropometry (height, weight and waist circumference collection) protocols and equipment.

Table 1.2: Summarised content of the 2006/07 New Zealand Health Survey adult questionnaire (answered by adults aged 15 years and over)

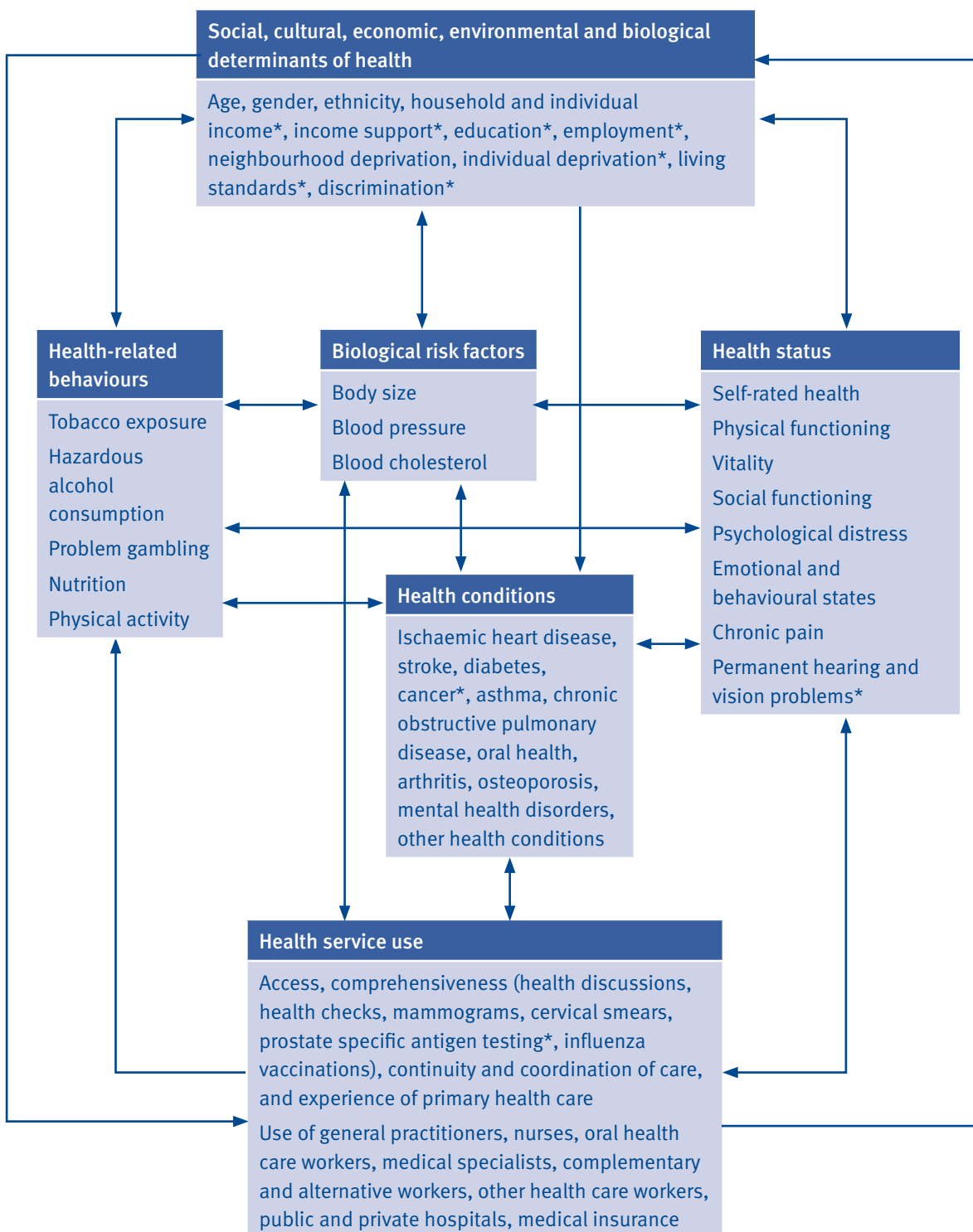
Module	Topics	Details
Chronic health conditions	Heart disease, stroke, diabetes, asthma, chronic obstructive pulmonary disorder, arthritis, spinal disorders, osteoporosis, cancer, mental health conditions, other long-term conditions, chronic pain	Prevalence of ever-diagnosed condition, age at diagnosis, treatment
Health service utilisation	Primary health care provider use, general practitioners, nurses, oral health care professionals, medical specialists, prescriptions, complementary and alternative health professionals, other health care professionals, telephone health advice, hospital use	Use in previous 12 months, frequency of contact, reasons for visit, unmet need and barriers to access, measures of service for primary health care
Health risk and protective factors	High blood pressure, high blood cholesterol, mammograms, cervical smears, prostate specific antigen testing, physical activity, tobacco smoking, second-hand smoke exposure, vegetable and fruit intake, alcohol use and hazardous drinking, gambling participation and problem gambling	Prevalence of risk and protective factors
Health status	General health in past 4 weeks (physical and mental health), psychological distress	SF-36 Health Status Questionnaire and K10 Psychological Distress Scale
Socio-demographics	Gender, age, ethnicity, language, country of birth, education, income support, labour status, income, racial discrimination, medical insurance, household characteristics, living standards and deprivation characteristics	Standard questions and classifications
Anthropometry	Height, weight and waist circumference measurements	Using standardised equipment and procedures
Re-contact	Permission to re-contact within 2 years, contact details	

³ Analyses using ELSI and NZiDep have not been included in this report, however they are planned and will be published at a later date.

Overview of content

Figure 1.1 illustrates the relationships between the content of the questionnaires and the topics included in this report. Not all of the information collected in the 2006/07 New Zealand Health Survey was able to be presented in this report. Topics not included are signalled with an asterisk (*), and it is expected that the results and further analyses of these topics will be released at a later date.

Figure 1.1: Relationships between New Zealand Health Survey content areas



Key: * Not included in this report. See *How can readers access more survey results?* section later this chapter.

How were survey participants selected?

Overview of the sample design

Like earlier New Zealand Health Surveys, the 2006/07 New Zealand Health Survey used a multi-stage, stratified, probability proportionate to size (PPS) sample design, with increased sampling of some ethnic groups, primarily through a 'screened' sample. The sample design was developed by the Centre for Statistical and Survey Methodology, University of Wollongong, New South Wales, Australia.

Small geographic areas (meshblocks) were randomly chosen throughout New Zealand, with larger areas having a slightly increased chance of selection. These areas were randomly allocated to the four seasons of the year to minimise seasonality bias. Interviewers began at a random point in each area and selected every kth house as the 'core' sample households. In core households, one adult aged 15 years and over, and one child aged from birth to 14 years old, if any, were randomly selected for the survey. Interviewers then selected every jth house in each area as the 'screened' sample households, to boost Māori, Pacific and Asian sample sizes. In screened households, adults and children were only eligible if the participants identified with a Māori, Pacific or Asian ethnicity (determined using the Census ethnicity question and Statistics New Zealand Ethnicity Classification Level 4). There was no substitution of households or participants if the selected household or participant refused, was not contactable or was unavailable.

This sample design ensured that:

- robust national estimates for key health behaviours and outcomes could be produced
- all population groups of interest – in particular Māori, Pacific and Asian populations, and District Health Board (DHB) area populations – were included in sufficient numbers to enable estimates that are accurate for all groups
- interviewer travel costs were reduced because the sample was geographically clustered or 'clumped'.

A full methodology report for the 2006/07 New Zealand Health Survey is available online at <http://www.moh.govt.nz/moh.nsf/indexmh/portrait-of-health>.

Data collection

Interviews were conducted from October 2006 to the end of November 2007. The 2006/07 New Zealand Health Survey interview team consisted of professional social research interviewers, employed by NRB.

The New Zealand Health Survey is voluntary, relying on the goodwill of participants, and consent is obtained without coercion or inducement. Adults and the primary caregivers of children selected for the survey were given an invitation letter from the Ministry of Health and an information brochure, available in 11 languages. If they agreed to take part, they were asked to sign a consent form. The consent form included a request for an interpreter, if required, and it was possible to match participants and interviewers by ethnicity and gender when requested.

Interviews were conducted in participants' homes, at a time to suit participants. Interviewers typed responses directly into a laptop computer, and show cards with predetermined response categories were used to assist the participant, where appropriate. The height, weight and

waist measurements were taken following protocols developed specifically for the New Zealand Health Monitor surveys, using professional weighing scales, a portable stadiometer, and a standard anthropometric measuring tape.

Adult interviews were approximately 60 minutes long and child interviews (with the primary caregiver) were approximately 40 minutes long.

The methodology report contains more information on data collection procedures (available from www.moh.govt.nz/moh.nsf/indexmh/portrait-of-health).

Ethical approval

The New Zealand Health and Disability Multi-Region Ethics Committee granted approval for the 2006/07 New Zealand Health Survey (MEC/06/02/004), confirming that the study met the following ethical principals:

- validity of research
- minimisation of harm
- privacy and confidentiality
- informed consent
- cultural and social responsibility.

Who agreed to take part?

A total of 12,874 households from throughout New Zealand participated in the 2006/07 New Zealand Health Survey, resulting in interviews with 12,488 adults (aged 15 years and over) and the parent or caregiver of 4921 children (aged from birth to 14 years).

The adult sample included 3160 Māori, 1033 Pacific, 1513 Asian and 8593 European/Other adults⁴. The child sample included 1983 Māori, 798 Pacific, 742 Asian and 3039 European/Other children. Young people (aged 15–24 years) and men aged 25–64 years were proportionately less likely to participate in the New Zealand Survey, but sufficient numbers in these groups still took part to provide accurate results for the key findings presented in this report.

Appendix 2 contains the survey sample size and population counts for the groups referred to in this report.

For more information on the 2006/07 New Zealand Health Survey sample, please refer to the methodology report (www.moh.govt.nz/moh.nsf/indexmh/portrait-of-health).

How does the survey represent the total population?

To ensure that no group is under- or over-represented in estimates from the survey, ‘weights’ were calculated for every survey participant. The weight can be thought of as the number of population members represented by a given survey participant.

⁴ Total response standard output for ethnic groups has been used, so these numbers will not add to the total sample size. See page 9 for more information on total response standard output.

Calibrated weighting

A method called ‘calibrated weighting’ (Deville and Sarndal 1992) was used for the 2006/07 New Zealand Health Survey. This results in:

- the weight being close to the inverse of the probability of selection of each participant
- the aggregated weights matching the known population counts for a range of sub-populations (eg, age-by-sex categories).

Calibrated weights were calculated using population counts from the 2006 Census, broken down by age, gender, DHB area and ethnic group. These variables were included in the calibration weighting because they are related to many health conditions and non-response, and are the output classifications for the survey. By using these variables in the calibration, if the sample differed from the population according to any of these categories, then the weights corrected for the discrepancy. For example, if young men are under-represented in the sample relative to the census counts (as was the case due to non-response), the weights for young male participants are increased so that this group is correctly represented in estimates.

Weights were used in all of the results presented in this report, so that estimates of population totals, averages and proportions can be said to be representative of the total resident population of New Zealand.

The online methodology report contains more information on weighting the 2006/07 New Zealand Health Survey sample.

What has been analysed and reported?

This report presents the key descriptive results from the 2006/07 New Zealand Health Survey: this includes data on topics that align with the Ministry of Health’s priority monitoring and policy areas, as stated in the New Zealand Health Strategy (Minister of Health 2000) and the Health Targets (Minister of Health 2007).

Data in this report have been presented for the total child and/or adult population, by gender and age group. Analyses by ethnic group, neighbourhood deprivation (NZDep2006), DHB area, and comparisons over time have also been reported, where possible. Important information about these analyses is discussed below.

Gender analyses

Gender is self-defined in the 2006/07 New Zealand Health Survey and therefore in a very small number of cases may not be the biological sex at birth of the participant.

Where statements regarding differences between genders are made in this report, the data have been age standardised to account for the different age structures of the male and female populations.⁵

Appendix 2 contains the survey sample size and population counts for boys and girls (0–14 years) and men and women (15 years and over).

⁵ For more information on age-standardisation see page 16.

Age group analyses

The participant's date of birth was used to ascribe the appropriate age group. In the small number of cases where this was not possible, age or 10-year age group was collected from the participant. There were no missing data on the dataset for age group.

For ease of reporting, children aged from birth to 14 years have been referred to as boys and girls, and adults aged 15 years and over have been referred to as men and women. The total child population refers to boys and girls aged from birth to 14 years, unless otherwise stated, and the total adult population refers to men and women aged 15 years and over, unless otherwise stated.

In most instances, child data have been presented by five-year age group (0–4, 5–9, 10–14 years) and adult data have been presented by 10-year age group. For some topics these age groups were not appropriate, so different age groups have been used in analyses and stated specifically in the text.

Age group analyses have been presented throughout this report in graphs using unadjusted data, by gender.

Appendix 2 contains the survey sample sizes and population counts of each age group.

Ethnic group analyses

Ethnicity is a self-defined concept. Participants in the 2006/07 New Zealand Health Survey were able to report affiliation with multiple ethnicities, using the Statistics New Zealand standard ethnicity question and Level 4 response categories.⁶ Only three adult participants (0.02%) and one parent of a child participant (0.02%) refused the ethnicity question.

For this report, participants' ethnicity (Statistics New Zealand Level 4) was output to the following ethnic groups: European/Other, Māori, Pacific, and Asian.⁷ The 'Other' ethnic group (comprising mainly Middle-Eastern, Latin-American and African ethnicities) has been combined with 'European' to avoid small number problems. The small number of participants who reported 'New Zealander' as their ethnicity (0.9% of adults and 0.7% of children) or refused the ethnicity question (noted above) have been included in the European/Other group.

Participants were counted in each of the four output ethnic groups, and so the sum of the ethnic group populations exceeds the total New Zealand population. This is referred to as 'total response standard output' by Statistics New Zealand. Total response standard output is the most appropriate way to represent valid multiple ethnic group data in the restricted space of this report (Callister et al 2007a). A total of 1578 adult participants (12.7% of adults) and 1390 child participants (28.3% of children) have been assigned to more than one of the four ethnic groups in this report, based on their self-reported multiple ethnicities.

In this report unadjusted prevalences by ethnic group for some indicators have been presented to show the burden on different population groups, and include estimates of the number of people affected in each group.

Age standardised rate ratios (SRR) have also been presented after the unadjusted rate to compare each ethnic group with the total New Zealand population by gender (the reference group). For example, Pacific men are compared to men in the total population. The reference

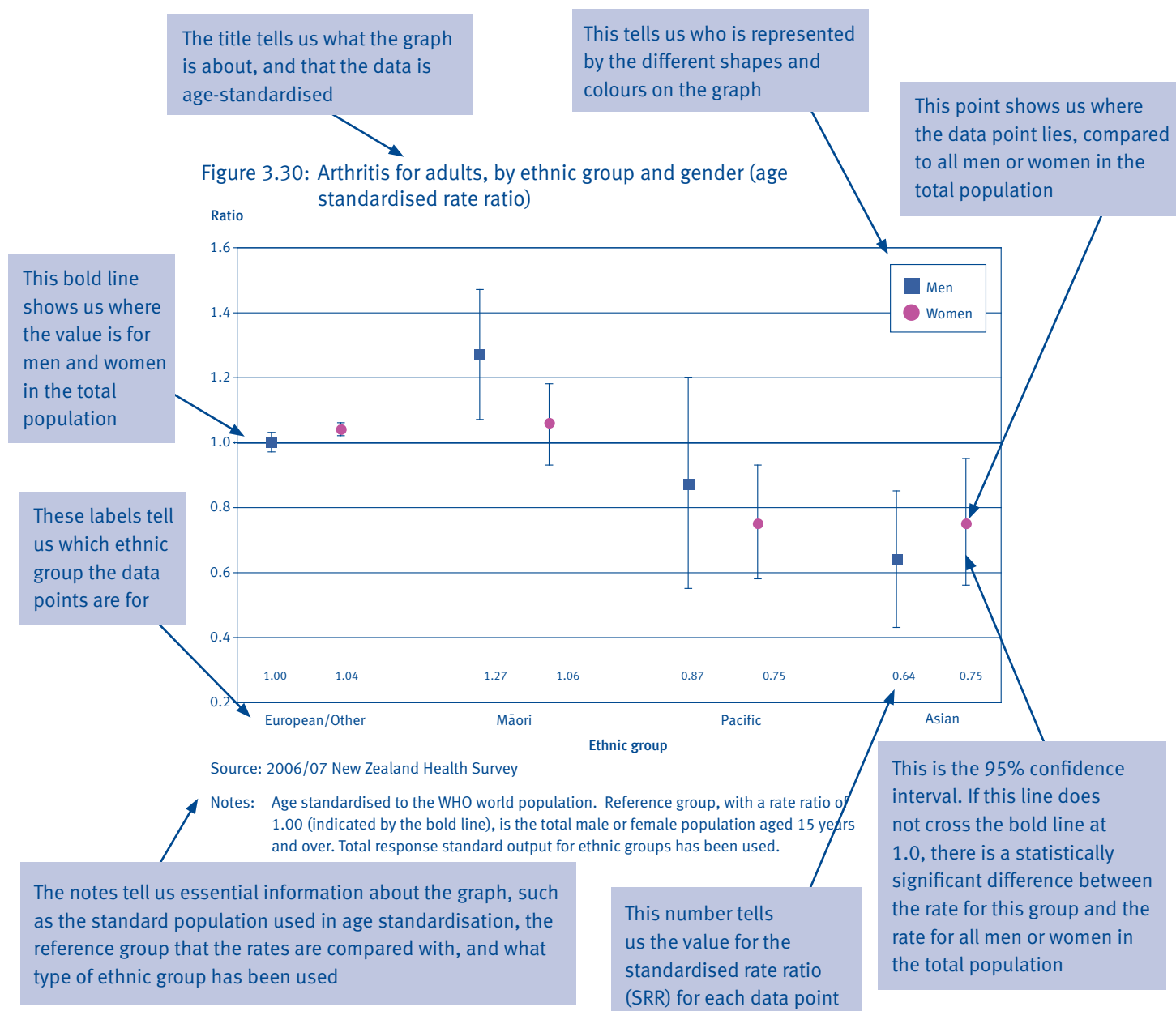
⁶ The methodology report contains more information on collection of ethnicity data in the New Zealand Health Survey (www.moh.govt.nz/moh.nsf/indexmh/portrait-of-health).

⁷ More information on the ethnicities included in the output ethnic groups can be found at www.stats.govt.nz/statistical-methods/classifications-and-related-statistical-standards/ethnicity/default.htm.

group does not represent ‘the best health outcome group’, but provides an indication of the current level in New Zealand for comparison.

Ethnic groups should not be compared with each other (eg, comparing Māori and Pacific data) using either the unadjusted rates or the standardised rate ratios. Instead, comparisons should be made with the reference population as explained in Figure 1.2.

Figure 1.2: How to interpret rate ratio graphs in this report



Ethnic group analyses with an independent comparison group (ie, Māori/non-Māori, Pacific/non-Pacific and Asian/non-Asian) are available in the online data tables⁸ and will be published in upcoming ethnic-specific publications from the Ministry of Health, such as the next *Tatau Kahukura: Māori Health Chart Book*. Readers should note that variation also occurs within the four aggregated ethnic groups presented in this report. The issue of variation within ethnic groups is explored in Pacific and Asian health publications by the Ministry of Health (Ministry of Health 2006a; Ministry of Health and Ministry of Pacific Island Affairs 2004).

8 www.moh.govt.nz/moh.nsf/indexmh/portrait-of-health - see Appendix 5.

Appendix 2 contains the survey sample sizes and population counts of each ethnic group.

Neighbourhood deprivation analyses

Data in this report have been presented by quintile of the 2006 version of the New Zealand Index of Deprivation (NZDep2006) as a proxy measure of socioeconomic position. NZDep2006 is an area-based index of deprivation that measures the level of socioeconomic deprivation for each neighbourhood (meshblock) according to a combination of the following 2006 Census variables: income, benefit receipt, transport (access to car), household crowding, home ownership, employment status, qualifications, support (sole-parent families), and access to a telephone (Salmond et al 2007).

The predecessors of NZDep2006 (NZDep91, NZDep96 and NZDep2001) have been validated. This means that the index accurately describes levels of deprivation in small areas and is highly correlated with key health outcomes and behaviours, such as mortality and smoking (Crampton et al 2004). The 3rd edition of the Atlas of Socioeconomic Deprivation in New Zealand will be published by the Ministry of Health in June 2008.

All analyses using NZDep2006 in this report have been adjusted for the differing age distributions within NZDep2006 quintile populations (page 16 has an explanation of age standardisation).

Appendix 2 contains the survey sample sizes and population counts of each NZDep2006 quintile group.

Other measures of socioeconomic position collected in the 2006/07 New Zealand Health Survey include: household income, individual income, education qualifications, employment status, income support (benefit receipt), individual-level deprivation (NZiDep), and economic standard of living (ELSI). Analyses using these other measures of socioeconomic position have not been included in this report, but analyses are planned and will be published at a later date.

District Health Board analyses

There are 21 DHBs in New Zealand, responsible for providing, or funding the provision of, health and disability services in their district. Key data from the 2006/07 New Zealand Health Survey, that is, data on topics aligned with the New Zealand Health Strategy, (Minister of Health 2000) and the Health Targets (Minister of Health 2007) have been presented in this report at the DHB level, where possible.

Appendix 2 contains the sample size and population counts for each DHB area and Appendix 3 contains a map of DHB areas.

Direct survey results from the 2006/07 New Zealand Health Survey were possible only for the larger DHBs (Waitemata, Auckland, Counties Manukau, Waikato and Canterbury). The remaining DHBs have been grouped according to population age and socio-demographic structure or shared service provision, to produce robust direct survey estimates with minimal sample error:

- Northland, Lakes, Hawke's Bay, Tairāwhiti and Whanganui
- Bay of Plenty, Taranaki and MidCentral
- Wairarapa, Hutt Valley and Capital and Coast
- Nelson Marlborough, West Coast, South Canterbury, Otago and Southland.

DHB-level analyses in this report are presented in table format. Table 1.3 provides a list of topics in this report that contain DHB-level estimates. Readers should look for + (higher) and – (lower) symbols in the data tables, which represent a statistically significant difference between DHB and national rates. DHB areas that do not have a symbol next to their rate are not statistically different from the national rate.

DHB analyses for this report have used a different method to that used to produce DHB-level data from the 2002/03 New Zealand Health Survey. However, comparisons between the 2002/03 and 2006/07 data are presented at PHIONline (an interactive geographic mapping website, www.phionline.moh.govt.nz), where the 2002/03 estimates have been updated using a comparable method. Adult data for the estimates in Table 1.3 have been presented on PHIONline for all DHBs using small area estimation techniques. Estimates for child data were not possible due to the small number of children sampled from each DHB in the survey. Small area estimation methodology and its application to New Zealand Health survey data are described in detail in the methodology report.

Table 1.3: Regional / DHB area data presented in this report

Topic	Indicator	Age group
Health behaviours and risk factors		
Infant feeding	Ever breastfed	0–14
Fizzy drink intake	Three or more fizzy drinks in the previous 7 days	2–14
Fast food intake	Fast food eaten 3 or more times in the previous 7 days	2–14
Television watching	Usually watched 2 or more hours of television per day	5–14
Tobacco exposure	Second-hand smoke exposure in children and non-smokers in their home	0–14, 15+
	Current smokers	15+
Alcohol use	Hazardous drinking	15+
Vegetable and fruit intake	Adequate vegetable intake	15+
	Adequate fruit intake	15+
Physical activity	Regular physical activity	15+
	Sedentary behaviour	15+
Body size	Obesity	2–14, 15+
Health conditions		
Blood pressure	Medicated high blood pressure	15+
Cholesterol	Medicated high blood cholesterol	15+
Ischaemic heart disease	Ever diagnosed with ischaemic heart disease (angina or heart attack)	15+
Stroke	Ever diagnosed with stroke	15+
Diabetes	Ever diagnosed with diabetes	15+
Asthma	Medicated asthma	2–14, 15+
Oral health	Never had a filling	2–14
	One or more teeth removed due to decay, abscess, infection or gum disease	2–14, 15+
Health status		
General health	Parent-rated or self-rated health as excellent or very good	0–14, 15+
Psychological distress	High or very high probability of having an anxiety or depressive disorder (K-10 score of 12 or more)	15+
Health service use		
Primary health care provider and general practitioner use (in previous 12 months)	Has a primary health care provider	0–14, 15+
	Saw a general practitioner	0–14, 15+
	Last visit to general practitioner was free	0–14, 15+
	Unmet need for a general practitioner visit	0–14, 15+
Oral health services	Visited an oral health care worker in previous 12 months	2–14, 15+
	Never seen an oral health care worker	2–14, 15+
	Unmet need for oral health care services in previous 12 months	2–14, 15+
Emergency department use	Emergency department use in the previous 12 months	0–14, 15+

Time trend analyses

Where possible, key findings from the 2006/07 New Zealand Health Survey have been compared with earlier New Zealand Health Survey data (1996/97 and 2002/03), as well as the 1997 National Nutrition Survey and the 2002 National Children's Nutrition Survey, where appropriate. The 1992/93 New Zealand Health Survey has not been included in the time trend analyses as it was a telephone survey and had a smaller sample size making it difficult to compare with more recent New Zealand Health Surveys.

To ensure as much comparability as possible with the 2006/07 New Zealand Health Survey data, all earlier data sets have been reanalysed and only identical questions or measurements have been analysed and presented. The methodology report (available at www.moh.govt.nz/moh.nsf/indexmh/portrait-of-health) contains information on the comparability of the survey data presented in the time trends, and Appendix 2 has the sample sizes for each survey used in the time trend analyses.

Statistical tests for difference have been used to assess changes in prevalence rates between surveys (ie, 95% confidence intervals and t-tests), and data are presented by gender for the total population where appropriate.

As a population group, Māori have the poorest health outcomes and highest mortality rate of any ethnic group in New Zealand (Blakely et al 2007; Robson and Harris 2007). It is therefore important to monitor progress towards addressing these disparities, and as a result, time trend data for the Māori population by gender have also been presented where possible.

Although European/Other, Pacific and Asian people also have poor outcomes for some indicators in this report, comparisons with earlier survey data for these ethnic groups have not been presented in the limited space available. Time trends for these ethnic groups may be explored in other publications.

The results presented in this report may be different from those in earlier publications due to:

- age standardisation of the data rather than presenting unadjusted rates
- total response standard output for ethnic groups being used in analyses rather than prioritised ethnic groups (where participants with multiple ethnicities are only counted once rather than in each reported ethnic group)
- differing age groups used in analyses
- changes in the definition of some variables (eg, a change in the BMI cut-off points for Māori and Pacific adults).

Direct comparisons with other data that are not included in the time trend analyses in this report need to be treated with caution due to differences in statistical methods used in the collection and analysis of data.

Table 1.4 provides a summary of the time trend topics and the survey data used in this report.

Table 1.4: Time series data presented in this report

Topic	Indicator	1996/97	2002/03	2006/07	Age group
Health behaviours and risk factors					
Tobacco use	Daily smoking	•	•	•	15+
Alcohol use	Hazardous drinking	•	•	•	15+
Vegetable and fruit intake	Adequate vegetable intake	• ¹	•	•	15+
	Adequate fruit intake	• ¹	•	•	15+
Physical activity	Regular physical activity		•	•	15+
	Sedentary behaviour		•	•	15+
Body size	Obesity and mean BMI		• ²	•	2–14
	Obesity and mean BMI	• ¹	•	•	15+
Health conditions					
Blood pressure	Medicated high blood pressure		•	•	15+
Cholesterol	Medicated high blood cholesterol		•	•	15+
Stroke	Ever diagnosed with stroke		•	•	15+
Diabetes	Ever diagnosed with diabetes	•	•	•	15+
Asthma	Medicated asthma		•	•	15–44
Oral health	Never had a filling		• ²	•	5–14
	One or more teeth removed due to decay, abscess, infection or gum disease		• ²	•	5–14
Arthritis	Ever diagnosed with arthritis		•	•	15+
Osteoporosis	Ever diagnosed with osteoporosis		•	•	15+
Health status					
General health	Self-rated health excellent or very good	•	•	•	15+
SF-36	SF-36 health scores	•	•	•	15+
Health service utilisation					
General practitioner use (in previous 12 months)	Saw a general practitioner (GP)	•		•	0–14
	Saw a GP	•	•	•	15+
	Median number of visits to a GP		•	•	15+
	Last visit to GP was free	•		•	0–14
	Last visit to GP was free	•	•	•	15+
	Unmet need for a GP	•		•	0–14
	Unmet need for a GP	•	•	•	15+
Prescriptions (in previous 12 months)	Uncollected prescriptions due to cost	•		•	0–14
	Uncollected prescriptions due to cost		•	•	15+
Primary health care nurse use	Saw a primary health care nurse in previous 12 months		•	•	15+

continued over page...

Topic	Indicator	1996/97	2002/03	2006/07	Age group
Health service utilisation					
Public hospital use (in previous 12 months)	Emergency department use	•		•	0–14
	Emergency department use	•	•	•	15+
	Use of other public hospital services	•		•	0–14
	Use of other public hospital services	•	•	•	15+
Private hospital use (in previous 12 months)	Use of private hospital services	•		•	0–14
	Use of private hospital services	•	•	•	15+
Medical insurance	Medical insurance coverage		•	•	15+

1 Data sourced from 1997 National Nutrition Survey

2 Data sourced from 2002 Children’s Nutrition Survey

Age standardisation

Unadjusted rates have been presented in this report for estimates of the prevalence in the total population and by age group. However, age is an important determinant of health, so populations with different age structures, (such as men and women, due to women having a longer life expectancy) will have different rates due to these age differences.

For this report, age standardisation was performed by the direct method using the World Health Organization (WHO) world population age distribution (Ahmad et al 2000). This statistical method of standardising for age has been used in analyses by gender, ethnic group and neighbourhood deprivation (NZDep2006), and for comparisons between the different health surveys. Results for children in this report have been age standardised to the under 15-year-old population, and results for adults have been age standardised to the 15-year-old and over population.

What is the quality of these results?

As a signatory to the Protocols of Official Statistics (Statistics New Zealand 1998), best-practice survey techniques have been employed throughout the 2006/07 New Zealand Health Survey. Many steps have been taken to ensure the data collected are as high quality and robust as possible, including the establishment of an advisory group and an independent monitoring group to direct questionnaire content and analyses of the survey. External peer-review of the sample design and this report has contributed to maintaining the high quality of the survey.

However, readers should be aware that errors can come about due to sampling (selection of only some people in a population) and for other reasons (referred to as non-sample errors). The minimising and quantifying of sampling errors and the prevention of non-sampling errors is discussed below.

Sample error and small sample numbers

Sample error results from selecting a small number of people (a sample) in the population to represent the entire population, and is influenced by the complex design of the survey (that is, that some people have a higher chance of selection than others). Consequently, results presented in this report may differ from the 'true' value that would have been produced if the questionnaire had been given to everyone in the population.

Ninety-five percent confidence intervals are used to represent the sample error for estimates. A 95% confidence interval means that there is a 95% chance that the true value of the estimate (if we were to ask the whole population) lies between the lower and upper confidence interval values. Ninety-five percent confidence intervals are presented in this report in brackets after estimates in the text, and as error bars in graphs.

Differences between estimates are said to be statistically significant when the confidence intervals for each rate do not overlap. Sometimes, even when there are overlapping confidence intervals the difference between the groups can be statistically significant, and so in this report any differences between two variables where the confidence intervals overlap were tested using a t-test. The significance of a t-test is represented by the p-value. If a p-value is below 0.05, then we are 95% confident the difference between the two estimates is statistically significant. In this report, t-test results appear in brackets after the analyses, rounded to two decimal places (p-value < 0.05).

Unless otherwise stated, all differences noted in the text in this report are statistically significant.

Small sample numbers can affect both the reliability and the confidentiality of results. Problems with reliability occur when the sample becomes too small to adequately represent the population from which it has been drawn. Problems with confidentiality can occur when it becomes possible to identify an individual, usually someone in a sub-group of the population within a small geographical area.

In order to ensure that the survey data presented are reliable and that the confidentiality of the participants is protected, data have only been presented when there are at least 30 people in the denominator (the population group being analysed). Care has been taken to ensure that no participant can be identified in the results.

Non-sample error

Non-sample errors arise primarily from coverage problems, measurement inaccuracies, non-response, or processing errors (explained in Table 1.5). Non-sample errors are extremely difficult to measure and therefore the effect of them on the quality of survey data is uncertain. Consequently, non-sample errors are prevented in surveys, where possible.

Table 1.5 summarises the steps taken to prevent or minimise non-sample error in the 2006/07 New Zealand Health Survey.

Table 1.5: Summary of actions taken to prevent non-sample error

Survey area	Type of error	Actions taken to prevent error
Coverage	Omissions, erroneous inclusions, duplications, misclassification of units in the survey frame	Statistics New Zealand’s geographical frame of census meshblocks was used to randomly select areas for interviewing (only excluding meshblocks with a very small number of households, and off-shore islands).
		Comprehensive training of interviewers was given regarding household inclusion / exclusion criteria.
		Supervisor checking was done of all enumeration and household selection.
		A random method (Kish Grid) was used to select participants.
		Standard procedures were used to screen for ethnicity, using Statistics New Zealand ethnicity classification.
		No exclusion criteria based on age, literacy, cognitive functioning or poor health were used – the primary caregiver acted as a proxy participant, where necessary.
Measurement	Difference between the recorded response to a question and the ‘true’ value	Interviewers were trained for consistency in approach, technique and recording of answers.
		Validated questions, standard definitions and accepted classifications were used where possible in the questionnaires.
		Cognitive testing of new questions was carried out.
		Concepts in questions were clearly defined.
		Professional language assistance was provided when requested (including sign language).
		Direct measurement of height, weight and waist circumference using standard protocols and procedures, including calibration of scales at mid-point of data collection, was done.
		A limited recall period was used where possible.
		Data were collected across the four seasons to control for seasonality effects (eg, for physical activity).
Supervisors re-contacted a proportion of the interview participants to check the interview occurred and to check key data collected.		
Non-response	Item non-response (participant refuses or doesn’t know answer)	Interviewer training was given on establishing rapport and sustaining interest throughout the survey.
		Computer programming, including skip patterns so that participants only answer questions relevant to them.
		Item non-response was monitored.
		Interview length was kept as short as possible to reduce participant burden.
		Show cards were used where appropriate to assist the participant and prompt an appropriate response.
		Supervisors telephoned back participants to check unclear or illogical answers.

Survey area	Type of error	Actions taken to prevent error
Non-response	Complete non-response (when all or almost all answers are missing, lost data, etc)	Up to nine call-backs to households were made to make contact.
		There was flexibility with interview day and time to suit the participant and their household.
		Child care was provided where necessary for the interview to occur.
		An invitation letter from the Ministry was sent to householders and colourful brochures in 11 different languages were used to assist the interviewer to secure household participation.
		Participants were given the option to request another interviewer (for any reason) using an 0800 phone number.
		Overlap control was carried out with other Ministry of Health surveys in the field at the same time to avoid approaching the same households.
		Follow-up was done of non-responders where possible.
		Non-response was analysed and accounted for where possible in the weighting (calibration).
Processing	Responses are changed during data handling after collection and prior to reporting. These could be during coding, data movement, editing or analysis.	High-quality software was used in data collection, transfer, editing and analysis.
		A dress rehearsal was done to test operational processes.
		Closed-response categories were used where possible, avoiding text answers, which require additional coding.
		A coding manual was used for 'other' responses.
		Range and logic edit checks of data were performed throughout data collection, by both NRB and PHI.
		No imputation for non-response was performed.
		Double-coding of descriptive analyses output was done to check for error.

The methodology report contains more information on questionnaire development, interviewer training and operational processes (www.moh.govt.nz/moh.nsf/indexmh/portrait-of-health).

Response rates

The main measure used to assess the overall quality of a survey is the final weighted response rate. The response rate is a measure of how many people who were invited to take part in the survey actually participated. A high response rate means that we can be more confident that the survey results are representative of the New Zealand population.

The overall response rates for the 2006/07 New Zealand Health Survey were 68% for adults and 71% for children. Table 1.6 presents the weighted response rates by ethnic group. These rates are comparable to other face-to-face household-based population surveys conducted in New Zealand, and are similar to earlier New Zealand Health Surveys and other national health surveys in like countries.

Table 1.6: Final weighted response rates for 2006/07 New Zealand Health Survey

Ethnic group	Child response rate (0-14 years)	Adult response rate (15+ years)
European/ Other	75.0	67.8
Māori	74.9	67.5
Pacific	74.9	70.2
Asian	74.0	79.6
New Zealand total	71.2	67.9

Note: The total response rate for children is lower than the ethnic group response rates due to there being a large number of screened households in the survey for which the ethnicity of children was not recorded. The eligibility of some children was therefore unknown and these cases could not be directly used in the ethnic group response rate calculations, whereas they were able to be used in the overall response rate calculation. See methodology report for more information.

The methodology report contains a detailed explanation of the response rate calculations (www.moh.govt.nz/moh.nsf/indexmh/portrait-of-health).

Key points for interpreting results

The 2006/07 New Zealand Health Survey is a sample survey at one point in time and can be used to examine *associations* between health states, individual health risk and protective behaviours, and socio-demographic characteristics. However, associations do not necessarily imply *causality*. For example, if the survey finds that a particular condition is more common in people living in deprived areas, an *association* has been identified. This does not mean the condition is *caused* by living in a deprived area. Associations between current health states and current behaviour or current socio-demographic characteristics, need to be interpreted with caution, as current health states may reflect past, rather than present, behaviour or childhood circumstances.

The survey only included the usually resident population who live in private dwellings, that is, approximately 94% of the usually resident population. People living in institutions (hospitals, IHC⁹ and rest homes, prisons, boarding schools), the homeless, short-term visitors and tourists were not included, many of whom may have a particular health condition and may be accessing New Zealand health services.

Many of the survey results are based on the assumption that participants can accurately recall previous events (such as a diagnosis by a doctor, or how many times they did a particular activity in a given period) and that they have a sufficient level of health literacy. Questions and additional definitions of technical terms provided to participants during the interview are included in the topic introductions throughout this report.

Comparisons with other data sources (Census, health system administrative and other survey data) which are not presented in this report should be approached with caution, as there are many issues regarding comparability.

9 Supported living homes for the intellectually disabled.

How can readers access more survey results?

The Ministry of Health hopes this report stimulates interest in the health of New Zealanders and generates more research, both through additional use of Health Survey data and by informing future research direction and priorities.

There are several ways to access further data from the 2006/07 New Zealand Health Survey: through online data tables, further publications, confidential unit record files (CURFs), PHIONline maps, or by contacting PHI.

Online data tables

To see the data for all analyses presented in this report and extra descriptive results, please go to www.moh.govt.nz/moh.nsf/indexmh/portrait-of-health where you can access the data tables online in Excel format. Appendices 5 and 6 contain more information on the data tables available online.

Further publications

Look for further publications from PHI that use the 2006/07 New Zealand Health Survey data, which will be available on PHI's website (www.moh.govt.nz/phi/publications).

New Zealand Health Survey CURF data access

The analyses presented in this report are only a small proportion of those that could be undertaken, and in many ways pose more questions than they answer. PHI encourages researchers to use New Zealand Health Survey data sets to explore topics of interest. The 2006/07 New Zealand Health Survey Adult and Child CURFs, with accompanying documentation and user guides, will be available from September 2008.

Researchers may apply to access the CURFs from PHI. CURFs have had all identifying information about individuals removed, and have been modified to protect individual information. Approval is subject to certain criteria, terms and conditions and the researcher's organisation must sign a microdata access agreement with PHI.

Refer to PHI's Microdata Data Access Protocol online for more information and to download the application form (www.moh.govt.nz/phi/dataaccess).

PHIONline website

PHIONline (www.phionline.moh.govt.nz) is a geographic visualisation tool with linked tables, graphs and maps, which gives a multidimensional view of data. DHB-level estimates for adult data presented in this report are accessible on PHIONline, allowing users to visually compare DHB data. Due to the small number of children in the survey sample for some DHBs, child estimates have not been included on PHIONline.

PHIONline uses Adobe Flash player version 8 or above. Flash is a standard PC multimedia application, and is already embedded in most commonly used internet web browsers for free. If you have trouble accessing PHIONline, please contact PHI.

How to contact Public Health Intelligence

Public Health Intelligence
Health and Disability Systems Strategy Directorate
Ministry of Health
PO Box 5013
Wellington, New Zealand

Tel: +64 (4) 816 2000, Fax: +64 (4) 816 2340

Email: phi@moh.govt.nz or to contact staff directly firstname_lastname@moh.govt.nz

Chapter 2: Health Behaviours and Risk Factors

Introduction

Health behaviours and risk factors are modifiable factors associated with good or poor health outcomes.

The health behaviours and risk factors included in this chapter were selected to align with the New Zealand Health Strategy and Health Targets, as well as being of current policy interest. Only behaviours that have been shown to be causally related to health outcomes in previous research have been included.

In the 2006/07 New Zealand Health Survey, the height and weight of all participants aged two years and over (and waist circumference for those aged 5 years old and over) were measured in their home using professional equipment and standardised techniques. The height and weight measures were used to calculate body mass index (BMI), and estimate the proportion of the population with increased risk of health conditions associated with obesity.

For other topics in this chapter, the survey used a series of questions to determine the prevalence of self-reported health behaviour in adults, and parents were asked about the behaviour of their child. The questions used in the survey have been validated in other studies and have been found to provide an accurate estimate of the health behaviour being measured.

Appendices 5 and 6 describe how to access data presented in this chapter, as well as additional results available online.

Infant feeding

Introduction

Appropriate nutrition in the first few months of life is more critical than at any other time in the life cycle. Breast milk is promoted by the World Health Organization and the Ministry of Health as the best food for infants (Ministry of Health 2008; World Health Organization and UNICEF 2003). Breastfed infants have a reduced risk of infectious disease, such as meningitis, gastroenteritis, and respiratory and ear infections because of maternal antibodies in breast milk (Ministry of Health 2001). Breastfed infants also appear to have reduced risk of sudden infant death syndrome (SIDS), and a reduced risk of being overweight during childhood and adulthood (Harder et al 2005). The long-term protective effects of breastfeeding appear to be related to the duration and exclusivity of breastfeeding (Riordan 2005). In addition, breastfeeding has benefits for the mother, with women who have ever breastfed having a lower risk of breast cancer compared to women who have never breastfed (World Cancer Research Fund and American Institute for Cancer Research 2007).

The Ministry of Health recommends that infants be fed exclusively on breast milk to around six months of age, with continued breastfeeding until at least one year of age or beyond. Solid food should be gradually introduced along with the usual milk feed (breast milk or infant formula) when the infant is developmentally ready, usually around six months of age. (Ministry of Health 2008). There are a number of risks associated with the introduction of solids before the age of four months, including increased risk of eczema, asthma, allergies, respiratory disease, gut infections, diarrhoea and dehydration, iron deficiency, and malnutrition.

Late introduction of solids, after six months of age, has been associated with increased risk of iron deficiency, malnutrition and delays in oral motor development (Ministry of Health 2008).

What were the survey questions?

In the 2006/07 New Zealand Health Survey, parents and caregivers of children aged under 15 years were asked if their child had ever been breastfed.

Parents and caregivers of children aged under five years were asked several more questions on breastfeeding, infant formula use, weaning and the introduction of solids. These detailed questions on infant feeding were only asked of the parents of children under five years old to minimise recall bias.

The data presented in this report focus on whether children have ever been breastfed, the prevalence of exclusive breastfeeding, weaning, and the introduction of solids.

Another source of data on breastfeeding rates for New Zealand children is Well Child Tamariki Ora providers (of which Plunket is the largest), which co-ordinate nurses and community health workers to provide support services for the development, health and wellbeing for children under five years of age. Well Child Tamariki Ora services are available to all families, but not all families participate, and not all Well Child breastfeeding data are reported. The breastfeeding incidence rates usually reported by the Ministry of Health are based on Plunket clients and will differ from the prevalence presented in this report.

Ever breastfed children

Nine out of ten children aged from birth to 14 years (87.8%, 86.7–88.9) had ever been breastfed. There was no difference in the age-adjusted prevalence of having ever been breastfed between boys and girls.

Pacific (SRR: 0.94, 0.90–0.98) and Māori (SRR: 0.97, 0.95–0.99) children were less likely to have ever been breastfed compared to the total child population rate, adjusted for age. European/Other children (SRR: 1.02, 1.01–1.02) were more likely to have ever been breastfed.

Children living in the least deprived neighbourhoods (NZDep2006 quintile 1, 92.1%, 89.6–94.5) were more likely to have ever been breastfed than children living in the most deprived neighbourhoods of quintile 5 (83.3%, 81.1–85.5), adjusted for age.

Ever breastfed children, by DHB area

Children aged from birth to 14 years living in Auckland DHB area were significantly more likely to have ever been breastfed compared to the national rate, whereas children living in Counties Manukau and the South Island DHBs, excluding Canterbury, were less likely to have ever been breastfed (Table 2.1).

Table 2.1: Children aged from birth to 14 years who have ever been breastfed, by DHB area (unadjusted)

DHB area	Prevalence (95% CI)	Number of children
Northland / Lakes / Tairāwhiti / Hawke's Bay / Whanganui	89.6 (87.2–91.9)	103500
Waitemata	90.5 (87.5–93.4)	94200
Auckland	94.5 (92.1–96.8) +	70500
Counties Manukau	82.8 (79.6–86.0) –	92100
Waikato	85.8 (81.8–89.8)	65400
Bay of Plenty / Taranaki / MidCentral	89.5 (86.4–92.7)	88200
Wairarapa / Hutt Valley / Capital and Coast	86.0 (82.1–89.9)	76900
Canterbury	89.6 (85.4–93.9)	81500
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	82.8 (77.8–87.8) –	77800
New Zealand total	87.8 (86.7–88.9)	750000

Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Age breastfeeding stopped

For children aged less than five years who had ever been breastfed, the average (mean) age at which breastfeeding was stopped was 8.6 months (8.1–9.2 months).¹⁰ There was no difference between boys and girls in the age at which breastfeeding stopped. One in eleven children (8.8%, 6.3–11.3) were still breastfed at two years of age.¹¹

European/Other children were more likely to have stopped breastfeeding at an earlier age compared to children in the total population (SRR: 0.96, 0.92–0.99). There were no other differences by ethnic group. There were also no differences by NZDep2006 quintile.

Exclusive breastfeeding

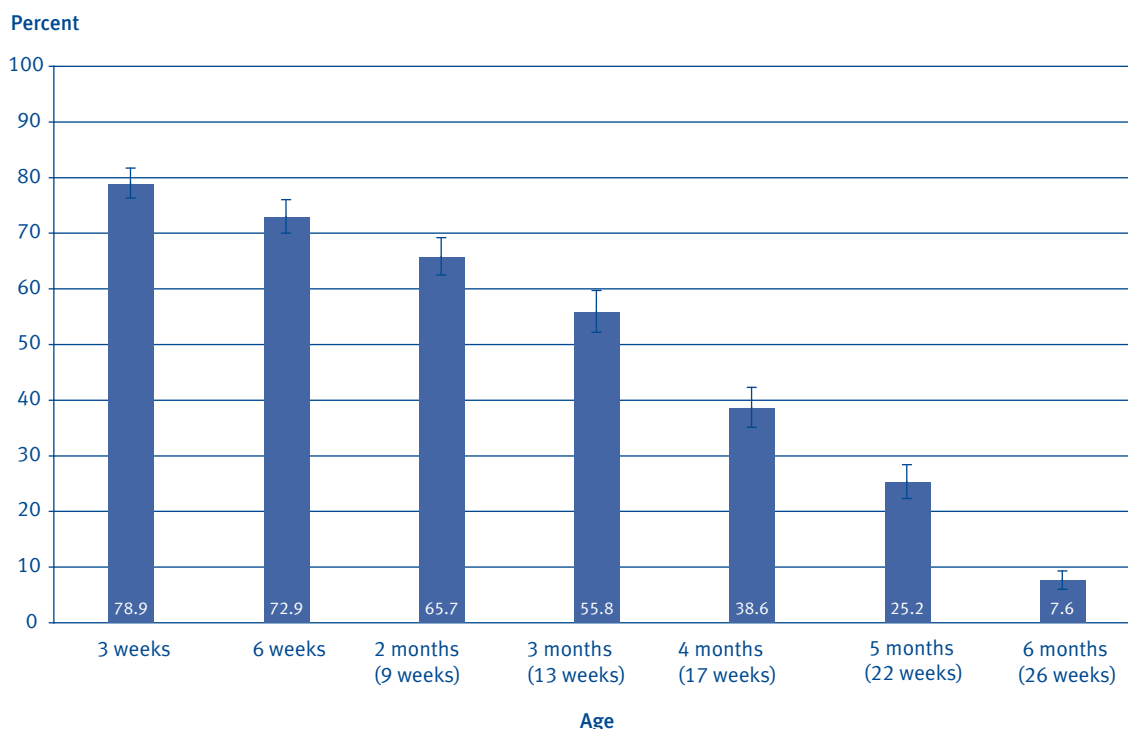
Exclusive breastfeeding is when infants have not been given any liquids or solids (excluding prescribed medicines) other than breast milk. There was no difference in the rate of exclusive breastfeeding for infants by gender, so the data presented combine boys and girls.

At six weeks of age seven out of ten infants were exclusively breastfed. This proportion reduced with age, until by three months of age just over half of infants were exclusively breastfed, and at six months of age 1 in 13 infants were still being exclusively breastfed (Figure 2.1).

¹⁰ Excluding children who were still being breastfed at the time of the survey.

¹¹ Aged under five years but over two years in the sample, who were breastfed at two years old.

Figure 2.1: Exclusively breastfed, by age of infant, at intervals up to 6 months of age (26 weeks) (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Note: Includes children aged under five years at the time of survey, and older than the age of interest in analyses.

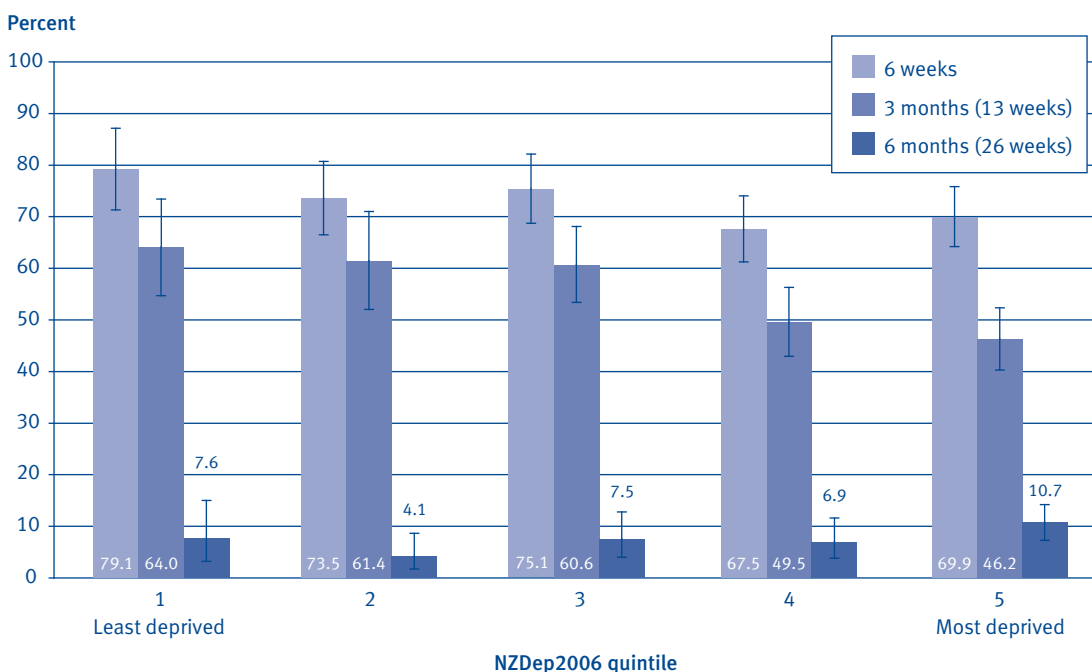
Exclusive breastfeeding, by ethnic group

At six weeks and three months of age there were no significant differences by ethnic group in the proportion of children exclusively breastfed. At six months of age, European/Other children were much less likely to be exclusively breastfed than all children at six months of age (SRR: 0.81, 0.67–0.95).

Exclusive breastfeeding, by neighbourhood deprivation

Infants at three months of age living in areas of low neighbourhood deprivation (NZDep2006 quintile 1) were more likely to be exclusively breastfed than infants of the same age living in deprived areas (NZDep2006 quintile 5) (Figure 2.2). However, by six months of age infants living in quintile 2 were less likely than infants in quintile 5 to still be exclusively breastfed (p-value < 0.05).

Figure 2.2: Exclusively breastfed at 6 weeks, 3 months (13 weeks) and 6 months (26 weeks) of age, by NZDep2006 quintile (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Note: Includes children aged under five years at the time of survey, and older than the age of interest in analyses.

Age first given any food or drink other than breast milk

The mean age children aged under five years old were given any food or drink other than breast milk was four months (3.7–4.1).¹² There was no difference between boys and girls, or by NZDep2006 quintile in the age at which they were given any food or drink other than breast milk.

The mean age at which Pacific children (SRR: 1.13, 1.01–1.25) were given any food or drink other than breast milk was higher than children in the total population. European/Other children had a lower mean age (SRR: 0.97, 0.95–1.00). There were no other differences by ethnic group.

The first food or drink given to infants (other than breast milk) was:

- infant formula: 53.1% (49.9–56.2)
- water: 22.5% (19.5–25.4)
- solids: 21.9% (19.1–24.6)
- milk (any non-breast milk): 2.6% (1.6–3.7).

¹² Excluding children who had not been given any liquids or solids other than breast milk at the time of the survey.

Age first given solids

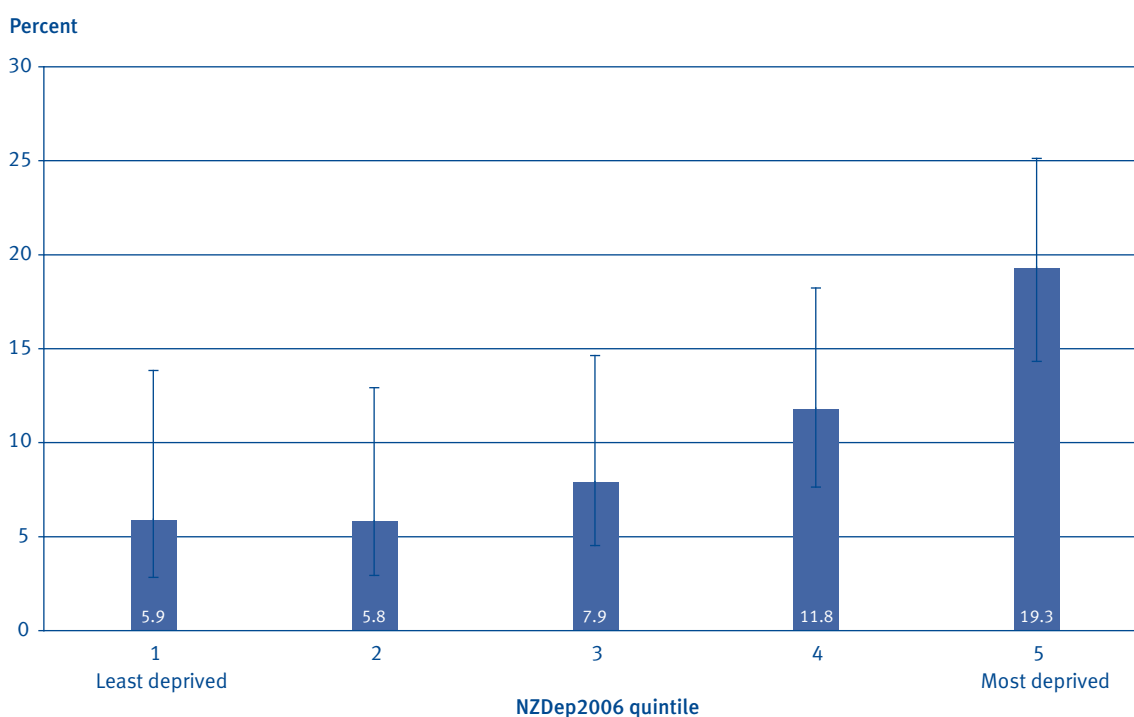
For children aged under five years, the mean age at which solids were introduced was five and a half months (5.4, 5.2-5.6).¹³ There was no difference between boys and girls in the age at which solids were introduced.

One in ten infants was first given solids before four months of age (10.6%, 8.6–12.5). There was no difference by gender in the prevalence of being given solids early.

Māori children (SRR: 1.57, 1.20–1.95) were more likely than children in the total population to have been given solids before four months of age. European/Other (SRR: 0.88, 0.76–1.00) and Asian (SRR: 0.40, 0.19–0.61) children were less likely.

Children living in the most deprived areas (NZDep2006 quintile 5) were over three times more likely than children in the least deprived neighbourhoods to be given solids before four months of age (Figure 2.3).

Figure 2.3: First given solids before 4 months of age, for children aged from 4 months to 5 years, by NZDep2006 quintile (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey.

¹³ Excluding children who had not started solids at the time of the survey.

Breakfast at home every day

Introduction

Eating breakfast at home every day is a proxy measure of good nutritional intake and healthy behaviour. Eating breakfast is positively associated with increased intake of most vitamins and minerals, better food choices, higher concentration at school and better mental health (Quigley et al 2007). The 2002 National Children's Nutrition Survey showed that children who usually eat breakfast at home had a lower mean body mass index (BMI) than children who do not, even after controlling for the effects of age, sex, ethnic group, neighbourhood deprivation, and physical activity level (Utter et al 2007). Children who do not eat breakfast at home are more likely to consume unhealthy snack foods such as meat pies, chocolate and candies, and soft drink, and are less likely to eat lunch as well (Utter et al 2007).

What were the survey questions?

Parents and caregivers of children aged from 2–14 years in the 2006/07 New Zealand Health Survey were asked how many times their child had eaten breakfast at home in the past seven days. Those who answered 'seven' (every day) have been the focus of the following analyses.

Readers should note that the New Zealand Health Survey collects information on health behaviour rather than measuring food or nutrient intake, so the quantity and type of breakfast have not been collected. Refer to findings from the 2002 National Children's Nutrition Survey for information on dietary intake related to breakfast (Wilson et al 2006).

Breakfast at home every day for children aged 2–14 years

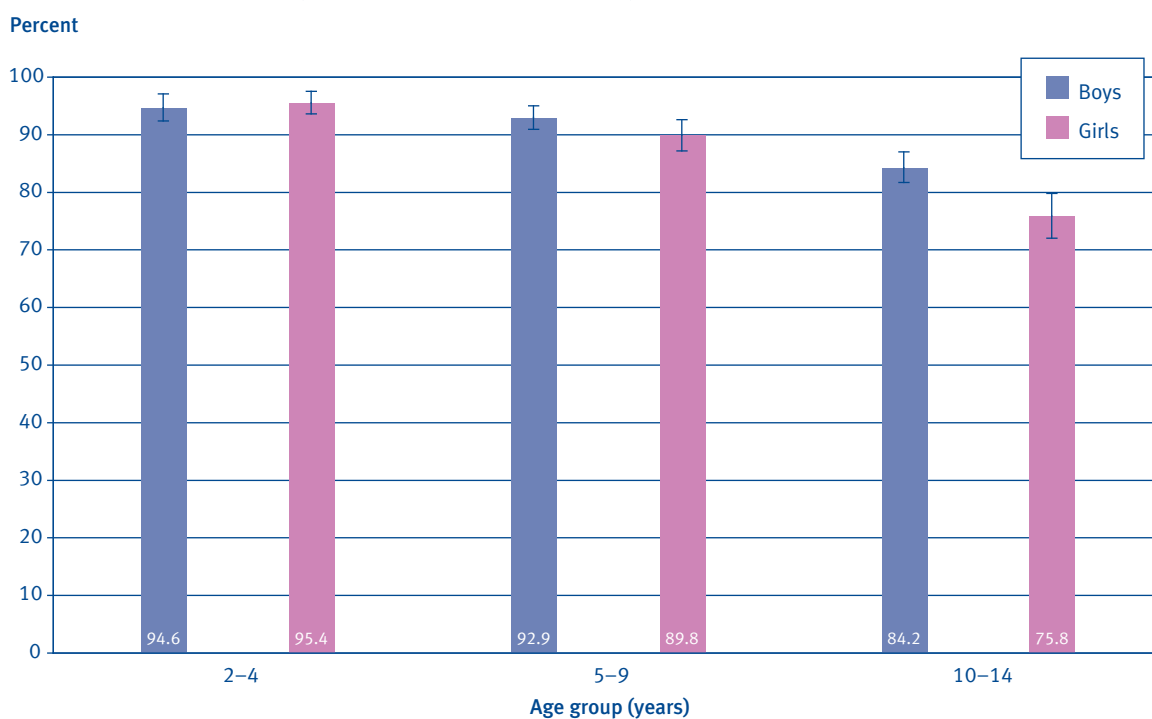
Nine out of ten children aged 2–14 years ate breakfast at home every day in the previous seven days (87.8%, 86.6–89.0). However, one in 14 children, which equates to 54,600 children, had eaten breakfast at home on fewer than five days in the previous week (7.4%, 6.5–8.2).

Boys (90.0%, 88.6–91.5) were more likely than girls (85.7%, 83.8–87.6) to have eaten breakfast at home every day, adjusted for age.

Breakfast at home every day, by age group

Eating breakfast at home every day was less likely as children got older, with girls aged 10–14 years the least likely of all age and gender groups to have eaten breakfast at home every day. Three out of four 10–14-year-old girls had eaten breakfast at home every day in the previous seven days, significantly fewer than boys in the same age group (Figure 2.4).

Figure 2.4: Children aged 2–14 years who ate breakfast at home every day in the past 7 days, by age group and gender (unadjusted prevalence)

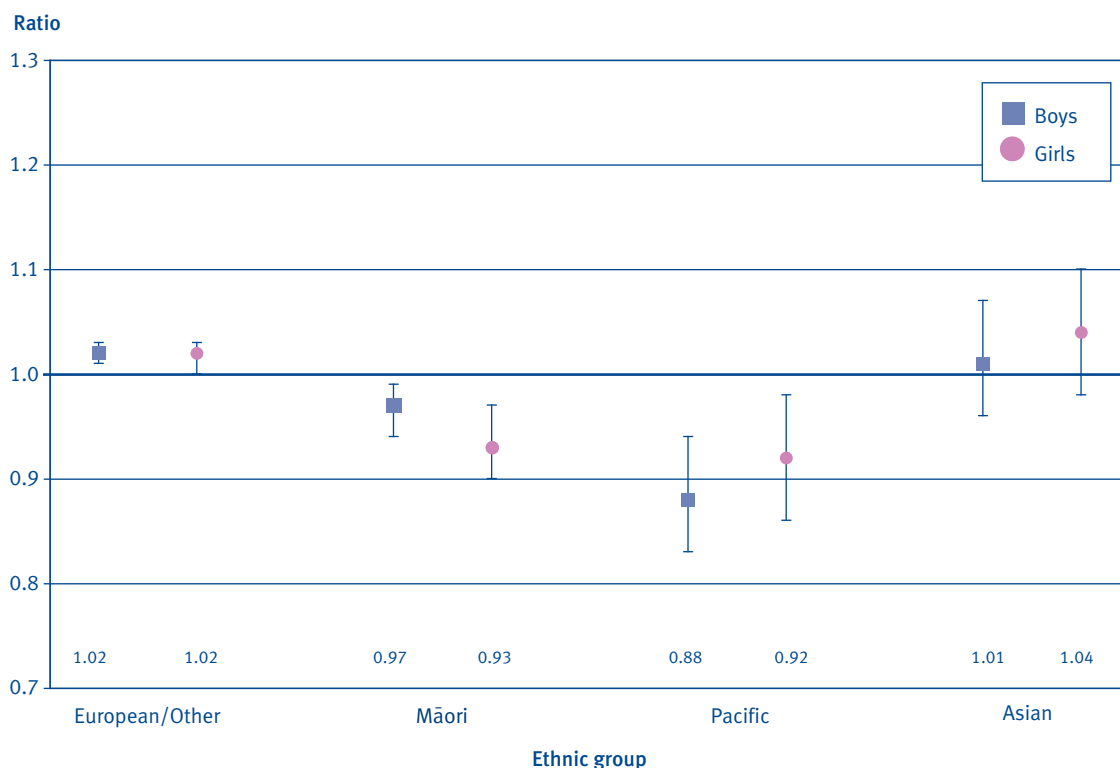


Source: 2006/07 New Zealand Health Survey

Breakfast at home every day, by ethnic group

After adjusting for age, Pacific and Māori boys and girls were less likely to have eaten breakfast at home every day in the previous seven days, compared to boys and girls in the total population (Figure 2.5).

Figure 2.5: Children aged 2–14 years who ate breakfast at home every day in the past 7 days, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged from 2-14 years. Total response standard output for ethnic groups has been used.

Breakfast at home every day, by neighbourhood deprivation

Adjusted for age, boys living in the most deprived areas (NZDep2006 quintile 5) (87.3%, 84.4–90.1) were less likely to consume breakfast at home every day compared to boys from the least deprived areas (quintile 1) (93.9%, 90.8–97.0). No differences by neighbourhood deprivation were present for girls.

Breakfast at home every day, by DHB area

There were no differences by DHB area in the proportion of children aged 2–14 years who ate breakfast at home every day.

Fizzy drink intake

Introduction

There is a strong association between drinking fizzy drinks and increased risk of obesity (Taylor et al 2005; Vartanian et al 2007; World Cancer Research Fund and American Institute for Cancer Research 2007) as well as type 2 diabetes (Taylor et al 2005; Vartanian et al 2007). Fizzy drinks are high in sugar, have very little nutritional value, and many studies suggest that they displace more nutritional fluids, such as milk, in the diets of children (Harnack et al 1999; Mrdjenovic and Levitsky 2003). In addition, fizzy drinks contain acids that can dissolve tooth enamel, contributing to poor oral health (Ministry of Health 1997).

Although fruit juices also contain large amounts of sugar, the relationship between fruit juice intake and weight gain in children is weak (Taylor et al 2005). As a result, this section only focuses on fizzy drink.

Full-sugar carbonated drinks and energy drinks of all types are recommended as ‘treat foods’ for children aged 2–12 years by the Ministry of Health, to be given at special times only; for example, birthday parties (Ministry of Health 1997). Fizzy drinks are not recommended for children under the age of two years (Ministry of Health 2000).

What were the survey questions?

Parents and caregivers of children aged 2–14 years in the 2006/07 New Zealand Health Survey were asked if in a typical week their child would usually have a fizzy or soft drink, such as cola or lemonade. The definition of fizzy drink includes diet (artificially sweetened) and energy drinks such as Powerade or V, but does not include powdered drinks made up with water, such as cordial or Raro, and does not include fruit juice such as Just Juice.

Parents and caregivers were then asked how often in the past seven days their child had this type of drink. The results presented here are from this last question regarding the number of drinks consumed in the past seven days.

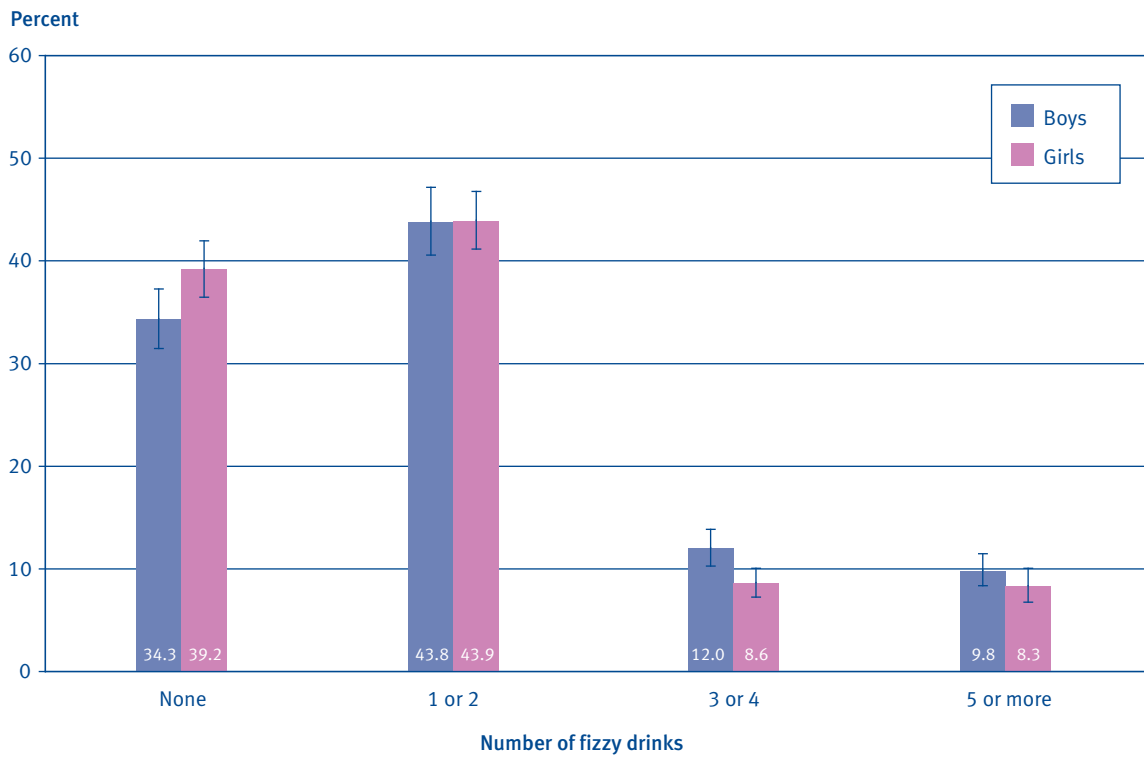
Readers should note that the New Zealand Health Survey collects information on health behaviour rather than measuring food or nutrient intake, so the quantity and type of fizzy drink have not been collected. Refer to the 2002 National Children’s Nutrition Survey data for information on dietary intake (Ministry of Health 2003b).

Fizzy drink intake for children aged 2–14 years old

Two out of three children had a fizzy drink in the previous week (63.6%, 61.5–65.6), with no difference by gender adjusted for age. Most of these children had one or two fizzy drinks in the previous week, again with no difference by gender (Figure 2.6).

One in five children aged 2–14 years had three or more fizzy drinks in the previous week (19.6%, 18.1–21.2), which equates to 145,800 children, with nearly half of these children having had five or more fizzy drinks in the previous week.

Figure 2.6: Number of fizzy drinks consumed in the past 7 days for children aged 2–14 years, by gender (age standardised prevalence)



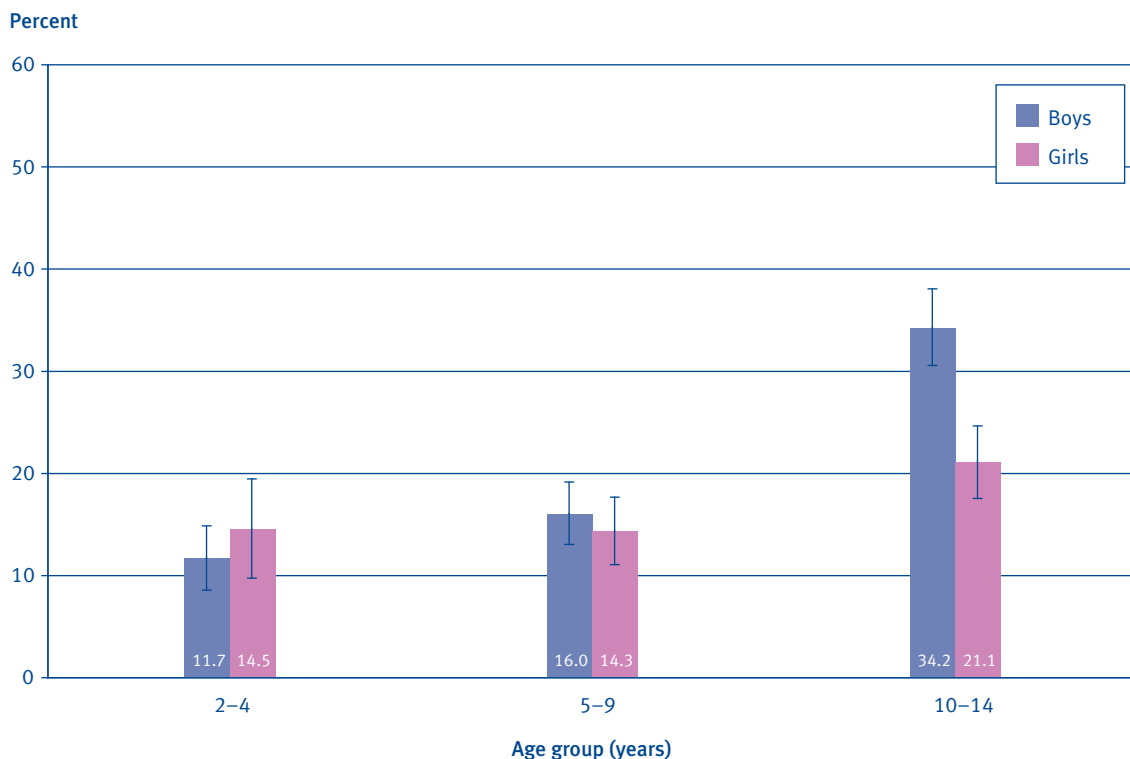
Source: 2006/07 New Zealand Health Survey

The remainder of this section focuses on those children who had three or more fizzy drinks in the previous seven days.

Fizzy drink intake, by age group

Boys aged 10–14 years were the most likely to have consumed three or more fizzy drinks in the previous seven days (Figure 2.7).

Figure 2.7: Three or more fizzy drinks consumed in past 7 days for children aged 2–14 years, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Fizzy drink intake, by ethnic group

Table 2.2 gives an indication of the proportion and number of children in New Zealand’s main ethnic population groups who had three or more fizzy drinks in the previous seven days.

Table 2.2: Three or more fizzy drinks in the past 7 days for children aged 2–14 years, by ethnic group (unadjusted)

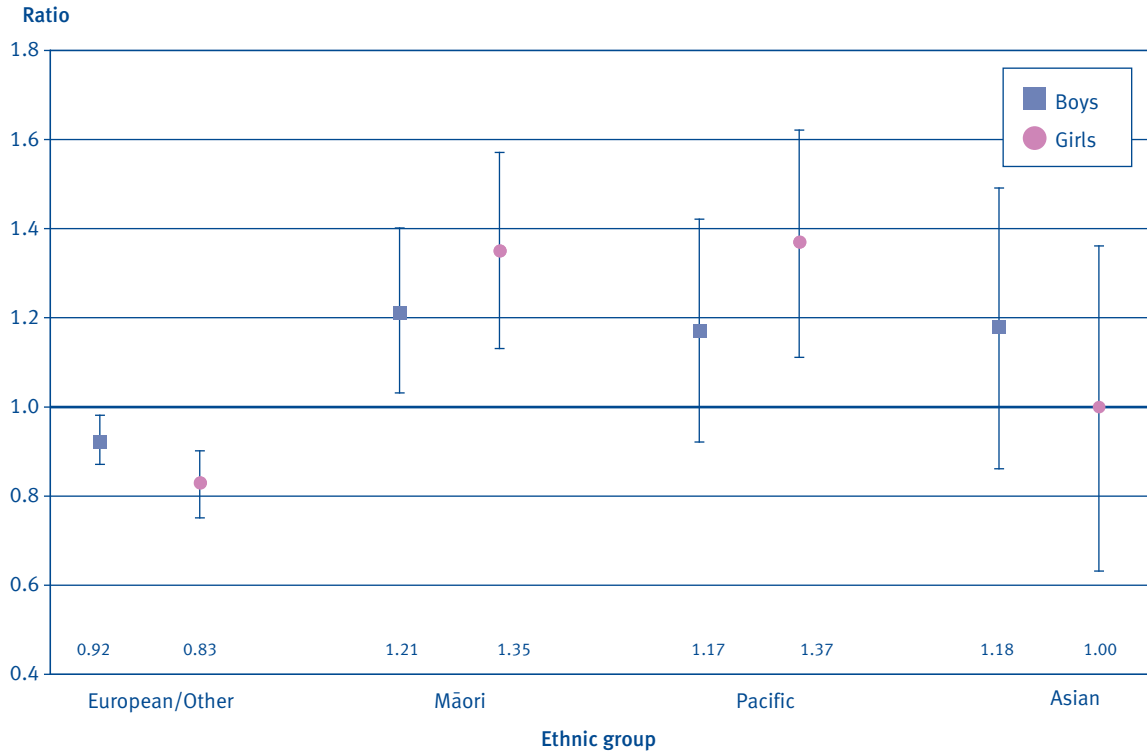
Ethnic group	Prevalence (95% CI)	Number of children
European/ Other	17.5 (15.8–19.2)	98500
Māori	24.6 (21.5–27.8)	41300
Pacific	24.1 (20.5–27.7)	20400
Asian	21.7 (16.5–26.9)	14300

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Māori and Pacific girls and Māori boys were significantly more likely to have had three or more fizzy drinks in the past week compared to girls and boys in the total population. European/Other children were significantly less likely to have had three or more fizzy drinks, and Asian children and Pacific boys showed no significant difference from boys and girls in the total population (Figure 2.8).

Figure 2.8: Three or more fizzy drinks in the past 7 days for children aged 2–14 years, by ethnic group and gender (age standardised rate ratio)



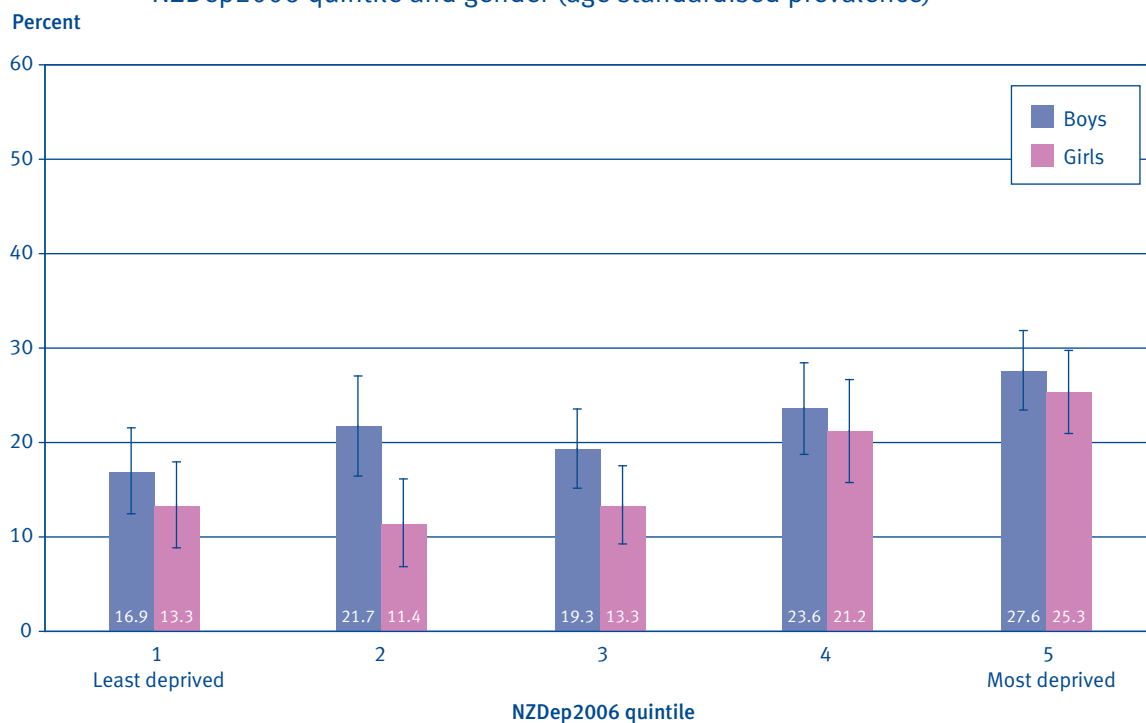
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged from 2-14 years. Total response standard output for ethnic groups has been used.

Fizzy drink intake, by neighbourhood deprivation

In both boys and girls, the proportion of children who had three or more fizzy drinks in the past week was significantly higher in the most deprived neighbourhoods (NZDep2006 quintile 5) than in the least deprived neighbourhoods (quintile 1), adjusted for age. This association was stronger for girls than boys, with girls in NZDep2006 quintile 5 neighbourhoods nearly twice as likely to have consumed three or more fizzy drinks in the previous week than girls living in NZDep2006 quintile 1, 2 or 3 neighbourhoods (Figure 2.9).

Figure 2.9: Three or more fizzy drinks in the past 7 days for children aged 2–14 years, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Fizzy drink intake, by DHB area

Children aged 2–14 years living in Counties Manukau DHB area had a significantly increased fizzy drink intake compared to the national rate, with one in four children having had three or more fizzy drinks in the previous week. Children living in Waitemata and Wairarapa / Hutt Valley / Capital and Coast DHB areas were significantly less likely to have had three or more fizzy drinks in the previous week (Table 2.3).

Table 2.3: Three or more fizzy drinks in the past 7 days for children aged 2–14 years, by DHB area (unadjusted)

DHB area	Prevalence (95% CI)	Number of children
Northland / Lakes / Tairāwhiti / Hawke's Bay / Whanganui	20.0 (16.2–23.8)	19900
Waitemata	15.1 (11.3–18.8) –	13500
Auckland	21.6 (15.7–27.6)	14100
Counties Manukau	25.5 (21.3–29.8) +	24200
Waikato	19.9 (15.7–24.1)	13200
Bay of Plenty / Taranaki / MidCentral	19.4 (14.6–24.3)	16800
Wairarapa / Hutt Valley / Capital and Coast	15.2 (10.9–19.4) –	11500
Canterbury	19.2 (13.3–25.0)	15400
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	20.4 (14.5–26.4)	17300
New Zealand total	19.6 (18.1–21.2)	145800

Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Fast food intake

Introduction

Evidence suggests that eating fast food more than twice a week is associated with an increased risk of weight gain, overweight and obesity (World Cancer Research Fund and American Institute for Cancer Research 2007). In addition, fast food is generally high in fat, salt and sugar, and low in fibre (Ministry of Health 1997). Diets that are high in fat and salt and low in fibre are associated with heart disease and hypertension (Ministry of Health 1997).

Fast food is defined as food purchased from fast food places or takeaway shops; for example, burgers, fried chicken, pizza, or fish and chips.

What were the survey questions?

In the 2006/07 New Zealand Health Survey, parents and caregivers of children aged 2–14 years were asked if in a typical week their child would usually eat any food purchased from a fast food place or takeaway shop, such as fish and chips, burgers, fried chicken or pizza. This includes snacks as well as mealtimes.

Parents and caregivers were then asked how often in the past seven days their child ate this type of food. The results presented here are from this last question regarding the number of times fast food was eaten in the past seven days.

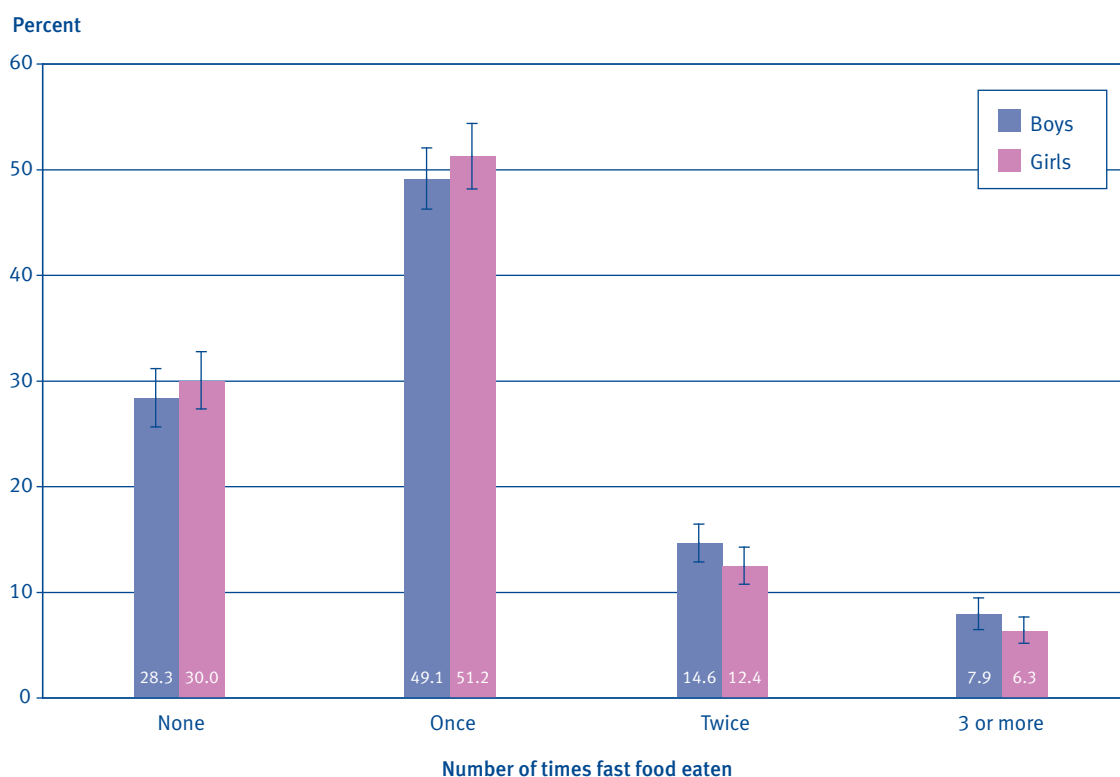
Readers should note that the New Zealand Health Survey collects information on health behaviour rather than measuring food or nutrient intake, so the quantity and type of fast food have not been collected. Refer to the 2002 National Children’s Nutrition Survey for information on dietary intake related to fast food (Ministry of Health 2003b).

Fast food intake for children aged 2–14 years

Seven out of ten children aged 2–14 years had eaten fast food in the previous seven days (70.9%, 68.9–73.0), the majority of whom ate fast food once during that week. There was no difference between boys and girls in the number of times fast food was eaten (Figure 2.10).

One in seven children aged 2–14 years had eaten fast food twice in the previous seven days (13.6%, 12.4–14.8), and 1 in 14 children, which equates to 53,400 2–14-year-olds, had eaten fast food three or more times in the previous seven days (7.2%, 6.2–8.2).

Figure 2.10: Number of times fast food eaten in the past 7 days for children aged 2–14 years, by gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

The remainder of this section focuses on those children who ate fast food three or more times in the past seven days.

Fast food intake, by age group

Boys aged 10–14 years were more likely (10.4%, 7.6–13.2) than boys aged 2–4 years (5.8%, 3.7–8.0) to have eaten fast food three or more times in the previous seven days, with no difference compared to 5–9-year-old boys (6.8%, 4.3–9.4). There was no significant difference by age for girls.

Fast food intake, by ethnic group

Table 2.4 gives an indication of the proportion and number of children in New Zealand’s main ethnic population groups who ate fast food three or more times in the previous week.

Table 2.4: Fast food eaten 3 or more times in past 7 days for children aged 2–14 years, by ethnic group (unadjusted)

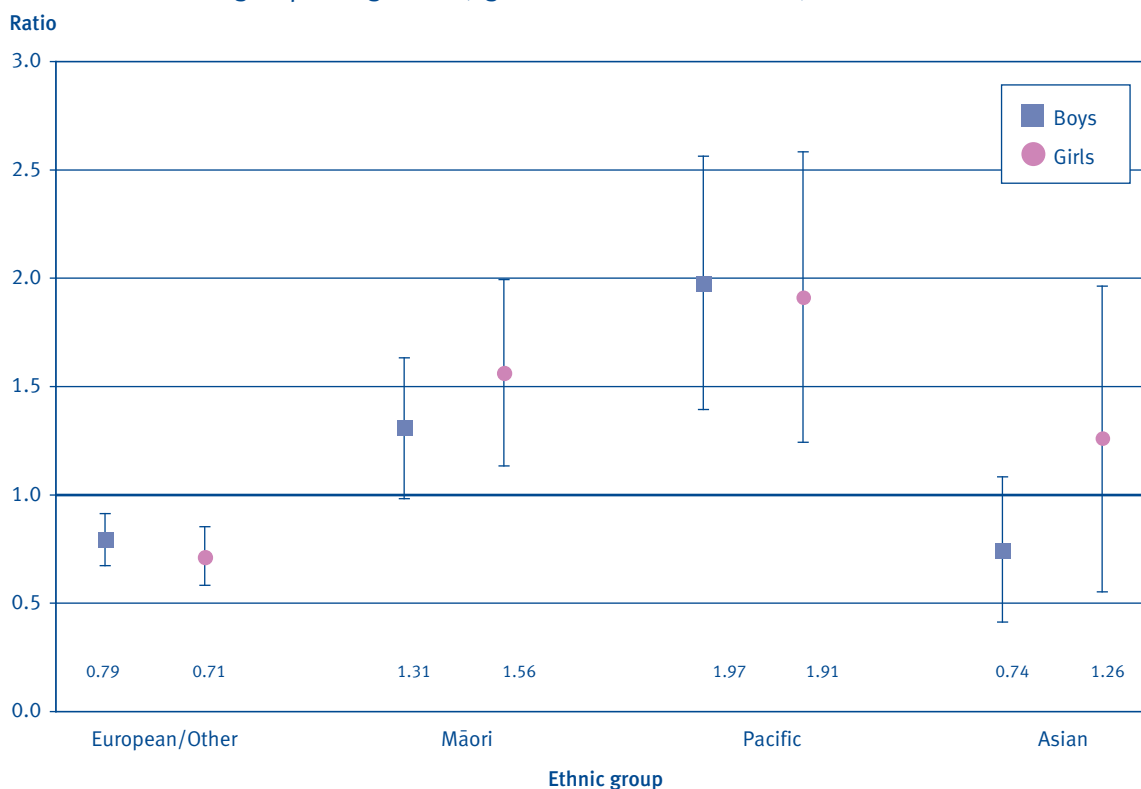
Ethnic group	Prevalence (95% CI)	Number of children
European/ Other	5.5 (4.4–6.6)	30900
Māori	10.1 (8.3–11.9)	17000
Pacific	13.8 (10.3–17.4)	11700
Asian	7.0 (4.4–9.7)	4600

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Pacific boys and girls were twice as likely to have eaten fast food three or more times in the previous seven days compared to boys and girls in the total population. Māori girls were 1.5 times more likely than all girls. European/Other boys and girls were significantly less likely to have eaten fast food three or more times in the previous seven days compared to boys and girls in the total population (Figure 2.11).

Figure 2.11: Fast food eaten 3 or more times in the past 7 days for children aged 2–14 years, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged from 2-14 years. Total response standard output for ethnic groups has been used.

Fast food intake, by neighbourhood deprivation

Children living in areas of high deprivation (NZDep2006 quintile 5) were much more likely to have eaten fast food three or more times in the previous seven days (13.9%, 11.2–16.6), compared to children living in areas of low deprivation (NZDep2006 quintile 1) (3.4%, 1.9–4.9).

Fast food intake, by DHB area

Waitemata DHB area showed the only significant difference from the national rate, with 1 in 20 children in this DHB having eaten fast food three or more times in the previous seven days, which was lower than the national rate (Table 2.5).

Table 2.5: Fast food eaten 3 or more times in the past 7 days for children aged 2–14 years, by DHB area (unadjusted)

DHB area	Prevalence (95% CI)	Number of children
Northland / Lakes / Tairāwhiti / Hawke's Bay / Whanganui	7.5 (5.5–9.6)	7500
Waitemata	4.9 (2.9–7.8) –	4400
Auckland	6.0 (3.2–8.8)	3900
Counties Manukau	10.1 (6.7–13.6)	9600
Waikato	6.7 (4.0–9.4)	4400
Bay of Plenty / Taranaki / MidCentral	10.4 (6.5–14.3)	9000
Wairarapa / Hutt Valley / Capital and Coast	6.4 (3.9–8.8)	4800
Canterbury	6.1 (2.6–11.9)	4900
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	5.7 (3.0–9.7)	4800
New Zealand total	7.2 (6.2–8.2)	53400

Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Active transport to school

Introduction

Participation in regular physical activity is associated with improvements in cholesterol levels and lower blood pressure in children (US Department of Health and Human Services 1996). Regular physical activity promotes children's physical development, coordination, bone density and energy balance. There is also some evidence for a positive association between physical activity habits and self-esteem in children and young adults (US Department of Health and Human Services 1996). Active transport (eg, walking or biking) provides an opportunity for children of all physical abilities to take part in physical activity on a regular basis. For example, walking to and from school has been found to increase the number of steps taken by New Zealand boys and girls each weekday by over 1000 (Duncan 2005).

What were the survey questions?

In the 2006/07 New Zealand Health Survey parents and caregivers of children aged 5–14 years were asked how their child usually gets to and from school. Multiple responses could be given (eg, in cases where a child walks to the bus stop and then takes the bus to school). For those children who did not usually use active transport to and from school, parents and caregivers were asked what stops this from happening.

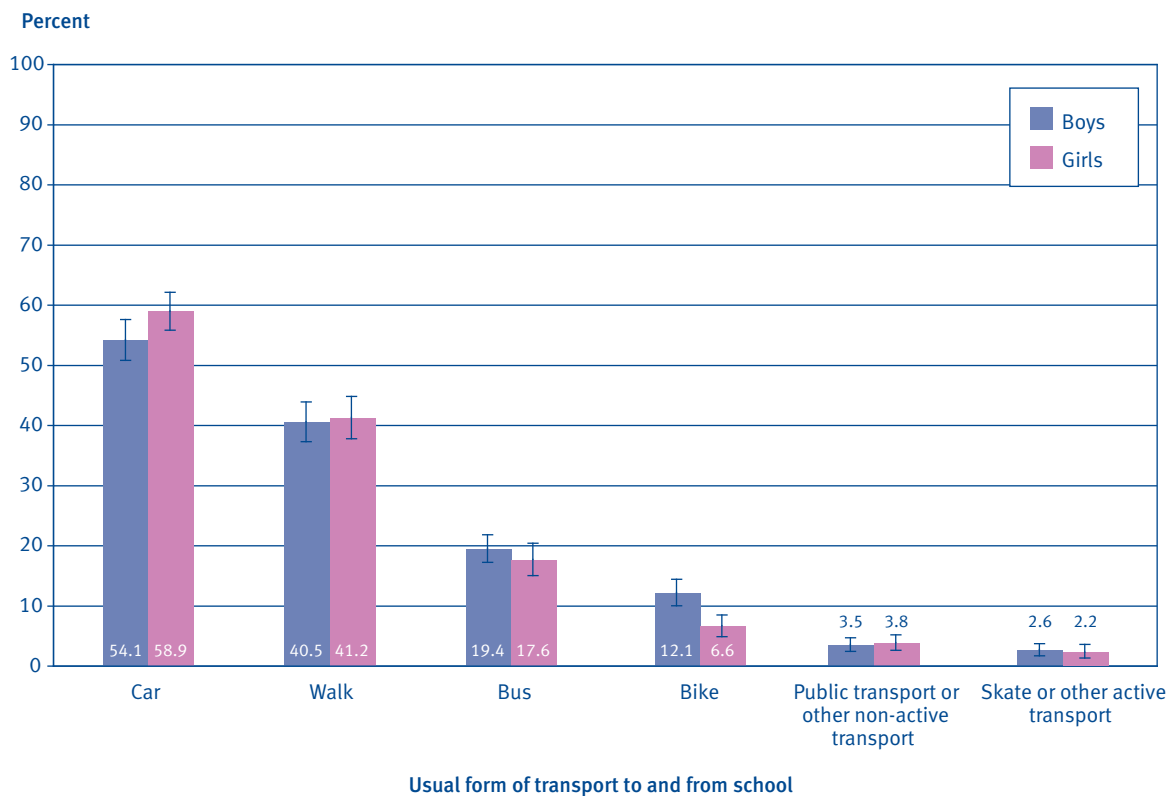
In future New Zealand Health Surveys it is intended that information to monitor the frequency, intensity and duration of physical activity will be collected for children.

Active transport to school for children aged 5–14 years

Just under half of children aged 5–14 years (47.0%, 44.2–49.8) usually use active transport to get to and from school; this equates to 264,800 children who walk, bike, skate or use another form of physical activity to get to and from school.

Private car is the most common way for children in New Zealand to get to and from school (56.4%, 54.3–58.6), followed by walking (40.9%, 38.2–43.5). There were no differences between boys and girls in the type of transport used to go to and from school, except for cycling, where boys were more likely than girls to bike to school (Figure 2.12).

Figure 2.12: Usual transport to and from school for children aged 5–14 years, by gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

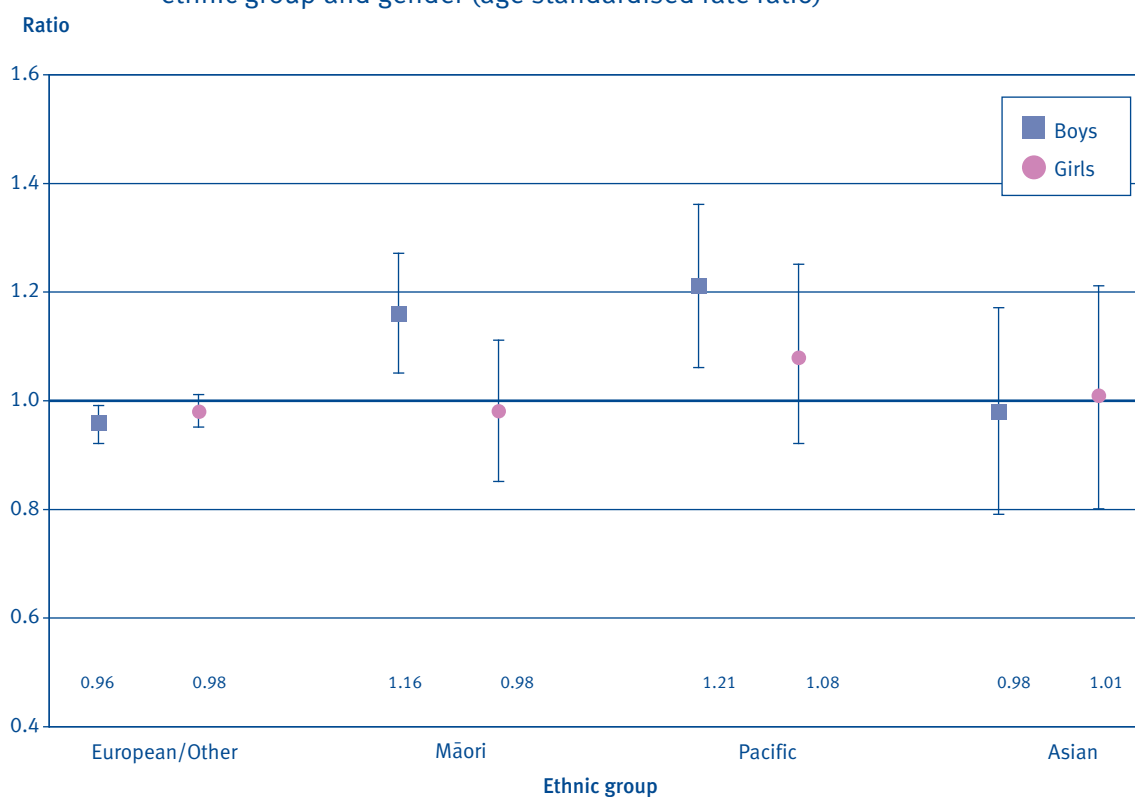
Active transport to school, by age group

The proportion of children who usually used active transport to and from school appeared to increase slightly as age increased, but this was only statistically significant in boys; from 43.6% (38.9–48.2) in 5–9-year-olds to 53.7% (49.7–57.8) in 10–14-year-old boys.

Active transport to school, by ethnic group

After adjusting for age, Pacific and Māori boys were 20% more likely to walk, bike, skate or use other forms of physical activity to go to and from school, compared to boys in the total population. European/Other boys were slightly less likely to use active transport to and from school (Figure 2.13).

Figure 2.13: Physical activity as a mode of transport to school for children aged 5–14 years, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged from 5-14 years. Total response standard output for ethnic groups has been used.

Active transport to school, by neighbourhood deprivation

There were no statistically significant differences by neighbourhood deprivation in the proportion of children who used active transport to go to and from school.

Barriers to active transport to and from school

The reasons parents and caregivers gave for what prevents their children walking, biking, skating or using other forms of physical activity to go to and from school¹⁴ were:

- we live too far from school (67.5%, 64.1–70.9)
- busy traffic / main road (23.0%, 20.4–25.6)
- too dangerous, for reasons other than traffic (17.3%, 14.7–19.9)
- it takes too long / there is not enough time (12.0%, 9.7–14.3)
- the weather (5.9%, 4.1–7.7)
- child doesn't want to (4.4%, 3.1–5.7)
- child is unable to due to a health condition (1.9%, 0.9–2.9)
- something else (8.9%, 6.9–10.8).

Parents of European/Other children were significantly more likely to report traffic (SRR: 1.10, 1.06–1.15) and lack of time (SRR: 1.09, 1.02–1.15) as a barrier compared to all parents. Parents of Pacific children were significantly more likely to report that it was too dangerous, for reasons other than traffic (SRR: 1.59, 1.17–2.00).

Television watching

Introduction

Watching television is a very sedentary behaviour. Time spent watching television displaces opportunities for more active pursuits and increases exposure to advertising, which has been shown to adversely affect children's food choices through the promotion of foods that can lead to weight gain. Watching television has also been associated with increased consumption of energy-dense foods and drinks (Utter et al 2006).

Many studies have found that watching two or more hours of television per day in childhood increases the risk of obesity in both childhood and adulthood (Scragg et al 2006; World Cancer Research Fund and American Institute for Cancer Research 2007). The Dunedin Multidisciplinary Study, following children from their birth in 1972/73 through to adulthood, found that watching television for more than two hours a day in childhood and adolescence explained 17% of overweight, 15% of raised blood cholesterol, 17% of smoking and 15% of poor fitness at age 26 (Hancox et al 2004). Sustained watching of television for more than two hours a day in childhood is also associated with poor behavioural outcomes and low social skills (Mistry et al 2007).

The Ministry of Education in collaboration with Sport and Recreation New Zealand (SPARC) physical activity guidelines for children and young people recommend that 5–18-year-olds should spend less than two hours a day out of school time in front of television, computers and game consoles (Ministry of Education 2007).

¹⁴ For those parents and caregivers whose children do not usually use active transport to school. Note that multiple responses were possible.

What were the survey questions?

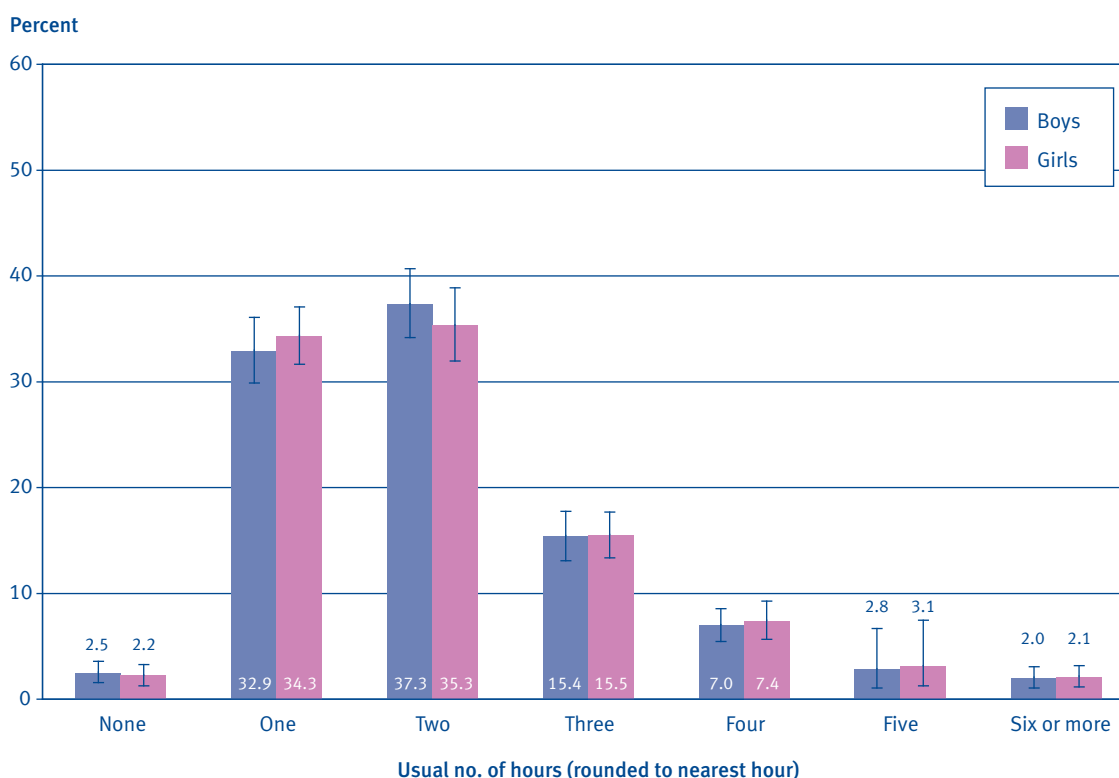
In the 2006/07 New Zealand Health Survey, parents and caregivers of children aged 5–14 years were asked how many hours (rounded to the nearest hour) their child usually watched television, on a weekday and over the weekend separately, to aid recall.

Here, weekend and weekday data have been combined to produce an indicator for usually watched two or more hours of television a day (averaged over the week).

Television watching for children aged 5–14 years

Two out of three children aged 5–14 years usually watched two or more hours of television a day (64.1%, 62.1–66.2). This equates to 368,700 children watching two or more hours of television a day (averaged over the week). There was no difference by gender in the hours of television usually watched, adjusted for age (Figure 2.14).

Figure 2.14: Number of hours of television usually watched per day, for children aged 5–14 years, by gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

The remainder of this section focuses on those children who usually watched two or more hours of television per day.

Television watching, by age group

Children aged 10–14 years (71.8%, 69.3–74.3) were significantly more likely than children aged 5–9 years (56.3%, 53.0–59.7) to usually watch two or more hours of television a day. There was no difference by gender for these age groups.

Television watching, by ethnic group

Table 2.6 gives an indication of the proportion and number of children in New Zealand’s main ethnic groups who usually watched two or more hours of television a day.

Table 2.6: Usually watched 2 or more hours of television per day for children aged 5–14 years, by ethnic group (unadjusted)

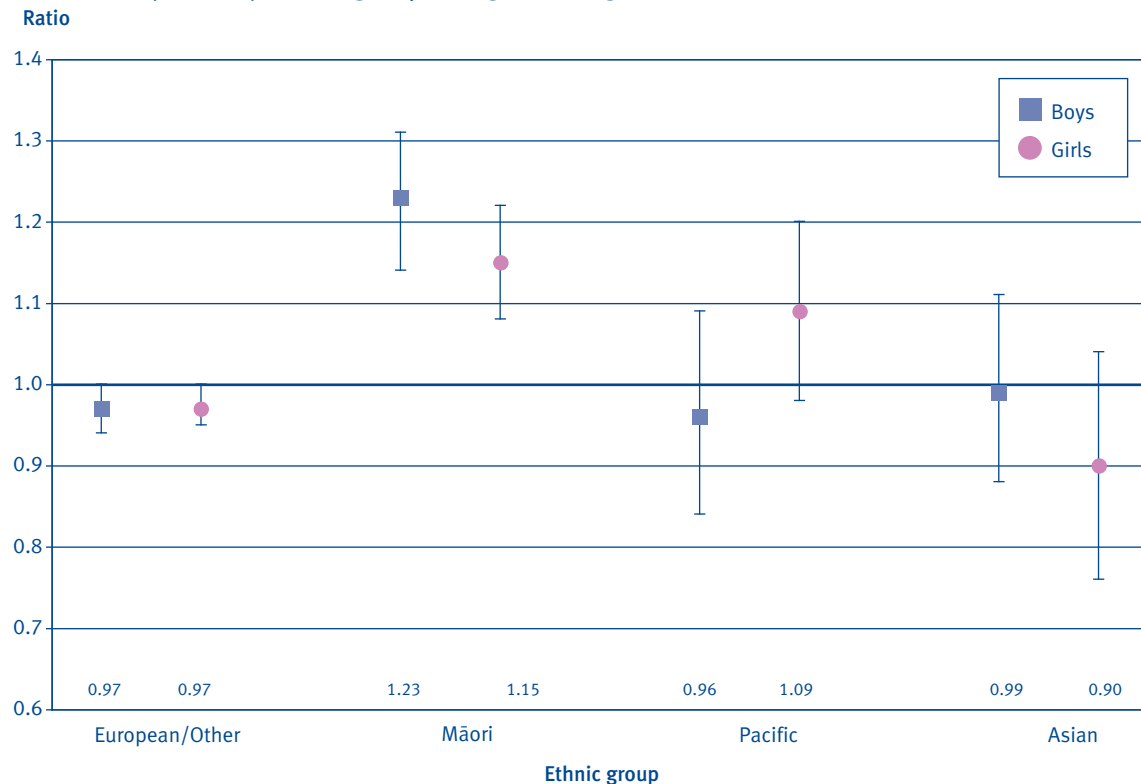
Ethnic group	Prevalence (95% CI)	Number of children
European/ Other	62.5 (60.0–65.0)	273000
Māori	76.1 (72.9–79.2)	98200
Pacific	65.7 (60.6–70.7)	42100
Asian	60.9 (54.3–67.5)	31500

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

Adjusted for age, Māori boys and girls were significantly more likely to watch television for two or more hours a day compared to boys and girls in the total population (Figure 2.15).

Figure 2.15: Usually watched 2 or more hours of television per day for children aged 5–14 years, by ethnic group and gender (age standardised rate ratio)



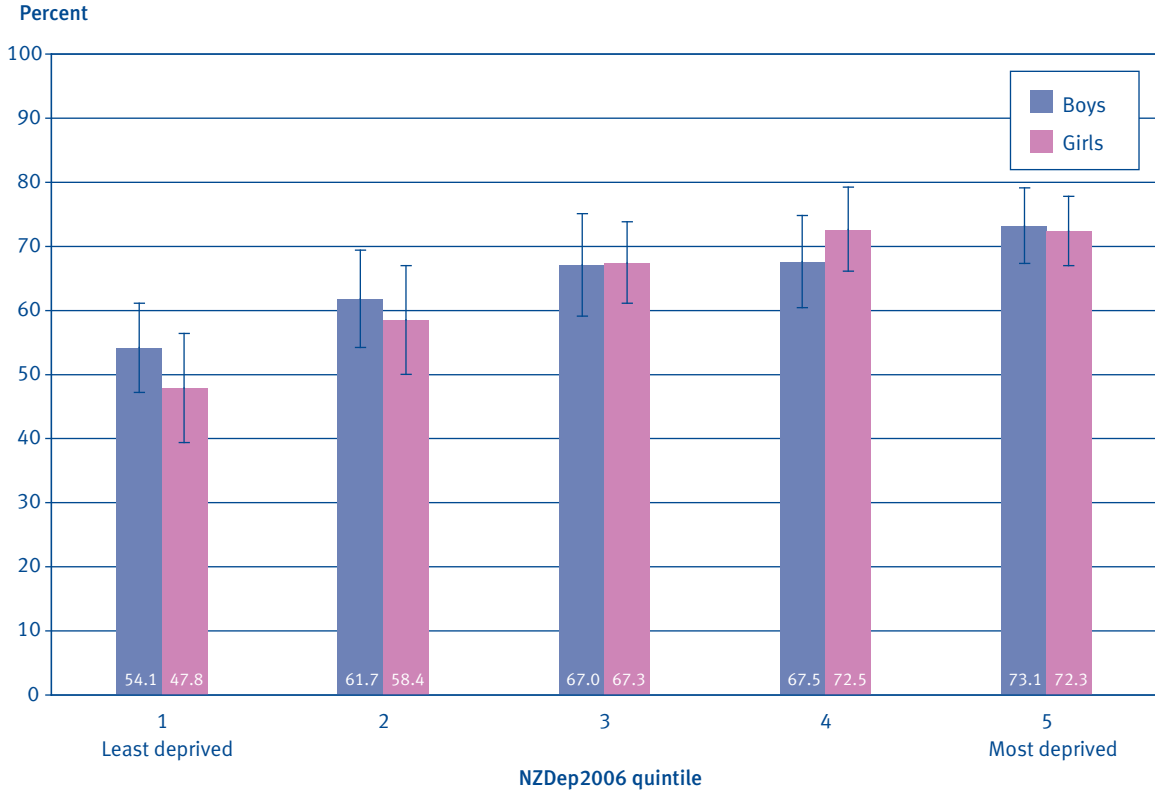
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male female population aged from 5-14 years. Total response standard output for ethnic groups has been used.

Television watching, by neighbourhood deprivation

Children aged 5–14 years living in the most deprived neighbourhoods (NZDep2006 quintile 5) were significantly more likely to watch two or more hours of television a day than children in NZDep2006 quintile 1 (Figure 2.16).

Figure 2.16: Usually watched 2 or more hours of television per day for children aged 5–14 years, by NZDep2006 and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Television watching, by DHB area

School-aged children in Northland / Lakes / Tairāwhiti / Hawke’s Bay / Whanganui DHB areas were significantly more likely to usually watch two or more hours of television a day compared to the national rate. Children living in Counties Manukau DHB area were significantly less likely to watch two or more hours of television a day (Table 2.7).

Table 2.7: Usually watched 2 or more hours of television per day for children aged 5–14 years, by DHB area (unadjusted)

DHB area	Prevalence (95% CI)	Number of children
Northland / Lakes / Tairāwhiti / Hawke’s Bay / Whanganui	72.8 (68.1–77.5) +	55500
Waitemata	59.6 (52.7–66.5)	42200
Auckland	62.3 (53.0–71.5)	28800
Counties Manukau	57.6 (50.4–64.8) –	44000
Waikato	67.0 (60.1–73.8)	34200
Bay of Plenty / Taranaki / MidCentral	66.1 (59.6–72.6)	44300
Wairarapa / Hutt Valley / Capital and Coast	65.3 (57.7–73.0)	37300
Canterbury	58.0 (50.3–65.7)	36800
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	68.6 (61.6–75.6)	45700
New Zealand total	64.1 (62.1–66.2)	368600

Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Physical punishment

Introduction

Physical punishment is the ‘use of physical force with the intention of causing pain, but not injury, for the purposes of correction or control of behaviour’ (Straus and Stewart 1999). Parental use of physical punishment is associated with negative developmental outcomes such as antisocial behaviour, poor intellectual development, poor parent-child relationships and mental health problems (Smith et al 2004). In a small number of cases physical punishment can also lead to serious physical injury and death. Discipline that does not include physical punishment has been found to be better for the parent-child relationship, and is more effective when the methods used are consistent, supportive and authoritative (not authoritarian) (Smith et al 2004).

The Ministry of Health is part of a cross-government initiative working towards attaining violence-free homes in New Zealand, and is committed to monitoring changing parental attitudes and behaviour towards children (The Taskforce for Action on Violence within Families 2006).

What were the survey questions?

In the 2006/07 New Zealand Health Survey the primary caregiver of child participants was asked: 'Thinking back over the past four weeks, when [your child] misbehaved, which of the following, if any, have you done? Just read out the number next to the words'. They were given the following responses on a show card to choose from:

- 1 Made him/her go without something or miss out on something
- 2 Yelled at him/her
- 3 Explained or discussed why he/she should not do it
- 4 Physical punishment, such as smacking
- 5 Told him/her off
- 6 Sent him/her to the bedroom or other place in the house
- 7 Ignored his/her behaviour
- 77 Something else [please specify]

The primary caregiver was also asked which of the above forms of discipline they think are most effective when trying to change their child's behaviour.

In 79% of child interviews, the primary caregiver who completed the questionnaire was the biological mother, in 14% it was the biological father, in 3% a grandparent, and the remaining 4% included a foster or adoptive parent, mother or father's partner or spouse, aunt or uncle, older sibling, or someone else with the day-to-day responsibility for the care of the child.

It is important to note that this method will undercount the use of physical punishment in the past four weeks because:

- only the actions of the primary caregiver are counted, excluding the other adults that look after the child
- the primary caregiver may have forgotten
- the primary caregiver may fail to define some acts as physical punishment
- there may be social desirability bias or feelings of guilt.

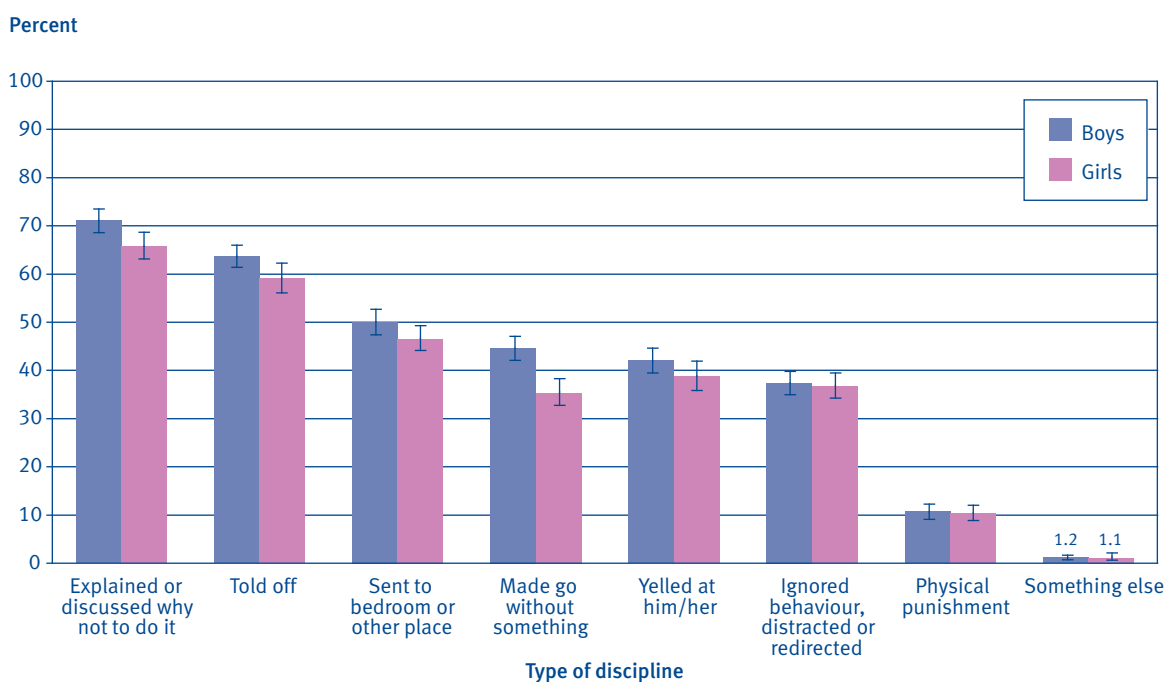
The repeal of Section 59 of the Crimes Act 1961 in May 2007 may further contribute to the undercount discussed above. The repeal removed the defence for adults to use 'reasonable force' when disciplining children in their care. This may have influenced the results by increasing the social desirability bias or fear of criminal punishment if admitting to physical punishment. This repeal and the public discussions surrounding it may have also changed some parents' behaviour or the reporting of behaviour. Readers should be aware that the 2006/07 New Zealand Health Survey data collection includes interviews from before and after this law change.

Physical punishment by the primary caregiver

Physical punishment was one of the least common forms of discipline to have been used in the previous four weeks with children aged from birth to 14 years (Figure 2.17). One in ten children aged from birth to 14 years (10.4%, 9.3–11.5), or 88,900 children, had experienced physical punishment by their primary caregiver in the previous four weeks.

Overall, 7.9% (6.9–9.0) of parents reported they did not use any discipline in the previous 4 weeks as their child had not misbehaved or they considered the child was too young to be disciplined.

Figure 2.17: Type of discipline used in previous 4 weeks by primary caregiver for children, by gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

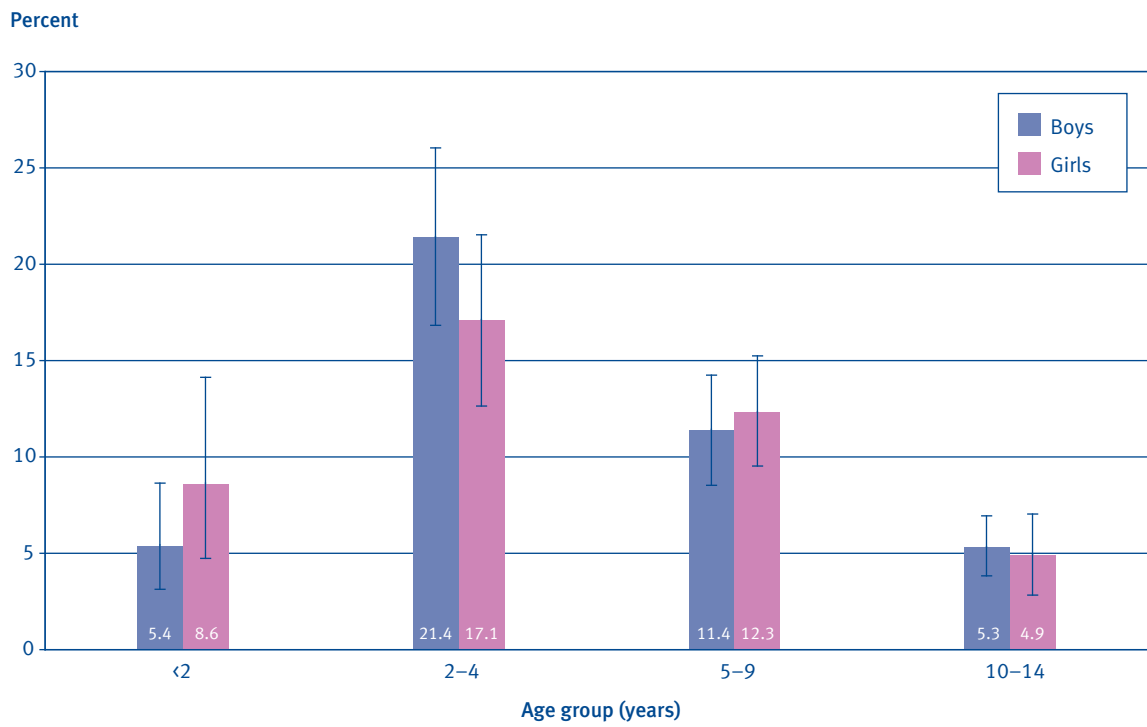
One in 22 parents (4.5%, 3.8–5.2) considered physical punishment to be an effective form of discipline. Less than one in three parents who had used physical punishment in the previous four weeks considered it to be effective (29.8%, 24.9–34.8).

Physical punishment, by age group

Children aged 2–4 years were the most likely to experience physical punishment, with one in five having experienced physical punishment by their primary caregiver in the previous four weeks (19.4%, 16.0–22.7). One in 14 children aged under two years (7.0%, 4.6–9.5) experienced physical punishment by their primary caregiver in the previous four weeks.

Children within all age groups have experienced physical punishment in the previous 4 weeks, with no significant difference by gender (Figure 2.18).

Figure 2.18: Physical punishment by the primary caregiver in the previous four weeks for children, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Physical punishment, by ethnic group

Table 2.8 gives an indication of the proportion and number of children in New Zealand’s main ethnic groups who were physically punished by their primary caregiver in the previous four weeks.

Table 2.8: Physical punishment by primary caregiver in the previous 4 weeks for children, by ethnic group (unadjusted)

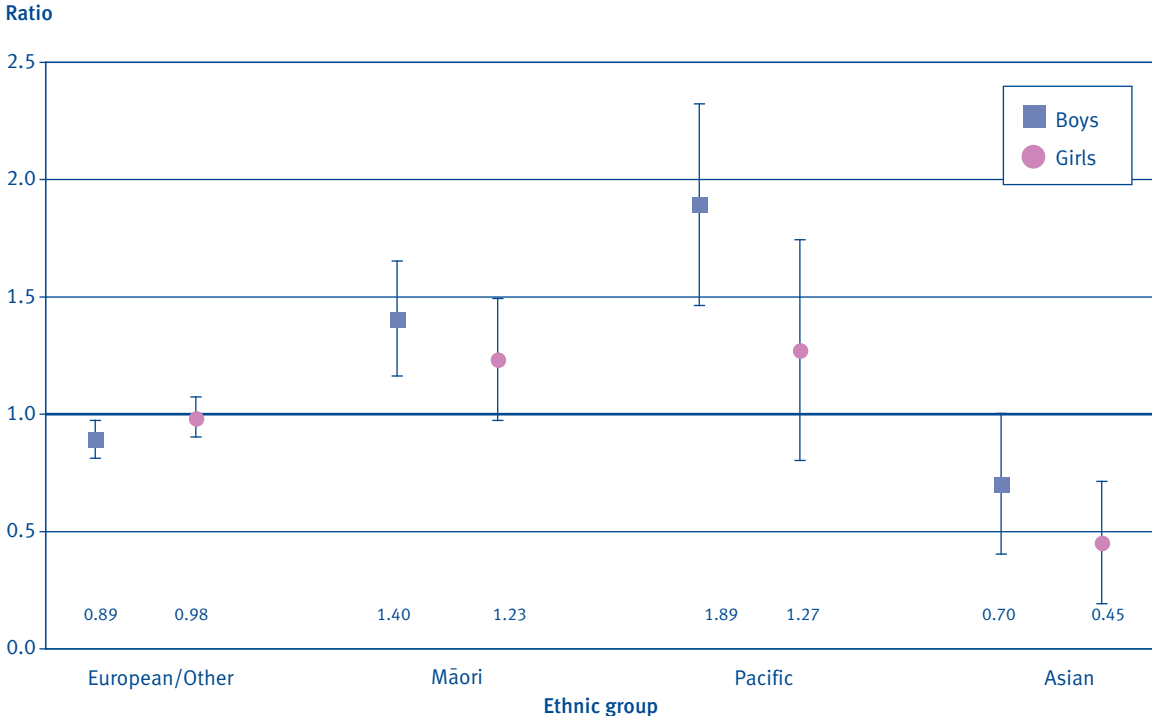
Ethnic group	Prevalence (95% CI)	Number of children
European/ Other	9.6 (8.3–10.9)	62300
Māori	14.0 (12.1–15.8)	27300
Pacific	16.9 (13.2–20.5)	16800
Asian	6.0 (3.9–8.0)	4500

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Pacific boys were nearly twice as likely to have been physically punished by their primary caregiver in the previous four weeks compared to boys in the total population (Figure 2.19). Māori boys were also significantly more likely to have been physically punished, and European/Other boys were significantly less likely than boys in the total population. Asian girls were much less likely to have experienced physical punishment by their primary caregiver in the previous four weeks compared to all girls (Figure 2.19).

Figure 2.19: Physical punishment by the primary caregiver in the previous 4 weeks for children, by ethnic group and gender of the child (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged from birth to 14 years. Total response standard output for ethnic groups has been used.

Physical punishment, by neighbourhood deprivation

Boys living in the most deprived neighbourhoods (NZDep2006 quintile 5) were more likely to have been physically punished in the previous four weeks than boys living in quintile 1 areas of low deprivation (p-value < 0.05). There were no other differences in the prevalence of physical punishment by NZDep2006 quintile.

Second-hand smoke exposure

Introduction

Second-hand smoke comes from two places: smoke breathed out by the person who smokes, and smoke from the end of a burning cigarette. Although both smokers and non-smokers can inhale second-hand smoke, in this section we focus on the inhalation of second-hand smoke by non-smokers.

Second-hand smoke causes premature death and disease in both children and adults. There is evidence that children who are exposed to second-hand smoke are at an increased risk for sudden infant death syndrome (SIDS, or cot death), chest infections, ear problems, and more severe asthma (US Department of Health and Human Services 2006). In non-smoking adults, second-hand smoke has been linked to the development of lung cancer and ischaemic heart disease (US Department of Health and Human Services 2006).

What were the survey questions?

The 2006/07 New Zealand Health Survey asked about exposure to second-hand smoke in the home and car for both adults and children. The analyses presented in this report are for children of all ages and adults who are not currently smoking tobacco (including ex-smokers), exposed to second-hand smoke in their home.

Data on child and adult exposure to second-hand smoke in the car will be presented in *Tobacco Trends 2008*. No comparable time trend data are available for exposure to second-hand smoke in the home or car.

Exposure to second-hand smoke in the home for children and non-smoking adults

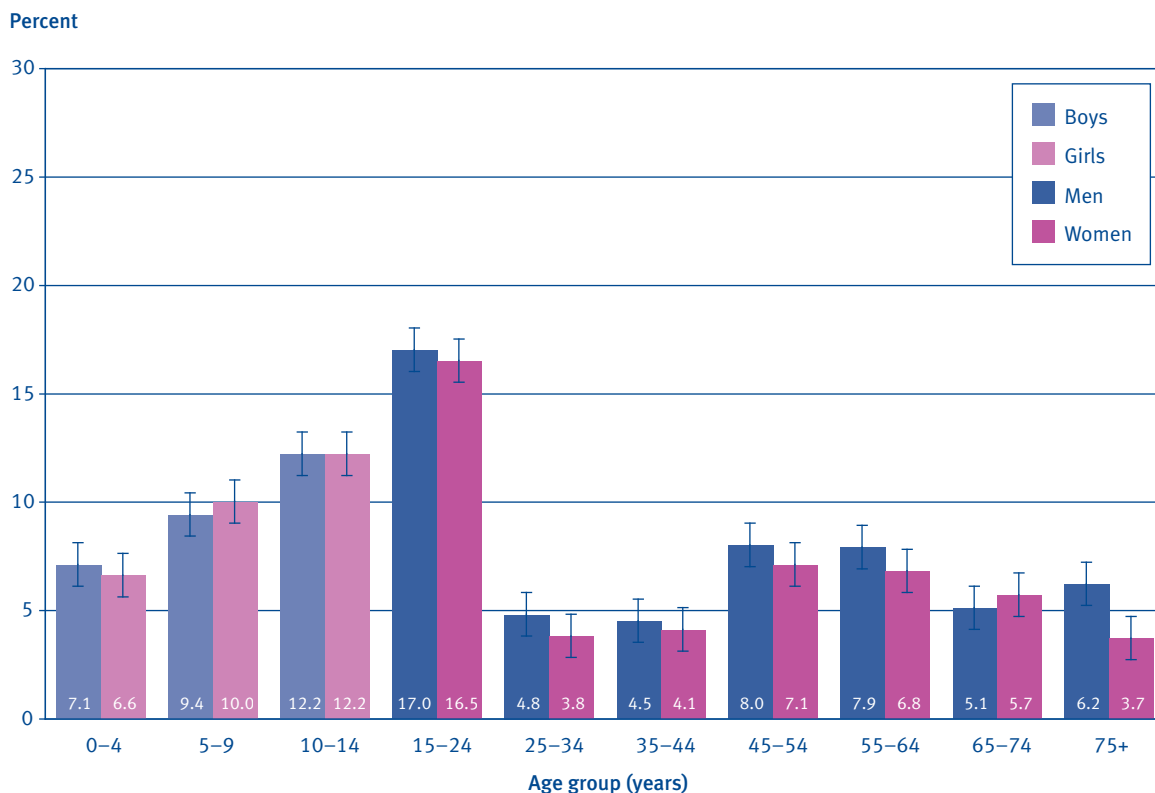
One in ten children (9.6%, 8.6–10.6) and one in 13 adult non-smokers (7.5%, 6.9–8.2) were exposed to second-hand smoke in their home. This equates to 82,100 children and 186,300 adults.

Adjusted for age, there was no significant difference by gender in the proportion of children or adult non-smokers who were exposed to second-hand smoke inside their home.

Exposure to second-hand smoke in the home, by age group

Young people aged 15–24 years were the most likely age group to be exposed to second-hand smoke in the home (Figure 2.20).

Figure 2.20: Exposure to second-hand smoke in the home for children and non-smoking adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

One in 21 children aged under two years old were exposed to second-hand smoke in their home (4.8%, 2.7–6.9).

Exposure to second-hand smoke, by ethnic group

Table 2.9 gives an indication of the proportion and number of children aged from birth to 14 years exposed to second-hand smoke in their home in New Zealand’s main ethnic population groups.

Table 2.9: Second-hand smoke exposure for children in their home, by ethnic group (unadjusted)

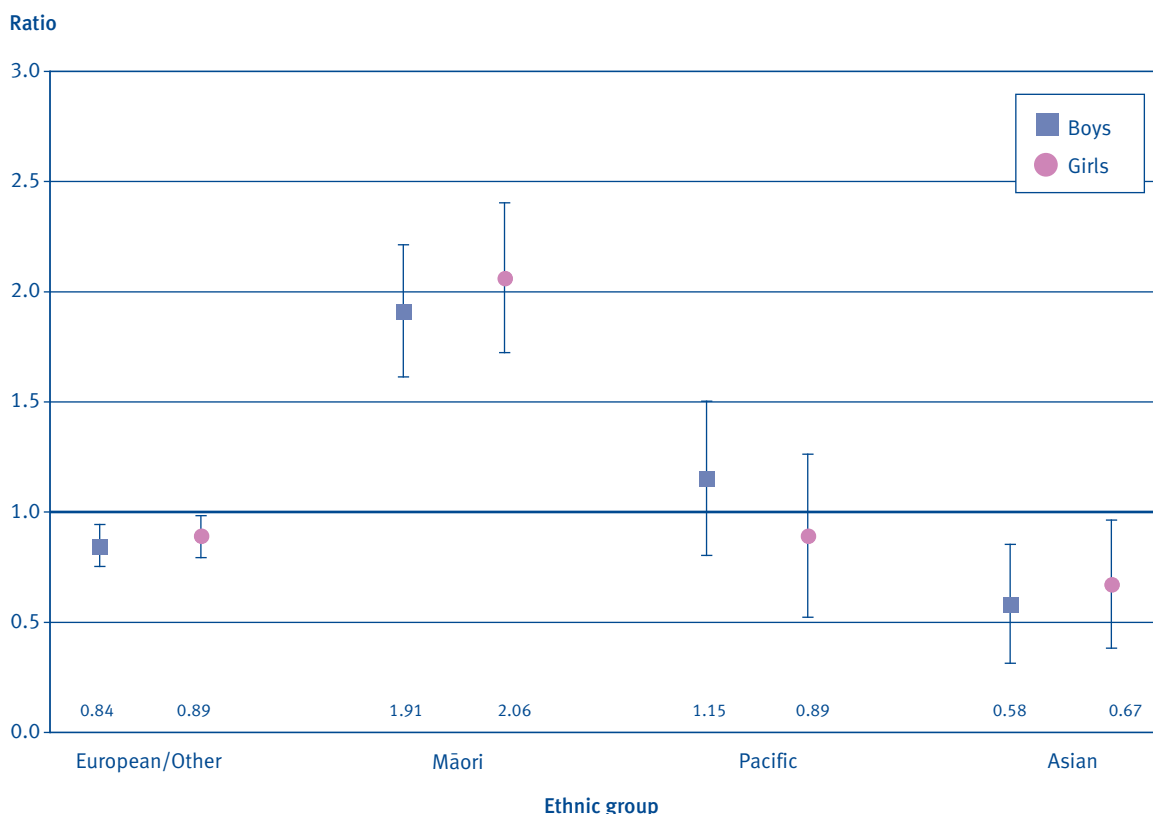
Ethnic group	Prevalence (95% CI)	Number of children
European/ Other	8.4 (7.1–9.6)	54000
Māori	18.9 (16.4–21.4)	37000
Pacific	9.6 (7.3–11.9)	9500
Asian	6.1 (4.2–7.9)	4600

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

Adjusted for age, Māori boys and girls had twice the risk of exposure to second-hand smoke in their home compared to boys and girls in the total population (Figure 2.21).

Figure 2.21: Second-hand smoke exposure for children in their home, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged from birth to 14 years. Total response standard output for ethnic groups has been used.

Table 2.10 gives an indication of the proportion and number of adults exposed to second-hand smoke in their home in New Zealand’s main ethnic population groups.

Table 2.10: Second-hand smoke exposure for non-smoking adults in their home, by ethnic group (unadjusted)

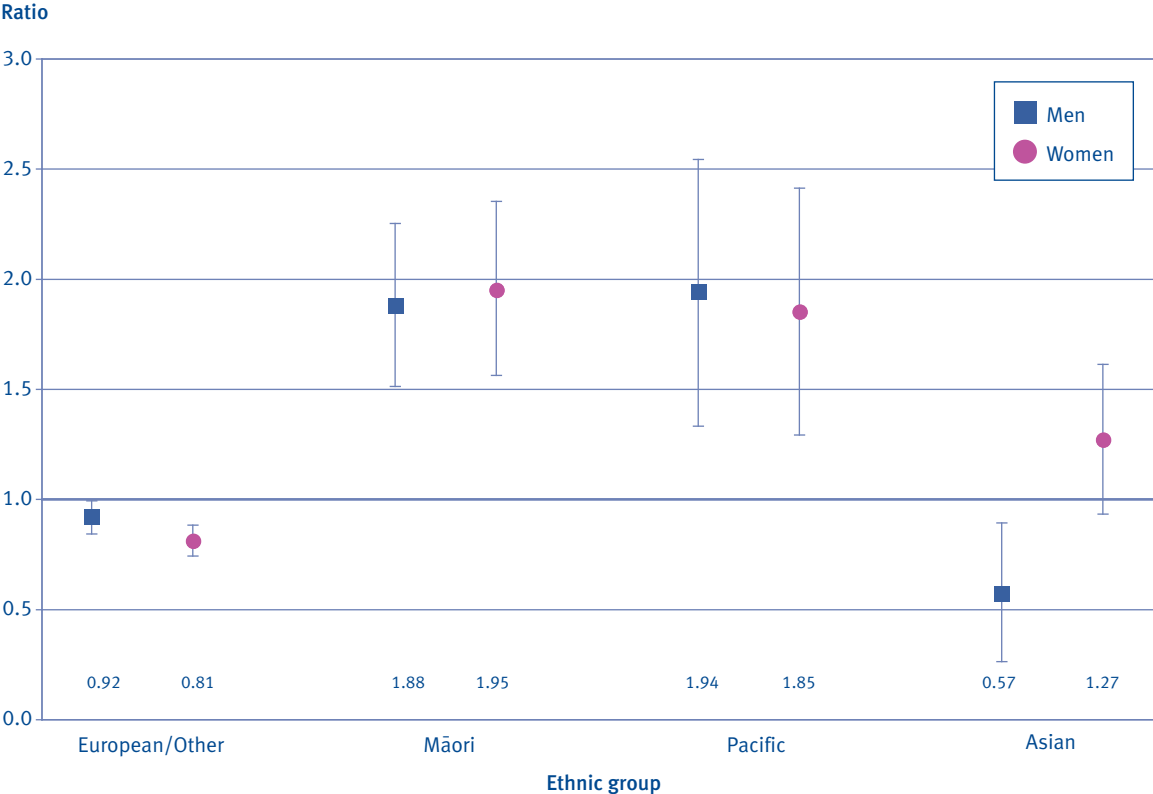
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	6.5 (5.8–7.2)	132900
Māori	16.1 (13.8–18.4)	32300
Pacific	16.4 (13.1–19.7)	19600
Asian	8.5 (6.0–11.0)	21000

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

Adjusted for age, Māori and Pacific men and women who do not smoke were almost twice as likely to be exposed to second-hand smoke in their home compared to all non-smoking men and women in the population (Figure 2.22). Asian men and European women were less likely to be exposed to second-hand smoke in their home (Figure 2.22).

Figure 2.22: Second-hand smoke exposure for adult non-smokers in their home, by ethnic group and gender (age standardised rate ratio)



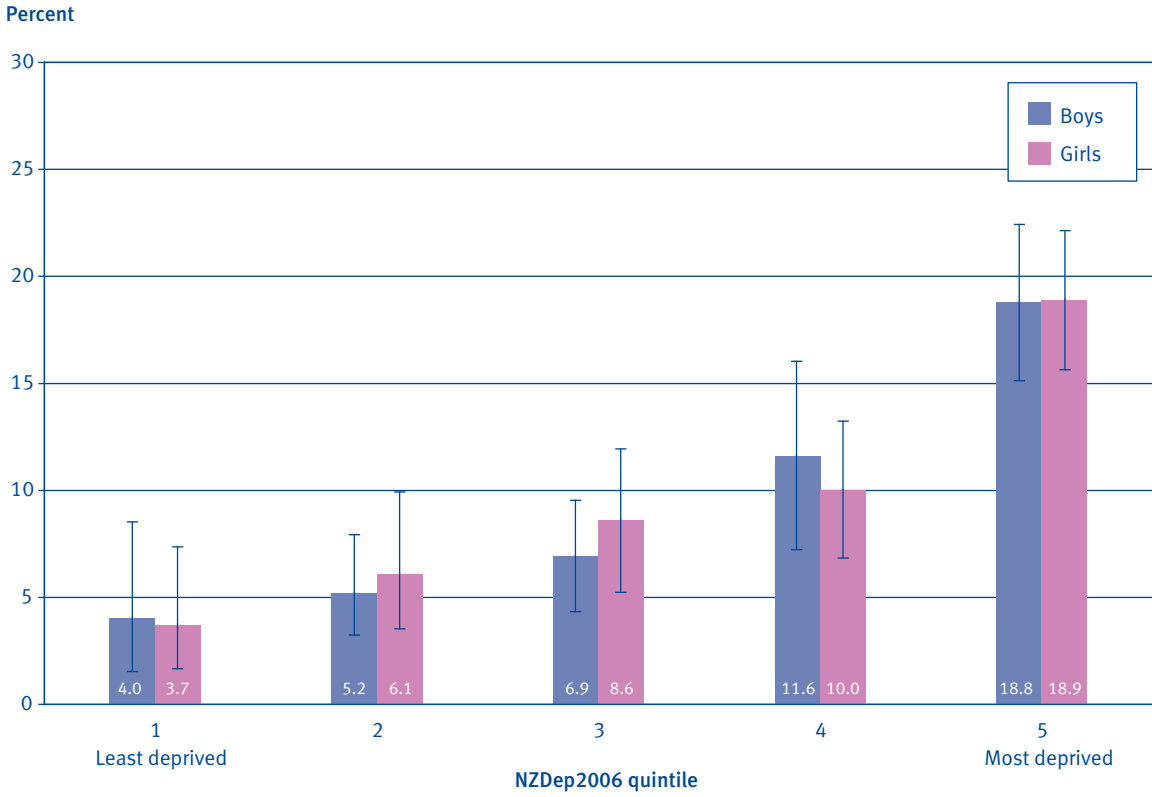
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Exposure to second-hand smoke, by neighbourhood deprivation

Children living in NZDep2006 quintile 5 areas (most deprived) were much more likely to be exposed to second-hand smoke in their home compared to children living in NZDep2006 quintile 1 areas (least deprived) when adjusted for age (Figure 2.23).

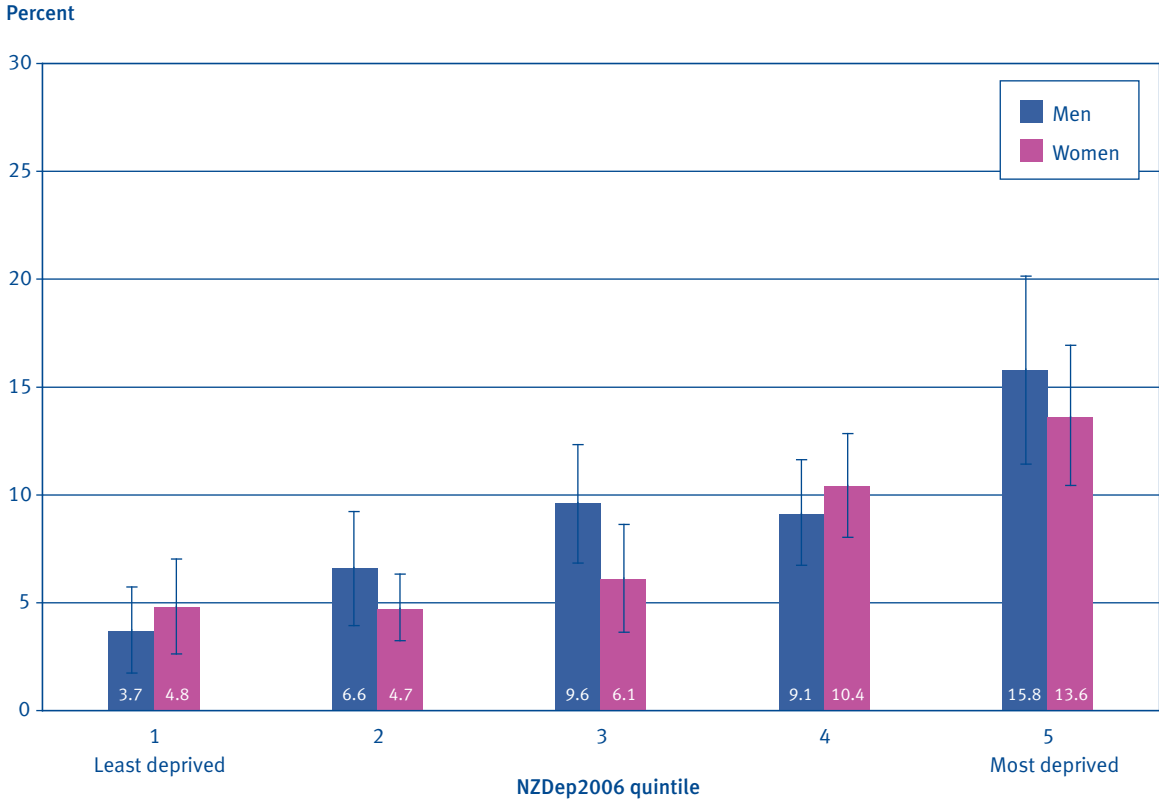
Figure 2.23: Exposure to second-hand smoke for children in their home, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Non-smoking adults in the most deprived neighbourhoods (NZDep2006 quintile 5) were more than three times as likely as non-smoking adults in the least deprived areas of NZDep2006 quintile 1 to be exposed to second-hand smoke in their home, adjusted for age (Figure 2.24).

Figure 2.24: Exposure to second-hand smoke for non-smoking adults in their home, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Exposure to second-hand smoke, by DHB area

Children's exposure to second-hand smoke in their home varied by DHB area. Children living in Waikato and Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui DHB areas were exposed to second-hand smoke at home at a significantly higher rate than the total child rate (Table 2.11). Waitemata and Auckland DHB areas had significantly lower prevalences of second-hand smoke exposure for children.

Non-smoking adults living in Canterbury and Auckland DHB areas were significantly less likely to be exposed to second-hand smoke in their home compared to the national rate (Table 2.11).

Table 2.11: Exposure to second-hand smoke for children and non-smoking adults in their home, by DHB area (unadjusted)

DHB area	Prevalence in children (95% CI)	Number of children	Prevalence in adults (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	13.1 (10.2–16.1) +	15200	8.1 (6.1–10.0)	22000
Waitemata	5.2 (3.0–7.4) –	5400	8.5 (6.4–10.7)	27200
Auckland	5.4 (3.0–8.9) –	4000	4.9 (3.1–6.7) –	12900
Counties Manukau	7.8 (5.2–10.3)	8700	9.3 (7.0–11.5)	23600
Waikato	14.8 (10.8–18.8) +	11300	9.0 (6.5–11.5)	17600
Bay of Plenty / Taranaki / MidCentral	11.8 (8.6–14.9)	11600	8.5 (6.3–10.7)	23300
Wairarapa / Hutt Valley / Capital and Coast	7.3 (4.5–10.2)	6600	7.3 (5.0–9.6)	21000
Canterbury	7.2 (4.3–11.4)	6600	4.8 (3.0–6.6) –	14300
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	13.6 (8.6–18.6)	12800	7.9 (5.2–10.6)	24300
New Zealand total	9.6 (8.6–10.6)	82100	7.5 (6.9–8.2)	186300

Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Tobacco use

Introduction

Tobacco smoking has long been known to be a major cause of death and ill health. Smoking is the main cause of lung cancer and chronic obstructive pulmonary disease (COPD), and is a primary risk factor for cardiovascular disease, cancers of the mouth, oesophagus, pharynx and larynx, and many other cancers and chronic diseases (US Department of Health and Human Services 2004).

What were the survey questions?

In the 2006/07 New Zealand Health Survey, adult participants aged 15 years or over were asked a series of questions about their smoking habits, including the frequency and quantity of tobacco smoking.

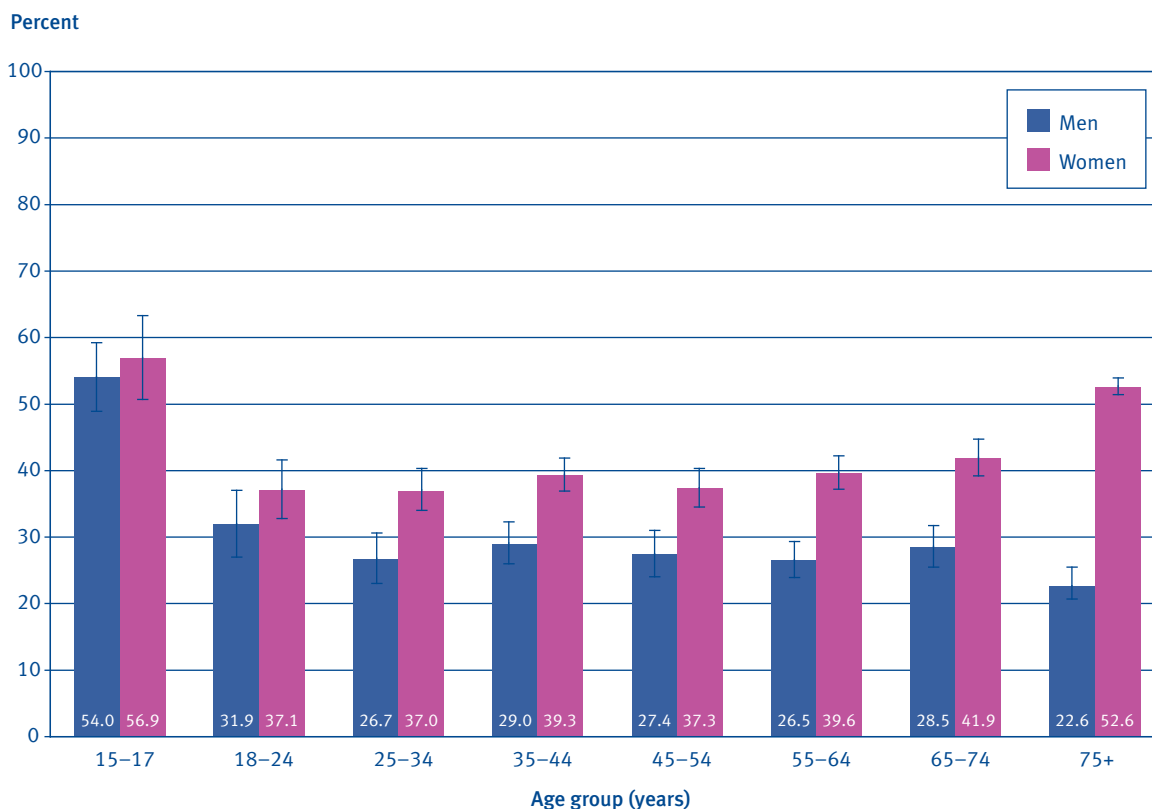
A current smoker, based on the World Health Organization definition, is someone who has smoked more than 100 cigarettes in their lifetime and is currently smoking at least once a month (World Health Organization 1998).

Further analyses of tobacco use data from the 2006/07 New Zealand Health Survey will be available in *Tobacco Trends 2008*.

Never tried smoking for adults

One in three adults (35.4%, 34.3–36.4) had never tried smoking, not even a few puffs. Over half of young people aged 15–17 years had never tried smoking (55.4%, 50.5–60.4), with no difference by gender in this age group. For 18–24-year-olds, only one in three had never tried smoking (34.5%, 30.8–38.2). From 25 years of age women became more likely than men to have never tried smoking (Figure 2.25).

Figure 2.25: Adults who have never tried smoking, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Current smoking for adults

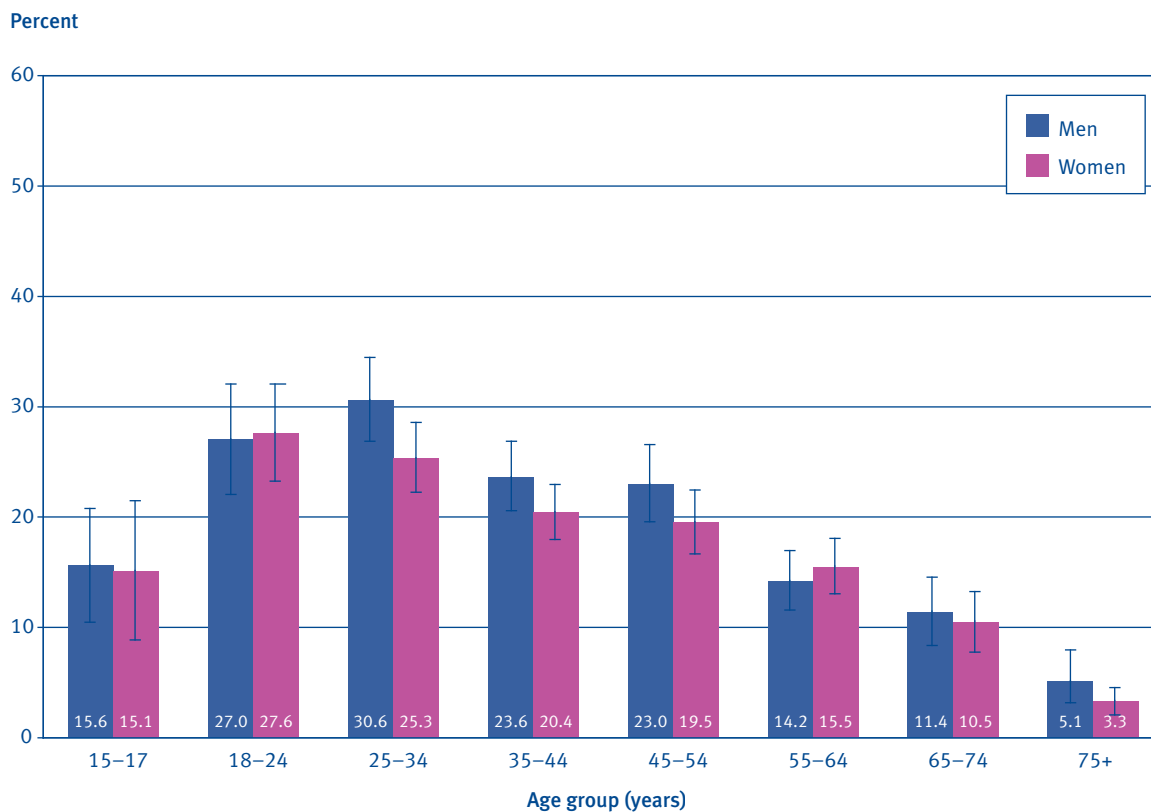
One in five adults (19.9%, 18.9–20.8) was a current smoker. This equates to 619,900 New Zealand adults. There were no differences in the age-adjusted prevalence of current smoking by gender.

Most current smokers smoked at least once a day (91.2%, 89.6–92.7), one in 16 current smokers (6.4%, 5.1–7.7) smoked at least once a week, and 2.5% (1.6–3.3) smoked at least once a month. There were no differences by gender in the frequency of smoking.

Current smoking, by age group

Smoking prevalence peaked in early adulthood (18–34 years) and then declined with age (Figure 2.26). One in seven 15–17-year-olds were current smokers (15.3%, 11.2–19.5), even though it is illegal in New Zealand to purchase tobacco products at this age.

Figure 2.26: Current smoking for adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Current smoking, by ethnic group

Table 2.12 gives an indication of the burden of tobacco use by adults in New Zealand's main ethnic population groups.

Table 2.12: Current smoking for adults, by ethnic group (unadjusted)

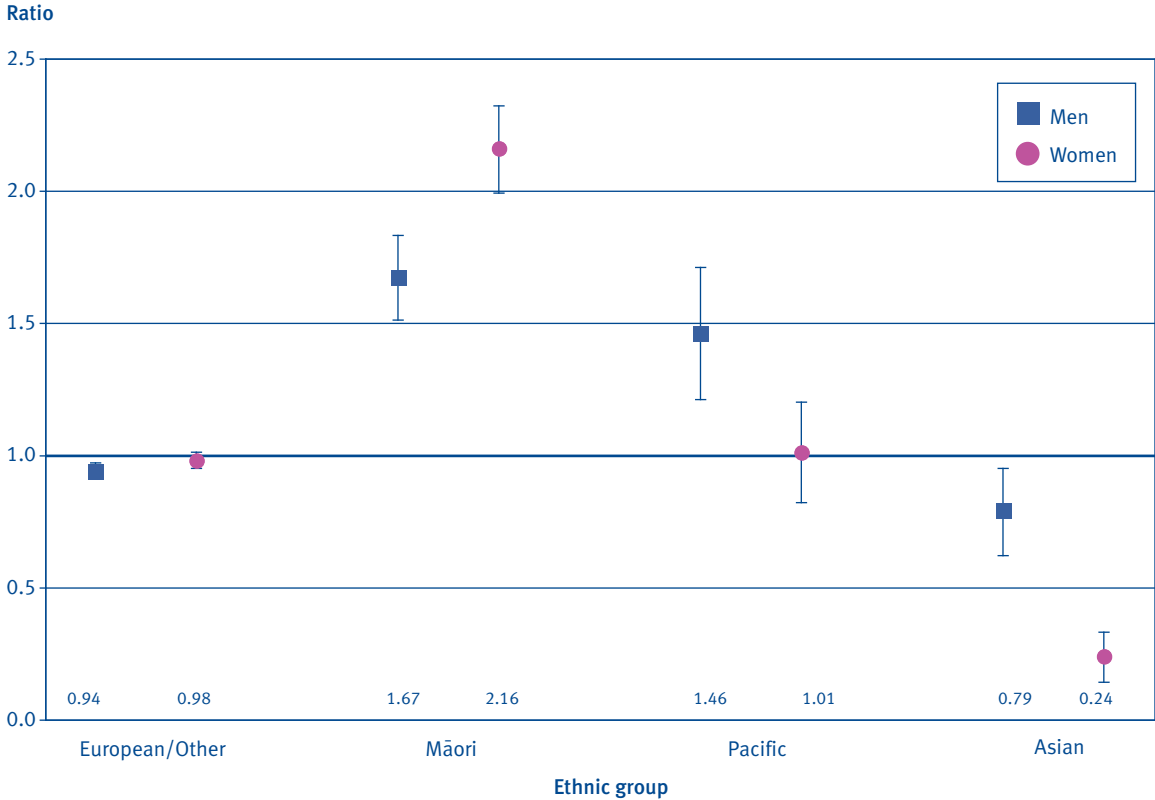
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	18.6 (17.5–19.7)	475100
Māori	42.2 (40.0–44.4)	150000
Pacific	26.9 (23.6–30.2)	44300
Asian	11.2 (8.9–13.4)	31200

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Māori women were more than twice as likely to be current smokers than women in the total population. Māori men and Pacific men were 1.5 times more likely to be current smokers than men in the total population. Asian women were the least likely population group to currently smoke (Figure 2.27).

Figure 2.27: Current smoking for adults, by ethnic group and gender (age standardised rate ratio)



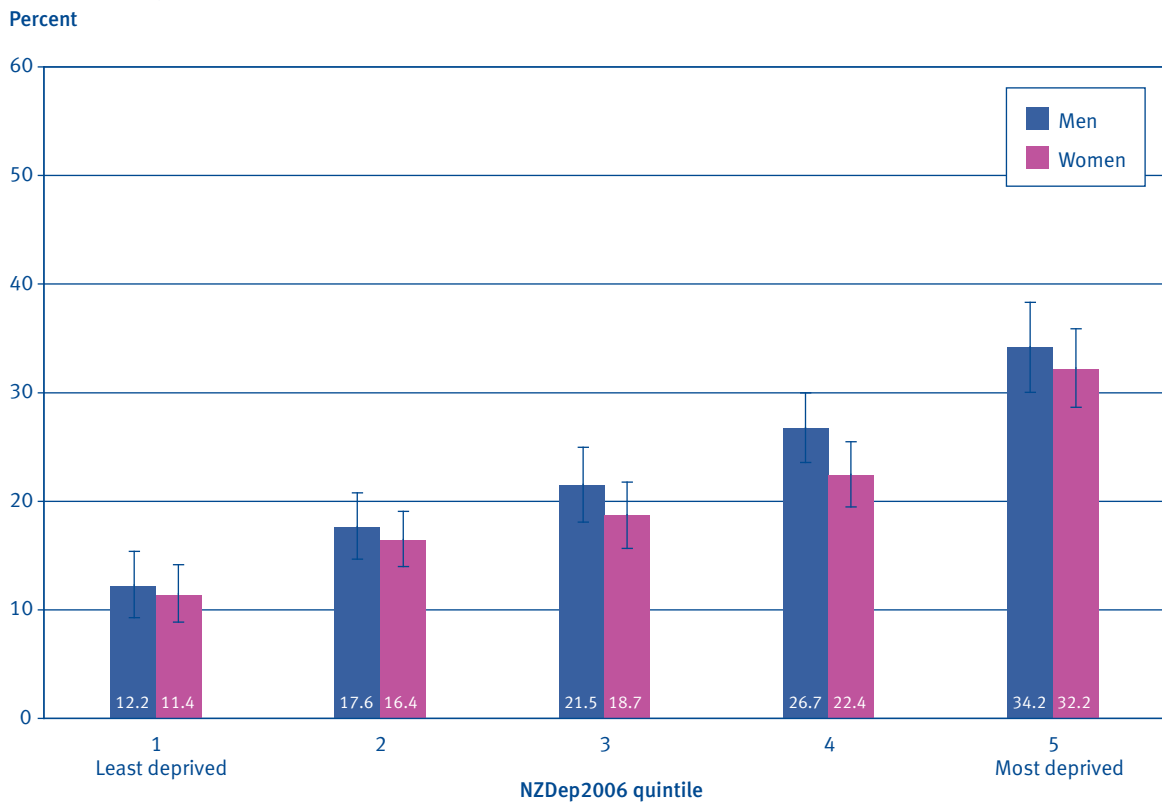
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Current smoking, by neighbourhood deprivation

In both men and women the prevalence of smoking was three times higher in NZDep2006 quintile 5 (most deprived) than in quintile 1 (least deprived), when adjusted for age (Figure 2.28).

Figure 2.28: Current smoking for adults, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Current smoking, by DHB area

Adults living in Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui and Waikato DHB areas were significantly more likely to be current smokers, whereas adults living in Waitemata and Wairarapa / Hutt Valley / Capital and Coast DHB areas were less likely to be current smokers, compared to the national rate (Table 2.13).

Table 2.13: Current smoking for adults, by DHB area (unadjusted)

DHB area	Prevalence in adults (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	26.2 (23.7–28.6) +	98300
Waitemata	15.3 (12.2–18.5) –	58000
Auckland	17.2 (14.1–20.3)	55500
Counties Manukau	21.0 (17.9–24.1)	67700
Waikato	23.6 (20.5–26.8) +	61300
Bay of Plenty / Taranaki / MidCentral	20.8 (18.2–23.4)	72900
Wairarapa / Hutt Valley / Capital and Coast	16.5 (13.8–19.1) –	57100
Canterbury	18.3 (15.2–21.3)	67800
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	20.7 (17.2–24.2)	81400
New Zealand total	19.9 (18.9–20.8)	619900

Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

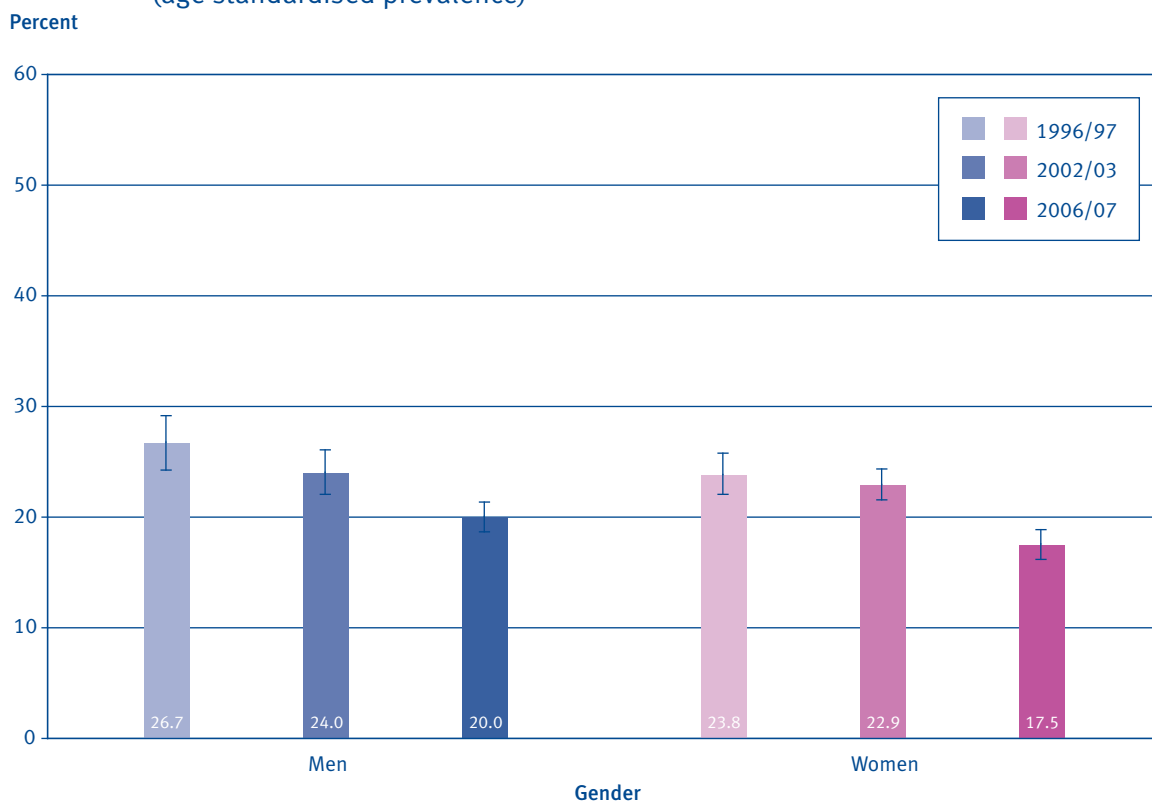
Time trends in daily smoking

Earlier New Zealand Health Survey data are not strictly comparable with 2006/07 data because the definition and questions for 'current smoker' have changed to align with international definitions. Comparable data will be available from the 2006 and 2008 New Zealand Tobacco Use Surveys (NZTUS), for adults aged 15–64 years. However, the 2006 NZTUS data collection period was too close to the New Zealand Health Survey data collection to see time trends and 2008 NZTUS data will not be available until later in 2008.

Previous health surveys collected data on daily smoking (that is, adults currently smoking one or more cigarettes per day) and these trends are presented here.

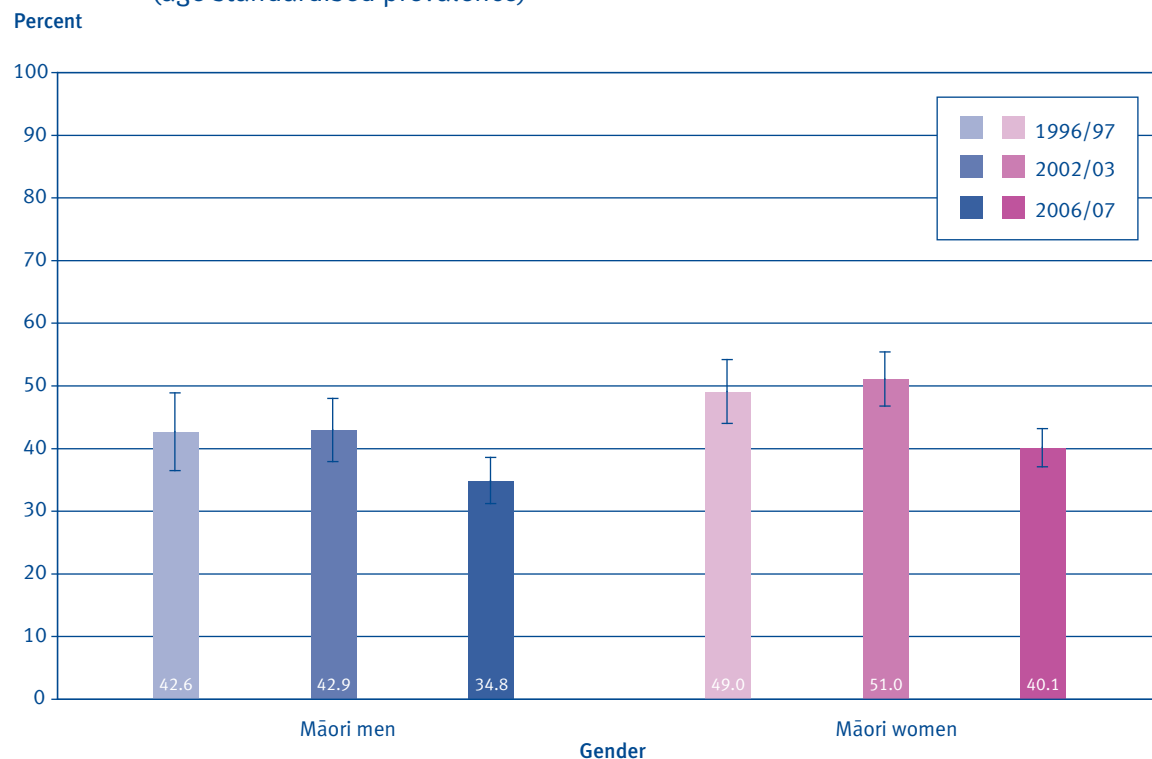
The prevalence of daily smoking has decreased from 23.4% (22.2–24.7) in 2002/03 to 18.7% (17.7–19.7) in 2006/07, adjusted for age. This decline was significant for both men and women between 2002/03 and 2006/07 (Figure 2.29).

Figure 2.29: Daily smoking for adults, by gender, 1996/97, 2002/03 and 2006/07 (age standardised prevalence)



Among Māori, there was also a significant decrease in current daily smoking from 47.2% (43.8–50.6) in 2002/03 to 37.6% (35.5–39.7) in 2006/07. This decline was evident in both Māori men and women (Figure 2.30).

Figure 2.30: Daily smoking for Māori adults, by gender, 1996/97, 2002/03 and 2006/07 (age standardised prevalence)



Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Alcohol use

Introduction

Alcohol is the most commonly used recreational drug in New Zealand, with the majority of New Zealanders consuming alcohol at least occasionally (Ministry of Health 2007). The consumption of more than two standard drinks per day increases the risk for health problems in many organ systems, including the central nervous system, gastrointestinal system, and cardiovascular system, as well as affecting foetal development (Schuckit 2005), and increasing the risk of several cancers (World Cancer Research Fund and American Institute for Cancer Research 2007). Alcohol also contributes to death and injury due to traffic accidents, drowning, suicide, assault and domestic violence (Conner et al 2005).

What were the survey questions?

In the 2006/07 New Zealand Health Survey, adult participants were asked whether they had had an alcoholic drink in the previous 12 months. Adult participants who had an alcoholic drink in the previous 12 months were then asked 10 questions about their alcohol use, covering the volume and frequency of alcohol consumed, alcohol-related problems and abnormal drinking behaviour. These 10 questions were developed by the WHO, and are known as the Alcohol Use Disorders Identification Test (AUDIT).

There are several ways to measure potentially hazardous drinking behaviour. In this report, the international definition of hazardous drinking as an AUDIT score of 8 or more has been used, representing an established pattern of drinking that carries a high risk of future damage to physical or mental health, but may not yet have resulted in significant adverse effects (Babor et al 2001). As men and women have been assigned the same cut-off score, this may underestimate hazardous drinking in women, who generally have lower alcohol tolerance than men (Alcohol Advisory Council of New Zealand 2008).

Prevalence of hazardous drinking has been presented for the total population and for 'drinkers' (the proportion of the population who had a drink containing alcohol in the previous 12 months).

Alcohol use in the previous 12 months

Eight out of every ten adults (83.7%, 82.9–84.5) reported having had a drink containing alcohol in the previous year. Previous year alcohol use was higher in men (87.9%, 86.6–89.2) than in women (80.8%, 79.6–82.0), adjusted for age.

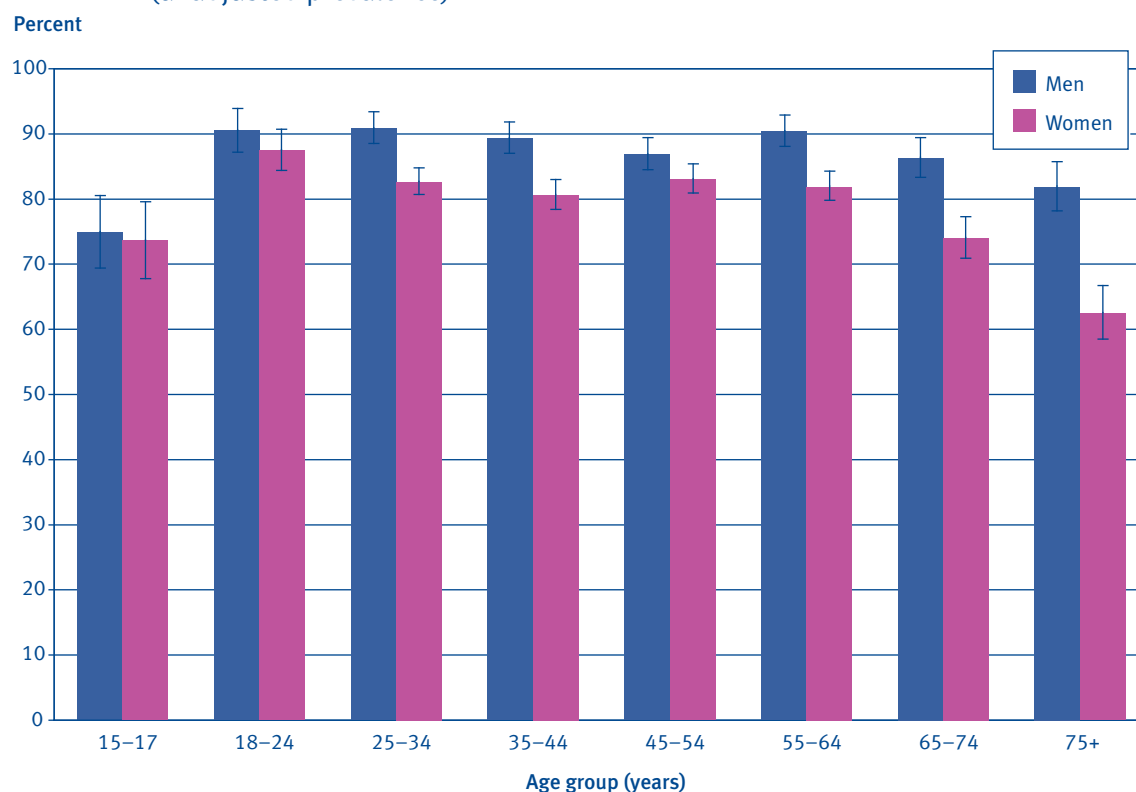
Alcohol use in the previous 12 months for adults, by age group

Three out of four 15–17-year-olds had a drink containing alcohol in the previous 12 months (74.2%, 70.1–78.4).

In under 25-year-olds there was no difference in the proportion of men and women who had a drink containing alcohol in the previous 12 months. However, from 25–34 years, women were less likely than men to have had an alcoholic drink in the previous 12 months (Figure 2.31).

In both men and women aged 18 years or over, the prevalence of previous year alcohol use was relatively stable until age 55–64 years, after which it declined slightly in men and more quickly in women (Figure 2.31).

Figure 2.31: Alcohol use in the previous 12 months for adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Hazardous drinking patterns in the previous 12 months

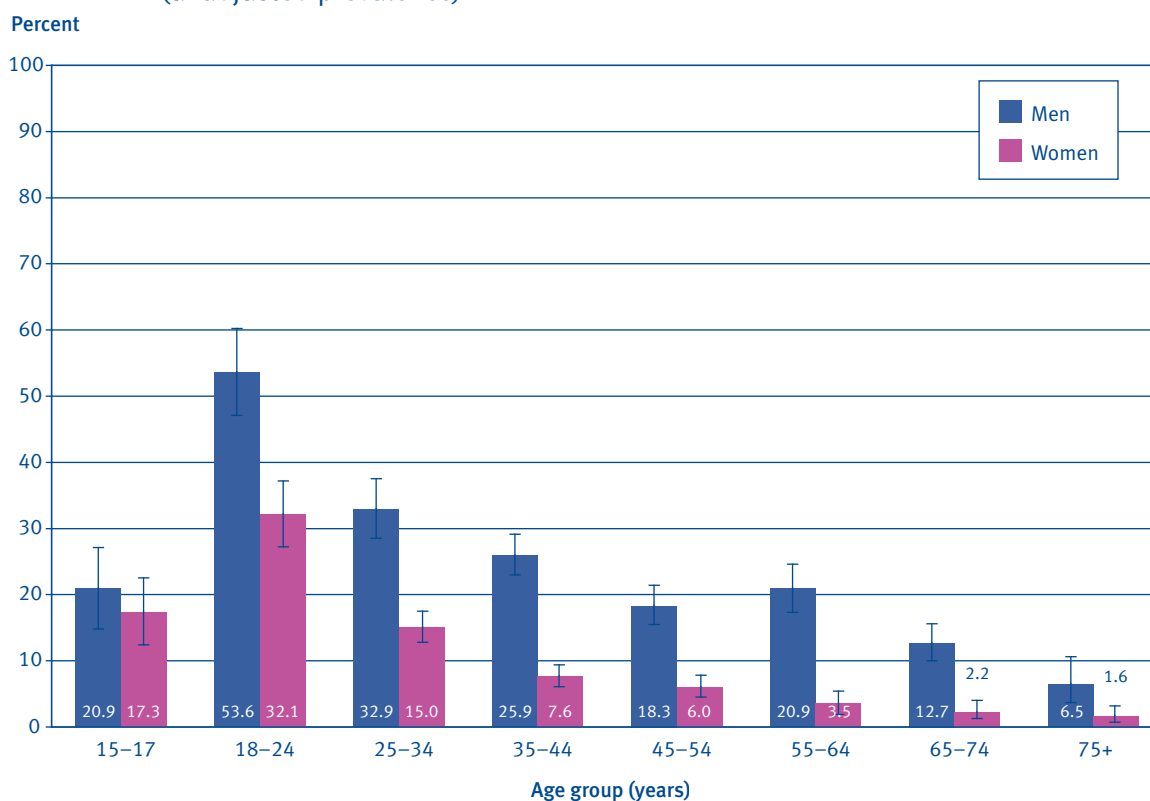
One in five adult drinkers (21.1%, 20.1–22.2) had a potentially hazardous drinking pattern, as indicated by a score of 8 or more on the AUDIT questionnaire. This is 17.7% (16.8–18.5) of the total adult population, equating to 551,300 adults who had a high risk of future damage to their physical and/or mental health due to drinking alcohol.

In the total population, men (27.6%, 25.9–29.4) were more than twice as likely as women (12.2%, 11.1–13.3) to have a potentially hazardous drinking pattern, when standardised for age. This pattern remained the same when looking at only those who had an alcoholic drink in the previous 12 months, with 31.5% (29.5–33.4) of male adult drinkers and 15.1% (13.8–16.4) of female adult drinkers at a high risk of future damage to their physical and/or mental health due to their drinking, when age standardised.

Hazardous drinking, by age group

In both men and women, the proportion of adults with a potentially hazardous drinking pattern was highest for those aged 18–24 years. Half of all men aged 18–24 years, and one in three women aged 18–24 years, had a hazardous drinking pattern (Figure 2.32).

Figure 2.32: Hazardous drinking (AUDIT score of 8 or more) for adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

For adults who had an alcoholic drink in the previous year, the pattern was the same, with hazardous drinking prevalence peaking for men aged 18–24 years (59.3%, 52.6–65.9) and for women in the same age group (36.7%, 31.1–42.3).

Hazardous drinking, by ethnic group

Table 2.14 gives an indication of the burden of hazardous drinking in New Zealand’s main ethnic population groups.

Table 2.14: Hazardous drinking for adults, by ethnic group (unadjusted)

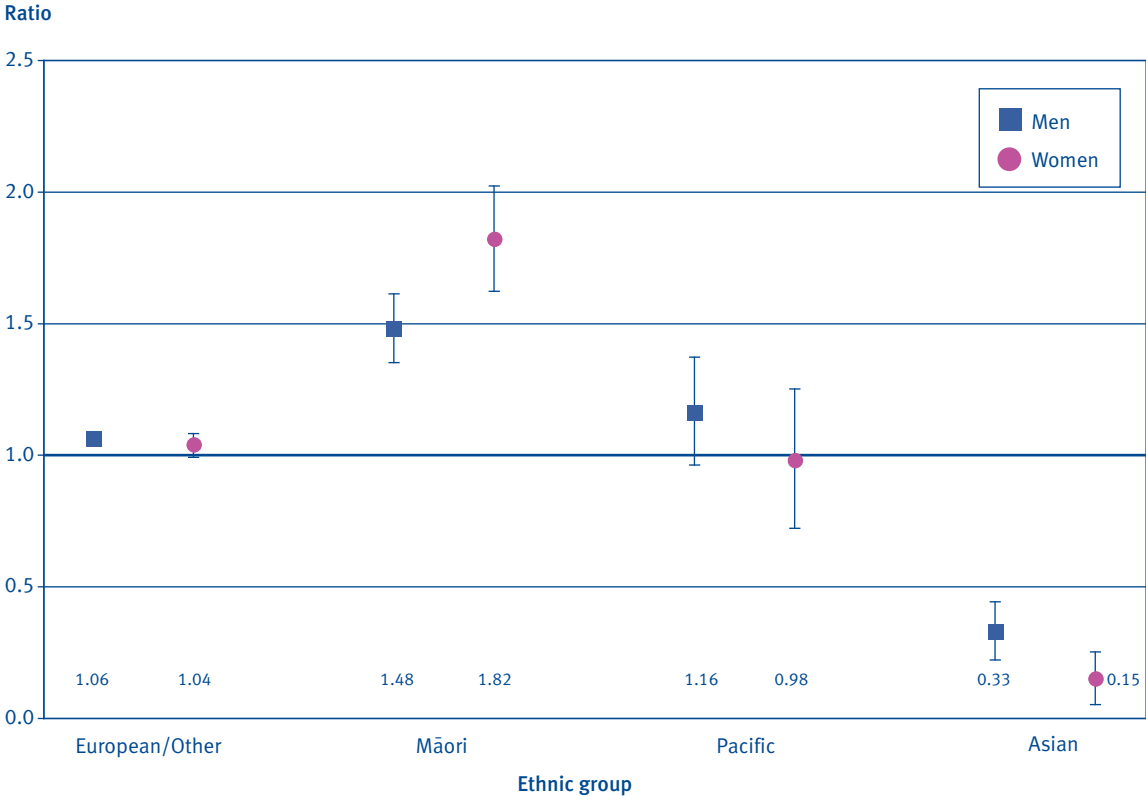
Ethnic group	Prevalence for drinkers (95% CI)	Prevalence for total adults (95% CI)	Number of adults
European/ Other	20.1 (18.9–21.3)	17.7 (16.6–18.7)	451300
Māori	39.2 (36.9–41.4)	32.9 (30.9–35.0)	117100
Pacific	39.2 (35.0–43.3)	23.0 (19.8–26.2)	37900
Asian	9.4 (6.5–12.3)	5.6 (3.8–7.4)	15600

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

Adjusted for age, Māori women were nearly twice as likely, and Māori men 1.5 times as likely, to have a potentially hazardous alcohol drinking pattern, compared to women and men in the total population (Figure 2.33). Asian men and women were significantly less likely to have a hazardous drinking pattern.

Figure 2.33: Hazardous drinking for adults, by ethnic group and gender (age standardised rate ratio)

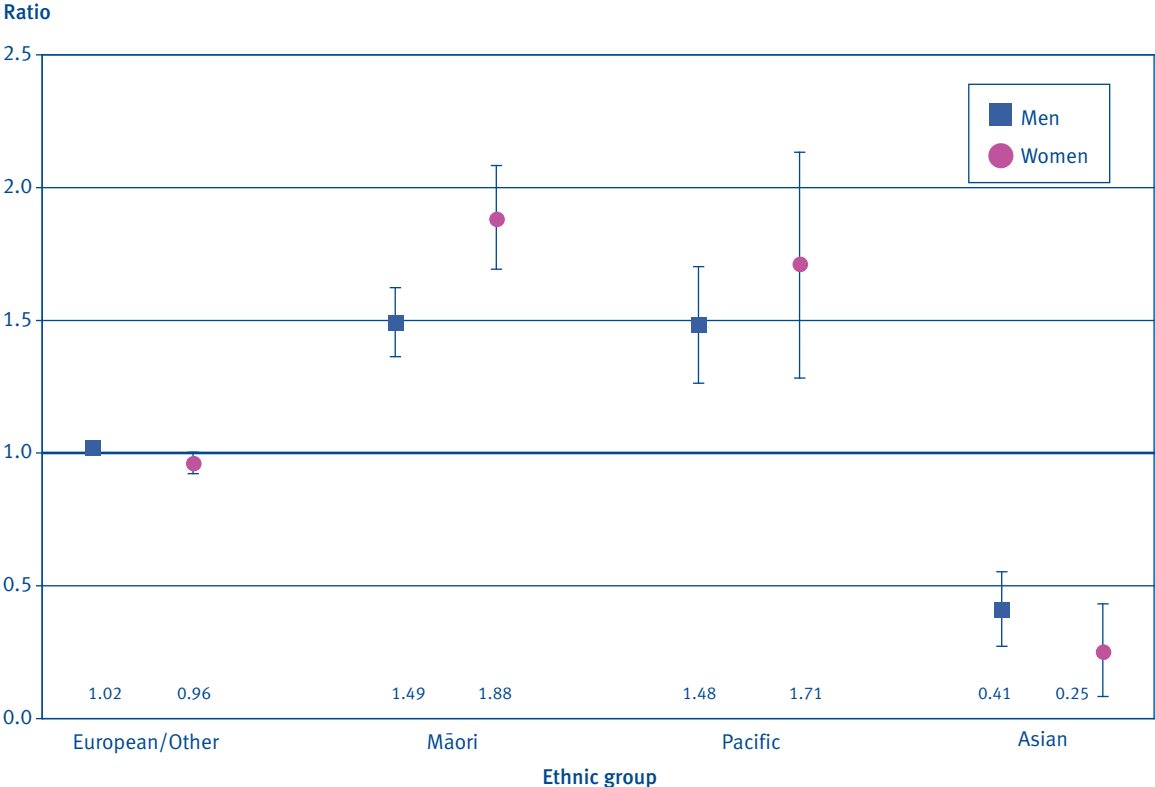


Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

When only considering adults who had an alcoholic drink in the previous 12 months, Pacific men and women also had an increased prevalence of hazardous drinking compared to all men and women who had an alcoholic drink in the previous 12 months (Figure 2.34).

Figure 2.34: Hazardous drinking for adult drinkers, by ethnic group and gender (age standardised rate ratio)



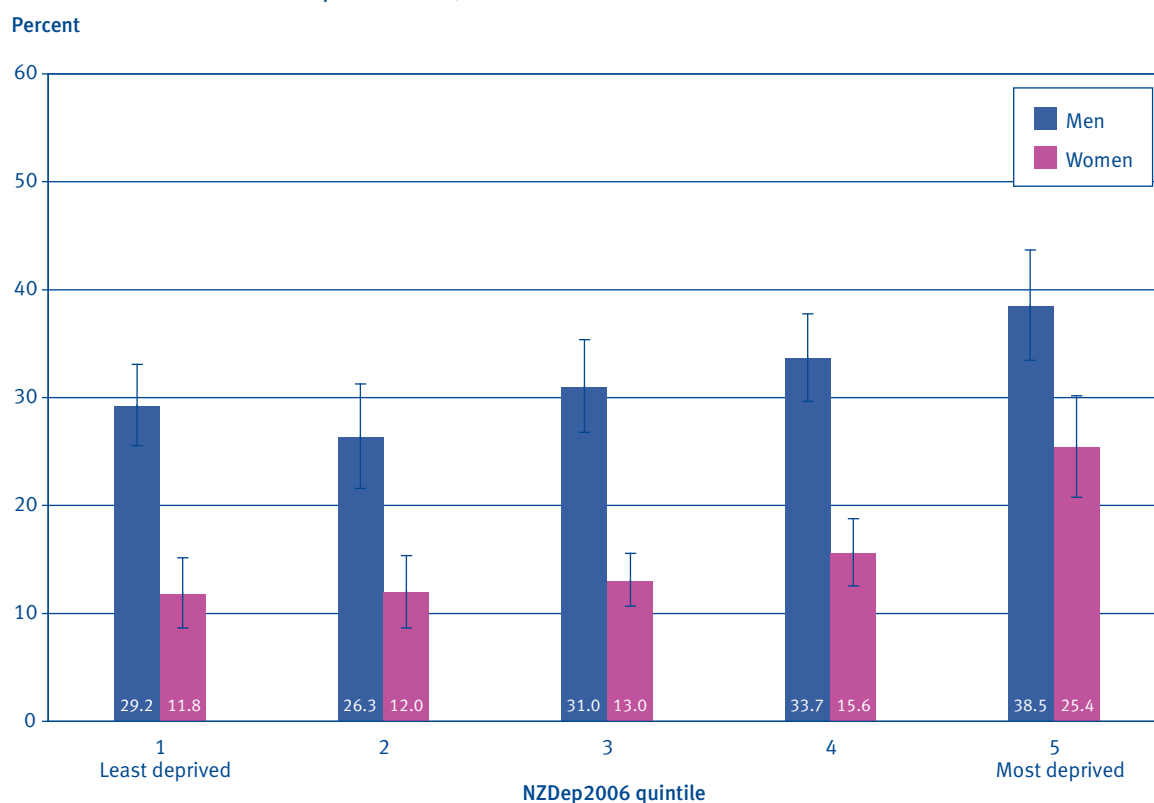
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Hazardous drinking, by neighbourhood deprivation

In both men and women the proportion of adult drinkers with a potentially hazardous drinking pattern was higher in NZDep2006 quintile 5 (most deprived) than in quintile 1 (least deprived). This pattern is particularly strong for women, where the age standardised prevalence more than doubles from quintile 1 to quintile 5 (Figure 2.35).

Figure 2.35: Hazardous drinking for drinkers, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

This pattern is similar when considering the total adult population (rather than just ‘drinkers’), with statistically significant differences between NZDep2006 quintile 1 and 5 for women.

Hazardous drinking, by DHB area

Adults living in Northland / Tairāwhiti / Hawke’s Bay / Lakes / Whanganui DHB areas were significantly more likely to have a hazardous drinking pattern than the national rate, with one in four ‘drinkers’ in these DHBs having an AUDIT score of 8 or more (Table 2.15). Adults living in Counties Manukau DHB area were significantly less likely to have a hazardous drinking pattern. However, this is due to a smaller proportion of adults having had an alcoholic drink in the previous 12 months compared to the national rate, and this difference disappears when considering only those adults who are ‘drinkers’ (Table 2.15).

Table 2.15: Hazardous drinking for adults, by DHB area (unadjusted)

DHB area	Prevalence for drinkers (95% CI)	Prevalence for total adults (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	23.8 (21.1–26.5) +	20.4 (18.1–22.7) +	76600
Waitemata	19.4 (15.8–22.9)	16.2 (13.2–19.2)	61400
Auckland	22.0 (18.1–26.0)	17.4 (14.2–20.6)	56000
Counties Manukau	18.5 (15.6–21.4)	13.3 (11.3–15.4) –	43000
Waikato	24.1 (20.8–27.5)	20.1 (17.3–22.9)	52300
Bay of Plenty / Taranaki / MidCentral	19.7 (16.8–22.7)	17.1 (14.5–19.6)	60000
Wairarapa / Hutt Valley / Capital and Coast	20.2 (16.7–23.7)	17.3 (14.3–20.3)	60000
Canterbury	21.0 (17.7–24.2)	18.4 (15.4–21.4)	68300
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	21.6 (17.8–25.4)	18.8 (15.5–22.2)	74100
New Zealand total	21.1 (20.1–22.2)	17.7 (16.8–18.5)	551300

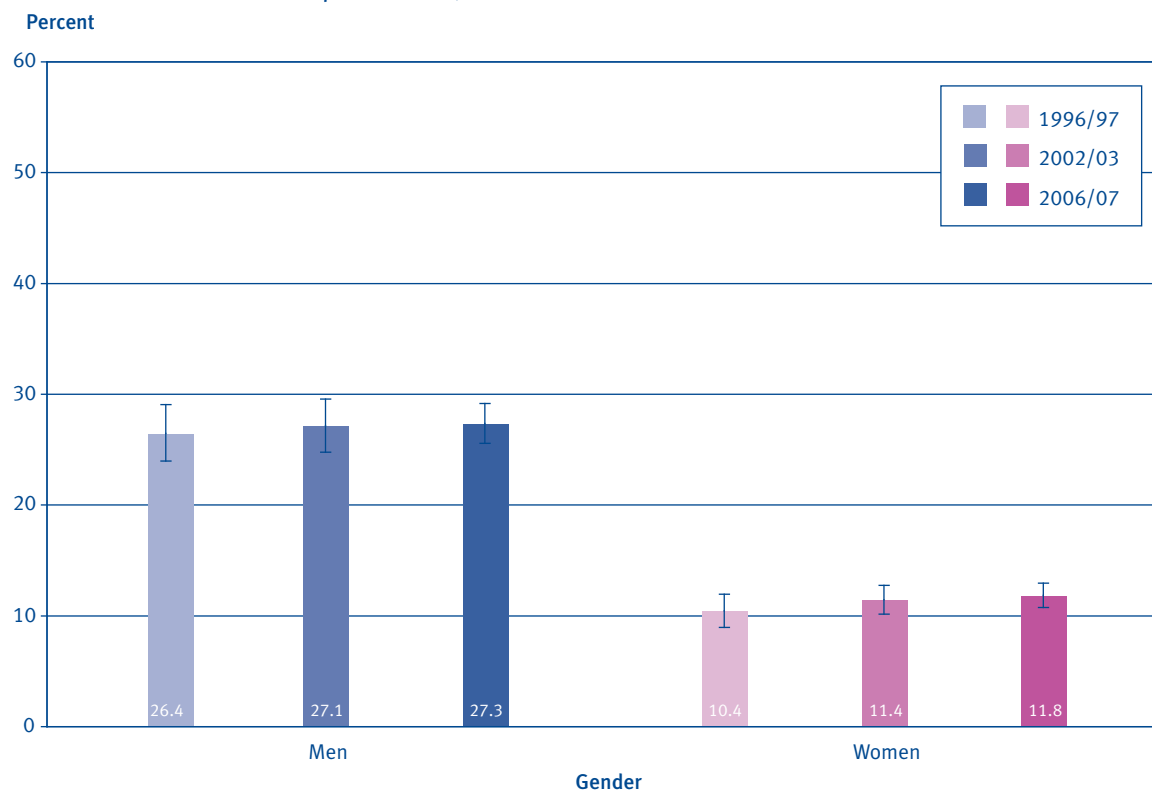
Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends in hazardous drinking

From 1996/97 to 2006/07 there was no change in the prevalence of hazardous drinking for adults, adjusted for age (Figure 2.36).

Figure 2.36: Hazardous drinking for adults, by gender, 1996/97, 2002/03 and 2006/07 (age standardised prevalence)

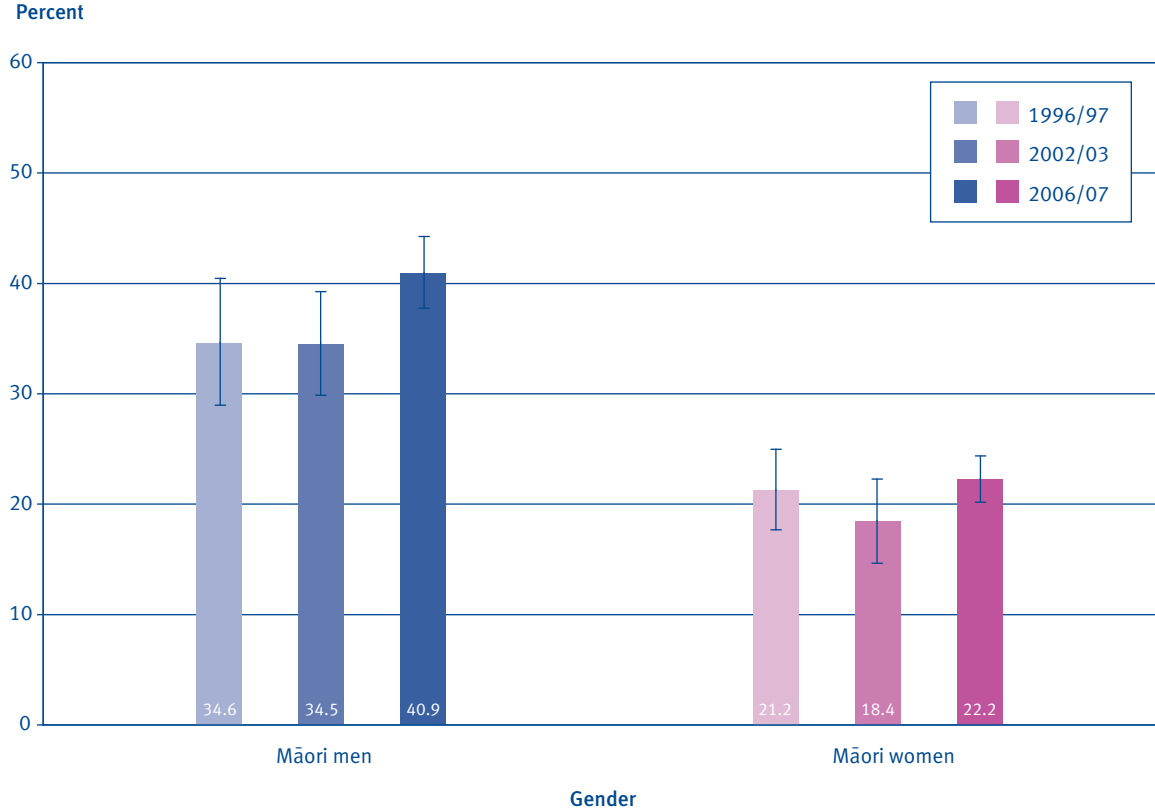


Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Although there was no difference from 1996/97 to 2002/03, there has been an increase in the prevalence of hazardous drinking between 2002/03 and 2006/07 for Māori men (p-value < 0.05), adjusted for age (Figure 2.37).

Figure 2.37: Hazardous drinking for Māori adults, 1996/97, 2002/03 and 2006/07, by gender (age standardised prevalence)



Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

The trend from 1996/97 to 2006/07 in the prevalence of hazardous drinking among drinkers was the same as that for hazardous drinking for all adults, adjusted for age (graphs not shown).

Problem gambling

Introduction

Over the past decade there has been a significant growth in the gambling environment, both in New Zealand and overseas. With the growth of gambling opportunities, problem gambling has also emerged as a public health issue (Ministry of Health 2005).

The Ministry of Health is responsible for monitoring the level of problem gambling in New Zealand, as referred to in the Gambling Act 2003. Problem gambling is defined as patterns of gambling behaviour that comprise, disrupt or damage health, personal, family or vocational pursuits.

What were the survey questions?

In the 2006/07 New Zealand Health Survey adult participants were asked if in the previous 12 months they had taken part in any of the following gambling activities: Lotto (including Strike, Powerball and Big Wednesday), Keno, Instant Kiwi or other scratch tickets, housie (bingo) for money, horse or dog racing, sports betting, gaming machines (pokies) at pubs or casinos, table games at casinos, internet-based gambling, or any other form of gambling. If they had participated in any gambling activities in the previous 12 months, they were then asked to complete a nine-question 'gambling screen' called the Canadian Problem Gambling Index (CPGI). The gambling screen contains questions about strong predictors of problem gambling (eg, feeling guilty about gambling, having financial difficulties, betting more than one can afford).

All adult participants were also asked if they had experienced any problems due to someone's gambling in the previous 12 months, irrespective of whether they themselves gambled or not.

The definition of gambling used in this report excludes work sweepstakes and fund-raising raffles.

Prevalence for problem gambling has been analysed for the total population aged 15 years and over, and for 'gamblers' (the proportion of the population who have gambled in the previous 12 months). The proportion of 'gamblers' in the population is presented first in this report.

Readers should note that the wording for experiencing problems due to someone's gambling allows for the participant to report problems due to their own gambling as well as due to other people's gambling. In this way, the total number of adults in the population affected by problem gambling can be monitored.

Further analyses of problem gambling data from the 2006/07 New Zealand Health Survey will be available in *A Focus on Problem Gambling*, due to be published late in 2008.

Gambling in previous 12 months for adults

Two out of every three adults had gambled in the previous 12 months (65.3%, 64.2–66.5), with no difference by gender when adjusted for age. The most common types of gambling activities (for the total population aged 15 years and over) in the previous 12 months were:

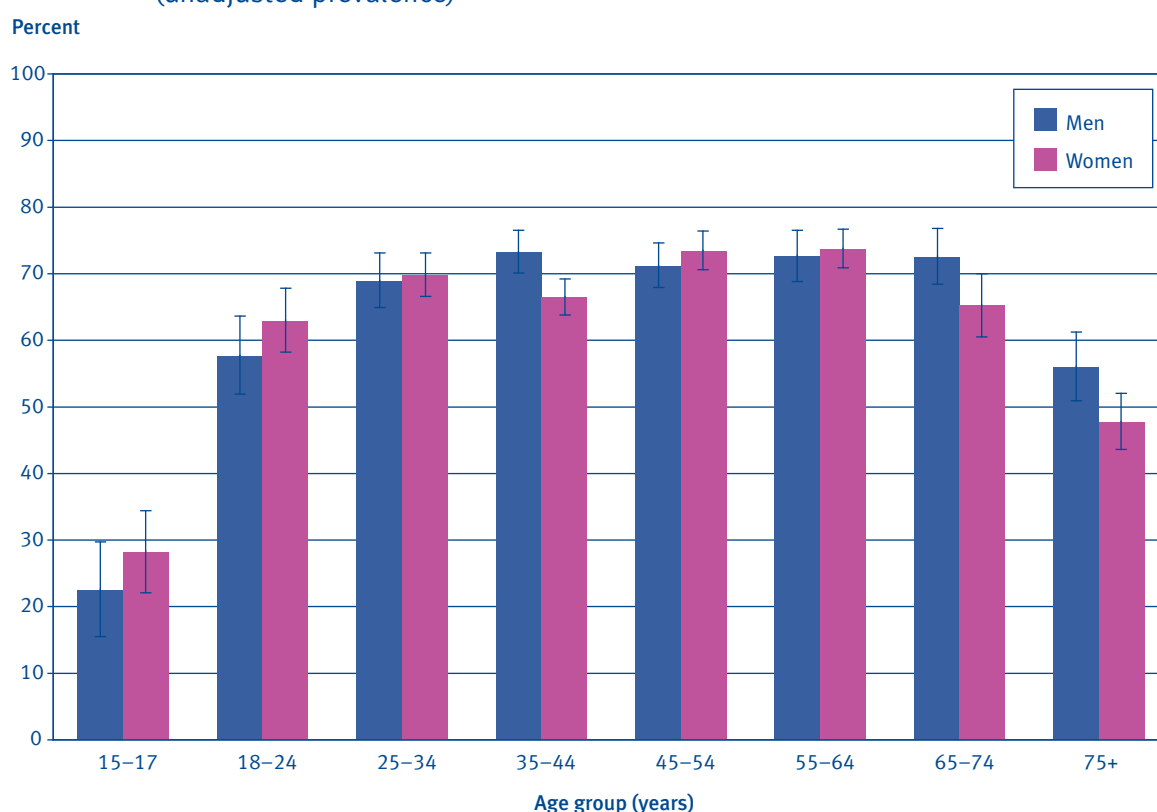
- Lotto (includes Strike, Powerball, Big Wednesday): 55.2% (54.0–56.4)
- scratch tickets (includes Instant Kiwi): 26.5% (25.5–27.6)

- gaming machines or pokies in a pub or club: 10.2% (9.5–10.9)
- track betting (horse or dog racing): 8.7% (7.9–9.4)
- casino gaming machines: 7.7% (7.0–8.4)
- sports betting: 5.2% (4.7–5.7).

The prevalence of gambling in the previous 12 months was fairly stable across age groups, with the exception of younger and older adults, where the rates were lower (Figure 2.38). One in four 15–17-year-olds had participated in gambling in the previous 12 months (25.3%, 20.6–30.1).

There were no significant differences between men and women except in the 35–44, 65–74 and 75+ age groups (p -values < 0.05), where men were more likely than women to gamble (Figure 2.38).

Figure 2.38: Gambling in the previous 12 months for adults, by age group and gender (unadjusted prevalence)

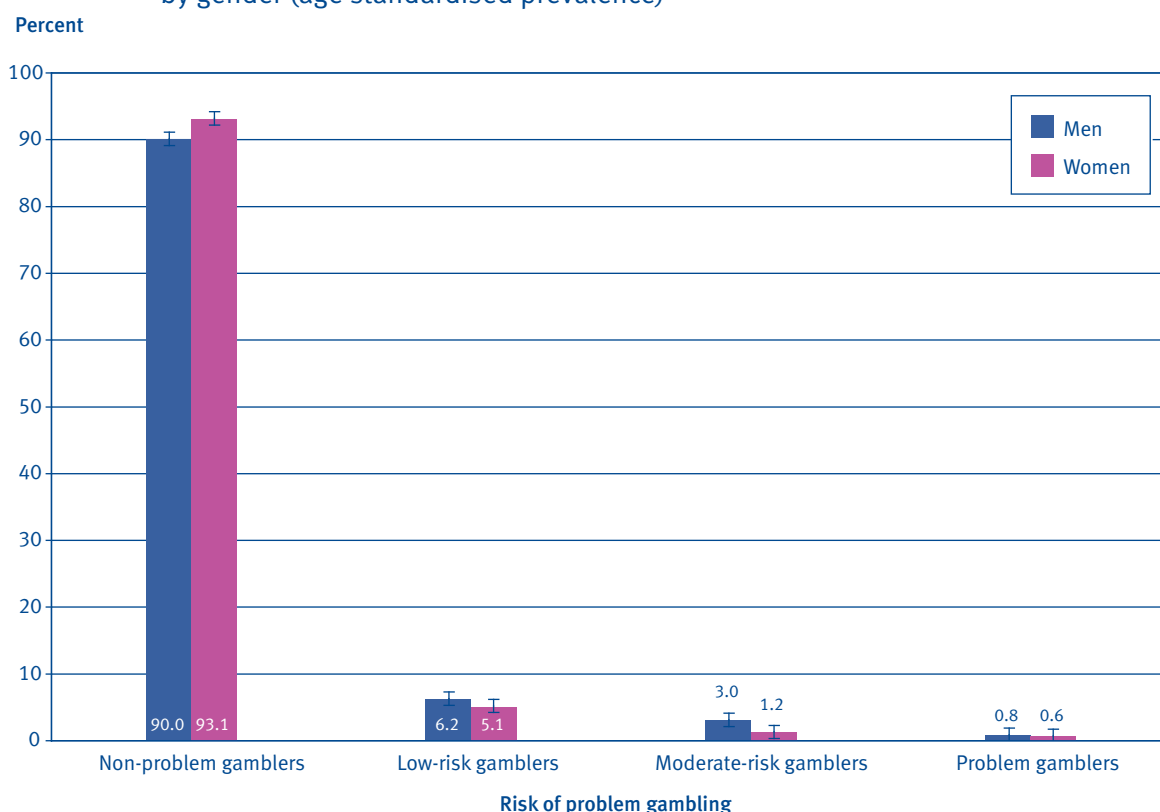


Source: 2006/07 New Zealand Health Survey

Risk of problem gambling

Most adults who had gambled in the previous 12 months were at no risk of their gambling becoming a problem (Figure 2.39). One in 19 were at low risk (5.4%, 4.8–6.0) and one in 50 were at moderate risk (2.0%, 1.7–2.3) of their gambling being a problem. A further 0.6% (0.5–0.8) of gamblers met the criteria for problem gambling. This equates to 13,000 adults with problem gambling behaviour, or 0.4% (0.3–0.5) of the total adult population.

Figure 2.39: Risk of problem gambling for adults who had gambled in the previous 12 months, by gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

As there was little difference in problem gambling by gender, and due to the small number of people with problem gambling behaviour in the survey, the results in the rest of this section combine men and women.

Problem gambling, by age group

Due to large sample errors created by the small number of people with problem gambling behaviour in the survey sample, it was difficult to see statistically significant differences by age group; however, problem gambling was most common for 35–44-year-olds (1.2%, 0.6–1.7). This pattern was the same when looking only at those adults who had gambled in the previous 12 months.

Problem gambling, by ethnic group

Table 2.16 gives an indication of the burden of problem gambling in New Zealand’s main ethnic population groups.

Table 2.16: Problem gambling for adults, by ethnic group (unadjusted)

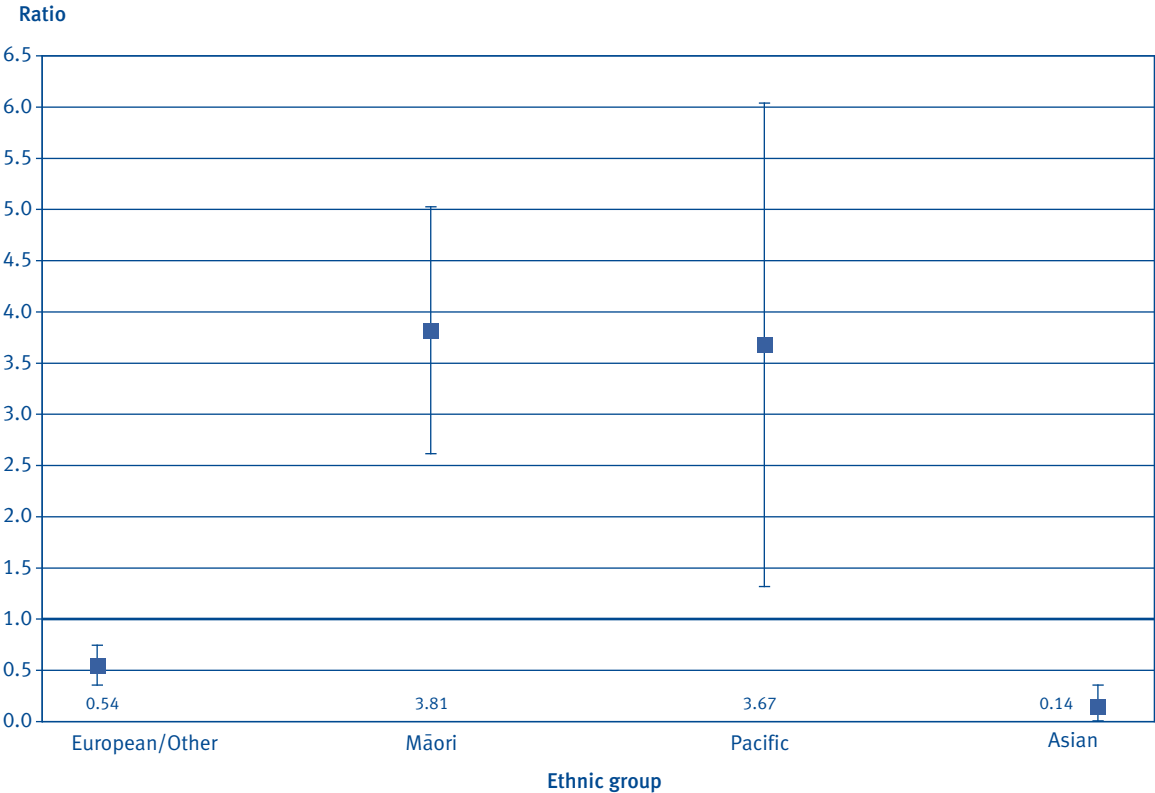
Ethnic group	Prevalence in gamblers (95% CI)	Prevalence in total adults (95% CI)	Number of adults
European/ Other	0.3 (0.2–0.5)	0.2 (0.1–0.4)	5600
Māori	2.4 (1.6–3.1)	1.7 (1.2–2.2)	6000
Pacific	3.0 (1.3–6.0)	1.7 (0.7–3.3)	2700
Asian	0.2 (0.0–0.6)	0.1 (0.0–0.3)	200

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Māori and Pacific adults were more than three and a half times more likely than adults in the total population to be problem gamblers (Figure 2.40).

Figure 2.40: Problem gambling for adults, by ethnic group, compared to the total adult population (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

When looking at only those adults who had gambled in the previous 12 months (rather than the total population), the above pattern was the same.

Problem gambling, by neighbourhood deprivation

The prevalence of problem gambling increased as neighbourhood deprivation increased, from zero prevalence (0.0–0.1) in neighbourhoods of low deprivation (NZDep2006 quintile 1) to 1.2% (0.8–1.7) of people living in neighbourhoods of high deprivation (NZDep2006 quintile 5).

For gamblers the above pattern was the same, with one in 53 adults living in NZDep2006 quintile 5 areas that had gambled in the previous 12 months meeting the criteria for problem gambling behaviour (1.9%, 1.2–2.6).

Problems due to someone's gambling

One in 36 adults had experienced problems due to someone's gambling in the previous 12 months (2.8%, 2.5–3.1). This equates to 87,000 adults who were affected by problem gambling in the 2006/07 year. In half of these cases, gaming machines or pokies in a pub or club were the type of gambling involved in creating problems (53.0%, 47.5–58.6). Other types of gambling involved in problems were:

- casino gaming machines: 33.0% (27.8–38.2)
- track betting: 16.0% (11.4–20.5)
- Lotto: 14.3% (9.7–18.8)
- sports betting: 11.7% (7.8–15.6)
- casino tables: 8.1% (4.6–13.1).

There was no significant difference between men (2.6%, 2.1–3.2) and women (3.3%, 2.8–3.8) in the prevalence of experiencing problems due to someone's gambling, when adjusted for age.

Problems due to someone's gambling, by age group

Due to large sample errors created by the small number of people who had experienced problems due to gambling in the survey sample, it was difficult to see statistically significant differences by age group; however, problems due to someone's gambling appeared relatively stable across adult age groups, with a decline in the older age groups.

Problems due to someone’s gambling, by ethnic group

Table 2.17 gives an indication of the burden of experiencing problems due to someone’s gambling in New Zealand’s main ethnic population groups.

Table 2.17: Problems experienced in the previous 12 months due to someone’s gambling, for adults, by ethnic group (unadjusted)

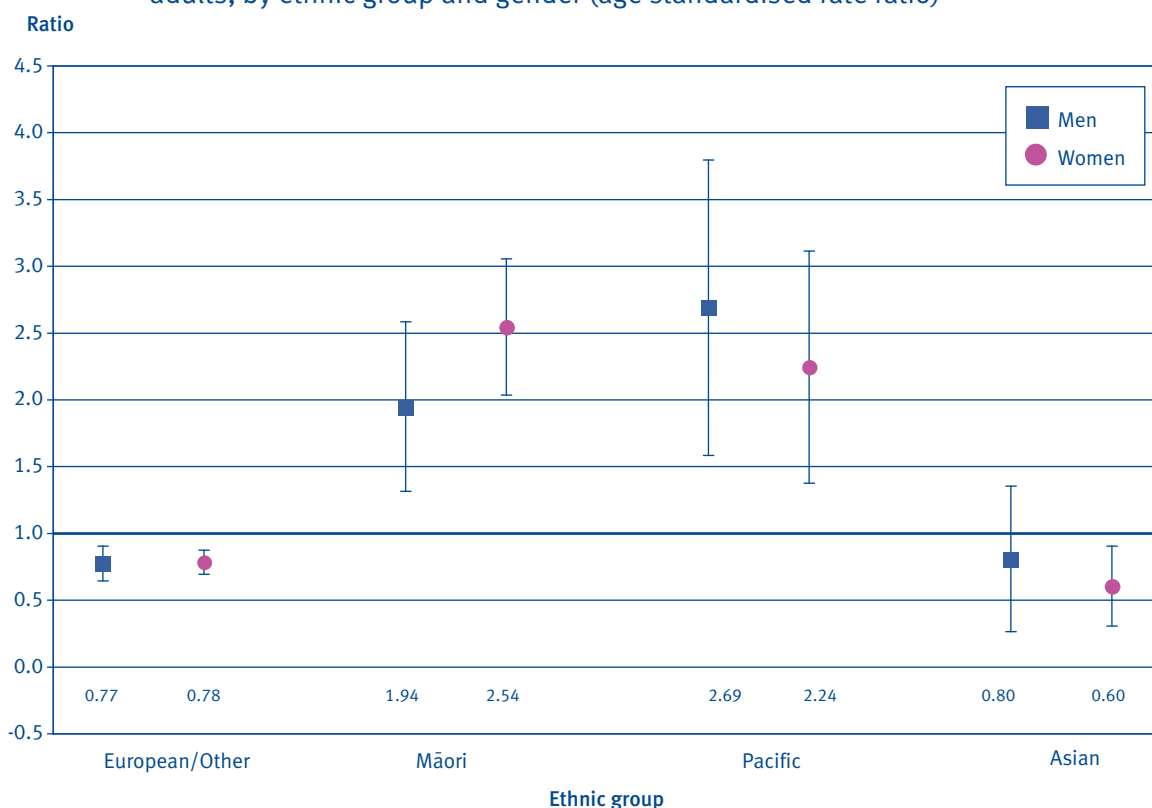
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	2.1 (1.8–2.5)	54100
Māori	7.0 (5.9–8.2)	25000
Pacific	7.6 (5.6–9.7)	12600
Asian	2.2 (1.3–3.2)	6300

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Māori and Pacific men and women were 2 to 2.5 times more likely to report experiencing problems due to someone’s gambling in the previous 12 months, compared to men and women in the total population (Figure 2.41). European/Other men and women and Asian women were significantly less likely to report problems due to someone’s gambling, compared to men and women in the total population.

Figure 2.41: Experiencing problems in the previous 12 months due to someone’s gambling, for adults, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Problems due to someone's gambling, by neighbourhood deprivation

One in 20 adults (5.0%, 4.0–5.9) living in areas of high neighbourhood deprivation (NZDep2006 quintile 5) had experienced problems in the previous 12 months due to someone's gambling, compared to one in 53 adults in NZDep2006 quintile 1 areas (1.9%, 1.2–2.6). There were no other statistically significant differences by neighbourhood deprivation quintile.

Vegetable and fruit intake

Introduction

Vegetables and fruit are highly nutritious and have been shown to protect against heart disease, stroke and high blood pressure (World Health Organization 2003a). There is also evidence that vegetables and fruit protect against cancers of the mouth, larynx, pharynx, oesophagus and stomach, and fruit also protect against lung cancer (World Cancer Research Fund and American Institute for Cancer Research 2007).

In New Zealand, it is recommended that adults eat at least three servings of vegetables and at least two servings of fruit each day (Ministry of Health 2003a). The Minister of Health's target for 2007/08 for vegetable and fruit intake is 70% of adults with adequate vegetable consumption and 62% of adults with adequate fruit consumption (Minister of Health 2007).

What were the survey questions?

In the 2006/07 New Zealand Health Survey, vegetable and fruit intake were measured by asking adult participants two questions: how many servings of vegetables they eat each day on average and how many servings of fruit they eat each day on average. Participants were provided with information on serving size and the range and type of vegetables and fruit to include.

Vegetable and fruit intake for children was not included in the 2006/07 New Zealand Health Survey.

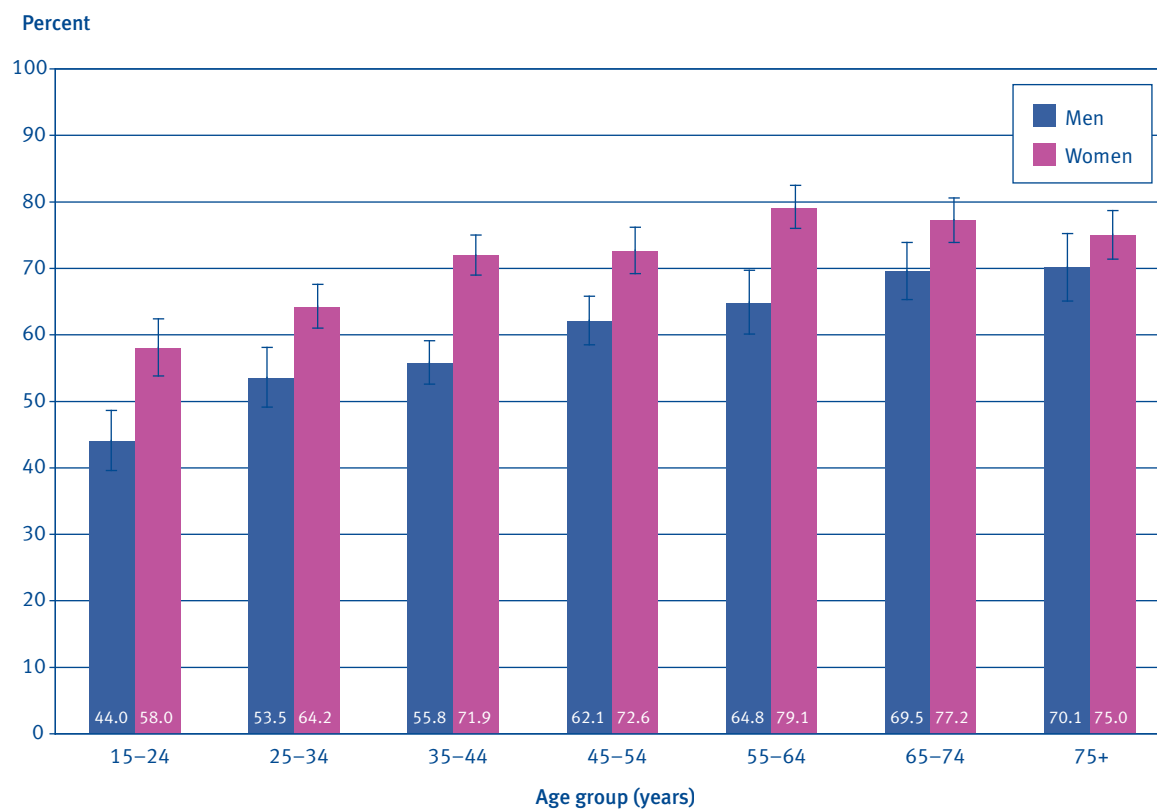
Vegetable intake for adults

Two out of every three adults (64.1%, 62.8–65.3) ate the recommended three or more servings of vegetables each day. Women (68.6%, 66.8–70.4) were significantly more likely than men to eat enough vegetables per day (56.1%, 54.4–57.9) when standardised for age.

Adequate vegetable intake, by age group

The proportion of men who ate the recommended three or more servings of vegetables each day increased as age increased, and for women the same pattern was evident, although with a levelling in the older age groups (Figure 2.42). Young men were the least likely to eat vegetables, with less than half of men aged 15–24 years consuming the recommended intake.

Figure 2.42: Adequate vegetable intake for adults, by age group and gender (unadjusted prevalence)

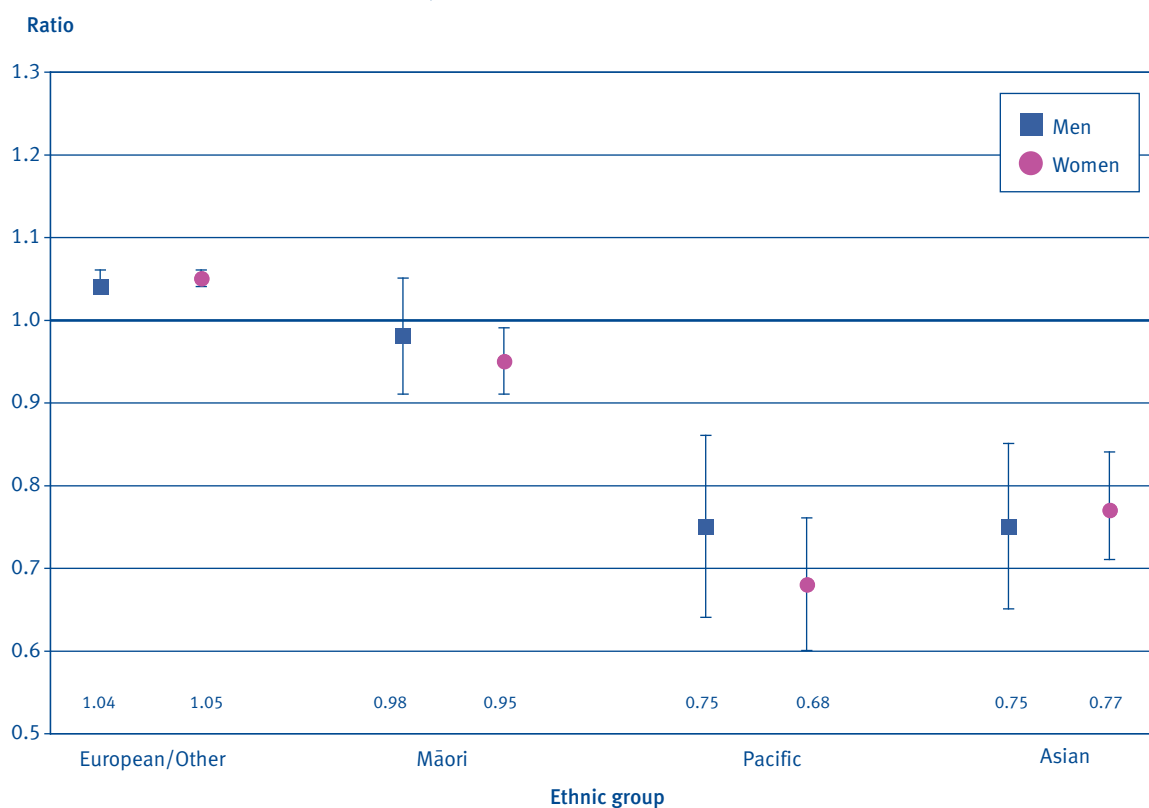


Source: 2006/07 New Zealand Health Survey

Adequate vegetable intake, by ethnic group

After adjusting for age, Pacific and Asian men and women were less likely to eat the recommended three or more servings of vegetables a day compared to men and women in the total population (Figure 2.43). Māori women were also slightly less likely than all women to have adequate vegetable intake.

Figure 2.43: Adequate vegetable intake for adults, by ethnic group and gender (age standardised rate ratio)



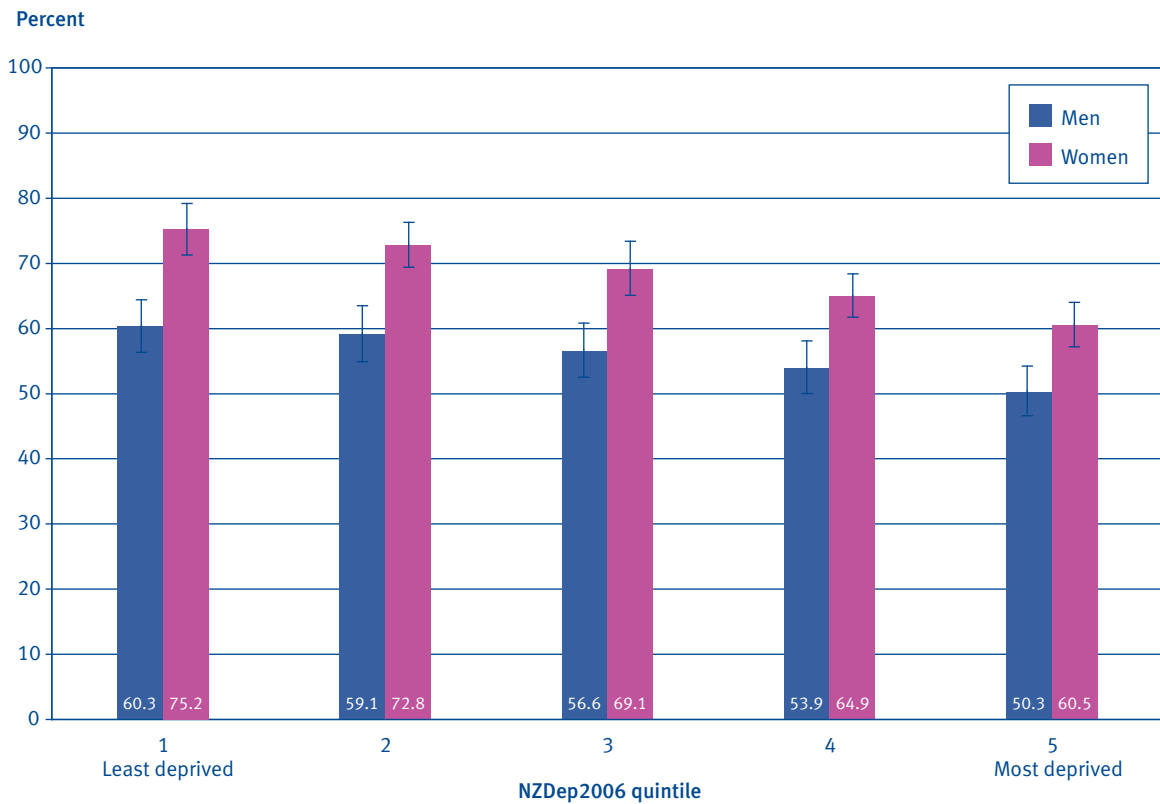
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Adequate vegetable intake, by neighbourhood deprivation

There was a decrease in the prevalence of adequate vegetable intake by NZDep2006 quintile in both men and women. Only half of men living in areas of high neighbourhood deprivation (NZDep2006 quintile 5) had adequate daily vegetable intake (Figure 2.44).

Figure 2.44: Adequate vegetable intake for adults, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Adequate vegetable intake, by DHB area

Vegetable intake varied by DHB area. Adults living in the South Island DHBs, including Canterbury, and in Northland / Lakes / Tairāwhiti / Hawke’s Bay / Whanganui and Waikato, were more likely to eat three or more vegetables a day, whereas adults living in Counties Manukau, Auckland and Waitemata DHBs were less likely to have adequate vegetable intake (Table 2.18).

Table 2.18: Adequate vegetable intake for adults, by DHB area (unadjusted)

DHB area	Prevalence (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke’s Bay / Lakes / Whanganui	70.6 (67.9-73.3) +	265200
Waitemata	55.7 (51.1-60.3) –	211000
Auckland	56.1 (51.6-60.6) –	181000
Counties Manukau	51.8 (47.5-56.1) –	167000
Waikato	70.8 (67.3-74.3) +	183600
Bay of Plenty / Taranaki / MidCentral	65.5 (62.4-68.7)	230200
Wairarapa / Hutt Valley / Capital and Coast	63.2 (59.2-67.1)	218900
Canterbury	69.4 (65.1-73.7) +	257600
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	72.4 (69.4-75.5) +	284600
New Zealand total	64.1 (62.8-65.3)	1999300

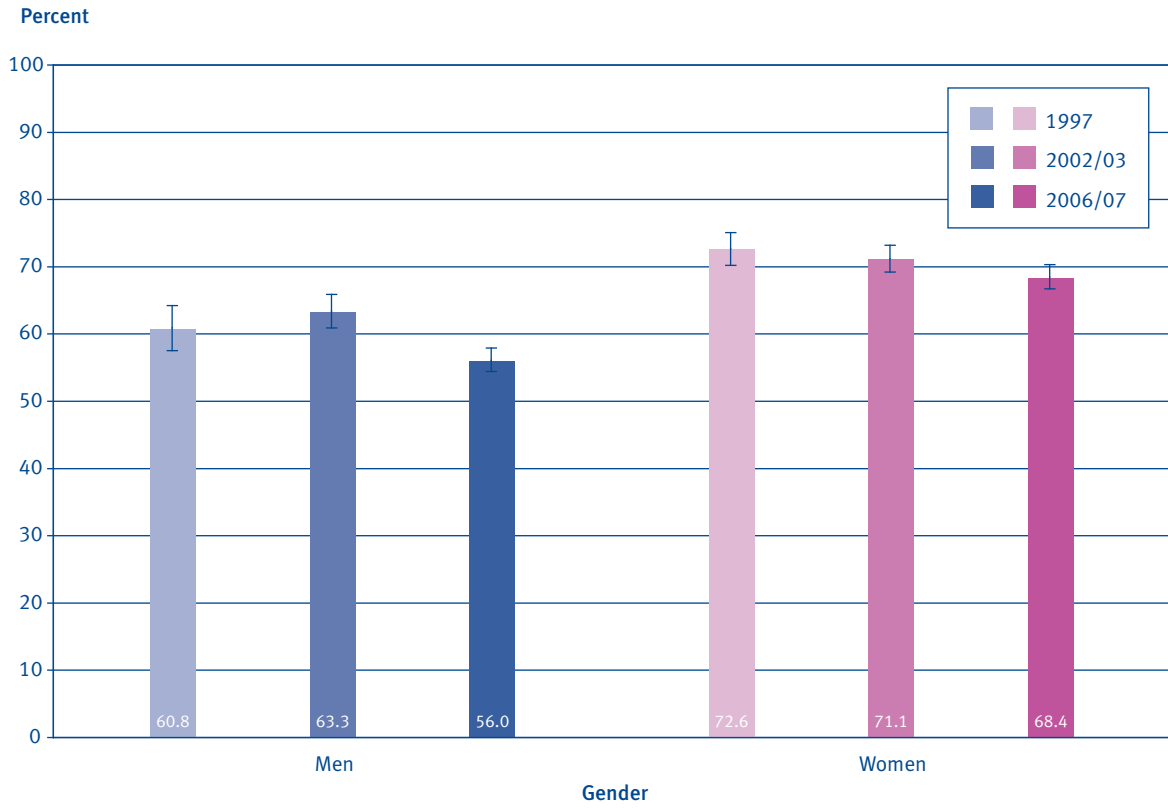
Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends in adequate vegetable intake for adults

Between 2002/03 and 2006/07 there was a significant decline in the proportion of men who consumed the recommended three or more servings of vegetables a day, adjusted for age (Figure 2.45). For women, there was a decline between 1997 and 2006/07 but no significant change between 2002/03 and 2006/07.

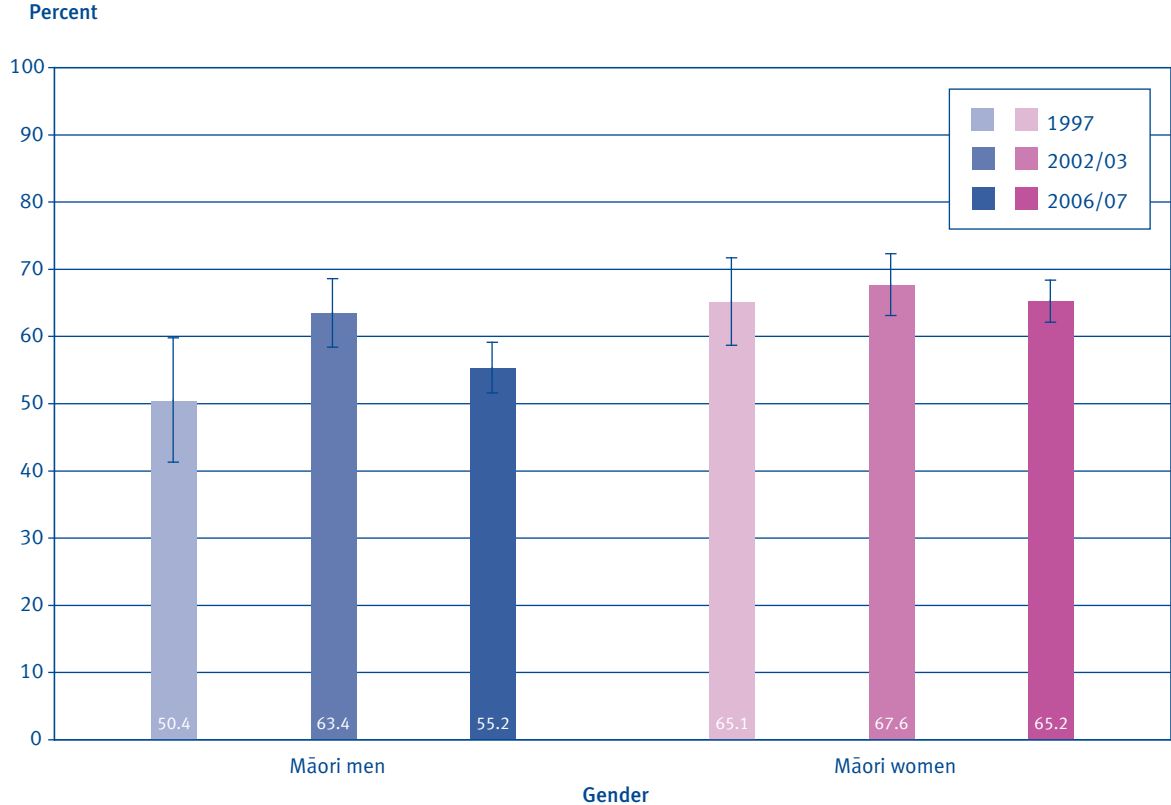
Figure 2.45: Adequate vegetable intake for adults, by gender, 1997, 2002/03 and 2006/07 (age standardised prevalence)



Source: 2002/03 and 2006/07 New Zealand Health Surveys, and 1997 National Nutrition Survey
 Note: Data from previous years have been reanalysed to allow for comparability.

For Māori, there was a significant decrease between 2002/03 and 2006/07 in the proportion of men who consumed the recommended three or more servings of vegetables a day, adjusted for age (Figure 2.46). There was no change for Māori women since 1997, adjusted for age.

Figure 2.46: Adequate vegetable intake for Māori adults, by gender, 1997, 2002/03, 2006/07 (age standardised prevalence)



Source: 2002/03 and 2006/07 New Zealand Health Surveys, and 1997 National Nutrition Survey

Note: Data from previous years have been reanalysed to allow for comparability.

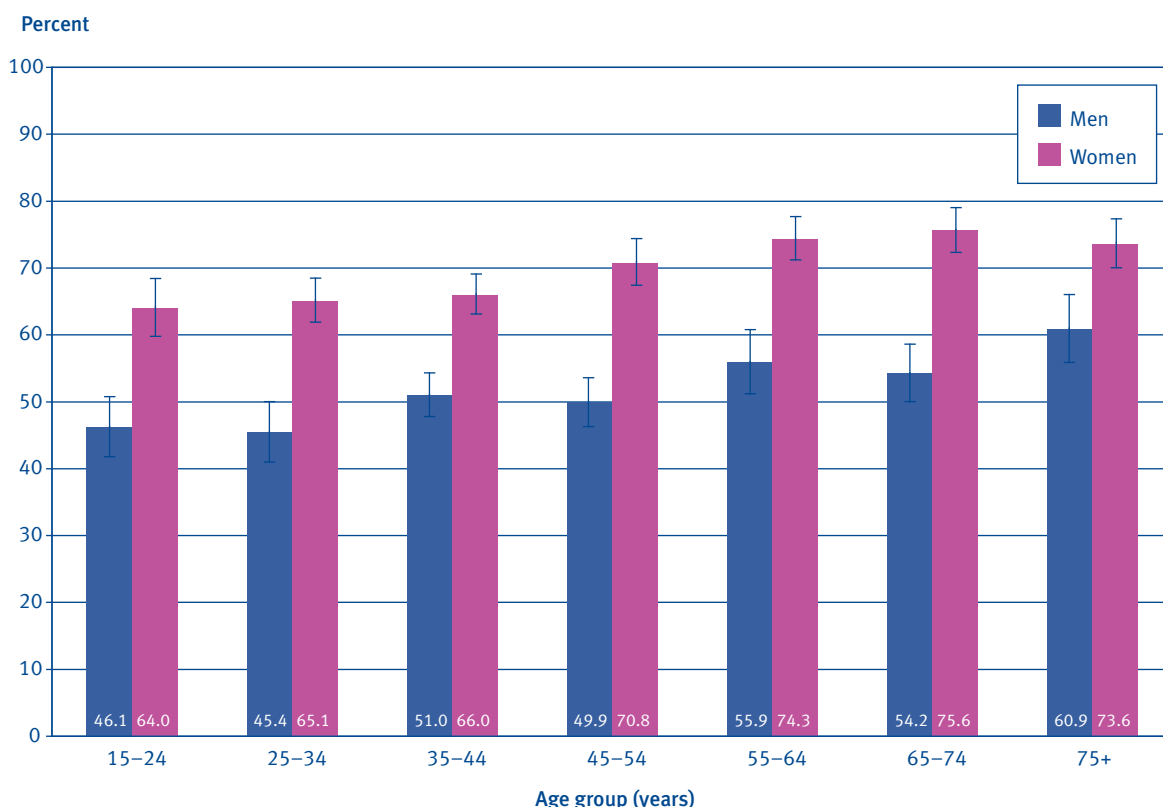
Fruit intake for adults

Two out of every three adults (60.0%, 58.8–61.3) ate the recommended two or more servings of fruit each day. Women (68.0%, 66.2–69.8) were significantly more likely than men (49.6%, 47.8–51.5) to have adequate fruit intake.

Adequate fruit intake, by age group

The prevalence of adequate fruit intake increased with age in both men and women (Figure 2.47). In all age groups, women were significantly more likely than men to eat two or more servings of fruit a day than men. Less than half of men aged under 55 years met the daily recommendation of two or more servings of fruit each day.

Figure 2.47: Adequate fruit intake for adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

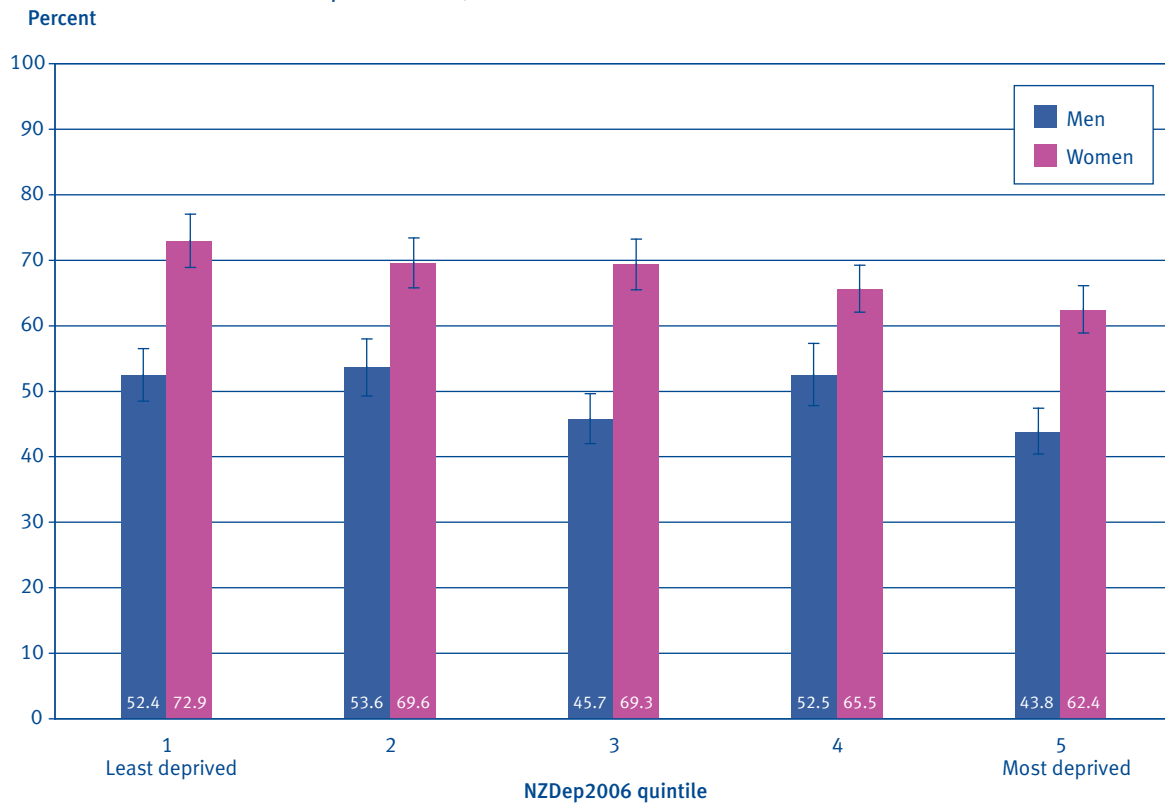
Adequate fruit intake, by ethnic group

After adjusting for age, Māori women (SRR: 0.93, 0.88–0.97) and Asian women (SRR: 0.92, 0.86–0.98) were slightly less likely to meet the daily requirement of two or more servings of fruit a day compared to women in the total population. There were no other significant differences in adequate fruit intake by ethnic group.

Adequate fruit intake, by neighbourhood deprivation

Women living in the least deprived areas of NZDep2006 quintile 1 were significantly more likely to meet the daily recommendation of two or more servings of fruit than women living in the most deprived areas of quintile 5. This correlation with deprivation is not as clear for men, but is still significantly higher in quintile 1 compared to quintile 5 (Figure 2.48).

Figure 2.48: Adequate fruit intake for adults, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Adequate fruit intake, by DHB area

Only Waikato DHB had a significant difference in adequate fruit intake compared to the national rate, with relatively fewer adults in this DHB area meeting the recommended intake of two or more servings of fruit per day (Table 2.19).

Table 2.19: Adequate fruit intake for adults, by DHB area (unadjusted)

DHB area	Prevalence (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	60.4 (58.1–62.7)	226800
Waitemata	61.6 (58.6–64.7)	233500
Auckland	61.8 (58.1–65.5)	199300
Counties Manukau	58.0 (54.0–62.0)	187000
Waikato	55.9 (52.1–59.7) –	145000
Bay of Plenty / Taranaki / MidCentral	59.7 (56.4–62.9)	209600
Wairarapa / Hutt Valley / Capital and Coast	61.3 (57.2–65.4)	212400
Canterbury	61.9 (57.8–66.0)	229800
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	58.6 (55.0–62.2)	230300
New Zealand total	60.0 (58.8–61.3)	1873700

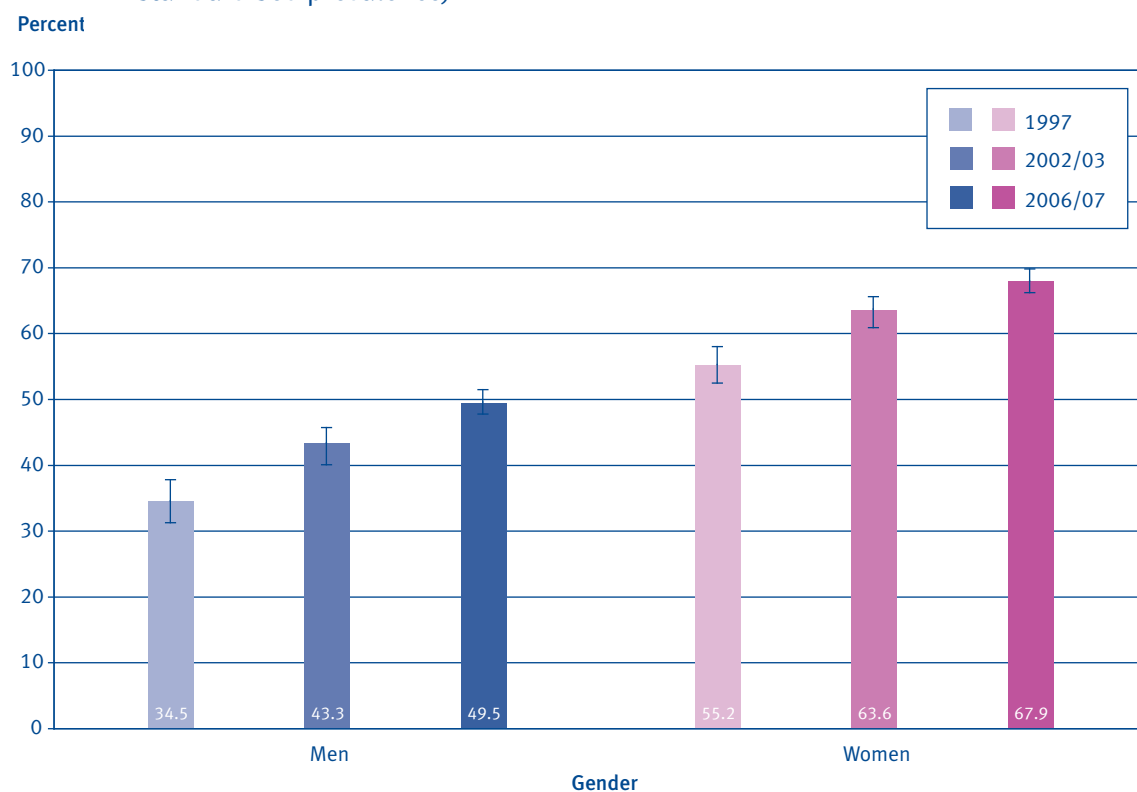
Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends in adequate fruit intake for adults

From 1997 to 2006/07 there was a significantly increasing trend in the prevalence of adequate fruit intake in both men and women, adjusted for age (Figure 2.49). For Māori, a similar trend can be seen (graph not shown).

Figure 2.49: Adequate fruit intake for adults, by gender, 1997, 2002/03 and 2006/07 (age standardised prevalence)



Source: 2002/03 and 2006/07 New Zealand Health Surveys, and 1997 National Nutrition Survey

Note: Data from previous years have been reanalysed to allow for comparability.

Physical activity

Introduction

Physical activity refers to all movement produced by skeletal muscles that increases energy expenditure, whether it is incidental, occupational or recreational. Physical activity is protective against health conditions such as heart disease, type 2 diabetes and certain cancers (colon, post-menopausal breast, and endometrial) (World Cancer Research Fund and American Institute for Cancer Research 2007; World Health Organization 2003a). Physical activity also helps to lower blood pressure, as well as minimising weight gain, overweight and obesity, which are risk factors for heart disease and type 2 diabetes (US Department of Health and Human Services 1996).

In New Zealand the Ministry of Health recommends that adults do at least 30 minutes of moderate-intensity physical activity (equivalent to brisk walking) on most, if not all, days of the week. It is also recommended that, where possible, vigorous exercise is added for extra fitness and health benefits.

What were the survey questions?

In the 2006/07 New Zealand Health Survey adult physical activity was measured by asking participants how many days in the previous seven days they had done brisk walking, moderate activity and vigorous activity, and how many hours and minutes they had done per day for each of those activities. Examples of moderate and vigorous activity were given to participants.

These questions are known as the New Zealand Physical Activity Questionnaire Short Form (NZPAQ-SF).

The following definitions have been used in this report:

- regularly physically active – at least 30 minutes of physical activity per day on five or more days of the last week
- sedentary – less than 30 minutes of physical activity in the last week.

Physical activity in the above definition was calculated as: brisk walking + moderate + (vigorous x 2); that is, one minute of vigorous activity was equated with two minutes of moderate intensity activity.

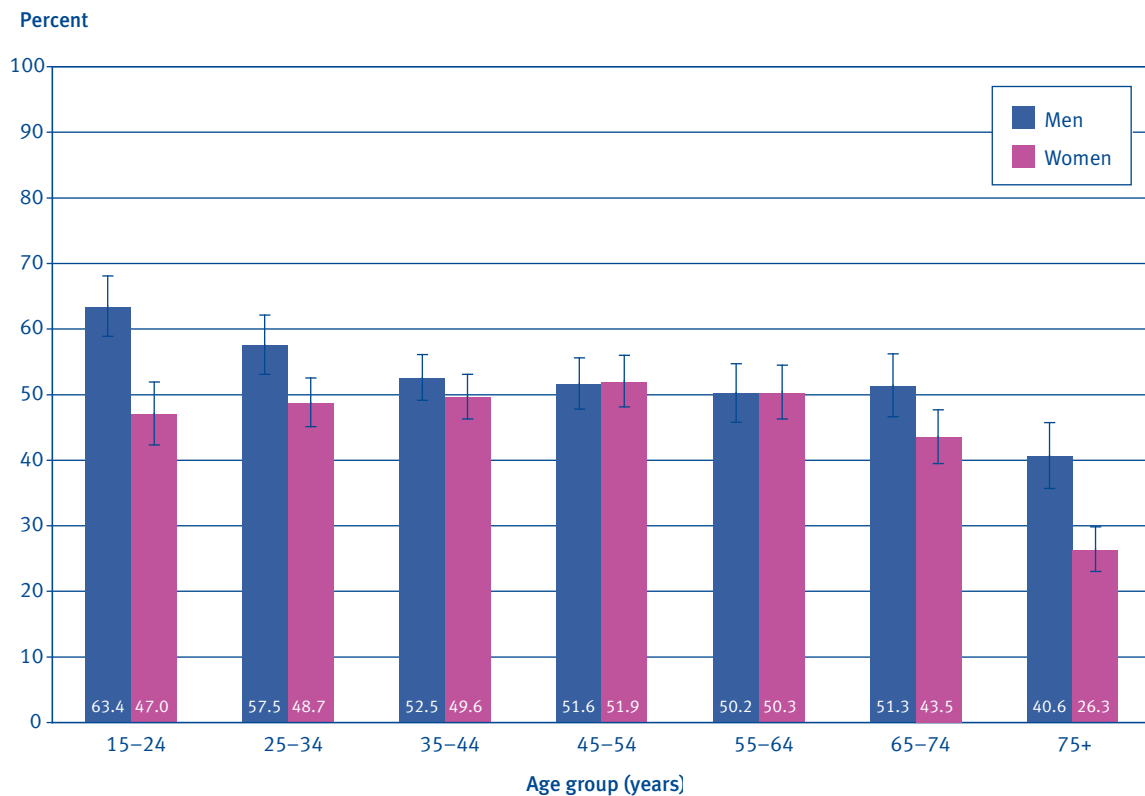
Regular physical activity for adults

Half of all adults (50.5%, 49.2–51.9) met the definition of being regularly physically active. Men (55.1%, 53.4–56.9) were significantly more likely than women (47.9%, 46.0–49.8) to do at least 30 minutes of physical activity a day on five or more days of the week, adjusted for age.

Regular physical activity for adults, by age group and gender

The prevalence of regular physical activity declined in the over 65 year age group for women and in the over 75 year group for men. The greatest difference between men and women occurred in the 15–24 year age group, where men were nearly 1.5 times as likely as women to do at least 30 minutes of physical activity a day on five or more days of the week. Men aged 75 years and over were also much more likely to report regular physical activity than women of the same age (Figure 2.50).

Figure 2.50: Regular physical activity for adults, by age group and gender (unadjusted prevalence)

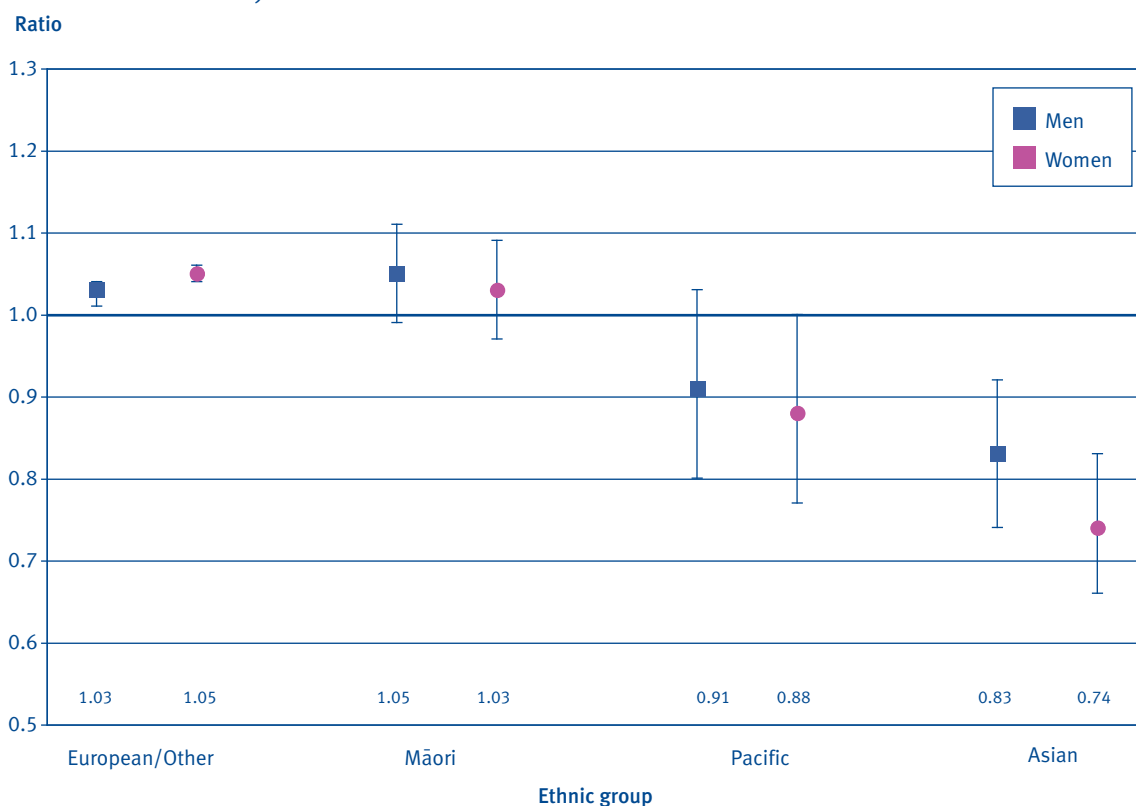


Source: 2006/07 New Zealand Health Survey

Regular physical activity for adults, by ethnic group

After adjusting for age, Asian men and women were less likely to meet the recommendation of 30 minutes of physical activity on five or more days of the week compared to men and women in the total population (Figure 2.51). European/Other men and women had a slightly increased prevalence of regular physical activity compared to men and women in the total population (Figure 2.51).

Figure 2.51: Regular physical activity for adults, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Regular physical activity for adults, by neighbourhood deprivation

There were no significant differences in the prevalence of regular physical activity for adults by neighbourhood deprivation.

Regular physical activity for adults, by DHB area

Adults living in the South Island (excluding Canterbury) and Bay of Plenty / Taranaki / MidCentral DHB areas were more likely to meet the recommendation of 30 minutes of physical activity a day on five or more days of the week compared to the national rate. Adults living in Auckland DHB area and Wairarapa / Hutt Valley / Capital and Coast DHB areas were significantly less likely to be regularly physically active (Table 2.20).

Table 2.20: Regular physical activity for adults, by DHB area (unadjusted)

DHB area	Prevalence (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	52.4 (49.7–55.0)	196700
Waitemata	46.7 (42.4–51.0)	176900
Auckland	40.3 (35.6–45.0) –	130000
Counties Manukau	53.0 (49.1–56.9)	170700
Waikato	52.4 (49.0–55.8)	135800
Bay of Plenty / Taranaki / MidCentral	54.9 (51.5–58.3) +	193000
Wairarapa / Hutt Valley / Capital and Coast	46.0 (42.3–49.7) –	159400
Canterbury	49.9 (45.6–54.2)	185100
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	58.3 (54.8–61.8) +	228900
New Zealand total	50.5 (49.2–51.9)	1576500

Source: 2006/07 New Zealand Health Survey

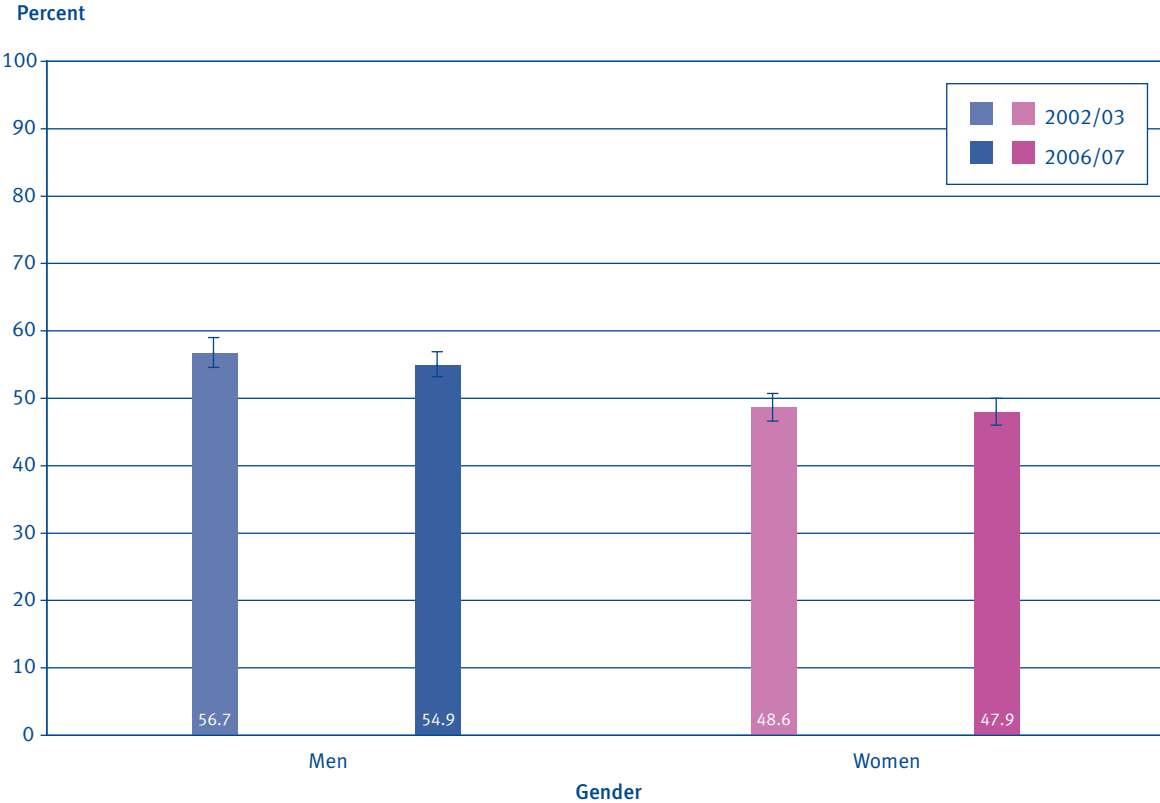
Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends in regular physical activity for adults

For both men and women, there was no significant difference in the prevalence of regular physical activity between 2002/03 and 2006/07, adjusted for age (Figure 2.52).

For Māori men and women, there was also no difference between 2002/03 and 2006/07 in the prevalence of regular physical activity (graph not shown).

Figure 2.52: Regular physical activity for adults, by gender, 2002/03 and 2006/07 (age standardised prevalence)



Source: 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Sedentary behaviour for adults

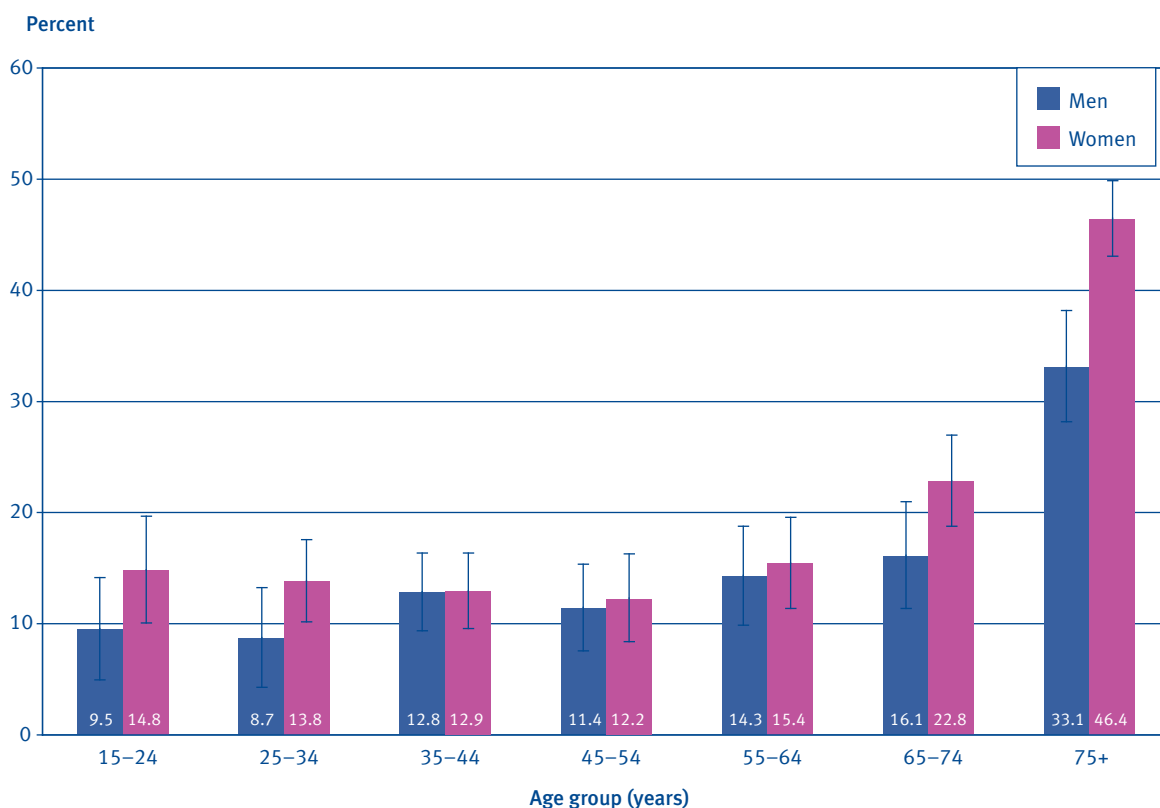
Overall, one in seven adults (15.0%, 14.2–15.9) were sedentary, reporting less than 30 minutes of physical activity per week. When adjusted for age, women (15.7%, 14.5–16.9) were more likely than men (12.2%, 11.2–13.2) to be sedentary.

Sedentary behaviour for adults, by age group

The proportion of men that were sedentary was relatively stable until old age, when sedentary behaviour increased to one in three men over the age of 75 years (Figure 2.53).

The proportion of women who were sedentary was relatively stable until the age of 65 years, when sedentary behaviour increased sharply such that nearly half of women over the age of 75 years were sedentary (Figure 2.53).

Figure 2.53: Sedentary behaviour for adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Sedentary behaviour for adults, by ethnic group

Table 2.21 presents the number and proportion of sedentary adults in New Zealand's main ethnic population groups.

Table 2.21: Sedentary behaviour for adults, by ethnic group (unadjusted)

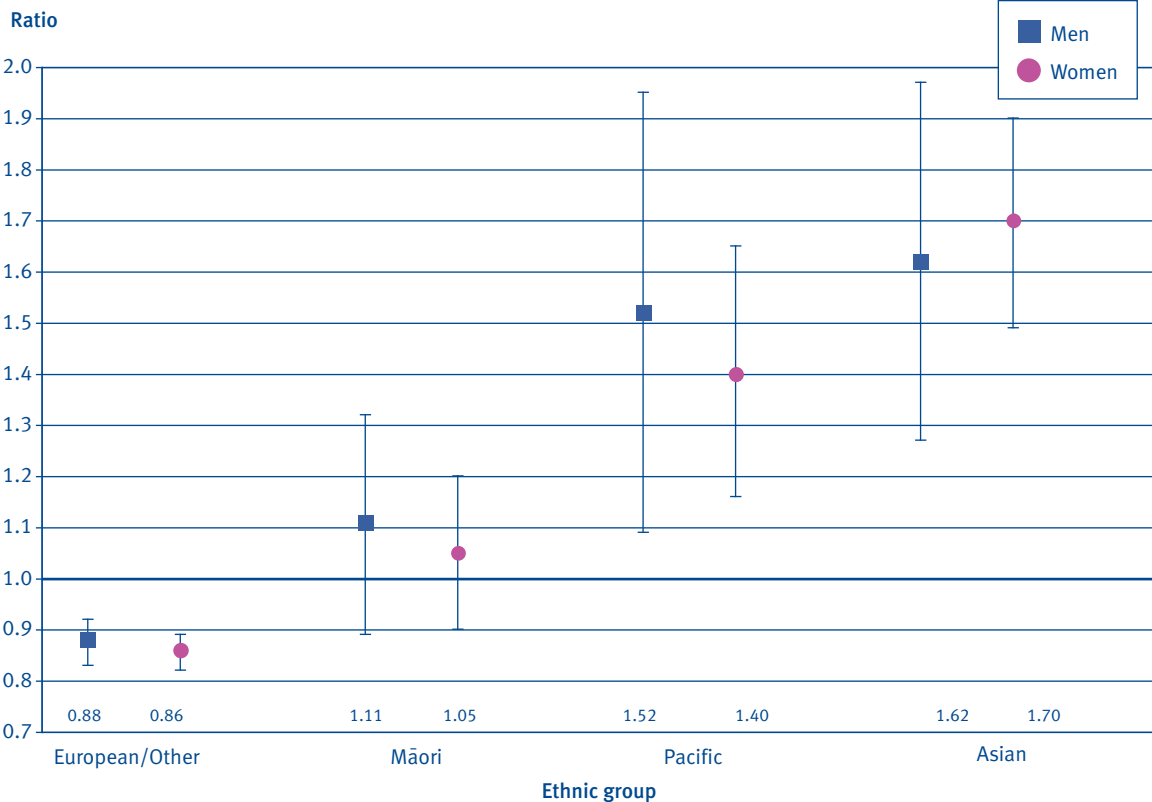
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	13.8 (12.8–14.7)	351900
Māori	14.0 (12.4–15.7)	49900
Pacific	19.4 (16.6–22.2)	31900
Asian	23.0 (20.4–25.5)	64000

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Asian and Pacific men and women were significantly more likely to be sedentary compared to men and women in the total population (Figure 2.54).

Figure 2.54: Sedentary behaviour for adults, by ethnic group and gender (age standardised rate ratio)



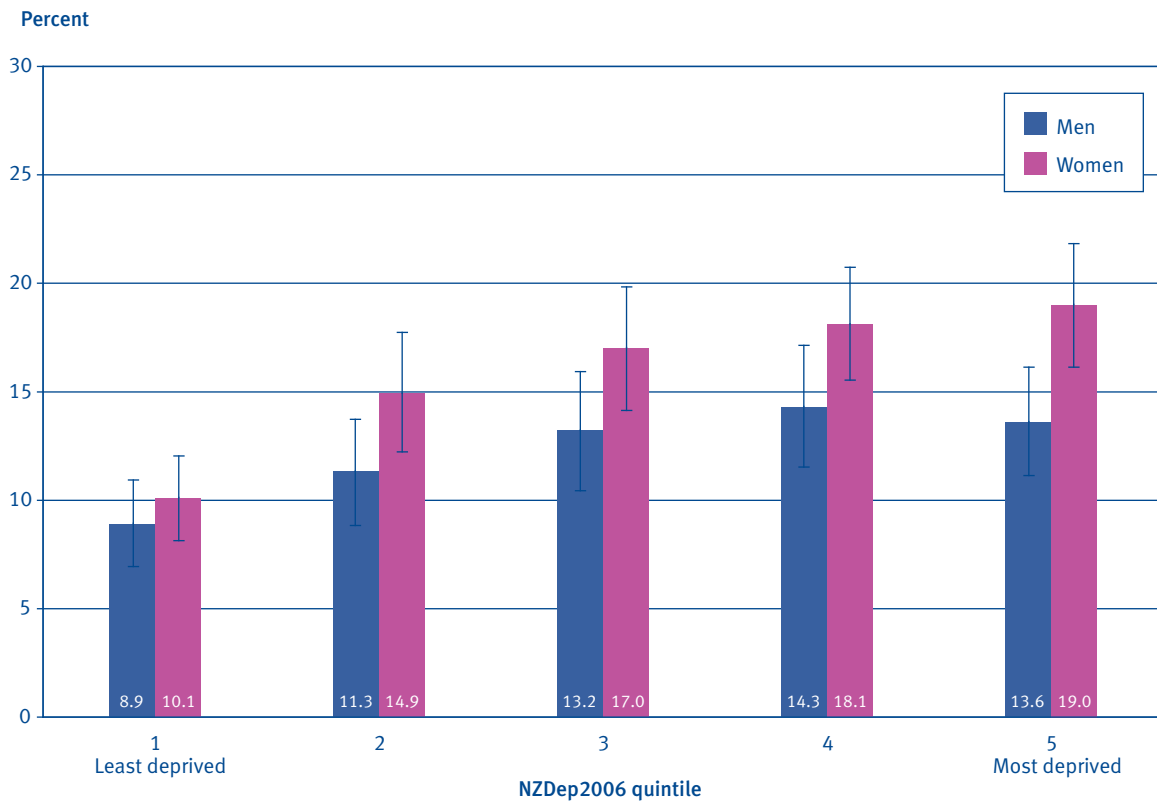
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Sedentary behaviour for adults, by neighbourhood deprivation

Women living in NZDep2006 quintile 5 areas were twice as likely to be sedentary as women living in NZDep2006 quintile 1 areas, when adjusted for age. This pattern by NZDep2006 quintile was not as strong in men (Figure 2.55).

Figure 2.55: Sedentary behaviour for adults, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Sedentary behaviour for adults, by DHB area

Adults living in Auckland DHB area had a significantly higher prevalence of sedentary behaviour than the national rate. Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui DHB areas had a significantly lower proportion of their population that was sedentary (Table 2.22).

Table 2.22: Sedentary behaviour for adults, by DHB area (unadjusted)

DHB area	Prevalence (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	12.5 (11.0–14.0) –	46900
Waitemata	15.4 (12.5–18.3)	58400
Auckland	18.2 (15.2–21.3) +	58800
Counties Manukau	16.0 (13.1–18.9)	51600
Waikato	17.3 (14.8–19.9)	45000
Bay of Plenty / Taranaki / MidCentral	14.8 (12.7–16.9)	52200
Wairarapa / Hutt Valley / Capital and Coast	13.4 (11.3–15.4)	46400
Canterbury	13.7 (11.0–16.4)	50900
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	14.8 (12.3–17.4)	58200
New Zealand total	15.0 (14.2–15.9)	468400

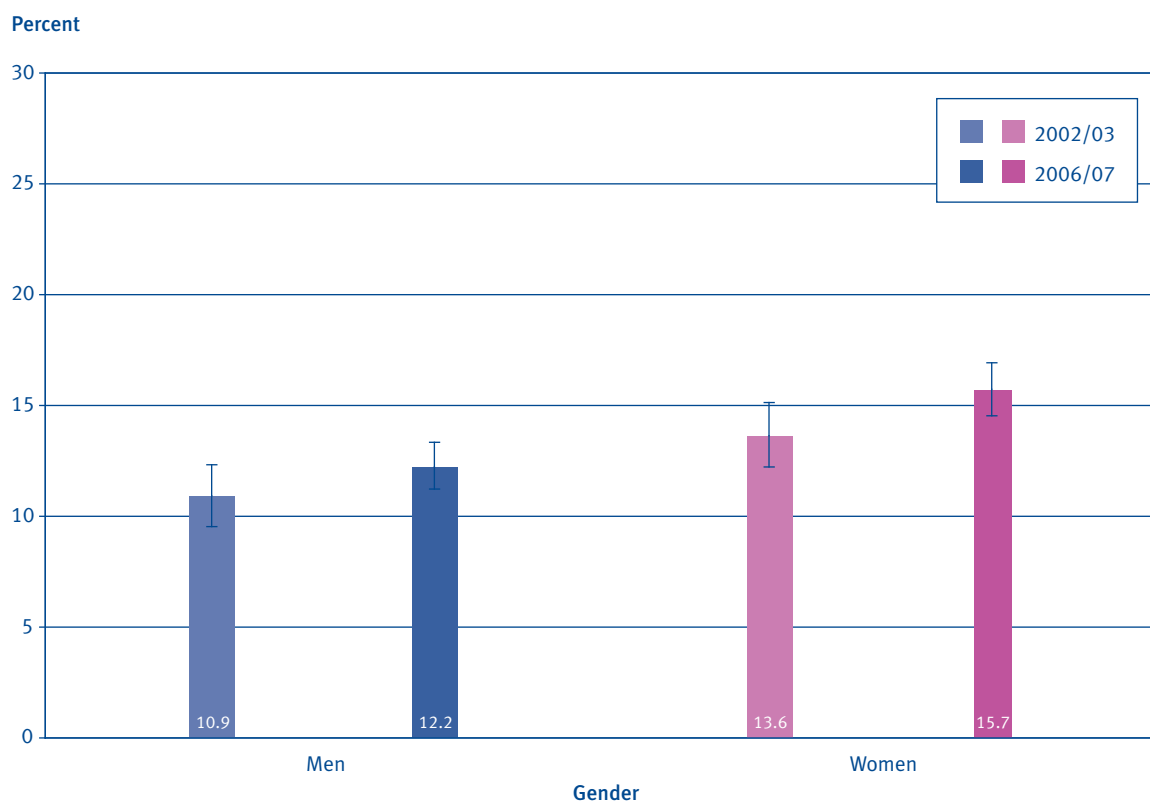
Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends in sedentary behaviour for adults

From 2002/03 to 2006/07 there was a significant increase in the proportion of women who were sedentary (p -value < 0.05), adjusted for age (Figure 2.56). For Māori adults there were no statistically significant difference between the two surveys (Figure 2.57).

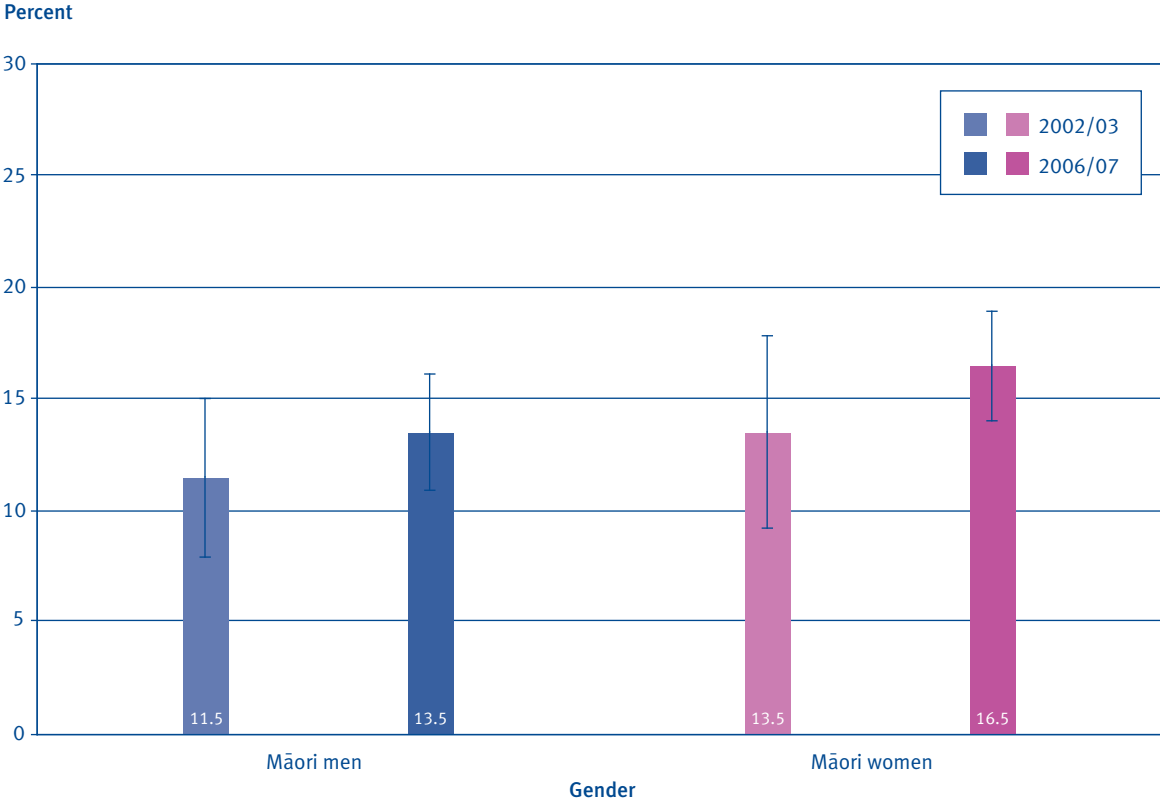
Figure 2.56: Sedentary behaviour for adults, by gender, 2002/03 and 2006/07 (age standardised prevalence)



Source: 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Figure 2.57: Sedentary behaviour for Māori adults, by gender, 2002/03 and 2006/07 (age standardised prevalence)



Source: 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Body size

Introduction

A healthy body size is increasingly recognised as important for good health and wellbeing, as the evidence grows that obese children and adults are at greater risk of short-term and long-term health consequences.

Overweight and obese children are likely to be obese into adulthood, and to have abnormal lipid profiles and high blood pressure at a younger age (Freedman et al 2005; Harding et al 2008; World Cancer Research Fund and American Institute for Cancer Research 2007). Obese children may also suffer stigmatisation due to their weight (Dietz and Robinson 2005).

Obesity is associated with a long list of adult health conditions, including: cardiovascular disease (ischaemic heart disease, high blood pressure and stroke), various types of cancer, type 2 diabetes, kidney disease, fatty liver disease, osteoarthritis, pulmonary embolism, deep vein thrombosis, polycystic ovarian syndrome, gout, gallstones, reproductive disorders, sleep apnoea, complications in pregnancy, complications in surgery, and psychological and social problems (World Health Organization 2000). In addition, obese people are more likely to experience personal, social and professional difficulties (World Cancer Research Fund and American Institute for Cancer Research 2007).

Body mass index (BMI) is a measure of weight adjusted for height, and is calculated by dividing weight in kilograms by height in metres squared (kg/m^2). BMI is used internationally to classify underweight, overweight and obesity. Since BMI does not distinguish between weight associated with muscle and weight associated with fat, it provides only a crude measure of body fatness in individuals. However, it does provide a good estimate of the proportion of the population with increased risk of health conditions associated with obesity (World Health Organization 2000).

What were the survey questions?

In the 2006/07 New Zealand Health Survey participants aged two years old and over were weighed and had their height measured using professional anthropometric equipment and standardised techniques. In addition, participants aged five years old and over had their waist circumference measured.

Protocols for collecting height, weight and waist measurements in the survey are available online at www.moh.govt.nz/moh.nsf/indexmh/portrait-of-health. Less than 1% of participants (0.2% of children and 1.3% of adults) were unable to have their height or weight recorded due to being pregnant, chairbound, unsteady on their feet or in pain etc. A further 2.8% of children and 3.0% of adults refused to have their height and weight measured.

In this report international BMI cut-off points have been used to classify participants as underweight (or thin in children), normal range, overweight or obese. The World Health Organization BMI cut-off points were used for adults aged 18 years and over (World Health Organization 2007) (Table 2.23).

Table 2.23: International cut-off points for adults aged 18 years and over

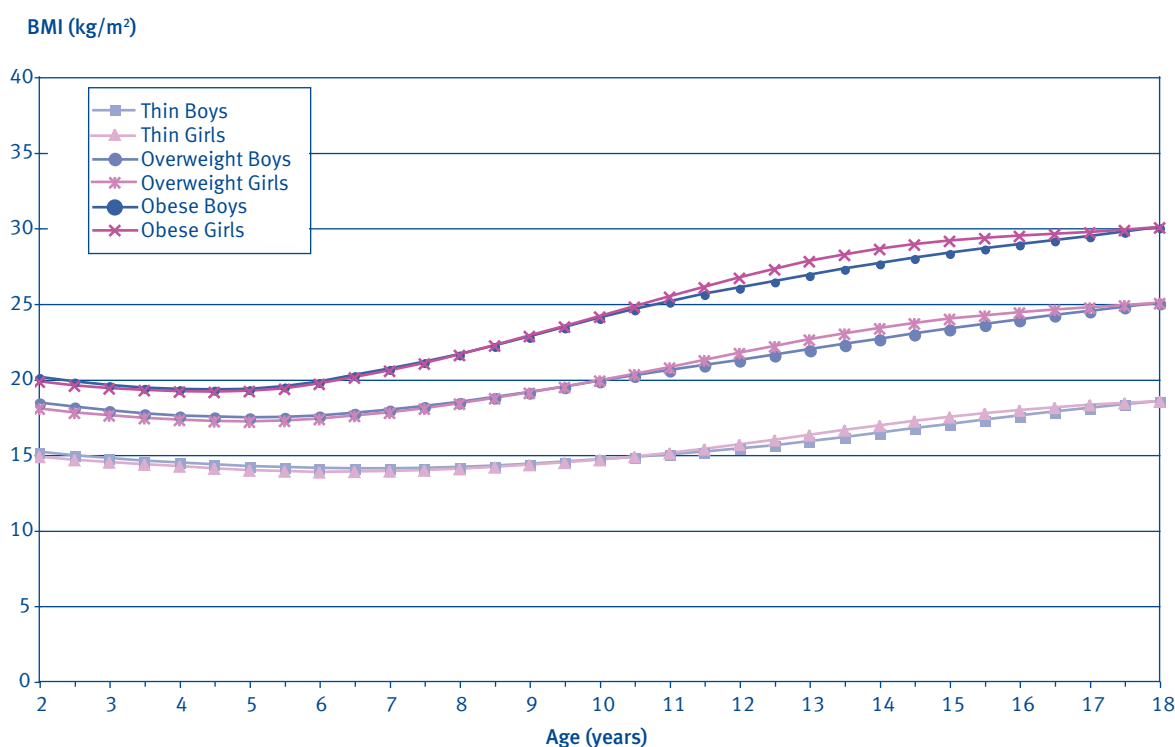
Classification	BMI score (kg/m ²)	Risk of health conditions*
Underweight	< 18.50	Low risk
Normal range	18.50–24.99	Average risk
Overweight	25.00–29.99	Increased risk
Obese:	≥ 30.00	Substantially increased risk
Obese (class I)	30.00–34.99	Moderate risk
Obese (class II)	35.00–39.99	Severe risk
Obese (class III)	≥ 40.00	Very severe risk

Adapted from: World Health Organization 2000

Note: * Only includes health conditions associated with increasing BMI.

For participants aged 2–17 years, BMI cut-off points developed by the International Obesity Taskforce (IOTF) were used to define thinness, overweight and obesity (Cole et al 2000; Cole et al 2007). The IOTF BMI cut-off points are sex and age-specific, and have been designed to coincide with the WHO BMI cut-off points for adults at age 18 years (18.5, 25 and 30 for underweight, overweight and obesity, respectively) (Figure 2.58). See Appendix 4 for a summary table of IOTF BMI cut-off points by six-month steps.

Figure 2.58: International BMI cut-off points for children and adolescents



It is important to note that although BMI cut-off points have been used to define overweight and obesity, the risk of disease increases as BMI increases in all population groups, even within the ‘normal’ range.

In order to comply with international practice and ensure consistency for adults and children, the same BMI cut-off points have been used for all ethnic groups, and no adjustment for clothing weight was made. Although this approach differs to that used for adults in previous

surveys, all data presented in this report have been analysed using the same definitions and therefore time trends can be interpreted as real changes over time. Please refer to the online body size technical report for more information (www.moh.govt.nz/moh.nsf/indexmh/portrait-of-health).

Mean (average) BMI for children and adults

The mean BMI for children aged 2 to 14 years was 18.7 kg/m² (18.6–18.8), with no difference between the age-adjusted mean BMI of boys (18.6, 18.5–18.8) and girls (18.8, 18.6–19.0). Mean BMI was highest in the 10–14 year age group (20.7, 20.5–21.0).

Adults aged 15 years and over had a mean BMI of 27.4 kg/m² (27.3–27.5). When adjusted for age, there was no difference in the mean BMI for men (27.3, 27.1–27.5) and women (27.1, 26.9–27.3). Mean BMI peaked in the 55–64 year age group for both men (28.9, 28.5–29.4) and women (28.6, 28.2–29.1).

Mean BMI, by ethnic group

The mean BMI for Pacific children (21.1, 20.6–21.6) and Māori children (19.4, 19.1–19.6) was higher, while the mean BMI for European/Other (18.3, 18.1–18.4) and Asian children (18.1, 17.8–18.4) was lower, than that of all children adjusted for age. There were no significant differences in the mean BMI of boys and girls within all ethnic groups.

The mean BMI for Pacific adults (33.2, 32.7–33.7) and Māori adults (29.8, 29.4–30.1) was higher than that of all adults, while the mean BMI for Asian (24.9, 24.6–25.2) and European/Other (26.8, 26.6–27.0) adults was lower than all adults, adjusted for age. There were no significant differences in the mean BMI of men and women within all ethnic groups.

Mean BMI, by neighbourhood deprivation

Mean BMI for children was highest in areas of high neighbourhood deprivation (NZDep2006 quintile 5), reaching 19.5 kg/m² (19.1–19.9) for boys and 20.0 kg/m² (19.5–20.5) for girls living in quintile 5.

Mean BMI for adults was also highest in areas of high neighbourhood deprivation (NZDep2006 quintile 5), reaching 28.6 kg/m² (28.1–29.1) for men and 29.5 kg/m² (29.0–30.1) for women living in quintile 5.

Time trends in mean BMI for children aged 5–14 years and adults

There has been no change in the mean BMI for children aged 5–14 years since 2002 (adjusted for age). There was no change by gender between 2002 and 2006/07. Among Māori children, there was a decrease in mean BMI from 22.1 kg/m² (21.5–22.7) in 2002 to 19.9 kg/m² (19.6–20.2) in 2006/07.

While still increasing over time, the rate of increase in age-adjusted mean BMI for adults appears to have recently slowed. In 1997, the mean BMI was 26.0 kg/m² (25.8–26.2) increasing to 26.9 kg/m² (26.7–27.0) in 2002/03, then to 27.2 kg/m² (27.0–27.3) in 2006/07. This pattern was the same for both men and women.

For Māori men and women, there have been no significant changes in mean BMI across the three surveys (1997, 2002/03 and 2006/07).

The remainder of this section focuses on the results for BMI classifications of thin, normal range, overweight and obese.

Body size of children and adults

Most New Zealand children aged 2–14 years had a body mass index in the normal range. One in five were overweight and a further one in twelve were obese. One in thirty-four were thin (Table 2.24).

Table 2.24: Body size of children aged 2–14 years, using international cut-off points (unadjusted)

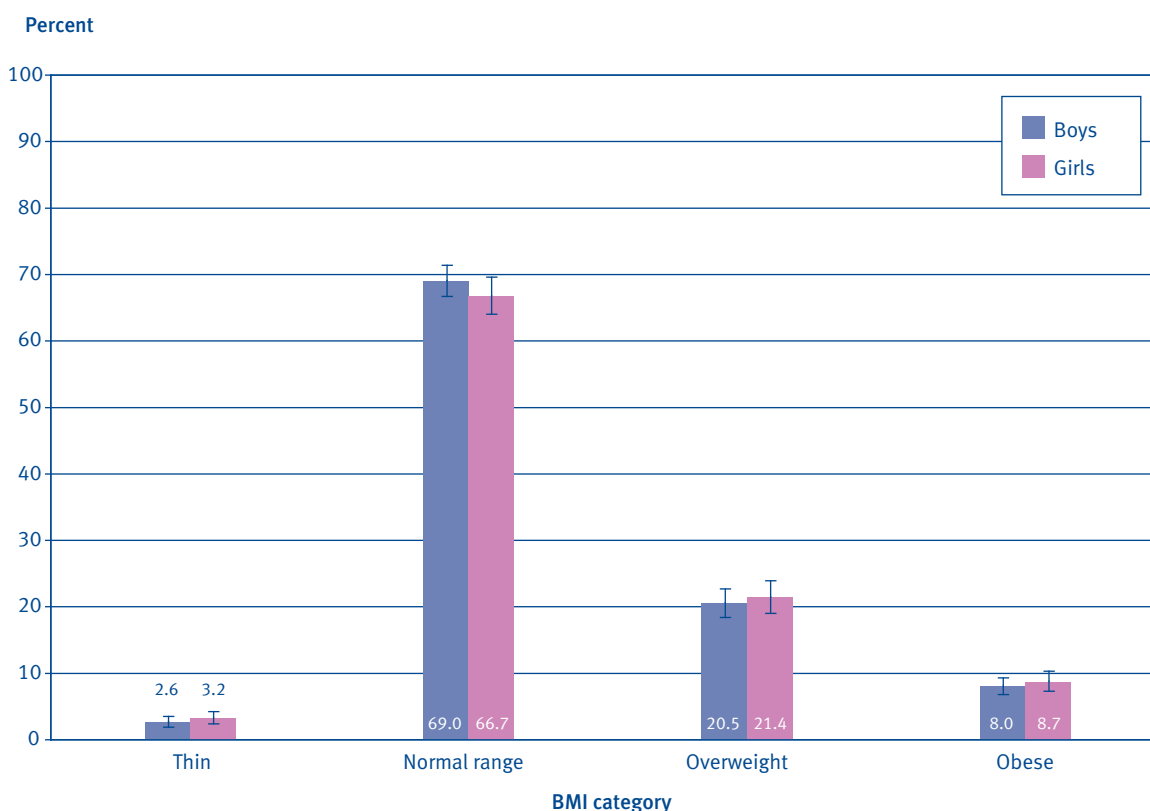
Classification	Risk of health conditions*	Prevalence (95% CI)	Number of children
Thin	Low	2.9 (2.2 - 3.6)	21600
Normal range	Average	67.9 (66.2 - 69.6)	503900
Overweight	Increased	20.9 (19.2 - 22.6)	155000
Obese	Substantially increased	8.3 (7.4 - 9.3)	61800

Source: 2006/07 New Zealand Health Survey

Note: * Only includes health conditions associated with increasing BMI

There was no difference between boys and girls aged 2–14 years in the prevalence of each of the BMI categories, adjusted for age (Figure 2.59).

Figure 2.59: Body mass index (BMI) category of children aged 2–14 years, by gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

One in three New Zealand adults had a BMI in the normal range (Table 2.25). One in three were overweight and a further one in four were obese (all classes).

Table 2.25: Body size of adults, using international cut-off points (unadjusted)

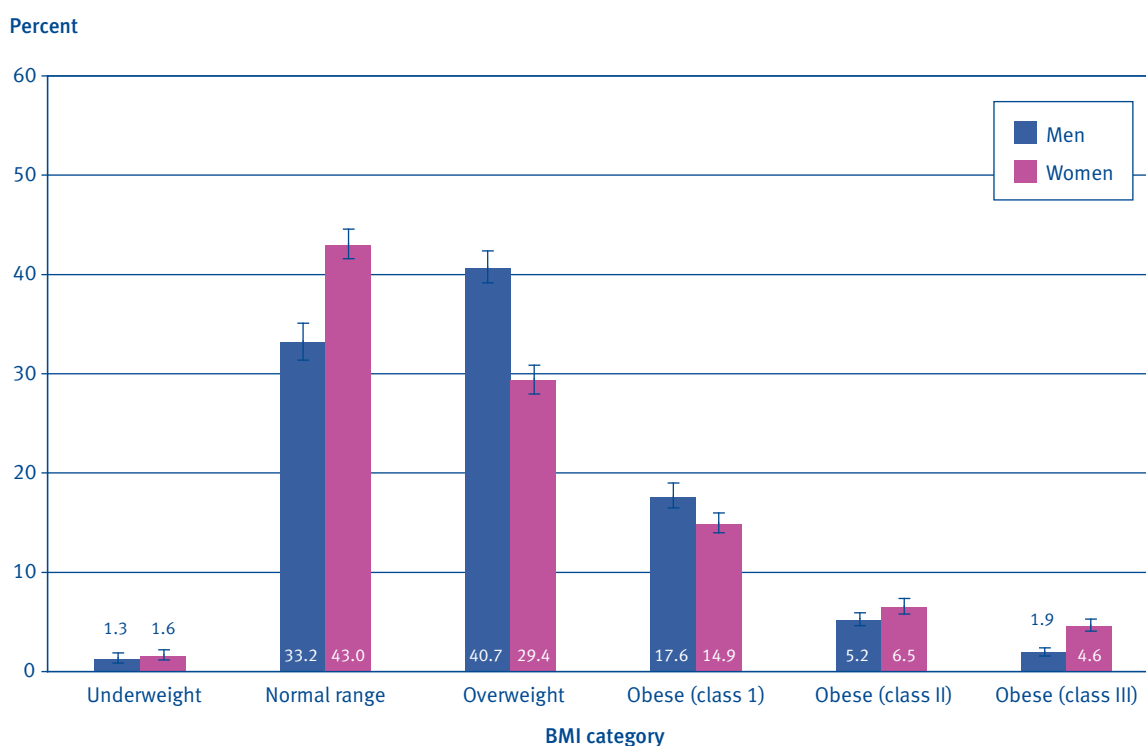
Classification	Risk of health conditions*	Prevalence (95% CI)	Number of adults
Underweight	Low	1.3 (1.0–1.6)	40500
Normal range	Average	36.1 (35.0–37.1)	1125600
Overweight	Increased	36.2 (35.2–37.1)	1128500
Obese (all classes)	Substantially increased	26.5 (25.5–27.5)	826100

Source: 2006/07 New Zealand Health Survey

Note: * Only includes health conditions associated with increasing BMI

After adjusting for age, women were significantly more likely than men to have a BMI in the normal range, but were also more likely to be extremely obese (class II and class III). Men were more likely than women to be overweight or class I obese (Figure 2.60).

Figure 2.60: Body mass index (BMI) category of adults, by gender (age standardised prevalence)



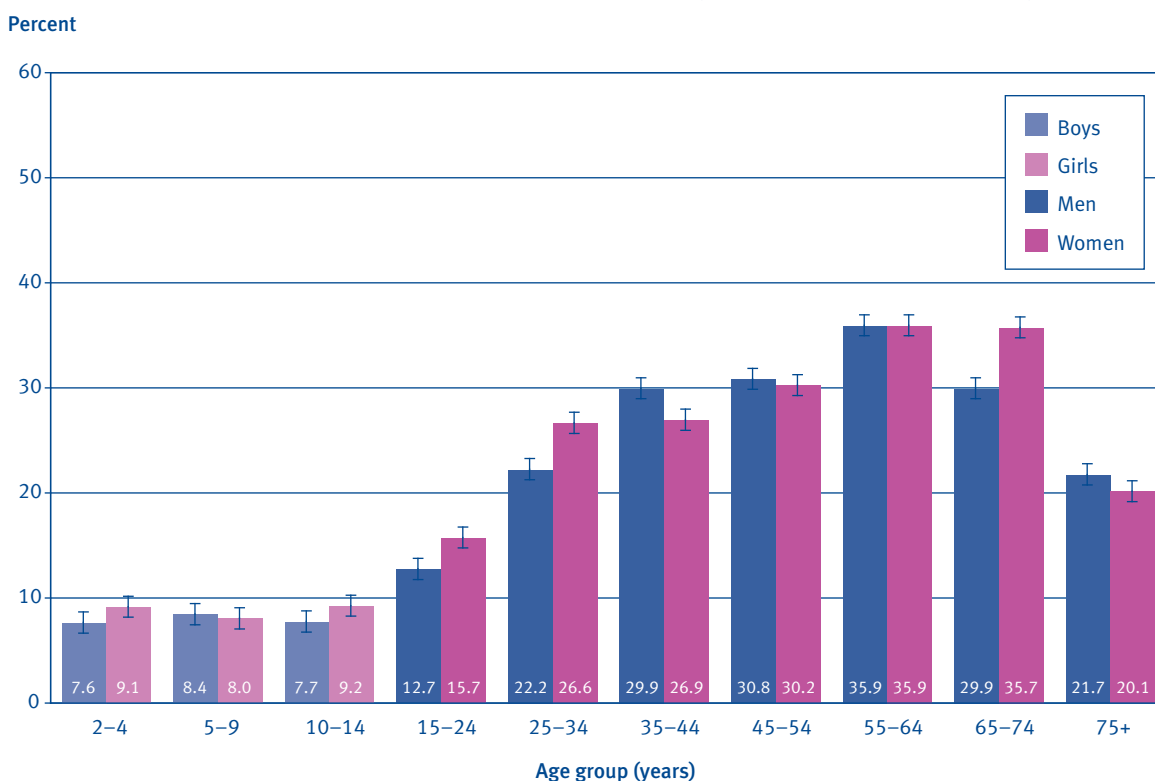
Source: 2006/07 New Zealand Health Survey

The remainder of this section focuses on obesity (all classes).

Obesity for children and adults, by age group

The prevalence of obesity was relatively low and stable in childhood, and then increased as age increased, until a decline in men aged 65 years and over and in women aged 75 years and over (Figure 2.61). Men aged 55–64 years and women aged 55–74 years had the highest prevalence of obesity.

Figure 2.61: Obesity for children and adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Obesity, by ethnic group

Table 2.26 gives an indication of the burden of obesity for children in New Zealand’s main ethnic population groups.

Table 2.26: Obesity for children aged 2–14 years, by ethnic group (unadjusted)

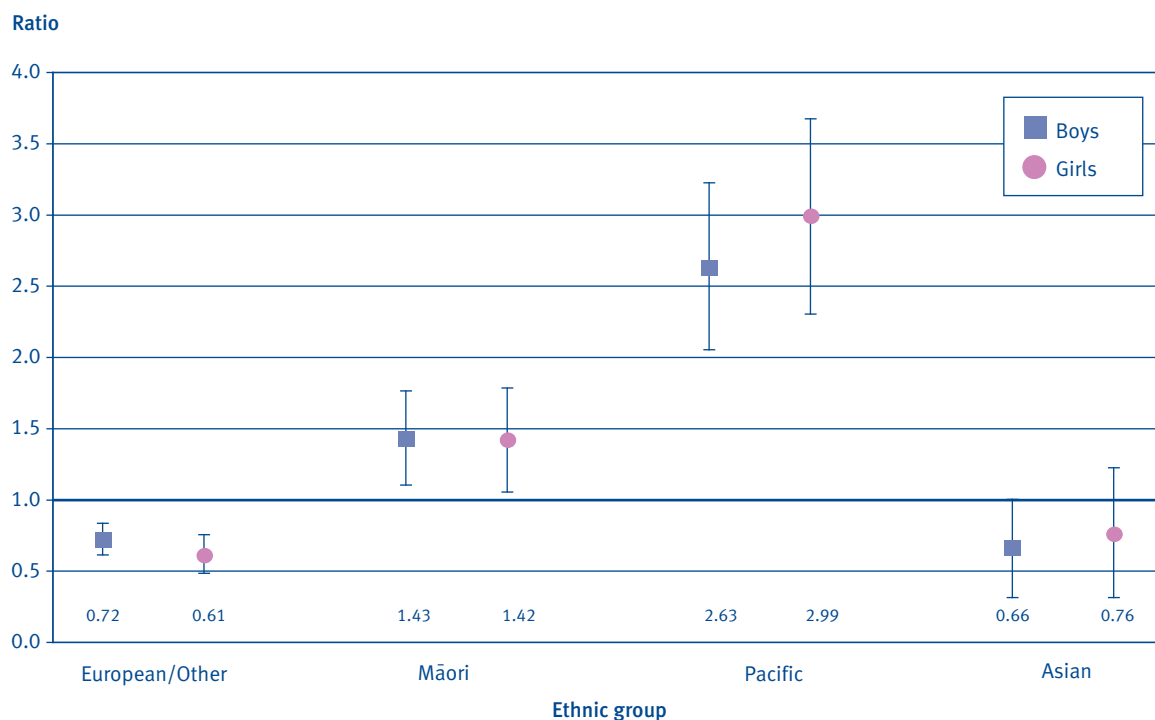
Ethnic group	Prevalence (95% CI)	Number of children
European/ Other	5.5 (4.3–6.7)	31000
Māori	11.8 (9.9–13.7)	19900
Pacific	23.3 (19.7–26.8)	19700
Asian	5.9 (3.5–8.3)	3900

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

Adjusted for age, Pacific boys and girls were at least 2.5 times more likely to be obese than boys and girls in the total population. Māori boys and girls were approximately 1.5 times more likely to be obese than boys and girls in the total population (Figure 2.62).

Figure 2.62: Obesity for children aged 2 to 14 years, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged from 2-14 years. Total response standard output for ethnic groups has been used.

Table 2.27 gives an indication of the burden of obesity for adults in New Zealand's main ethnic population groups.

Table 2.27: Obesity for adults, by ethnic group (unadjusted)

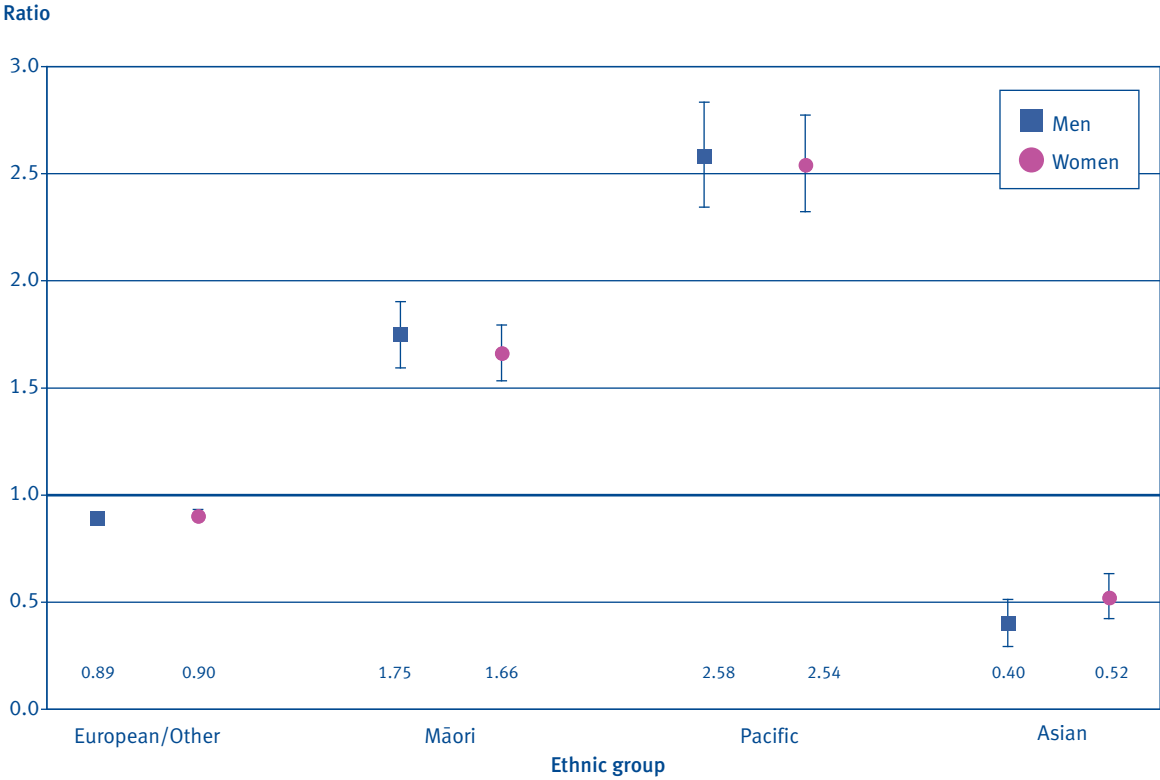
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	24.3 (23.1–25.5)	619200
Māori	41.7 (39.8–43.7)	148300
Pacific	63.7 (60.0–67.5)	104900
Asian	11.0 (9.0–13.0)	30800

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

Pacific men and women were at least 2.5 times more likely to be obese than men and women in the total population. Māori men and women were 1.7 times more likely to be obese than men and women in the total population (Figure 2.63).

Figure 2.63: Obesity for adults, by ethnic group and gender (age standardised rate ratio)



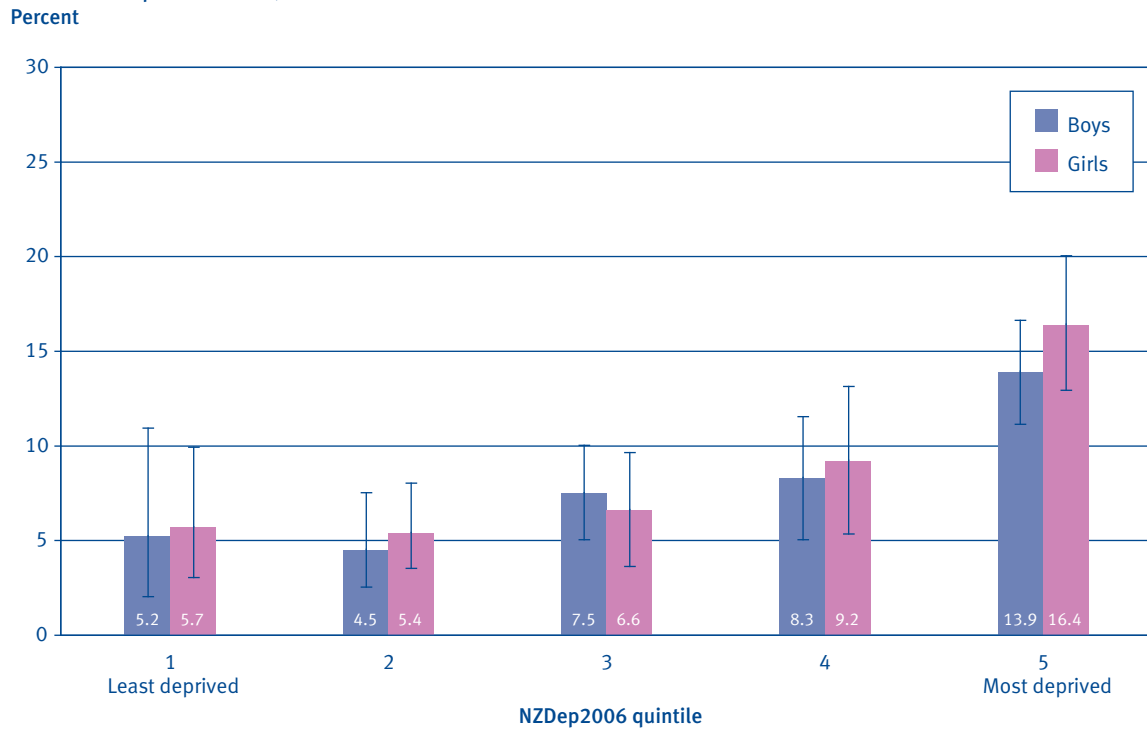
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Obesity, by neighbourhood deprivation

Children living in areas of high neighbourhood deprivation (NZDep2006 quintile 5) were more likely to be obese than children living in all other areas (NZDep2006 quintiles 1, 2, 3 and 4) (p-values < 0.05). This pattern was evident in both boys and girls (Figure 2.64).

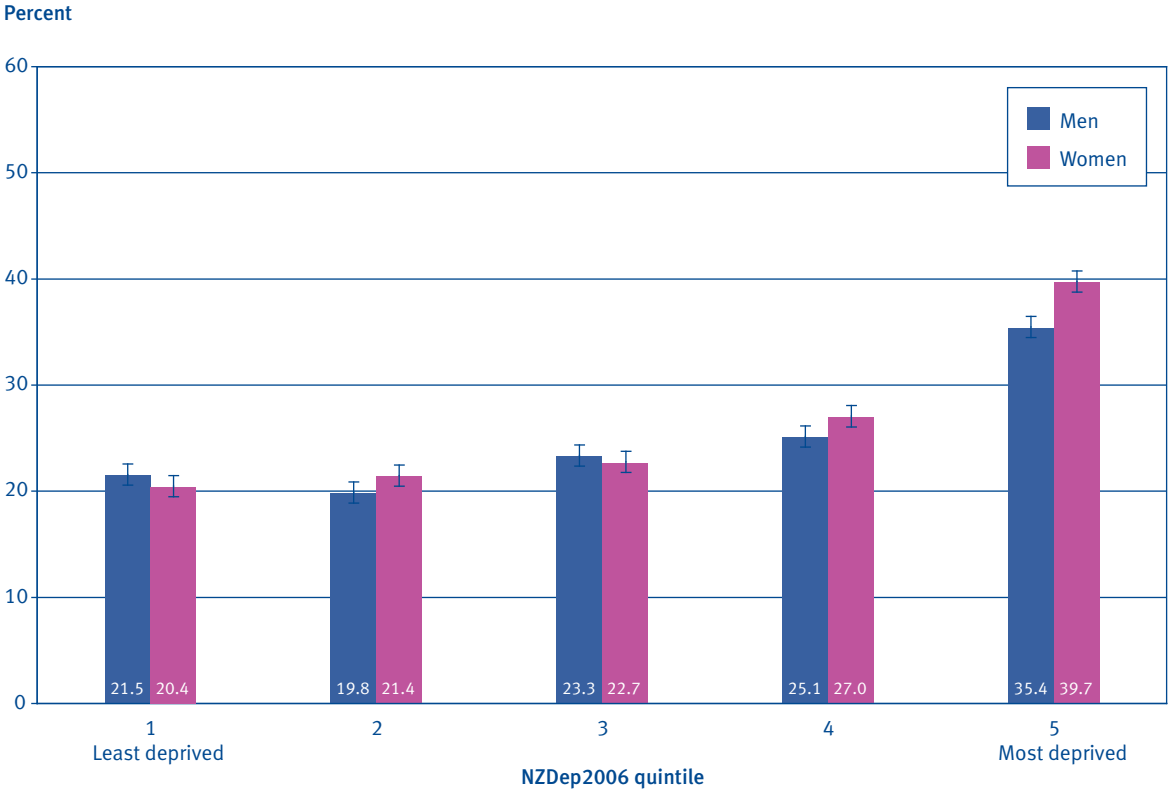
Figure 2.64: Obesity for children, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

The proportion of adults who were obese was relatively stable across neighbourhood deprivation quintiles 1 to 4, and then increased sharply for adults living in NZDep2006 quintile 5, especially for women (Figure 2.65).

Figure 2.65: Obesity for adults, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Obesity, by DHB area

Children and adults living in Counties Manukau DHB area had a significantly increased prevalence of obesity compared to the total child and total adult populations, respectively. Adults living in Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui DHB area were also more likely to be obese than the total adult population (Table 2.28). Children and adults living in Waitemata and children living in Bay of Plenty / Taranaki / MidCentral were less likely to be obese than the total population.

Table 2.28: Obesity for children and adults, by DHB area

DHB area	Prevalence for children (95% CI)	Number of children	Prevalence for adults (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	8.9 (6.6–11.2) –	8800	30.2 (27.6–32.9) +	113600
Waitemata	5.9 (3.4–8.3) –	5200	20.5 (17.3–23.7) –	77600
Auckland	9.7 (6.6–12.9)	6300	21.4 (18.2–24.7) –	69200
Counties Manukau	12.7 (9.4–16.0) +	12000	33.0 (29.3–36.8) +	106500
Waikato	9.2 (6.2–12.2)	6000	29.2 (26.1–32.3)	75600
Bay of Plenty / Taranaki / MidCentral	5.2 (3.1–7.3) –	4400	27.5 (24.5–30.5)	96600
Wairarapa / Hutt Valley / Capital and Coast	9.1 (6.0–12.2)	6900	25.3 (22.0–28.6)	87700
Canterbury	6.1 (3.5–9.6)	4800	24.5 (21.7–27.3)	90800
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	8.2 (4.0–12.3)	7000	27.9 (24.5–31.2)	109400
New Zealand total	8.3 (7.4–9.3)	61700	26.5 (25.5–27.5)	826100

Source: 2006/07 New Zealand Health Survey

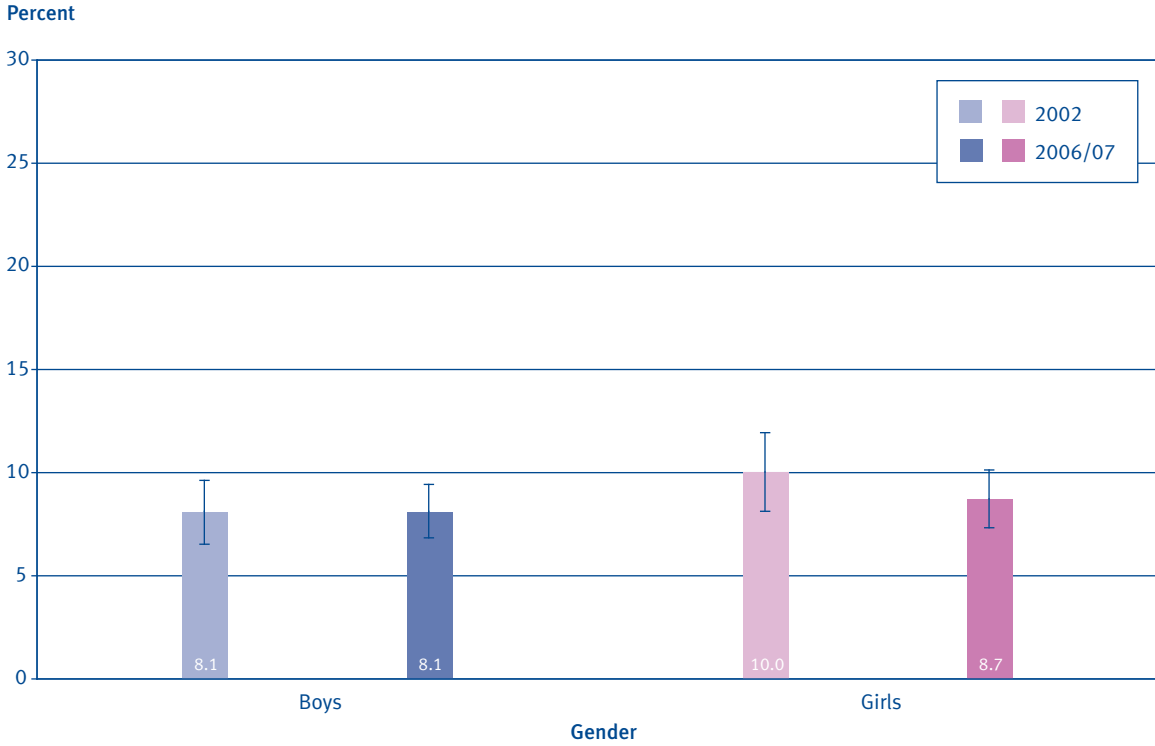
Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends in the prevalence of obesity for children

A time trend is not available for under five-year-olds.

From 2002 to 2006/07 there was no change in the prevalence of obesity for school-aged children, adjusted for age (Figure 2.66).

Figure 2.66: Obesity for children aged 5–14 years, by gender, 2002 and 2006/07 (age standardised prevalence)

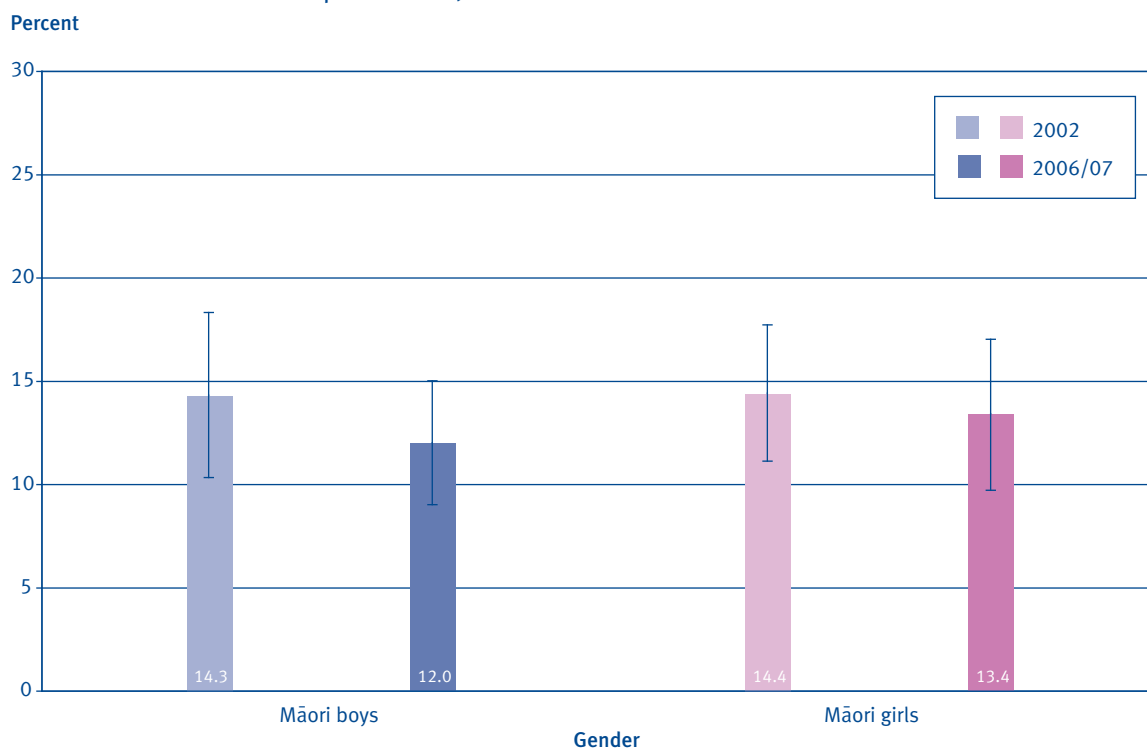


Source: 2006/07 New Zealand Health Survey and 2002 National Children’s Nutrition Survey

Note: Data from previous years have been reanalysed to allow for comparability.

For Māori boys and girls, there was also no significant change in the prevalence of obesity for school-aged children, adjusted for age (Figure 2.67).

Figure 2.67: Obesity for Māori children aged 5–14 years, by gender, 2002 and 2006/07 (age standardised prevalence)



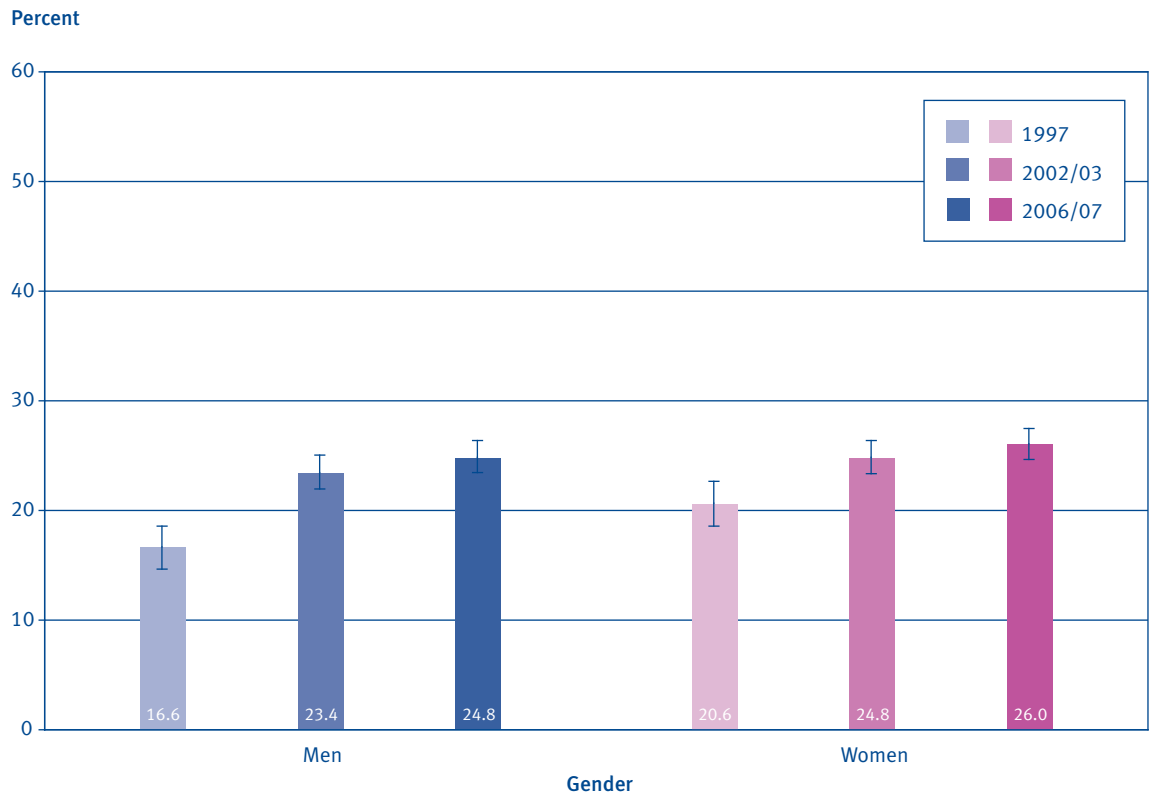
Source: 2006/07 New Zealand Health Survey and 2002 National Children's Nutrition Survey

Note: Data from previous years have been reanalysed to allow for comparability.

Time trend in the prevalence of obesity for adults

There has been an increase in the prevalence of obesity for men and women from 1997 to 2006/07, adjusted for age. However, the rate of increase appears to be slowing, with no statistically significant increase between 2002/03 and 2006/07 for both men and women (Figure 2.68).

Figure 2.68: Obesity for adults, by gender, 1997, 2002/03 and 2006/07 (age standardised prevalence)

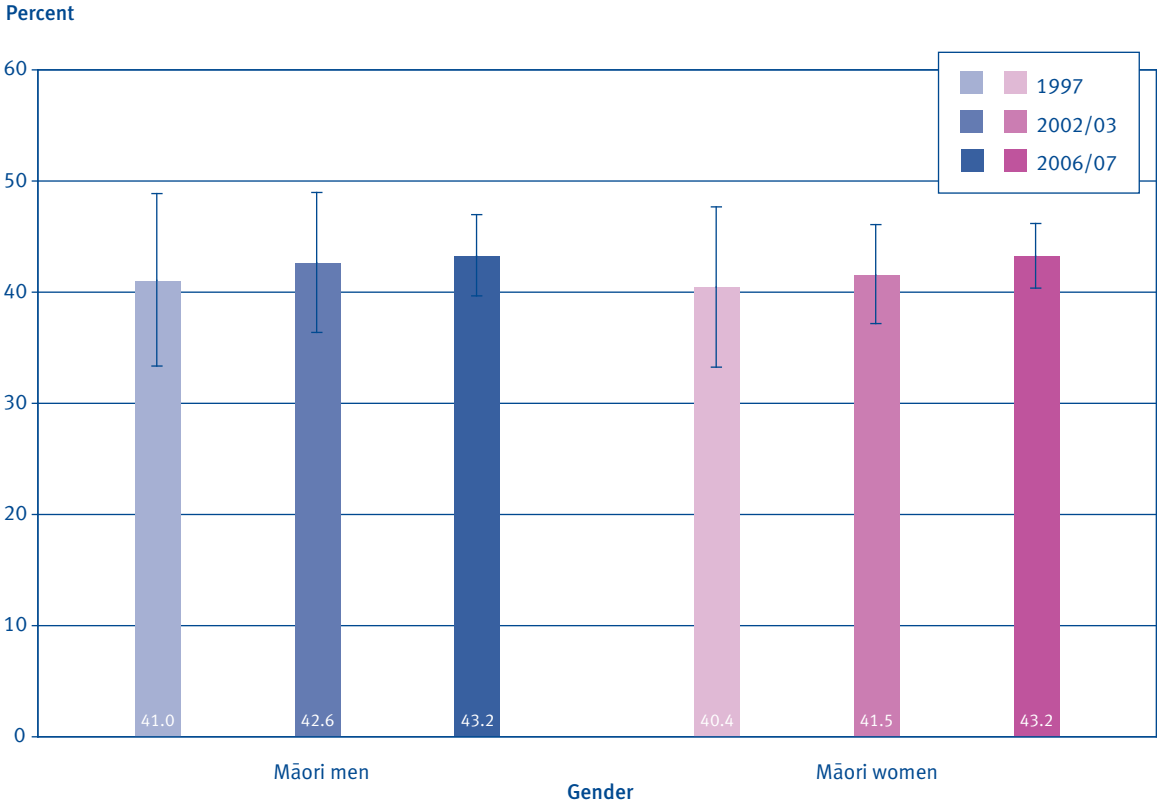


Source: 2002/03 and 2006/07 New Zealand Health Surveys, 1997 National Nutrition Survey

Note: Data from previous years have been reanalysed to allow for comparability.

For Māori adults there was no significant change from 1997 to 2006/07 in the prevalence of obesity for both men and women, adjusted for age (Figure 2.69).

Figure 2.69: Obesity for Māori adults, by gender, 1997, 2002/03 and 2006/07 (age standardised prevalence)



Source: 2002/03 and 2006/07 New Zealand Health Surveys, 1997 National Nutrition Survey

Note: Data from previous years have been reanalysed to allow for comparability.

Chapter 3: Health Conditions

Introduction

A health condition is defined in this report as a doctor-diagnosed physical or mental illness that has lasted, or is expected to last, for more than six months. The symptoms may come and go or be present all the time.

The 2006/07 New Zealand Health Survey found that one out of every three children (36.5%, 34.5–38.5) and two out of every three adults (65.7%, 64.7–66.8) had been diagnosed by a doctor with a health condition that had lasted or was expected to last for six months or more.

Asking survey participants if a doctor had ever told them they had the selected condition may underestimate the true prevalence of some health conditions, because not everyone with the condition will have been diagnosed by a doctor and some people may not remember the diagnosis. The proportion of people who are not diagnosed or cannot remember diagnosis will vary by condition, depending on a number of factors, such as the presence and severity of symptoms.

New Zealand Health Survey participants who said they had been diagnosed with a particular health condition were also asked how old they were when the condition was first diagnosed, what treatments they now have for the condition, and, if applicable, whether they had ever had surgery for the condition.

Health conditions presented in this chapter in detail are those that align with the New Zealand Health Strategy, Health Targets or current policy. The prevalences of other health conditions are presented in tables at the end of the chapter.

Appendices 5 and 6 describe how to access data presented in this chapter, as well as additional results available online.

High blood pressure

Introduction

High blood pressure (hypertension) is an important risk factor for heart disease, as well as stroke and renal failure. Modifiable risk factors for high blood pressure include physical activity, salt intake, obesity and alcohol intake (Fisher and Williams 2005).

What were the survey questions?

In the 2006/07 New Zealand Health Survey adult participants were asked if they had ever been told by a doctor they have high blood pressure (other than during pregnancy) and whether they currently take any medication for this condition.

High blood pressure does not usually have any symptoms, so many people may not be aware they have the condition. Therefore, the best way to determine the true prevalence of high blood pressure in the community is to take actual blood pressure measurements. However, taking blood pressure measurements was beyond the scope of this survey.

The definition of high blood pressure in this report only includes people currently taking medication for high blood pressure. It is important to note that this definition will underestimate the true prevalence of high blood pressure because:

- not all people with high blood pressure will have been diagnosed, or will remember being diagnosed
- not all people diagnosed with high blood pressure will currently be taking medication.

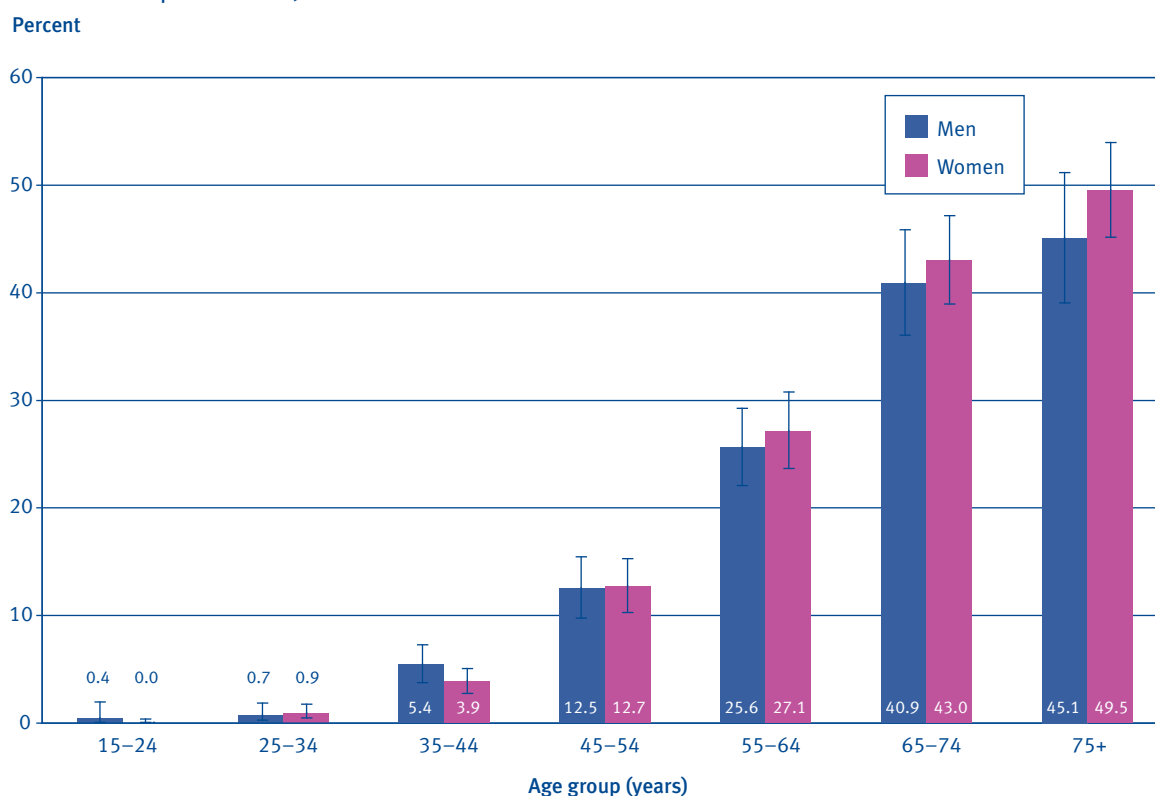
Medicated high blood pressure for adults

One in seven adults (13.6%, 13.0–14.3) reported that they were currently taking medication for high blood pressure. This equates to 425,500 adults. Overall, there was no difference in the age standardised prevalence of taking medication for high blood pressure between men (10.8%, 10.0–11.6) and women (10.9%, 10.3–11.6).

Medicated high blood pressure, by age group

In both men and women the prevalence of taking medication for high blood pressure increased as age increased. Nearly half of adults aged 75 years and over were currently taking medication for high blood pressure. There were no differences by gender for any age group in the prevalence of medicated high blood pressure (Figure 3.1).

Figure 3.1: Medicated high blood pressure for adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Medicated high blood pressure, by ethnic group

Table 3.1 gives an indication of the burden of high blood pressure in New Zealand's main ethnic population groups.

Table 3.1: Medicated high blood pressure for adults, by ethnic group (unadjusted)

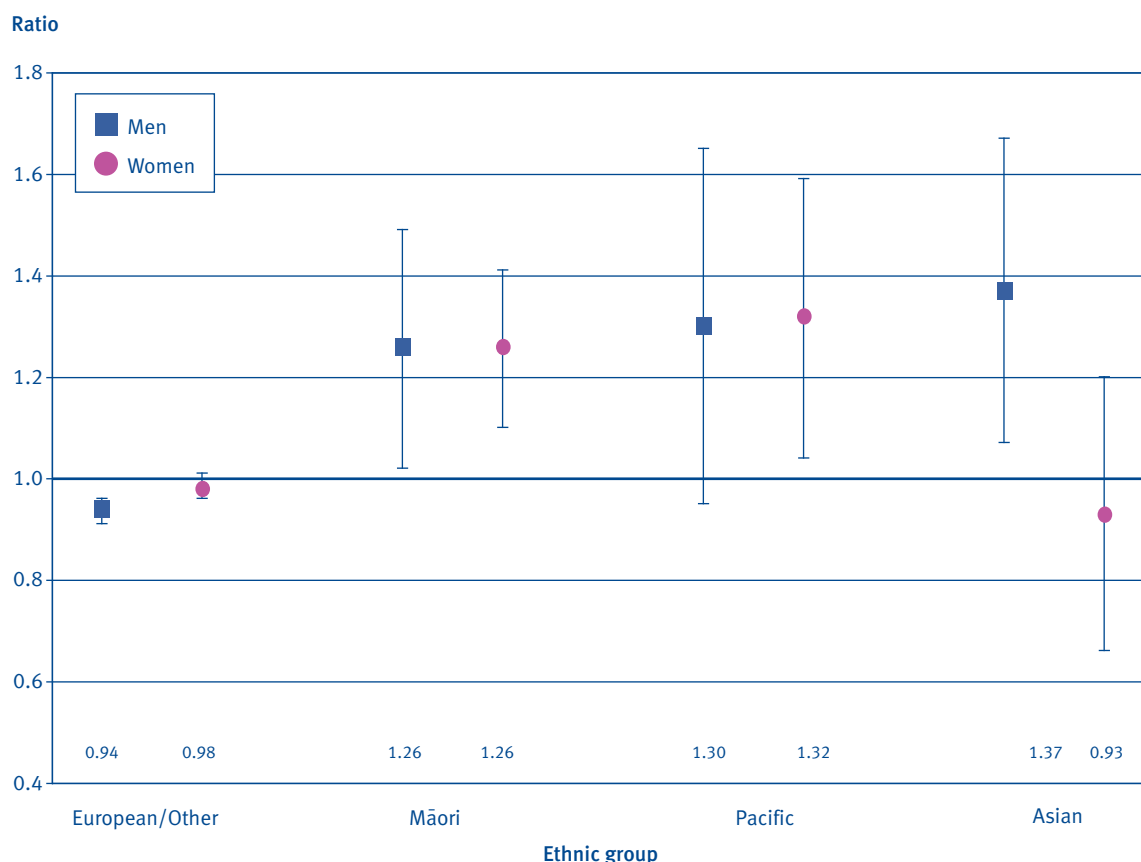
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	14.3 (13.5–15.0)	363600
Māori	10.3 (9.2–11.4)	36600
Pacific	10.6 (8.6–12.6)	17400
Asian	9.0 (7.5–10.5)	25000

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Asian men were nearly 40% more likely to be taking medication for high blood pressure compared to men in the total population. Māori men and Māori and Pacific women also had an increased prevalence of treated high blood pressure (Figure 3.2).

Figure 3.2: Medicated high blood pressure for adults, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.00 (indicated by the bold line), is the rate for total male and female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Medicated high blood pressure, by neighbourhood deprivation

In both men and women there was no significant difference in the prevalence of taking treatment for high blood pressure between NZDep2006 quintile 1 (least deprived) and quintile 5 (most deprived).

Medicated high blood pressure, by DHB area

There was no regional variation in high blood pressure for adults, with the exception of Auckland DHB, where significantly fewer adults had medicated for high blood pressure compared to the national rate (Table 3.2).

Table 3.2: Medicated high blood pressure for adults, by DHB area (unadjusted)

DHB area	Prevalence (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	14.7 (12.9–16.6)	55400
Waitemata	14.3 (11.8–16.8)	54100
Auckland	9.7 (7.9–11.4) –	31200
Counties Manukau	13.4 (10.9–16.0)	43300
Waikato	12.8 (10.9–14.7)	33300
Bay of Plenty / Taranaki / MidCentral	15.4 (13.3–17.6)	54200
Wairarapa / Hutt Valley / Capital and Coast	13.7 (11.4–16.1)	47600
Canterbury	13.0 (10.7–15.2)	48100
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	14.9 (12.2–17.6)	58500
New Zealand total	13.6 (13.0–14.3)	425500

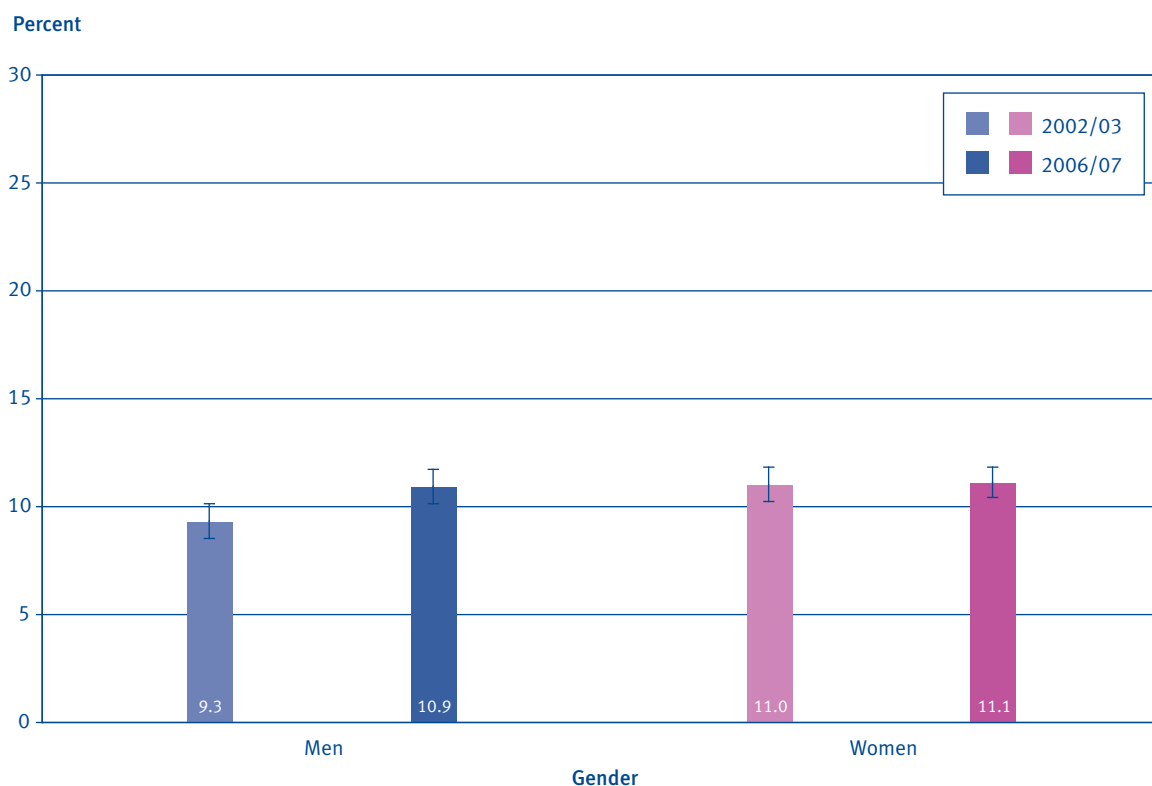
Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trend in prevalence of medicated high blood pressure

Between 2002/03 and 2006/07 there was an increase in the prevalence of men taking medication for high blood pressure, adjusted for age (Figure 3.3). There was no change in the proportion of Māori men or women taking medication for high blood pressure, adjusted for age (graph not shown).

Figure 3.3: Medicated high blood pressure for adults, by gender, 2002/03 and 2006/07 (age standardised prevalence)



Source: 2002/2003 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

High cholesterol

Introduction

High cholesterol is an important risk factor for cardiovascular disease, particularly ischaemic heart disease. Modifiable determinants of blood cholesterol include diet, body weight and physical activity levels. Dietary fat intake is an important modifiable determinant of raised blood cholesterol (Rader and Hobbs 2005).

What were the survey questions?

In the 2006/07 New Zealand Health Survey, adult participants were asked if they had ever been told by a doctor they have high cholesterol levels in their blood, whether they currently take any medication for this condition, and the name of that medication.

High cholesterol usually has no symptoms, and people may not be aware they have the condition unless they have had a blood test. Therefore, the best way to determine the true prevalence of high cholesterol in the community is to take blood samples and measure cholesterol (and other blood lipid and lipoprotein) levels. However, taking blood cholesterol levels was beyond the scope of this survey.

The definition of high cholesterol in this report only includes people currently taking medication for high cholesterol. It is important to note that this definition will underestimate the true prevalence of high cholesterol because:

- not all people with high cholesterol will have been diagnosed, or will remember being diagnosed
- not all people diagnosed with high cholesterol will currently be receiving medication for high cholesterol – some are treated with a change in diet.

Some people do not know whether the medication they are taking is for high cholesterol. The name of cholesterol medication was collected in the 2006/07 survey, so those people who incorrectly believed they were taking medication for high cholesterol, when the medication was not for this condition, were removed from these analyses (3.7% of adults answered this question in error).

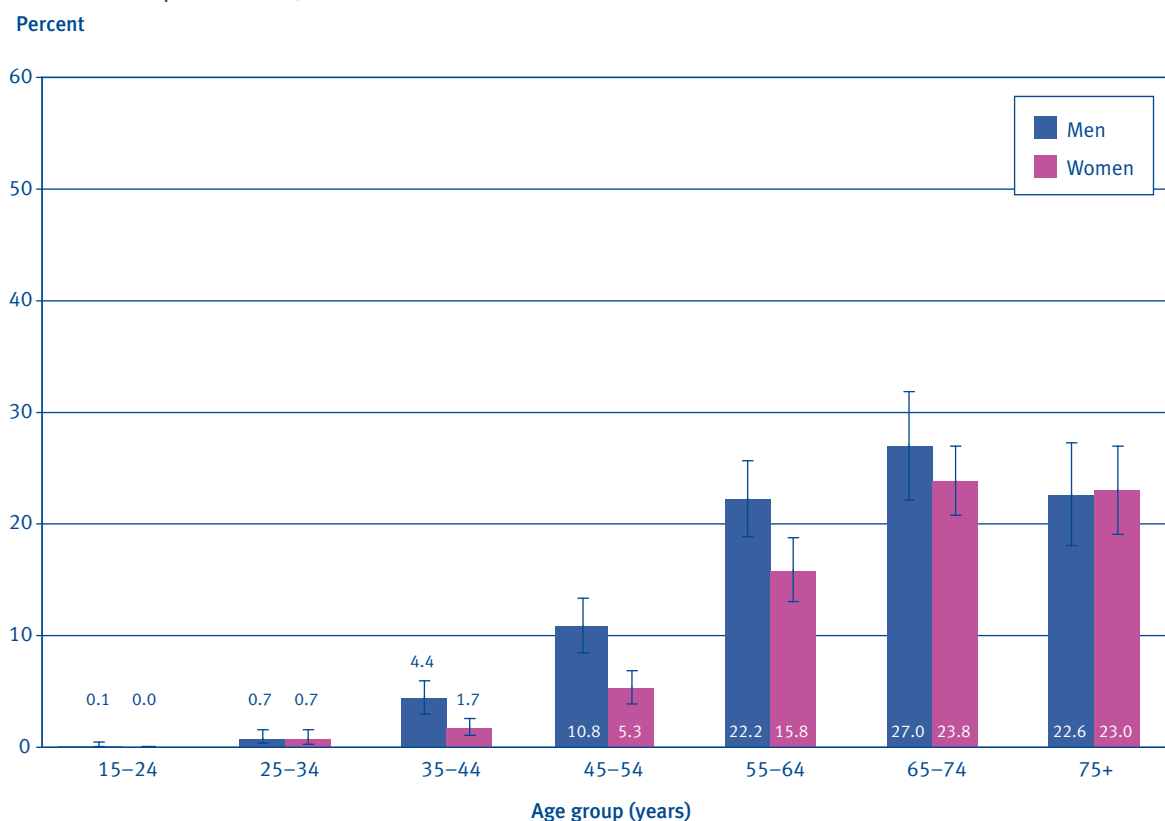
Medicated high cholesterol for adults

One in twelve adults (8.4%, 7.7–9.0) were currently taking medication for high cholesterol. This equates to 260,600 adults. Men (7.9%, 7.2–8.7) were significantly more likely than women (5.7%, 5.1–6.2) to be taking medication for high cholesterol, when standardised for age.

Medicated high cholesterol, by age group

In both men and women the prevalence of taking medication for high cholesterol increased as age increased until 65 years, where it stabilised at just over one in five adults. Men in middle-age groups (35–44, 45–54 and 55–64 years) were significantly more likely than women of the same age to be taking medication for high cholesterol (Figure 3.4).

Figure 3.4: Medicated high cholesterol for adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Medicated high cholesterol, by ethnic group

Table 3.3 gives an indication of the burden of high blood cholesterol in New Zealand's main ethnic population groups.

Table 3.3: Medicated high cholesterol for adults, by ethnic group (unadjusted)

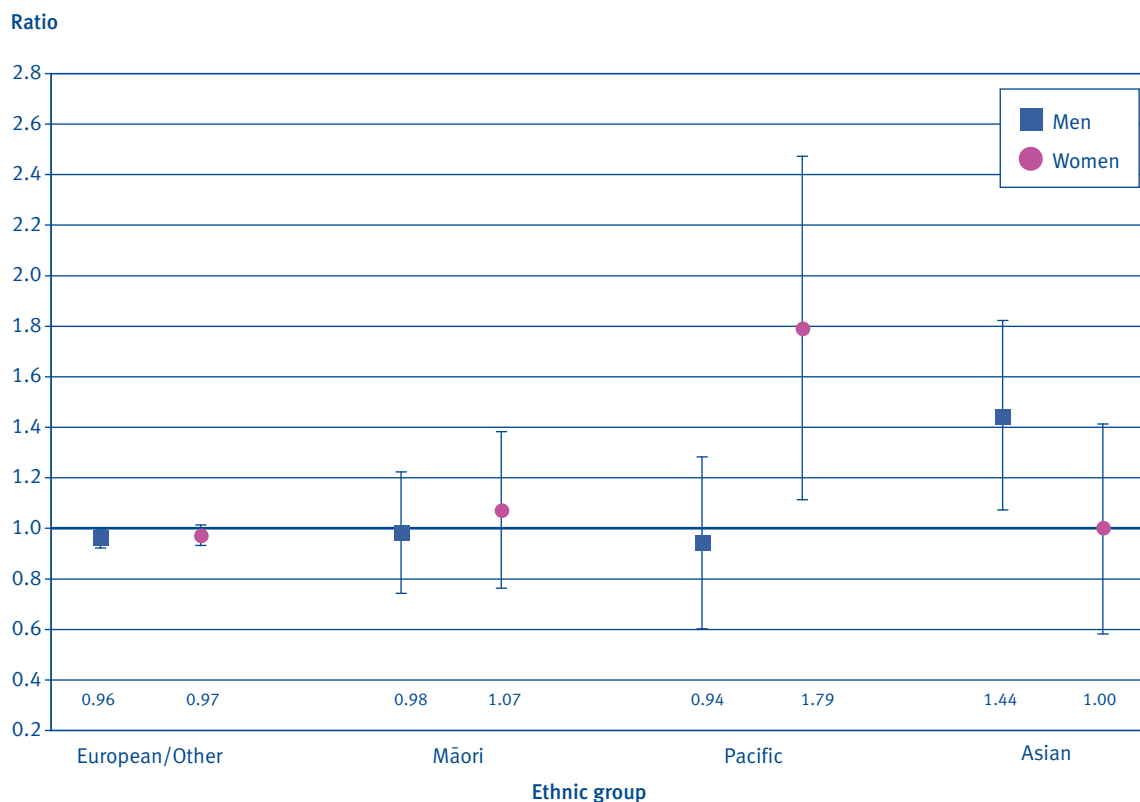
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	8.7 (8.0-9.5)	222600
Māori	5.5 (4.5-6.5)	19500
Pacific	6.8 (4.8-8.8)	11200
Asian	6.5 (5.0-8.0)	18300

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups have been used.

After adjusting for age, Pacific women and Asian men were more likely to be taking medication for high cholesterol compared to women and men in the total population (Figure 3.5).

Figure 3.5: Medicated high cholesterol for adults, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.00 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Medicated high cholesterol, by neighbourhood deprivation

In both men and women there was no significant difference in the prevalence of taking medication for high cholesterol by neighbourhood deprivation (NZDep2006 quintiles).

Medicated high cholesterol, by DHB area

Adults living in Counties Manukau DHB were significantly more likely than the total adult population to be taking medication for high cholesterol (Table 3.4). There were no other differences by DHB area.

Table 3.4: Medicated high cholesterol for adults, by DHB area (unadjusted)

DHB area	Prevalence (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	7.5 (6.2–8.8)	28300
Waitemata	8.3 (6.4–10.2)	31600
Auckland	8.7 (6.6–10.7)	28000
Counties Manukau	10.8 (8.7–12.8) +	34700
Waikato	8.2 (6.5–10.0)	21300
Bay of Plenty / Taranaki / MidCentral	8.0 (6.7–9.3)	28200
Wairarapa / Hutt Valley / Capital and Coast	8.3 (6.7–10.0)	28800
Canterbury	7.4 (6.0–8.8)	27500
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	8.2 (6.3–10.2)	32300
New Zealand total	8.4 (7.7–9.0)	260600

Source: 2006/07 New Zealand Health Survey

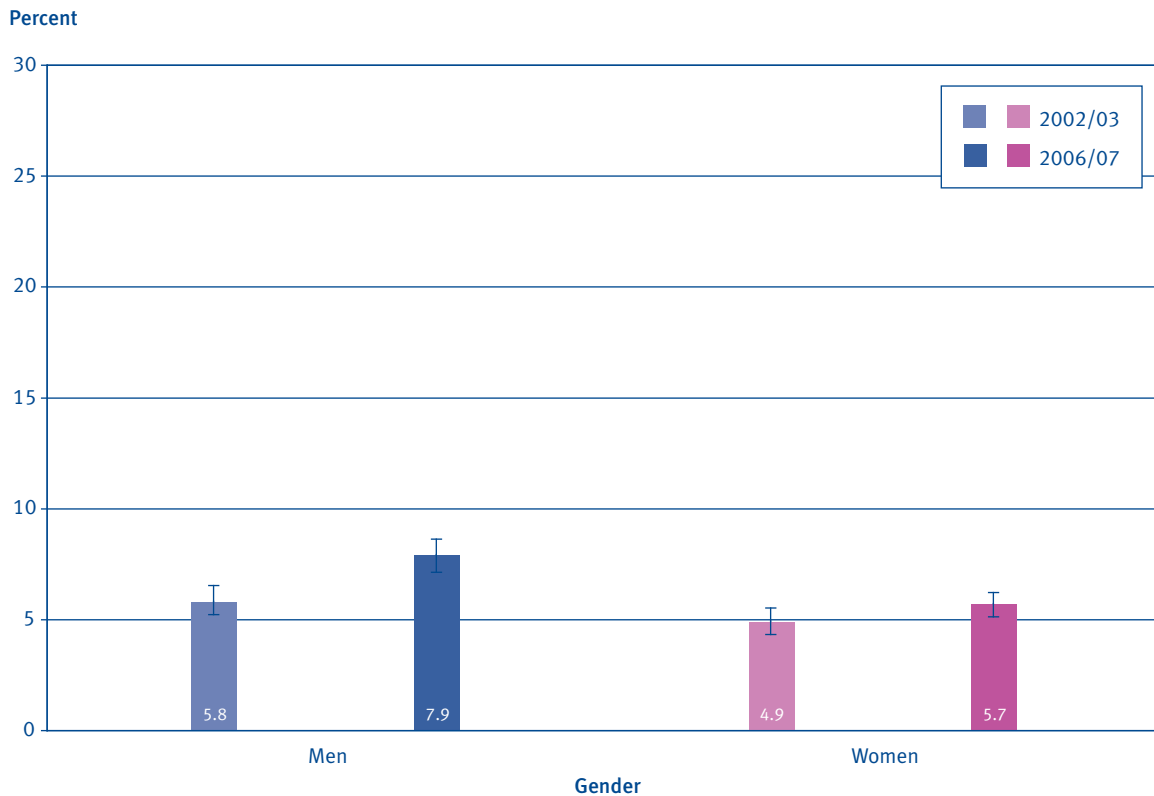
Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends in prevalence of medicated high cholesterol

When looking at the time trends, it is important to note that, unlike the 2006/07 survey, the 2002/03 New Zealand Health Survey did not collect the name of cholesterol medication currently being taken. Therefore earlier data may slightly overestimate the prevalence of taking medication for high cholesterol if respondents answered this question in error (ie they incorrectly believed they were taking medication for high cholesterol, when the medication was not for this condition).

Between 2002/03 and 2006/07 there was a significant increase in the prevalence of men taking medication for high cholesterol (p -value < 0.05), adjusted for age (Figure 3.6). For women, there was also a small, but non-significant increase (p -value = 0.05) in the proportion taking medication for high cholesterol. There was no change in the proportion of Māori men or women taking medication for high cholesterol (graph not shown).

Figure 3.6: Medicated high cholesterol for adults, by gender, 2002/03 and 2006/07 (age standardised prevalence)



Source: 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Type of medication for high cholesterol

Nearly all adults who took medication for high cholesterol were taking statins (92.1%, 90.3–94.0). Statins are pills that lower the level of cholesterol in the blood by reducing the production of cholesterol by the liver, and they have been proven to reduce the risk of heart attack, stroke and deaths due to these diseases (Heart Protection Study Collaborative Group 2002; Rader and Hobbs 2005).

Ischaemic heart disease

Introduction

Ischaemic heart disease (IHD) is the narrowing or blocking of the coronary arteries that supply blood and oxygen to the heart. IHD can cause heart attack and angina (typically temporary chest discomfort when walking or exercising) and lead to heart failure. Modifiable risk factors for IHD include high blood cholesterol, high blood pressure, tobacco smoking, overweight and obesity, physical inactivity, poorly controlled diabetes, and inadequate vegetable and fruit intake (Selwyn and Braunwald 2005; World Health Organization 2003b).

What were the survey questions?

IHD has been measured in the New Zealand Health Survey by asking adult participants if they have ever been diagnosed by a doctor with a heart attack that resulted in hospitalisation, and/or angina.

Time trend data for the number of people who have ever had ischaemic heart disease are not available, because earlier New Zealand Health Surveys combined heart failure with heart attack and angina in a generic heart disease question. Consequently, IHD could not be separated from other forms of heart disease before the 2006/07 New Zealand Health Survey.

IHD is very rare for children. The figures presented in this report are for the adult population only.

Diagnosed ischaemic heart disease for adults

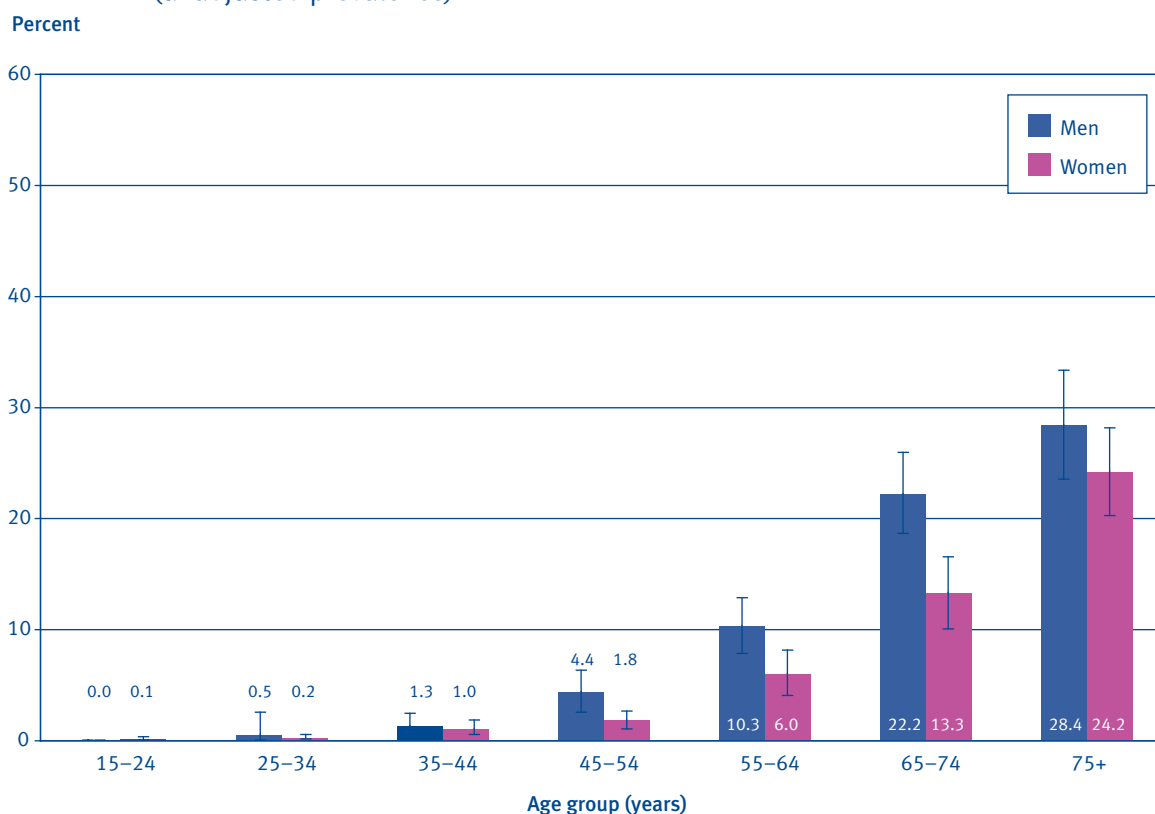
One in twenty adults (5.2%, 4.7–5.6) had been diagnosed with ischaemic heart disease. This equates to 161,000 adults, including 118,500 with angina (3.8%, 3.4–4.2) and 89,400 who had a heart attack resulting in hospitalisation at some point in their life (2.9%, 2.5–3.2).

Men (4.9%, 4.3–5.5) were significantly more likely to be diagnosed with ischaemic heart disease than women (3.1%, 2.7–3.5), adjusted for age.

Diagnosed ischaemic heart disease, by age group

Ischaemic heart disease occurred earlier in men than in women, and increased with age in both genders. One in five men aged 65 years and over had been diagnosed with angina or had a heart attack that resulted in hospitalisation (Figure 3.7).

Figure 3.7: Diagnosed IHD (angina or heart attack) for adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Diagnosed ischaemic heart disease, by ethnic group

Table 3.5 gives an indication of the burden of ischaemic heart disease in New Zealand's main ethnic population groups.

Table 3.5: Diagnosed IHD (angina or heart attack) for adults, by ethnic group (unadjusted)

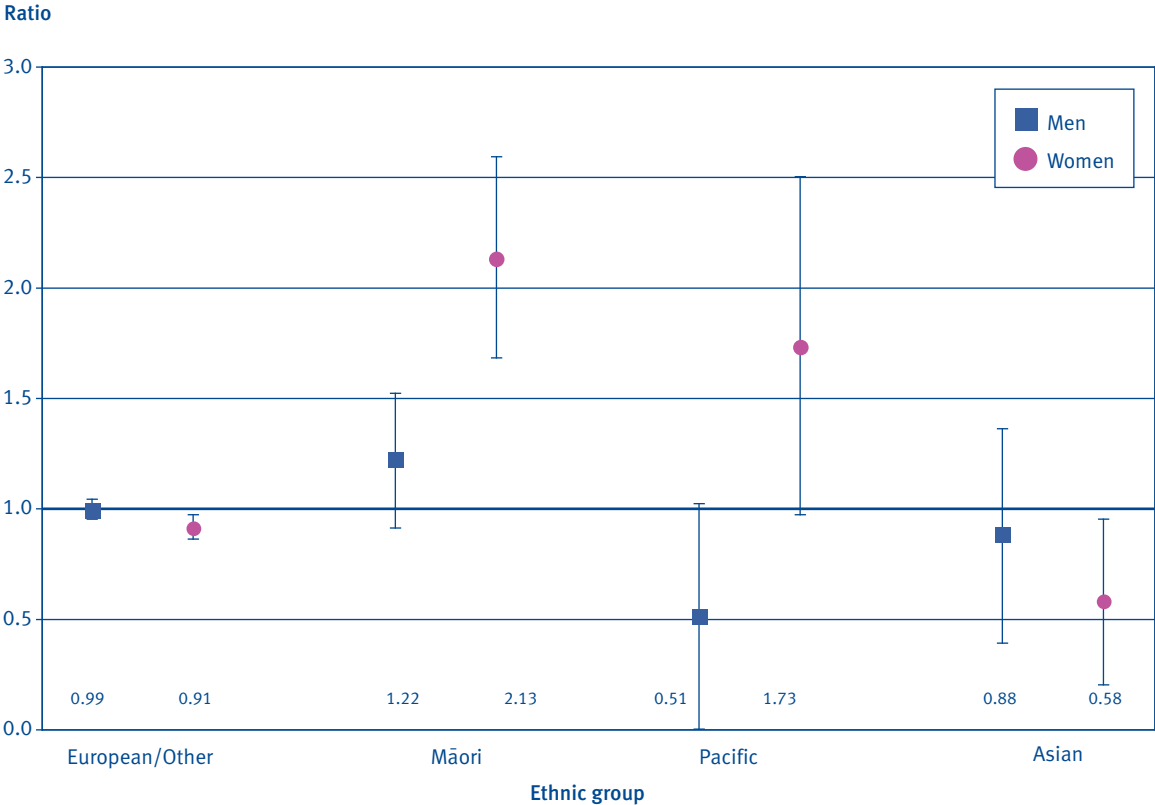
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	5.5 (5.0–6.0)	140400
Māori	4.7 (3.8–5.5)	16700
Pacific	2.9 (1.8–4.0)	4800
Asian	2.3 (1.1–3.4)	6400

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Māori women had twice the likelihood of having ever been diagnosed with ischaemic heart disease compared to women in the total population (Figure 3.8). Asian women and European/Other women were less likely to be diagnosed with ischaemic heart disease. There were no significant differences for men by ethnic group (Figure 3.8).

Figure 3.8: Diagnosed IHD (angina or heart attack) for adults, by ethnic group and gender (age standardised rate ratio)



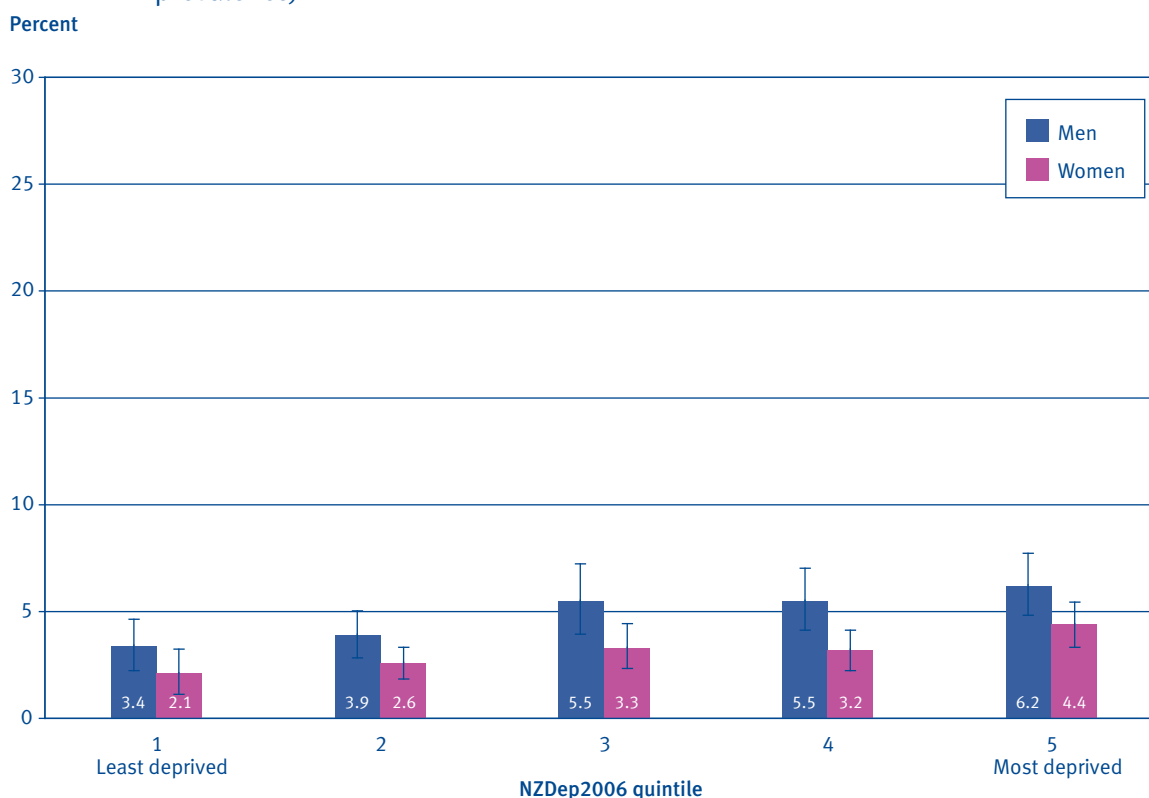
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.00 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Diagnosed ischaemic heart disease, by neighbourhood deprivation

Ischaemic heart disease was less prevalent in neighbourhoods with low deprivation. Men and women living in NZDep2006 quintile 5 (most deprived) were twice as likely to be diagnosed with IHD than men and women in quintile 1 (least deprived) (Figure 3.9).

Figure 3.9: Diagnosed IHD for adults, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Diagnosed ischaemic heart disease, by DHB area

There were no significant differences in IHD by DHB area, with the exception of Auckland DHB, where the prevalence was slightly lower than the total national rate (Table 3.6).

Table 3.6: Diagnosed IHD (angina or heart attack) for adults, by DHB area (unadjusted)

DHB area	Prevalence (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	6.1 (5.0–7.1)	22800
Waitemata	4.8 (3.3–6.3)	18100
Auckland	3.8 (2.5–5.0) –	12100
Counties Manukau	4.3 (2.9–5.8)	14000
Waikato	4.2 (2.9–5.4)	10800
Bay of Plenty / Taranaki / MidCentral	6.2 (4.8–7.6)	21800
Wairarapa / Hutt Valley / Capital and Coast	4.8 (3.3–6.2)	16500
Canterbury	5.6 (4.3–7.0)	20900
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	6.1 (4.4–7.8)	23900
New Zealand total	5.2 (4.7–5.6)	161000

Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Treatment for ischaemic heart disease

One in three adults with IHD (36.2%, 32.4–40.1) had received a medical intervention. This included procedures such as coronary artery bypass grafts (CABG), coronary angioplasty, coronary stenting (stents), heart transplants, and implanting pacemakers and cardiac defibrillators.

One in three adults with IHD (36.3%, 32.5–40.0) was taking statins regularly. Statins are pills that are proven to lower the risk of heart disease and mortality (Heart Protection Study Collaborative Group 2002). Half of adults with IHD (53.5%, 49.2–57.7) were taking aspirin daily. Taking aspirin reduces the risk of heart attack, angina and mortality (Antiplatelet Trialists' Collaboration 1994).

One in eight adults with IHD (12.0%, 9.5–14.5) reported not using any treatment for IHD.

Stroke

Introduction

Stroke refers to a sudden interruption of the blood supply to the brain, which can cause permanent damage. The interruption of the blood supply can be caused by either blood clots (ischaemic stroke) or bleeding in the brain (haemorrhagic stroke). The majority of strokes are due to blood clots. Modifiable risk factors for stroke include high blood pressure, high blood cholesterol, smoking, high alcohol consumption, overweight and obesity, and physical inactivity (Smith et al 2005).

What were the survey questions?

In the 2006/07 New Zealand Health Survey all adult participants were asked if they had ever been told by a doctor that they had had a stroke. Mini-strokes (transient ischaemic attacks) were excluded.

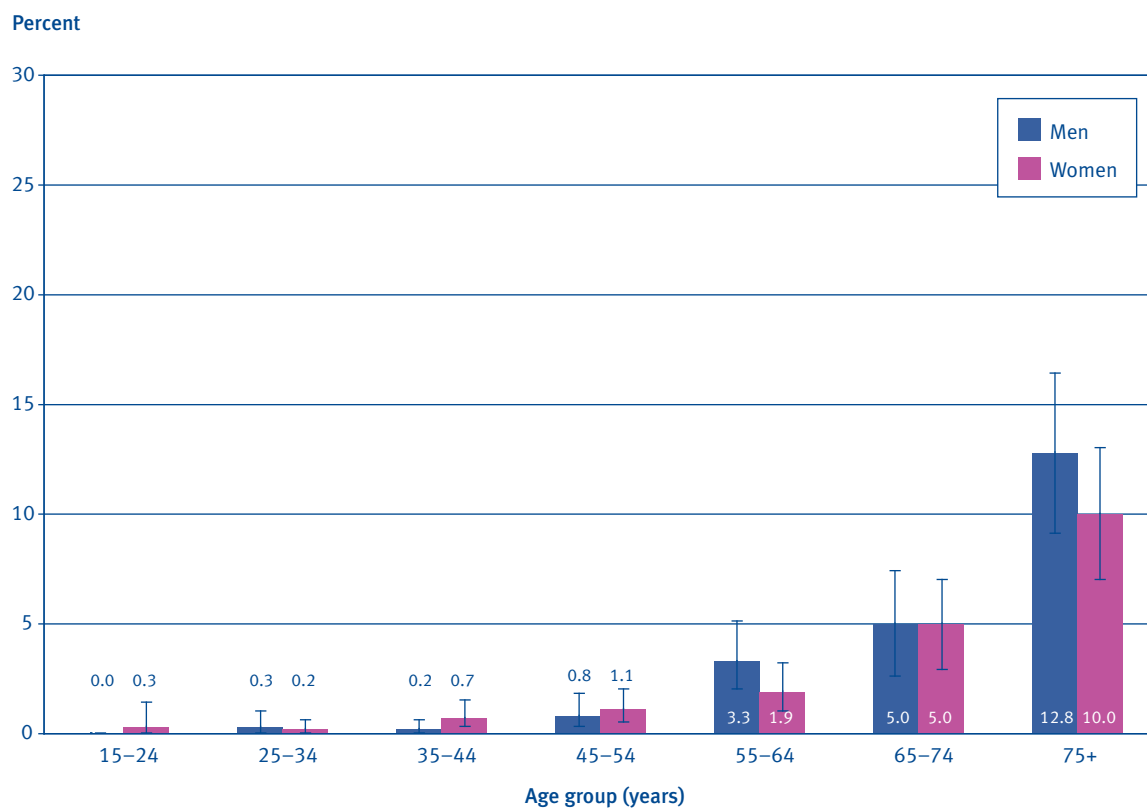
Prevalence of stroke for adults

One in 56 adults (1.8%, 1.6–2.1) had ever experienced a stroke (excluding transient ischaemic attack or mini-stroke). This equates to 57,700 adults. There was no significant difference in the age standardised prevalence of stroke between men (1.5%, 1.1–1.8) and women (1.4%, 1.1–1.6).

Prevalence of stroke, by age group

The prevalence of stroke increased with age. One in ten people aged 75 years or older had ever been diagnosed with a stroke (Figure 3.10).

Figure 3.10: Stroke for adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Prevalence of stroke, by ethnic group

Table 3.7 gives an indication of the burden of stroke in New Zealand's main ethnic population groups.

Table 3.7: Stroke for adults, by ethnic group (unadjusted)

Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	1.9 (1.6-2.2)	48300
Māori	1.8 (1.2-2.4)	6400
Pacific	2.1 (1.1-3.7)	3400
Asian	1.0 (0.5-1.7)	2700

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups have been used.

Due to large sample errors created by the small number of people with stroke in the survey sample, it was difficult to see statistically significant differences by ethnic group, so the rate ratios have not been presented.

Prevalence of stroke, by neighbourhood deprivation

There were no significant differences in the prevalence of stroke between NZDep2006 quintile 1 (least deprived) and quintile 5 (most deprived) for both men and women.

Prevalence of stroke, by DHB area

There were no significant differences in the prevalence of stroke by DHB area, with the exception of Waitemata DHB, where the prevalence was lower than the total national rate (Table 3.8).

Table 3.8: Stroke for adults, by DHB area (unadjusted)

DHB area	Prevalence (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	2.5 (1.8–3.2)	9300
Waitemata	0.9 (0.4–1.7) –	3400
Auckland	2.1 (1.2–3.5)	6900
Counties Manukau	1.5 (0.9–2.3)	4800
Waikato	1.8 (1.1–2.5)	4700
Bay of Plenty / Taranaki / MidCentral	2.2 (1.5–2.9)	7700
Wairarapa / Hutt Valley / Capital and Coast	1.5 (0.9–2.5)	5200
Canterbury	2.4 (1.5–3.5)	8800
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	1.7 (1.0–2.9)	6900
New Zealand total	1.8 (1.6–2.1)	57700

Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends in stroke prevalence

Between 2002/03 and 2006/07 there was no change in the prevalence of stroke for adults, adjusted for age.

Treatment for stroke

One in three adults who had experienced a stroke (29.1%, 20.8–37.5) were taking aspirin regularly. Aspirin thins the blood to reduce the risk of further stroke (Antiplatelet Trialists' Collaboration 1994). One in nine adults who had had a stroke (10.7%, 6.6–16.3) were using exercise or rehabilitation (speech therapy, occupational therapy or physiotherapy) for treatment of their stroke.

One in three adults who had had a stroke (32.6%, 25.6–39.6) did not use anything to treat the effects of a stroke or to prevent further stroke.

Diabetes

Introduction

Diabetes is a metabolic condition which results in raised blood glucose. It is an important cause of morbidity and mortality in New Zealand. The presence of diabetes can lead to cardiovascular disease, blindness, kidney disease and vascular insufficiency. These vascular problems may lead to nerve damage in the feet, or amputation of the lower leg (Powers 2005).

Diabetes is characterised by raised blood glucose due to insulin deficiency, insulin resistance, or both. There are two main types of diabetes.

Type 1 diabetes is less common and usually develops in childhood. It is caused by the destruction of insulin-producing cells, resulting in insulin deficiency. Daily insulin injections are usually required to sustain life.

Type 2 diabetes is more common and usually develops in adulthood. The condition is associated with insulin resistance, leading to a relative insulin deficit. Type 2 diabetes may not have any symptoms and may not be diagnosed in some people who have the condition. Treatment includes changes to diet, tablets and/or insulin injections. Modifiable risk factors for Type 2 diabetes are being overweight or obese and physical inactivity.

What were the survey questions?

In the 2006/07 New Zealand Health Survey adults were asked if they had ever been told by a doctor that they have diabetes (other than during pregnancy). If so, they were asked their age at diagnosis, what treatment they were currently taking and whether they had received a free Get Checked health check in the previous 12 months.

Parents of child participants in the survey were asked if they had ever been told by a doctor that their child had any of the health conditions listed on a show card, of which diabetes was one prompted response.

Prevalence of diagnosed diabetes for children and adults

The prevalence of diabetes in children was 0.2% (0.1–0.4), which means that approximately 1700 children had been diagnosed with diabetes by a doctor (most probably type 1). Due to small numbers, the data presented in the rest of this section are for adults only.

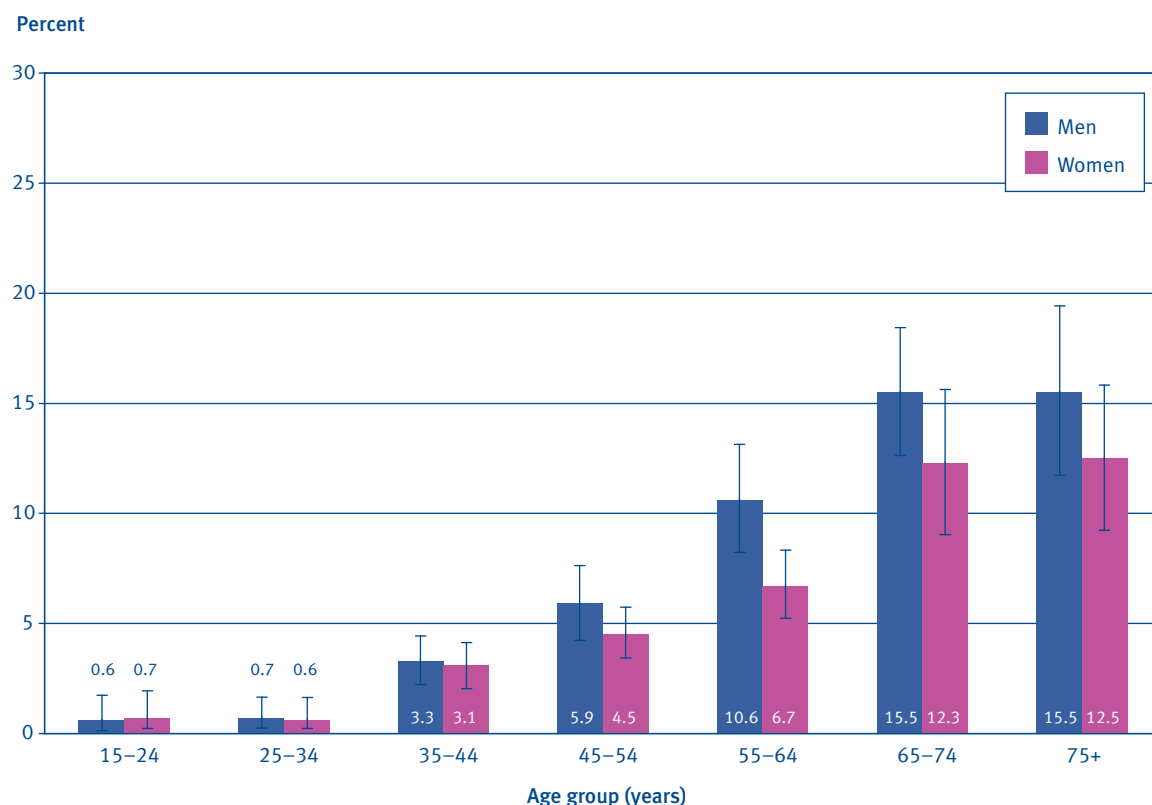
One in 20 adults (5.0%, 4.6–5.5) had doctor-diagnosed diabetes (excluding diabetes during pregnancy). This equates to 157,100 adults. Men (4.7%, 4.2–5.2) were slightly more likely than women (3.7%, 3.3–4.1) to be diagnosed with diabetes when standardised for age (p-value < 0.05).

Type 2 diabetes accounts for the majority of diabetes in New Zealand. Nine out of every ten adults with diabetes (90.9%, 88.2–93.7) were diagnosed when they were aged 25 years or older, and almost all of these people will have type 2 diabetes.

Prevalence of diagnosed diabetes, by age group

In both men and women the prevalence of diabetes increased as age increased (Figure 3.11). One in seven adults aged 65 years and over had been diagnosed with diabetes. Men aged 55–64 years were significantly more likely than women in the same age group to have diagnosed diabetes.

Figure 3.11: Diagnosed diabetes for adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Prevalence of diagnosed diabetes, by ethnic group

Table 3.9 gives an indication of the burden of diabetes in New Zealand's main ethnic population groups.

Table 3.9: Diagnosed diabetes for adults, by ethnic group (unadjusted)

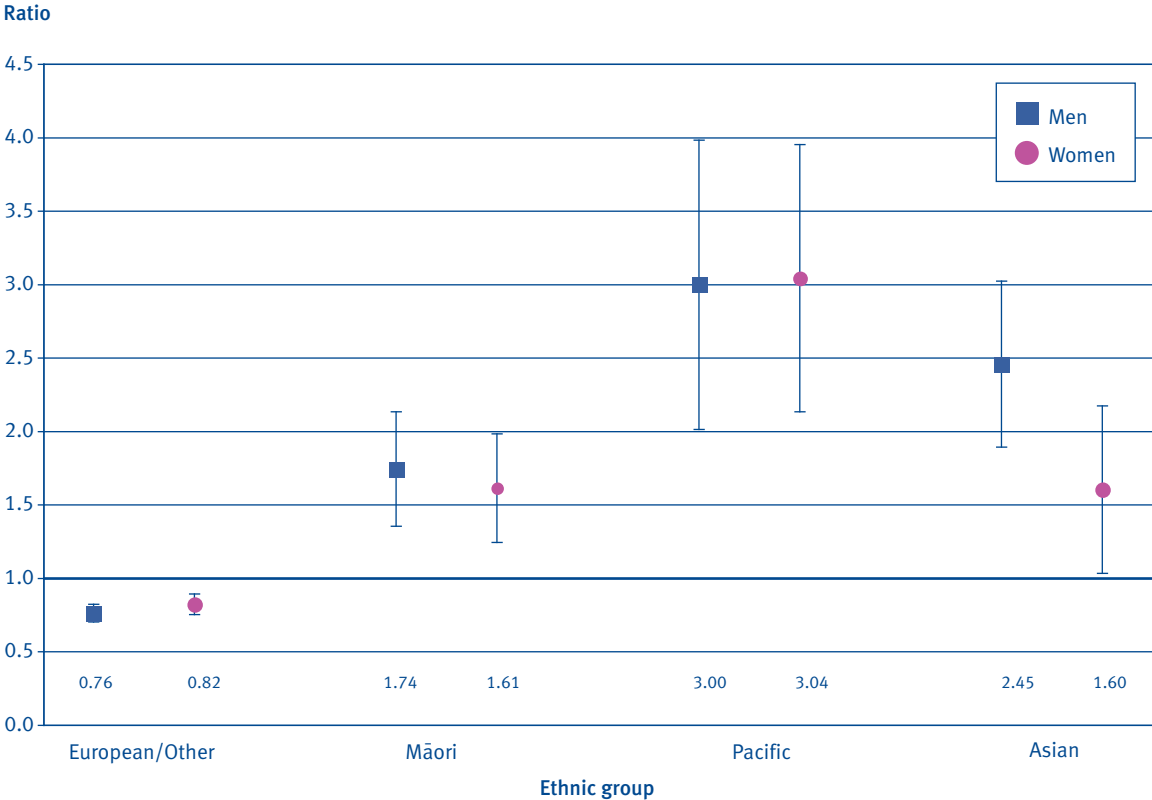
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	4.3 (3.8–4.8)	109200
Māori	5.8 (4.9–6.7)	20800
Pacific	10.0 (8.1–11.8)	16400
Asian	6.5 (5.4–7.7)	18100

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Pacific men and women had three times the prevalence of diagnosed diabetes than men and women in the total population (Figure 3.12). Asian men and women, and Māori men and women were also more likely to have been diagnosed with diabetes.

Figure 3.12: Diagnosed diabetes for adults, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.00 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Prevalence of diagnosed diabetes, by neighbourhood deprivation

Diabetes was associated with higher neighbourhood deprivation. Adults living in the most deprived neighbourhoods (6.2%, 5.2–7.3 in NZDep2006 quintile 5) were more than twice as likely to be diagnosed with diabetes than adults in the least deprived neighbourhoods (2.7%, 1.9–3.6 in NZDep2006 quintile 1), adjusted for age.

Prevalence of diagnosed diabetes, by DHB area

There was little difference by DHB area in the prevalence of diabetes, except in Counties Manukau DHB, where adults were significantly more likely to be diagnosed with diabetes compared to the total adult population (Table 3.10).

Table 3.10: Diagnosed diabetes for adults, by DHB area (unadjusted)

DHB area	Prevalence (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	4.5 (3.4–5.7)	17000
Waitemata	4.0 (2.8–5.2)	15200
Auckland	4.9 (3.4–6.3)	15600
Counties Manukau	8.2 (6.4–9.9) +	26400
Waikato	5.6 (4.2–7.0)	14400
Bay of Plenty / Taranaki / MidCentral	4.8 (3.5–6.1)	16900
Wairarapa / Hutt Valley / Capital and Coast	5.1 (3.6–6.7)	17700
Canterbury	4.4 (2.7–6.1)	16500
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	4.4 (3.0–5.8)	17400
New Zealand total	5.0 (4.6–5.5)	157100

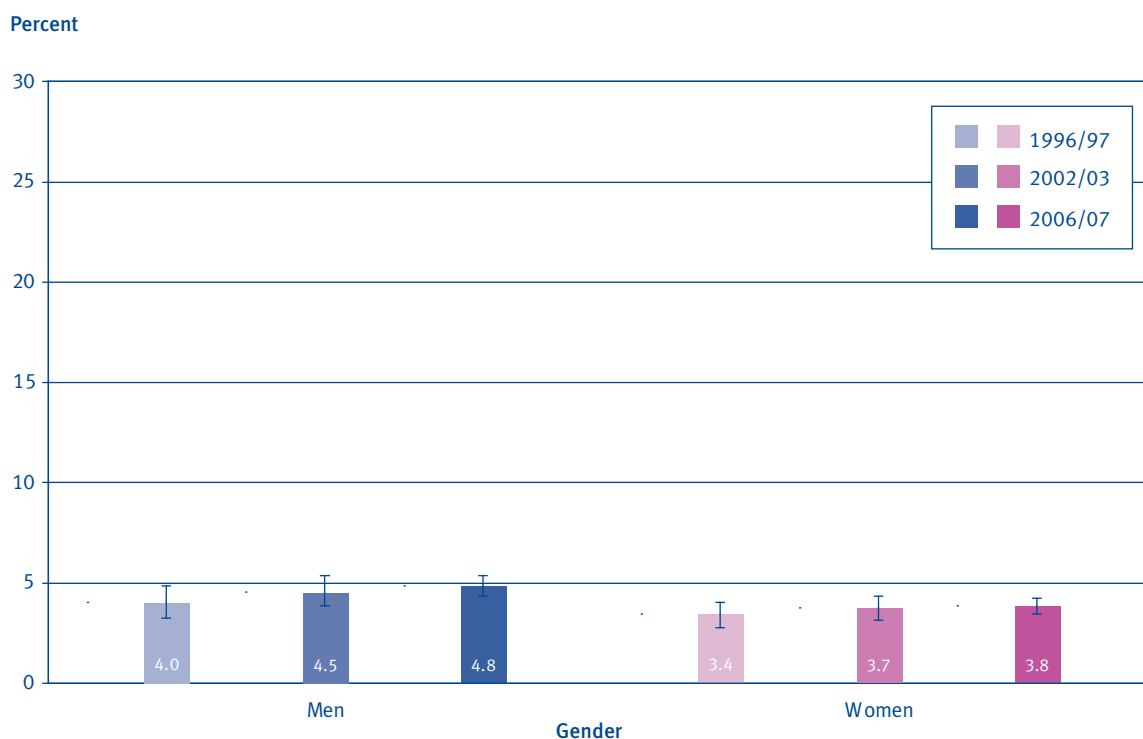
Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends in diagnosed diabetes prevalence

Between 1996/97 and 2006/07 there was a small but not significant increase in the proportion of adults who had been diagnosed with diabetes (from 3.7% to 4.3%, p-value = 0.05), after adjusting for age. When looking at men and women separately, there have been no significant changes between 1996/97 and 2006/07 (Figure 3.13).

Figure 3.13: Diagnosed diabetes for adults, by gender, 1996/97, 2002/03 and 2006/07 (age standardised prevalence)

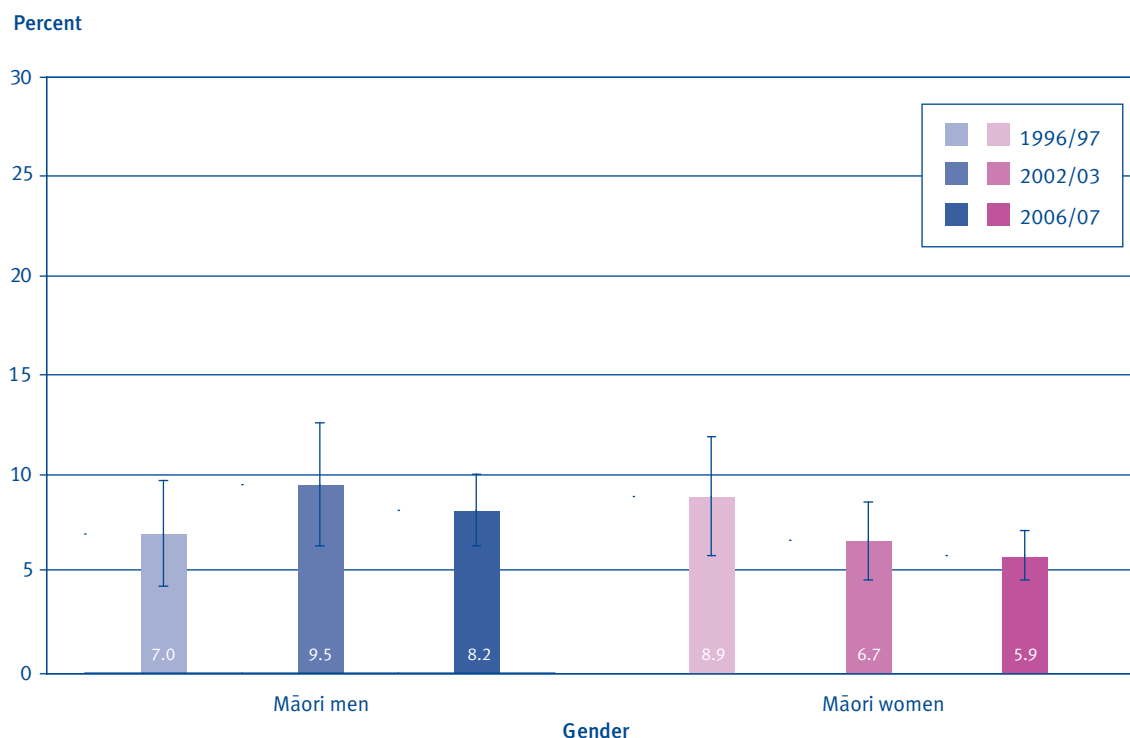


Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

For Māori there may have been a decline in the proportion of women who had been diagnosed with diabetes between 1996/97 and 2006/07 (age-adjusted), although this change is not significant (p-value = 0.07) (Figure 3.14). There was no significant change for Māori men in the prevalence of diagnosed diabetes between 1996/97 and 2006/07.

Figure 3.14: Diagnosed diabetes for Māori adults, by gender, 1996/97, 2002/03 and 2006/07 (age standardised prevalence)



Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Diabetes care

All New Zealanders with diabetes are eligible for one free health check with their general practitioner or practice nurse every year, called Get Checked. Seven out of ten adults diagnosed with diabetes had a Get Checked visit in the previous 12 months (68.3%, 63.8–72.8). There were no significant differences by gender, age group or ethnic group in the use of free health checks for diabetes.

One in five adults with diabetes used daily insulin injections (19.4%, 16.4–22.4), either with or without oral medications. A further one in two adults with diabetes reported taking only oral medication (tablets or pills) to treat their diabetes (52.4%, 48.3–56.5). One in six adults with diabetes (16.4%, 13.2–19.6) used only diet and exercise as treatment for their diabetes (no insulin or oral medication), and one in nine adults with diabetes (11.6%, 8.7–14.5) reported not using any treatment.

Asthma

Introduction

Asthma is an inflammatory disorder of the airways that causes reversible restriction of air flow into and out of the lungs. Asthma is characterised by periodic attacks of wheezing, breathlessness and coughing. Most asthma attacks are short-lived, lasting minutes to hours, with complete recovery after the attack. The cause of asthma is unknown, but symptoms can be triggered by allergens, respiratory infections, exercise, cold air, tobacco smoke and other pollutants (McFadden 2005).

What were the survey questions?

In the 2006/07 New Zealand Health Survey, the parents of child participants were asked if their child has ever been diagnosed by a doctor with asthma, and if they were currently using any treatment for this condition. The parents of all children aged 5–14 years were also asked if their child had wheezing or whistling in the chest in the previous 12 months, how many times this occurred, how often their child's sleep had been disturbed due to wheezing, and if the wheezing had ever been severe enough to limit the child's speech to only one or two words at a time between breaths, in the previous 12 months.

Adult participants in the 2006/07 New Zealand Health Survey were asked if a doctor had ever told them they had asthma. If so, they were asked if they had had an asthma attack in the previous 12 months, and what treatment they were currently taking for asthma.

About half of people with asthma develop it before age 10, and most develop it before age 40 years. Asthma is rarely diagnosed in children under 12 months of age. The asthma data presented in this report are for the population aged two years and over.

Only children and adults currently taking medication for asthma have been included in this section, in order to exclude people who may have been diagnosed with asthma in the past but no longer experience symptoms. Medication, such as inhalers, aerosols or tablets, may be taken every day or only when required for the relief of symptoms.

Prevalence of medicated asthma in children and adults

One in seven children aged 2–14 years (14.8%, 13.5–16.2) and one in nine adults (11.2%, 10.4–11.9) had been diagnosed with asthma and were taking medication for this condition. This equates to 109,900 children and 348,400 adults taking medication for asthma.

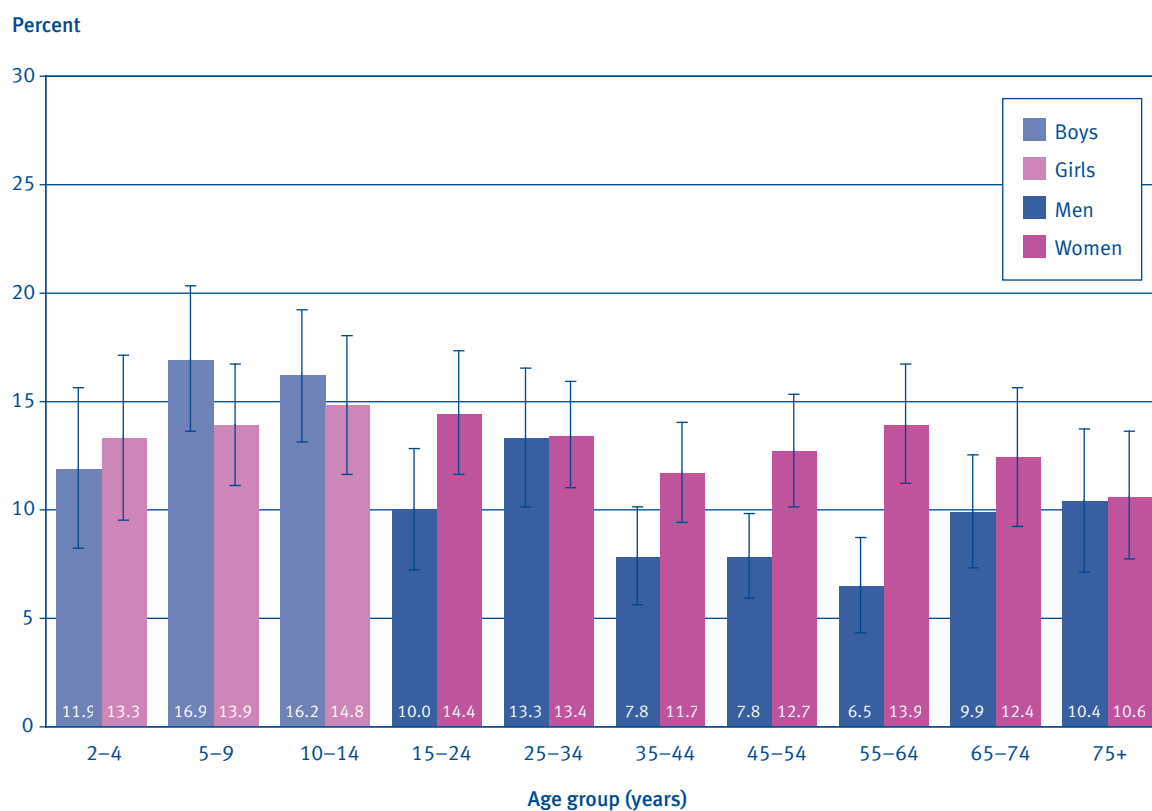
When adjusted for age, women (13.1%, 11.9–14.2) were more likely to be taking medication for asthma than men (9.6%, 8.6–10.6); in children there was no statistically significant difference by gender.

Two out of every three 5–14-year-olds taking medication for asthma (67.8%, 62.9–72.7) had wheezing or whistling in the chest in the previous 12 months. Two out of every five adults taking medication for asthma (40.9%, 37.7–44.0) had an asthma attack in the previous 12 months. This equates to 60,300 children and 142,400 adults taking medication for asthma who had an asthma attack in the previous 12 months.

Prevalence of medicated asthma, by age group

The proportion of females taking medication for asthma was relatively stable across all age groups (Figure 3.15). Men in all age groups, except 25–34 and 75 years or more, were less likely than women of the same age to be taking medication for asthma (p -values < 0.05).

Figure 3.15: Medicated asthma for children aged 2–14 years and adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Prevalence of medicated asthma, by ethnic group

Table 3.11 gives an indication of the burden of asthma for children in New Zealand's main ethnic population groups.

Table 3.11: Medicated asthma for children aged 2–14 years, by ethnic group (unadjusted)

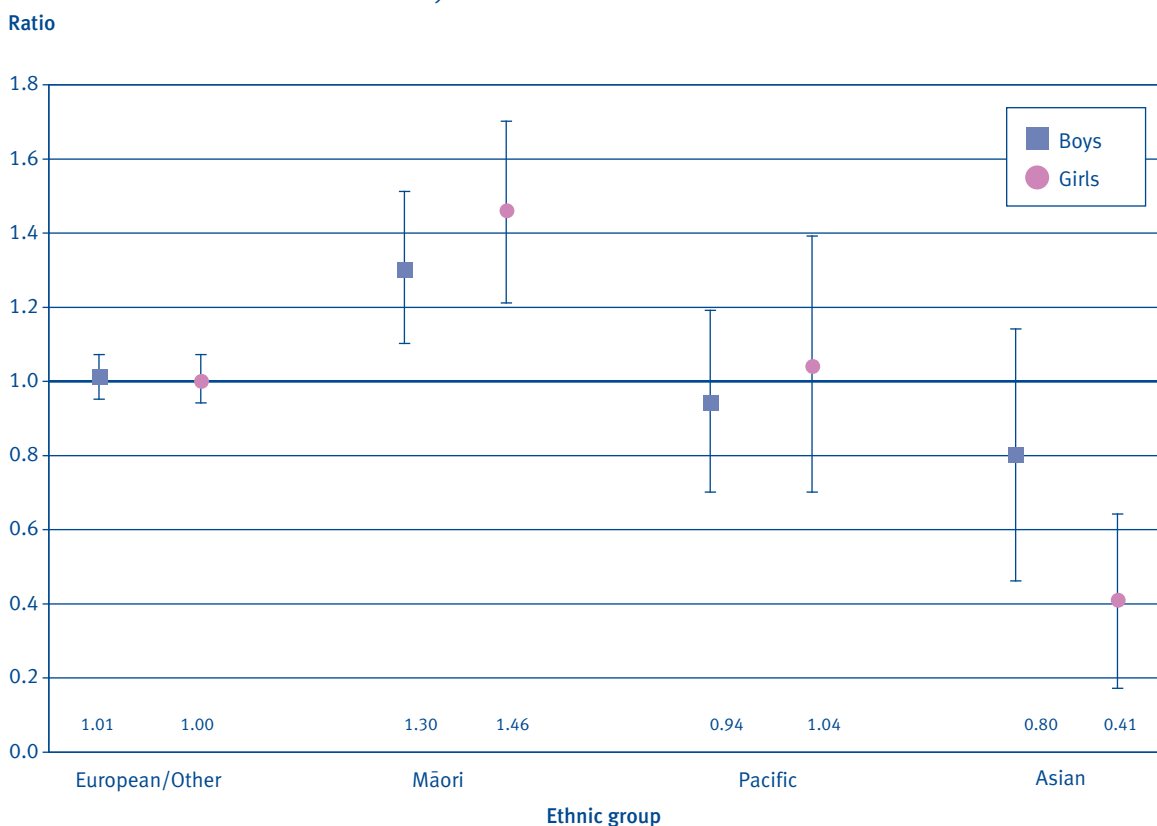
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	14.9 (13.3–16.5)	84000
Māori	20.3 (17.7–23.0)	34100
Pacific	14.8 (11.6–17.9)	12500
Asian	9.2 (6.1–12.3)	6000

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

Adjusted for age, Māori boys and girls had a significantly higher rate of taking medication for asthma than boys and girls in the total population (Figure 3.16). Asian girls had significantly lower rates of medicated asthma.

Figure 3.16: Medicated asthma for children aged 2–14 years, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.00 (indicated by the bold line), is the total male or female population aged from 2-14 years. Total response standard output for ethnic groups has been used.

Table 3.12 gives an indication of the burden of asthma for adults in New Zealand’s main ethnic population groups.

Table 3.12: Medicated asthma for adults, by ethnic group (unadjusted)

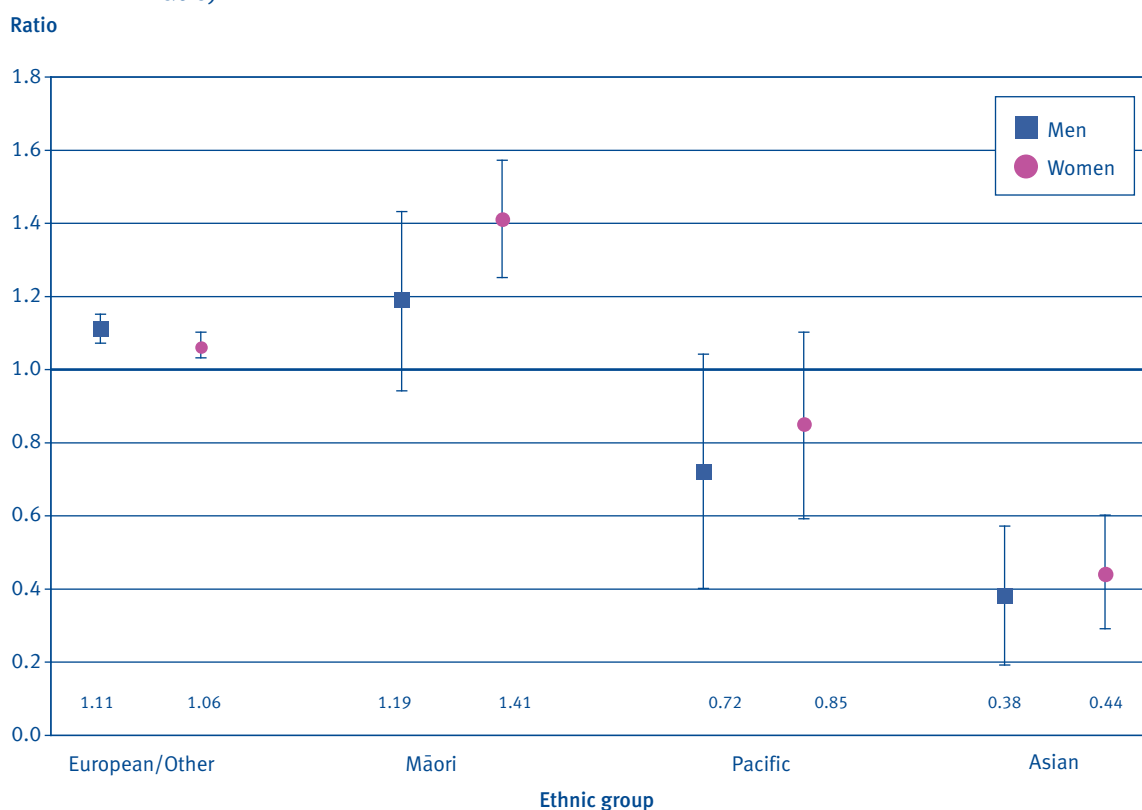
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	11.8 (11.0–12.7)	301400
Māori	15.5 (13.8–17.1)	54900
Pacific	8.9 (6.7–11.0)	14600
Asian	4.4 (3.2–5.6)	12300

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Māori women were 40% more likely to be taking medication for asthma than women in the total population (Figure 3.17). European/Other men and women had a slightly increased prevalence of medicated asthma. Asian men and women were much less likely to be taking medication for asthma than men and women in the total population (Figure 3.17).

Figure 3.17: Medicated asthma for adults, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

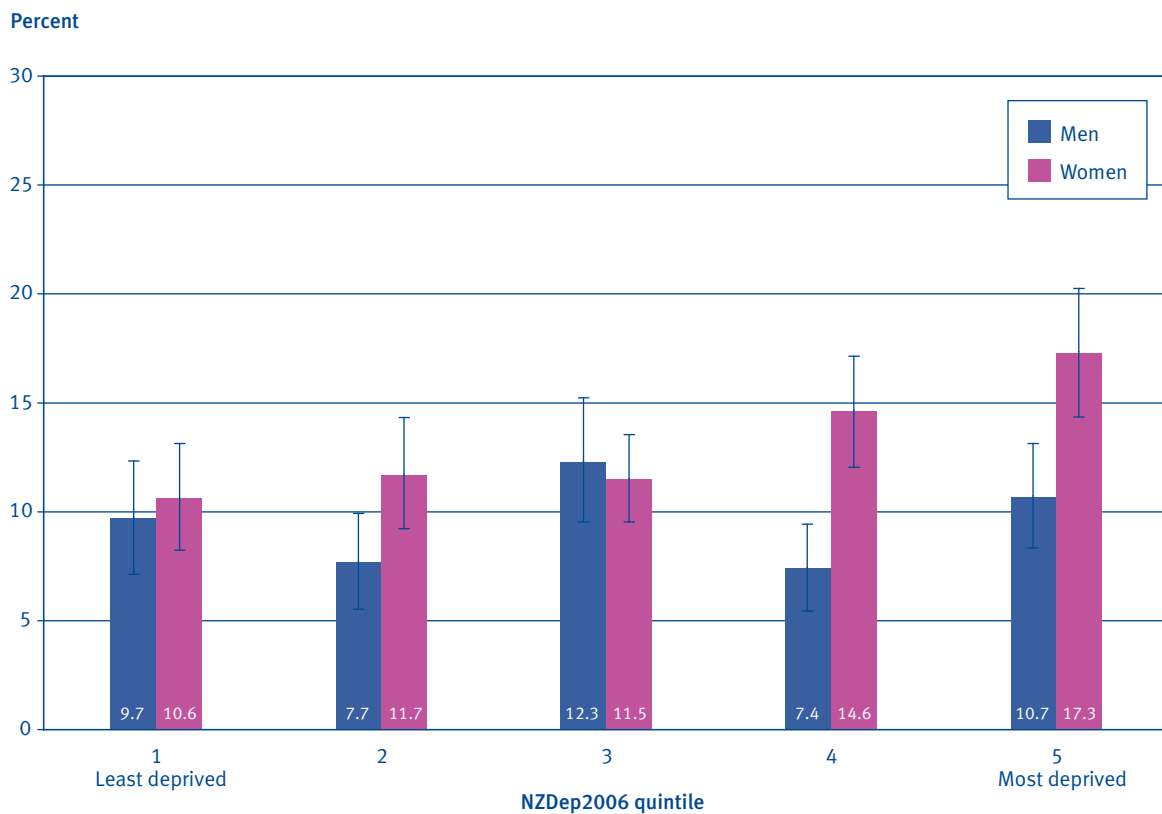
Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.00 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Prevalence of medicated asthma, by neighbourhood deprivation

There were no significant differences by NZDep2006 quintile in the prevalence of medicated asthma for children.

Women living in neighbourhoods of high deprivation (NZDep2006 quintile 5) were significantly more likely to be taking medication for asthma than women living in neighbourhoods of low deprivation (NZDep2006 quintiles 1 and 2). There was no pattern by neighbourhood deprivation for men (Figure 3.18).

Figure 3.18: Medicated asthma for adults, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Prevalence of medicated asthma, by DHB area

There were no differences by DHB area in the prevalence of medicated asthma in children. The Wairarapa / Hutt Valley / Capital and Coast DHB area had a significantly higher rate of adults taking medication for asthma, and Auckland had a significantly lower rate than the national rate (Table 3.13).

Table 3.13: Medicated asthma for children and adults, by DHB area (unadjusted)

DHB area	Prevalence in children (95% CI)	Number of children	Prevalence in adults (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	15.9 (12.7–19.1)	15800	11.8 (9.8–13.7)	44200
Waitemata	13.9 (9.3–18.5)	12500	9.7 (7.5–11.9)	36700
Auckland	13.3 (8.5–18.0)	8600	7.7 (5.5–9.9) –	24800
Counties Manukau	13.2 (10.2–16.2)	12500	12.4 (10.0–14.8)	40100
Waikato	15.8 (11.3–20.2)	10400	10.8 (9.0–12.7)	28200
Bay of Plenty / Taranaki / MidCentral	14.6 (10.5–18.6)	12600	11.8 (10.0–13.6)	41500
Wairarapa / Hutt Valley / Capital and Coast	16.8 (12.6–20.9)	12700	14.3 (11.9–16.6)+	49400
Canterbury	12.8 (8.0–17.5)	10200	11.4 (9.3–13.5)	42300
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	17.2 (11.7–22.6)	14500	10.4 (7.9–13.0)	41000
New Zealand total	14.8 (13.5–16.2)	109900	11.2 (10.4–11.9)	348400

Source: 2006/07 New Zealand Health Survey

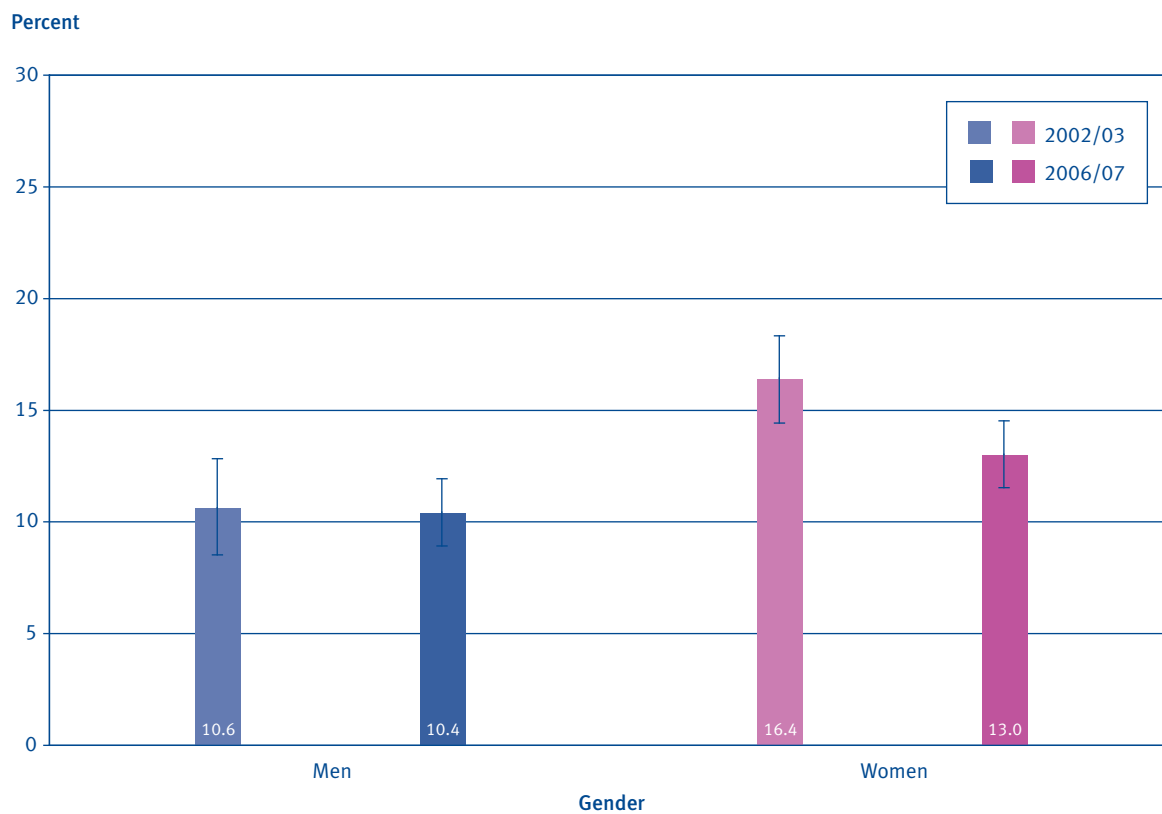
Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends in the prevalence of medicated asthma for adults aged under 45 years

Data were not collected on asthma in adults aged 45 years or over in the 2002/03 New Zealand Health Survey, and so the time trends presented here are only for adults aged under 45 years who were currently taking medication for asthma at the time of the survey.

Between 2002/03 and 2006/07 there was a decline in the proportion of women aged under 45 years taking medication for asthma after adjusting for age (Figure 3.19). There have been no changes in the prevalence of Māori taking medication for asthma (graph not shown).

Figure 3.19: Medicated asthma for adults aged 15–44 years, by gender, 2002/03 and 2006/07 (age standardised prevalence)



Source: 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Chronic obstructive pulmonary disease

Introduction

Chronic obstructive pulmonary disease (COPD) refers to a number of chronic lung disorders that are characterised by non-reversible air-flow restriction into and out of the lungs (compared to asthma, which is reversible). Emphysema and chronic bronchitis are the most common forms of COPD. Chronic bronchitis occurs when the airways to the lungs become narrow and partly clogged with mucus. Emphysema occurs when some of the air sacs deep in the lungs have been damaged. Common features are cough with phlegm and breathlessness when exercising or walking. COPD is permanent, and the main risk factor is tobacco smoking (Reilly et al 2005).

What were the survey questions?

In the 2006/07 New Zealand Health Survey adult participants aged 45 years and over were asked if they had ever been told by a doctor that they had chronic bronchitis or emphysema (COPD). If so, they were then asked the age they were diagnosed and if they currently had any treatment for COPD.

Due to its relationship to smoking and the time it takes to develop, COPD is rare in adults under 50 years old. The figures presented in this report are only for the adult population aged 45 years and over.

Prevalence of COPD for adults

One in 15 adults aged over 45 years (6.6%, 5.9–7.3) had been told by a doctor they have COPD (emphysema or chronic bronchitis). This equates to 96,100 adults. Women aged 45 years and over (7.4%, 6.5–8.4) were more likely than men (5.6%, 4.4–6.7) to have been diagnosed with COPD (p -value < 0.05).

Prevalence of COPD, by age group

The prevalence of COPD appeared to increase as age increased; however, there were no statistically significant differences by age group and gender (due to the large sample error created by the small number of people with COPD in the survey sample).

Prevalence of COPD, by ethnic group

Table 3.14 gives an indication of the burden of COPD in New Zealand's main ethnic population groups.

Table 3.14: COPD for adults aged 45 years or over, by ethnic group (unadjusted)

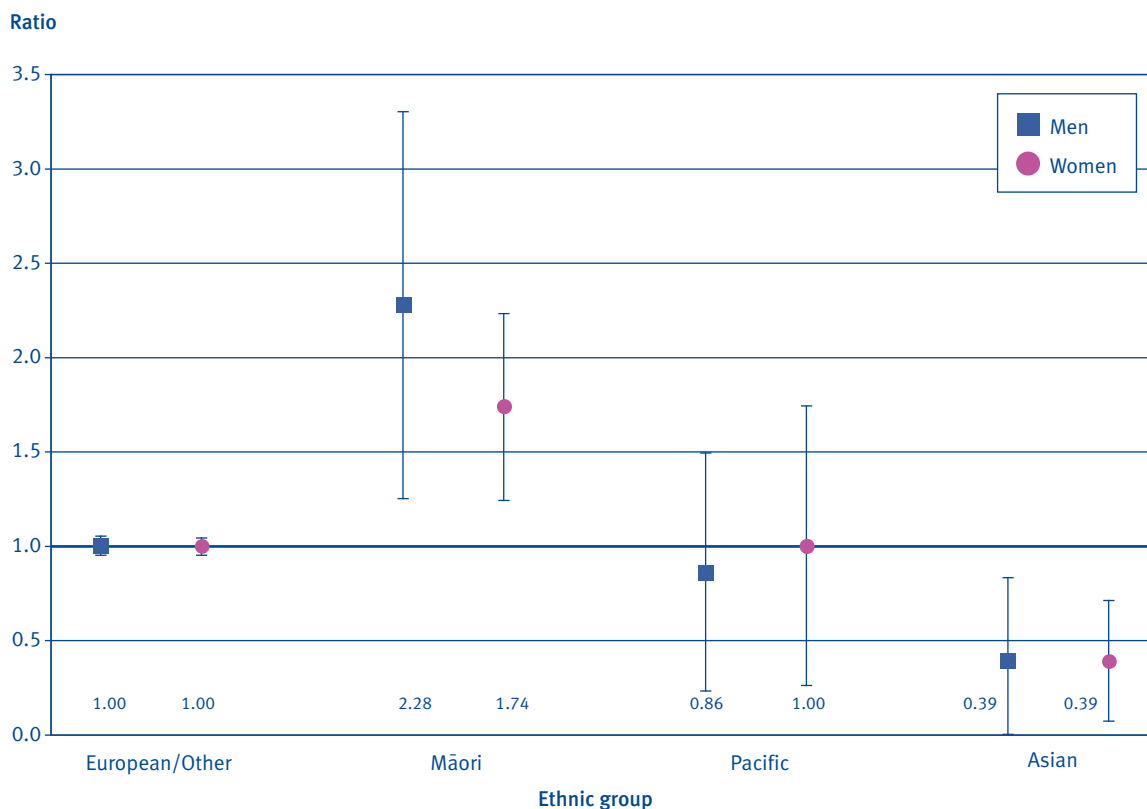
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	6.7 (5.9–7.5)	84800
Māori	12.9 (9.4–16.4)	14200
Pacific	5.7 (3.3–9.1)	2700
Asian	2.4 (1.2–4.1)	2000

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Māori men aged 45 years or over had twice the prevalence of COPD than all men aged 45 years and over. Māori women aged 45 years and over also had an increased prevalence of COPD. Asian men and women aged 45 years and over were less likely to be diagnosed with COPD than men and women in the total population (Table 3.20).

Figure 3.20: COPD for adults aged 45 years or over, by ethnic group and gender (age standardised rate ratio)



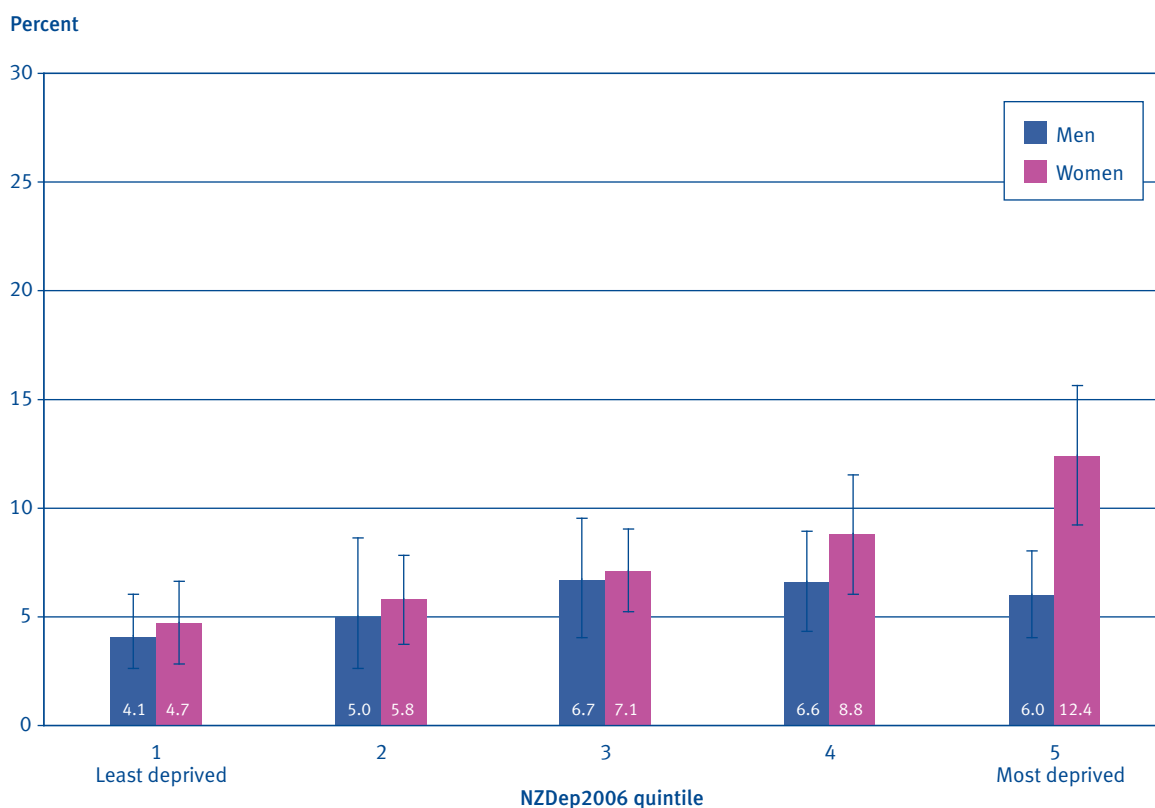
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.00 (indicated by the bold line), is the total male or female population aged 45 years and over. Total response standard output for ethnic groups has been used.

Prevalence of COPD, by neighbourhood deprivation

The prevalence of COPD for women aged 45 years and over who live in areas of high deprivation (NZDep2006 quintile 5) was nearly three times higher than for women aged 45 years and over who live in the least deprived areas (NZDep2006 quintile 1) (Figure 3.21). This association was not present in men aged 45 years or over.

Figure 3.21: COPD for adults aged 45 years or over, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Treatment for COPD

Two out of every five adults with COPD (39.4%, 34.1–44.7) were prescribed inhalers, medicines or tablets for their COPD. A small number of adults with COPD (less than 2%) used oxygen. Oxygen treatment increases the amount of oxygen that flows into the lungs and into the bloodstream, improves shortness of breath, and may prolong life in very serious cases of COPD.

Most adults with COPD (59.6%, 54.4–64.9) did not use any treatment.

Oral health conditions

Oral health conditions include tooth decay, abscesses and infections in the mouth, and gum disease. Poor oral health can lead to pain as well as difficulty eating and speaking. In New Zealand, oral health is strongly correlated with the fluoridation of water supplies, with people living in areas where the water supply is fluoridated having (on average) better oral health than those in non-fluoridated areas. Other modifiable risk factors for poor oral health include poor diet, tooth-brushing less than twice a day, and cigarette smoking (Ministry of Health 2006b).

What were the survey questions?

In the 2006/07 New Zealand Health Survey the parents of child participants aged 1–14 years were asked if their child had ever had any teeth removed due to decay, abscess, infection or gum disease. This does not include teeth removed for other reasons such as injury, crowded mouth or orthodontics. Information was also collected on whether children had ever had a filling, ever experienced pain in their mouth that had kept them awake at night, and the number of times their child brushed their teeth yesterday.

Adult participants in the survey were asked if they had ever had any teeth removed due to decay, abscess, infection or gum disease.

Results on the use of oral health care services by children and adults are reported in Chapter 6 of this report.

Data presented here are for children aged two years and over, and adults.

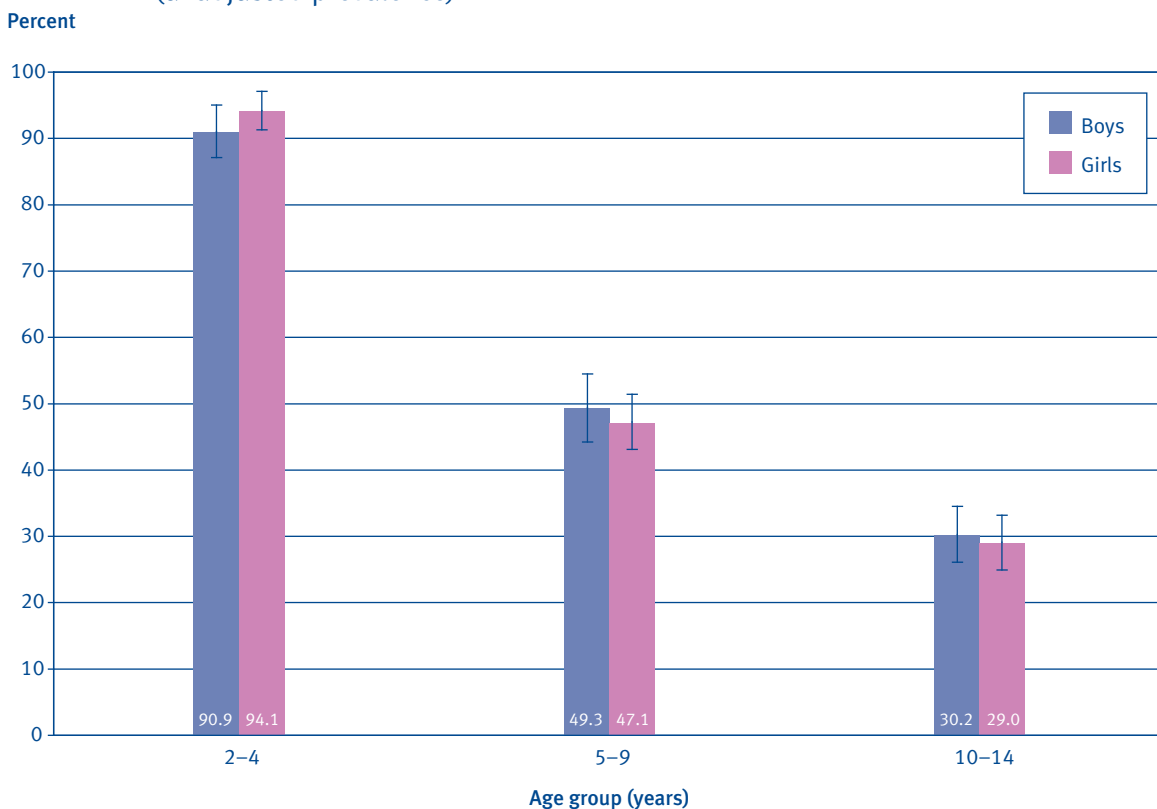
Children who have never had a filling

Half of children aged 2–14 years (50.9%, 49.0–52.9) had never had a filling in their teeth. There was no difference between boys and girls in the age standardised rate of never having had a filling.

Never had a filling, by age group

Nearly all children aged 2–4 years had never had a filling (92.4%, 89.8–95.0), but this decreased to half of children aged 5–9 years (48.2%, 44.6–51.8), and then to one in three children aged 10–14 years (29.6%, 26.7–32.5). There were no differences between boys and girls within age groups in the proportion of children who had never had a filling (Figure 3.22).

Figure 3.22: Children aged 2–14 years who have never had a filling, by gender and age group (unadjusted prevalence)

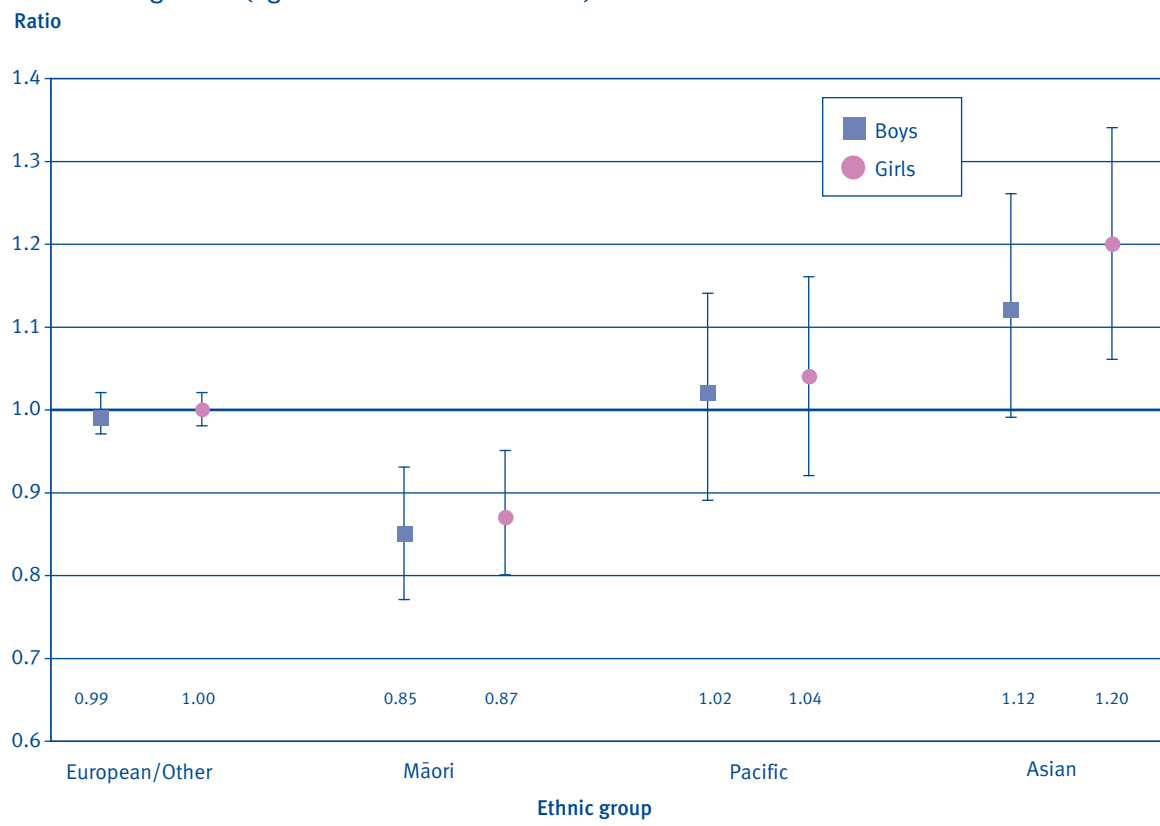


Source: 2006/07 New Zealand Health Survey

Never had a filling, by ethnic group

Once adjusted for age, Māori boys and girls were significantly less likely to have never had a filling, while Asian girls were 20% more likely to have never had a filling, compared to all boys and girls in the total population. There were no other differences by ethnic group (Figure 3.23).

Figure 3.23: Children aged 2–14 years who have never having had a filling, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.00 (indicated by the bold line), is the total male or female population aged from 2–14 years. Total response standard output for ethnic groups has been used.

Never had a filling, by neighbourhood deprivation

There were no significant differences by NZDep2006 quintile in the proportion of children who had never had a filling.

Never had a filling, by DHB area

Oral health of children varies by DHB area. Children aged 2–14 years living in Wairarapa / Hutt Valley / Capital and Coast DHB areas, Waitemata and Auckland DHB areas were significantly more likely to have never had a filling in their teeth. Children aged 2–14 years living in the South Island DHBs (excluding Canterbury), Northland / Tairāwhiti / Hawke’s Bay / Lakes / Whanganui, and Bay of Plenty / Taranaki / MidCentral DHB areas were significantly less likely to have never had a filling in their teeth compared to the national rate (Table 3.15).

Table 3.15: Children aged 2–14 years who have never had a filling, by DHB area (unadjusted)

DHB area	Prevalence in children 2-14 years (95% CI)	Number of children 2-14 years
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	43.1 (37.9–48.4) –	43000
Waitemata	58.5 (52.8–64.3) +	52500
Auckland	59.2 (53.2–65.2) +	38700
Counties Manukau	51.7 (46.0–57.3)	48900
Waikato	49.9 (43.8–55.9)	33000
Bay of Plenty / Taranaki / MidCentral	45.2 (39.8–50.5) –	39000
Wairarapa / Hutt Valley / Capital and Coast	59.8 (54.4–65.1) +	45200
Canterbury	54.0 (47.0–61.1)	43400
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	40.6 (33.9–47.4) –	34500
New Zealand total	50.9 (49.0–52.9)	378100

Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends for children aged 5–14 years who have never had a filling

Time trends in oral health are only available for children aged 5–14 years, because the 2002 National Children's Nutrition Survey did not include under five-year-olds.

There was no significant change between 2002 (35.6, 33.0–38.1) and 2006/07 (38.9, 36.7–41.2) in the proportion of boys and girls aged 5–14 years who had never had a filling, adjusting for age. There was also no significant change when looking only at Māori children between 2002 (25.3, 22.3–28.3) and 2006/07 (29.9, 26.7–32.2).

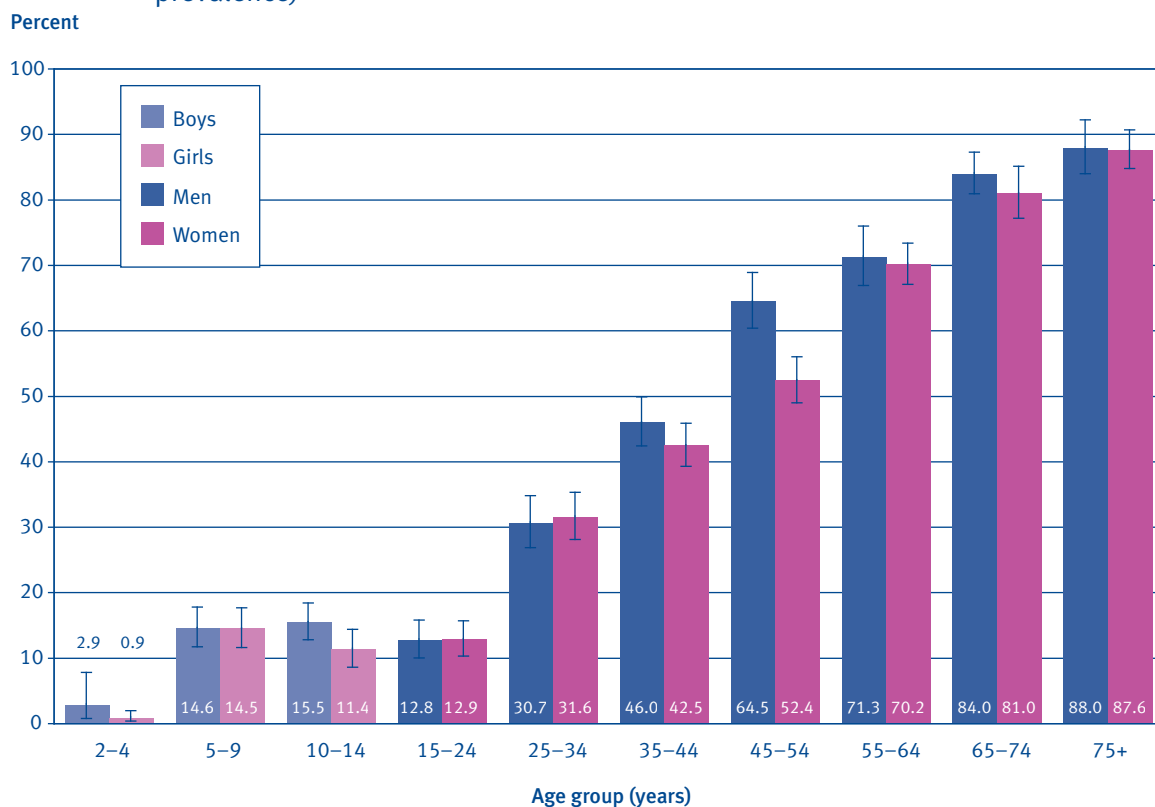
Children and adults with tooth decay, abscess, infection and gum disease

One in nine children aged 2–14 years (11.3%, 10.1–12.5) had one or more teeth removed due to decay, abscess, infection or gum disease. Half of all adults (48.7%, 47.7–49.6) had one or more teeth removed due to decay or gum disease. This equates to 84,000 children and 1,518,300 adults. There was no difference by gender in the age-adjusted prevalence of having had one or more teeth removed, for both children and adults.

Tooth decay, abscess, infection and gum disease, by age group

Approximately 3300 children aged 2–4 years had had a tooth removed due to decay, abscess, infection or gum disease (2.0%, 0.7–4.4). The proportion of children and young people aged 5–24 years who had had a tooth removed was stable at approximately one in seven. After this the likelihood of having teeth removed increased sharply with age, with each 10-year age group in adults being significantly more likely than the prior group to have had one or more teeth removed (Figure 3.24). Men aged 45–54 years, were significantly more likely than women of the same age to have had a tooth removed due to decay, abscess, infection or gum disease.

Figure 3.24: Children and adults who have had one or more teeth removed due to decay, abscess, infection or gum disease, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Tooth decay, abscess, infection and gum disease, by ethnic group

Table 3.16 gives an indication of the burden of tooth decay, abscess, infection and gum disease for children in New Zealand's main ethnic population groups.

Table 3.16: Children aged 2–14 years who have had one or more teeth removed due to decay, abscess, infection or gum disease, by ethnic group (unadjusted)

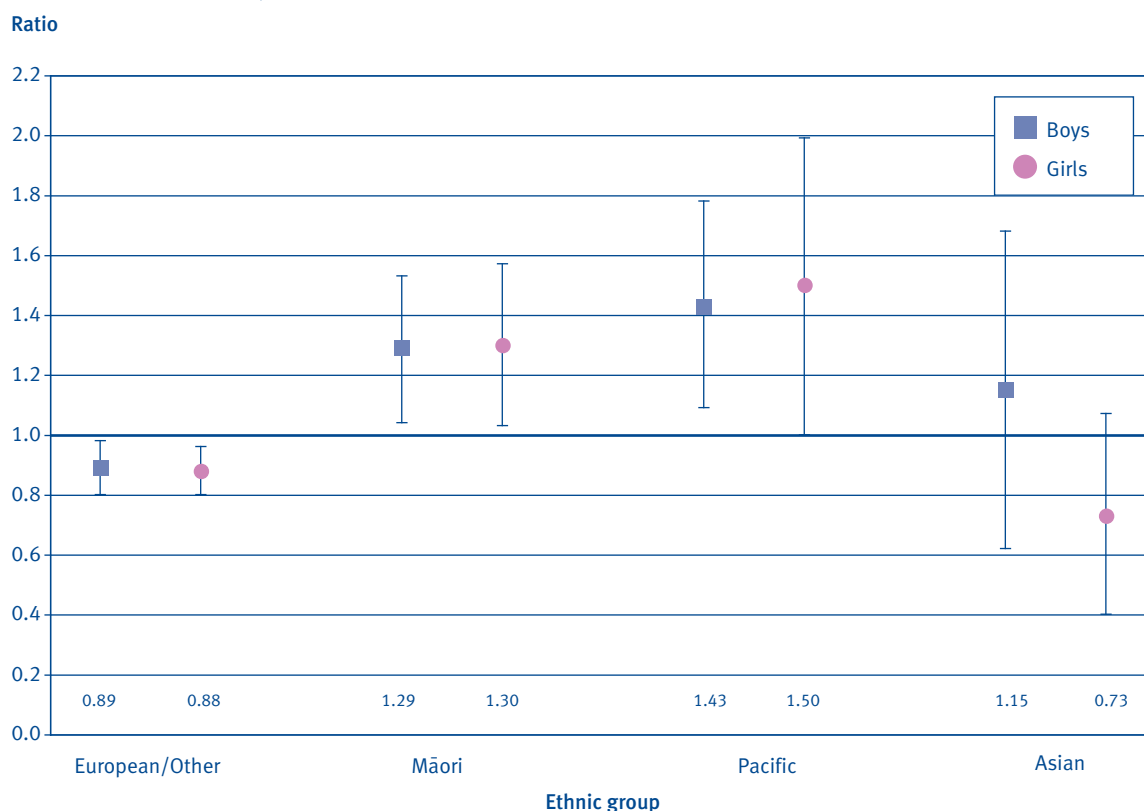
Ethnic group	Prevalence (95% CI)	Number of children
European/ Other	10.1 (8.7–11.5)	56600
Māori	14.5 (12.5–16.5)	24300
Pacific	16.1 (12.5–19.8)	13600
Asian	10.9 (7.7–14.2)	7300

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

Adjusted for age, Māori and Pacific boys and Māori girls were significantly more likely to have had a tooth removed due to decay, abscess, infection or gum disease compared to boys and girls in the total population, whereas European/Other boys and girls were slightly less likely (Figure 3.25).

Figure 3.25: Children aged 2–14 years who have had one or more teeth removed due to decay, abscess, infection or gum disease, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.00 (indicated by the bold line), is the total male or female population aged from 2-14 years. Total response standard output for ethnic groups has been used.

Table 3.17 gives an indication of the burden of tooth decay, abscess, infection and gum disease for adults in New Zealand's main ethnic population groups.

Table 3.17: Adults who have had one or more teeth removed due to decay, abscess, infection or gum disease, by ethnic group (unadjusted)

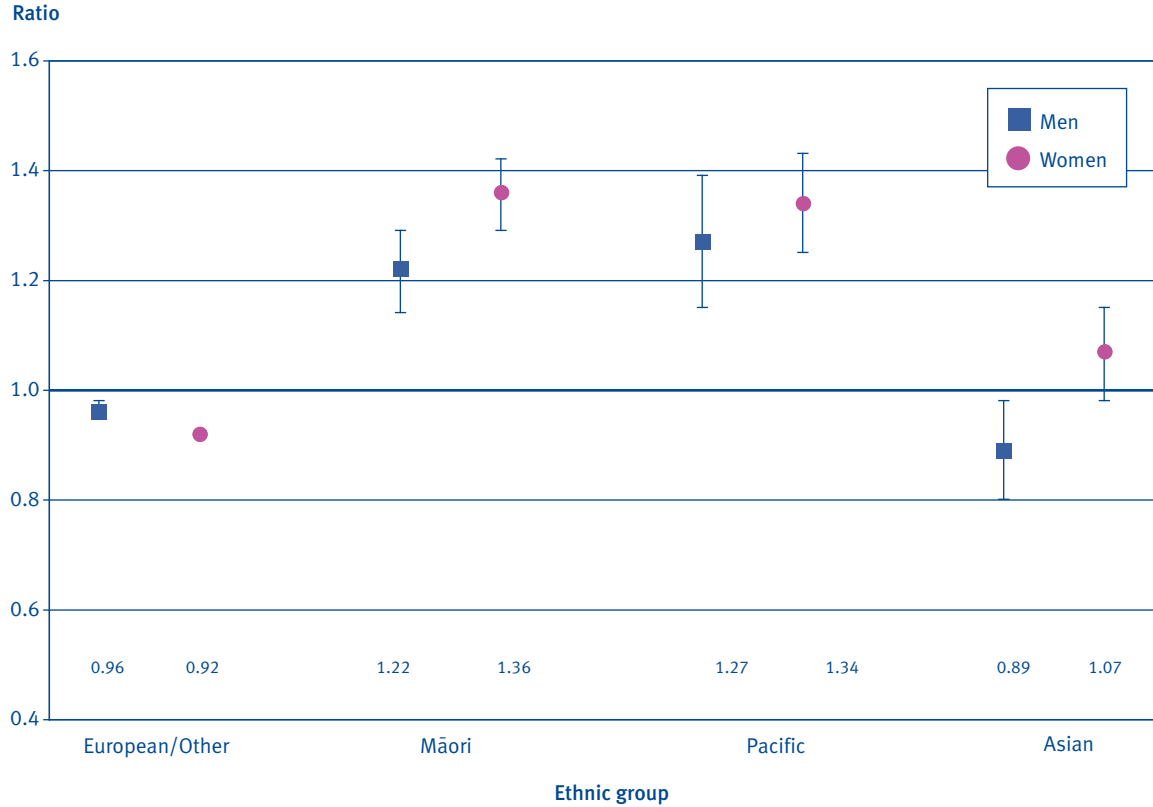
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	48.2 (47.1–49.3)	1230300
Māori	52.5 (50.4–54.5)	186400
Pacific	52.6 (48.8–56.4)	86600
Asian	39.0 (36.2–41.8)	108800

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Māori and Pacific men and women were more likely than men and women in the total population to have had one or more teeth removed due to decay, abscess, infection or gum disease, while Asian men and European/Other men and women were significantly less likely (Figure 3.26).

Figure 3.26: Adults who have had one or more teeth removed due to decay, abscess, infection or gum disease, by ethnic group and gender (age standardised rate ratio)



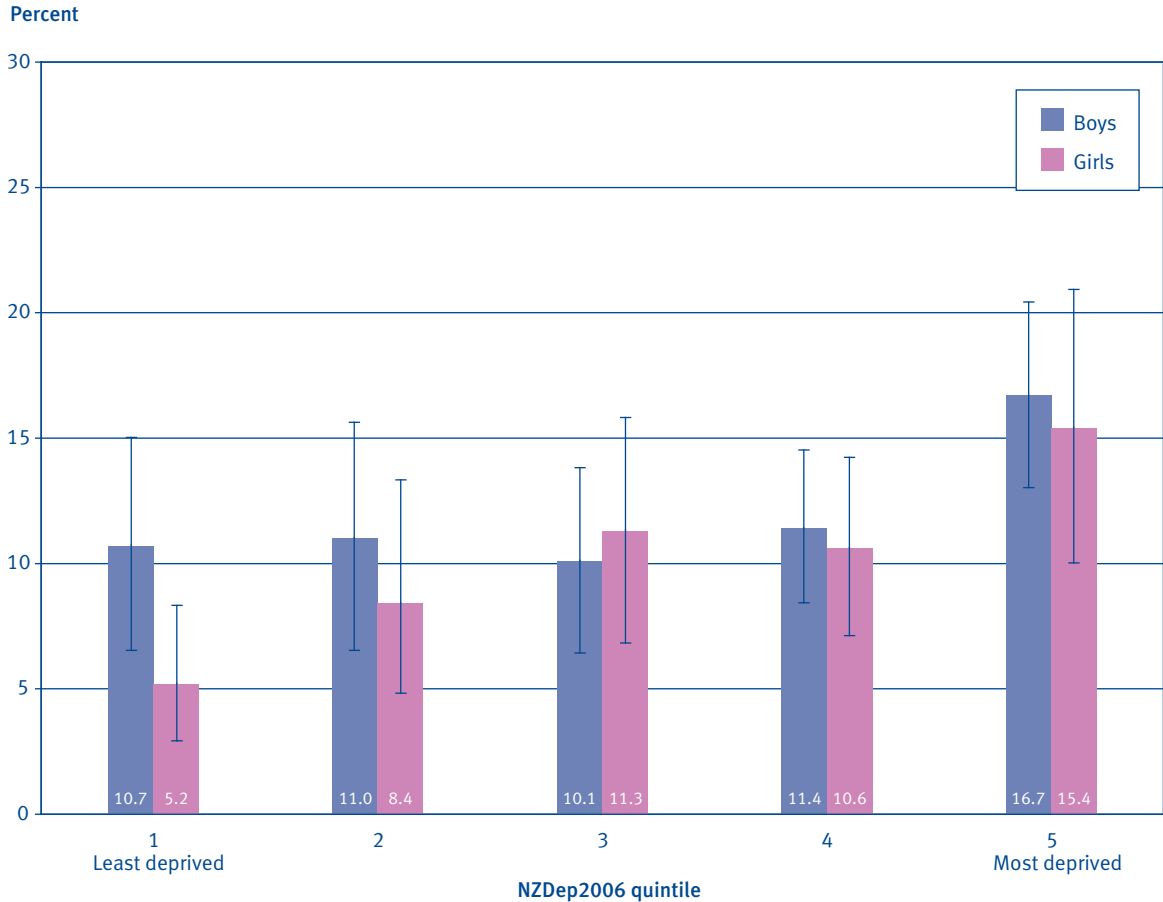
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.00 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Tooth decay, abscess, infection and gum disease, by neighbourhood deprivation

Girls living in the most deprived neighbourhoods (NZDep2006 quintile 5) were significantly more likely to have had a tooth removed compared to girls in NZDep2006 quintile 1 neighbourhoods (Figure 3.27). This difference was not significant for boys.

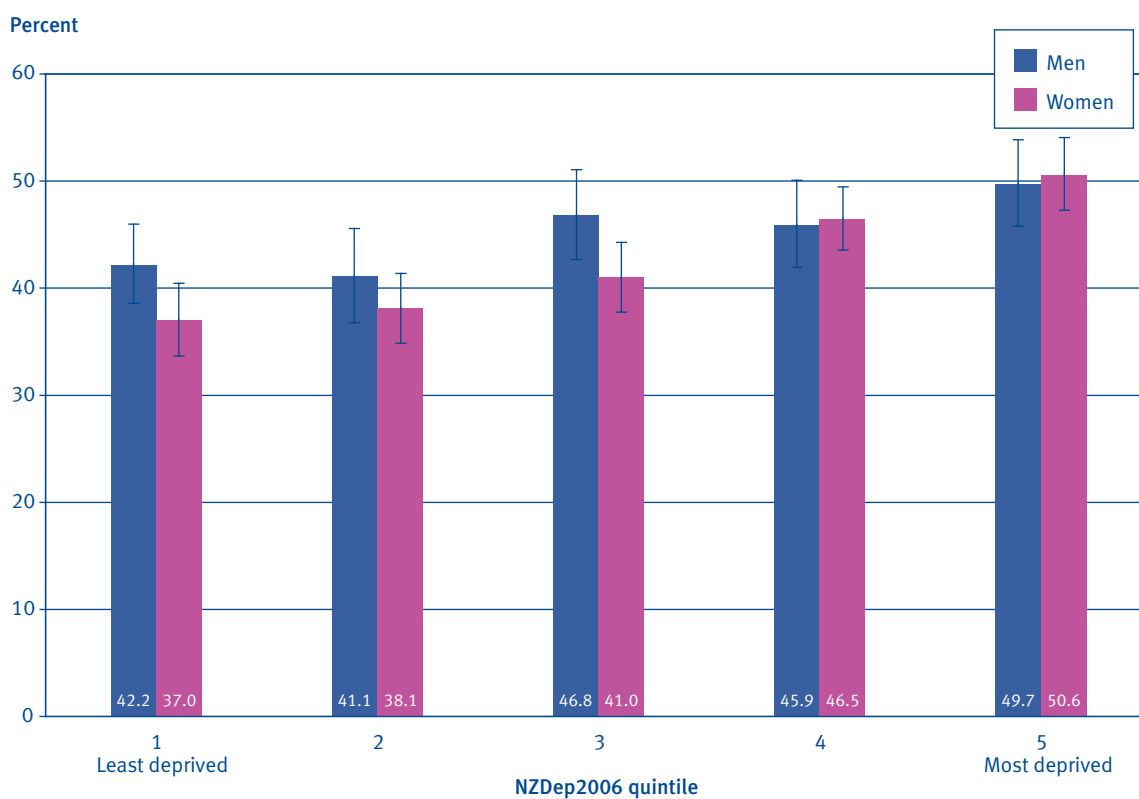
Figure 3.27: Children aged 2–14 years who have had one or more teeth removed due to decay, abscess, infection or gum disease, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

For adults, having a tooth removed due to tooth decay, abscess, infection or gum disease was more likely in areas of high neighbourhood deprivation for both men and women (Figure 3.28). For women, this relationship was particularly strong, with one in two women living in the most deprived neighbourhoods (NZDep2006 quintile 5) having had a tooth removed, compared to a little over one in three women in the least deprived neighbourhoods (NZDep2006 quintile 1) (Figure 3.28).

Figure 3.28: Adults who have had one or more teeth removed due to decay, abscess, infection or gum disease, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Tooth decay, abscess, infection and gum disease, by DHB area

Children living in Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui DHB area were significantly more likely than the total child rate to have had a tooth removed due to decay, abscess, infection or gum disease, whereas children living in Waitemata DHB area were less likely to have had a tooth removed (Table 3.18).

For adults, there was a lot of variation in oral health by DHB area. Adults living in Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui DHB area and Bay of Plenty / Taranaki / MidCentral DHB area were significantly more likely than the total adult rate to have had a tooth removed due to decay, abscess, infection or gum disease. Adults living in Auckland, Waitemata, Wairarapa / Hutt Valley / Capital and Coast DHB areas were less likely than the national rate to have had a tooth removed (Table 3.18).

Table 3.18: Children aged 2–14 years and adults who have had one or more teeth removed due to decay, abscess, infection or gum disease, by DHB area (unadjusted)

DHB area	Prevalence for children (95% CI)	Number of children	Prevalence in adults (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	15.1 (11.9–18.3) +	15100	57.1 (54.4–59.8) +	214400
Waitemata	8.5 (5.8–11.1) –	7600	44.0 (40.8–47.2) –	166700
Auckland	8.2 (4.3–12.2)	5300	38.7 (34.7–42.7) –	124700
Counties Manukau	14.1 (10.5–17.7)	13300	49.9 (46.3–53.5)	160800
Waikato	9.3 (5.8–12.7)	6100	49.1 (44.9–53.3)	127200
Bay of Plenty / Taranaki / MidCentral	10.0 (6.6–13.3)	8600	56.6 (53.6–59.7) +	199100
Wairarapa / Hutt Valley / Capital and Coast	10.0 (6.5–13.5)	7600	42.8 (38.8–46.8) –	148300
Canterbury	11.9 (7.2–16.7)	9500	46.6 (43.0–50.1)	172800
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	12.7 (8.1–17.3)	10800	51.9 (47.6–56.2)	204100
New Zealand total	11.3 (10.1–12.5)	84000	48.7 (47.7–49.6)	1518300

Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends in having had a tooth removed for children aged 5–14 years

Between 2002 and 2006/07 there was no significant difference in the proportion of children aged 5–14 years who had one or more teeth removed due to decay, abscess, infection or gum disease, adjusted for age. There was also no change when looking only at Māori children.

Arthritis

Introduction

Arthritis is a group of diseases that involve inflammation of one or more joints. The inflammation may occur in response to injury to a joint, the presence of an infection, an attack on the joint by the body itself (autoimmune disease), or accumulated wear and tear. Chronic arthritis occurs when prolonged inflammation results in long-term pain and deformity (Cush and Lipsky 2005).

Osteoarthritis is the most common type of arthritis and usually results from accumulated wear and tear. It is common in the elderly and usually affects the hip and knee joints. Other types of arthritis include rheumatoid arthritis (caused by autoimmune disease) and gout (caused by the formation of uric acid crystals in the joints, which leads to inflammation).

What were the survey questions?

In the 2006/07 New Zealand Health Survey, adult participants were asked if they had ever been told by a doctor they have arthritis. If so, they were then asked what kind of arthritis, which joints were affected first, the age they were diagnosed, and if they currently have any treatment for arthritis.

Please note that 7% of survey respondents ever diagnosed with arthritis did not know the type of arthritis; these respondents were excluded from the analysis by type of arthritis.

Arthritis is rare for children. The figures presented here are for the adult population only.

Prevalence of arthritis for adults

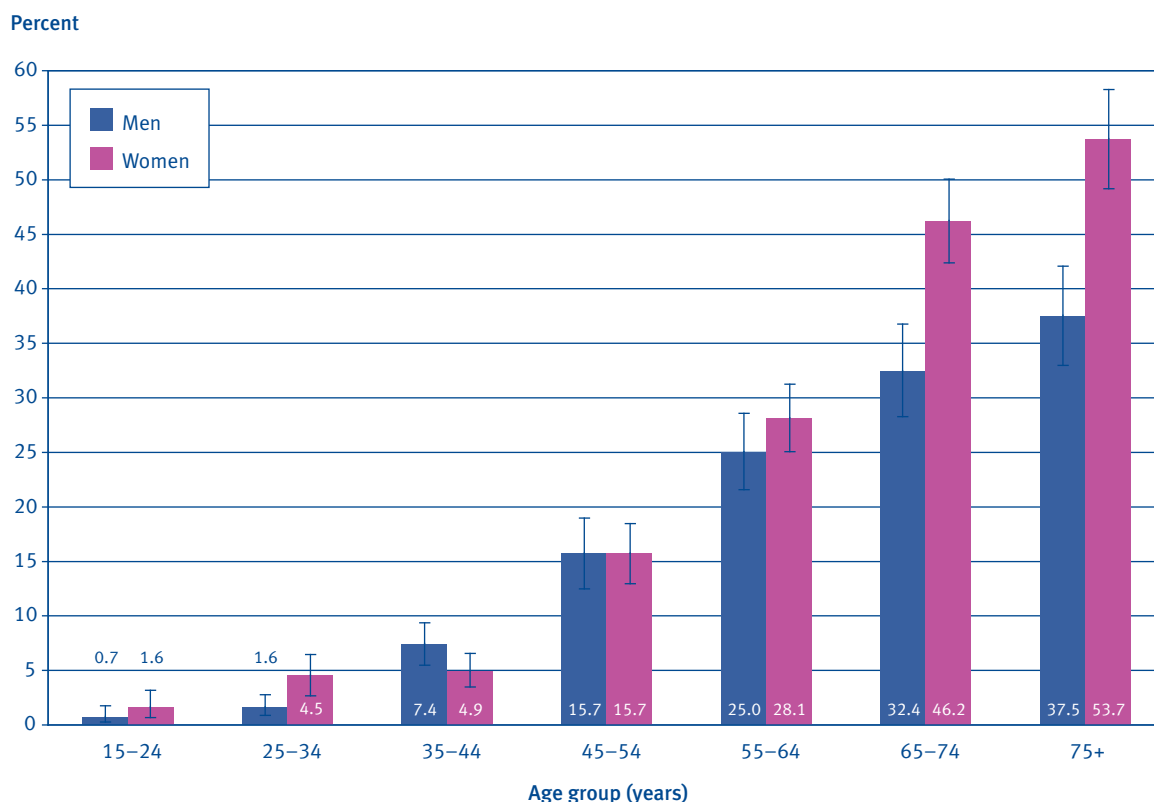
One in seven adults (14.8%, 14.2–15.3) had been told by a doctor they have arthritis. This equates to 460,500 adults. The age standardised prevalence of arthritis was higher in women (13.2%, 12.3–14.0) than in men (10.9%, 10.2–11.7). Osteoarthritis was the most common type of arthritis (8.4%, 7.9–8.8), followed by rheumatoid arthritis (3.5%, 3.1–3.9), then gout (1.3%, 1.1–1.5).

Adjusted for age, osteoarthritis and rheumatoid arthritis were more common in women (7.8%, 7.1–8.4 and 3.7%, 3.1–4.3 respectively) than in men (5.3%, 4.7–5.9 and 2.3%, 1.8–2.7 respectively), whereas gout was more common in men (2.0%, 1.7–2.4) than in women (0.2%, 0.1–0.3).

Prevalence of arthritis, by age group

In both men and women the prevalence of arthritis increased rapidly as age increased, especially in women. More than half of women aged 75 years and over had been diagnosed with arthritis (Figure 3.29).

Figure 3.29: Arthritis for adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Prevalence of arthritis, by ethnic group

Table 3.19 gives an indication of the burden of arthritis for adults in New Zealand's main ethnic population groups.

Table 3.19: Arthritis for adults, by ethnic group (unadjusted)

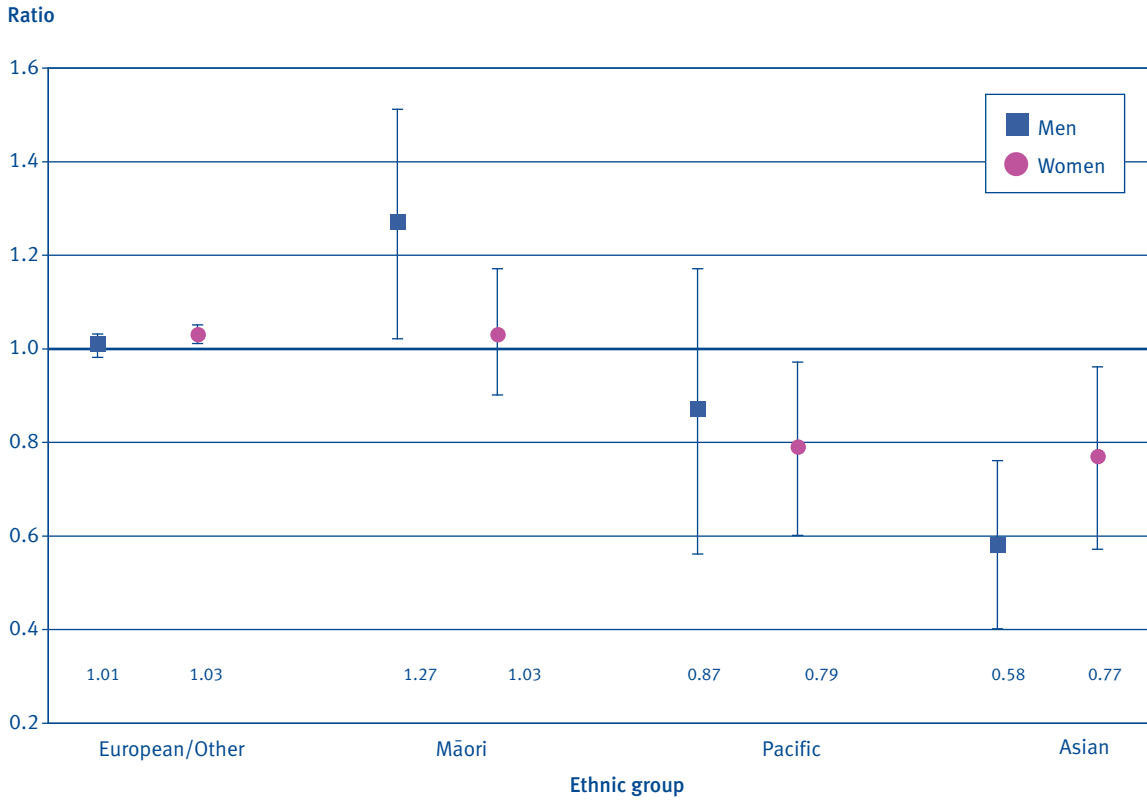
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	16.1 (15.4–16.8)	411300
Māori	11.1 (9.8–12.4)	39500
Pacific	7.9 (6.1–9.8)	13000
Asian	6.2 (5.1–7.2)	17200

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Māori men had an increased prevalence of arthritis compared to men in the total population. Pacific women and Asian men and women had a significantly lower prevalence of arthritis than men and women in the total population (Figure 3.30). European/Other women had a slightly higher prevalence of arthritis, mostly due to an increased prevalence of osteoarthritis (SRR: 1.05, 1.03–1.07).

Figure 3.30: Arthritis for adults, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.00 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Prevalence of arthritis, by neighbourhood deprivation

There were no significant differences in the prevalence of arthritis between NZDep2006 quintile 1 (least deprived) and quintile 5 (most deprived) for both men and women.

Treatment for arthritis

One in six adults with arthritis (17.4%, 15.3–19.5) had had surgery for arthritis, such as joint replacement or joint corrective surgery. Nearly half of all adults with arthritis (46.1%, 43.5–48.7) used medications, tablets or pills, including creams and ointments. A small number of adults with arthritis (2.4%, 1.4–3.3) received injections to treat their arthritis.

Nearly half of all adults with arthritis (45.6%, 42.9–48.3) did not currently use any treatment.

Time trends in prevalence of arthritis

Between 2002/03 and 2006/07 there was a small decline in the proportion of men (from 12.4% to 11.0%, p-value < 0.05) and women (from 14.4% to 13.1%, p-value=0.05) who were diagnosed with arthritis, adjusted for age. There was no change in the prevalence of diagnosed arthritis in Māori men and women between 2002/03 and 2006/07.

Osteoporosis

Introduction

Osteoporosis is the thinning of the bones resulting from a loss of bone density. It occurs when not enough new bone is formed, too much bone is reabsorbed, or both. Osteoporosis causes bones to become brittle and fragile, which can lead to fractures even in the absence of injury. Osteoporosis usually develops slowly and is most common in older people.

Women are particularly prone to osteoporosis as the drop in oestrogen that occurs at menopause results in accelerated bone loss. Other modifiable risk factors include tobacco smoking, low body weight, low calcium intake, heavy alcohol consumption, low levels of weight-bearing physical activity, and the long-term use of some medications, including oral steroids (Lindsay and Cosman 2005).

What were the survey questions?

In the 2006/07 New Zealand Health Survey adult participants were asked if they had ever been told by a doctor they have osteoporosis; that is, thin or thinning bones. If so, they were then asked the age they were diagnosed and if they currently have any treatment for osteoporosis.

Osteoporosis is rare for children. The figures presented here are for the adult population only.

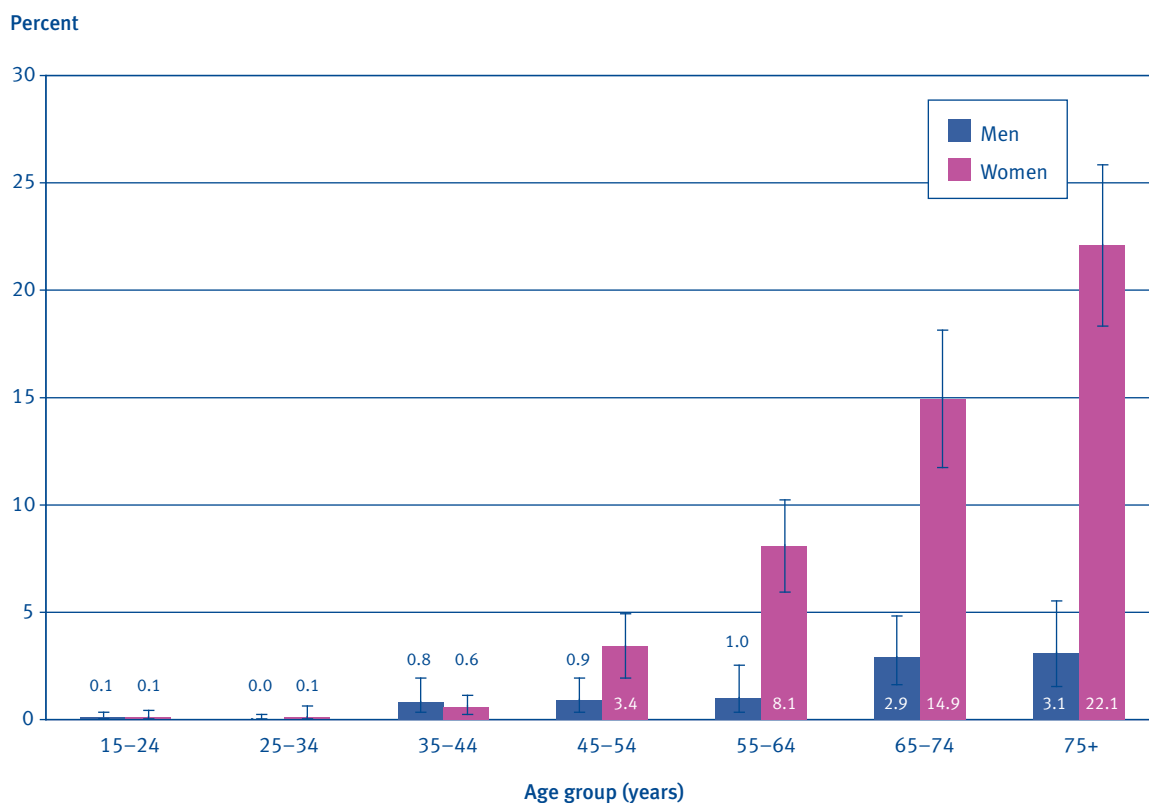
Prevalence of osteoporosis for adults

One in 34 adults (2.9%, 2.6–3.2) had been told by a doctor they have osteoporosis. This equates to 90,000 adults. The age standardised prevalence of osteoporosis was much higher in women (3.5%, 3.1–4.0) than in men (0.8%, 0.5–1.0).

Prevalence of osteoporosis, by age group

In women the risk of osteoporosis increased rapidly as age increased (Figure 3.31). One in five women aged 75 years and over had been diagnosed with osteoporosis (22.1%, 18.3–25.8). In men this increasing relationship was present, but was not statistically significant.

Figure 3.31: Osteoporosis for adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Prevalence of osteoporosis, by ethnic group

Table 3.20 gives an indication of the burden of osteoporosis in New Zealand's main ethnic population groups.

Table 3.20: Osteoporosis for adults, by ethnic group (unadjusted)

Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	3.2 (2.8–3.6)	81400
Māori	1.5 (1.1–1.9)	5400
Pacific	1.0 (0.4–2.1)	1800
Asian	1.4 (0.8–2.2)	4000

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

Due to large sample errors created by the small number of people with osteoporosis in the survey sample, it was difficult to see statistically significant differences by ethnic group, so a rate ratio graph has not been presented.

Prevalence of osteoporosis, by neighbourhood deprivation

There was no difference in the prevalence of osteoporosis between NZDep2006 quintile 1 (least deprived) and quintile 5 (most deprived) for both men and women.

Treatment for osteoporosis

Two out of three adults with osteoporosis (65.9%, 60.6–71.3) were using medication for osteoporosis. One in eight adults with osteoporosis (12.3%, 8.4–16.1) were treated with exercise or physiotherapy without any medical treatment from injections, tablets or pills.

One in four adults with osteoporosis (25.7%, 21.3–30.1) reported not using any treatment.

Time trend in prevalence of osteoporosis

Between 2002/03 and 2006/07 there was no significant change in the prevalence of osteoporosis for men (0.7%, 0.4–1.1 in 2002/03 and 0.8%, 0.6–1.1 in 2006/07) or women (2.9%, 2.4–3.4 in 2002/03 and 3.5%, 3.0–3.9 in 2006/07).

Time trends for Māori are not shown due to small numbers.

Mood disorders

Introduction

Mood disorders in children and adults include depression (the most common type of mood disorder), bipolar disorder (also known as manic depression) and dysthymia (US Department of Health and Human Services 1999; World Health Organization 2001). Cognitive-behavioural therapy and other psychotherapy, sometimes combined with pharmacological treatment, are used to treat mood disorders in children. For adults, treatment for mood disorders most commonly includes pharmacological treatment, psychotherapy, or a combination of the two (US Department of Health and Human Services 1999).

What were the survey questions?

The 2006/07 New Zealand Health Survey asked parents if they had ever been told by a doctor that their child had any of the health conditions listed on a show card, of which depression was one prompted response. Other mood disorders could be specified by the parent respondent.

Adult participants in the 2006/07 New Zealand Health Survey were asked if they had ever been diagnosed by a doctor with any of the following conditions, which were listed on a show card:

- 1 depression
- 2 bipolar disorder (manic depression)
- 3 anxiety disorder (including panic, phobia, post-traumatic stress disorder, obsessive compulsive disorder)
- 4 eating disorder
- 5 alcohol-related disorder
- 6 drug-related disorder
- 7 schizophrenia
- 8 any other mental health condition [please specify]

Any current treatments for mental health conditions were also collected for both adult and child participants.

Chapter 4 contains results on the prevalence of psychological distress for adults (K10 scores).

Prevalence of diagnosed mood disorder for children and adults

The prevalence of mood disorders in children was 0.2% (0.1–0.4), which means that 1300 children in the population were diagnosed with depression by a doctor. Due to small numbers, the data presented in the remainder of this section are for adults only.

One in ten adults (10.9%, 10.3–11.5) had ever been diagnosed with a mood disorder. In nearly all cases this was depression, which had a population prevalence of 10.5% (9.9–11.1), and in a small number of cases bipolar disorder (0.7%, 0.5–1.0 in the total population). This represents 340,900 adults ever diagnosed with a mood disorder.

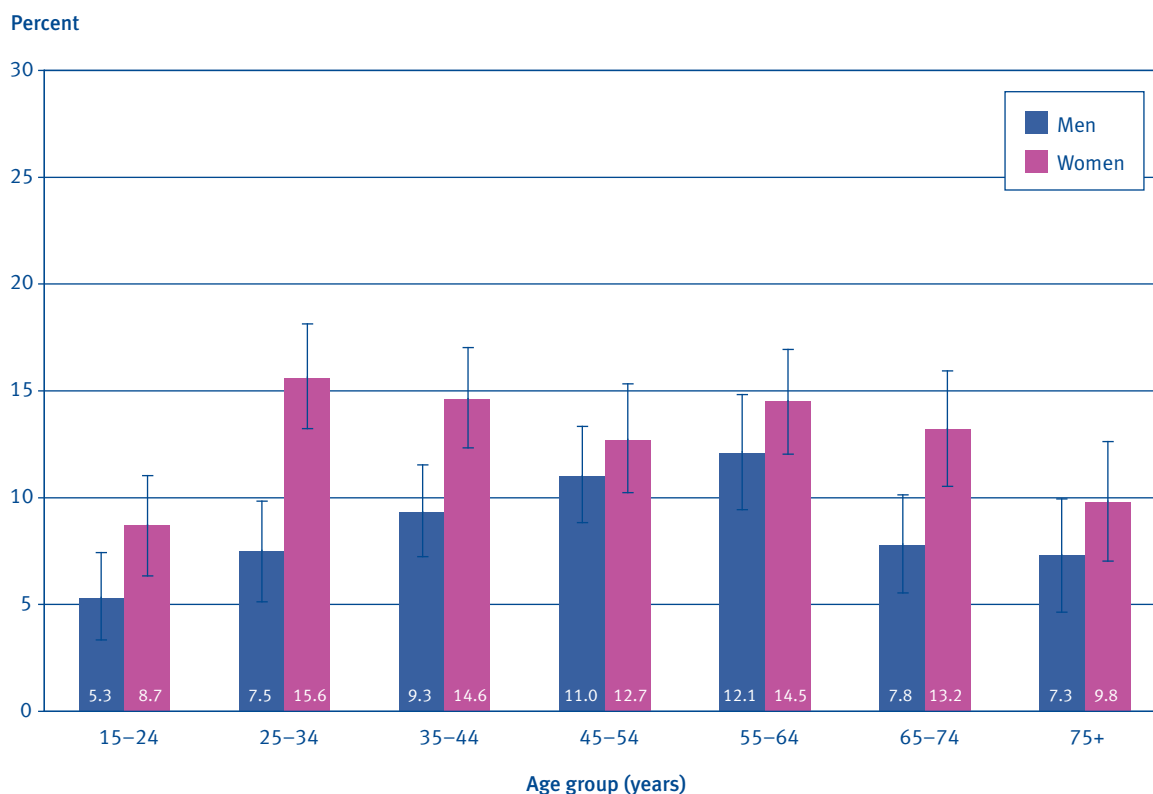
Women (12.8%, 11.9–13.8) were significantly more likely than men (8.4%, 7.5–9.3) to have ever been diagnosed with a mood disorder, after adjusting for age.

Prevalence of diagnosed mood disorder, by age group

Mood disorder was present in all age groups. The prevalence of mood disorder appeared to peak in women aged 25–34 and was then relatively stable until the 75+ years age group, when it declined slightly. In men, mood disorder appeared to peak much later, in the 55–64 years age group (Figure 3.32).

Women aged 25–44 years and 65–74 years were more likely than men of the same age to have been diagnosed with a mood disorder (Figure 3.32).

Figure 3.32: Diagnosed mood disorder for adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Prevalence of diagnosed mood disorder, by ethnic group

Table 3.21 gives an indication of the burden of mood disorder in New Zealand's main ethnic population groups for adults.

Table 3.21: Diagnosed mood disorder for adults, by ethnic group (unadjusted)

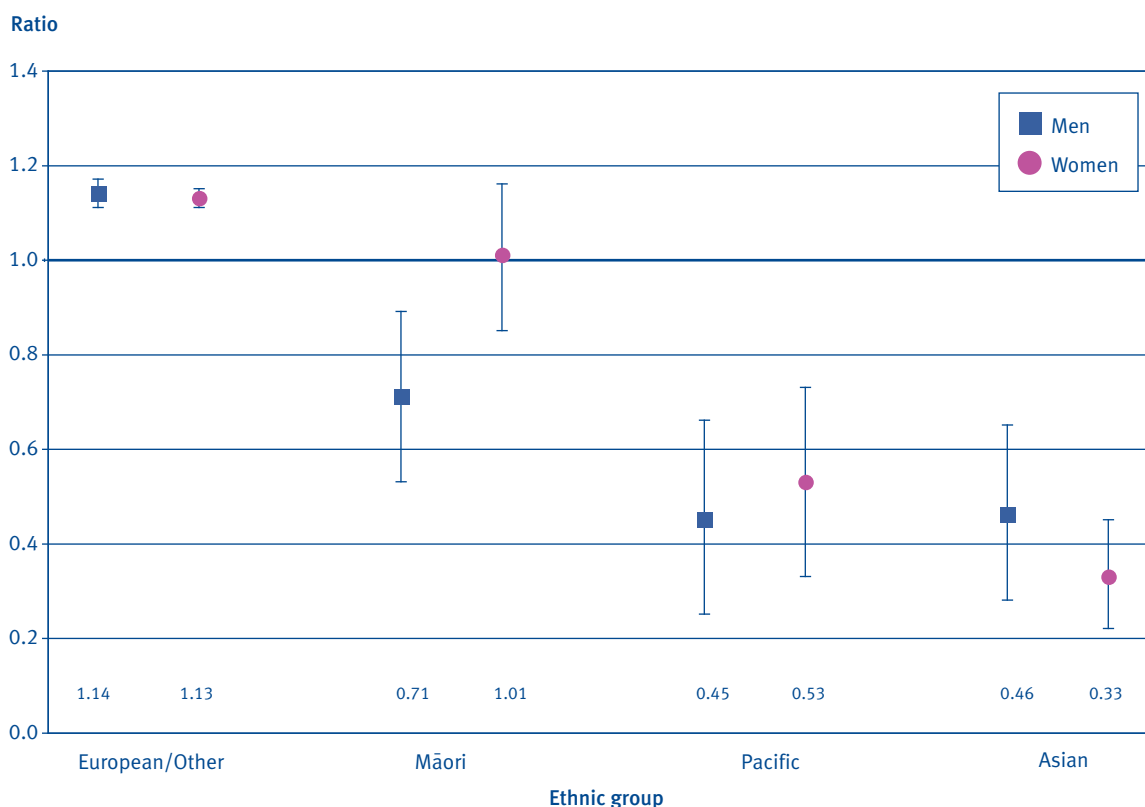
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	12.2 (11.5–13.0)	312400
Māori	9.9 (8.6–11.2)	35100
Pacific	5.1 (3.7–6.5)	8300
Asian	3.9 (2.9–4.8)	10700

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

Once adjusted for age, European/Other men and women were significantly more likely to have ever been diagnosed with a mood disorder than men and women in the total adult population (Figure 3.33). Pacific men and women, Asian men and women, and Māori men were all much less likely to have ever been diagnosed with a mood disorder compared to men and women in the total population.

Figure 3.33: Diagnosed mood disorder for adults, by ethnic group and gender (age standardised rate ratio)



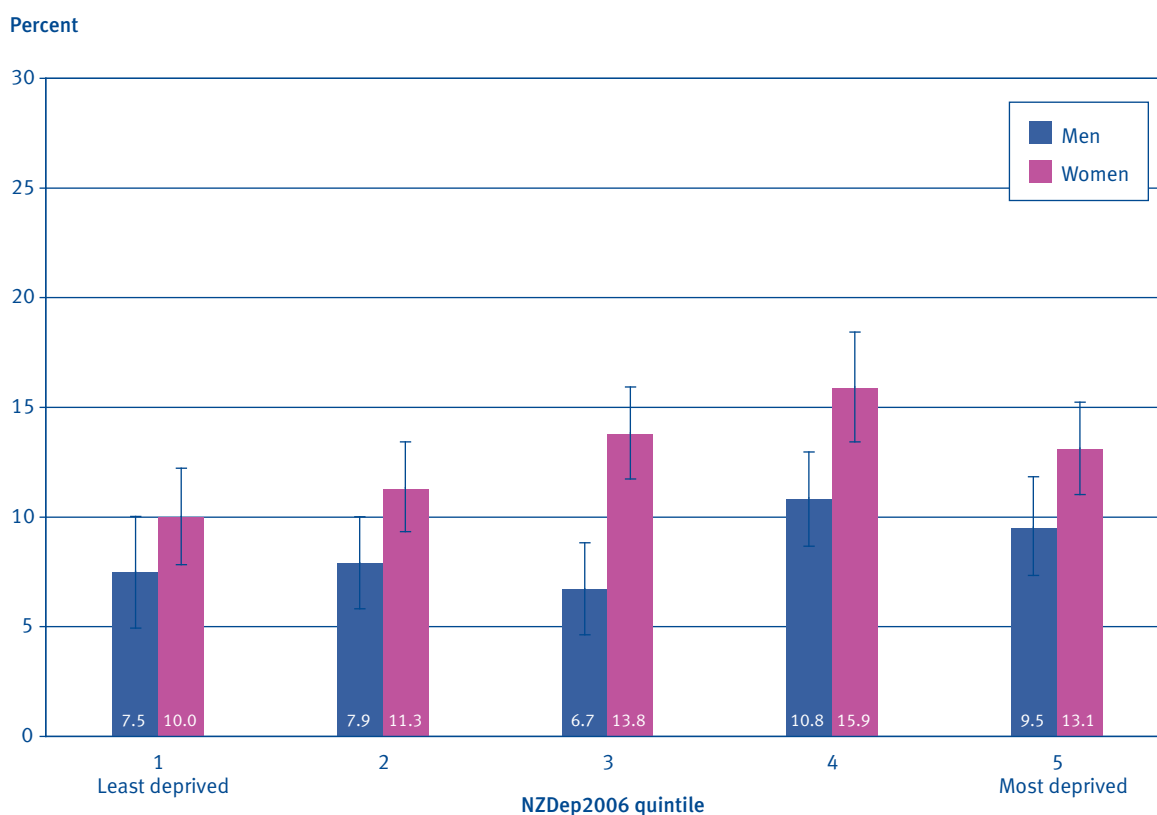
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.00 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Prevalence of mood disorder, by neighbourhood deprivation

For men there was little variation by neighbourhood deprivation in the prevalence of mood disorder. However, women living in NZDep2006 quintile 4 had 1.5 times the prevalence of mood disorder compared to women living in NZDep2006 quintile 1, adjusted for age. This higher prevalence was also significant for women in the most deprived areas of NZDep2006 quintile 5, compared to NZDep2006 quintile 1 (p-value < 0.05) (Figure 3.34).

Figure 3.34: Diagnosed mood disorder for adults, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Treatment for mood disorder

Half of adults who had ever been diagnosed with depression or bipolar disorder were currently taking medication for the condition (48.6%, 45.5–51.6). One in eight adults who had ever been diagnosed with depression or bipolar disorder were currently receiving counselling (13.0%, 10.4–15.5), most of whom were also taking medication (8.9%, 6.9–10.8 – ie, both counselling and medication).

Nearly half of adults who had ever been diagnosed with depression or bipolar disorder reported not receiving any treatment at the time of the survey (45.6%, 42.4–48.7).

Anxiety disorders

Introduction

Anxiety disorders in children include separation anxiety, specific phobias, panic disorder, post-traumatic stress disorder, obsessive-compulsive disorder and generalised anxiety disorder (Green et al 2005; Koppelman 2004).

Anxiety disorders in adults include panic disorder, agoraphobia, generalised anxiety disorder, specific phobia, social phobia, obsessive-compulsive disorder, acute stress disorder and post-traumatic stress disorder (US Department of Health and Human Services 1999).

Treatments for anxiety disorders for both children and adults include cognitive-behavioural therapy and other psychotherapy, as well as pharmacotherapy (American Academy of Child and Adolescent Psychiatry 2007; US Department of Health and Human Services 1999).

What were the survey questions?

The 2006/07 New Zealand Health Survey asked parents if they had ever been told by a doctor that their child had any of the health conditions listed on a show card, of which anxiety was one prompted response, and particular anxiety disorders could be specified by the parent respondent.

Adult participants in the 2006/07 New Zealand Health Survey were asked if they had ever been told by a doctor that they had any of the following conditions, which were listed on a show card:

- 1 depression
- 2 bipolar disorder (manic depression)
- 3 anxiety disorder (including panic, phobia, post-traumatic stress disorder, obsessive compulsive disorder)
- 4 eating disorder
- 5 alcohol-related disorder
- 6 drug-related disorder
- 7 schizophrenia
- 8 any other mental health condition [please specify]

Any current treatments for mental health conditions were also collected for both adult and child participants.

The small number of adult participants who reported doctor-diagnosed stress (unprompted) as an 'other' mental health condition were included in these analyses of anxiety disorders.

Chapter 4 contains results on the prevalence of psychological distress for adults (K10 scores).

Prevalence of diagnosed anxiety disorder for children and adults

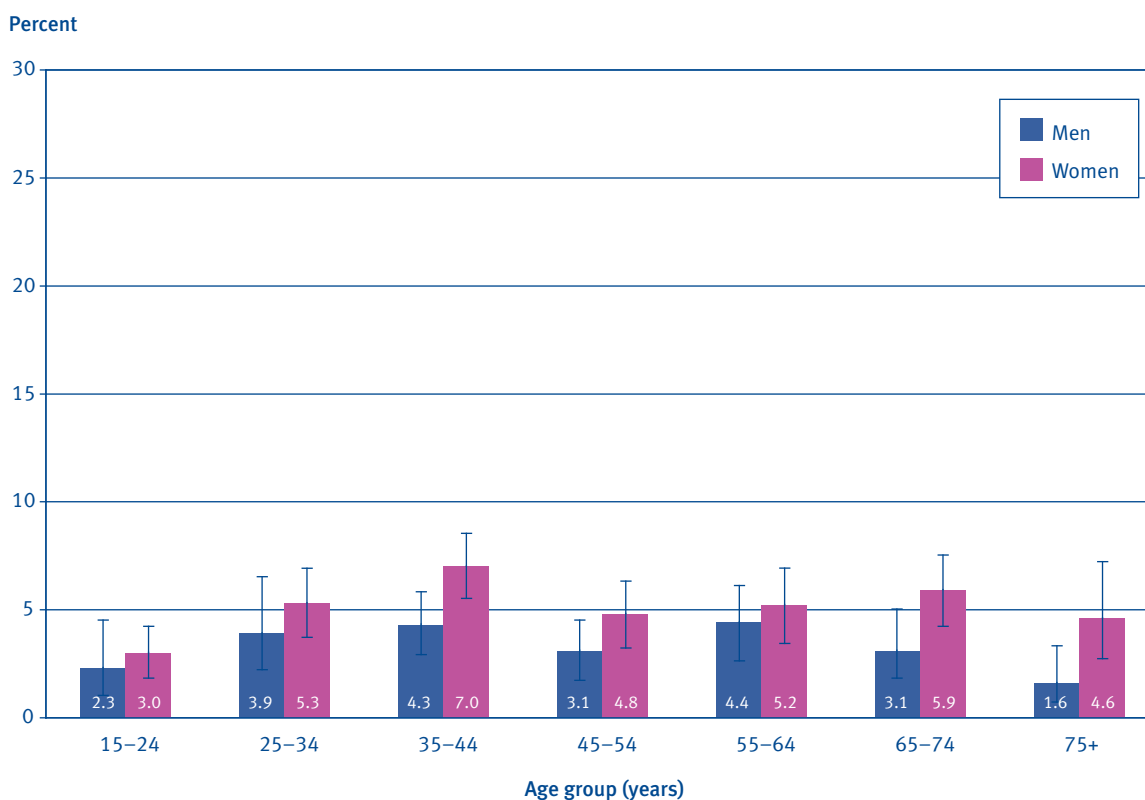
The prevalence of anxiety disorders in children was 0.3% (0.2–0.5), which means that approximately 2800 children in the population were diagnosed by a doctor with anxiety. Due to small numbers, the data presented in the rest of this section are for adults only.

One in 23 adults (4.3%, 3.8–4.8) had been diagnosed with an anxiety disorder. This equates to 134,200 adults. Women (5.0%, 4.3–5.7) were significantly more likely than men (3.4%, 2.7–4.1) to have ever been diagnosed with an anxiety disorder, when adjusting for age.

Prevalence of diagnosed anxiety disorder, by age group

There was little difference by age group in the prevalence of anxiety disorders. Women aged 35–44 years appeared to have the highest prevalence of diagnosed anxiety disorder (Figure 3.35). Women aged 35–44 and 65 years and over had a higher prevalence of diagnosed anxiety disorder compared to men of the same age (p-value < 0.05).

Figure 3.35: Diagnosed anxiety disorder for adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Prevalence of diagnosed anxiety disorder, by ethnic group

Table 3.22 gives an indication of the burden of anxiety disorder in New Zealand’s main ethnic population groups for adults.

Table 3.22: Diagnosed anxiety disorder for adults, by ethnic group (unadjusted)

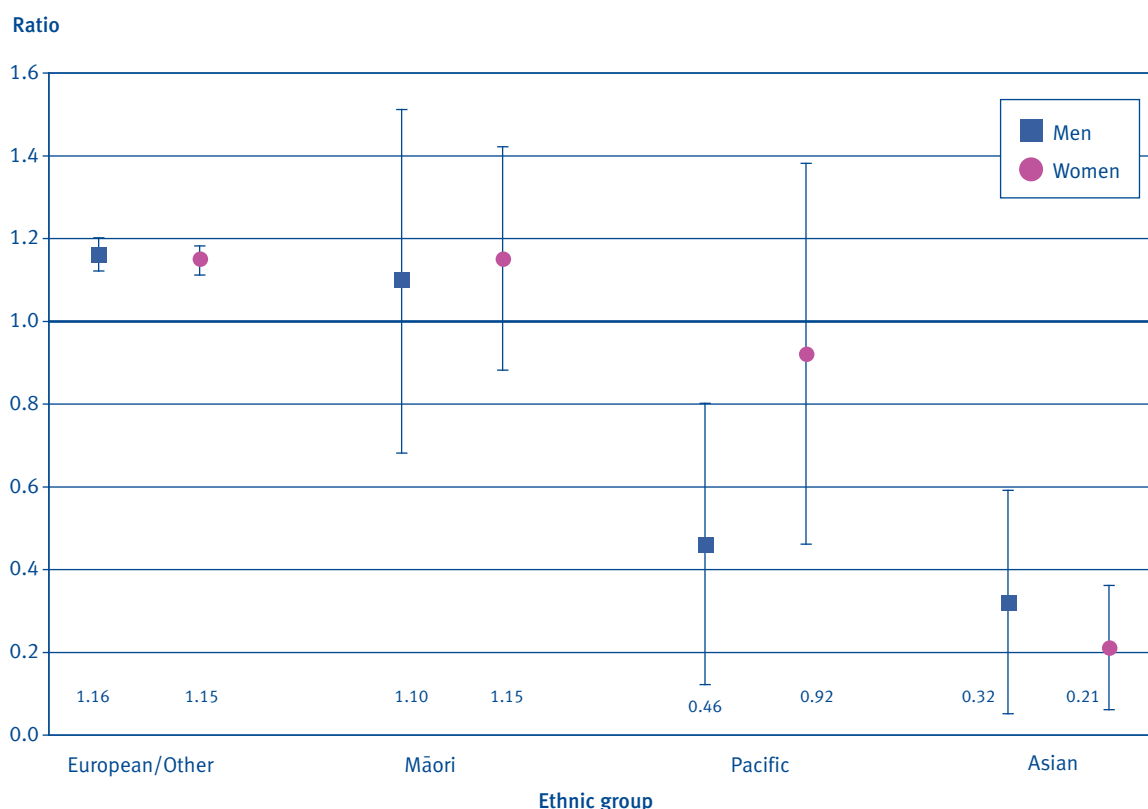
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	4.8 (4.3–5.4)	123600
Māori	4.7 (3.7–5.8)	16900
Pacific	2.8 (1.7–3.9)	4600
Asian	1.0 (0.5–1.6)	2700

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, European/Other men and women had nearly a 20% increased prevalence of doctor-diagnosed anxiety disorder compared to men and women in the total population (Figure 3.36). Pacific men and Asian men and women were the least likely to be diagnosed with an anxiety disorder.

Figure 3.36: Diagnosed anxiety disorder for adults, by ethnic group and gender (age standardised rate ratio)



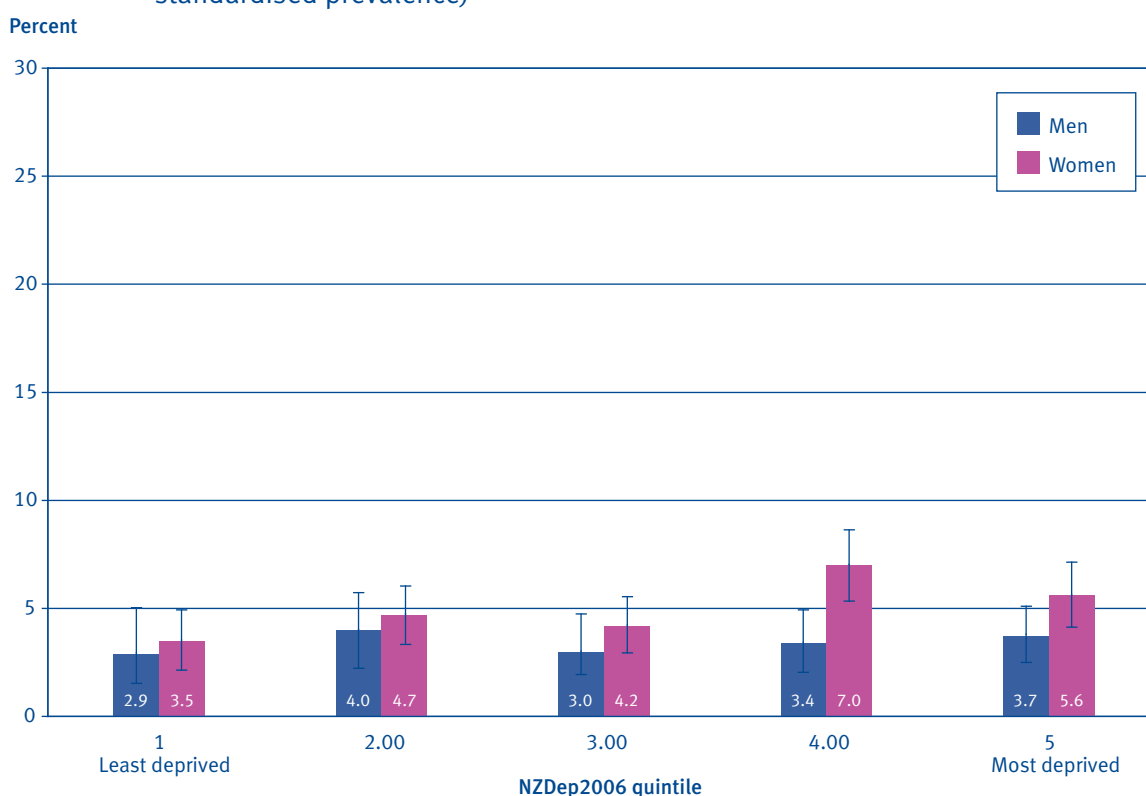
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.00 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Prevalence of diagnosed anxiety disorder, by neighbourhood deprivation

Women living in NZDep2006 quintile 4 had approximately 2 times the prevalence of anxiety disorders compared to women living in NZDep2006 quintile 1. This difference compared to NZDep2006 quintile 1 was not significant for women in the most deprived areas of NZDep2006 quintile 5 (Figure 3.37). There were no significant differences for men by neighbourhood deprivation.

Figure 3.37: Diagnosed anxiety disorder for adults, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Treatment for anxiety disorder

Two out of every five adults who had ever been diagnosed with an anxiety disorder were taking medication for the condition (39.3%, 34.6–44.0). One in seven adults who had ever been diagnosed with an anxiety disorder were receiving counselling (14.5%, 10.4–18.5), just under half of whom were also taking medication (6.4%, 3.8–9.1 – ie, both counselling and medication).

Nearly half of adults who had ever been diagnosed with an anxiety disorder reported not receiving any treatment at the time of the survey (48.5%, 43.0–53.9).

Other health conditions

Introduction

What were the survey questions?

The 2006/07 New Zealand Health Survey asked the parents of children and adult participants if they had ever been told by a doctor that they had any other long-term condition that had not been discussed already (in the course of the interview).

Participants were reminded that ‘long-term’ means a condition has lasted, or is expected to last, six months or more, and may come and go or be present all the time. Participants were given a show card containing examples, and were asked to specify the name of the condition.

Conditions prompted on the adult show card were: epilepsy, migraine, stomach ulcer, irritable bowel syndrome, gallbladder problems / gallstones, endometriosis, prostate problems, thyroid conditions. Conditions prompted on the child show card were: allergy lasting six months or more, birth conditions (eg, spina bifida, congenital heart defect, and intellectual disability), cancer, rheumatic heart disease, epilepsy, permanent hearing problems, vision problems that cannot be corrected with glasses.

‘Other’ answers given by respondents were checked and recoded before analysis. Conditions that were not considered to be chronic (long-term), such as pneumonia, were removed from the data set.

Disability in adults (including hearing, vision and intellectual disabilities) was not measured in the 2006/07 New Zealand Health Survey.

Prevalence of other health conditions for children

Table 3.23 presents the proportion of children diagnosed by a doctor with other common health conditions lasting, or expected to last, for more than six months. The definition used here for a common health condition was a doctor-diagnosed condition that affected at least 0.3% of the child population; that is, a condition that affected 3000 children or more aged from birth to 14 years.

Table 3.23: Other common health conditions for children (unadjusted)

Health condition	Prevalence (95% CI)	Number of children
Eczema	14.1 (12.8–15.5)	120600
Allergy (all types)	6.2 (5.3–7.1)	52700
Birth conditions*	3.9 (3.0–4.8)	33600
Attention deficit hyperactivity disorder (ADHD)	1.2 (0.9–1.6)	10600
Permanent hearing problems	1.2 (0.8–1.6)	10300
Vision problems that cannot be corrected with glasses	0.8 (0.4–1.2)	7000
Epilepsy	0.5 (0.3–0.7)	4100
Autism spectrum disorders (ASD)	0.4 (0.3–0.7)	3700

Source: 2006/07 New Zealand Health Survey

* Birth conditions include spina bifida, congenital heart defects, intellectual impairment from birth and Down syndrome.

The following child health conditions were found to have a prevalence of less than 0.3% of the child population, which means that fewer than 3000 children aged under 15 years of age were diagnosed by a doctor with:

- rheumatic heart disease
- cancer
- oppositional defiant disorder (ODD) and conduct disorder.

Prevalence of other health conditions for adults

Table 3.24 presents the proportion of adults diagnosed by a doctor with other common health conditions lasting, or expected to last, for more than six months. The definition used here for a common health condition was a doctor-diagnosed condition that affected at least 0.3% of the adult population; that is, a condition that affected 10,000 adults or more aged 15 years or over.

Table 3.24: Other common health conditions for adults (total unadjusted) and by gender (age standardised)

Health condition	Prevalence in men (95% CI)	Prevalence in women (95% CI)	Total prevalence (95% CI)	Number of adults (total)
Neck or back disorders	23.1 (21.6–24.6)	21.3 (20.3–22.4)	24.2 (23.2–25.2)	755100
Migraine	5.5 (4.7–6.3)	12.9 (11.8–14.0)	9.5 (8.8–10.2)	296100
Eczema / dermatitis	4.1 (3.3–5.0)	9.5 (8.5–10.4)	6.6 (6.0–7.1)	204800
Bowel disorders *	3.2 (2.5–3.9)	5.9 (5.2–6.6)	5.0 (4.5–5.5)	157100
Gallbladder problems / gallstones	1.9 (1.4–2.3)	4.4 (3.9–4.9)	3.8 (3.4–4.2)	118800
Thyroid conditions	1.0 (0.7–1.3)	5.0 (4.3–5.6)	3.6 (3.2–4.0)	113200
Stomach / gastric ulcers	3.2 (2.8–3.9)	2.5 (2.0–2.9)	3.3 (2.9–3.7)	102800
Prostate problems	3.8 (3.2–4.4)	n/a	–	72900
Endometriosis	n/a	3.2 (2.7–3.7)	–	51700
Epilepsy	1.0 (0.7–1.4)	1.1 (0.9–1.4)	1.1 (0.9–1.3)	34800
Alcohol use disorders	1.4 (1.0–1.7)	0.7 (0.5–1.0)	1.0 (0.8–1.2)	32000
Eating disorders	0.3 (0.2–0.5)	1.3 (1.0–1.6)	0.8 (0.7–1.0)	26400
Bladder and kidney disorders **	0.6 (0.4–0.8)	0.6 (0.4–0.8)	0.7 (0.6–0.9)	22500
Drug use disorders	0.8 (0.5–1.0)	0.5 (0.3–0.7)	0.6 (0.5–0.8)	19000
Psoriasis	0.4 (0.2–0.7)	0.5 (0.3–0.8)	0.5 (0.3–0.7)	15500
Schizophrenia	0.5 (0.3–0.9)	0.2 (0.1–0.3)	0.3 (0.2–0.5)	10300

Source: 2006/07 New Zealand Health Survey

* Includes irritable bowel syndrome, inflammatory bowel disease, Crohn's disease, ulcerative colitis, coeliac disease, diverticular disease and other bowel problems not further defined.

** Includes nephritis, cystitis, bladder problems not further defined, and kidney problems not further defined.

The following health conditions had a prevalence of less than 0.3% in the adult population; that is, fewer than 10,000 adults aged 15 years or over had been diagnosed with:¹⁵

- Alzheimer's and other dementias
- Parkinson's disease
- other neurological disorders (including multiple sclerosis and muscular dystrophy)
- hepatitis C
- chronic fatigue syndrome / fibromyalgia
- systemic lupus erythematosus (SLE / Lupus)
- polymyalgia
- Paget's disease
- haemochromatosis / iron overload
- attention deficit hyperactivity disorder (ADHD)
- autism spectrum disorders (ASD).

¹⁵ Please note that the 2006/07 New Zealand Health Survey excluded the institutionalised population and only asked for conditions that had been diagnosed by a doctor, relying on recall of the participant, and therefore may slightly underestimate the true prevalence of these health conditions.

Chapter 4: Health Status

Introduction

Self-reported health measures, based on an individual's own perception of their health status and functioning, provide an alternative to the more traditional objective measures of health, such as hospitalisation rates and disease prevalences. Self-reported health measures introduce an element of subjectivity into health status measurement, which is useful for providing a more consumer-centred view of health, and for placing more emphasis on quality of life and wellbeing.

Since 1996/97 the New Zealand Health Survey has included the Medical Outcomes Study Short Form 36 questionnaire (SF-36), which is used internationally to measure health-related quality of life in adults. In 2006/07 a comprehensive module on child health, the Child Health Questionnaire Parent Form 28 (CHQ-PF28), was introduced into the New Zealand Health Survey to capture the health-related quality of life in children aged 5–14 years. The SF-36 and the CHQ-PF28 both contain the general health summary question, and responses to this question have been included at the start of this chapter.

In addition to the general health summary, SF-36 and CHQ-PF28, this chapter includes results on chronic pain for adults, and the results from the Kessler 10 (K10) instrument measuring non-specific psychological distress for adults. The chapter ends with findings from a question asked of parents in the New Zealand Health Survey about the ability of their family to get along – a proxy for family cohesion.

Appendices 5 and 6 describe how to access data presented in this chapter, as well as additional results available online.

General health summary

Introduction

What were the survey questions?

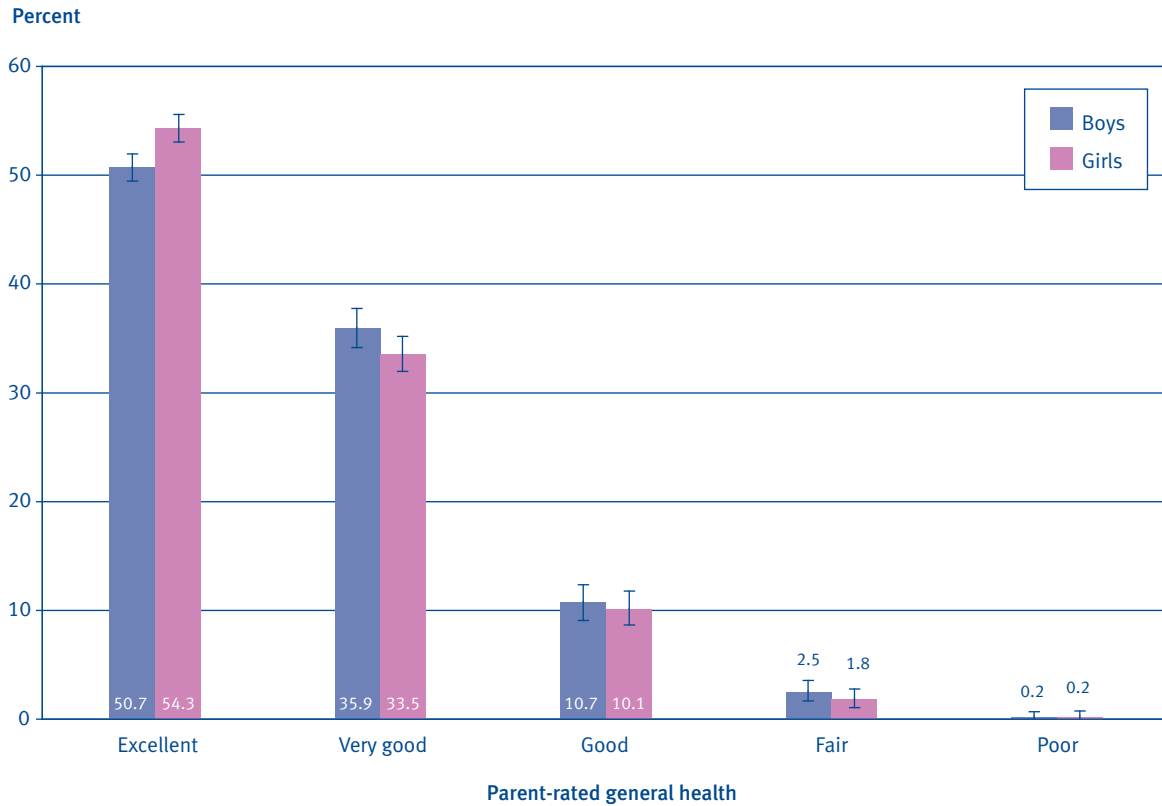
Adult participants in the New Zealand Health Survey were asked to summarise their perception of their health overall by indicating whether, in general, they would say their health was *excellent*, *very good*, *good*, *fair* or *poor*. The parents of child participants were similarly asked whether they considered their child's health to be *excellent*, *very good*, *good*, *fair* or *poor*.

This internationally used question, known as the general self-rated health summary, is simple, encompassing both mental and physical health status. The question has been found to be a powerful predictor of future health care use and mortality, independent of other medical, lifestyle and psychosocial risk factors (Idler and Benyamini 1997; McCallum et al 1994; Miilunpalo et al 1997).

General health summary for children and adults

More than half of parents rated their child's health as excellent, and nine out of ten parents (87.2%, 85.9–88.5) rated their child's health as excellent or very good. Parents of girls were more likely than parents of boys to rate their child's health as excellent, but there was no difference between boys and girls when the categories of excellent and very good were combined (Figure 4.1).

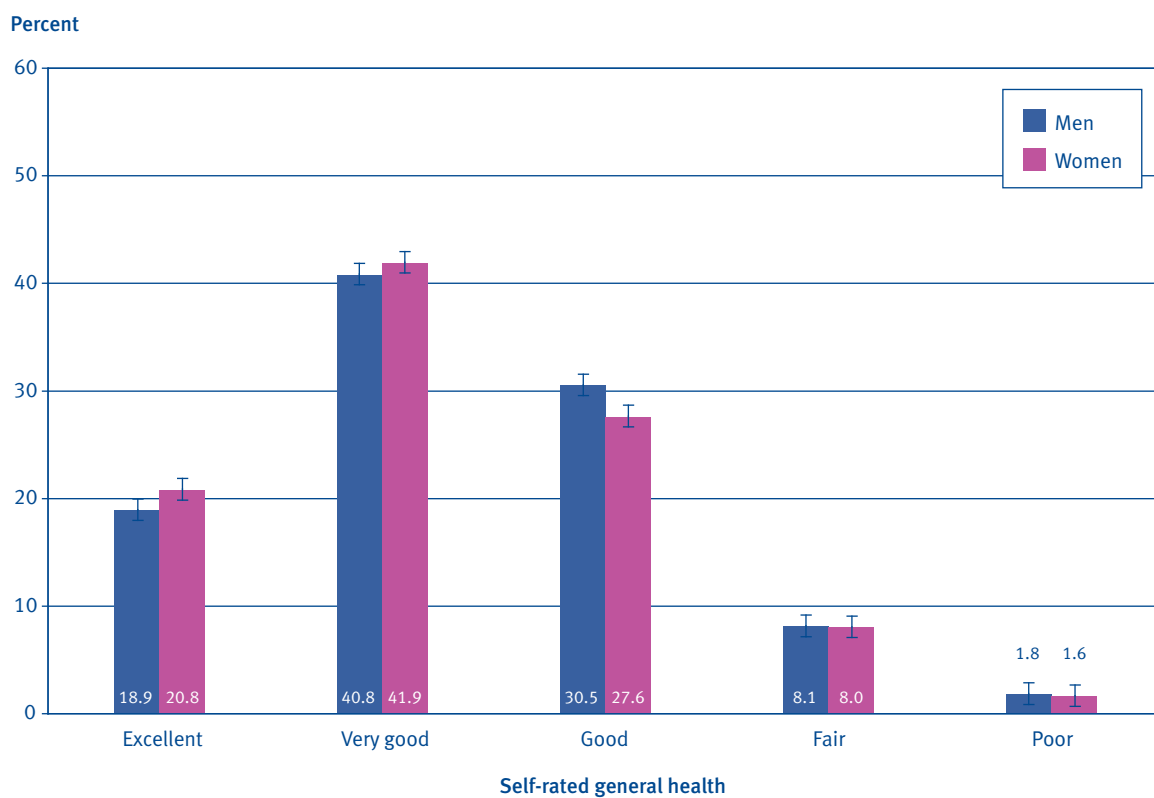
Figure 4.1: Parent-rated general health for children, by gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Three out of five adults (60.6%, 59.3–62.0) rated their own health as excellent or very good. Women were more likely than men to rate their health as excellent or very good, adjusted for age (p-value < 0.05) (Figure 4.2).

Figure 4.2: Self-rated general health for adults, by gender (age standardised prevalence)



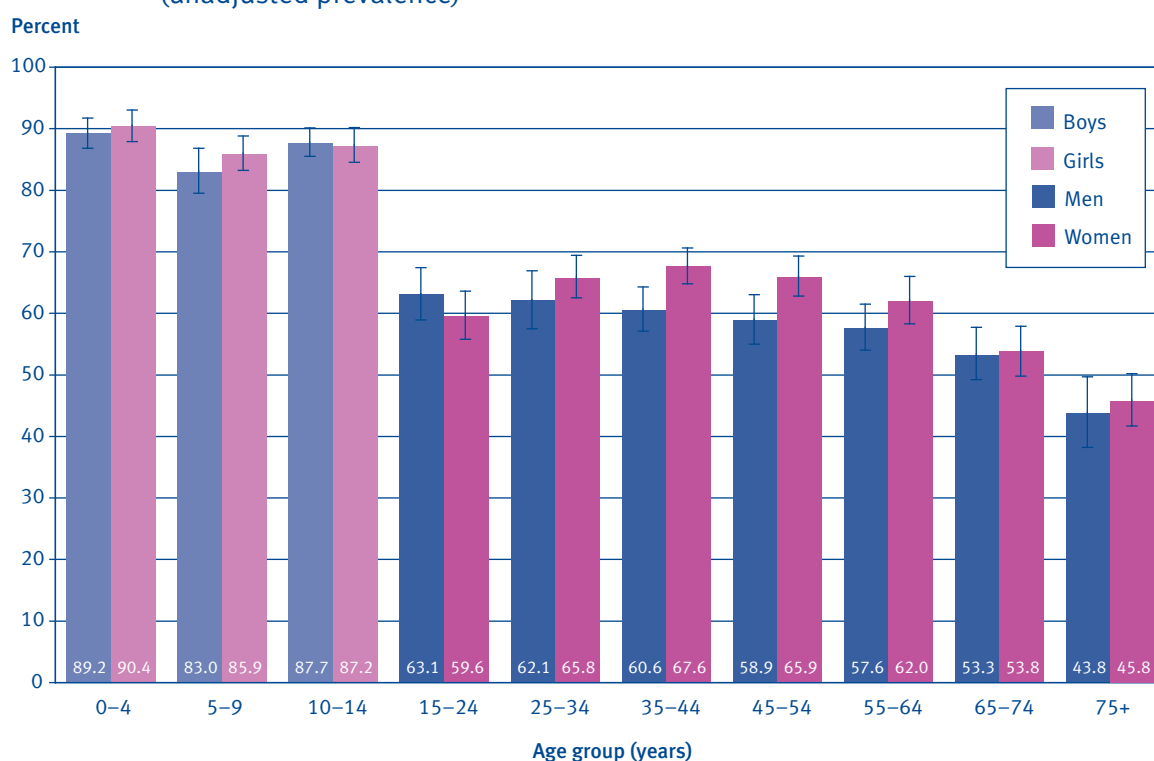
Source: 2006/07 New Zealand Health Survey

General health summary, by age group

Children’s health as rated by their parents was much higher than adult self-rated health. Boys aged 5–9 years had the lowest parent-rated health, and adults aged 75-years-and-over had the lowest self-rated health (Figure 4.3).

The proportion of men who said their health was excellent or very good was fairly stable at around 60%, with a steady decline in older age until less than 50% of men aged 75 years or over said their health was excellent or very good. The pattern for women was slightly different, with the proportion self-rating their health as excellent or very good improving in middle age and then declining in old age to the same rate as men. Women aged 35–54 years were significantly more likely than men of the same age to rate their health as excellent or very good (Figure 4.3).

Figure 4.3: Parent-rated and self-rated excellent or very good health, by age group and gender (unadjusted prevalence)

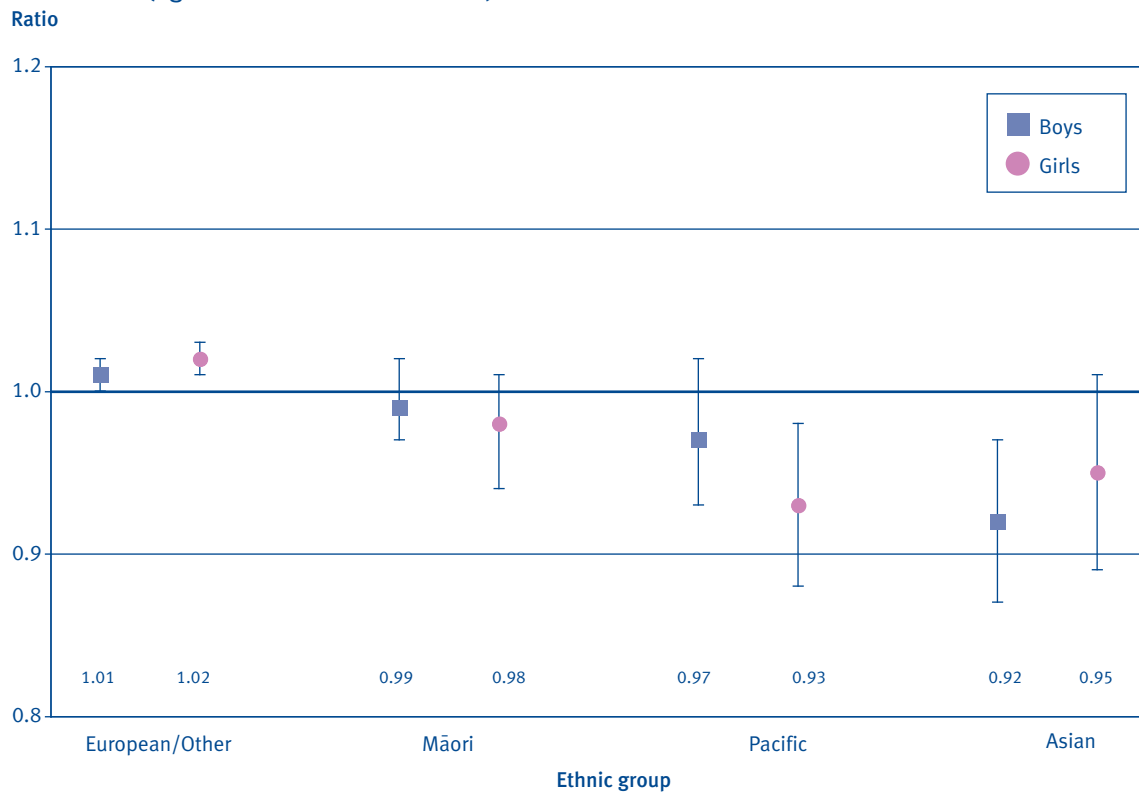


Source: 2006/07 New Zealand Health Survey

General health summary, by ethnic group

Adjusted for age, European/Other girls were slightly more likely than girls in the total population to have excellent or very good parent-rated health (Figure 4.4). Asian boys and Pacific girls were less likely to have excellent or very good parent-rated health.

Figure 4.4: Excellent or very good parent-rated health for children, by ethnic group and gender (age standardised rate ratio)

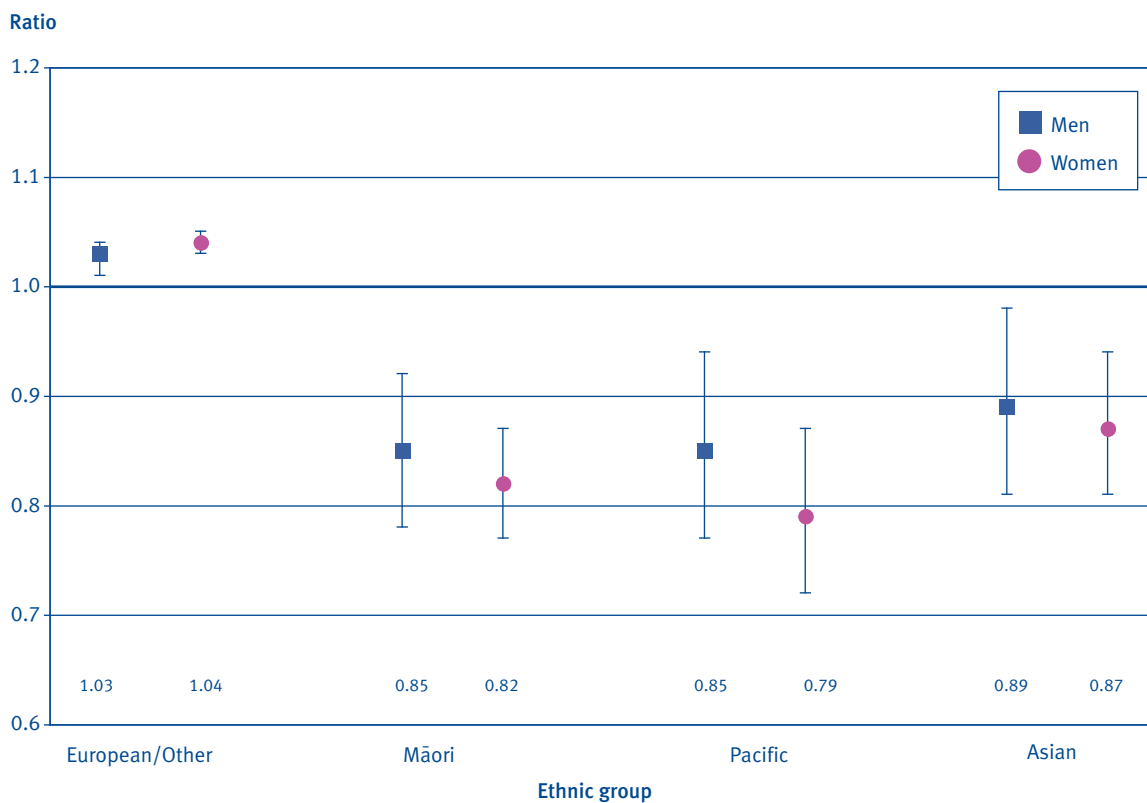


Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged from birth to 14 years. Total response standard output for ethnic groups has been used.

Adjusted for age, Māori men and women, Pacific men and women, and Asian men and women were all less likely to report excellent or very good self-rated health, whereas European/Other men and women were more likely to report excellent or very good self-rated health, compared to men and women in the total population (Figure 4.5).

Figure 4.5: Excellent or very good self-rated health for adults, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

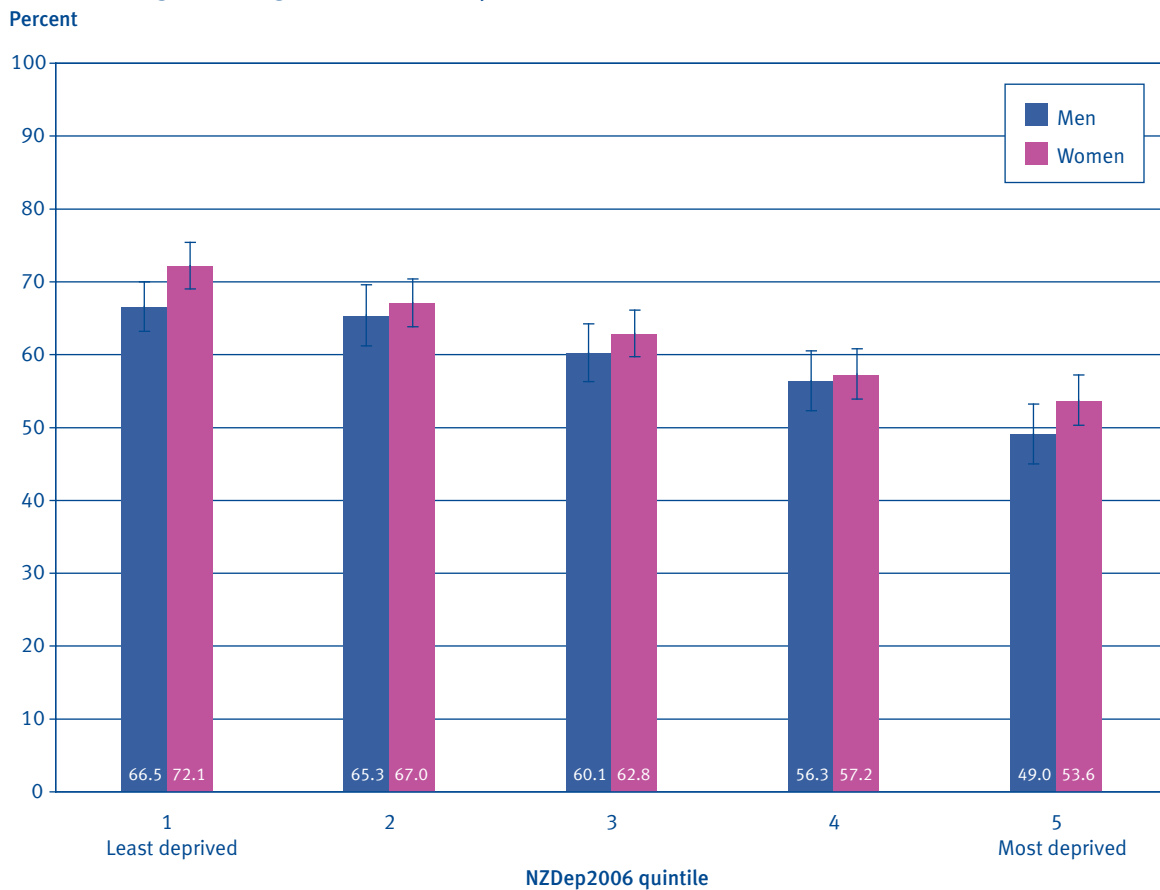
Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

General health summary, by neighbourhood deprivation

Adults living in the least deprived neighbourhoods (NZDep2006 quintile 1 or 2) were more likely to self-rate their health as excellent or very good than adults living in the most deprived neighbourhoods (quintile 5) (Figure 4.6).

This relationship was similar for children, but only statistically significant for girls (92.5%, 89.3–95.8 in NZDep2006 quintile 1 compared with 82.6%, 79.0–86.2 in quintile 5) (graph not shown).

Figure 4.6: Self-rated excellent or very good health in adults, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

General health summary, by DHB area

There were no differences by DHB in the proportion of parents who rated their child's health as excellent or very good. For adults, only Waikato DHB area was significantly different to the national rate, with proportionately fewer adults in that area rating their own health as excellent or very good (Table 4.1).

Table 4.1: Parent-rated and self-rated excellent or very good health for children and adults, by DHB area (unadjusted)

DHB area	Prevalence for children (95% CI)	Number of children	Prevalence for adults (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	86.5 (83.8–89.3)	99900	60.3 (57.7–62.9)	226400
Waitemata	85.5 (81.7–89.2)	88900	61.6 (58.0–65.2)	233300
Auckland	86.4 (82.4–90.3)	64500	60.7 (56.6–64.8)	195800
Counties Manukau	85.4 (82.2–88.5)	94900	60.2 (56.4–63.9)	194000
Waikato	85.1 (81.5–88.7)	64900	56.7 (53.4–60.0) –	147100
Bay of Plenty / Taranaki / MidCentral	87.2 (83.6–90.8)	85900	60.2 (57.1–63.2)	211400
Wairarapa / Hutt Valley / Capital and Coast	89.0 (85.5–92.5)	79700	60.8 (57.1–64.5)	210800
Canterbury	90.4 (86.7–94.1)	82200	63.2 (59.6–66.8)	234400
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	89.6 (85.5–93.7)	84300	60.7 (57.3–64.1)	238500
New Zealand total	87.2 (85.9–88.5)	745100	60.6 (59.3–62.0)	1891800

Source: 2006/07 New Zealand Health Survey

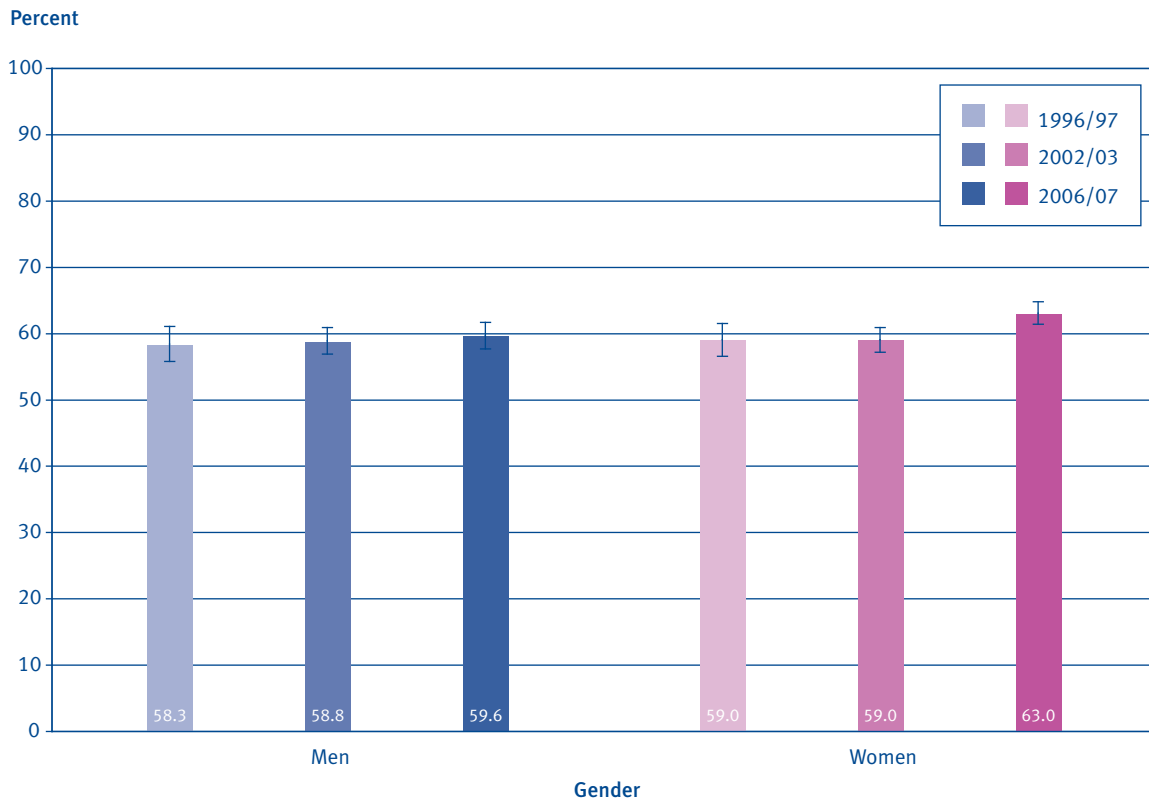
Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends in general health summary for adults

There is no comparable time trend for children in the general health summary.

Between 2002/03 and 2006/07 there was a small but significant increase in the proportion of women who rated their health as excellent or very good, adjusted for age (Figure 4.7). Looking at Māori specifically, between 1996/97 and 2006/07 there was no change in the proportion of men and women reporting excellent or very good health, adjusted for age (graph not shown).

Figure 4.7: Self-rated excellent or very good health for adults, by gender, 1996/97, 2002/03 and 2006/07 (age standardised prevalence)



Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Child health status (CHQ-PF28)

Introduction

The Child Health Questionnaire Parent Form (CHQ-PF28) is 28 questions (items) on children's quality of life and wellbeing across 10 health-related domains: physical functioning, role limitation (physical and emotional/behavioural), general health perceptions, bodily pain, parental impact (time and emotional), self-esteem, mental health and behaviour¹⁶ (Landgraf et al 1999). Responses to each of the CHQ-PF28 items are scored, and expressed on a 0–100 scale for each of the 10 health domains. Box 4.1 lists the CHQ-PF28 domains and provides a summary for interpreting scores.

The longer 50-item CHQ was developed in 1995 and has since been used extensively throughout the world in child health surveys, including in Australia, Ireland, England, the United States of America and many European countries (Ruperto et al 2001). The shorter form of the CHQ, used in the 2006/07 New Zealand Health Survey, is a reliable and valid measure of health-related quality of life in children at a population level (Raaf et al 2004).

Interpretation of the CHQ-PF28 is based on the mean average scores. The domains are independent of each other and domain mean scores cannot be compared. However, within each domain, population subgroup (age group, ethnic group, NZDep2006 quintile) means can be compared. The ordering of the domains in the graphs is an international standard, with the order from left to right representing the extent to which each scale measures physical health (closer to the left) or mental health (closer to the right) in children.

As the CHQ-PF28 is currently only appropriate for use with parents of children aged 5–14 years, the results presented here are for this age group only. A CHQ appropriate for the parents of under five-year-olds is currently being developed.

¹⁶ Data on family cohesion and change in health status are also collected in the CHQ-PF28, but these are not reported as measures of population-level child health. See page 212 for family cohesion results.

Box 4.1: Interpretation of CHQ-PF28 domain scores

Code	Domain	Low score interpretation	High score interpretation
PF	Physical functioning	Child is limited a lot in performing all physical activities, including self-care, due to health	Child performs all types of physical activities, including the most vigorous, without limitations due to health
RP	Role/social –physical	Child is limited a lot in school work or activities with friends as a result of physical health	Child has no limitations in school work or activities with friends as a result of physical health
GH	General health perceptions	Parent believes child’s health is poor and likely to get worse	Parent believes child’s health is excellent and will continue to be so
BP	Bodily pain	Child has extremely severe, frequent and limiting bodily pain	Child has no pain or limitations due to pain
PT	Parental impact – time	Parent experiences a lot of limitations in time available for personal needs due to child’s physical and/or psychosocial health	Parent doesn’t experience limitations in time available for personal needs due to child’s physical and/or psychosocial health
PE	Parental impact – emotional	Parent experiences a great deal of emotional worry/concern as a result of child’s physical and/or psychosocial health	Parent doesn’t experience feelings of emotional worry/concern as a result of child’s physical and/or psychosocial health
REB	Role/social – emotional/behavioural	Child is limited a lot in school work or activities with friends as a result of emotional or behavioural problems	Child has no limitations in school work or activities with friends as a result of emotional or behavioural problems
SE	Self esteem	Child is very dissatisfied with abilities, looks, family/peer relationships and life overall	Child is very satisfied with abilities, looks, family/peer relationships and life overall
MH	Mental health	Child has feelings of anxiety and depression all of the time	Child feels peaceful, happy and calm all of the time
BE	Behaviour	Child very often exhibits aggressive, immature, delinquent behaviour	Child never exhibits aggressive, immature, delinquent behaviour

Note: A four-week recall period is used in all domains, except GH, which uses an ‘in general’ recall period.

Mean CHQ-PF28 scores for children

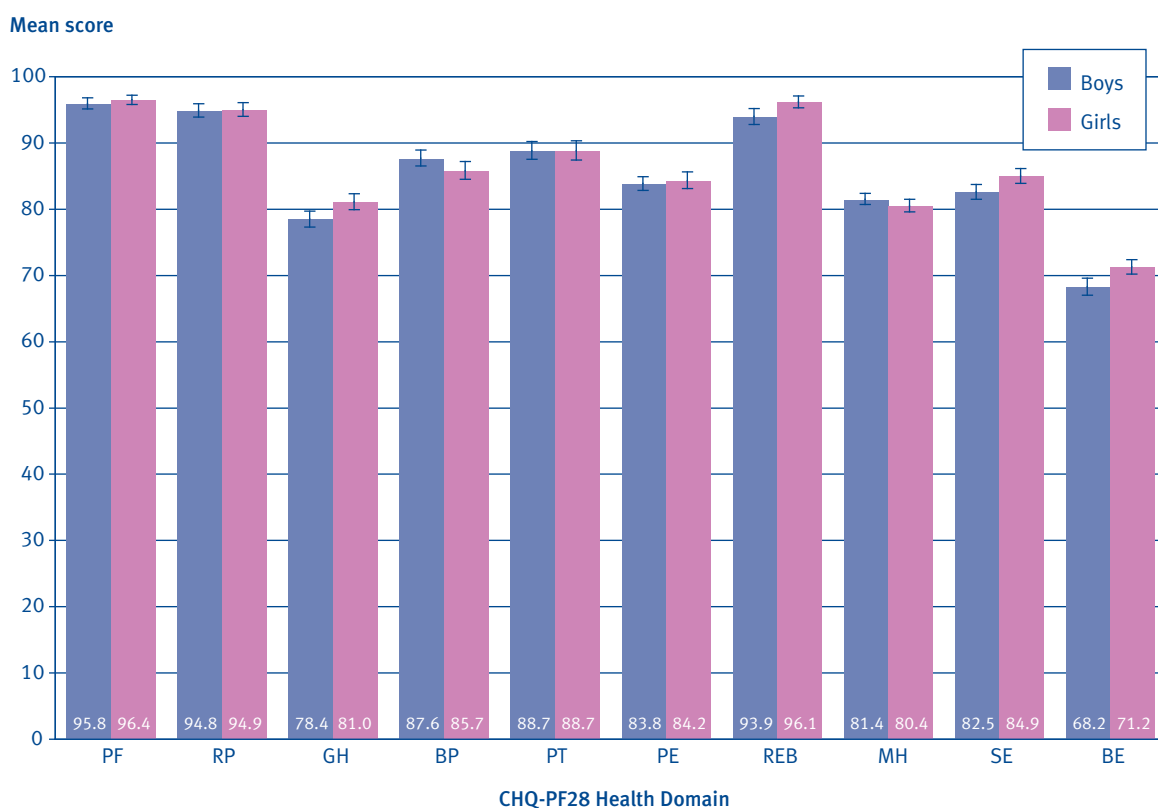
There were no differences between boys' and girls' mean scores for the CHQ health domains of physical functioning, role physical, the two parental impact domains (time and emotional) and mental health (Figure 4.8).

The mean score for girls was significantly higher than the mean score for boys in the following health domains:

- general health
- self esteem
- role/social – emotional/behaviour
- behaviour.

Boys scored higher than girls for bodily pain (p-value < 0.05), meaning that parents of boys reported on average that their child experienced less bodily pain or limitations due to pain compared to parents of girls (Figure 4.8).

Figure 4.8: Mean CHQ-PF28 scores for children aged 5–14 years, by gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Note: Comparisons can be made between genders within domains, not between health domains.

CHQ-PF28 scores, by age group

In the health domains of parental impact – emotional, role/social – emotional/ behavioural and mental health there were no significant differences between the mean scores of 5–9-year-olds compared to 10–14-year-olds, for both girls and boys (Table 4.2).

In both boys and girls the mean score for bodily pain and self esteem decreased with age. For girls the mean score for physical functioning and role physical also decreased in the 10–14 year age group, with no significant difference in boys (Table 4.2).

In both boys and girls the mean score for behaviour improved with age. For boys the mean score for parental impact – time increased in the 10–14 year age group, with no significant difference for girls (Table 4.2).

Table 4.2: Mean CHQ-PF28 scores for children, by age group and gender (unadjusted)

CHQ domain	Boys		Girls	
	5–9 years	10–14 years	5–9 years	10–14 years
Physical functioning	96.3 (95.0–97.5)	95.4 (94.3–96.6)	97.3 (96.4–98.2)	95.5 (94.4–96.6)
Role/social – physical	95.2 (93.7–96.6)	94.5 (93.1–95.9)	96.6 (95.5–97.6)	93.3 (91.5–95.0)
General health perceptions	78.3 (76.1–80.4)	78.6 (77.0–80.1)	80.2 (78.3–82.1)	81.8 (80.2–83.3)
Bodily pain	88.9 (87.2–90.7)	86.3 (84.7–87.8)	87.0 (85.1–88.9)	84.5 (82.5–86.5)
Parental impact – time	86.6 (84.3–88.8)	90.9 (89.4–92.4)	88.6 (86.5–90.7)	88.9 (87.0–90.8)
Parental impact – emotional	84.2 (82.3–86.1)	83.3 (82.0–84.6)	85.0 (83.4–86.6)	83.5 (81.6–85.3)
Role/social – emotional/ behavioural	94.1 (92.3–95.9)	93.7 (92.1–95.2)	96.1 (94.8–97.5)	96.1 (94.9–97.2)
Mental health	81.3 (79.9–82.6)	81.6 (80.6–82.7)	79.9 (78.9–81.0)	80.9 (79.4–82.4)
Self esteem	84.3 (82.8–85.8)	80.7 (79.3–82.2)	86.5 (85.1–87.9)	83.2 (81.6–84.9)
Behaviour	67.1 (65.2–68.9)	69.3 (67.7–70.9)	69.5 (68.0–71.0)	72.9 (71.3–74.4)

Source: 2006/07 New Zealand Health Survey

Note: Comparisons can be made between age groups and genders within domains (ie, within rows).

CHQ-PF28 scores, by ethnic group

This section summarises the CHQ mean score rate ratios comparing ethnic group by gender to the total child mean score. All results have been age standardised.

European/Other boys and girls had no difference between their mean scores and the scores of boys and girls in the total population on all health domains, except general health, where both genders had a higher mean score than boys and girls in the total population.

Māori boys and girls had lower mean scores on the following domains compared to boys and girls in the total population:

- general health
- role emotional/behavioural
- parental impact – emotional
- mental health
- behaviour.

In addition, Māori girls had a lower mean score on the parental impact–time domain compared to the mean score for all girls, with no difference for Māori boys. In other domains there were no differences for Māori children.

Pacific boys and girls also had lower mean scores for general health compared to boys and girls in the total population, but were similar to the national average for most other domains. Exceptions to this were that Pacific girls had higher mean scores for bodily pain (meaning they had less pain or fewer limitations due to pain) but a lower score for behaviour compared to all girls; and Pacific boys had a higher mean score for self esteem but a lower mean score for parental impact – time compared to all boys. In other domains there were no differences for Pacific children.

Asian boys and girls had higher mean scores compared to boys and girls in the total population for bodily pain (meaning they had less pain or fewer limitations due to pain), parental impact – emotional, mental health and behaviour. Asian boys also had a higher mean score for self esteem compared to all boys, and Asian girls had higher mean scores for role physical and parental impact – time compared to all girls. In other domains there were no differences for Asian children.

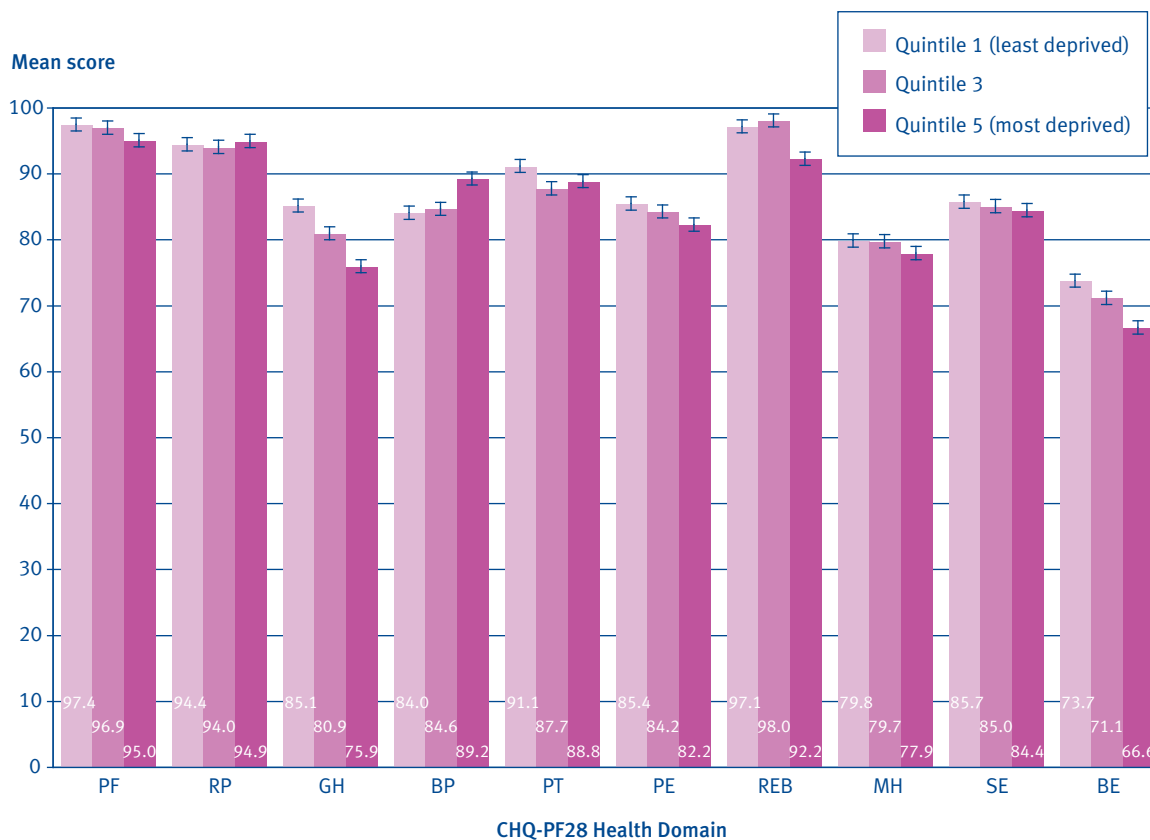
CHQ-PF28 scores, by neighbourhood deprivation

Six of the ten CHQ health domains had no differences for girls aged 5–14 years by neighbourhood deprivation: physical functioning, role/social –physical, parental impact – time, parental impact – emotional, mental health and self esteem (p-values all > 0.05).

Parents' general perceptions of their daughters' health decreased steadily with increasing neighbourhood deprivation. It was more likely for girls living in the most deprived areas (NZDep2006 quintile 5) to have their parents report they were limited in school work or activities with friends as a result of emotional or behavioural problems (role/social – emotional/behavioural domain), and that they exhibited aggressive, immature or delinquent behaviour (behaviour domain) compared to girls living in the least deprived areas (quintile 1) (Figure 4.9).

Parents of girls living in the most deprived neighbourhoods (NZDep2006 quintile 5) on average thought their daughters experienced less pain and had fewer limitations due to pain than parents of girls living in less deprived neighbourhoods (both NZDep2006 quintile 1 and 3) (Figure 4.9).

Figure 4.9: Girls aged 5–14 years mean CHQ-PF28 scores for each health domain, by NZDep2006 quintile (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

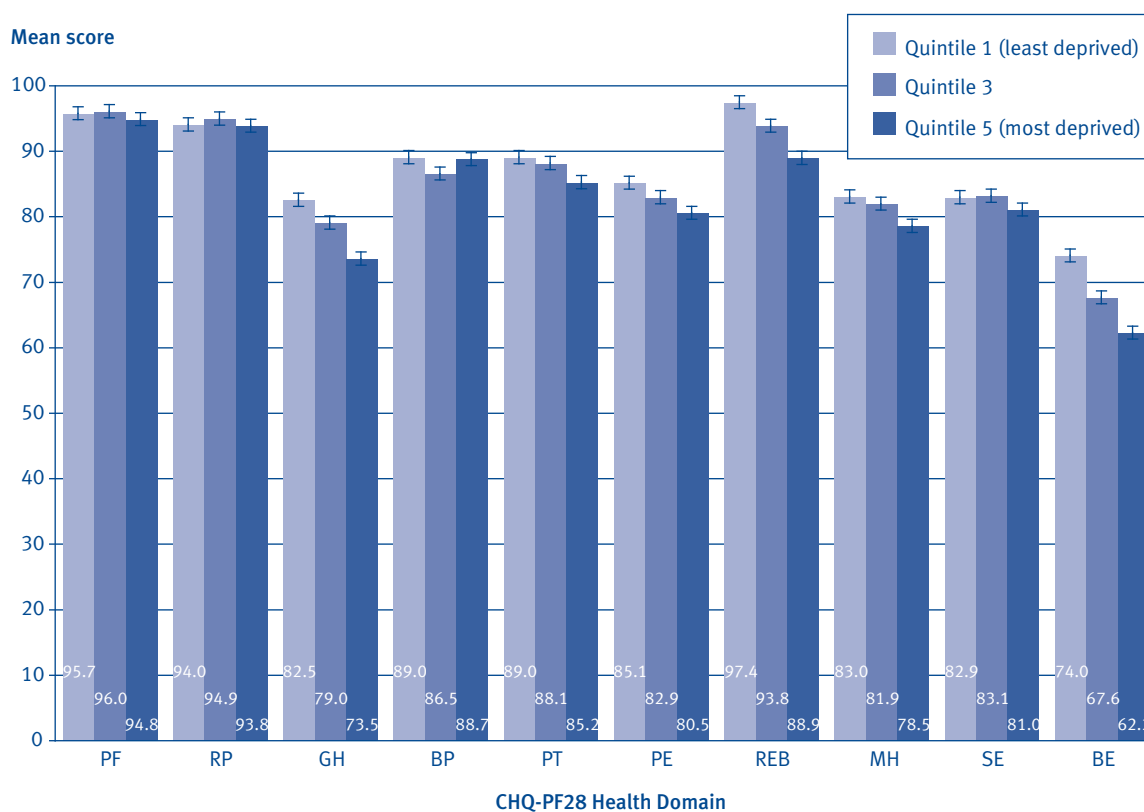
Note: Comparisons can be made between NZDep2006 quintiles within domains, not between domains.

Five of the ten CHQ health domains had no differences for boys aged 5–14 years by neighbourhood deprivation: physical functioning, role/social – physical, bodily pain, parental impact – time, and self esteem (p-values all > 0.05).

As with girls, parents’ general health perceptions of their sons decreased steadily with increasing neighbourhood deprivation. It was also more likely for parents of boys living in the most deprived areas (NZDep2006 quintile 5) to report that they themselves experienced emotional worry/concern as a result of their son’s physical and/or psychosocial health (parent impact – emotional) and that their sons were limited in school work or activities with friends as a result of emotional or behavioural problems (role/social – emotional/behavioural domain) compared to boys living in the least deprived areas (quintile 1) (Figure 4.10).

Parents of boys living in NZDep2006 quintile 5 (most deprived) were also more likely to report that their sons had feelings of anxiety and depression (mental health domain), and that they exhibited aggressive, immature or delinquent behaviour (behaviour domain) compared to boys living in NZDep2006 quintile 1 (Figure 4.10).

Figure 4.10: Boys aged 5–14 mean CHQ-PF28 scores for each health domain, by NZDep2006 quintile (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Note: Comparisons can be made between NZDep2006 quintiles within domains, not between domains.

Adult health status (SF-36)

Introduction

The Medical Outcomes Study Short Form 36 questionnaire (SF-36) is one of the most widely used questionnaires for measuring self-reported physical and mental health status in adults. The SF-36 consists of 36 questions (items) measuring physical and mental health status in relation to eight health domains: physical functioning, role limitation (physical), bodily pain, general health perceptions, vitality (energy/fatigue), social functioning, role limitation (emotional), and general mental health (Ware et al 2005). Responses to each of the SF-36 items are scored, and expressed on a 0–100 scale for each of the eight health domains. Box 4.2 lists the SF-36 domains and provides a summary for interpreting the scores.

Box 4.2: Interpretation of SF-36 domain scores

Code	Domain	Low score interpretation	High score interpretation
PF	Physical functioning	Limited a lot in performing all physical activities, including self-care, due to health	Performs all types of physical activities, including the most vigorous, without limitations due to health
RP	Role limitation – physical	Limited a lot in work or other daily activities as a result of physical health	No problems with work or other daily activities as a result of physical health
BP	Bodily pain	Very severe and extremely limiting bodily pain	No pain or limitations due to pain
GH	General health perceptions	Evaluates own health as poor and believes it is likely to get worse	Evaluates own health as excellent
VT	Vitality	Feels tired and worn out all of the time	Feels full of energy all of the time
SF	Social functioning	Extreme and frequent interference with normal social activities due to physical or emotional problems	Performs normal social activities without interference due to physical or emotional problems
RE	Role limitation – emotional	Problems with work or other daily activities as a result of emotional problems	No problems with work or other daily activities as a result of emotional problems
MH	Mental health	Has feelings of nervousness and depression all of the time	Feels peaceful, happy and calm all of the time

Note: A four-week recall period is used in all domains, except GH, which uses an ‘in general’ recall period.

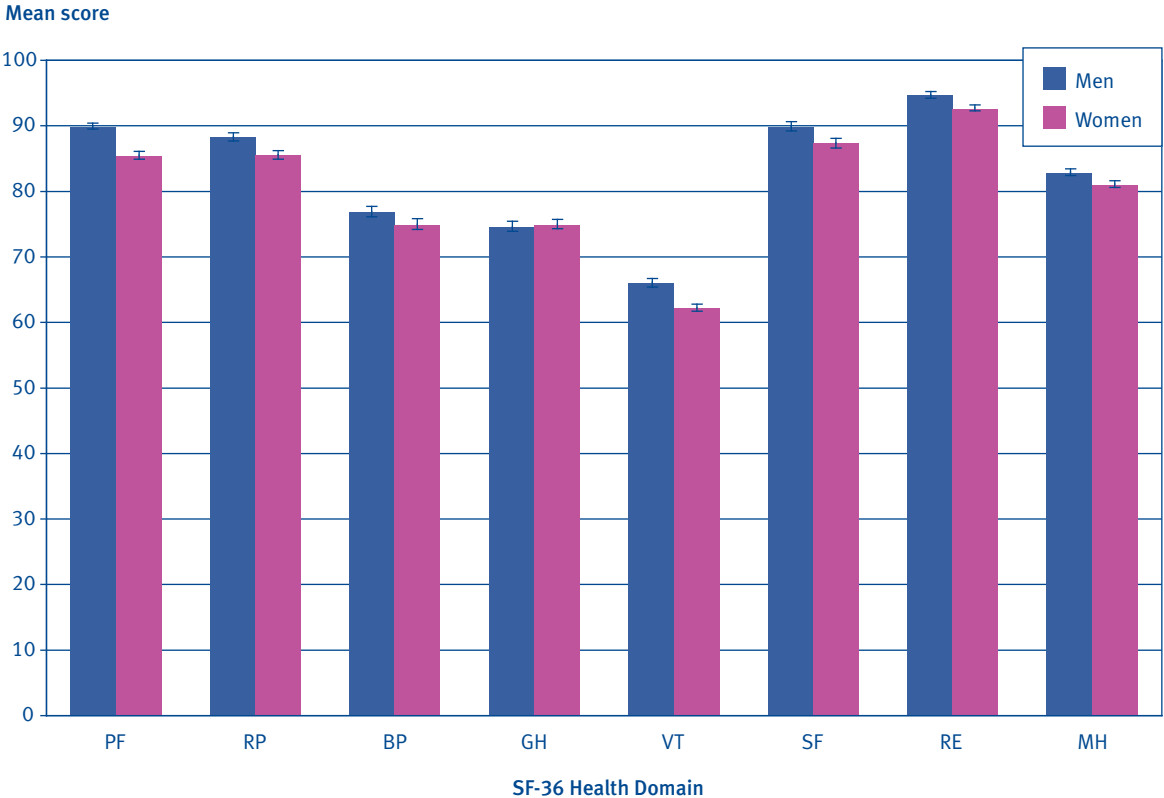
Interpretation of the SF-36 is based on the mean average scores. The domains are independent of each other and domain scores cannot be compared. However, within each domain, population subgroup (ethnic group, age, NZDep2006 quintile) means can be compared. The ordering of the domains used in this report is an international standard, with the order from left to right representing the extent to which each scale measures physical health (closer to the left) or mental health (closer to the right).

The New Zealand edition for Version 2 of the standard SF-36 was used in the 2006/07 New Zealand Health Survey. This version improved the wording and layout, and reduced the number of responses in some questions, minimising ambiguity and bias and allowing for greater comparability between cultural adaptations and translations. Versions 1 and 2 of SF-36 can be directly compared (Ware et al 2000).

Mean SF-36 scores for adults

Men scored significantly higher than women on all SF-36 health domains except general health, adjusted for age (Figure 4.11). The differences were most pronounced for physical functioning and vitality.

Figure 4.11: Mean SF-36 scores for adults, by gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Note: Comparisons can be made between genders within domains, not between health domains.

SF-36 scores for adults, by age group

Mean SF-36 scores across the health domains generally declined with age, particularly in physical functioning, role physical and bodily pain, which are the domains most associated with physical health. General health, vitality, social functioning and role emotional were fairly stable throughout the age groups, but then declined in 75-year-olds and over (earlier for general health). Mental health mean scores improved with age, with a stabilising in the mean score from 55 years of age (Table 4.3).

Table 4.3: Mean SF-36 scores for adults, by age group (unadjusted)

Age group (years)	Physical functioning	Role physical	Bodily pain	General health	Vitality	Social functioning	Role emotional	Mental health
15–24	93.6 (92.8–94.4)	91.0 (90.1–92.0)	78.6 (77.2–80.0)	74.6 (73.5–75.7)	64.6 (63.6–65.7)	88.7 (87.6–89.7)	93.6 (92.8–94.4)	79.8 (79.0–80.5)
25–34	92.3 (91.4–93.1)	89.9 (88.9–90.9)	77.9 (76.5–79.3)	76.1 (75.0–77.2)	63.1 (62.2–63.9)	88.8 (87.6–89.9)	93.3 (92.5–94.1)	80.7 (80.0–81.5)
35–44	90.7 (89.9–91.5)	88.8 (87.8–89.8)	76.1 (74.9–77.2)	76.5 (75.6–77.4)	63.5 (62.5–64.5)	88.1 (87.2–89.0)	93.2 (92.6–93.8)	81.4 (80.7–82.0)
45–54	87.4 (86.3–88.5)	87.1 (85.8–88.4)	75.2 (73.6–76.7)	75.4 (74.2–76.6)	65.3 (64.2–66.3)	89.6 (88.5–90.6)	94.0 (93.0–94.9)	82.8 (81.9–83.7)
55–64	81.3 (80.1–82.6)	83.2 (81.9–84.5)	73.0 (71.6–74.5)	73.6 (72.5–74.6)	65.0 (64.1–66.0)	89.0 (88.0–90.1)	94.6 (93.9–95.4)	84.6 (83.9–85.2)
65–74	73.6 (71.9–75.2)	76.5 (74.6–78.5)	70.1 (68.2–71.9)	71.0 (69.5–72.4)	64.3 (63.0–65.6)	88.1 (86.7–89.5)	94.2 (93.3–95.1)	85.2 (84.5–86.0)
75 +	56.2 (54.2–58.1)	63.5 (61.0–66.0)	68.8 (67.1–70.5)	67.5 (65.9–69.0)	58.9 (57.5–60.3)	82.4 (80.6–84.2)	91.6 (90.3–93.0)	84.9 (84.0–85.9)

Source: 2006/07 New Zealand Health Survey

Note: Comparisons can be made between age groups within domains (ie, within columns).

Looking at gender within the above age groups, men consistently had higher scores than women in the domain of physical functioning, and mainly had higher scores in the domains of vitality (except in the 55–64 years range, where there was no difference between men and women) and mental health (except for the 25–34 and 45–54 years ranges, where there were no differences).

Men also had higher scores than women for the age groups in the following health domains:

- role physical for ages 25–34, 35–44 and 75 years and over
- bodily pain for ages 65–74 and 75 years and over
- social functioning for ages 15–24 years and 75 years and over
- role emotional for ages 15–24, 65–74 and 75 years and over.

Other age groups in the domains above showed no difference between men and women.

In the domain of general health, men aged 15–24 years scored higher than women of the same age, and women aged 45–54 years scored higher than men of the same age. There were no other differences between the genders by age group.

SF-36 scores for adults, by ethnic group

This section summarises the SF-36 mean score rate ratios by ethnic group and gender. All results have been age standardised.

European/Other men and women had no differences in mean scores compared to men and women in the total population for all domains, except vitality, where European/Other men scored slightly lower than all men.

Māori men and women had lower mean scores than men and women in the total population on all SF-36 domains except vitality, where there were no differences for either gender, and mental health, where Māori men showed no difference compared to all men but Māori women were lower than all women.

Pacific men and women had lower mean scores than men and women in the total population on the two domains related to limitations in daily activities because of physical and emotional health problems. Pacific women also had lower mean scores than all women on physical functioning, general health and social functioning, whereas Pacific men had no difference in these domains compared to all men.

Asian men and women had a significantly higher mean score than men and women in the total population for bodily pain and vitality, with no other differences for this ethnic group compared to the total population.

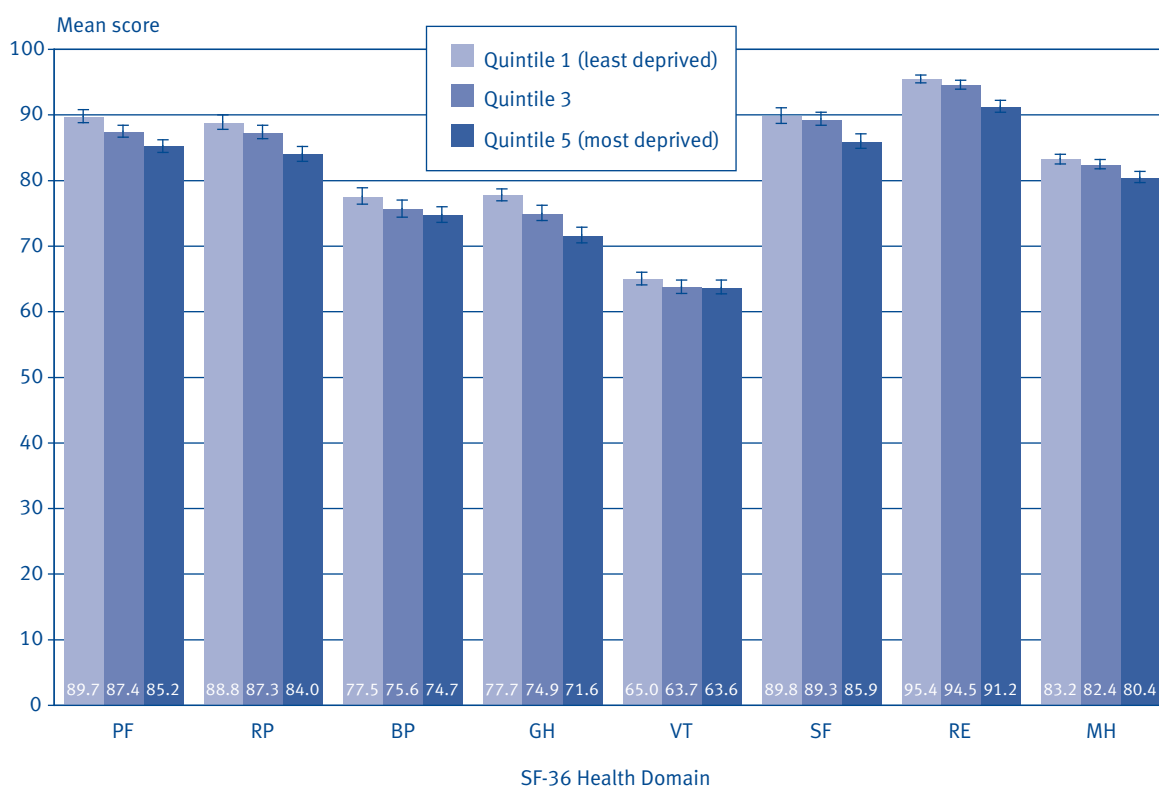
SF-36 scores, by neighbourhood deprivation

The same patterns were evident in SF-36 mean scores for both men and women by NZDep2006 quintile, so the analysis here combines data for men and women.

In all SF-36 domains, mean scores decrease as neighbourhood deprivation increases, with the exception of vitality, where there is no significant difference by NZDep2006 quintile.

In the SF-36 domains more closely related to physical health (physical functioning, role physical, bodily pain and general health), a steady gradient of decreasing score with increasing deprivation is evident, whereas in the domains more closely related to mental health (social functioning, role emotional and mental health) there is little difference, if any, between NZDep2006 quintiles 1 and 3, and then a significant decrease between quintile 3 and quintile 5 (Figure 4.12).

Figure 4.12: SF-36 mean scores for adults, by NZDep2006 quintile (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Note: Comparisons can be made between NZDep2006 quintiles within domains, but not between domains.

Time trends in SF-36 scores for adults

This section summarises the time trends in SF-36 mean scores for adults by gender and ethnic group. All results have been age standardised, and differences are only mentioned when they are statistically significant.

For women there was no change in the general health and vitality scores between 1996/97 and 2006/07.

For men, there was an increase in SF-36 scores from 1996/97 to 2006/07 in the role physical and role emotional domains. There was a decrease in the bodily pain score between 1996/97 and 2006/07 and within the vitality domain between 2002/03 and 2006/07. Between 1996/97 and 2002/03 there were increases in the physical functioning, general health, social functioning, and mental health domains, followed by decreases between 2002/03 and 2006/07.

For women, there was an increase in the role emotional score between 1996/97 and 2006/07 and in the role physical score between 2002/03 and 2006/07. Between 1996/97 and 2002/03 there were increases in the physical and social functioning scores, followed by decreases between 2002/03 and 2006/07. There was also an increase in bodily pain score between 2002/03 and 2006/07. Between 1996/97 and 2002/03 there was an increase in the mental health score but no change between 2002/03 and 2006/07.

For Māori the same trends as above can also be seen across the SF-36 domains.

Chronic pain

Introduction

Chronic pain is pain which lasts for longer than the usual time of healing. It is often defined as lasting for more than six months (Merskey and Bogduk 1994). Chronic pain is not usually relieved by simple pain remedies and can be present almost every day, with varying intensity. Chronic pain can be debilitating and affect a person's ability to carry out their usual activities. Types of chronic pain include back pain, headaches, arthritis, and neuropathic pain which results from injury to nerves.

What were the survey questions?

In the 2006/07 New Zealand Health Survey, adult participants were asked if they experience chronic pain; that is, pain that has lasted, or is expected to last, six months or more. If so, they were asked questions about the location, cause and treatment of their chronic pain.

The cause of chronic pain is not reported here due to complexity of analysis. The survey did not ask directly how chronic pain affects participants' usual activities, but this could be analysed by looking at correlations between chronic pain and SF-36 information (not reported here).

Prevalence of chronic pain for adults

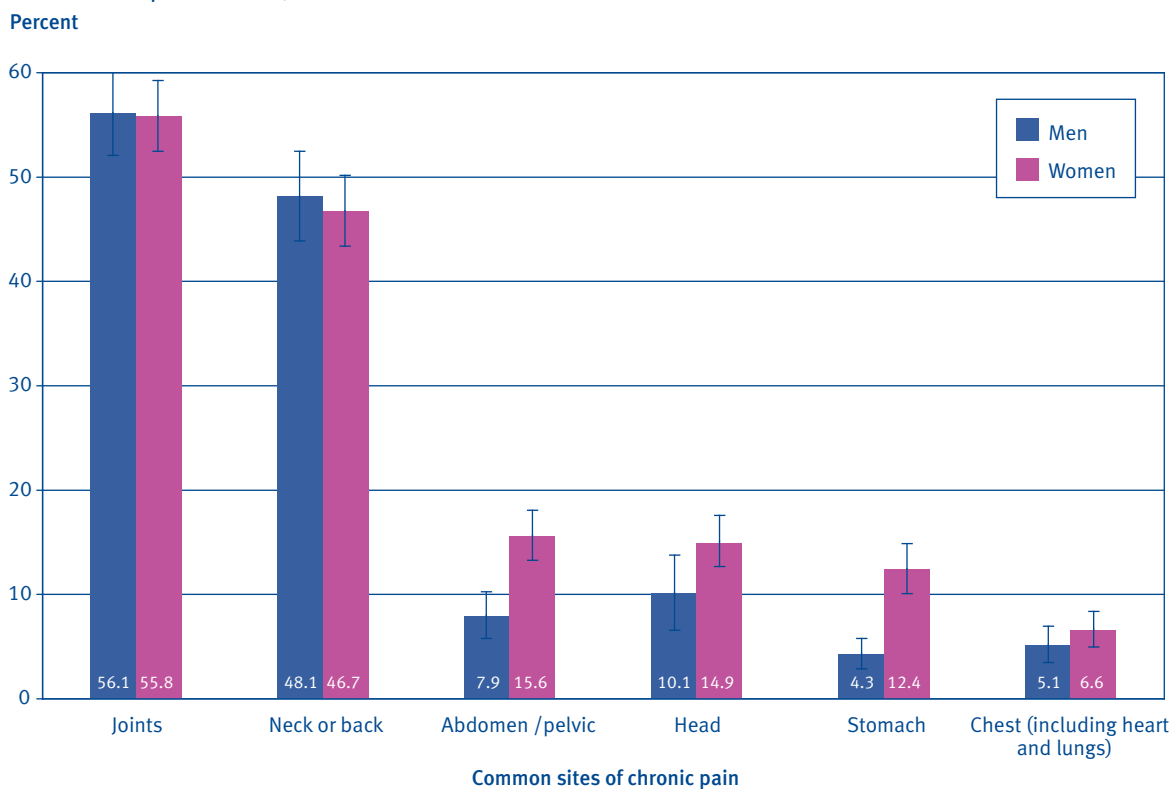
One in six adults (16.9%, 16.0–17.8) reported that they experienced chronic pain, which equates to 528,100 adults. When adjusted for age there was no difference between the prevalence of chronic pain in men (15.2%, 14.0–16.3) and women (16.1%, 14.9–17.2).

Chronic pain sufferers reported that the part(s) of their body affected by pain were:

- joints (57.6%, 55.0–60.3)
- neck or back (47.5%, 45.1–49.8)
- abdomen/pelvic region (12.5%, 10.8–14.3)
- head (12.0%, 10.0–14.0)
- chest, including heart and lungs (6.1%, 4.9–7.3)
- stomach (8.3%, 6.9–9.6)
- face/jaw (4.5%, 3.2–5.9)
- teeth/gums (1.7%, 1.1–2.3)
- other (1.2%, 0.7–1.9).

Women were more likely than men to be affected by chronic pain in the abdomen / pelvic region, head and stomach (p-values < 0.05) (Figure 4.13).

Figure 4.13: Six most common sites of chronic pain for adults, by gender (age standardised prevalence)

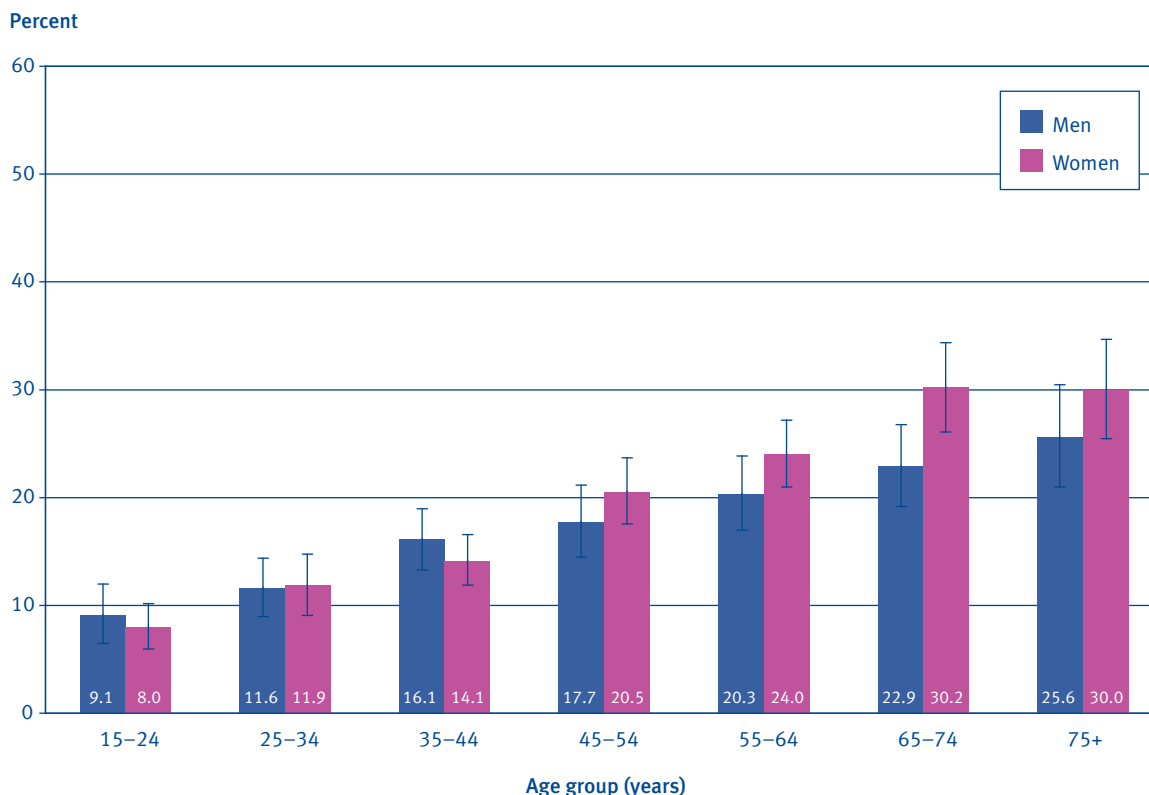


Source: 2006/07 New Zealand Health Survey

Prevalence of chronic pain, by age group and gender

Chronic pain was present in all age groups, but was more prevalent as age increased. Nearly one in three adults aged 65 years or over reported having chronic pain (Figure 4.14).

Figure 4.14: Chronic pain for adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Prevalence of chronic pain, by ethnic group

Table 4.4 gives an indication of the burden of chronic pain in New Zealand's main ethnic population groups.

Table 4.4: Chronic pain for adults, by ethnic group (unadjusted)

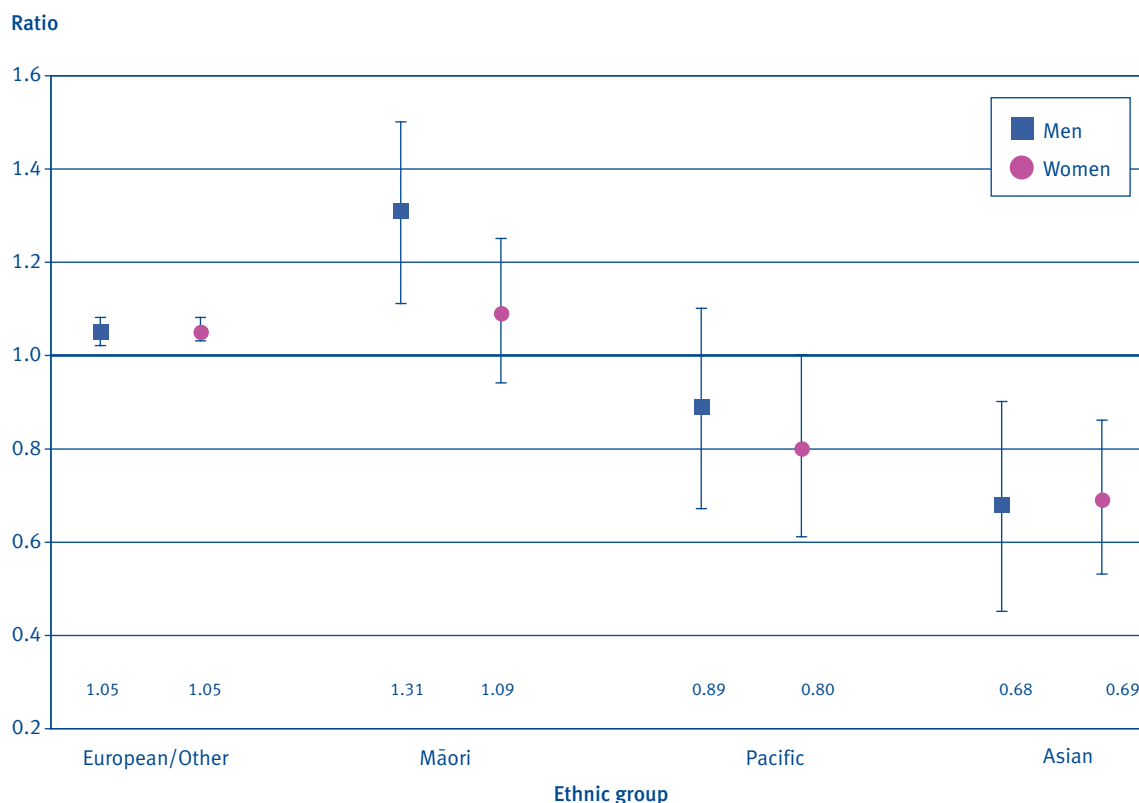
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	18.1 (17.0–19.1)	461000
Māori	17.3 (15.3–19.2)	61400
Pacific	12.0 (10.0–14.0)	19800
Asian	9.6 (7.8–11.3)	26700

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

When adjusted for age, Māori men had a significantly increased prevalence of chronic pain compared to men in the total population. Pacific women, Asian men and Asian women were significantly less likely to report chronic pain (Figure 4.15).

Figure 4.15: Chronic pain for adults, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Prevalence of chronic pain, by neighbourhood deprivation

Men living in the most deprived neighbourhoods (NZDep2006 quintile 5: 19.3%, 16.2–22.5) were more likely than men living in the least deprived neighbourhoods (quintile 1: 13.0%, 10.3–15.6) to report chronic pain, standardised for age (p-value < 0.05). There were no differences for women.

Treatment for chronic pain

A small number of chronic pain sufferers (3.2%, 2.3–4.2) used injections to treat their pain. Half of all adults with chronic pain (51.0%, 48.6–53.5) used oral medication to treat their pain. Two out of five adults with chronic pain (40.8%, 38.3–43.3) did not report using any form of treatment for their pain.

Psychological distress for adults (K10)

Introduction

The Kessler 10-item scale (K10) is a set of questions used internationally to screen populations for non-specific psychological distress and serious mental illness (Kessler et al 2003).

Many studies have found that the higher the K10 score, the more likely a respondent has symptoms that meet the criteria for any mental disorder using the Diagnostic and Statistical Manual of Mental Disorders criteria (American Psychiatric Association 1994), especially anxiety and mood disorders (Furukawa et al 2003; Kessler et al 2002). There is a strong association between a K10 score of 12 or more and having a mental disorder both for the previous month and the previous 12 months (Andrews and Slade 2001).

What were the survey questions?

In the 2006/07 New Zealand Health Survey, adult participants were asked to recall how often in the past four weeks they felt:

1. tired out for no good reason
2. nervous
3. so nervous that nothing could calm them down
4. hopeless
5. restless or fidgety
6. so restless they could not sit still
7. depressed
8. so depressed that nothing could cheer them up
9. worthless
10. that everything was an effort.

Responses are based on a five-point scale from 'None of the time' to 'All of the time', and scored from 0 to 4.

In keeping with other studies (M Oakley Browne, personal communication, 25 March 2008), participants were said to have the following likelihood of an anxiety or depressive disorder by categorising the K10 scores as follows:

- no or low probability (K10 score of 0–5)
- moderate probability (K10 score of 6–11)
- high probability (K10 score of 12–19)
- very high probability (K10 score of 20–40).

Chapter 3 of this report contains results on the prevalence of doctor-diagnosed mood and anxiety disorders for adults.

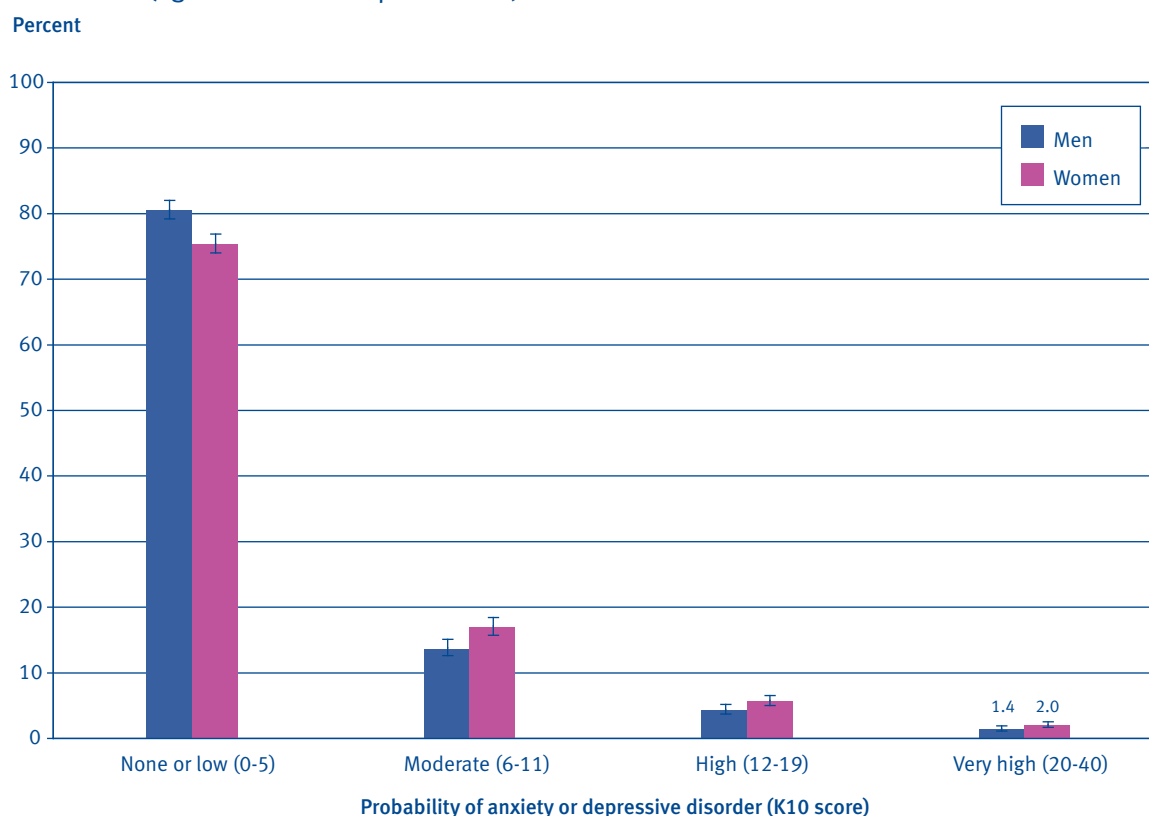
Psychological distress for adults

Most adults were found to have no or very low psychological distress, and therefore to have no or a low probability of having an anxiety or depressive disorder (78.7% 77.8–79.7).

One in seven adults (14.7%, 14.0–15.5), or an estimated 459,400 people, had a moderate probability of an anxiety or depressive disorder, and one in 15 adults (6.6%, 6.0–7.1), or 204,600 adults, had a high or very high probability of an anxiety or depressive disorder.

Women had an increased prevalence of moderate, high and very high probability of an anxiety or depressive disorder compared to men, when adjusted for age (Figure 4.16).

Figure 4.16: Probability of anxiety or depressive disorder (K10 scores) for adults, by gender (age standardised prevalence)



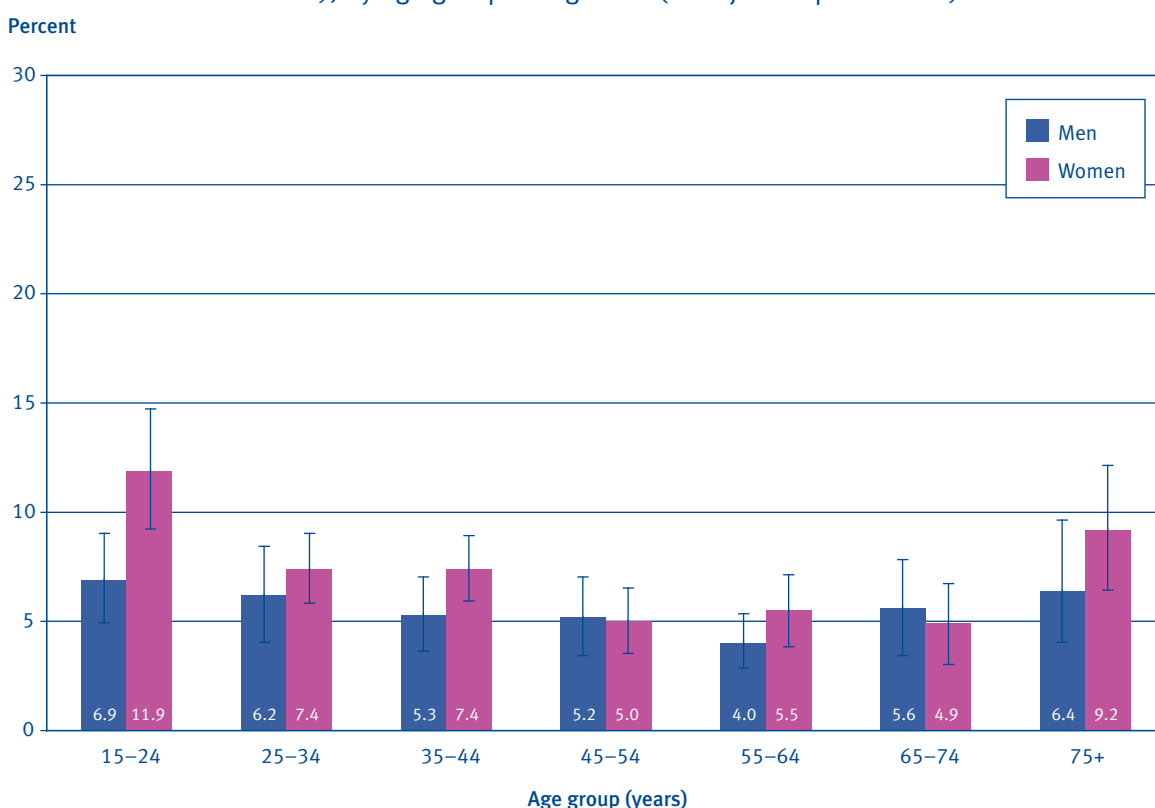
Source: 2006/07 New Zealand Health Survey

The following analyses combine the last two categories of high and very high probability of an anxiety or depressive disorder.

Psychological distress, by age and gender

Psychological distress occurred in all age groups, but the prevalence of high or very high probability of an anxiety or depressive disorder was highest in women aged 15–24 years, with an increase in prevalence again when women were aged over 75 years. In men, the prevalence of high or very high probability of an anxiety or depressive disorder remained stable across the age groups with no significant differences by age (Figure 4.17).

Figure 4.17: High or very high probability of anxiety or depressive disorder for adults (K10 score of 12 or more), by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Psychological distress, by ethnic group

Table 4.5 gives an indication of the burden of psychological distress in New Zealand's main ethnic population groups.

Table 4.5: High or very high probability of anxiety or depressive disorder for adults (K10 score of 12 or more), by ethnic group (unadjusted)

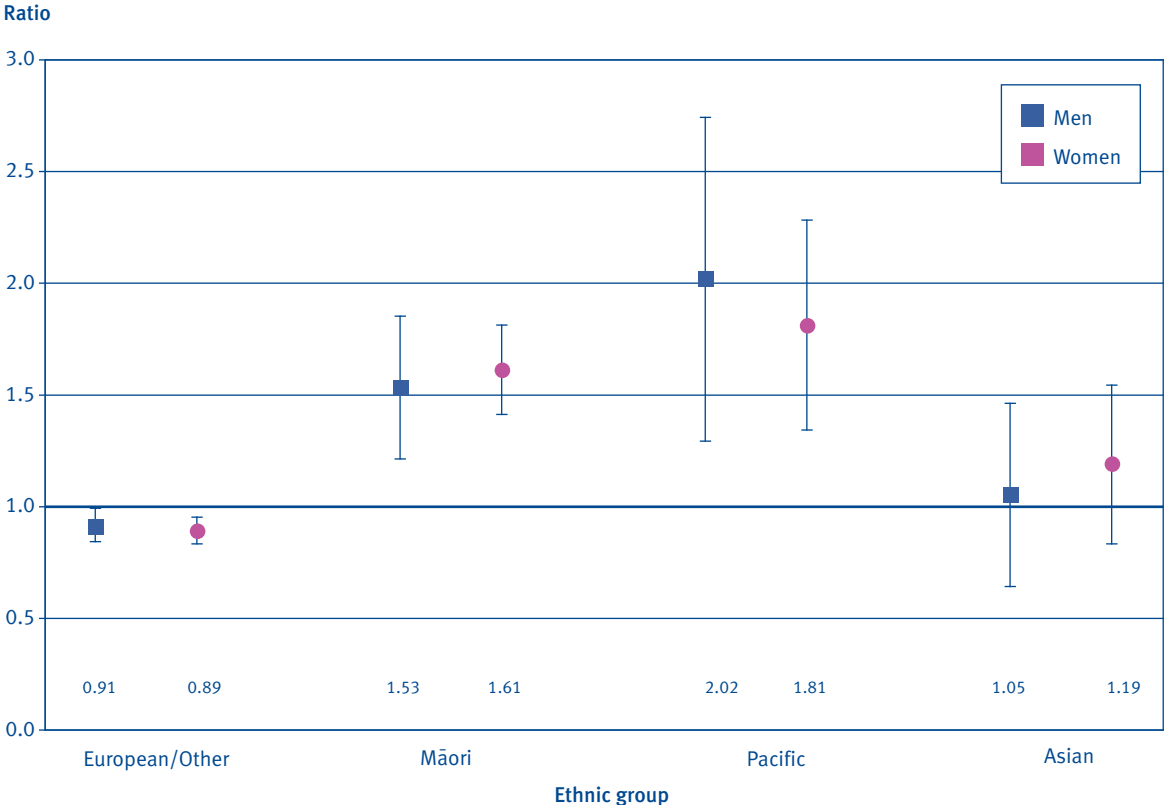
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	5.9 (5.2–6.5)	149300
Māori	10.9 (9.6–12.3)	38800
Pacific	13.1 (10.5–15.7)	21500
Asian	7.4 (5.7–9.2)	20800

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

Adjusted for age, Māori men and women and Pacific men and women had 1.5 to 2 times the prevalence of high or very high probability of an anxiety or depressive disorder compared to men and women in the total population (Figure 4.18). European men and women were slightly less likely than men and women in the total population to have a high or very high probability of an anxiety or depressive disorder.

Figure 4.18: High or very high probability of anxiety or depressive disorder (K10 score of 12 or more) (age standardised rate ratio)



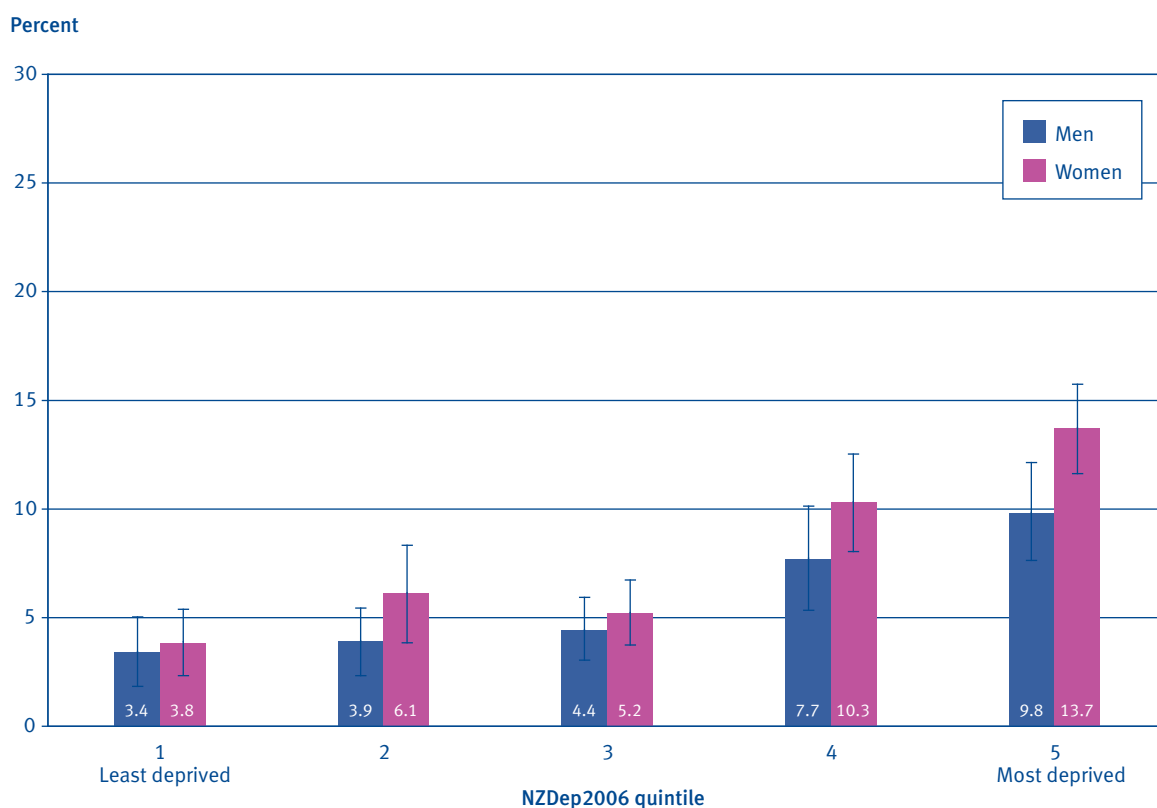
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Psychological distress, by neighbourhood deprivation

Adjusted for age, women living in the most deprived areas (NZDep2006 quintile 5) were more than three times as likely to have a high or very high probability of an anxiety or depressive disorder compared to women living in the least deprived areas (NZDep2006 quintile 1) (Figure 4.19). Similarly, men living in NZDep2006 quintile 5 areas were more than twice as likely to have a high or very high probability of an anxiety or depressive disorder compared to men living in the least deprived neighbourhoods (NZDep2006 quintile 1) adjusted for age (Figure 4.19).

Figure 4.19: High or very high probability of anxiety or depressive disorder for adults (K10 score of 12 or more), by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Psychological distress, by DHB area

There was little variation by DHB area in the level of psychological distress for adults. Waitemata DHB area was the only area to show a difference with the national rate, with a smaller proportion of the population in this DHB area having a high or very high probability of an anxiety or depressive disorder (Table 4.6).

Table 4.6: High or very high probability of anxiety or depressive disorder for adults (K10 score of 12 or more), by DHB area (unadjusted)

DHB area	Prevalence (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	6.9 (5.7–8.2)	26100
Waitemata	4.8 (3.4–6.2) –	18100
Auckland	6.9 (4.9–8.8)	22100
Counties Manukau	7.7 (5.8–9.6)	24800
Waikato	6.9 (5.4–8.3)	17700
Bay of Plenty / Taranaki / MidCentral	6.9 (5.4–8.4)	24200
Wairarapa / Hutt Valley / Capital and Coast	7.2 (5.0–9.4)	24900
Canterbury	5.7 (4.0–7.3)	21100
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	6.5 (4.8–8.2)	25600
New Zealand total	6.6 (6.0–7.1)	204600

Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Family cohesion

Introduction

Family is an important social institution, critical to the health and wellbeing of individuals, especially children, who depend on their family for most of their needs for physical and emotional development (Ministry of Social Development 2004).

The health or wellbeing of families is a complex concept to measure, especially in a survey where only one family member is interviewed. The New Zealand Health Survey used an internationally validated question from the Child Health Questionnaire Parent Form (CHQ-PF28) as a proxy for family wellbeing, which captured one parent's opinion of how well their family members interact. This is often called 'family cohesion', and is both a critical element in the daily functioning of a family and an important asset for families to have in order to 'rebound' from stresses and in times of crisis (Kalil 2003). Family cohesion is not the sole determinant of family wellbeing, but simply one dimension of many that has an impact on the way a family functions (Olson 1993).

What were the survey questions?

In the 2006/07 New Zealand Health Survey the primary caregiver of each child participant aged from birth to 14 years was asked to rate their family's ability to get along with one another. A definition of family as the immediate family members that live in the same household was given to all participants.

While the definition of family in the question does not match the description many New Zealanders have of their family – which may include supporting friends and wider family members who do not live in the household – this definition allowed for consistency across family types and cultures within New Zealand.

Analyses presented here have not been adjusted for the number of people in the family, household overcrowding, or other socio-demographic variables about the family which may impact on cohesion. As with other analyses in this report, these are simply the first descriptive findings by age and ethnic group of the child, and neighbourhood deprivation of the household. It is expected that further research will be undertaken on these data to explore associations with other variables of interest.

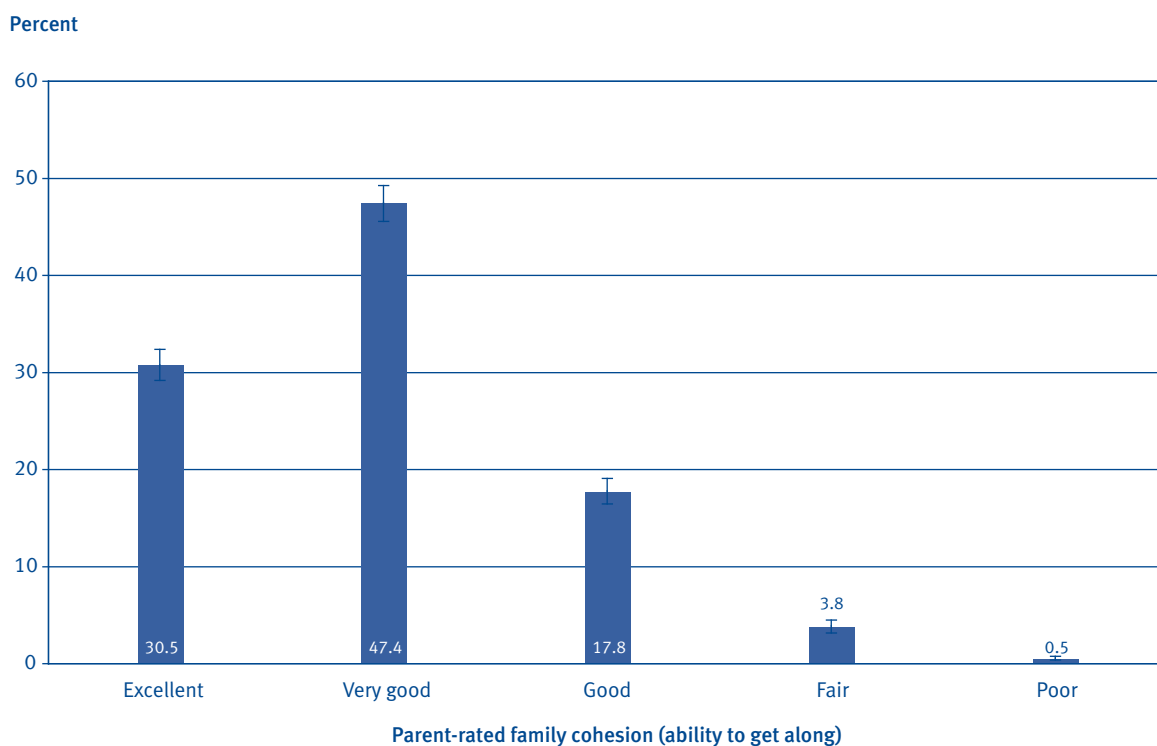
There were no differences in family cohesion by gender of the child, so the analyses in this section combine data for boys and girls.

Cohesion of families with children

Most parents of children aged from birth to 14 years reported that their family got along very well (Figure 4.20). Four out of five parents (77.9%, 76.4–79.3) rated their family’s ability to get along with one another as ‘excellent’ or ‘very good’. A further 17.8% (16.5–19.1) rated their family’s ability to get along as ‘good’.

One in twenty-three parents (4.3%, 3.6–5.0) rated their family’s ability to get along as ‘fair’ or ‘poor’, which equates to 37,100 children living in families with low levels of cohesion.

Figure 4.20: Parent rating of family’s ability to get along (unadjusted prevalence)



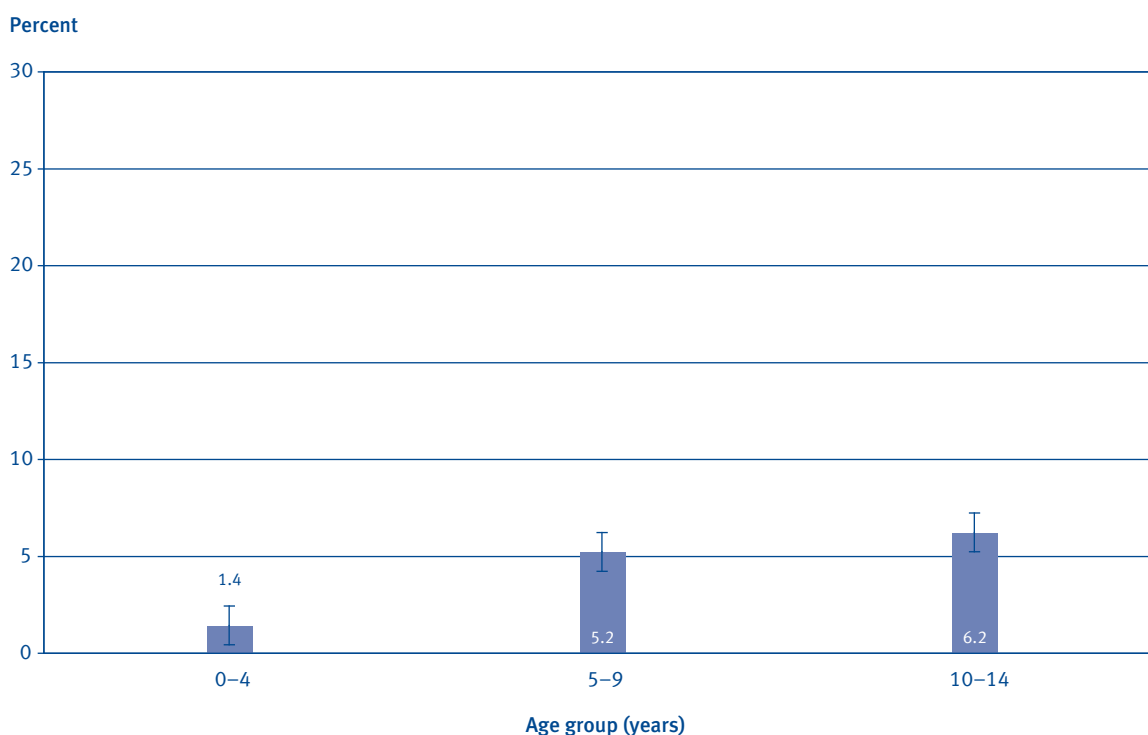
Source: 2006/07 New Zealand Health Survey

The rest of this section focuses on children living in families with ‘fair’ or ‘poor’ parent-rated family cohesion.

Cohesion of families with children, by age of child

Parents of children aged from birth to 4 years were significantly less likely than parents of children aged from 5–14 years to rate their family’s ability to get along as fair or poor (p-value < 0.05). One in 16 parents of 10–14 year olds reported low family cohesion (Figure 4.21).

Figure 4.21: Parent-rated family’s ability to get along as fair or poor, by age of child (unadjusted)



Source: 2006/07 New Zealand Health Survey

Cohesion of families with children, by ethnic group of child

The ethnic group analyses in this section do not represent the family unit, that is, these analyses do not describe, for example, ‘Pacific families’. There is currently no standard method for analysing the ethnicity of families in New Zealand (Callister et al. 2007b).

Table 4.7 presents an indication of the proportion and number of children in New Zealand’s main ethnic population groups who live in families with low cohesion (as reported by a parent).

Table 4.7: Children living in families where parent rated family’s ability to get along as fair or poor, by ethnic group of the child (unadjusted)

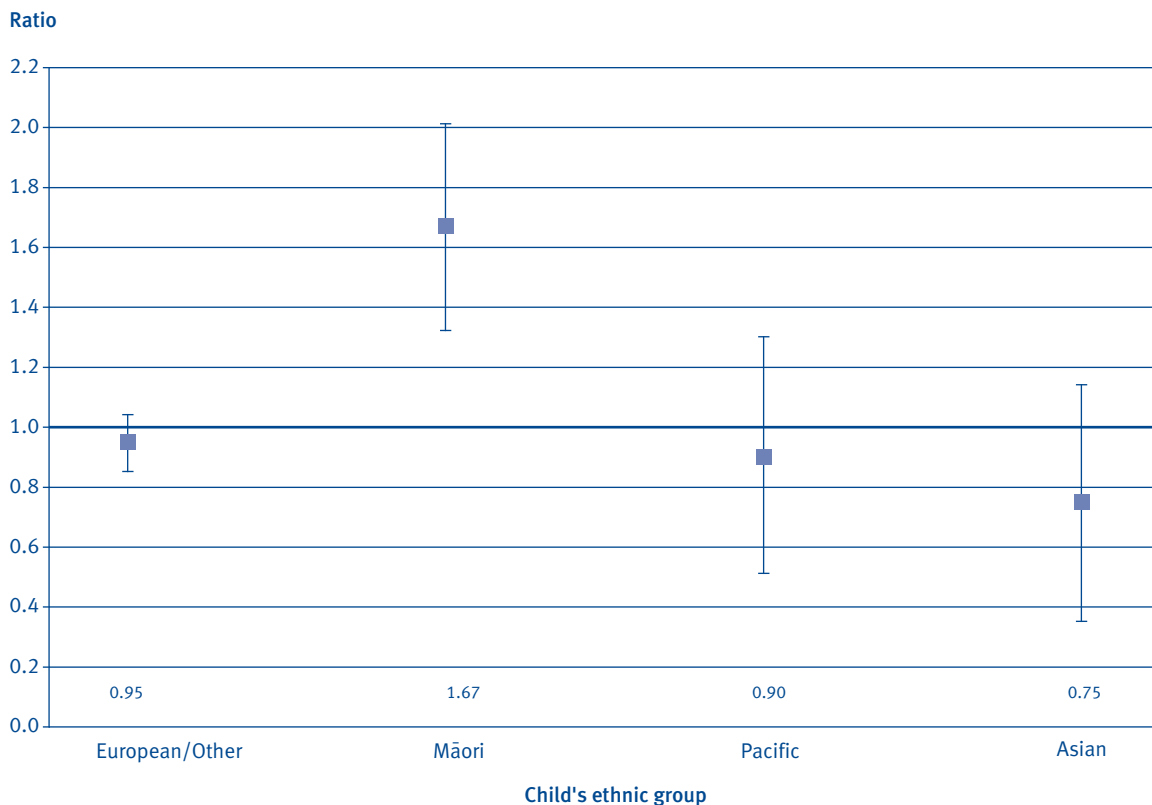
Ethnic group	Prevalence (95% CI)	Number of children
European/ Other	4.1 (3.3 - 5.0)	26700
Māori	7.1 (5.7 - 8.6)	13900
Pacific	3.8 (2.0 - 5.5)	3800
Asian	3.2 (1.7 - 5.6)	2500

Source: 2006/07 New Zealand Health Survey

Note: Total response ethnic group has been used. Ethnic groups cannot be compared using the crude rates presented in this table.

Adjusted for the age of the child, parents of Māori children were 60 percent more likely to have rated their family’s ability to get along as fair or poor (Figure 4.22). There were no other differences by ethnic group of the child.

Figure 4.22: Parent-rated family’s ability to get along as fair or poor, by ethnic group of the child (age standardised)



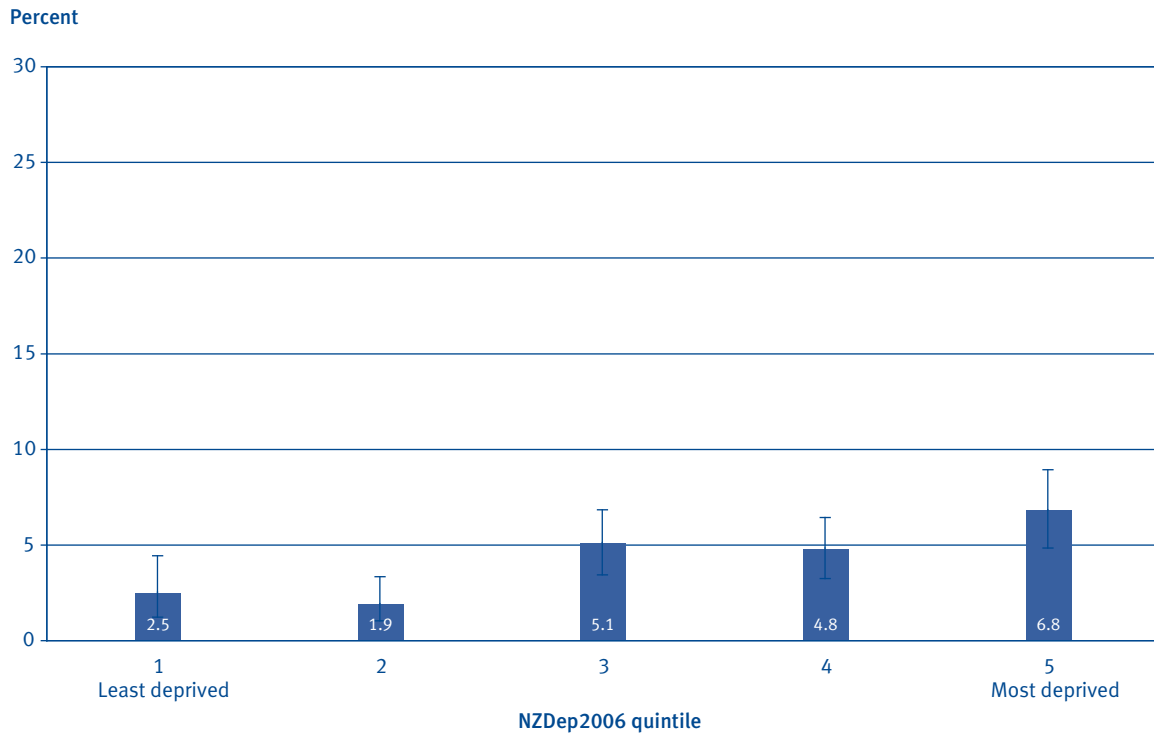
Source: 2006/07 New Zealand Health Survey

Notes: Reference group (bold line, rate ratio=1.0) is the total child population aged 0-14 years. Total response ethnic groups have been used. Ethnic groups cannot be compared with each other; compare only to the reference group. Age-standardised to WHO world population.

Cohesion of families with children, by neighbourhood deprivation

A small number of families in all NZDep2006 quintiles reported low family cohesion; however, families in the most deprived areas (quintile 5) were more than twice as likely as families living in the least deprived areas (quintile 1) to report that their ability to get along was only 'fair' or 'poor' (Figure 4.23).

Figure 4.23: Parent-rated family's ability to get along as fair or poor, by NZDep2006 quintile (age standardised prevalence by age of child)



Source: 2006/07 New Zealand Health Survey

Chapter 5: Primary Health Care Providers

Introduction

‘Primary health care’ refers to the professional health care that people receive in the community and is the first point of contact with the health care system. A strong primary health care system is central to improving the health of all New Zealanders and reducing health inequalities between different groups.

The introduction of the Primary Health Care Strategy in 2001 (Minister of Health 2001), followed by the establishment of Primary Health Organisations (PHOs), set a new direction and vision for primary health care services in New Zealand. Although many primary health care services are provided by general practitioners (GPs), the Primary Health Care Strategy places a greater emphasis on further developing the roles of a broader multidisciplinary primary health care team: GPs, nurses, pharmacists, and allied health professionals (including physiotherapists, dietitians, psychologists, counsellors, occupational therapists and community health workers).

PHOs are the local structures which deliver and co-ordinate the wide range of services provided in primary health care by health professionals. Between July 2002 and July 2007, the government provided new funding to PHOs in order to reduce the cost of visits to GPs and prescriptions. This funding was available for all New Zealanders enrolled in PHOs from 1 July 2007.

The 2006/07 New Zealand Health Survey included a range of questions designed to monitor the primary health care system in New Zealand. Three components of primary health care were measured in the survey, based on Starfield’s framework for monitoring primary health care:

- access
- comprehensiveness
- continuity and co-ordination (Starfield 1998).

Participants’ experience of primary health care in the previous 12 months was also measured by asking whether they had been treated with respect and dignity, listened to carefully, and had their health care discussed as much as they wanted.

The term ‘primary health care provider’ is used in this report to refer to the GP clinic, student health clinic, 24-hour accident and medical centre or nurse clinic that the survey participant (or the parents of child participants) reported they go to *first* when feeling sick or injured.

Appendices 5 and 6 describe how to access data presented in this chapter, as well as additional results available online.

Access to primary health care providers

The Primary Health Care Strategy aims to ensure that all New Zealanders have access to primary health care providers when they need them by reducing barriers such as cost and location and ensuring appropriateness of the service for the client.

This section reports findings from the 2006/07 New Zealand Health Survey that can be used to examine issues relating to access to primary health care providers in New Zealand.

What were the survey questions?

In the 2006/07 New Zealand Health Survey, adult participants and parents of child participants were asked whether they had a health practitioner or service that they usually go to *first* when they are feeling unwell or are injured.

If adult participants answered yes to this question, they were also asked about the type of provider it was (e.g. a GP clinic), which health care workers they had seen, their use of services at that place over the previous 12 months, and whether they were able to see this primary health care provider when they needed to.

Only participants who had a GP clinic, student health clinic, 24-hour accident and medical centre or nurse clinic they go to first when feeling unwell or injured have been included in the analyses.

Further information on the use of and access to GPs and practice nurses specifically, as well as oral health care workers, is included in Chapter 6.

Has a primary health care provider

Nearly all children (97.4%, 96.8–98.0) and nine out of ten adults (93.3%, 92.8–93.8) had a primary health care provider (a GP clinic, student health clinic, 24-hour accident and medical centre or nurse clinic) they go to first when feeling unwell or injured.

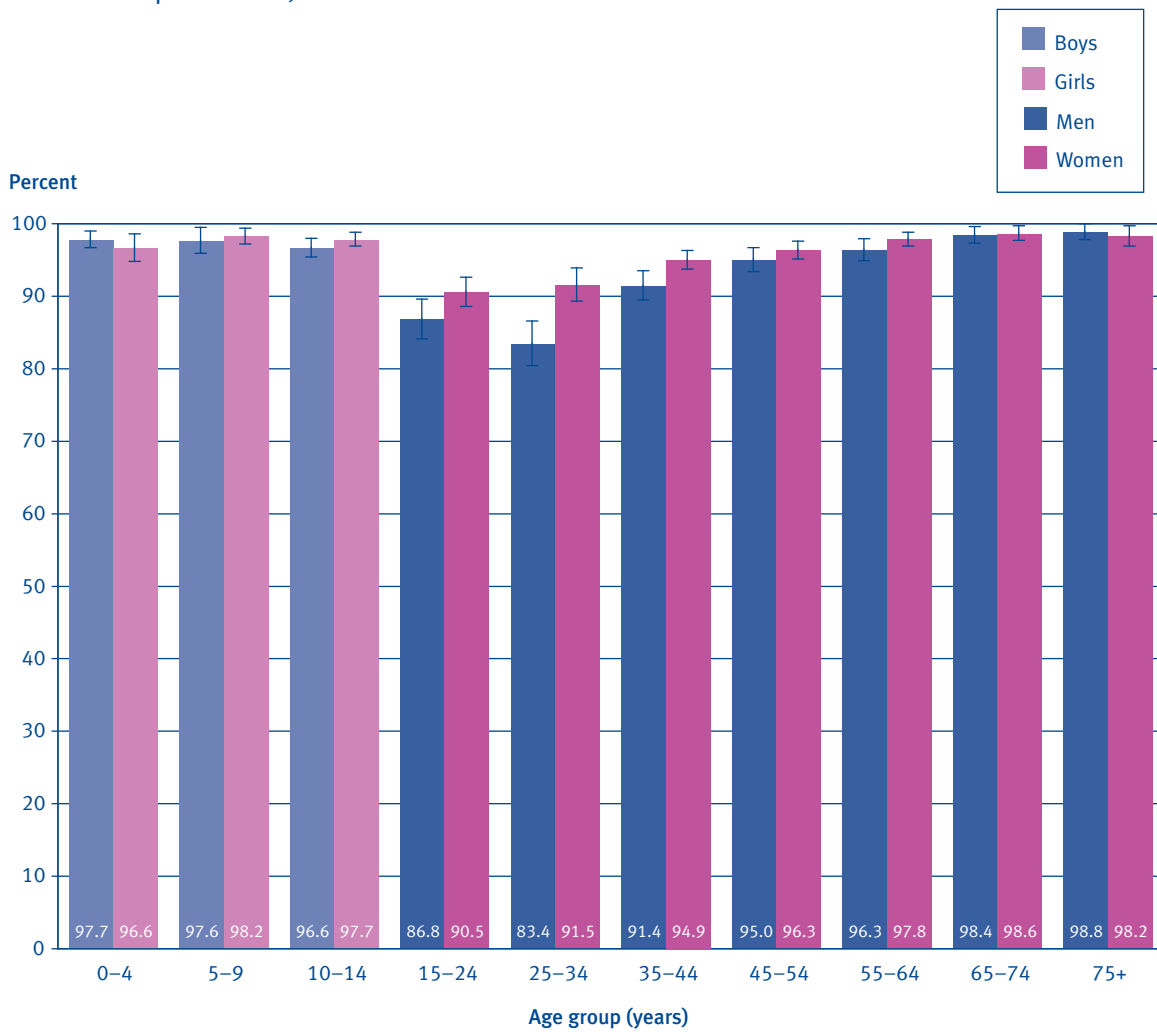
After adjusting for age, boys and girls were equally likely to have a primary health care provider they go to first when feeling unwell or injured. Women (94.1%, 93.3–94.8) were significantly more likely than men (90.5%, 89.6–91.5) to have a primary health care provider they go to first when feeling unwell or injured.

For almost all children (99.0%, 98.6–99.3) and adults (97.8%, 97.2–98.3) the primary health care provider they go to first is a GP clinic.

Has a primary health care provider, by age group

Children and adults aged over 45 years were significantly more likely than adults aged 15–44 years to have a primary health care provider they go to first when feeling unwell or injured (Figure 5.1). Women aged 25–44 years were significantly more likely than men of the same age to have a primary health care provider they go to first.

Figure 5.1: Has a primary health care provider, by age group and gender (unadjusted prevalence)

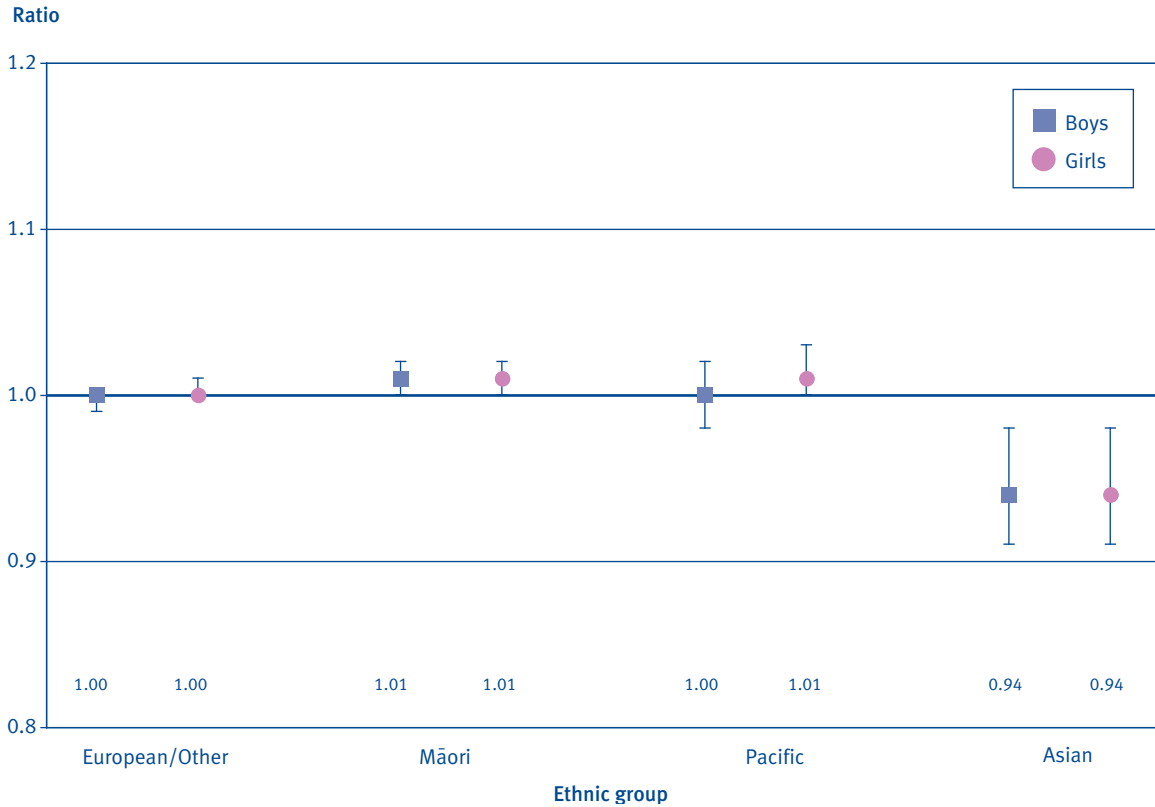


Source: 2006/07 New Zealand Health Survey

Has a primary health care provider, by ethnic group

After adjusting for age, Asian boys and girls were significantly less likely than boys and girls in the total population to have a primary health care provider they go to first (Figure 5.2).

Figure 5.2: Children who have a primary health care provider, by ethnic group and gender (age standardised rate ratio)

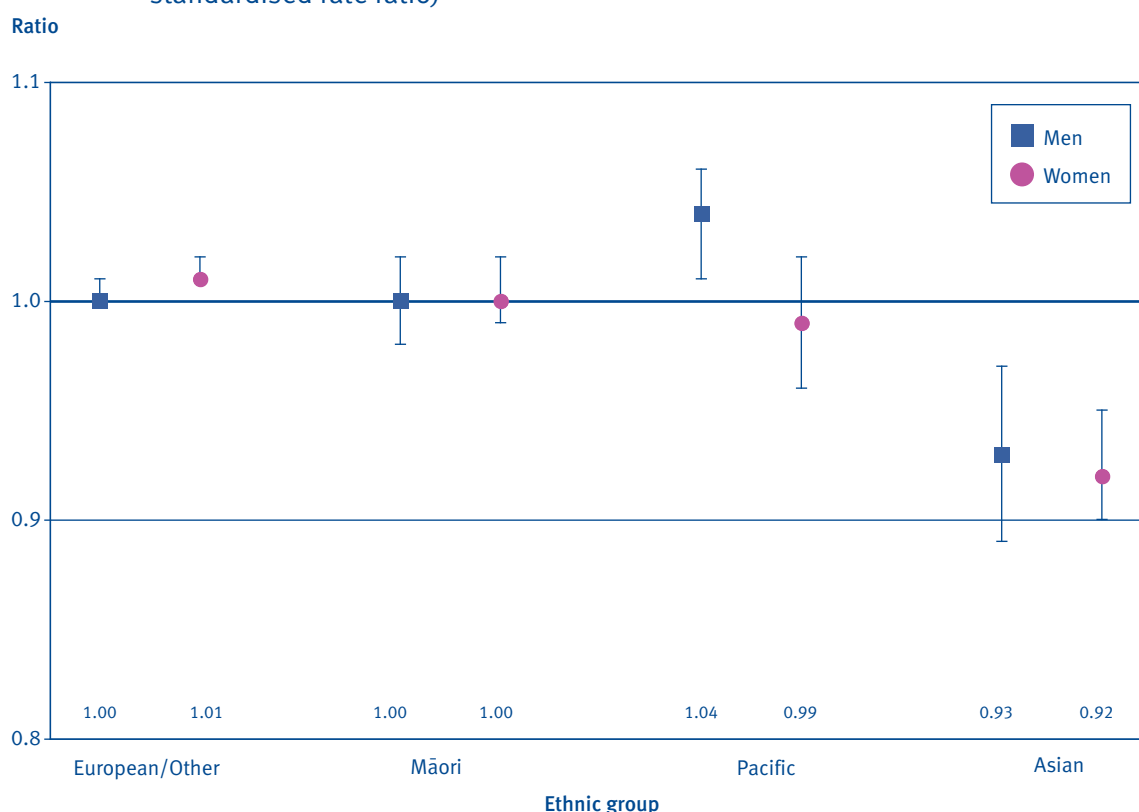


Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged from birth to 14 years. Total response standard output for ethnic groups has been used.

Asian men and women were significantly less likely than men and women in the total population to have a primary health care provider they go to first when they are feeling sick or injured (Figure 5.3).

Figure 5.3: Adults who have a primary health care provider, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Has a primary health care provider, by neighbourhood deprivation

Women living in neighbourhoods of high deprivation (NZDep 2006 quintile 5: 92.1%, 90.2–94.0) were slightly less likely to have a primary health care provider than women living in neighbourhoods of low deprivation (NZ Dep 2006 quintile 1: 95.8%, 94.1–97.5). This pattern was evident, but not statistically significant, for men as well.

Has a primary health care provider, by DHB area

The proportion of children who had a primary health care provider they go to first was significantly higher in the Bay of Plenty / Taranaki / MidCentral DHB area compared to the national rate, while this proportion was significantly lower in the Waikato DHB area (Table 5.1).

The proportion of adults who had a primary health care provider they go to first was significantly higher than the national rate in the following DHB areas:

- Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui
- Counties Manukau
- Bay of Plenty / Taranaki / MidCentral
- Nelson Marlborough / West Coast / South Canterbury / Otago / Southland.

The proportion of adults who had a primary health care provider they go to first was significantly lower in the Auckland and Waikato DHB areas (Table 5.1).

Table 5.1: Children and adults who have a primary health care provider, by DHB area (unadjusted)

DHB area	Prevalence in children (95% CI)	Number of children	Prevalence in adults (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	98.2 (96.5–99.2)	113300	96.6 (95.8–97.5) +	363000
Waitemata	97.1 (95.0–98.5)	101100	92.8 (91.0–94.5)	351400
Auckland	96.1 (92.8–98.1)	71800	91.1 (89.0–93.2) –	293900
Counties Manukau	96.9 (94.9–98.3)	107700	95.3 (93.9–96.6) +	307100
Waikato	95.4 (93.4–97.4) –	72700	90.9 (88.7–93.2) –	235800
Bay of Plenty / Taranaki / MidCentral	98.8 (97.8–99.5) +	97300	95.7 (94.4–97.0) +	336300
Wairarapa / Hutt Valley / Capital and Coast	98.5 (96.5–99.5)	88100	93.5 (91.7–95.3)	324100
Canterbury	96.6 (93.2–98.6)	87700	92.1 (90.0–94.1)	341600
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	98.4 (95.0–99.7)	92500	95.5 (93.9–97.1) +	375300
New Zealand total	97.4 (96.8–98.0)	832200	93.8 (93.3–94.3)	2928500

Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

The remainder of this section only includes results for adults, as only the adult questionnaire included extra questions on primary health care.

Reason for choosing primary health care provider

The most common reasons given by adults for choosing their primary health care provider were:

- they were the closest health care provider (46.6%, 45.2–48.0)
- I was referred to them by a friend or relative (28.8%, 27.5–30.1)
- they were willing to spend more time discussing my health (8.5%, 7.8–9.3)
- it was cheaper than going to another health care provider (6.0%, 5.4–6.6).
- I felt more comfortable talking to someone who understands my culture (5.7%, 5.1–6.2).

Use of primary health care provider in the previous 12 months

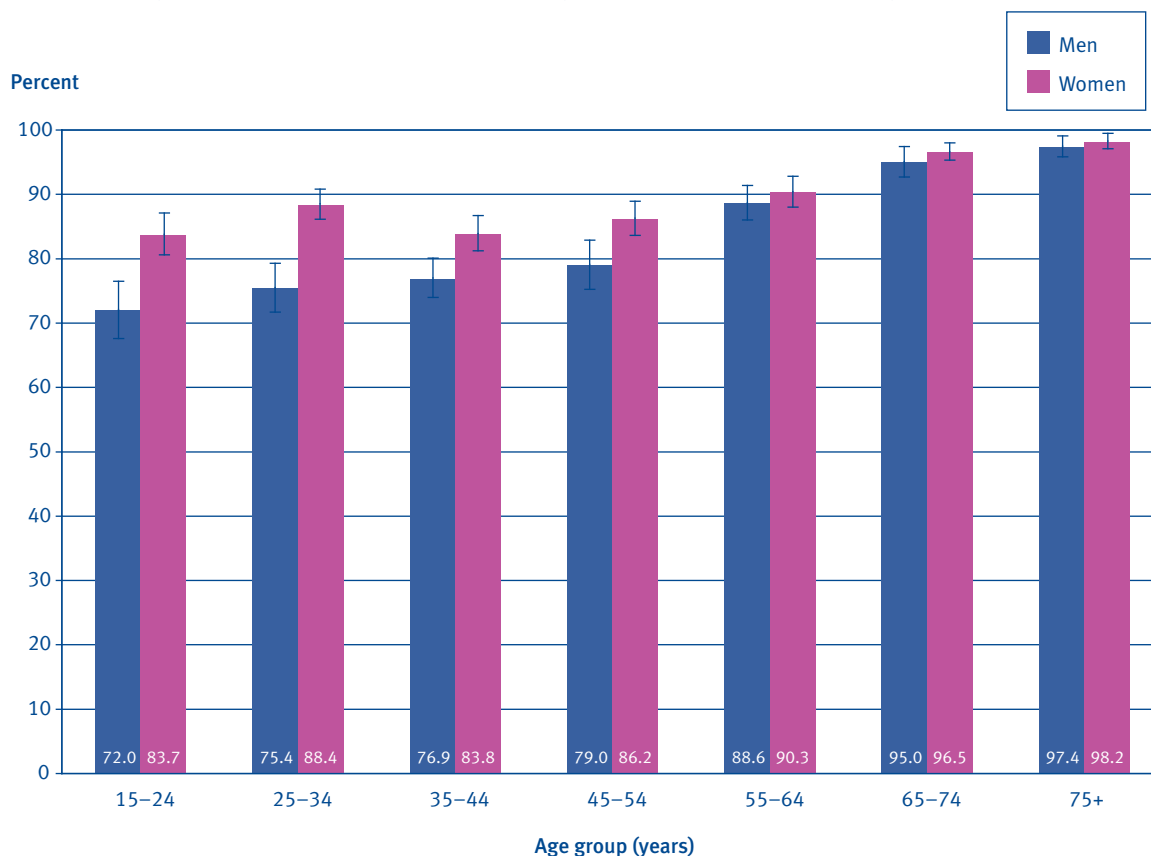
Five out of six adults (84.7%, 83.7–85.6) saw a health care worker from their usual primary health care provider about their own health in the previous 12 months.

After adjusting for age, women (87.4%, 86.2–88.6) were significantly more likely than men (79.6%, 78.1–81.2) to have seen a health care worker from their usual primary health care provider in the previous 12 months about their health.

Use of primary health care provider in previous 12 months, by age group

The proportion of adults who saw a health care worker from their usual primary health care provider in the previous 12 months generally increased with age. Adults aged over 65 years were significantly more likely than younger adults to have seen a health care worker from their usual primary health care provider about their own health in the previous 12 months (Figure 5.4).

Figure 5.4: Adults who saw a health care worker from their primary health care provider in the previous 12 months, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Use of primary health care provider in the previous 12 months, by ethnic group

Asian women (SRR 0.94, 0.89–0.98) were significantly less likely and European/Other women (SRR 1.01, 1.01–1.02) were more likely than women in the total population to have seen any health care worker at their usual primary health care provider in the previous 12 months. There were no other significant differences by ethnic group.

Use of primary health care provider in the previous 12 months, by neighbourhood deprivation

There were no significant differences by neighbourhood deprivation in terms of the proportion of adults who saw a health care worker at their primary health care provider in the previous 12 months.

Able to see primary health care provider within 24 hours

Four out of five adults (82.3%, 81.4–83.1) who had seen their primary health care provider in the previous 12 months reported that there was no time when they were unable to see their primary health care provider within 24 hours when they wanted to during this period. The 17.7% (16.9–18.6) of adults who could not see their primary health care provider within 24 hours when they wanted to in the previous 12 months equates to 436,300 adults.

When adjusting for age, women (20.8%, 19.8–21.9) were significantly more likely than men (15.4%, 13.8–16.9) to report that they had not been able to see their health care provider within 24 hours when they wanted to.

Māori women were significantly more likely than women in the total population (SRR 1.26, 1.12–1.40) to report that they had not been able to see their health care provider within 24 hours when they wanted to.

Adults in the most deprived neighbourhoods (NZDep2006 quintile 5: 78.8%, 76.6–80.9) were less likely than adults in the least deprived neighbourhoods (NZDep2006 quintile 1: 82.4%, 80.2–84.7) to have been able to see their primary health care provider within 24 hours in the previous 12 months.

Comprehensiveness of primary health care

The Primary Health Care Strategy envisages a primary health care sector which promotes a comprehensive approach to health, moving beyond just treating ill health. Comprehensive care in primary health includes services that promote and preserve health (eg, vaccinations and nutrition advice) and services that can identify disease at its early stages (eg, screening, blood pressure and diabetes checks).

This section measures how well primary health care providers in New Zealand promote and preserve health, by considering the provision and type of health advice and health checks received by adults who had seen a primary health care provider in the previous 12 months.

What were the survey questions?

In the 2006/07 New Zealand Health Survey adult participants with a primary health care provider were asked which health checks and discussions (listed on a show card) they had had at their primary health care provider or that had been arranged by their primary health care provider in the previous 12 months.

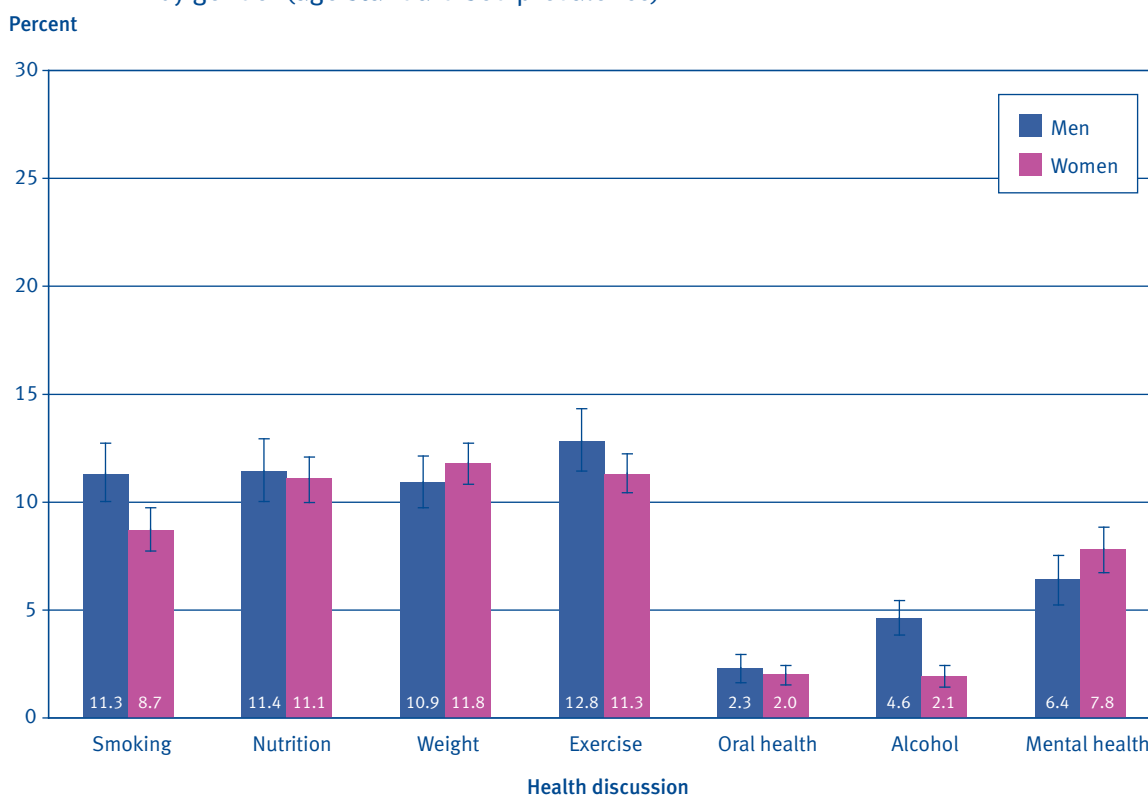
All female participants aged 20 years and over were also asked whether they had had a mammogram in the past two years or a cervical smear in the past three or five years.

Health discussions with primary health care provider

Exercise (12.5%, 11.6–13.3), weight (11.9%, 11.1–12.7), nutrition (11.4%, 10.6–12.2) and smoking (9.5%, 8.7–10.2) were the subjects most commonly discussed with adults who saw their primary health care provider in the previous 12 months.

When adjusting for age, men were significantly more likely than women to report that their primary health care provider had talked with them about smoking and alcohol in the previous 12 months (Figure 5.5).

Figure 5.5: Health discussions with primary health care provider in the previous 12 months, by gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Two out of five (37.9%, 35.5–40.3) adults who were smokers reported that their health care provider had talked with them about smoking in the previous 12 months. One in four (24.2%, 22.7–25.7) adults who were overweight or obese reported that their health care provider had talked with them about their nutrition, exercise or weight in the previous 12 months.

Health discussion with primary health care provider, by age group

Overall, discussion of health behaviours with primary health care providers tends to increase in middle age, then decrease in the older age groups.

Health discussion with primary health care provider, by ethnic group

Pacific adults were significantly more likely than adults in the total population to have their primary health care provider discuss their smoking (SRR 1.99, 1.55–2.44), nutrition (SRR 2.74, 2.26–3.22), weight (SRR 2.78, 2.37–3.20), exercise (SRR 2.66, 2.30–3.03), oral health (SRR 3.97, 2.51–5.43) and alcohol use (SRR 3.85, 2.71–4.99) in the previous 12 months.

Māori adults were significantly more likely than adults in the total population to have their primary health care provider discuss their smoking (SRR 1.84, 1.63–2.06), nutrition (SRR 1.39, 1.24–1.54), weight (SRR 1.48, 1.31–1.66), exercise (SRR 1.37, 1.22–1.53), oral health (SRR 1.55, 1.11–1.98) and alcohol use (SRR 1.51, 1.16–1.85) in the previous 12 months.

Asian adults were significantly more likely than adults in the total population to have their primary health care provider discuss their nutrition (SRR 1.52, 1.25–1.78) and exercise (SRR 1.35, 1.10–1.59).

European/Other adults were significantly more likely than adults in the total population to have discussed their mental health (SRR 1.10, 1.07–1.13) with their primary health care provider in the previous 12 months.

Health discussion with primary health care provider, by neighbourhood deprivation

Both men and women in NZDep2006 quintile 5 (most deprived) were significantly more likely than men and women in quintile 1 (least deprived) to have discussed smoking and weight with their primary health care provider.

Women in NZDep2006 quintile 5 were significantly more likely than women in NZDep2006 quintile 1 to have discussed exercise, nutrition and oral health with their primary health care provider. Men in NZDep2006 quintile 5 were significantly more likely than men in NZDep2006 quintile 1 to have discussed alcohol use with their primary health care provider.

There were no significant differences by neighbourhood deprivation in terms of the proportion of men and women who had discussed their mental health with their primary health care provider.

Prevention of cancer – mammograms and cervical smears

Procedures that identify disease at an early stage before it causes ill health are an important part of comprehensive primary health care services. For women, the provision of regular mammograms and cervical smears is a measure of the comprehensiveness of service provided by their primary health care provider.

Mammograms (a type of breast x-ray) are used to identify early breast cancer. Finding breast cancer early means a woman has a better chance of surviving the disease. In New Zealand, BreastScreen Aotearoa, the national breast-screening programme, provides a free mammogram every two years to all women aged 45–69 years to help check for early breast cancer. Outside the screening programme, women of any age can have a mammogram in order to investigate a breast problem or if they are at high risk of developing breast cancer. Primary health care providers can make referrals for mammograms outside the breast-screening programme if needed (eg, if a breast lump is identified) as well as referring women to the breast-screening programme if they are eligible.

A cervical smear test is a screening test to detect abnormal changes in the cells of the cervix, which, if not treated could develop into cancer. Treatment at an early abnormal stage is usually very effective in preventing cervical cancer. In New Zealand, the National Cervical Screening Programme provides all women aged 20–69 years who have ever been sexually active with a free cervical smear test every three years. Cervical smears are usually carried out by primary health care providers. Women who have had a hysterectomy with both the uterus and cervix removed do not usually need to have smear tests and have been removed from the following analyses.

It is important to note that the results presented here do not reflect uptake of either the national breast or cervical screening programmes. This is because they include women who have had mammograms or cervical smears for other reasons (eg, they have a family history of breast cancer or they have had a previous abnormal cervical smear).

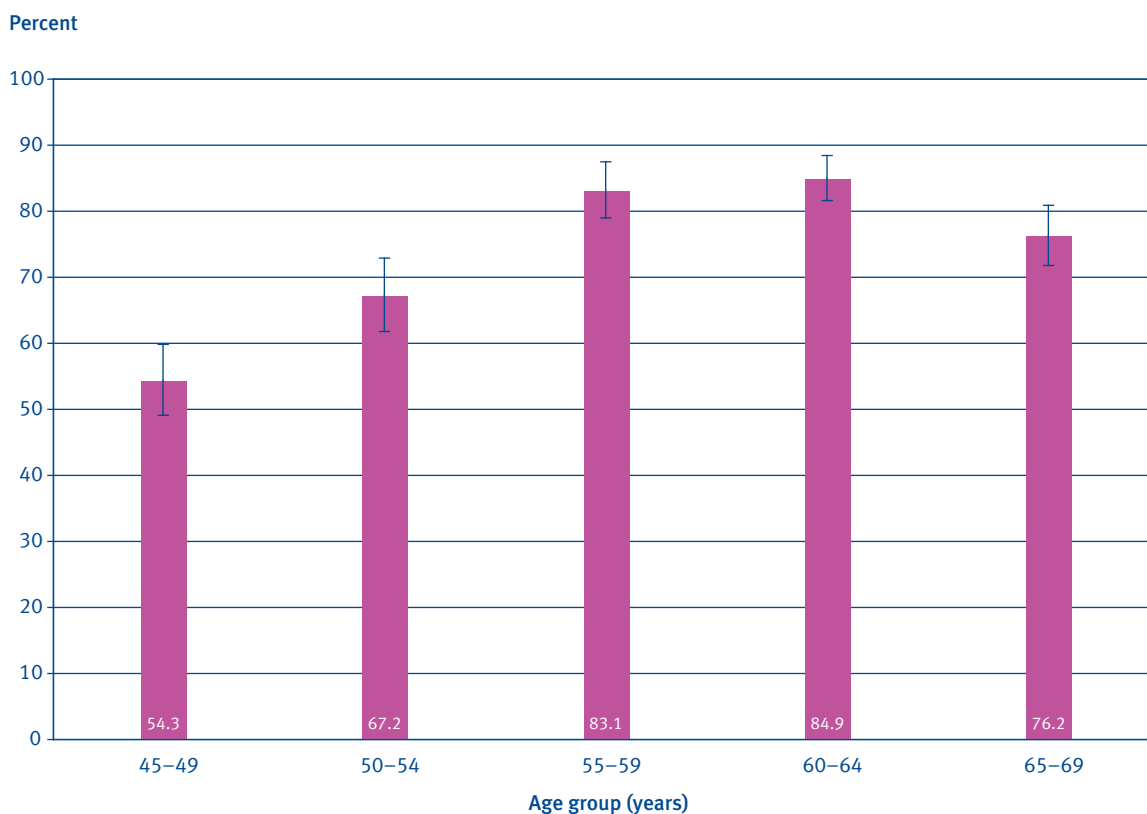
The analyses here only include women who report that they have a primary health care provider they go to first when feeling sick or injured (that is, not the total population).

Seven out of ten (71.2%, 69.0–73.5) women aged 45–69 years who have a primary health care provider reported having had a mammogram in the previous two years. Eight out of ten (79.6%, 77.9–81.3) women aged 20–69 years who have not had a hysterectomy and have a primary health care provider reported having had a cervical smear in the previous three years.

Mammogram and cervical smears, by age group

Women aged 55–64 years were more likely to have had a mammogram in the previous two years than those aged 45–54 years or 65–69 years (Figure 5.6).

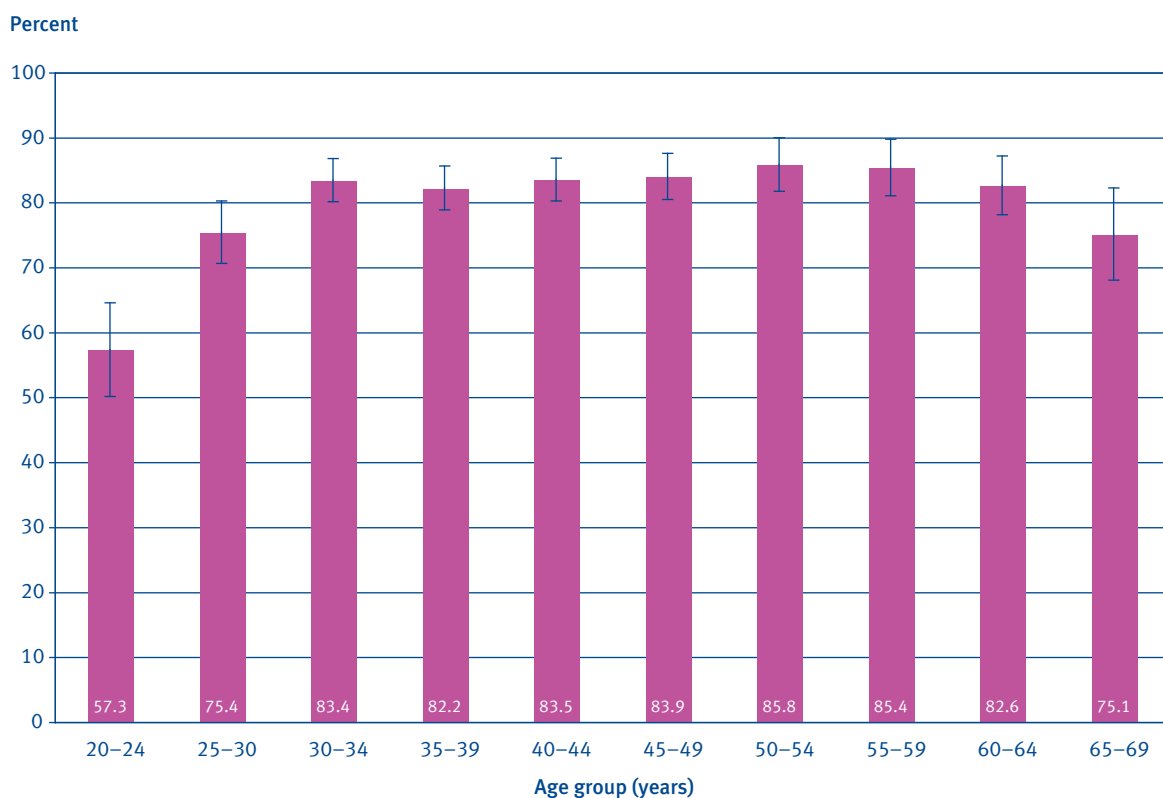
Figure 5.6: Women aged 45–69 years (with a primary health care provider) who have had a mammogram in the previous 2 years, by age group (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Women aged 20–29 years were less likely than women aged 30–64 years to have had a cervical smear in the previous three years (Figure 5.7).

Figure 5.7: Women aged 20–69 years (with a primary health care provider) who had a cervical smear in the previous 3 years, by age group (unadjusted prevalence)



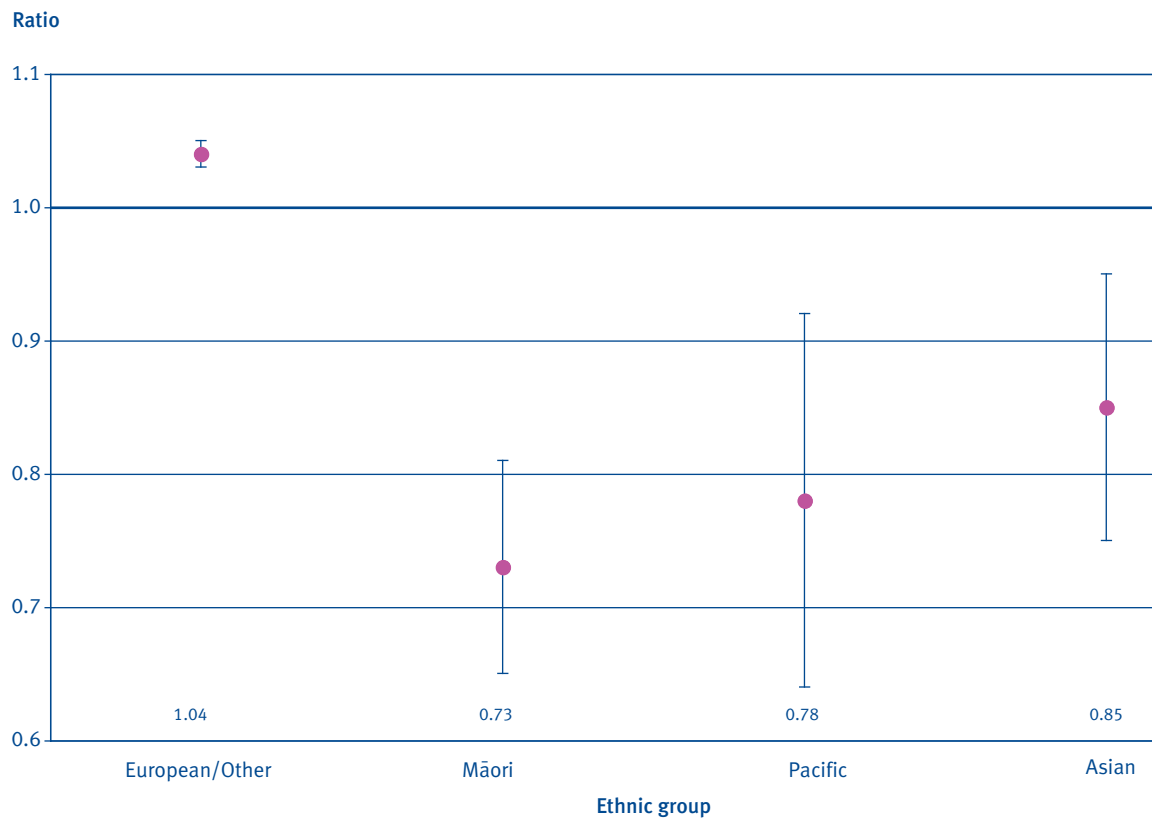
Source: 2006/07 New Zealand Health Survey

Note: Excludes women who have had a hysterectomy

Mammogram and cervical smears, by ethnic group

Māori women aged 45–69 years were less likely than the total female population aged 45–69 years to have had a mammogram in the previous two years, as were Pacific and Asian women. European/Other women aged 45–69 years were more likely than the total female population aged 45–69 years to have had a mammogram in the previous two years (Figure 5.8).

Figure 5.8: Women aged 45–69 years (with a primary health care provider) who have had a mammogram in the previous 2 years, by ethnic group (age standardised rate ratio)

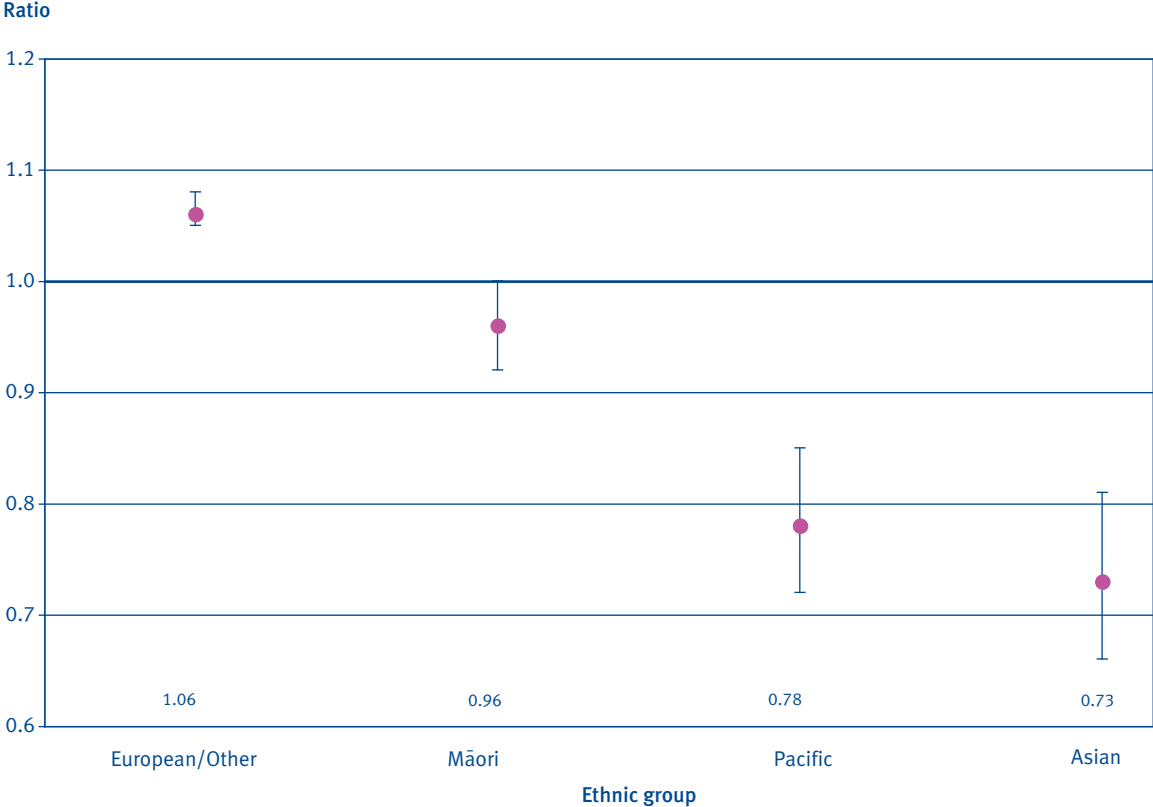


Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total female population aged from 45-69. Total response standard output for ethnic groups has been used.

Pacific and Asian women aged 20–69 years were less likely, and European/Other women aged 20–69 more likely, than the total female population aged 20–69 years to have had a cervical smear in the previous three years (Figure 5.9).

Figure 5.9: Women aged 20–69 years (with a primary health care provider) who have had a cervical smear in the previous 3 years, by ethnic group (age standardised rate ratio)



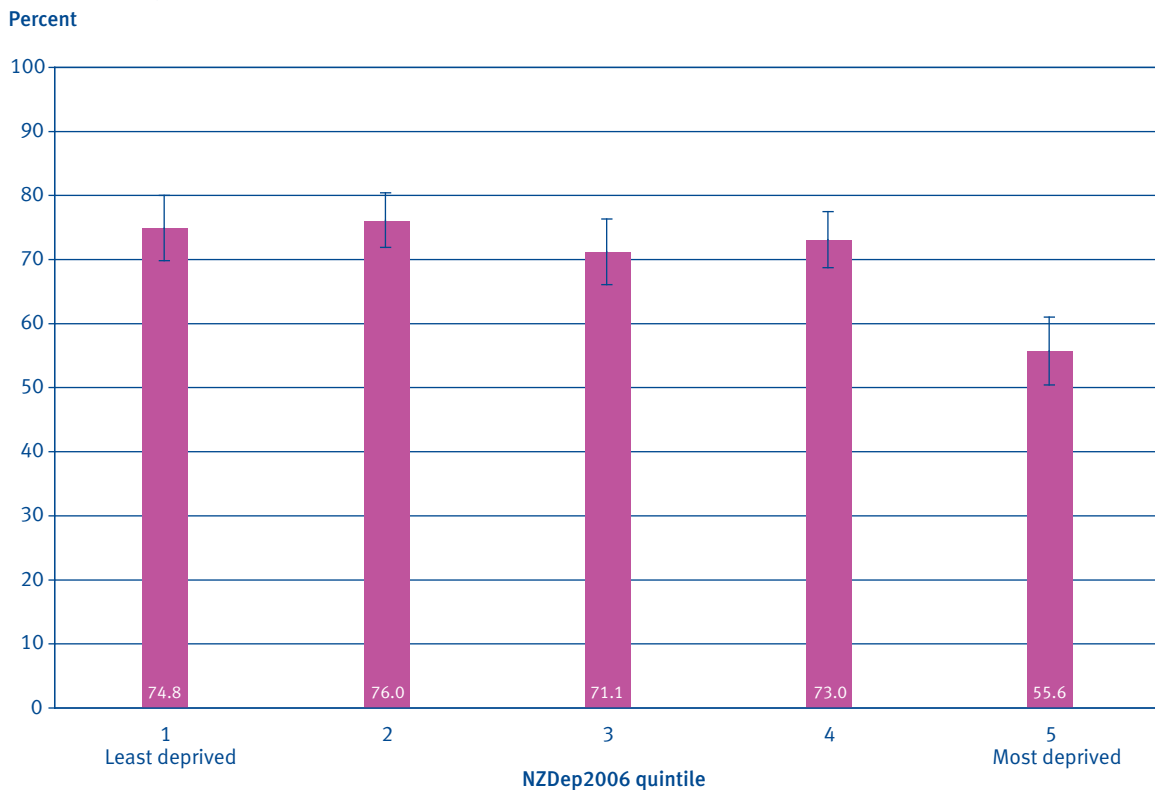
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total female population aged from 20-69 years. Total response standard output for ethnic groups has been used. Excludes women who have had a hysterectomy.

Mammogram and cervical smear, by neighbourhood deprivation

Women aged 45–69 years in NZDep2006 quintile 5 (most deprived) were significantly less likely than those in quintiles 1–4 to have had a mammogram in the previous two years (Figure 5.10).

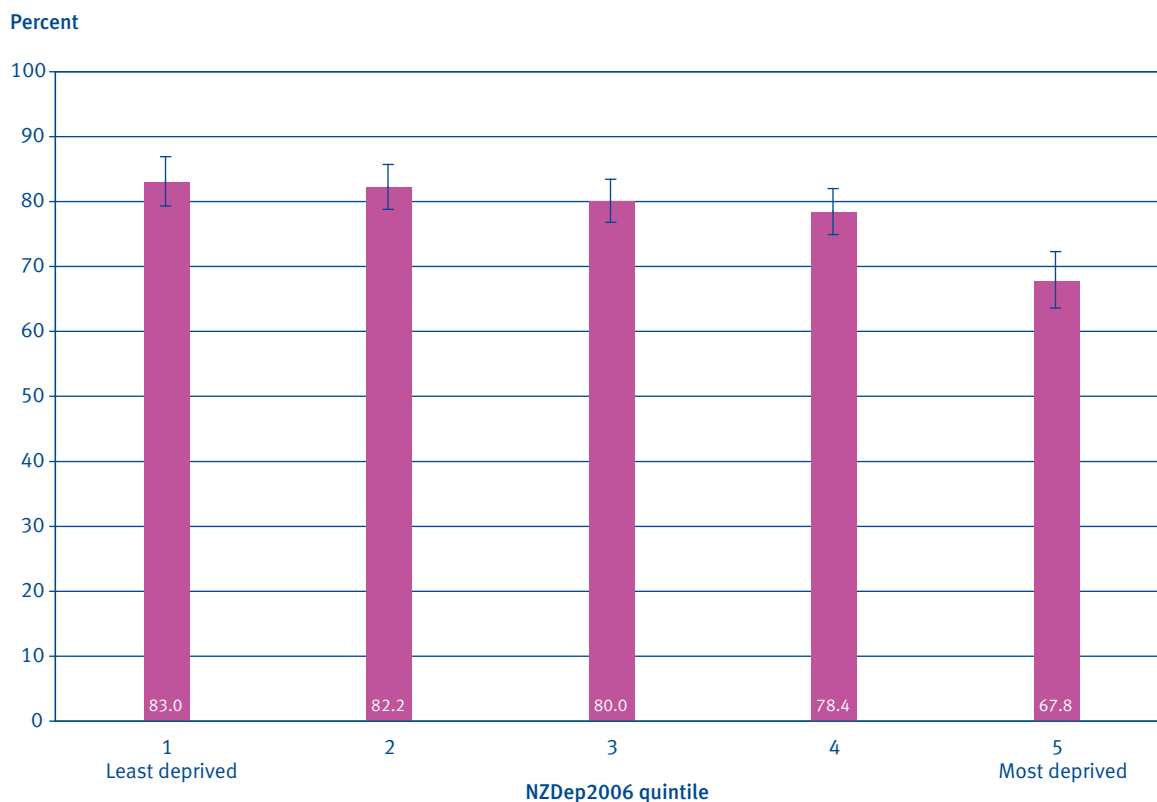
Figure 5.10: Women aged 45–69 years (with a primary health care provider) who have had a mammogram in the previous 2 years, by NZDep2006 quintile (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Women aged 20–69 years in NZDep2006 quintile 5 (most deprived) were significantly less likely than those in quintiles 1–4 to have had a cervical smear in the previous three years (Figure 5.11).

Figure 5.11: Women aged 20–69 years (with a primary health care provider) who have had a cervical smear in the previous 3 years, by NZDep2006 quintile (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Note: Excludes women who have had a hysterectomy

Prevention of ill health – influenza vaccination

Influenza is a significant public health issue in New Zealand. Each year, influenza has a large impact on our community, with 10–20% of New Zealanders infected. Some of these people become so ill they need hospital care, and a small number die. Influenza also has a financial impact, particularly in workplaces, and can potentially overwhelm both primary health care and hospital services during winter epidemics.

In New Zealand, adults aged 65 years and over and anyone under 65 years with one or more chronic health conditions can have a free influenza vaccination.

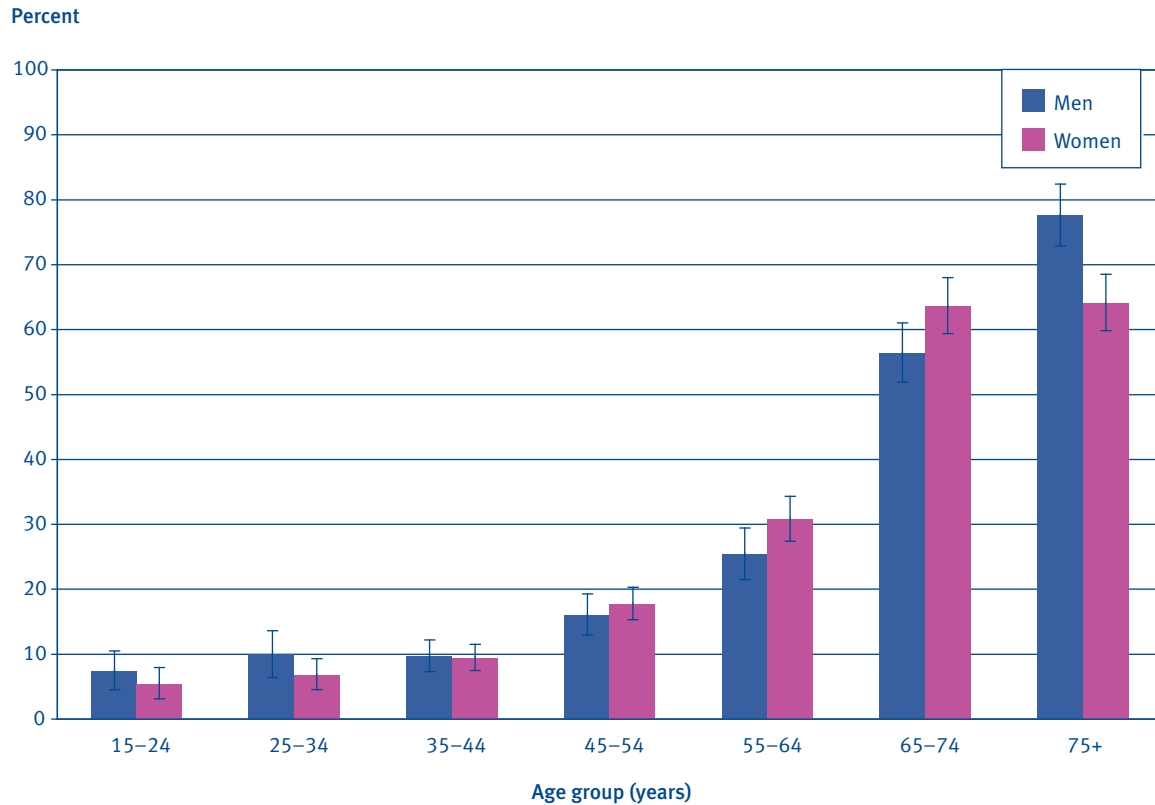
Data presented here are only for influenza vaccinations carried out by participants' primary health care provider and will underestimate the level of influenza vaccination in the total population as they may exclude vaccinations provided by employers.

Approximately one in four adults (23.0%; 22.0–23.9) had an influenza vaccination at their primary care provider in the previous 12 months. There was no significant difference between men and women, adjusted for age.

Influenza vaccination by primary health care provider, by age group

Influenza vaccination in the previous 12 months increased with age (Figure 5.12). Adults aged 65 years and over had a higher prevalence of having had an influenza vaccine carried out by their primary health care provider in the previous 12 months compared to other age groups, with men aged 75 years and over having the highest prevalence.

Figure 5.12: Influenza vaccination by primary health care provider in the previous 12 months for adults, by age group and gender (unadjusted prevalence)

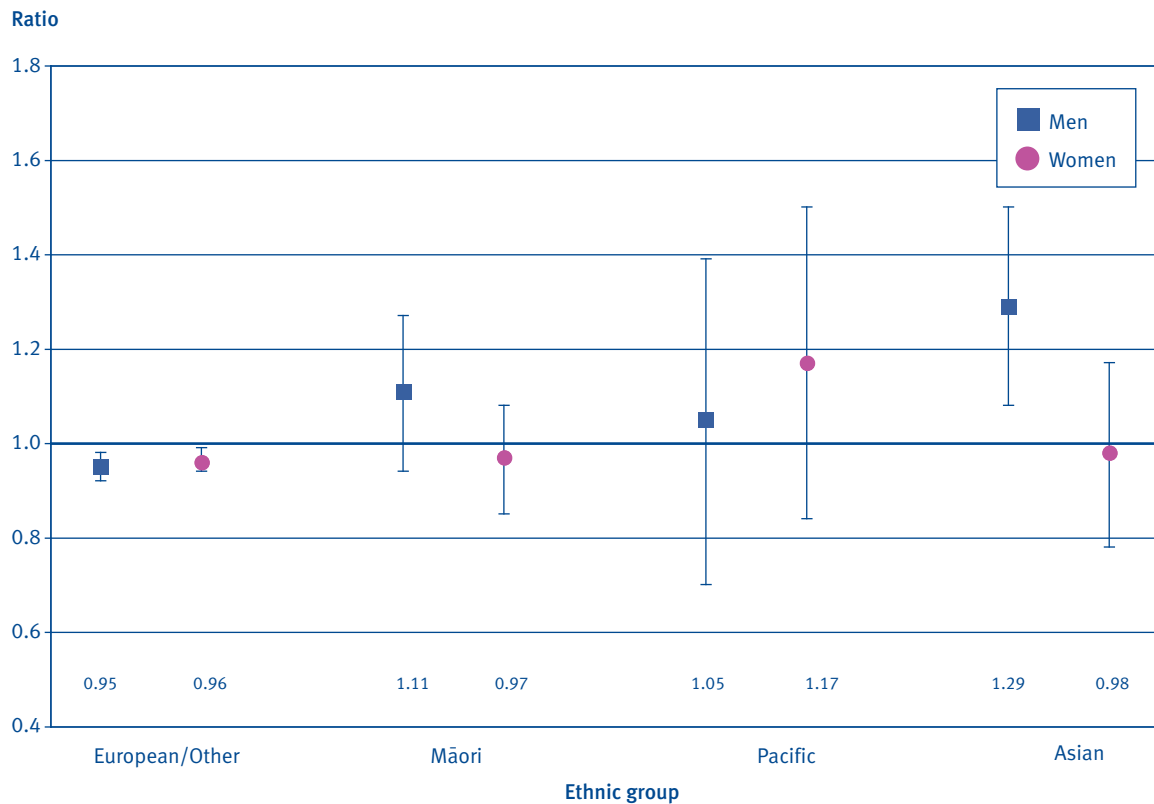


Source: 2006/07 New Zealand Health Survey

Influenza vaccine by primary health care provider, by ethnic group

Adjusted for age, European/Other men and women were less likely, and Asian men more likely, to have had an influenza vaccination carried out by their primary health care provider in the previous 12 months compared to men and women in the total population (Figure 5.13).

Figure 5.13: Influenza vaccination by primary health care provider in the previous 12 months for adults, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Influenza vaccination by primary health care provider, by neighbourhood deprivation

There were no significant differences by neighbourhood deprivation in terms of the proportion of men and women who had an influenza vaccine carried out by their primary health care provider in the previous 12 months.

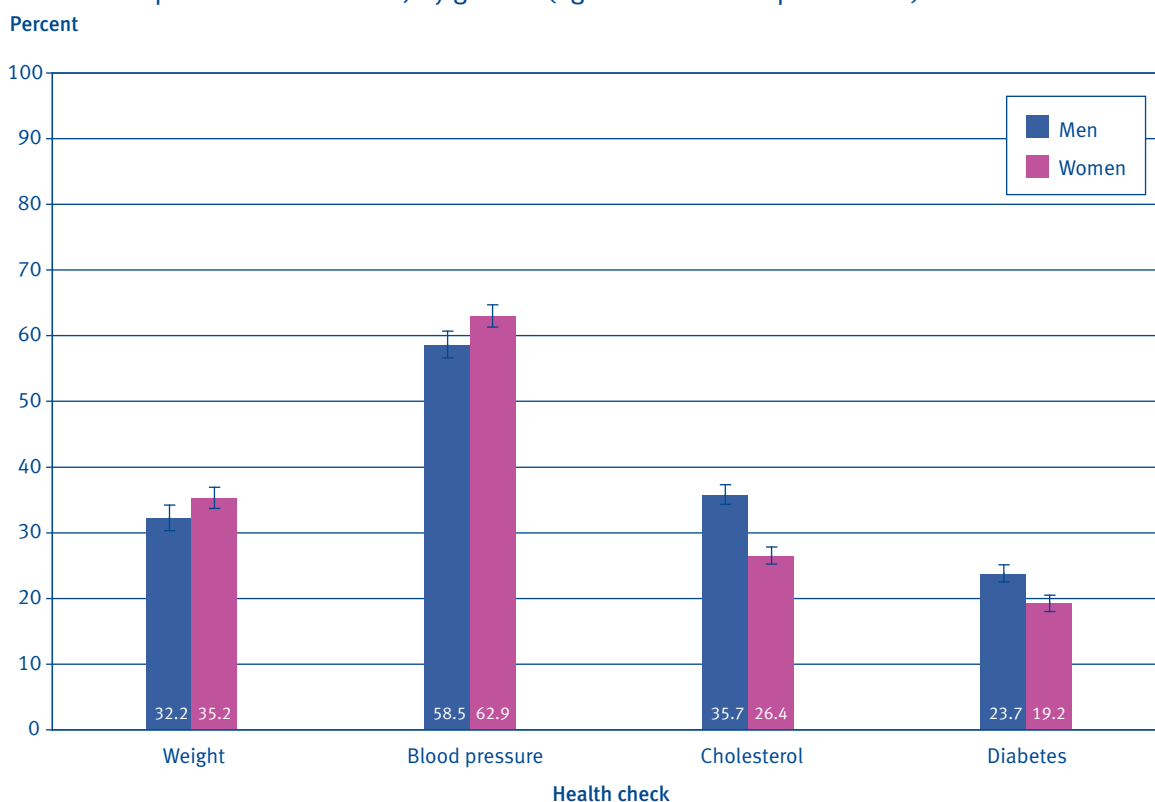
Health checks at primary health care providers

Health checks can either identify disease at an early stage enabling treatment, or ensure that a diagnosed health condition (eg, high blood pressure or diabetes) continues to be treated appropriately. Health checks reported here are for weight, blood pressure, cholesterol and diabetes.

The most common health check carried out or arranged by primary health care providers was a blood pressure check, with two-thirds of adults (64.4%, 63.1–65.7) who had seen a primary health care provider in the previous 12 months reporting having had their blood pressure checked.

After adjusting for age, men were more likely than women to have had a cholesterol test or a diabetes test in the previous 12 months. Women were more likely than men to have had a blood pressure test and their weight checked in the previous 12 months (p-values < 0.05) (Figure 5.14).

Figure 5.14: Health checks for adults who had seen a primary health care provider in the previous 12 months, by gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Health checks at primary health care provider, by age group

Overall, the prevalence of having a health check in the previous 12 months increased with age. In particular, both men and women over 45 years of age were significantly more likely than younger adults to have had a blood pressure, cholesterol or diabetes check. Men over 45 years were more likely to have had their weight checked compared to younger men. There were no significant differences in the proportion of women who had their weight checked across the age groups.

Health checks at primary health provider, by ethnic group

Overall, European/Other men were less likely to have had a health check in the previous 12 months compared to men in the total population (weight SRR 0.95, 0.92–0.97; blood pressure SRR 0.98, 0.97–1.00; cholesterol SRR 0.98, 0.96–0.99; diabetes SRR 0.92, 0.89–0.95). Apart from blood pressure checks, European/Other women were less likely to have had a health check in the previous 12 months compared to women in the total population (weight SRR 0.96, 0.94–0.98; cholesterol SRR 0.96, 0.94–0.98; diabetes SRR 0.88, 0.85–0.91).

Māori (SRR 1.10, 1.01–1.19) and Pacific (SRR 1.57, 1.39–1.76) women were more likely to have had their weight checked in the previous 12 months compared to women in the total population. Pacific men (SRR 1.33, 1.13–1.53) were also more likely to have had their weight checked.

Pacific men (SRR 1.09, 1.01–1.18) and women (SRR 1.12, 1.01–1.23) were more likely to have had their blood pressure checked compared to men and women in the total population.

Pacific women (SRR 1.32, 1.10–1.54) and Asian men (SRR 1.27, 1.14–1.40) were more likely than women and men in the total population to have had their cholesterol checked.

Māori, Pacific and Asian men and women were all more likely to have had a diabetes check in the previous 12 months compared to men and women in the total population.

Health check at primary health provider, neighbourhood deprivation

Women living in NZDep2006 quintile 5 (the most deprived areas) were more likely to have had a weight and diabetes check in the previous 12 months compared to women living in NZDep2006 quintile 1.

Men in NZDep2006 quintile 1 were significantly more likely than men in NZDep2006 quintile 5 to have had a cholesterol check in the previous 12 months.

Continuity and co-ordination of primary health care

Continuity in primary health care means that people have a health care provider they usually see, who provides health advice and referrals to secondary services when needed, and who they may form important relationships with over time. Sometimes, people have diverse health needs and may use a number of services provided by different providers in various settings. It is important that there is co-ordination of care between these services, so that the best possible total package of care is provided to the people using health services. Primary Health Organisations (PHOs) were established with the vision of providing continuity and co-ordination of care for their enrolled populations.

This section looks at how well primary health care providers in New Zealand provide continuity and co-ordination of care for children by looking at whether children have the same primary health care providers as their parents. For adults, this section also considers whether adults usually see the same GP or nurse at their primary health care provider, whether they have changed primary health care provider in the past year and why, and if any visits to medical specialists were followed up by their primary health care provider.

What were the survey questions?

In the 2006/07 New Zealand Health Survey parents of child participants were asked whether their child's primary health care provider was the same as their own.

Adult participants who saw a primary health care provider in the previous 12 months were asked whether they would usually see the same GP or nurse every time, and whether they had changed their usual primary health care provider in the previous 12 months, and if so, why.

If an adult participant had seen a medical specialist in the previous 12 months, they were also asked whether their primary health care provider had discussed the specialist visit with them afterwards.

Children attend the same provider as their parents

Most children (92.2%, 91.1–93.3) had the same primary health care provider as their parents or caregivers. There were no significant differences by age, gender, ethnicity or neighbourhood deprivation.

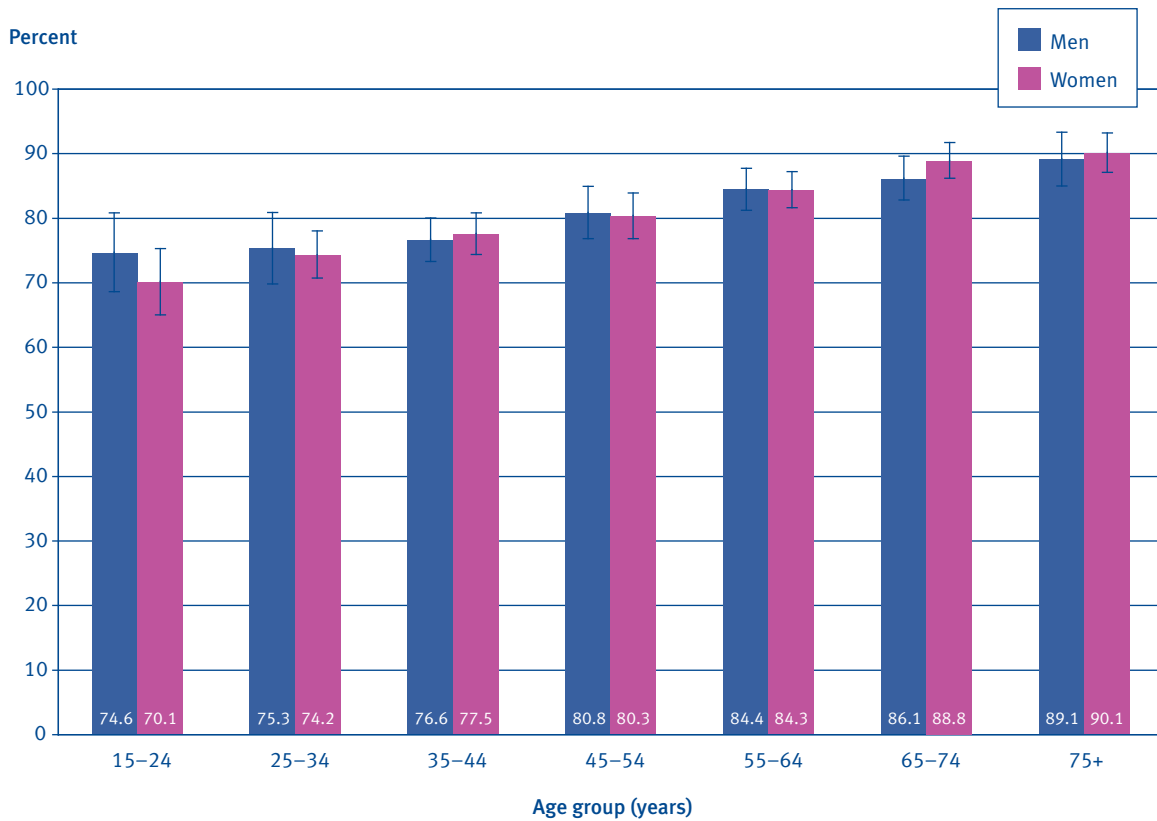
Usually see the same GP every time

Four out of five adults (79.8%, 78.7–80.9) who saw a GP at their primary health care provider in the previous 12 months reported that they usually see the same GP every time. There was no difference between men and women in the proportion who usually see the same GP every time, adjusted for age.

Usually see the same GP every time, by age group

Young people were less likely to see the same GP every time compared to adults over 55 years of age (Figure 5.15).

Figure 5.15: Adults who usually see the same GP at their usual primary health care provider, by age group and gender (unadjusted prevalence)

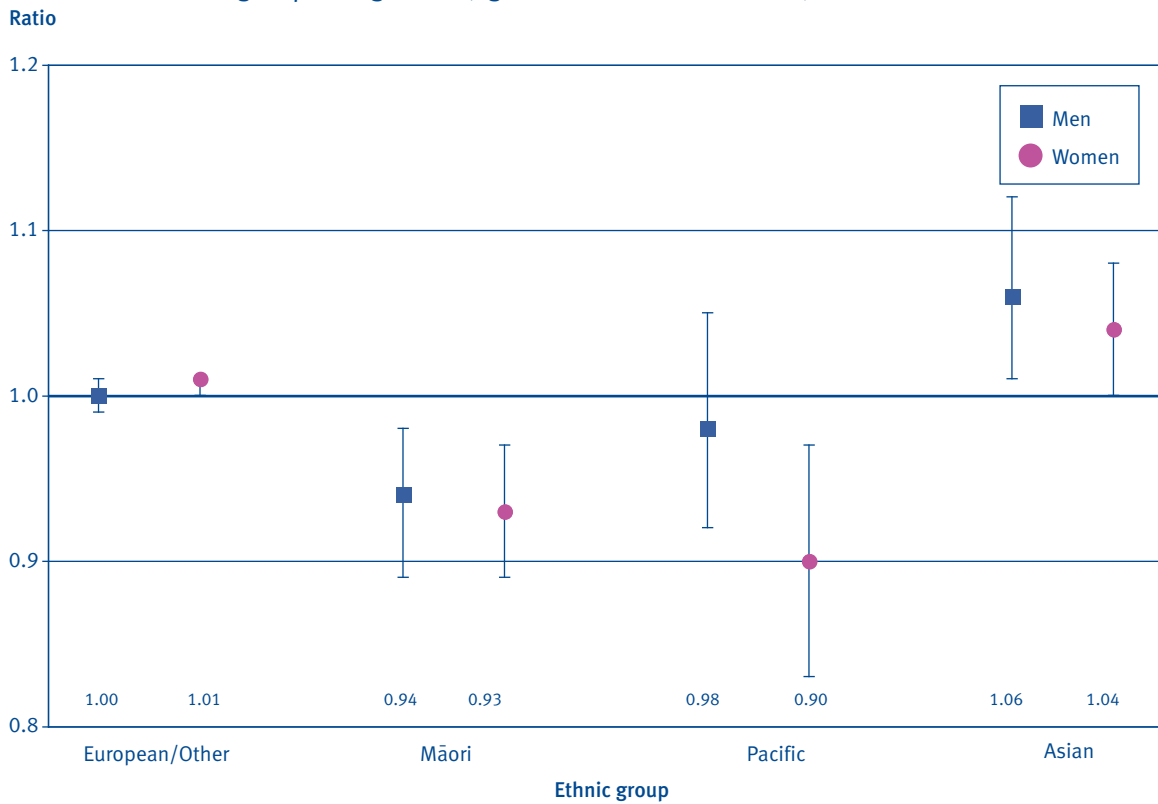


Source: 2006/07 New Zealand Health Survey

Usually see the same GP every time, by ethnic group

Māori men and Māori and Pacific women were less likely than men and women in the total population to see the same GP every time, while Asian men were more likely to see the same GP (Figure 5.16).

Figure 5.16: Adults who usually see the same GP at their usual primary health care provider, by ethnic group and gender (age standardised rate ratio)



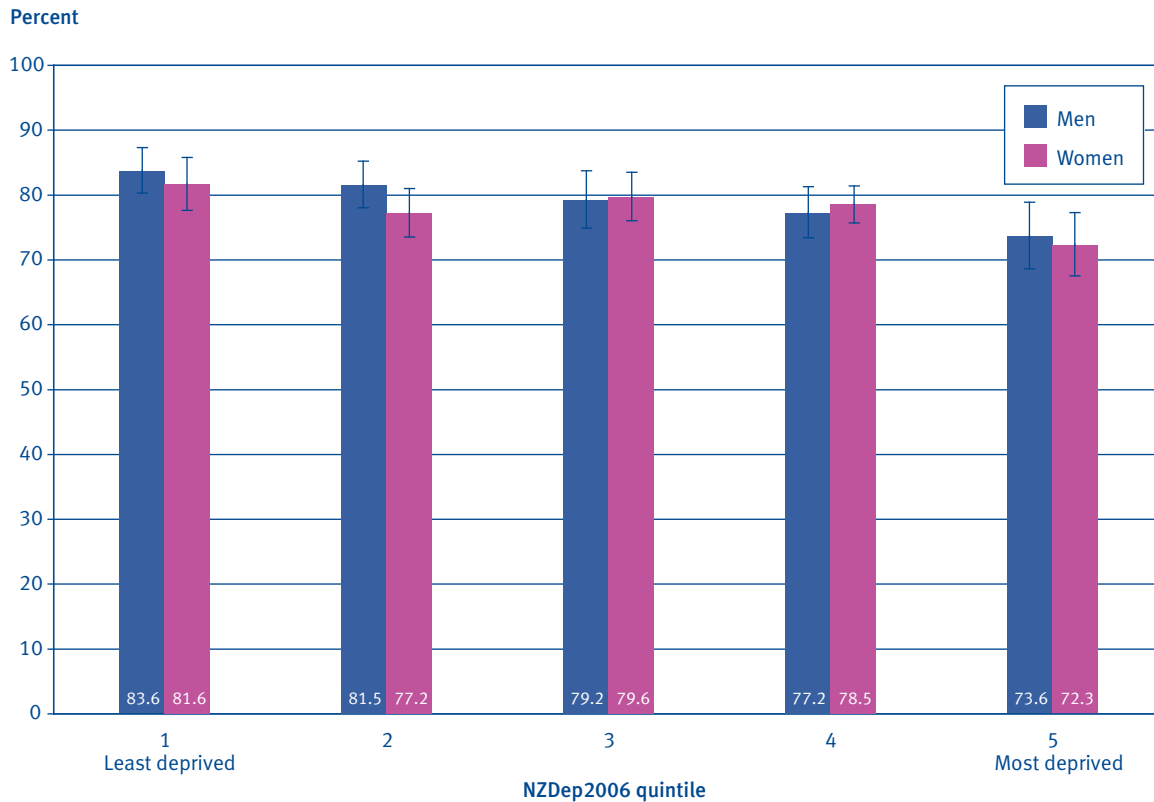
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Usually see the same GP every time, by neighbourhood deprivation

Men and women in NZDep2006 quintile 1 (least deprived) were more likely than those in quintile 5 (most deprived) to see the same GP every time (Figure 5.17).

Figure 5.17: Adults who usually see the same GP at their usual primary health care provider, by NZDep2006 quintile, by gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Usually see the same nurse every time

Almost half (46.8%, 44.8–48.8) of all adults who saw a nurse at their primary health care provider in the previous 12 months reported that they usually see the same nurse every time.

After adjusting for age, Māori men (SRR 1.16, 1.01–1.30) were more likely than men in the total population to see the same nurse every time. There were no significant differences in the proportion of adults who usually see the same nurse by age or neighbourhood deprivation.

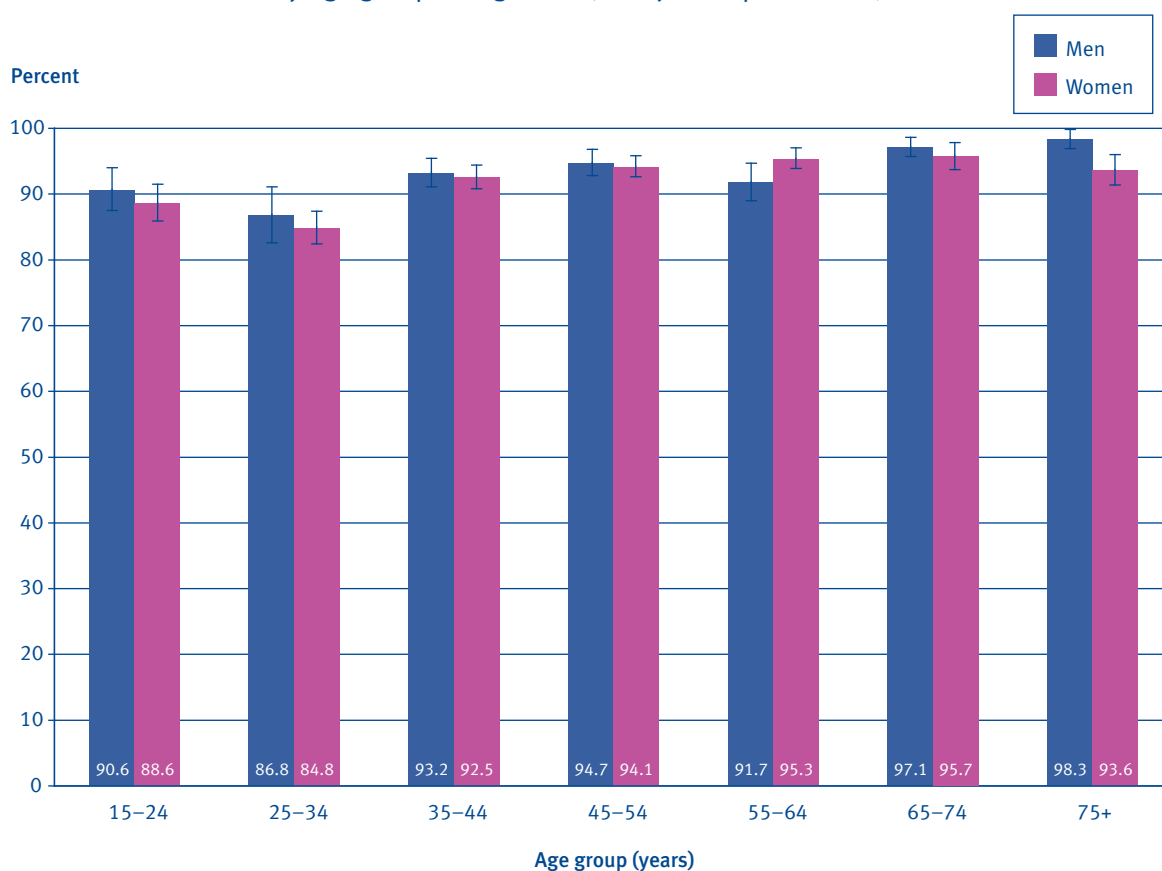
Did not change primary health care provider in the previous 12 months

Nine out of 10 adults (92.2%, 91.6–92.8) who saw a primary health care provider in the previous 12 months reported that they had not changed their usual primary health care provider in that time. There were no significant differences by gender.

Did not change primary health care provider in the previous 12 months, by age group

Women aged 25–34 years were more likely to have changed their primary health care provider in the previous 12 months than women aged 35 years and over (Figure 5.18).

Figure 5.18: Adults who did not change their primary health care provider in the previous 12 months, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

There were no significant differences in the proportion of adults who changed their primary health care provider in the previous 12 months by ethnicity or neighbourhood deprivation.

Of the adults who had changed their primary health care provider in the previous 12 months, the main reasons for changing were:

- I moved to a new area (50.8%, 46.1–55.4)
- my doctor moved / retired / closed the practice (13.8%, 10.4–17.3)
- I found a provider I felt more comfortable with (other than for reasons of culture or language) (12.9%, 9.7–16.1)
- I wanted a higher standard of health care / more professionalism (7.8%, 5.3–10.3)
- I couldn't get an appointment when needed (5.5%, 3.3–7.7).

Visits to medical specialists were followed up by primary health care provider

Two out of five (40.1%, 38.3–41.9) adults with a primary health care provider, and who had seen a medical specialist in the previous 12 months, had had a follow-up discussion with their primary health care provider after the specialist visit.

Asian (SRR 1.48, 1.29–1.67), Māori (SRR 1.15, 1.03–1.26) and Pacific (SRR 1.54, 1.29–1.80) adults were significantly more likely than adults in the total population who saw a medical specialist in the previous 12 months to have had their visit with a specialist discussed by their primary health care provider. There were no significant differences by age or neighbourhood deprivation.

Experiences of primary health care

One of the visions of the Primary Health Care Strategy is for a primary health care system that is community- and people-focused. An individual's overall experience of care is an important aspect of quality of care, and helps to assess the extent to which care is people-focused.

In this section, experiences of primary health care are measured by looking at whether individuals were treated with respect and dignity, whether they were listened to by the primary health care professional, and whether their health care professional discussed their health care and treatment as much as they wanted.

It is important to note that other factors that influence the experience an individual has, such as the quality of diagnosis and treatment of ill health, are not included here.

What were the survey questions?

In the 2006/07 New Zealand Health Survey, adult participants who saw a primary health care provider in the previous 12 months were asked how frequently their health care professionals treated them with respect and dignity, listened carefully to what they had to say, and discussed their health care and treatment as much as they wanted.

Treated with respect and dignity by primary health care professional

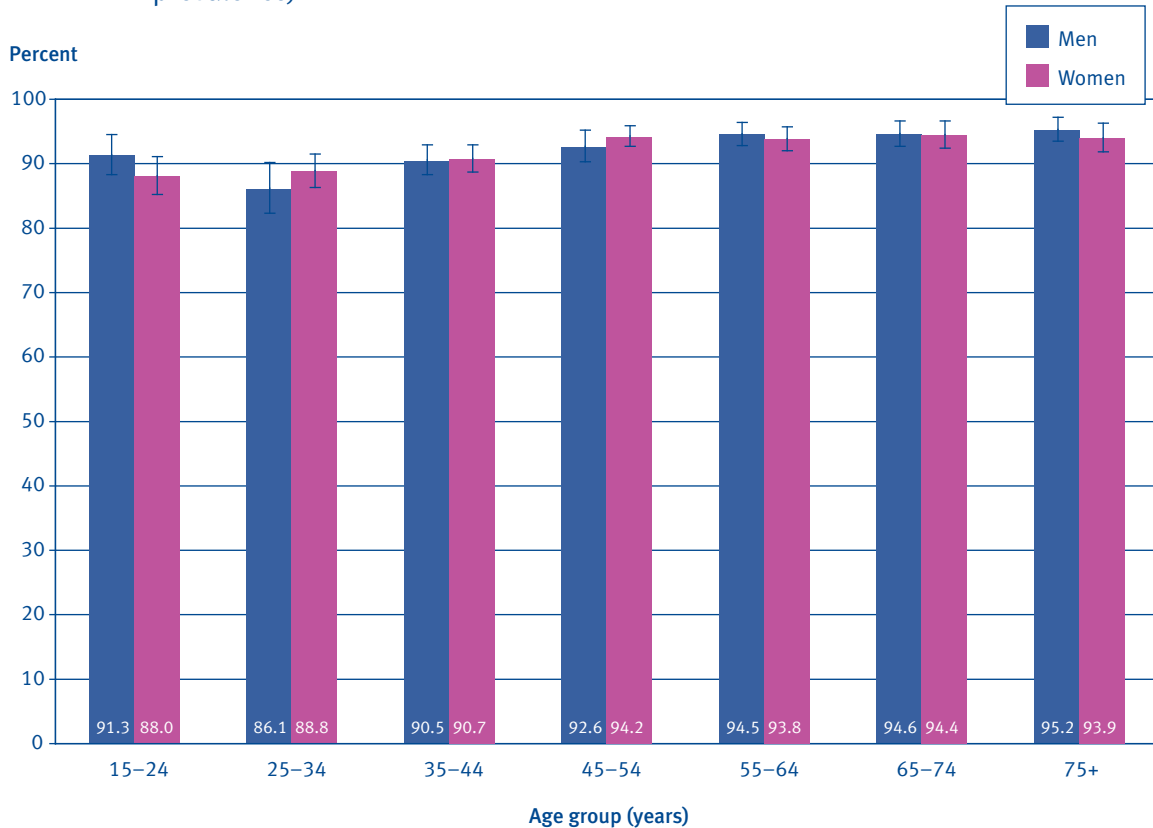
Nine out of ten (91.7%, 91.0–92.4) adults who saw a primary health care provider in the previous 12 months reported their health care professional had treated them with respect and dignity 'all of the time', while a further 6.7% (6.1–7.3) reported they had been treated with respect and dignity 'most of the time'.

There were no significant differences in being treated with respect and dignity by gender, adjusted for age.

Treated with respect and dignity, by age group

Men and women aged 25–34 years were less likely to report they had been treated with respect and dignity ‘all of the time’ than men and women over 55 years of age (Figure 5.19).

Figure 5.19: Adults who were treated with dignity and respect ‘all the time’ in the previous 12 months by their health care professional, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Treated with respect and dignity, by ethnic group

Asian (SRR 0.95, 0.92–0.97), Pacific (SRR 0.95, 0.92–0.99) and Māori (SRR 0.97, 0.95–0.99) adults were significantly less likely than adults in the total population who saw a primary health care provider in the previous 12 months to report that their health care professional treated them with respect and dignity ‘all of the time’.

Treated with respect and dignity, by neighbourhood deprivation

Adults in NZDep2006 quintile 5 (most deprived) (88.0%, 86.2–89.8) were significantly less likely than those in quintile 1 (least deprived) (94.0%, 92.4–95.6) to report that their health care professional treated them with respect and dignity ‘all of the time’.

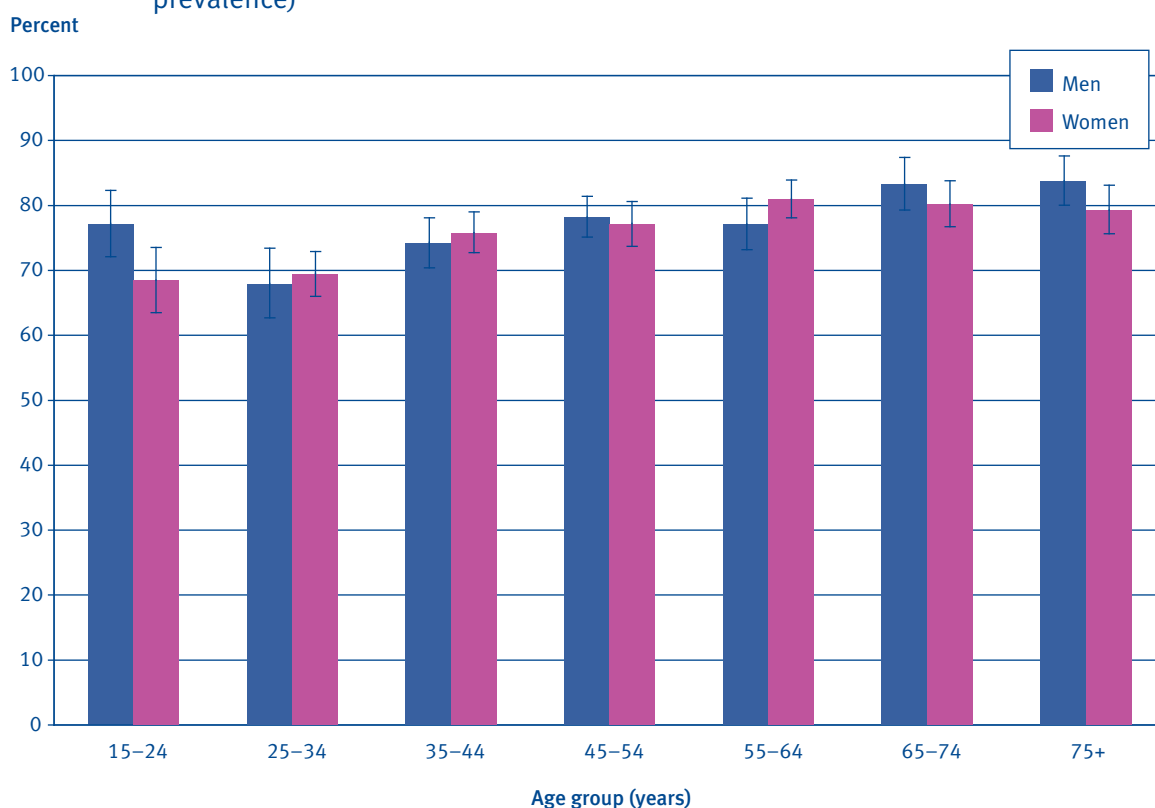
Listened to carefully by primary health care professional

Three out of four (75.9%, 74.7–77.0) adults who saw a primary health care provider in the previous 12 months reported that their health care professional listened carefully to what they had to say ‘all of the time’. A further 19.8% (18.7–20.8) reported their health care professional listened carefully to what they had to say ‘most of the time’. There were no differences by gender, after adjusting for age.

Listened to carefully, by age group

Men aged 25–34 years and women aged 15–34 years were least likely to report that their health care professional listened carefully to what they had to say ‘all of the time’ compared to men and women in all other age groups (Figure 5.20).

Figure 5.20: Adults whose primary health care provider listened carefully to what they had to say ‘all the time’ in the previous 12 months, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Listened to carefully, by ethnic group

Māori women (SRR 0.93, 0.90–0.97) were significantly less likely than all women who saw a primary health care provider in the previous 12 months to report that their health care professional listened carefully to what they had to say ‘all of the time’.

Listened to carefully, by neighbourhood deprivation

Adults in NZDep2006 quintile 5 (most deprived) (70.5%, 67.9–73.0) were significantly less likely than those in quintile 1 (least deprived) (76.9%, 74.3–79.6) to report that their health care professional listened carefully to what they had to say ‘all of the time’.

Adequate discussion of health care by primary health care professional

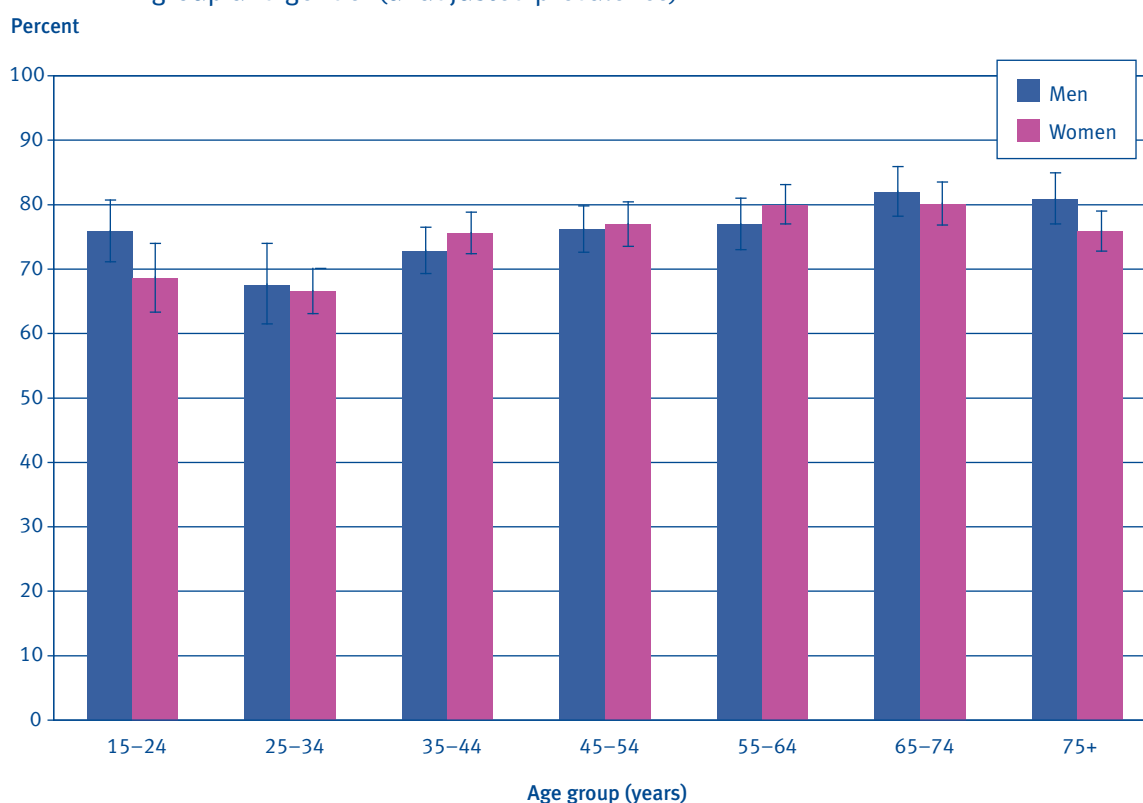
Three out of four (74.8%, 73.7–75.9) adults who saw a primary health care provider in the previous 12 months reported that their health care professional discussed their health care as much as they wanted ‘all of the time’. A further 18.8% (17.7–19.8) reported their health care professional discussed their health care as much as they wanted ‘most of the time’.

There were no differences by gender in the discussion of health care, adjusted for age.

Adequate discussion of health care, by age group

Men aged 25–34 years and women aged 15–34 years were least likely to report that their health care professional discussed their health care as much as they wanted ‘all of the time’, compared to men and women of other ages (Figure 5.21).

Figure 5.21: Adults whose primary health care professional discussed their health care and treatment as much as they wanted ‘all the time’ in the previous 12 months, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Adequate discussion of health care, by ethnic group

Māori (SRR 0.96, 0.93–0.99) and Pacific (SRR 0.93, 0.87–0.98) adults were significantly less likely than adults in the total population to report that their health care professional discussed their health care as much as they wanted ‘all of the time’.

Adequate discussion of health care, by neighbourhood deprivation

Adults in NZDep2006 quintile 5 (most deprived) (71.1%, 68.5–73.7) were significantly less likely than those in quintile 1 (least deprived) (76.5%, 74.3–78.7) to report that their health care professional discussed their health care as much as they wanted ‘all of the time’.

Chapter 6: Use of Health Care Professionals and Hospitals

Introduction

New Zealanders have access to a variety of health care workers and services in the health and disability sector.

The primary health sector is usually the first point of contact an individual has with the health system. GPs and practice nurses are the health professionals most often encountered in the primary health care sector. Oral health care workers, other health care workers (such as pharmacists, community nurses, physiotherapists, chiropractors, opticians and psychologists) and complementary and alternative health care workers are also seen in the primary health care sector.

The secondary health care sector provides more specialised services, generally by staff working in clinics and hospitals. Medical specialists are one of the groups of health care workers that work in the secondary health care sector. They specialise in a particular field of medicine (other than primary care) and usually see individuals after they have been seen in the primary sector. In New Zealand, public hospitals are generally free, whereas a fee is paid at private hospitals, which may be funded by an individual's medical insurance.

This chapter presents findings for the 2006/07 New Zealand Health Survey about the use of certain health care workers in the last 12 months, the usual number of visits, the reason for the last visit, reasons for selecting a particular type of provider, and how many people needed to see a health practitioner for some reason but then did not, and the reasons for this.

This chapter also includes the use of public and private hospitals in the previous 12 months, with a particular focus on emergency department use, and ends by looking at medical insurance coverage.

Appendices 5 and 6 describe how to access data presented in this chapter, as well as additional results available online.

General practitioners

Introduction

The local doctor or general practitioner (GP) is the first point of contact with the health care system for nearly all New Zealanders. GPs operate private businesses and set their own fees for consultations and other services. As part of the Primary Health Care Strategy, new funding has been provided by the government in order to lower the cost of GP visits for people enrolled in primary health organisations (PHOs) and to encourage free GP consultations for children under six years of age. Most GPs belong to a PHO.

The New Zealand Health Survey provides information about the cost of GP visits and, by comparing survey results over time, how successful the Primary Health Care Strategy has been in reducing these costs. The survey focuses on the actual cost of the last visit to a GP. Another source of information on the cost of GP visits is the advertised (*scheduled*) fees for standard consultations, but these may be different from the *actual* fee charged for the last visit as collected in this survey. Differences can arise if visits are shorter or longer than standard consultations, if nurses or other staff are involved in the visit, or if GPs choose to discount the fees they actually charge on the day.

What were the survey questions?

In the 2006/07 New Zealand Health Survey, all adult participants and parents of child participants were asked how many times they/their child had seen a GP in the previous 12 months. If they had seen a GP in the previous 12 months, they were asked further questions about their last visit: how long ago it was (adult participants only), the health issue concerned, and the cost. If adult participants saw a GP apart from their usual health care provider in the previous 12 months, they were asked how often this had occurred and the reason why.

Adult participants and the parents of child participants were also asked if there had been any time in the previous 12 months when they/their child needed to see a GP but could not, and if so how many times this occurred, the reason they were unable to see the GP, the health issue concerned (child participants only) and what they did instead.

Chapter 5 of this report focused on whether people had a primary health care provider to go to first and on the accessibility and comprehensiveness of services provided. This chapter focuses on visits to health professionals more generally. This includes visits to health professionals apart from those at primary health care providers, and includes visits for people who do not have a primary health care provider.

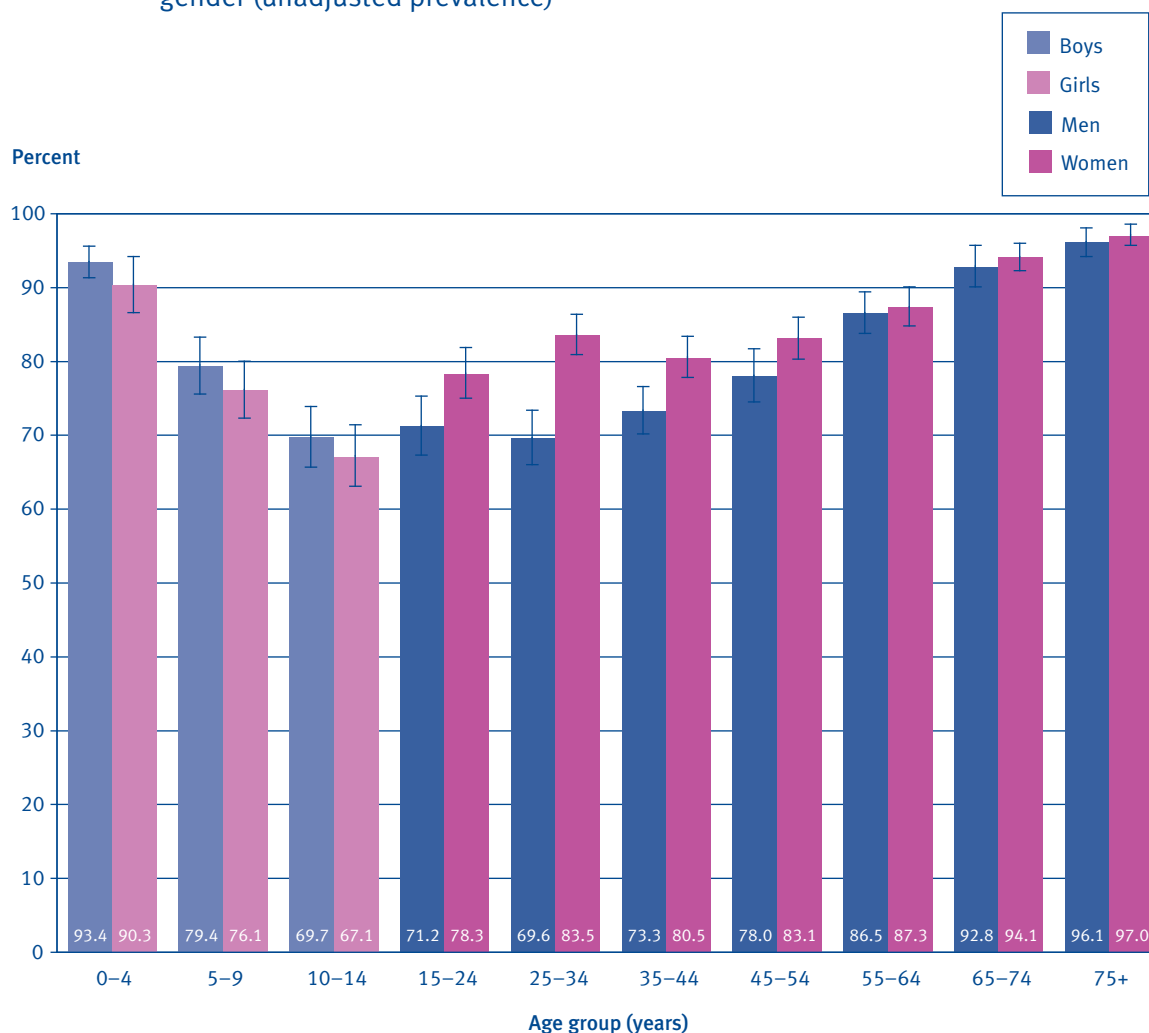
Saw a GP in the previous 12 months

Overall, four out of five children (79.2%, 77.7–80.7) and four out of five adults (81.3%, 80.3–82.3) had seen a GP in the previous 12 months. Adjusted for age, boys and girls were equally likely to have seen a GP in the previous 12 months, while women (83.4%, 82.1–84.7) were significantly more likely than men to have seen a GP in the previous 12 months (76.6%, 75.1–78.1).

Saw a GP in the previous 12 months, by age group

The proportion of the population who had seen a GP in the last 12 months was highest for children aged less than five years and adults aged over 65 years. The lowest proportion was for children aged 10–14 years (Figure 6.1).

Figure 6.1: Children and adults who saw a GP in the previous 12 months, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Saw a GP in the previous 12 months, by ethnic group

Pacific boys (SRR 1.05, 1.01–1.10) were significantly more likely than boys in the total population to have seen a GP in the previous 12 months. European/Other adults (SRR 1.02, 1.01–1.02) were significantly more likely than the total adult population to have seen a GP in the previous 12 months, while Asian adults (SRR 0.91, 0.88–0.95) were less likely to have done so.

Saw a GP in the previous 12 months, by neighbourhood deprivation

There were no significant differences in the use of GP services by neighbourhood deprivation for either children or adults.

Saw a GP in the previous 12 months, by DHB area

The proportion of children who saw a GP in the previous 12 months was significantly higher in the Auckland DHB area than the national rate, while this proportion was significantly lower in the South Island DHBs, excluding Canterbury (Table 6.1).

There were no significant differences in proportion of adults in each DHB area who saw a GP in the previous 12 months.

Table 6.1: Children and adults who saw a GP in the previous 12 months, by DHB area (unadjusted)

DHB area	Prevalence in children (95% CI)	Number of children	Prevalence in adults (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	81.7 (78.4–85.0)	94400	82.6 (80.4–84.8)	310200
Waitemata	80.0 (75.4–84.6)	83200	81.4 (78.3–84.5)	308400
Auckland	83.8 (79.4–88.1) +	62600	79.3 (76.0–82.7)	256000
Counties Manukau	80.1 (76.0–84.2)	89100	83.3 (80.5–86.0)	268500
Waikato	75.3 (71.0–79.6)	57400	80.8 (78.5–83.1)	209500
Bay of Plenty / Taranaki / MidCentral	78.3 (73.8–82.8)	77100	79.8 (77.1–82.5)	280400
Wairarapa / Hutt Valley / Capital and Coast	80.9 (76.1–85.6)	72300	82.2 (79.6–84.7)	284800
Canterbury	79.0 (73.4–84.6)	71800	83.0 (80.3–85.8)	308200
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	73.3 (67.2–79.4) –	68900	79.3 (76.1–82.4)	311400
New Zealand total	79.2 (77.7–80.7)	676800	81.3 (80.3–82.3)	2537400

Source: 2006/07 New Zealand Health Survey

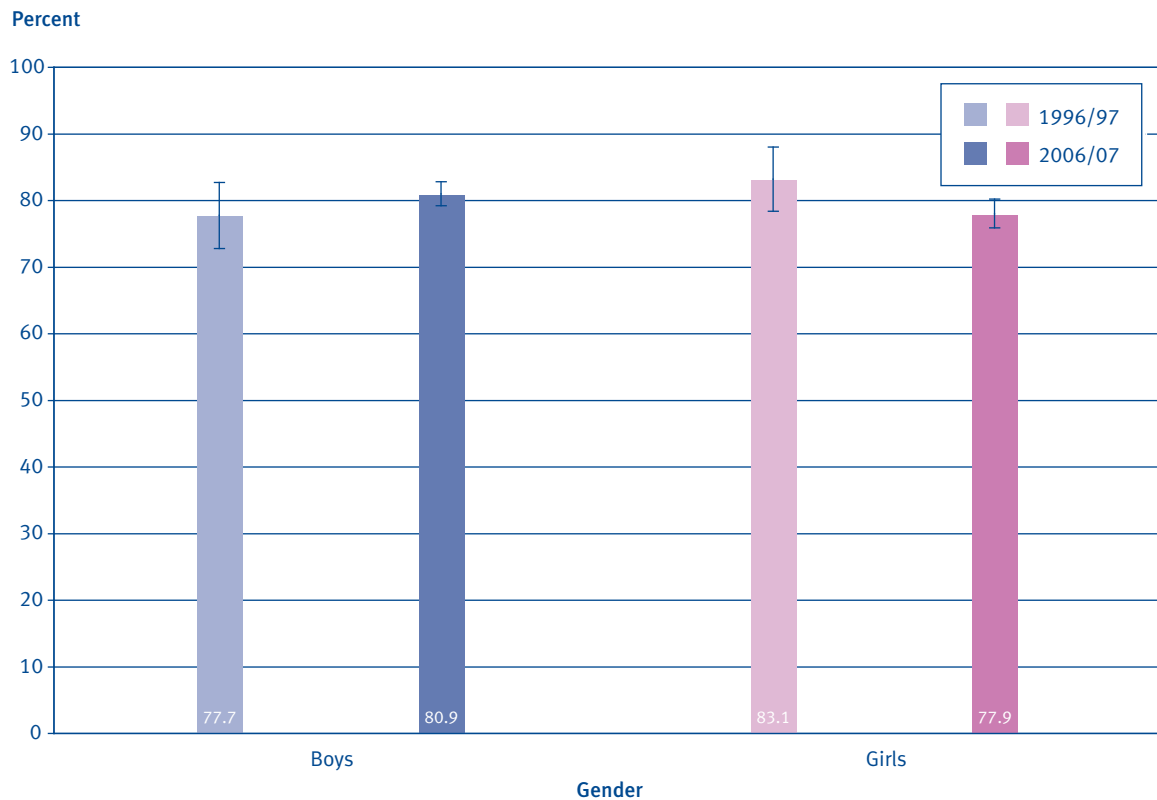
Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends in the use of GPs in the previous 12 months

Between 1996/97 and 2006/07, there has been no change in the proportion of boys who saw a GP in the previous 12 months, adjusted for age (Figure 6.2). For girls, adjusted for age, there has been a small, but not significant decline in the proportion who saw a GP in the previous 12 months from 83.1% to 77.9% (p-value = 0.05).

There was no change in the proportion of Māori children who saw a GP in the previous 12 months between 1996/97 and 2006/07, adjusted for age.

Figure 6.2: Children who saw a GP in the previous 12 months, by gender, 1996/97 and 2006/07 (age standardised prevalence)



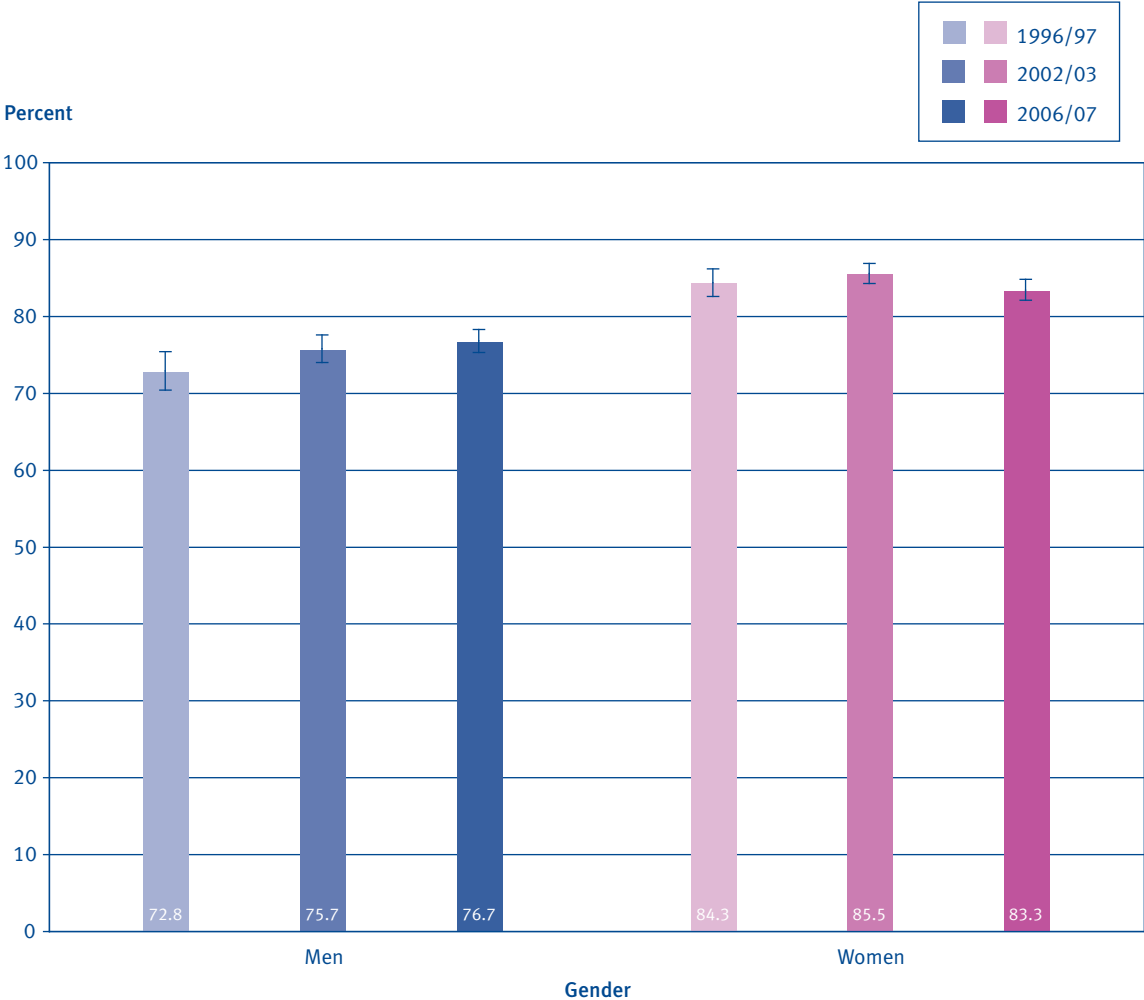
Source: 1996/97 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability. Data not available for 2002/03.

For men, between the 1996/97 and 2006/07 New Zealand Health Surveys, there was an increase in the proportion who saw a GP in the previous 12 months (p-value < 0.05), adjusted for age (Figure 6.3). For women, there was a significant decline between 2002/03 and 2006/07 in the proportion that saw a GP in last 12 months (p-value < 0.05).

For Māori, there was a significant increase in the proportion of men who saw a GP in the previous 12 months between the 2002/03 and 2006/07 health surveys, adjusted for age (Figure 6.4).

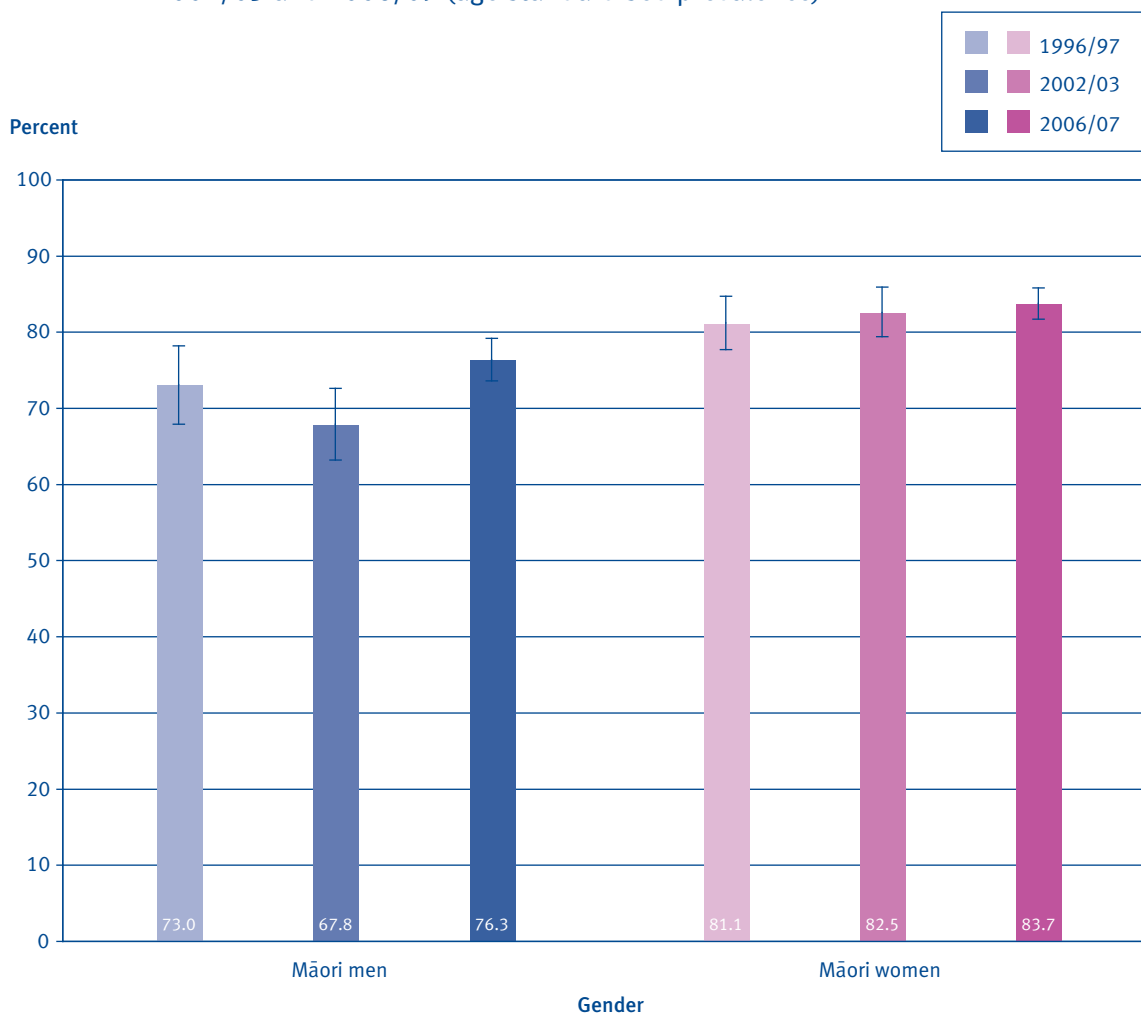
Figure 6.3: Adults who saw a GP in the previous 12 months, by gender, 1996/97, 2002/03 and 2006/07 (age standardised prevalence)



Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Figure 6.4: Māori adults who saw a GP in the previous 12 months, by gender, 1996/97, 2002/03 and 2006/07 (age standardised prevalence)



Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Number of visits to a GP in previous 12 months

The median number¹⁶ of visits to a GP in the previous 12 months for both children and adults was two. Children aged less than five years had a higher median number of visits (three), as did adults aged 55–64 years (three) and those aged 65 years and over (four). There were no significant differences in the number of visits by ethnic group or neighbourhood deprivation for either children or adults.

Time trends in the number of visits to a GP in the previous 12 months

There are no time trends available for children on the number of visits to a GP in the previous 12 months.

From 2002/03 to 2006/07, there was no change in the median number of two visits to a GP in the previous 12 months, for both men and women, adjusted for age.

¹⁶ Other reports may use the mean (average) number of visits, which is slightly higher than the median number of visits in the previous 12 months, due to a small number of people in this sample with a very high number of visits.

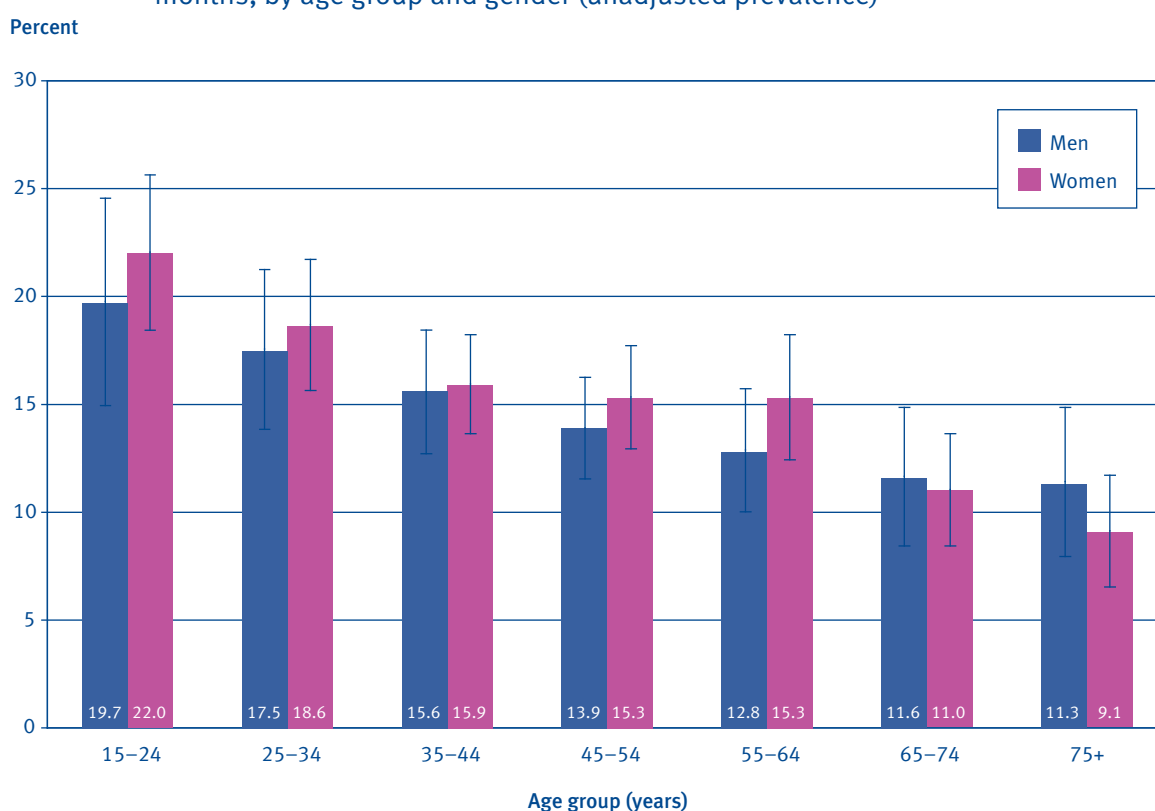
Among Māori men, the median number of visits increased from one in 2002/03 to two in 2006/07, adjusted for age. There was no difference in the median number of visits among Māori women (remaining steady at three visits).

Saw a GP at another primary health care provider

One in six (15.7%, 14.8–16.6) adults with a primary health care provider saw a GP in the previous 12 months who was not based at their usual primary health care provider¹⁷.

The proportion of adults who saw a GP at a different primary health care provider decreased with age (Figure 6.5). Adults aged 65 years and over were significantly less likely than those aged less than 65 years to have seen a GP at a different primary health care provider.

Figure 6.5: Adults who saw a GP outside their primary health care provider in the previous 12 months, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

The most common reasons given for seeing a GP at a different primary health care provider were:

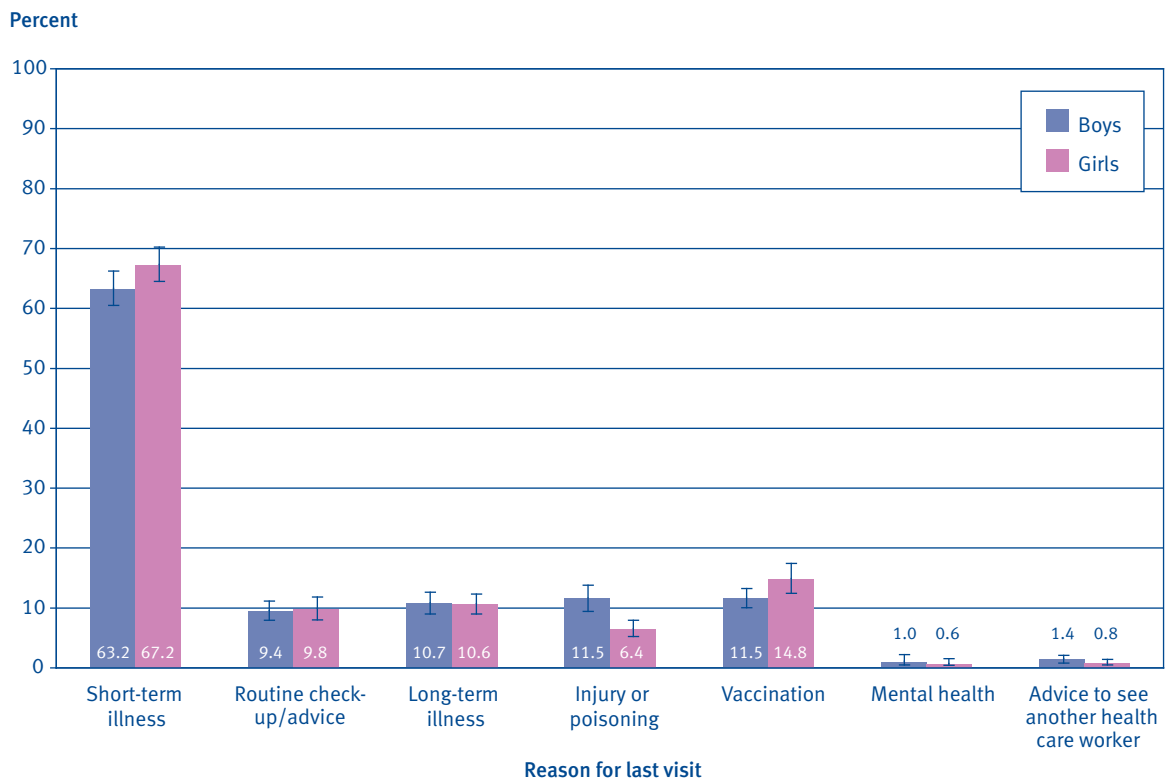
- it was after hours (38.3%, 35.3–41.3)
- I see different GPs for different conditions (18.0%, 15.5–20.5)
- I could not get an appointment with my usual health care provider (16.7%, 14.7–18.6)
- I was on holiday or at work away from my usual health care provider (13.3%, 11.4–15.2)
- another GP was closer/more convenient (5.5%, 4.1–6.9).

¹⁷ Chapter 5 contains more information about primary health care providers.

Reason for last visit to GP

For children who saw a GP in the previous 12 months, the usual reason for their last GP visit was a short-term condition, followed by vaccination for girls and injury/poisoning or vaccination for boys (Figure 6.6).

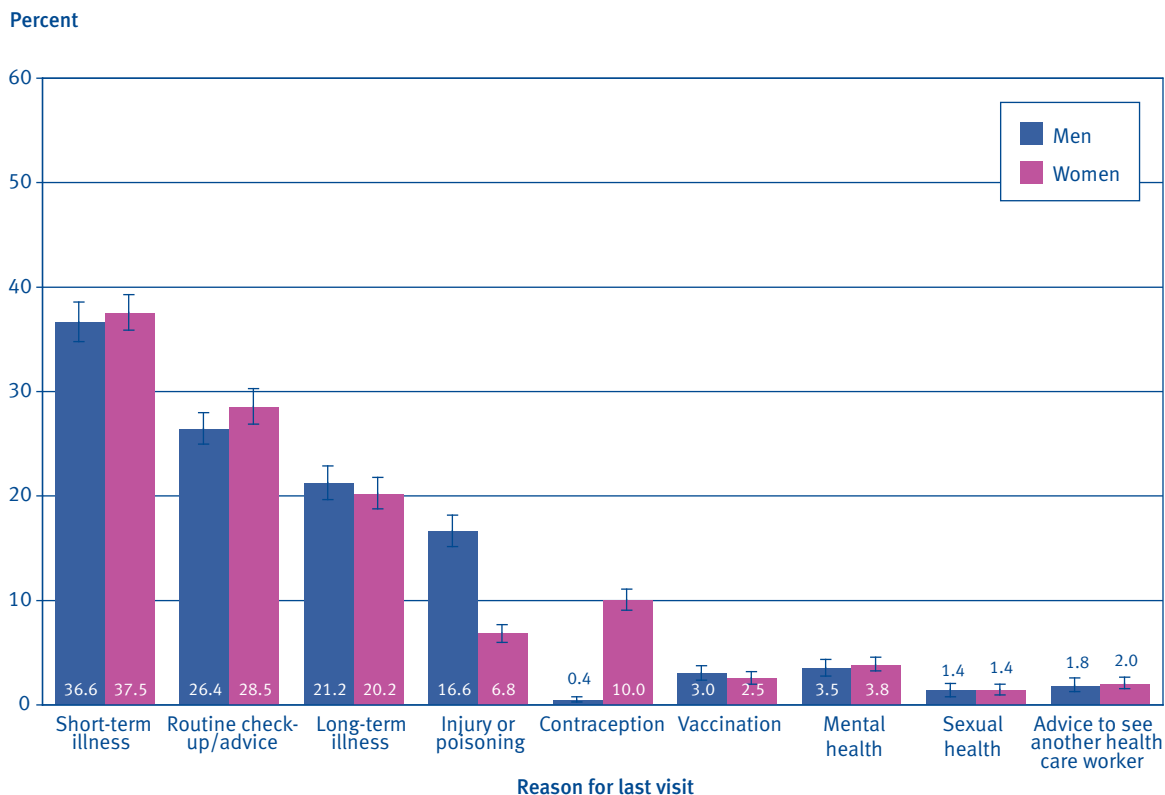
Figure 6.6: Reason for last visit to GP for children, by gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

For adults who saw a GP in the previous 12 months, the most common reason for the last GP visit was for a short-term illness, followed by a routine check-up or advice. Adjusted for age, men were much more likely than women to have seen a GP for an injury or poisoning, and women were much more likely than men to have seen a GP for contraception (Figure 6.7).

Figure 6.7: Reason for last visit to GP for adults, by gender (age standardised prevalence)

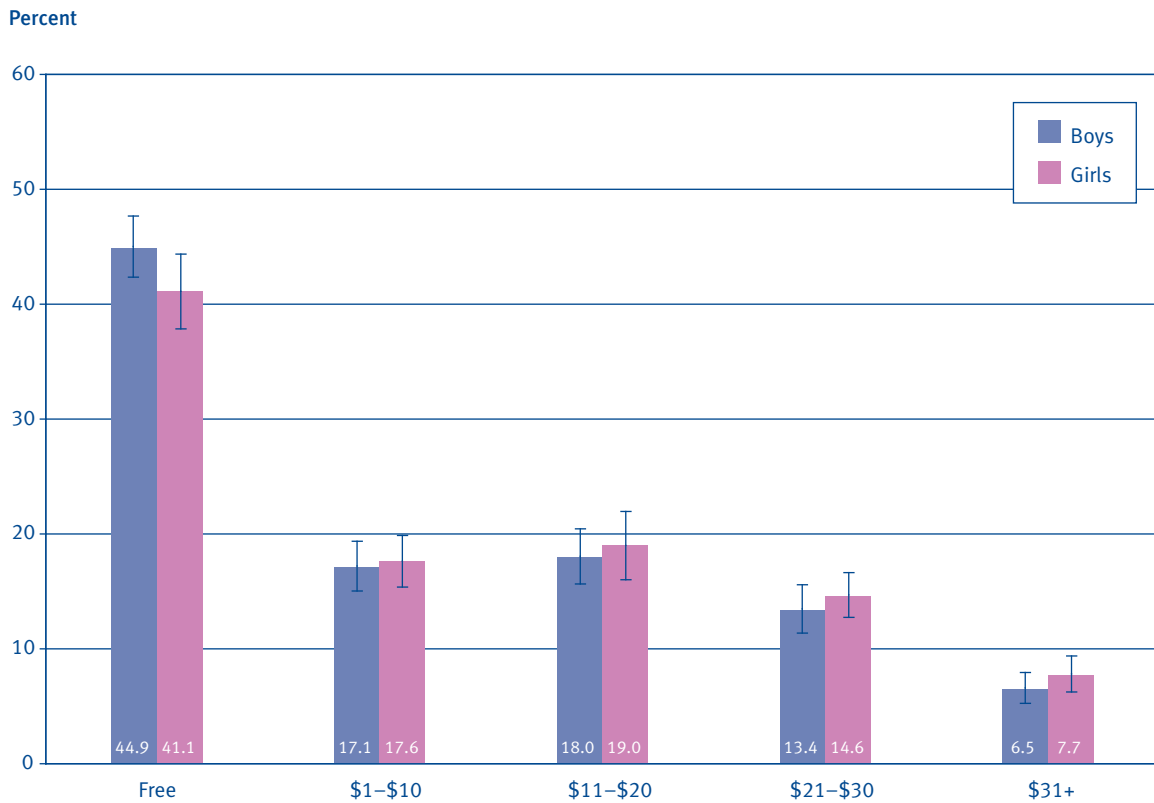


Source: 2006/07 New Zealand Health Survey

Cost of last visit to GP

The last visit to a GP was free for two out of five children (42.5%, 40.3–44.7) aged from birth to 14 years, while the cost for a further 17.3% (15.6–19.0) was \$10 or less. Adjusted for age, there were no significant differences between boys and girls in the cost of last visit to a GP (Figure 6.8)

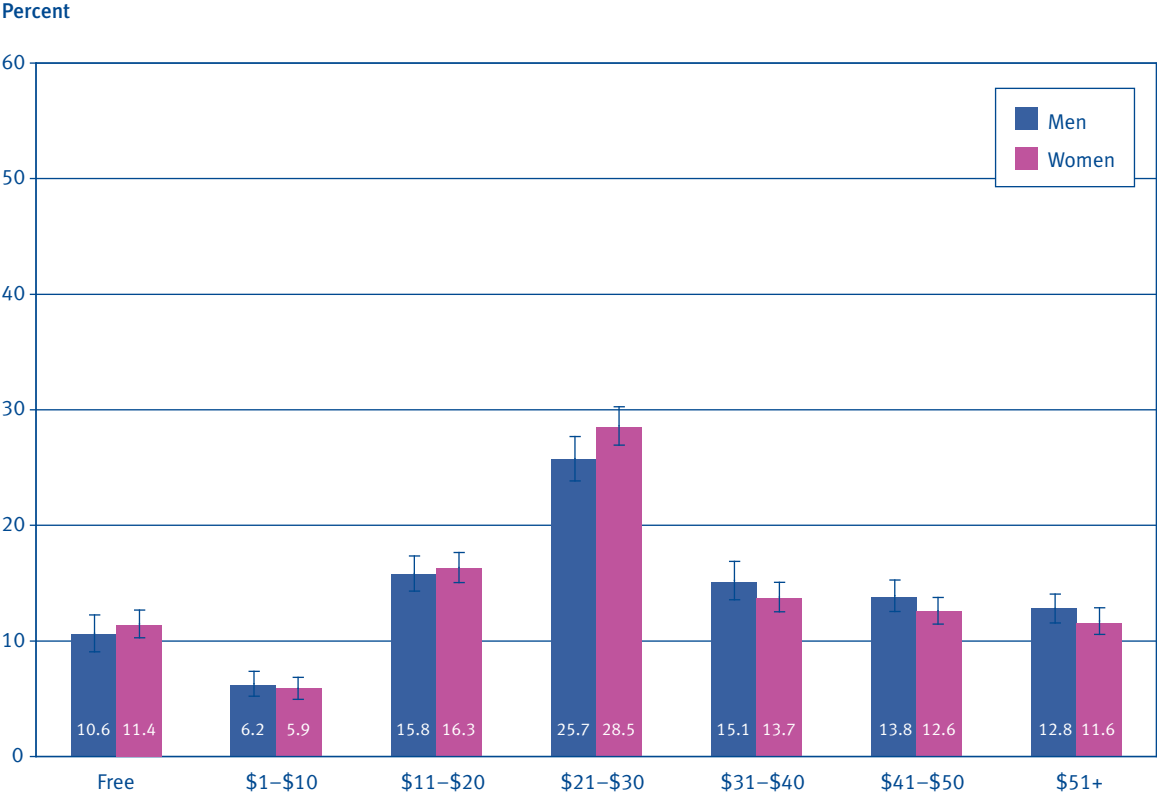
Figure 6.8: Cost of last GP visit for children, by gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

For men and women, the most common cost of their last GP visit was \$21 to \$30, followed by \$11–20 (Figure 6.9). One in ten adults were not charged for their last visit to a GP. Adjusted for age, there was little difference between men and women in the cost for their last GP visit, however women were slightly more likely than men to be charged \$21–30 (Figure 6.9).

Figure 6.9: Cost of last GP visit for adults, by gender (age standardised prevalence)



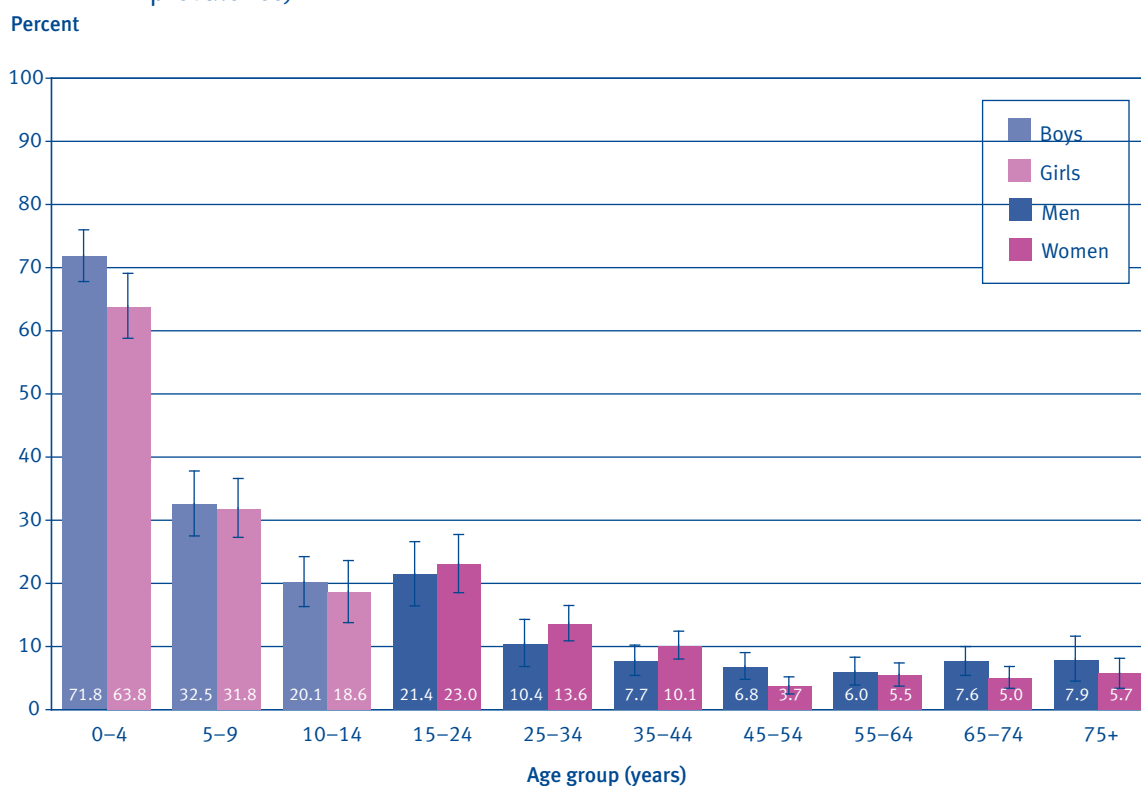
Source: 2006/07 New Zealand Health Survey

Last GP visit free, by age group

The proportion of children whose last GP visit was free decreased with increasing age. Children aged 0–4 years (68.0%, 64.9–71.1) were significantly more likely than those aged 5–9 years (32.2%, 28.5–35.9) and 10–14 years (19.4%, 16.2–22.6) to have had a free last GP visit (Figure 6.10). The last GP visit was free for two-thirds (67.0%, 64.2–69.9) of children aged less than six years.

Adults aged 15–24 years were significantly more likely than all other adult age groups to have had a free last GP visit with one in five (22.3%, 19.0–25.6) adults aged 15–24 years not charged for their last GP visit (Figure 6.10). For adults aged 65 years and over, 6.4%, (5.1–7.8) had a free last GP visit.

Figure 6.10: Population whose last GP visit was free, by age group and gender (unadjusted prevalence)

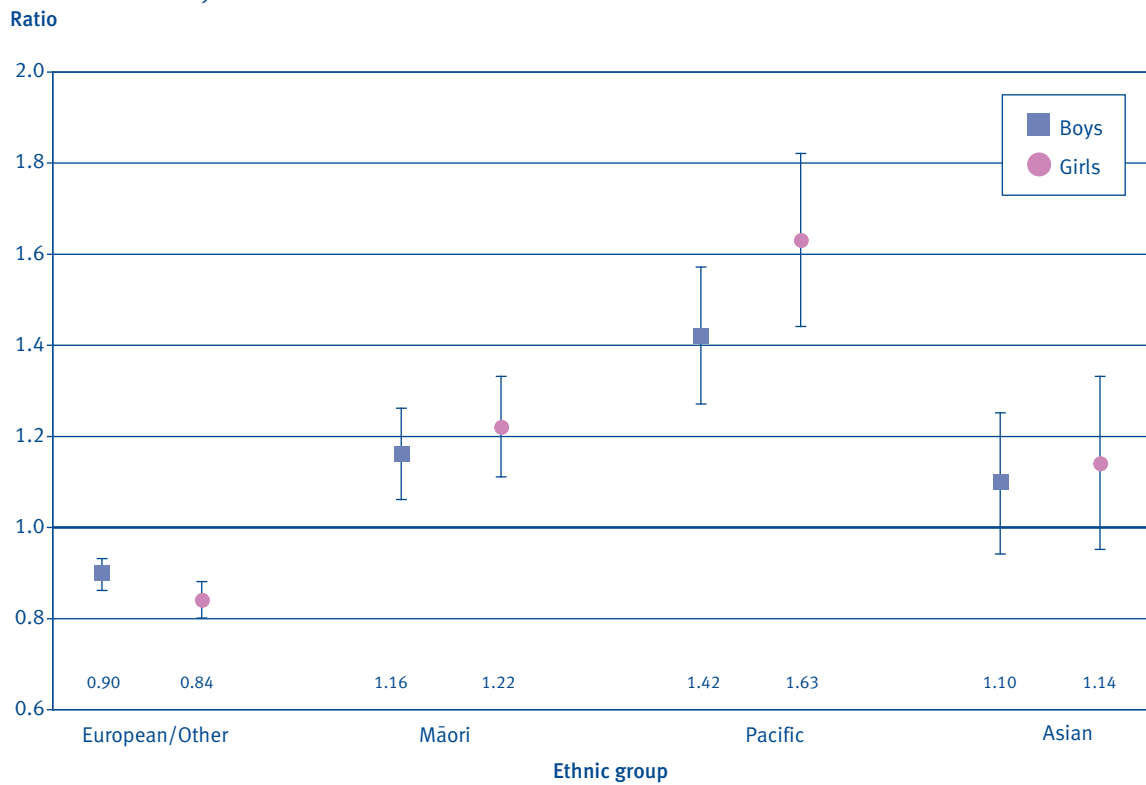


Source: 2006/07 New Zealand Health Survey

Last GP visit free, by ethnic group

After adjusting for age, Māori and Pacific boys and girls were significantly more likely than boys and girls in the total population to have had a free last GP visit (Figure 6.11). Māori (SRR 1.16, 1.10–1.22) and Pacific (SRR 1.25, 1.15–1.35) children under six years of age were also significantly more likely than all children under six years of age to have had a free last GP visit (graph not shown).

Figure 6.11: Last GP visit free for children, by ethnic group and gender (age standardised rate ratio)

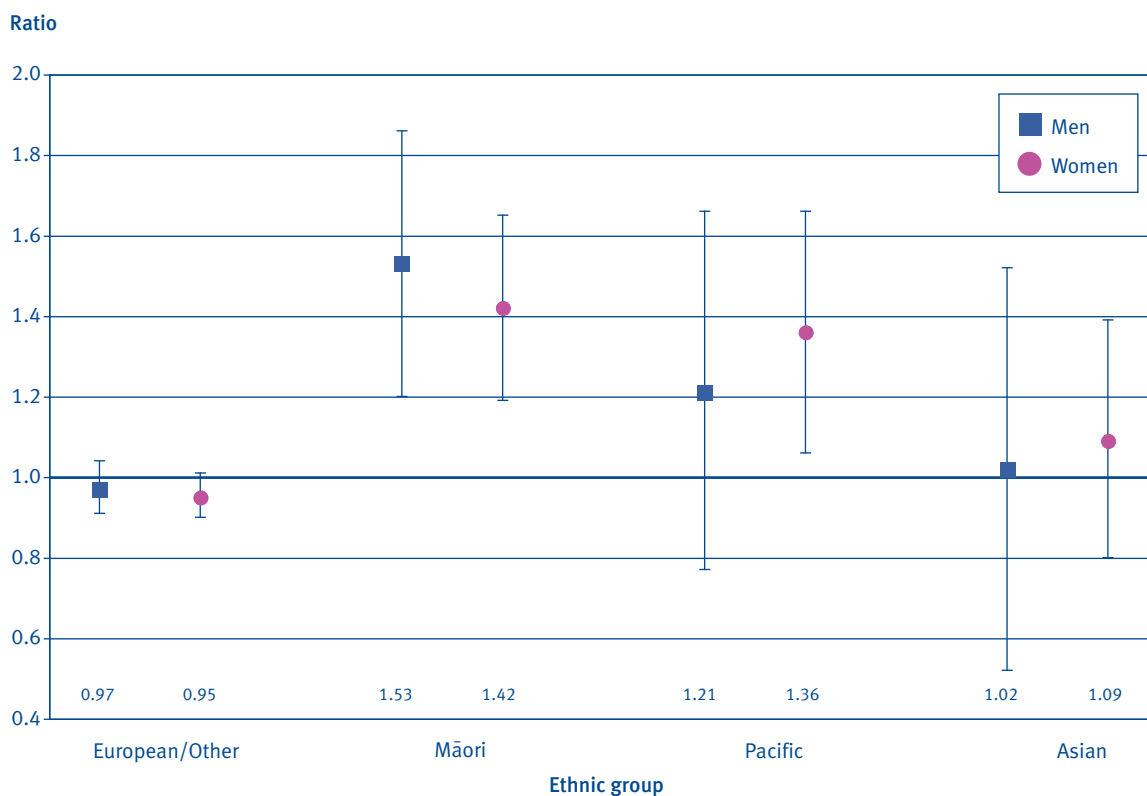


Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged from birth to 14 years. Total response standard output for ethnic groups has been used.

Māori men and women and Pacific women were significantly more likely than men and women in the total adult population to report that their last GP visit was free (Figure 6.12).

Figure 6.12: Last GP visit free for adults, by ethnic group and gender (age standardised rate ratio)



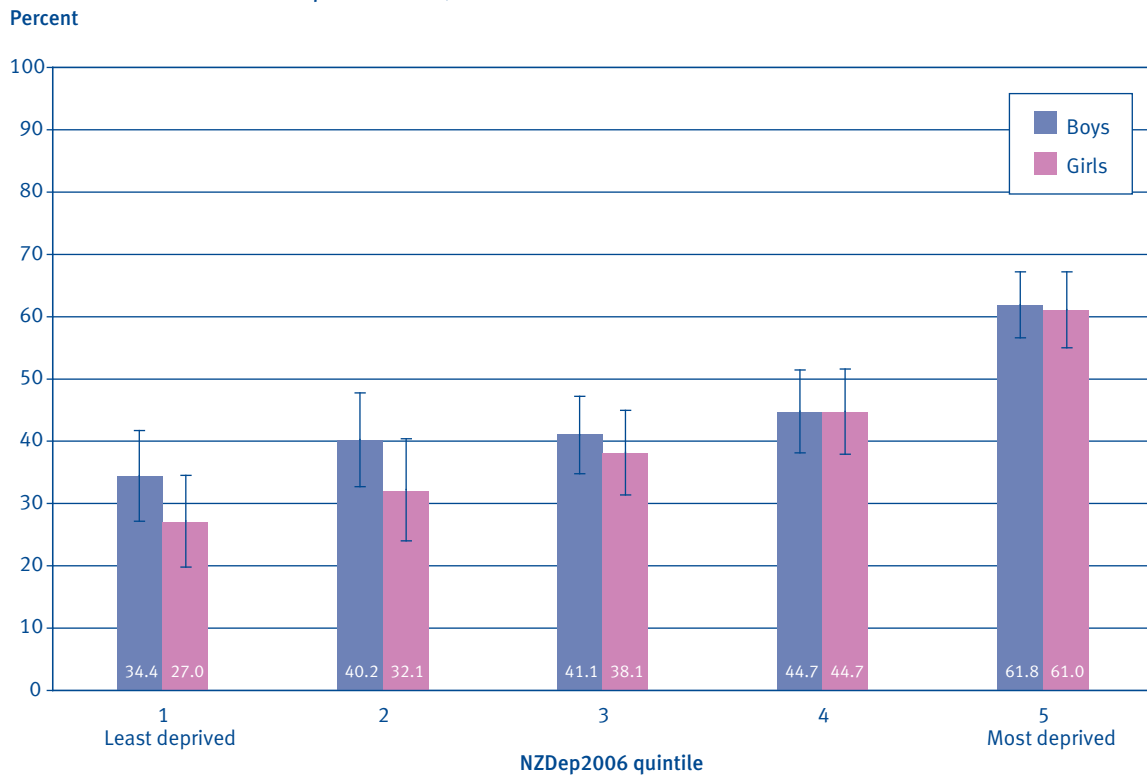
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Last GP visit free, by neighbourhood deprivation

Children in NZDep2006 quintile 5 (most deprived) neighbourhoods were significantly more likely to have had a free last GP visit than those in any other NZDep2006 quintile (Figure 6.13). The same trend was seen for children aged under six years.

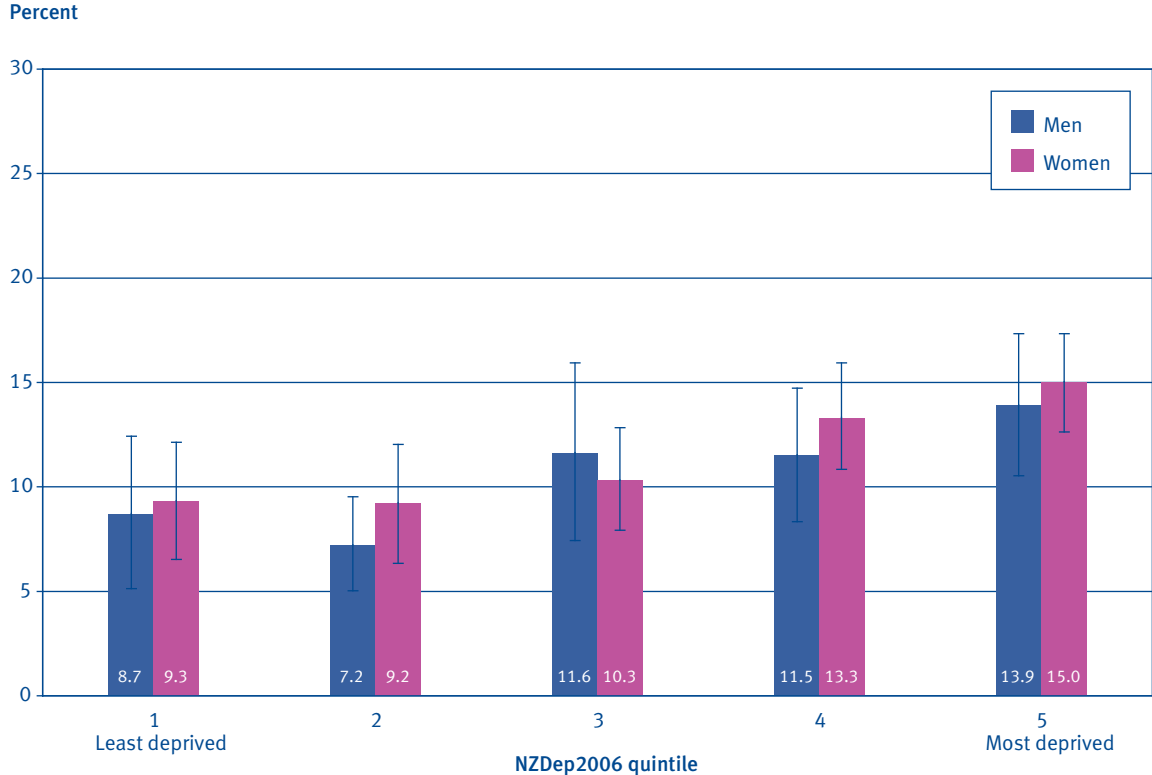
Figure 6.13: Children whose last GP was free, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Women in NZDep2006 quintile 5 (most deprived) neighbourhoods were significantly more likely to have had a free GP visit than women in NZDep2006 quintiles 1 (least deprived) and 2 (Figure 6.14).

Figure 6.14: Adults whose last GP was free, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Last GP visit free, by DHB area

There was a lot of variation by DHB area in the proportion of the population whose last visit to a GP was free.

The proportion of children whose last GP visit was free was significantly higher in the Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui and Counties Manukau DHB areas than nationally, while this proportion was significantly lower in Wairarapa / Hutt Valley / Capital and Coast and Canterbury DHB areas than nationally (Table 6.2).

The proportion of adults whose last GP visit was free was significantly higher in the Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui DHB area than nationally, while this proportion was significantly lower in the Waitemata and Bay of Plenty / Taranaki / MidCentral DHB areas (Table 6.2).

Table 6.2: Last visit to GP was free, children and adults, by DHB area (unadjusted)

DHB area	Prevalence in children (95% CI)	Number of children	Prevalence in adults (95%CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	41.5 (36.9–46.1) +	47900	12.5 (10.2–14.7) +	38700
Waitemata	28.0 (21.4–34.5)	29100	6.8 (4.7–8.8) –	20900
Auckland	39.6 (32.7–46.4)	29600	7.6 (5.0–10.3)	19500
Counties Manukau	47.1 (41.3–53.0) +	52400	10.1 (8.0–12.3)	27200
Waikato	32.1 (26.6–37.5)	24500	10.0 (7.1–12.9)	21000
Bay of Plenty / Taranaki / MidCentral	32.8 (27.6–37.9)	32300	6.8 (5.2–8.4) –	19100
Wairarapa / Hutt Valley / Capital and Coast	22.4 (17.1–27.6) –	20000	11.9 (9.1–14.6)	33800
Canterbury	22.1 (16.4–27.7) –	20100	11.7 (8.9–14.6)	36200
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	30.3 (23.6–36.9)	28500	11.6 (8.9–14.4)	36300
New Zealand total	33.3 (31.5–35.1)	284800	10.0 (9.2–10.8)	252600

Source: 2006/07 New Zealand Health Survey

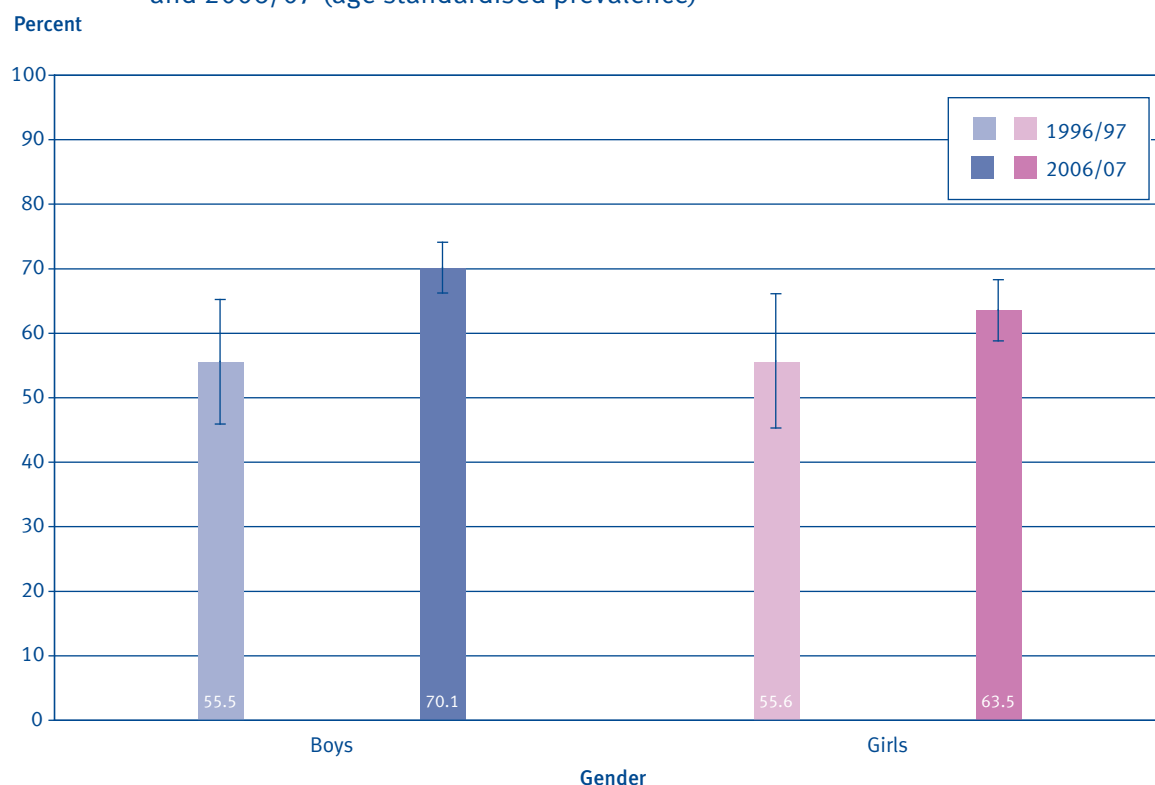
Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends in last GP visit free

Overall for children in the total population, between 1996/97 and 2006/07, there was no change in the proportion whose last visit to a GP was free. For children under six years of age, there was a significant increase in the proportion of children whose last visit to a GP was free, adjusting for age, from 55.5% (48.5–62.6) in 1996/97 to 67.0% (64.1–69.8) in 2006/07. When looking at boys and girls separately, this increase is significant only in boys (Figure 6.15).

There was also a significant increase in the proportion of Māori boys under 6 years of age whose last visit to a GP was free from 61.8% (44.5–79.2) in 1996/97 to 80.7% (75.0–86.5) in 2006/07 (p-value < 0.05), with no change for Māori girls.

Figure 6.15: Children aged under 6 years whose last visit to GP was free, by gender, 1996/97 and 2006/07 (age standardised prevalence)



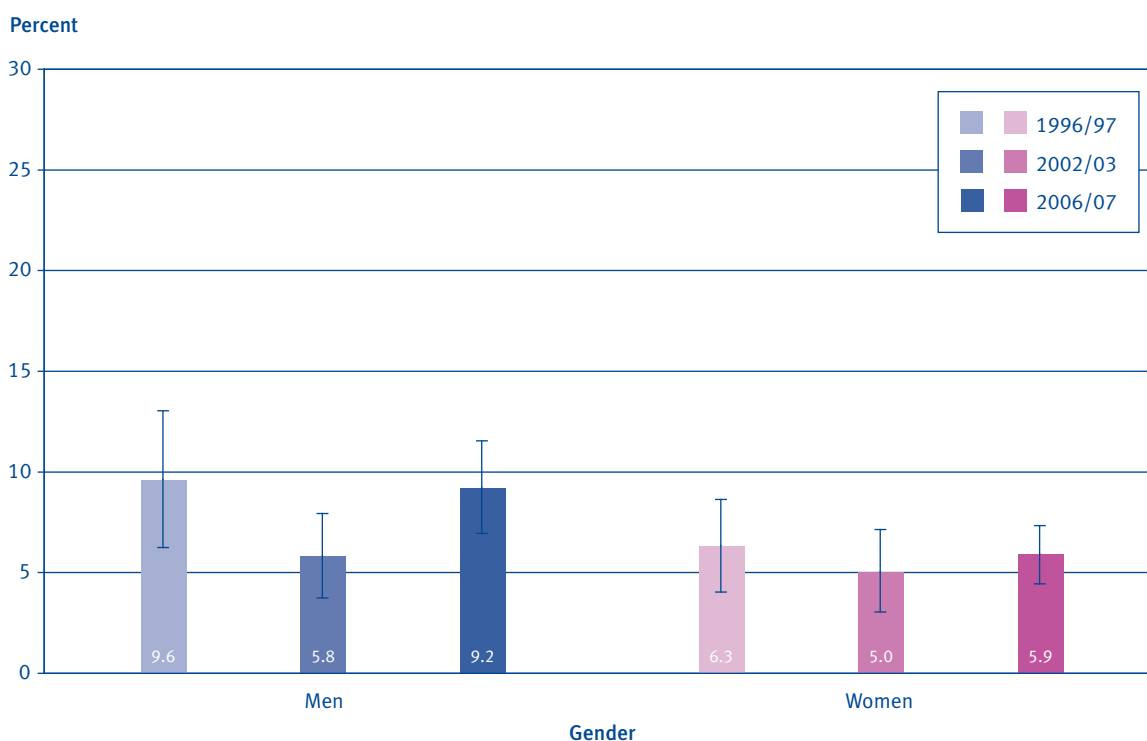
Source: 1996/97 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability. Data not available for 2002/03.

Among adults, between 1996/97 and 2002/03, there was no change in the proportion whose last visit to a GP was free. Among adults aged 65 years and over, there was an increase in the proportion of men whose last visit to a GP was free (p-value < 0.05) (Figure 6.16).

There was also a significant increase in the proportion of Māori men over 65 years of age whose last visit to a GP was free from 7.3 % (2.6–11.9) in 2002/03 to 26.4% (15.7–39.6) in 2006/07, with no change for Māori women.

Figure 6.16: Adults aged 65 years and over whose last visit to GP was free, by gender, 1996/97, 2002/03, 2006/07 (age standardised prevalence)



Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Unmet need for GP services in previous 12 months

Four percent (3.3–4.8) of children and 6.3% (5.8–6.9) of adults needed to see a GP in the previous 12 months but were unable to for any reason, that is, they had an unmet need for a GP. This equates to 34,600 children and 197,400 adults.

For children who had unmet need for a GP visit in the previous 12 months:

- 55.5% were unable to see a GP once
- 29.4% were unable to see a GP twice
- 15.1% were unable to see a GP three times or more.

Parents, whose child was unable to see a GP when needed, reported that the last time this happened they:

- did nothing (23.5%, 15.2–31.7)
- saw their child's GP at a later date (16.9%, 10.6–23.1)
- went to an after-hours medical centre (13.0%, 7.9–19.7)
- went to a hospital emergency department (9.5%, 4.9–16.1), or
- went to a pharmacy instead (7.0%, 4.0–11.4).

For adults who had unmet need for a GP visit in the previous 12 months:

- 40.4% were unable to see a GP once
- 31.1% were unable to see a GP twice
- 28.5% were unable to see a GP three times or more.

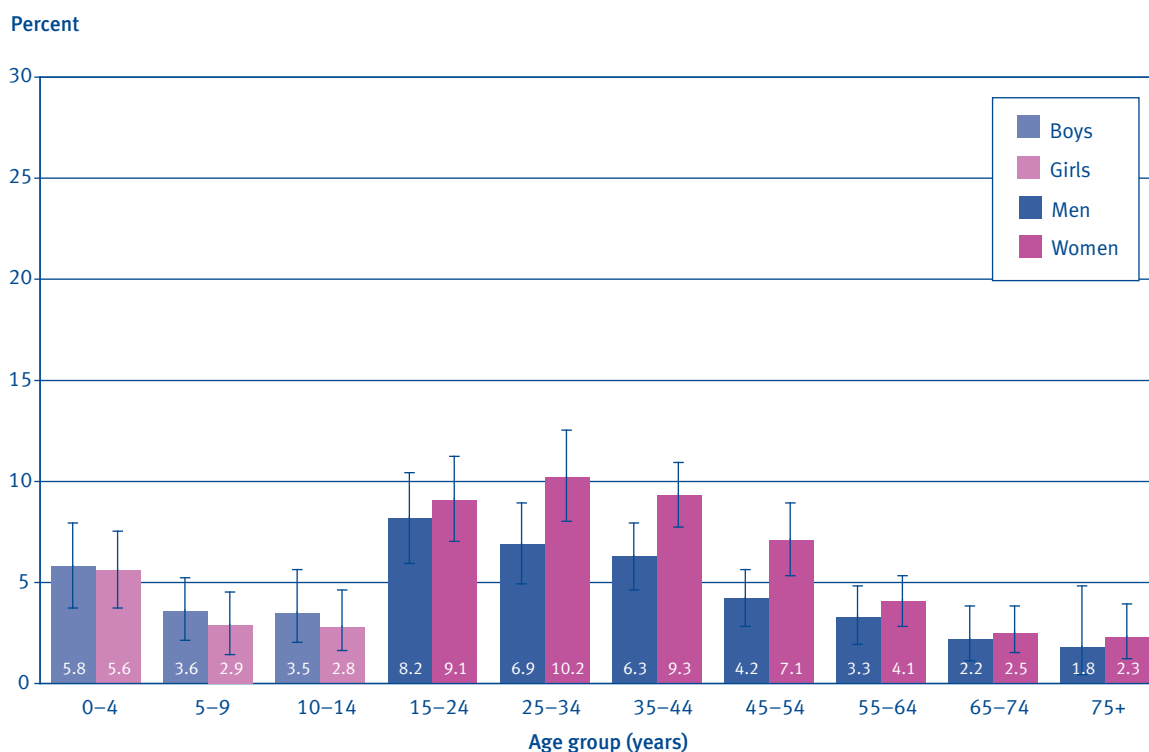
Adults who were unable to see a GP when needed, reported the last time this happened they:

- did nothing (45.8%, 41.7–50.0)
- went to a pharmacy (13.7%, 10.4–17.0)
- saw their GP at a later date (13.1%, 10.1–16.1)
- went to a hospital emergency department (3.9%, 2.3–5.5), or
- went to an after-hours medical centre instead (2.9%, 1.7–4.5).

Unmet need for GP services, by age group

The proportion of children reporting an unmet need for GP services decreased with age (Figure 6.17). For adults the same pattern can be seen, with the younger age groups having greater unmet need compared to the older age groups. Adjusted for age, boys and girls were equally likely to have an unmet need for a GP, while women (7.8%, 6.9–8.6) were significantly more likely than men (5.7%, 4.9–6.5) to report unmet need.

Figure 6.17: Unmet need for GP services for children and adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Unmet need for GP services, by ethnic group

Table 6.3 gives an indication of the proportions and numbers of children in New Zealand’s main ethnic groups that were unable to see a GP when they needed to in the previous 12 months.

Table 6.3: Unmet need for a GP in the previous 12 months for any reason for children, by ethnic group (unadjusted)

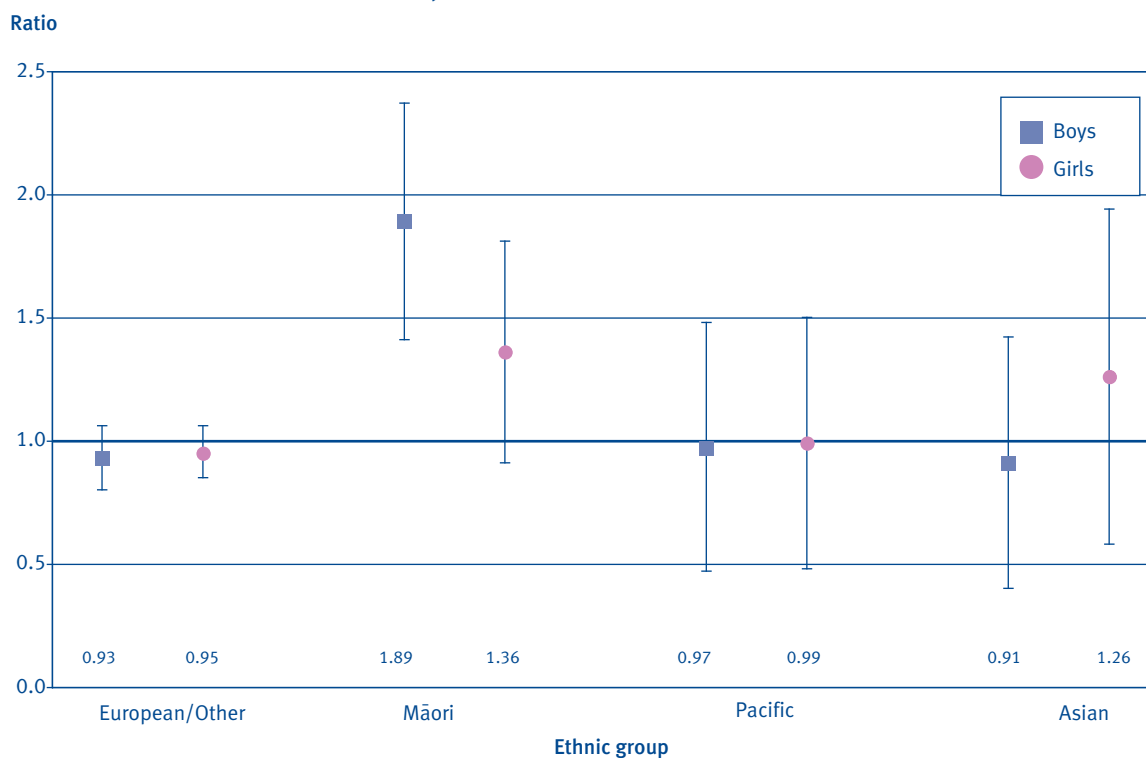
Ethnic group	Prevalence (95% CI)	Number of children
European/ Other	3.8 (3.0–4.6)	24500
Māori	6.7 (5.2–8.3)	13200
Pacific	4.0 (2.5–5.6)	4000
Asian	4.3 (2.4–6.1)	3300

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Māori boys (SRR 1.89, 1.41–2.37) were significantly more likely than boys in the total population to have had an unmet need for GP services in the previous 12 months (Figure 6.18).

Figure 6.18: Unmet need for GP services for children, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged from birth to 14 years. Total response standard output for ethnic groups has been used.

Table 6.4 gives an indication of the proportions and numbers of adults in New Zealand’s main ethnic population groups that were unable to see a GP when they needed to in the previous 12 months.

Table 6.4: Unmet need for a GP in the previous 12 months for any reason for adults, by ethnic group (unadjusted)

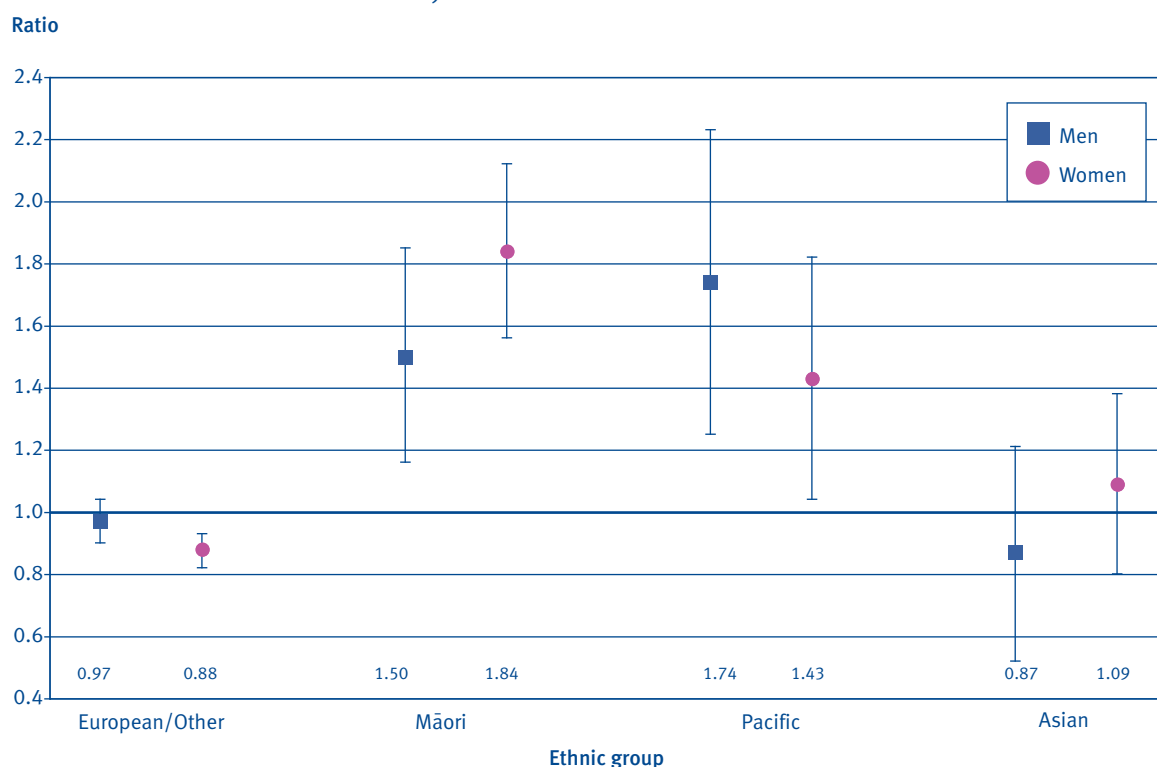
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	5.6 (5.0–6.1)	141800
Māori	12.1 (10.6–13.6)	43100
Pacific	11.2 (8.5–13.9)	18500
Asian	7.4 (5.7–9.2)	20800

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Māori and Pacific men and women were significantly more likely to report an unmet need for GP services in the previous 12 months compared to men and women in the total adult population (Figure 6.19).

Figure 6.19: Unmet need for GP services for adults, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

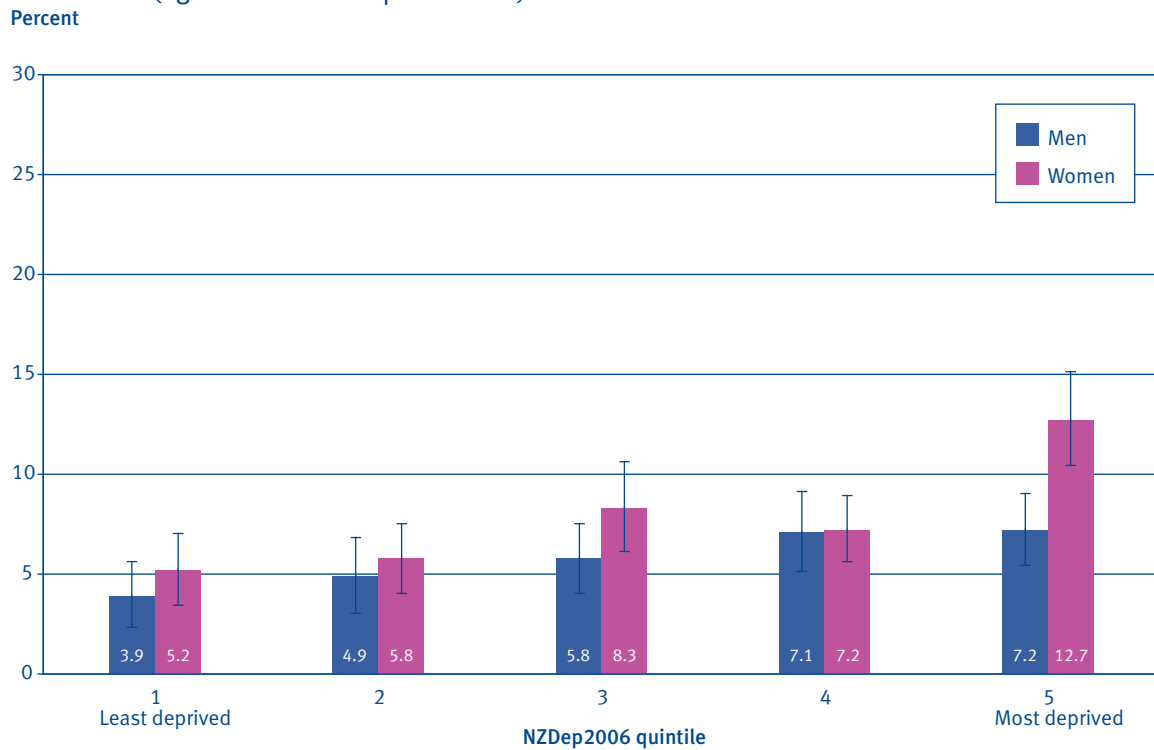
Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Unmet need for GP services, by neighbourhood deprivation

There were no significant differences in reporting an unmet need for GP services between NZDep2006 quintile 1 (least deprived) and quintile 5 (most deprived) for boys and girls.

Men and women in NZDep2006 quintile 5 (most deprived) neighbourhoods were significantly more likely to report an unmet need for GP services than those in quintile 1 (least deprived) (Figure 6.20).

Figure 6.20: Adults with an unmet need for GP services, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Unmet need for GP services, by DHB area

The proportion of children and adults having an unmet need for a GP visit was significantly lower in the Counties Manukau and Nelson Marlborough / West Coast / South Canterbury / Otago / Southland DHB areas than nationally (Table 6.5).

The proportion of adults having an unmet need for a GP visit was significantly lower in the Counties Manukau and the South Island DHBs, including Canterbury, than the national rate, while this proportion was significantly higher in Waikato and Wairarapa / Hutt Valley / Capital and Coast DHB areas than nationally.

Table 6.5: Unmet need for GP services for children and adults, by DHB area (unadjusted)

DHB area	Prevalence in children (95% CI)	Number of children	Prevalence in adults (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	4.5 (2.4–6.5)	5100	7.5 (6.1–8.8)	28200
Waitemata	4.4 (2.3–7.6)	4600	7.5 (5.6–9.3)	28400
Auckland	3.9 (1.9–7.1)	2900	7.0 (5.0–9.0)	22500
Counties Manukau	2.3 (1.3–3.8) –	2600	4.5 (2.9–6.1) –	14500
Waikato	5.9 (3.6–8.2)	4500	9.5 (7.1–12.0) +	24700
Bay of Plenty / Taranaki / MidCentral	3.9 (2.3–6.0)	3800	6.0 (4.6–7.4)	21100
Wairarapa / Hutt Valley / Capital and Coast	5.0 (2.5–8.9)	4500	8.8 (6.8–10.7) +	30400
Canterbury	4.9 (2.4–8.8)	4500	3.5 (2.3–4.7) –	12900
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	2.2 (0.9–4.6) –	2000	3.7 (2.4–5.1) –	14700
New Zealand total	4.0 (3.3–4.8)	34500	6.3 (5.8–6.9)	197400

Source: 2006/07 New Zealand Health Survey

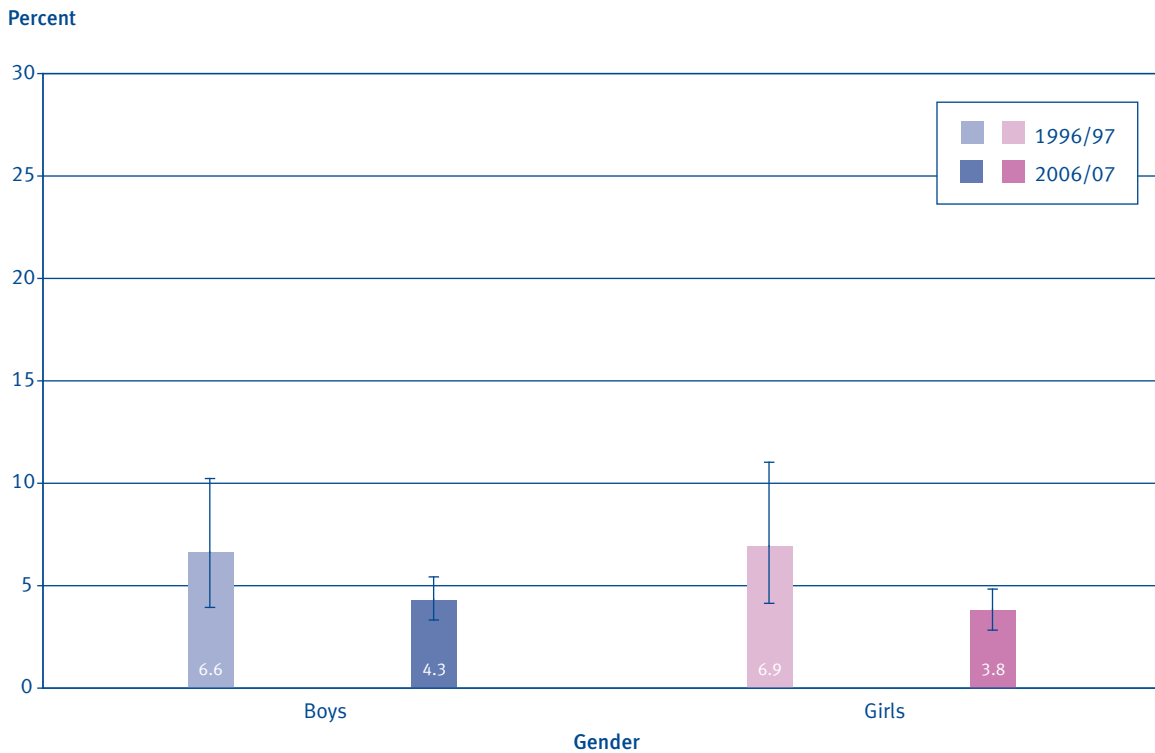
Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends in unmet need for GP services (any reason)

Overall, between 1996/97 and 2006/07 there was a 40% decrease in the proportion of children whose parents reported an unmet need for GP services, adjusted for age, from 6.8% in 1996/97 to 4.1% in 2006/07. When looking at boys and girls separately, there were also decreases but these changes were not significant (Figure 6.21).

The number of Māori children in the 1996/97 Health Survey was too small to make any meaningful comparisons with the findings from the 2006/07 Health Survey results.

Figure 6.21: Unmet need for a GP visit for children (any reason), by gender, 1996/97 and 2006/07 (age standardised prevalence)



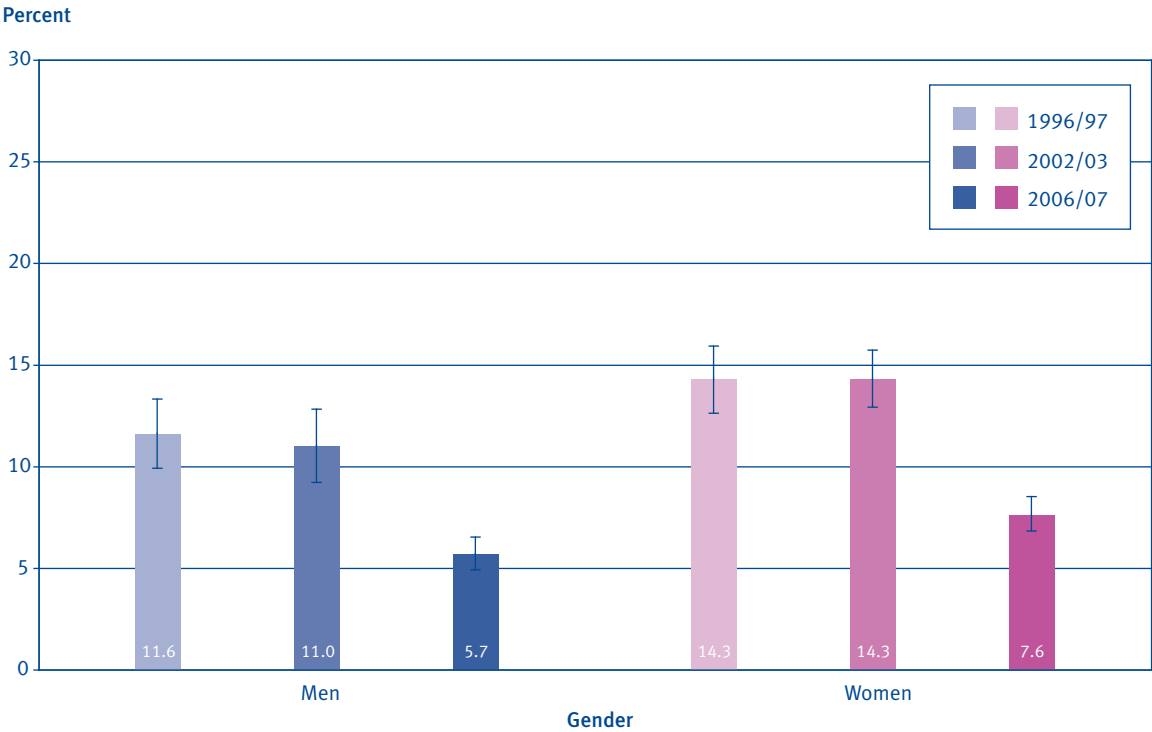
Source: 1996/97 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability. Data not available for 2002/03.

From 2002/03 to 2006/07 there was a large decrease (almost 50%) in the proportion of men and women reporting an unmet need for GP services, adjusted for age (Figure 6.22).

A similar trend can be seen for Māori adults, with the proportion reporting an unmet need for GP services declining in men and women, adjusted for age (Figure 6.23). However, the decrease is not as large for Māori, compared to men and women in the total population (43% decrease for Māori men and 35% decrease for Māori women in unmet need for GP services since 2002/03).

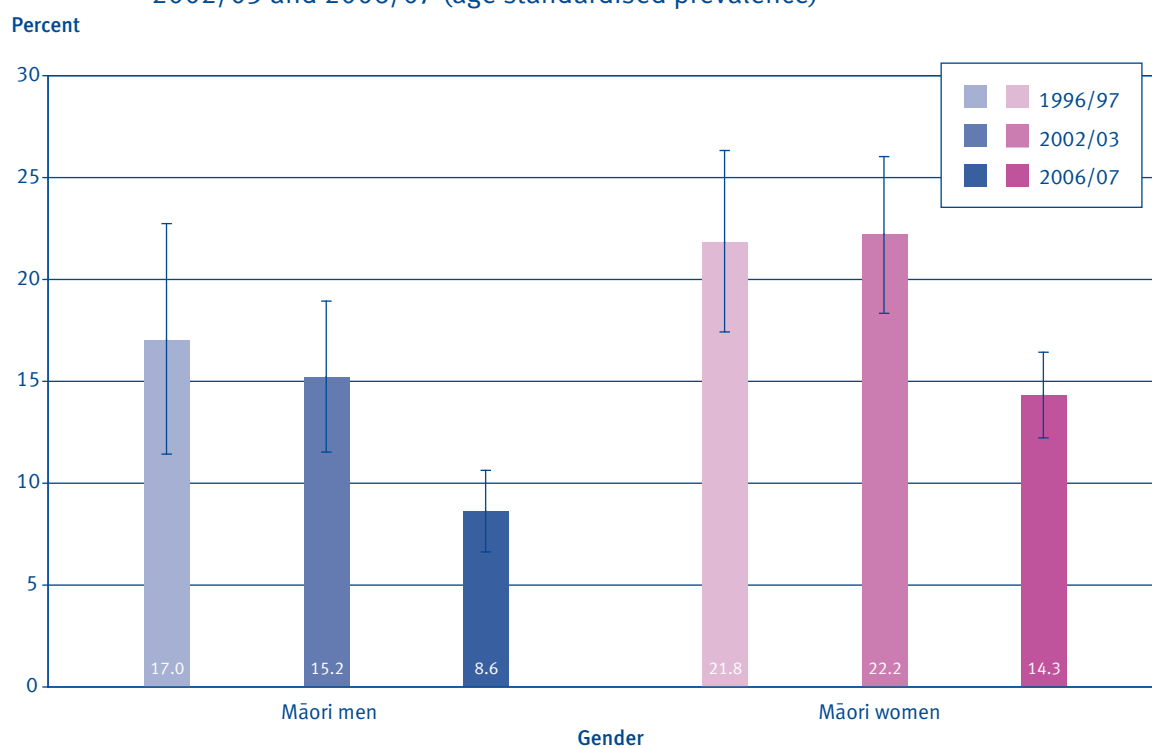
Figure 6.22: Unmet need for a GP visit for adults (any reason), by gender, 1996/97, 2002/03 and 2006/07 (age standardised prevalence)



Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Figure 6.23: Unmet need for a GP visit for Māori adults (any reason), by gender, 1996/97, 2002/03 and 2006/07 (age standardised prevalence)



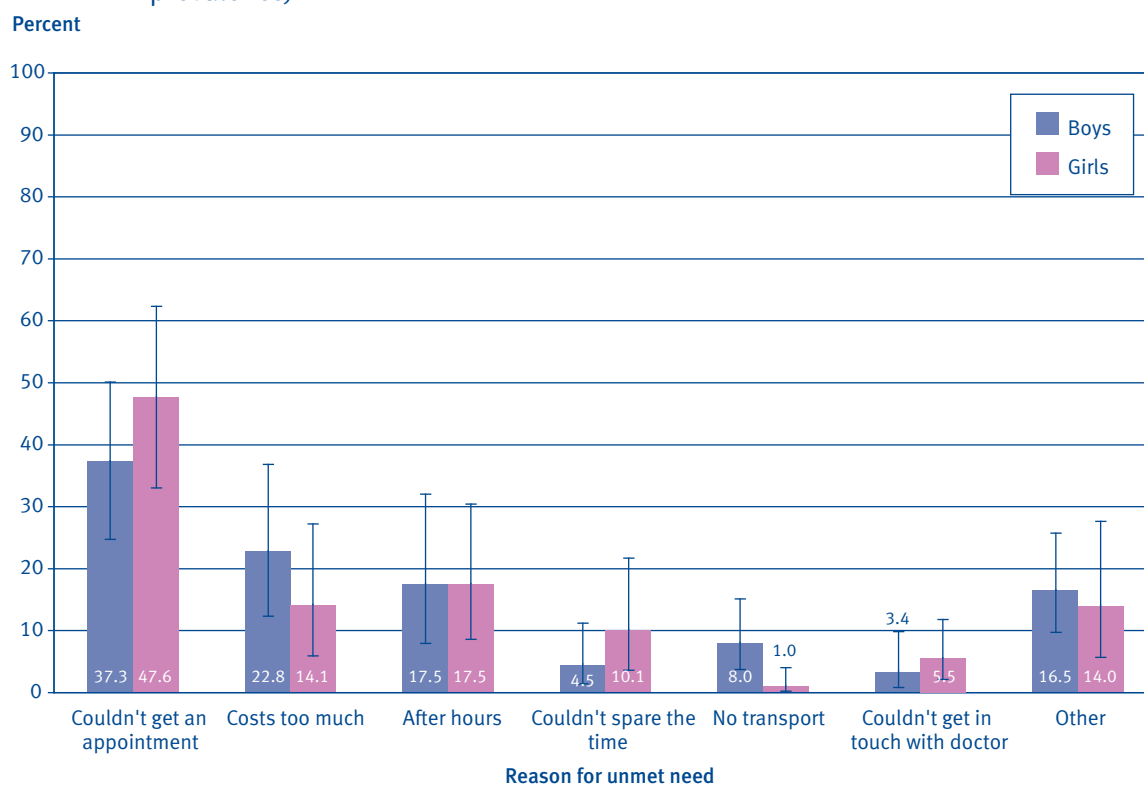
Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Reason for unmet need for GP services

The most common reasons given by parents for the last time their child could not see a GP when they needed to were: couldn't get an appointment soon enough or at a suitable time; it costs too much; and it was after hours (Figure 6.24).

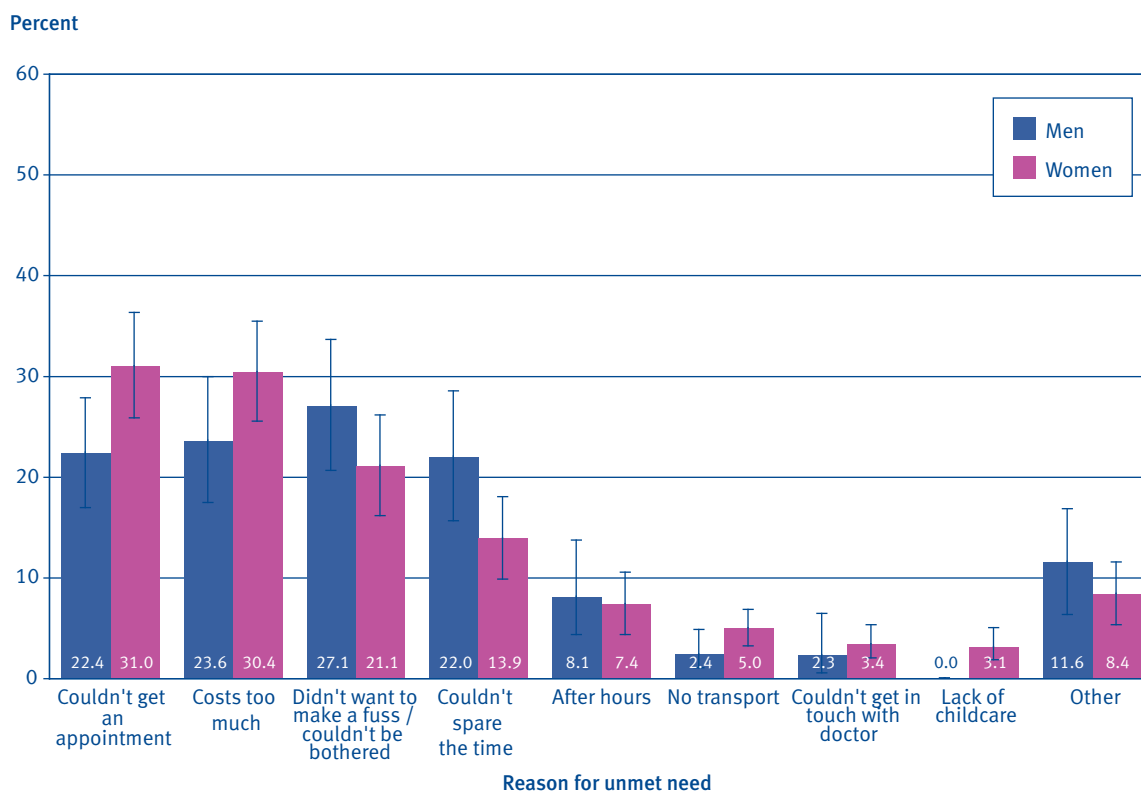
Figure 6.24: Reason for unmet need for GP services for children, by gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

The most common reasons for women being unable to see a GP when they last needed to were being unable to get an appointment soon enough or at a suitable time and cost, while for men the most common reasons given were that they didn't want to make a fuss / couldn't be bothered, followed by cost, being unable to get an appointment soon enough or at a suitable time, and couldn't spare the time (Figure 6.25).

Figure 6.25: Reason for unmet need for GP services for adults, by gender (age standardised)



Source: 2006/07 New Zealand Health Survey

Unmet need for GP services due to cost

One in 125 children (0.8%, 0.4–1.1) and 1 in 59 adults (1.7%, 1.4–1.9) were unable to see a GP due to cost (that is, cost was the barrier for the last time they couldn't see a GP when they wanted to in the previous 12 months), which equates to 6600 children and 52,500 adults.

When adjusting for age, boys and girls were equally likely, while women (2.4%, 1.9–2.8) were significantly more likely than men (1.4%, 0.9–1.8), to be unable to see a GP due to cost.

Māori children (SRR 2.33, 1.30–3.36) and Māori adults (SRR 2.19, 1.67–2.70) were significantly more likely than children and adults in the total population respectively to be unable to see a GP due to cost. Asian boys (SRR 0.12, 0.00–0.37) and Asian men (SRR 0.27, 0.00–0.55) were significantly less likely than boys and men in the total population respectively to be unable to see a GP due to cost.

Adults in the most deprived neighbourhoods (NZDep2006 quintile 5) (3.0%, 2.2–3.8) were significantly more likely than those in the least deprived neighbourhoods (quintile 1) (1.2%, 0.7–2.0) to be unable to see a GP due to cost. There were no significant differences in neighbourhood deprivation for children.

Time trends in reason for unmet need for GP services

Among children, after adjusting for age, there was a significant decrease in unmet need due to cost, from 4.0% (2.5–6.1) in 1996/97 to 0.8% (0.4–1.1) in 2006/07 (an 80% decline). For Māori children, there has also been a decrease in unmet need due to cost, from 10.8% (5.8–17.9) in 1996/97 to 1.8% (0.9–3.2) in 2006/07 (an 83% decline).

For adults, between 2002/03 and 2006/07 there was also a significant decrease in the proportion of adults who reported an unmet need for GP services due to cost from 6.3% (5.4–7.1) to 1.8% (1.5–2.1) (a 71% decline). Among Māori, there was also a decrease in unmet need for GP services due to cost from 10.8% (8.3 - 13.3) in 2002/03 to 4.1% (3.2–5.1) in 2006/07 (a 62% decline).

In 2002/03, after adjusted for age, the main reason for unmet need for GP services for men was ‘cost’, but in 2006/07 the main reason for unmet need had become ‘didn’t want to make a fuss / couldn’t be bothered’ and ‘unable to get an appointment soon enough or at a suitable time’. Between 2002/03 and 2006/07, the proportion of women who reported being ‘unable get an appointment soon enough or at a suitable time’ as a reason for unmet need also increased, replacing ‘cost’ as the main reason in 2006/07.

For Māori adults, although the proportion reporting ‘cost’ as the reason for unmet need declined from 2002/03 to 2006/07, it remained the main reason for unmet need in 2006/07 for this ethnic group.

Uncollected prescriptions due to cost

GPs are the most common prescribers of medicine in New Zealand – in the 2006/07 survey, 94.4% (93.9–95.0) of adults who had a prescription in the previous 12 months received their prescription from a GP.

Overall 1.1% (0.8–1.5) of parents of all children and 1.4% (1.2–1.7) of all adults did not collect their prescription due to cost the last time they had an uncollected prescription, which equates to 9700 children and 44,200 adults. When adjusting for age, there were no significant differences in uncollected prescriptions by gender for children or adults.

Uncollected prescriptions due to cost, by ethnic group

Asian children were much less likely (SRR 0.29, 0.00–0.59) than children in the total population to have an uncollected prescription due to cost. European/Other (SRR 0.79, 0.68–0.90) adults were significantly less likely than adults in the total population to have an uncollected prescription due to cost, while Māori (SRR 2.31, 1.74–2.88) and Pacific (SRR 2.88, 2.03–3.73) adults were significantly more likely.

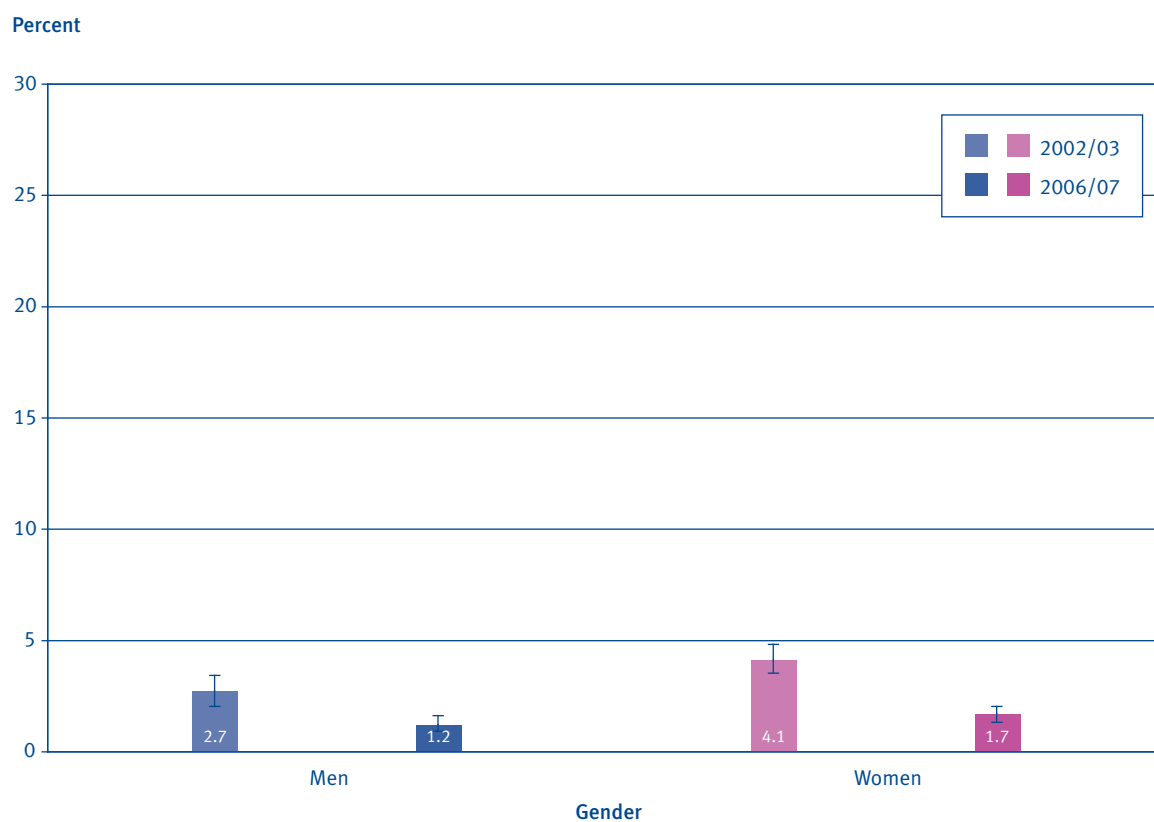
Uncollected prescriptions due to cost, by neighbourhood deprivation

Children (2.2%, 1.3–3.6) and adults (3.3%, 2.4–4.2) in the most deprived neighbourhoods (NZDep2006 quintile 5) were significantly more likely than children (0.4%, 0.1–1.0) and adults (0.6%, 0.3–1.1) in the least deprived neighbourhoods (quintile 1) to have an uncollected prescription due to cost.

Time trends in uncollected prescriptions due to cost

From 1996/97 to 2006/07 there was no change in the proportion of children with uncollected prescriptions in the previous 12 months due to cost, adjusted for age (graph not shown). For adults, from 2002/03 to 2006/07 there was a significant decline in the proportion of men and women with uncollected prescriptions in the previous 12 months due to cost, adjusted for age (Figure 6.26).

Figure 6.26: Adults with uncollected prescription due to cost in the previous 12 months, by gender, 2002/03 and 2006/07 (age standardised prevalence)



Source: 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Primary health care nurses

Introduction

Primary health care nurses (sometimes called practice nurses) play an important role in the delivery of primary health care services in New Zealand. In 2001 the Primary Health Care Strategy identified primary health care nurses as crucial to its successful implementation, and called for greater development of the role of nurses in the New Zealand health sector.

Nurses have skills and abilities that can be used effectively to improve the health and wellbeing of individuals, families and communities. Increased nurse involvement in primary health care is acknowledged to be an effective way not only to reduce inequalities in health, but also to improve population health in a way that is cost effective (Primary Health Care Nurse Innovation Evaluation Team 2007).

What were the survey questions?

In the 2006/07 New Zealand Health Survey, all adult participants and parents of child participants were asked how many times they/their child had seen a primary health care nurse in the previous 12 months, (a) as part of a GP consultation and (b) alone without seeing a GP. If they had seen a primary health care nurse in the previous 12 months, they were asked about the health issue concerned, how long ago (adult participants only), and the cost of their last visit.

If adult participants saw a primary health care nurse who was not based at their usual health care provider in the previous 12 months, they were asked the reason why.

Saw a primary health care nurse in the previous 12 months

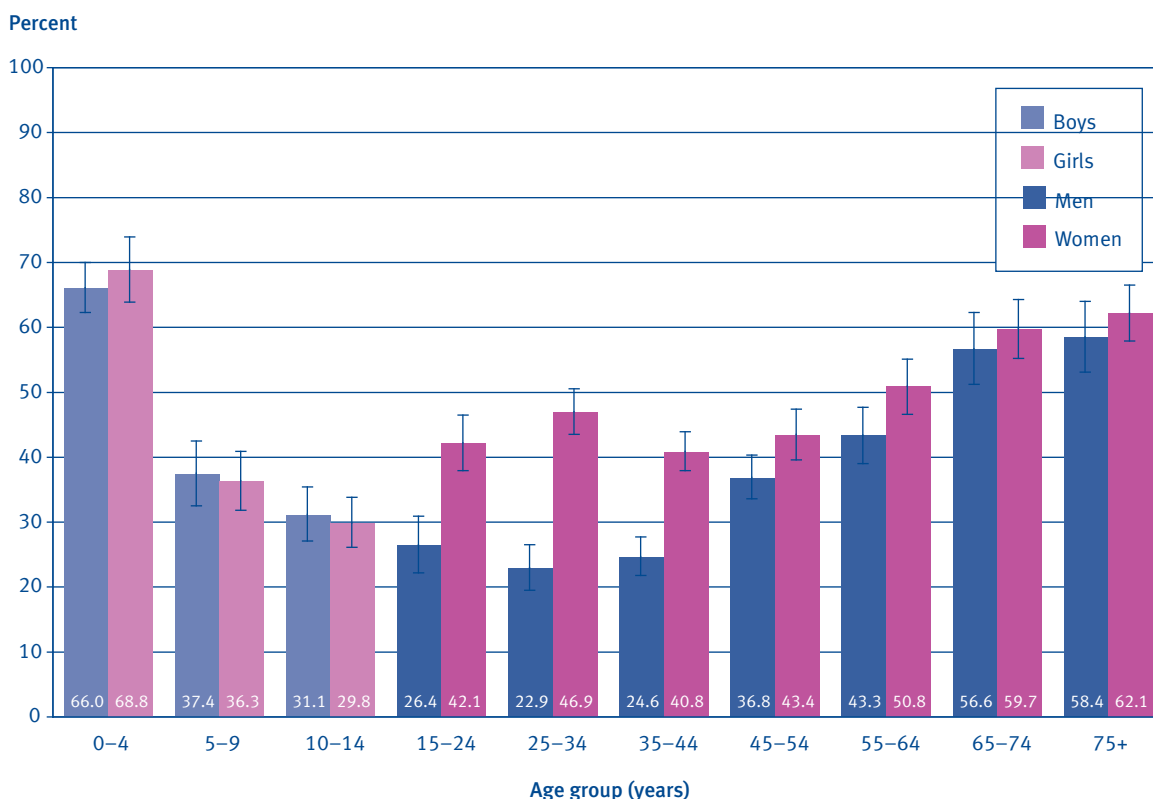
Overall, two out of five children (44.7%, 42.8–46.6) and adults (40.8%, 39.7–42.0) saw a primary health care nurse in the previous 12 months. Women (46.1%, 44.4–47.9) were significantly more likely than men (32.3%, 30.8–33.8) to have seen a primary health care nurse in the previous 12 months, while boys and girls were equally likely to have seen a primary health care nurse in the previous 12 months, adjusted for age.

One in three (33.5%, 31.8–35.2) children and one in four (25.5%, 24.5–26.5) adults saw a primary health care nurse as part of a GP consultation. One in five (22.7%, 21.2–24.3) children and one in four (28.7%, 27.7–29.7) adults saw a primary health care nurse alone without seeing a GP.

Saw a primary health care nurse, by age group

Children aged 0–4 years (67.4%, 63.9–70.8) were significantly more likely than all other age groups except those aged 65 years and over to have seen a primary health care nurse in the previous 12 months (Figure 6.27). Women aged 15–44 years were significantly more likely than men of the same age to have seen a primary health care nurse in the previous 12 months.

Figure 6.27: Saw a primary health care nurse in the previous 12 months, by age group and gender (unadjusted prevalence)



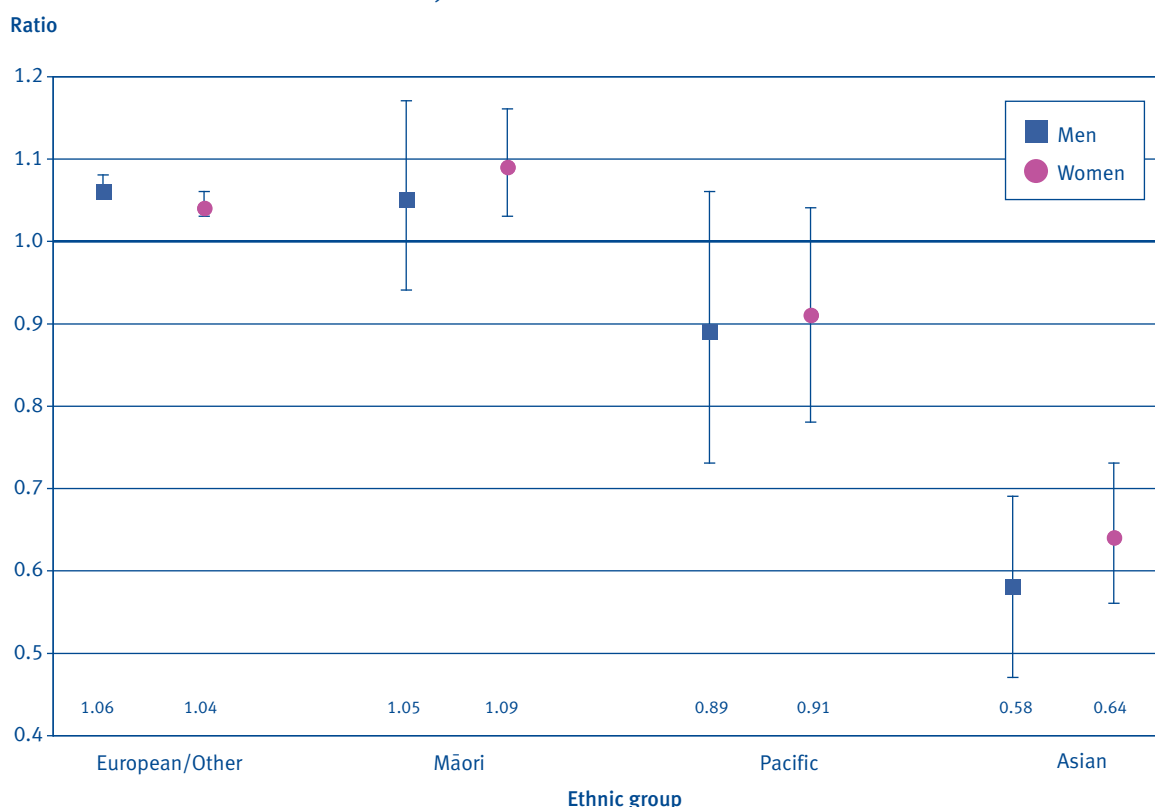
Source: 2006/07 New Zealand Health Survey

Saw a primary health care nurse, by ethnic group

Asian children (SRR 0.81, 0.72–0.90) were less likely and Māori children more likely (SRR: 1.06, 1.00–1.11) than children in the total population to have seen a primary health care nurse in the previous 12 months. There were no other significant differences by ethnic group in the proportion of children who saw a primary health care nurse in the previous 12 months.

European/Other men and women and Māori women were significantly more likely than men and women in the total population to have seen a primary health care nurse in the previous 12 months (Figure 6.28). Asian men and women were significantly less likely to have seen a primary health care nurse in the previous 12 months.

Figure 6.28: Adults who saw a primary health care nurse, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Saw a primary health care nurse, by neighbourhood deprivation

There were no significant differences by neighbourhood deprivation in the proportion of children and adults who had seen a primary health care nurse in the previous 12 months.

Number of visits to a primary health care nurse in previous 12 months

For those who saw a primary health care nurse as part of a GP consultation in the previous 12 months, the median number of visits for both children and adults was two. For those who saw a primary health care nurse alone in the previous 12 months without seeing a GP, the median number of visits for both children and adults was one.

Reason for last visit to primary health care nurse

For children who saw a primary health care nurse as part of a GP consultation, the main reasons given for the last visit were immunisation (39.1%, 35.7–42.4), short-term illness (34.0%, 30.7–37.3) and injury (10.5%, 8.4–12.5). For children who saw a primary health care nurse alone, the vast majority of last visits were for immunisation (70.4%, 67.2–73.6), followed by short-term illness (12.8%, 10.4–15.1) and routine check-up or health advice (5.2%, 3.8–6.6).

For adults who saw a primary health care nurse as part of a GP consultation, the main reasons given for the last visit were a blood or urine test (25.2%, 23.1–27.2), short-term illness (20.5%, 18.9–22.2) and routine check-up or health advice (17.6%, 16.2–18.9). For adults who saw a primary health care nurse alone, the main reasons for the last visit were immunisation (18.7%, 17.1–20.3), a blood or urine test (18.4%, 16.7–20.1) and a routine check-up or health advice (15.4%, 14.1–16.8).

Cost of last visit to primary health care nurse alone

The majority of children's last visits to a primary health care nurse were free, with 85.7% (82.7–88.7) of parents of child participants stating that the last time their child saw a nurse alone without seeing a GP they were not charged for the visit. A further 6.4% were charged less than \$10.

Pacific boys (SRR 1.11, 1.05–1.18) and Māori girls (SRR 1.07, 1.01–1.14) were significantly more likely to have not been charged for their last primary health care nurse visit than boys and girls in the total population.

After adjusting for age, children in NZDep2006 quintile 5 (most deprived) (92.7%, 89.1–96.4) were significantly more likely to have a free last primary health care nurse visit than those in quintile 1 (least deprived) (79.9%, 70.9–89.0).

One in two adults (55.7%, 53.4–57.9) reported they were not charged for their last visit to a primary health care nurse alone. A further 15.9% (14.2–17.6) of adults were charged \$1 to \$10, and 14.2% (12.7–15.8) were charged between \$10 and \$20.

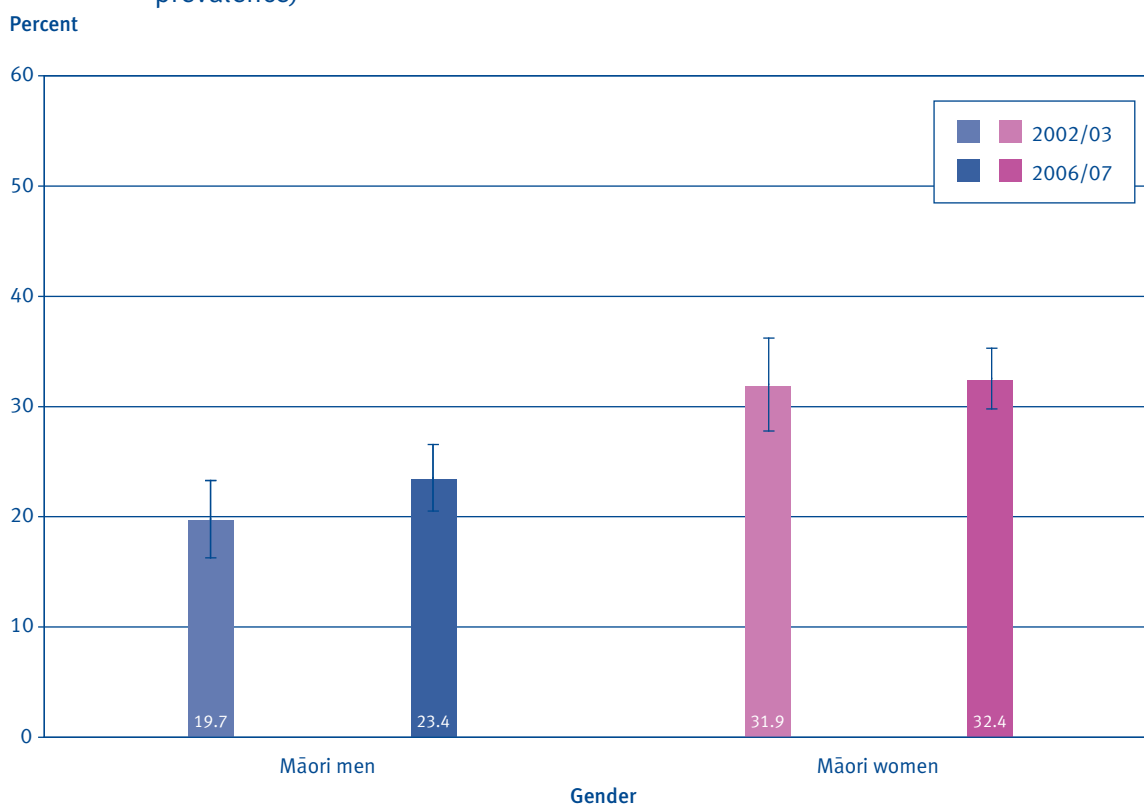
Asian women (SRR 1.23, 1.06–1.41) were significantly more likely than women in the total population to have not been charged for their last primary health care nurse visit.

Adults aged 65–74 years (66.5%, 62.0–71.0) and 75 years and over (66.0%, 60.9–71.0) were more likely than younger adults to have not been charged for their last visit to a primary health care nurse. There were no other significant differences in those who had not been charged for their last primary health care nurse visit by age and no differences by neighbourhood deprivation quintile.

Time trends in use of primary health care nurses

Between 2002/03 and 2006/07 there were no changes in the proportion of all adults who saw a primary health care nurse as part of a GP consultation in the previous 12 months, adjusted for age (graph not shown). However, there was a significant increase in the proportion of Māori men who saw a primary health care nurse as part of a GP consultation (p-value < 0.05), adjusted for age (Figure 6.29).

Figure 6.29: Māori adults who saw a primary health care nurse as part of a GP consultation in previous 12 months, by gender, 2002/03 and 2006/07 (age standardised prevalence)

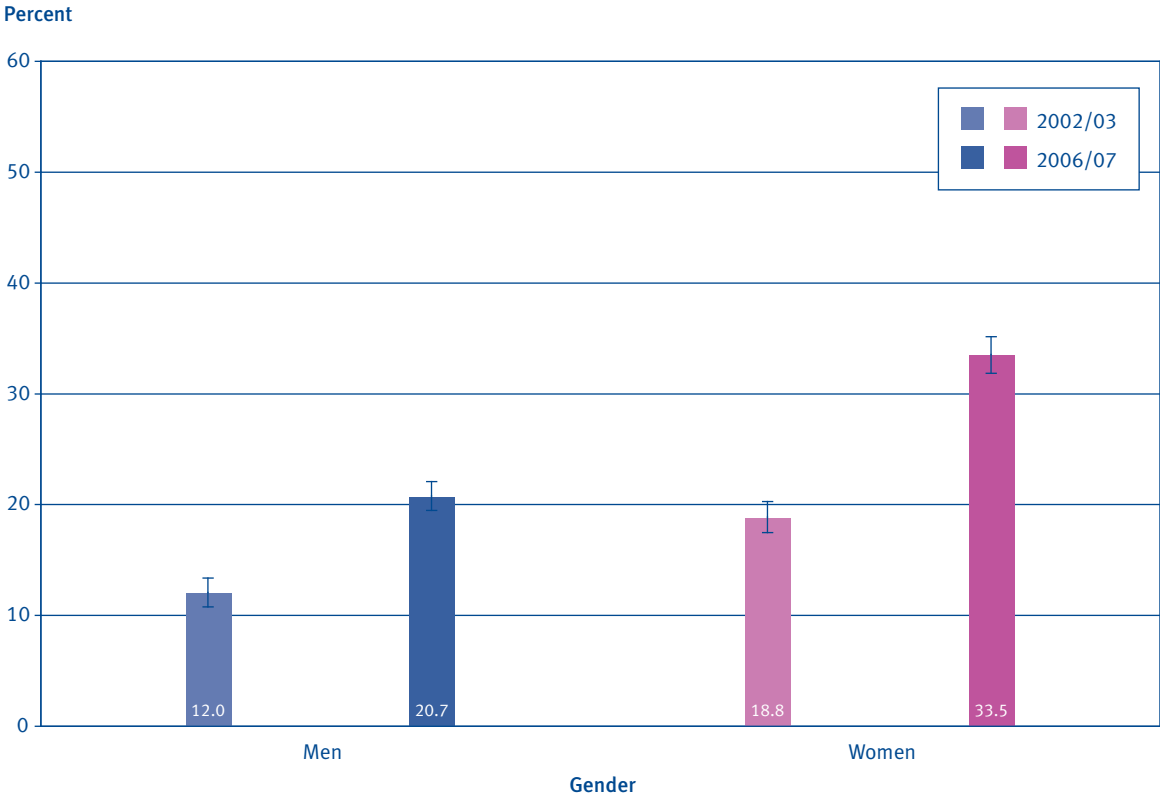


Source: 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Between 2002/03 and 2006/07 there was a large increase in the proportion of men and women who saw a primary health care nurse alone (without seeing a GP at the same time) in the previous 12 months, adjusted for age (Figure 6.30). This increasing trend was also seen for Māori adults (graph not shown).

Figure 6.30: Adults who saw a primary health care nurse alone in previous 12 months, by gender, 2002/03 and 2006/07 (age standardised prevalence)



Source: 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Oral health care workers

Introduction

The Ministry of Health has a vision for high-quality oral health services that promote, improve, maintain and restore good oral health, and that are proactive in addressing the needs of those at greatest risk of poor oral health (Ministry of Health 2006).

Promoting good oral health in young people has benefits over a lifetime. High levels of dental cavities in childhood lead to greater oral health disease levels in adulthood. Children and young people in New Zealand are entitled to free basic dental care from birth to their 18th birthday (Ministry of Health 2006).

What were the survey questions?

In the 2006/07 New Zealand Health Survey, adult participants and the parents of child participants were asked how long ago they/their child last saw an oral health care worker, whether there had been a time when they needed to see an oral health care worker and couldn't, and the reason they were unable to see them. Adult participants were also asked how often they usually see an oral health care worker.

The definition of oral health care worker included dentists, dental nurses, dental therapists, and specialists such as orthodontists.

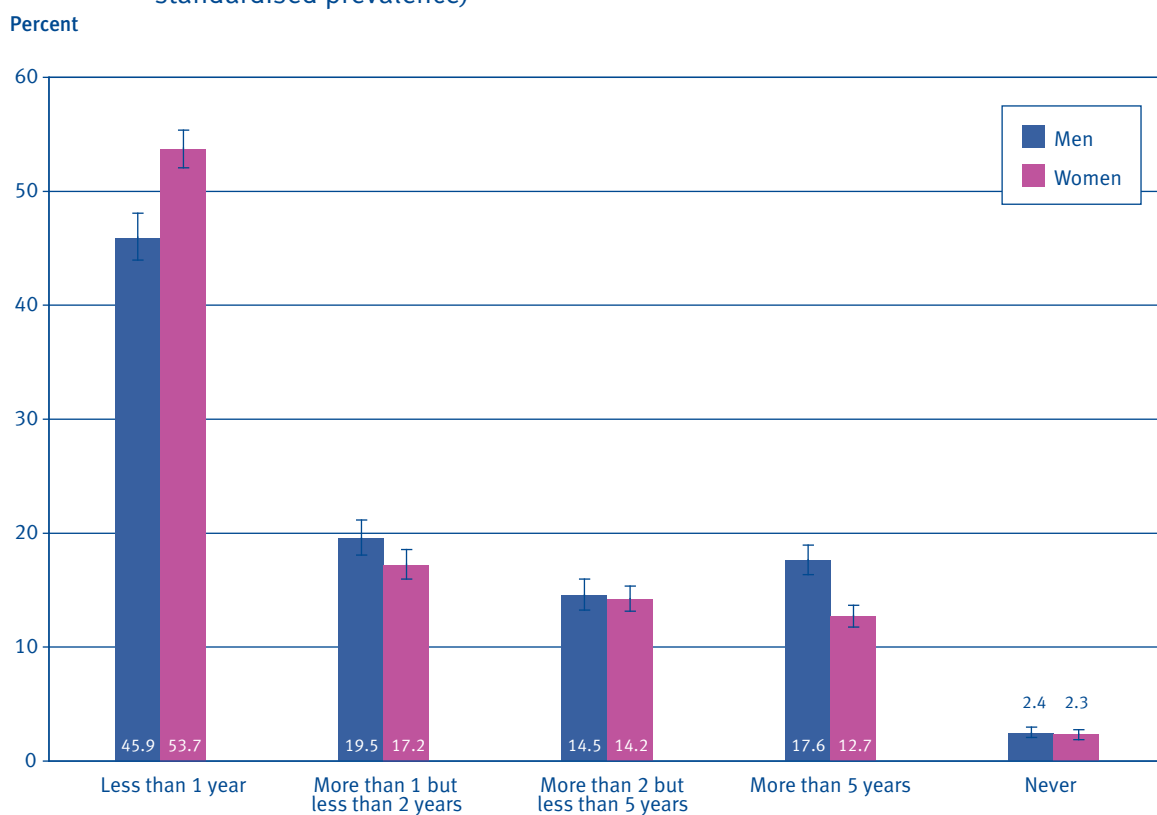
The key results for the oral health status of children and adults are included in Chapter 3 of this report.

Use of oral health care services for children and adults

Four out of five (80.4%, 78.9–81.9) children aged 2–14 years had visited an oral health care worker in the previous 12 months, and a further 9.4%, (8.1–10.8) had visited an oral health care worker more than one year but less than two years before. One in eleven children (8.9%, 7.9–9.8) aged 2–14 years had never seen an oral health care worker.

One in two adults (51.0%, 49.7–52.4) had visited an oral health care worker in the previous 12 months, and a further 17.8% (16.8–18.8) had visited an oral health care worker more than one year but less than two years before. One in forty (2.3%, 2.0–2.6) adults had never seen an oral health worker (Figure 6.31). Women (53.7%, 52.0–55.3) were significantly more likely than men (45.9%, 43.9–48.0) to have seen an oral health care worker in the previous 12 months.

Figure 6.31: Time since last visit to an oral health care worker for adults, by gender (age standardised prevalence)

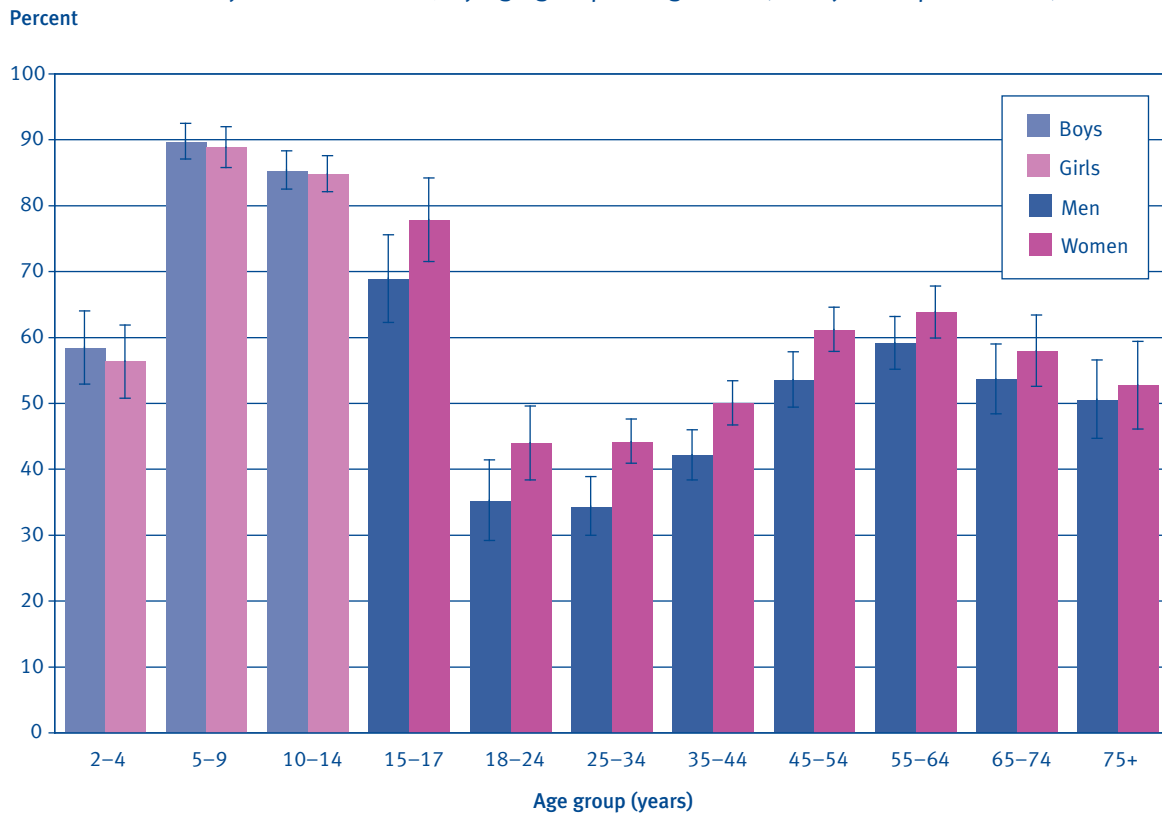


Source: 2006/07 New Zealand Health Survey

Use of oral health care services, by age group

School-aged children and young adults, particularly young women, were significantly more likely than all other age groups to have seen an oral health care worker in the previous 12 months. Women aged 25–54 years were significantly more likely than men of the same age to have visited an oral health care worker in the previous 12 months (Figure 6.32).

Figure 6.32: Visited an oral health care worker in the previous 12 months for children aged 2–14 years and adults, by age group and gender (unadjusted prevalence)

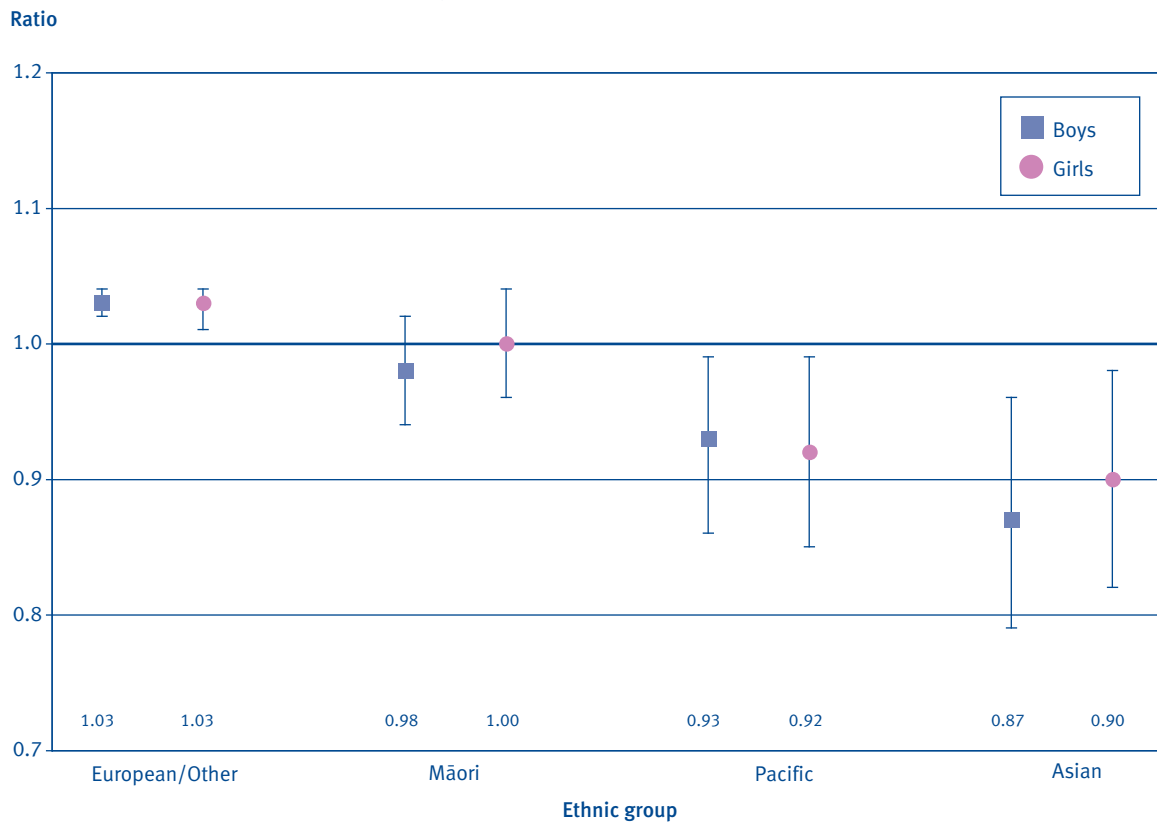


Source: 2006/07 New Zealand Health Survey

Use of oral health care services, by ethnic group

European/Other boys and girls aged 2–14 years were significantly more likely than boys and girls aged 2–14 years in the total population to have seen an oral health care worker in the previous 12 months. Pacific and Asian boys and girls were significantly less likely (Figure 6.33).

Figure 6.33: Children aged 2–14 years who saw an oral health care worker in the previous 12 months, by ethnic group and gender (age standardised rate ratio)

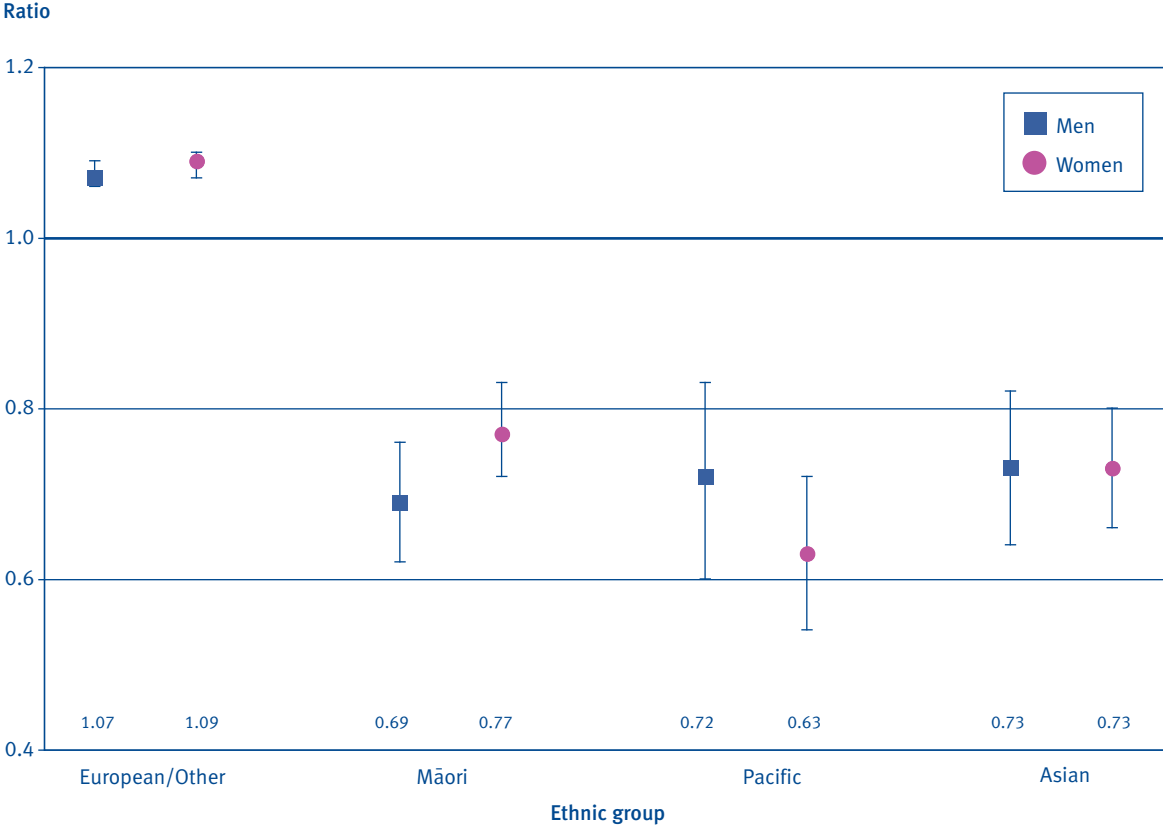


Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged from 2-14 years. Total response standard output for ethnic groups has been used.

European/Other men and women were significantly more likely than men and women in the total adult population to have visited an oral health care worker in the previous 12 months. Māori, Pacific and Asian men and women were significantly less likely (Figure 6.34).

Figure 6.34: Adults who saw an oral health care worker in the previous 12 months, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

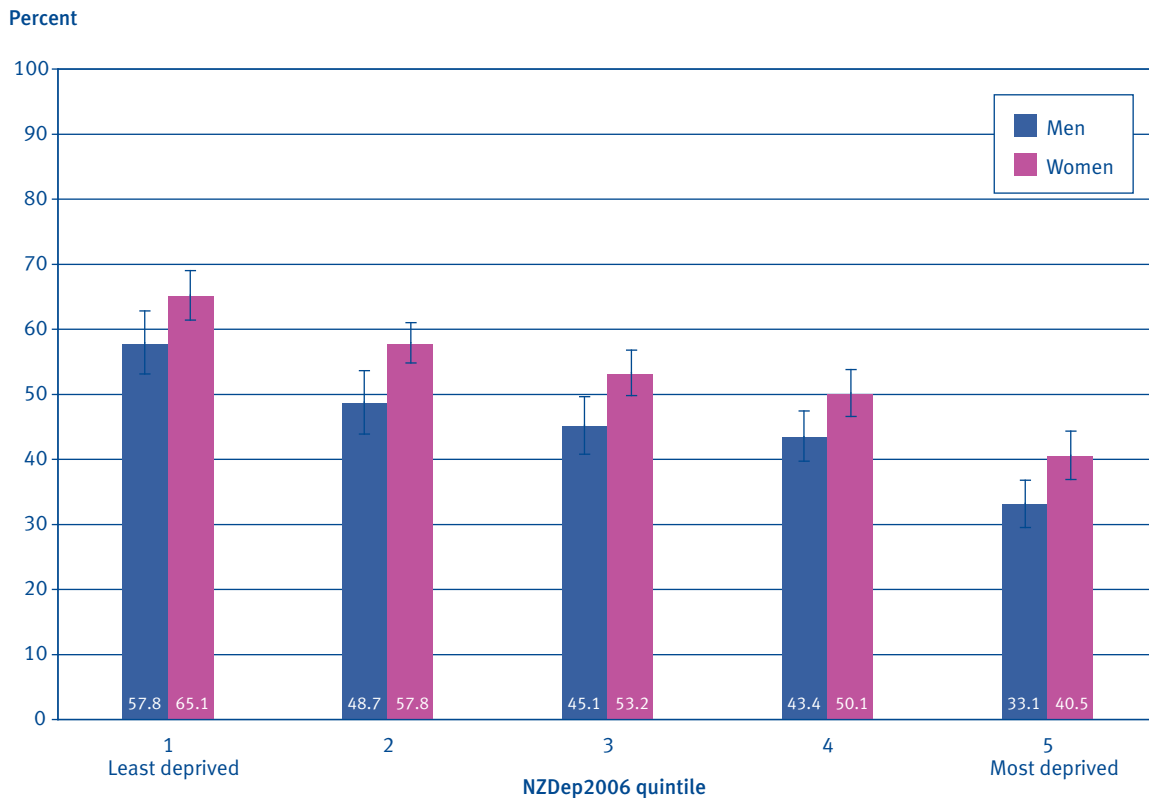
Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Use of oral health care services, by neighbourhood deprivation

Children living in neighbourhoods of high deprivation (NZDep 2006 quintile 5) were less likely to have seen an oral health care worker in the previous 12 months (77.0%, 73.4–80.5) compared to children living in the least deprived neighbourhoods (quintile 1) (84.8%, 81.3–88.3).

Men and women in NZDep2006 quintile 5 (most deprived) were significantly less likely than men and women in any other quintile to have seen an oral health care worker in the previous 12 months (Figure 6.35). One in three adults (36.9%, 34.0–39.8) in quintile 5 had visited an oral health care worker, compared with 61.7% (58.4–65.0) in quintile 1, adjusted for age.

Figure 6.35: Adults who saw an oral health care worker in the previous 12 months, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Use of oral health care services, by DHB area

The proportion of children aged 2–14 years who had visited an oral health care worker in the previous 12 months was significantly higher in the South Island DHBs, including Canterbury, compared to the national rate, while this proportion was significantly lower in Auckland and Wairarapa / Hutt Valley / Capital and Coast DHB areas (Table 6.6).

The proportion of adults who had visited an oral health care worker in the previous 12 months was also significantly higher in the South Island DHBs, including Canterbury, compared to the national rate, but significantly lower in Counties Manukau and Waikato DHB areas (Table 6.6).

Table 6.6: Visited an oral health care worker in the previous 12 months for children aged 2–14 years and adults, by DHB area (unadjusted)

DHB area	Prevalence in 2–14 year olds (95% CI)	Number of children	Prevalence in adults (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	80.8 (76.9–84.7)	80500	50.1 (47.4–52.8)	170700
Waitemata	76.4 (71.1–81.7)	68500	50.3 (46.7–53.9)	183300
Auckland	72.3 (66.5–78.1) –	47200	49.7 (45.2–54.1)	155800
Counties Manukau	79.0 (74.8–83.2)	74700	43.4 (39.3–47.5) –	133500
Waikato	78.9 (74.4–83.4)	52200	46.1 (42.8–49.5) –	111100
Bay of Plenty / Taranaki / MidCentral	83.6 (79.5–87.8)	72200	50.9 (47.5–54.3)	163600
Wairarapa / Hutt Valley / Capital and Coast	70.9 (65.4–76.4) –	53600	53.6 (49.8–57.4)	178000
Canterbury	89.4 (84.8–93.9) +	71800	54.6 (50.8–58.5) +	187100
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	89.9 (85.5–94.3) +	76300	58.1 (54.0–62.2) +	200900
New Zealand total	80.4 (78.9–81.9)	596900	51.0 (49.7–52.4)	1484200

Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

The proportion of children aged 2–14 years who had never visited an oral health care worker in the previous 12 months was significantly lower in the South Island DHB areas than the national rate, while this proportion was significantly higher in Auckland and Wairarapa / Hutt Valley / Capital and Coast DHB areas than nationally (Table 6.7).

The proportion of adults who had never visited an oral health care worker in the previous 12 months was significantly lower in the Wairarapa / Hutt Valley / Capital and Coast and the South Island DHB areas, including Canterbury, than the national rate, while this proportion was significantly higher in Auckland DHB area than nationally (Table 6.7).

Table 6.7: Never visited an oral health care worker for children aged 2-14 years and adults, by DHB area (unadjusted)

DHB area	Prevalence in 2–14 year olds (95% CI)	Number of children	Prevalence in adults (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	9.5 (6.8–12.1)	9400	2.5 (1.5–3.5)	8600
Waitemata	7.7 (4.7–10.7)	7000	2.2 (1.3–3.1)	8000
Auckland	13.2 (9.1–17.3) +	8600	5.9 (4.4–7.4) +	18500
Counties Manukau	9.9 (6.8–12.9)	9300	3.4 (2.2–4.5)	10400
Waikato	11.1 (7.5–14.8)	7400	2.1 (1.0–3.3)	5100
Bay of Plenty / Taranaki / MidCentral	7.0 (4.6–9.4)	6000	2.1 (1.4–2.8)	6800
Wairarapa / Hutt Valley / Capital and Coast	14.5 (10.2–18.7) +	11000	1.0 (0.5–1.8) –	3300
Canterbury	4.8 (2.2–8.7) –	3800	1.0 (0.5–2.0) –	3500
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	4.0 (1.8–7.6) –	3500	1.1 (0.5–2.1) –	3800
New Zealand total	8.9 (7.9–9.8)	65900	2.3 (2.0–2.6)	68000

Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Regularity of oral health care for adults

Two out of five adults (41.0%, 39.7–42.3) reported that they visit an oral health care worker at least every two years for a check-up, while a further 9.2%, (8.6–9.9) said they have regular check-ups but with intervals of more than two years. Two out of five adults (40.3%, 39.0–41.5) reported that they only visit an oral health care worker when they have a toothache, and one in ten (9.5%, 8.8–10.2) said they never visited an oral health care worker.

European/Other adults (SRR 1.13, 1.11–1.14) were significantly more likely to visit an oral health care worker at least every two years for a regular check-up than the total adult population. Māori (SRR 1.32, 1.25–1.38), Pacific (SRR 1.44, 1.34–1.54) and Asian (SRR 1.19, 1.12–1.26) adults were significantly more likely to visit an oral health care worker only when they have a toothache.

Unmet need for oral health care services in previous 12 months

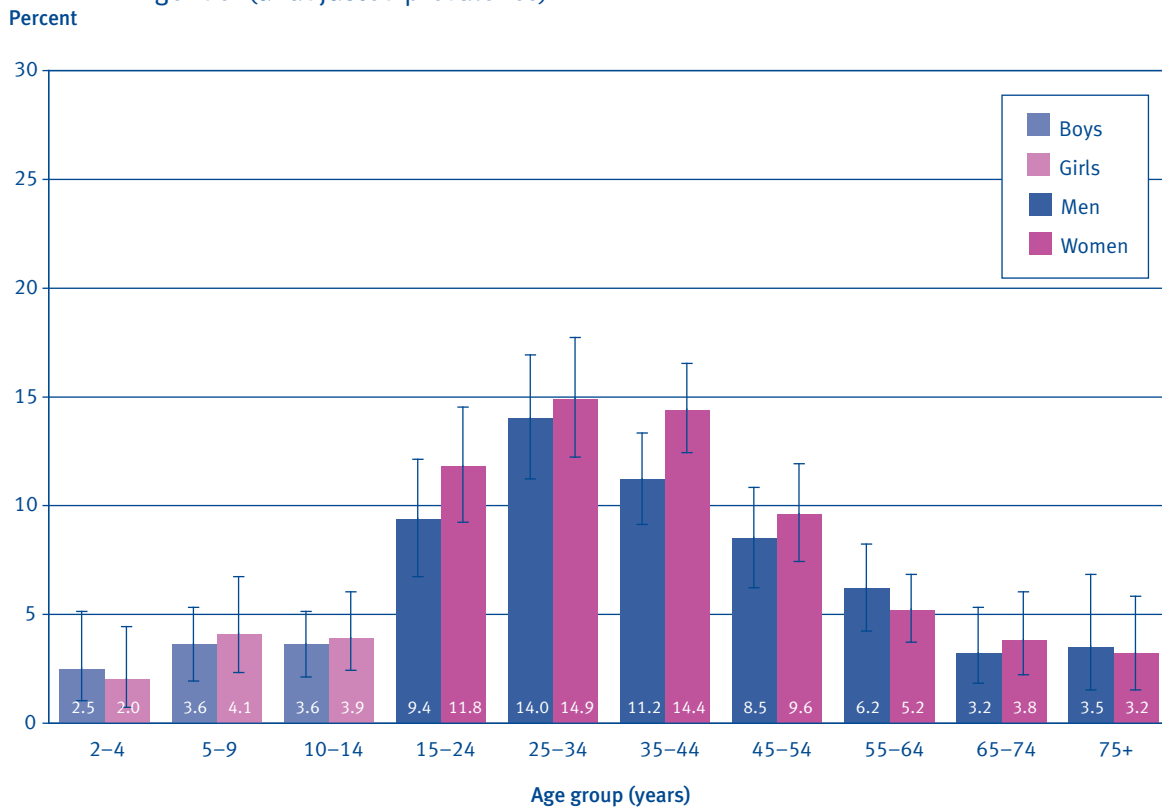
One in twenty-nine children (3.4%, 2.8–4.1) aged 2–14 years and one in ten adults (10.0%, 9.3–10.7) were unable to see an oral health care worker when they needed to in the previous 12 months. This equates to 25,600 children and 291,300 adults.

There were no significant differences in unmet need for an oral health care worker in the previous 12 months by gender for children or adults, adjusted for age.

Unmet need for oral health care services, by age group

Boys and girls aged 2–14 years and men and women aged 65 years and over were significantly less likely to have an unmet need for oral health care services than men and women aged 15–64 years (Figure 6.36).

Figure 6.36: Unmet need for oral health care services for children and adults, by age group and gender (unadjusted prevalence)



Source: 2006/07 New Zealand Health Survey

Unmet need for oral health care services, by ethnic group

Table 6.8 gives an indication of the proportion and number of children in New Zealand’s main ethnic groups that were unable to see an oral health care worker in the previous 12 months when they needed to.

Table 6.8: Unmet need for an oral health care worker in the previous 12 months for children aged 2–14 years, by ethnic group (unadjusted)

Ethnic group	Prevalence in children 2-14 years (95% CI)	Number of children 2–14 years
European/ Other	3.7 (2.9–4.5)	20800
Māori	4.6 (3.4–5.8)	7800
Pacific	2.2 (1.3–3.7)	1900
Asian	2.9 (1.6–4.8)	1900

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

After adjusting for age, Māori boys (SRR 1.64, 1.04–2.25) were significantly more likely to have been unable to see an oral health care worker in the previous 12 months than all boys aged 2–14 years. Pacific girls (SRR 0.52, 0.06–0.98) were significantly less likely to have been unable to see an oral health care worker in the previous 12 months than all girls aged 2–14 years.

Table 6.9 gives an indication of the proportions and numbers of adults in New Zealand’s main ethnic population groups who were unable to see an oral health care worker when they needed to in the previous 12 months.

Table 6.9: Unmet need for an oral health worker in the previous 12 months for adults, by ethnic group (unadjusted)

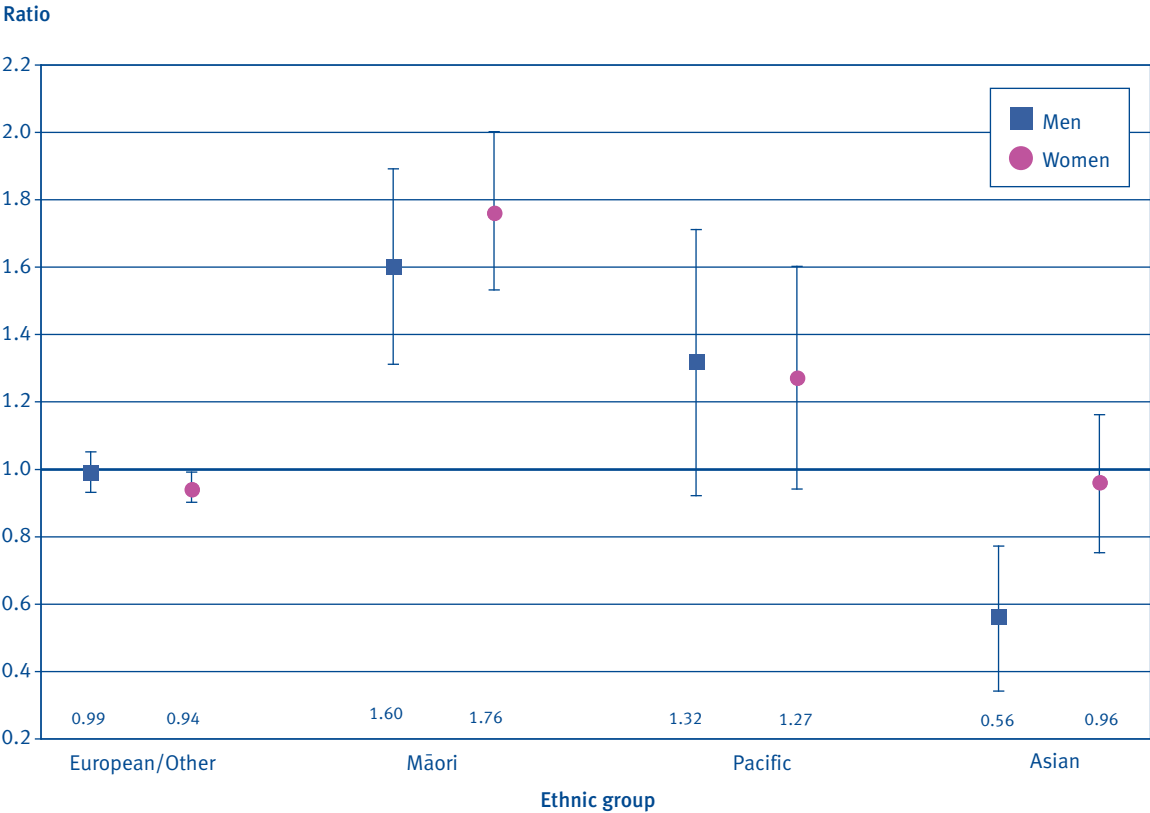
Ethnic group	Prevalence (95% CI)	Number of adults
European/ Other	9.4 (8.6–10.2)	222000
Māori	18.1 (16.4–19.8)	59900
Pacific	14.1 (11.4–16.7)	22700
Asian	8.7 (6.9–10.4)	23900

Source: 2006/07 New Zealand Health Survey

Note: Total response standard output for ethnic groups has been used.

When adjusting for age, Māori men and women were significantly more likely to have been unable to see an oral health care worker in the previous 12 months than men and women in the total adult population, while Asian men were significantly less likely than men in the total population (Figure 6.37).

Figure 6.37: Adults with an unmet need for oral health care services, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

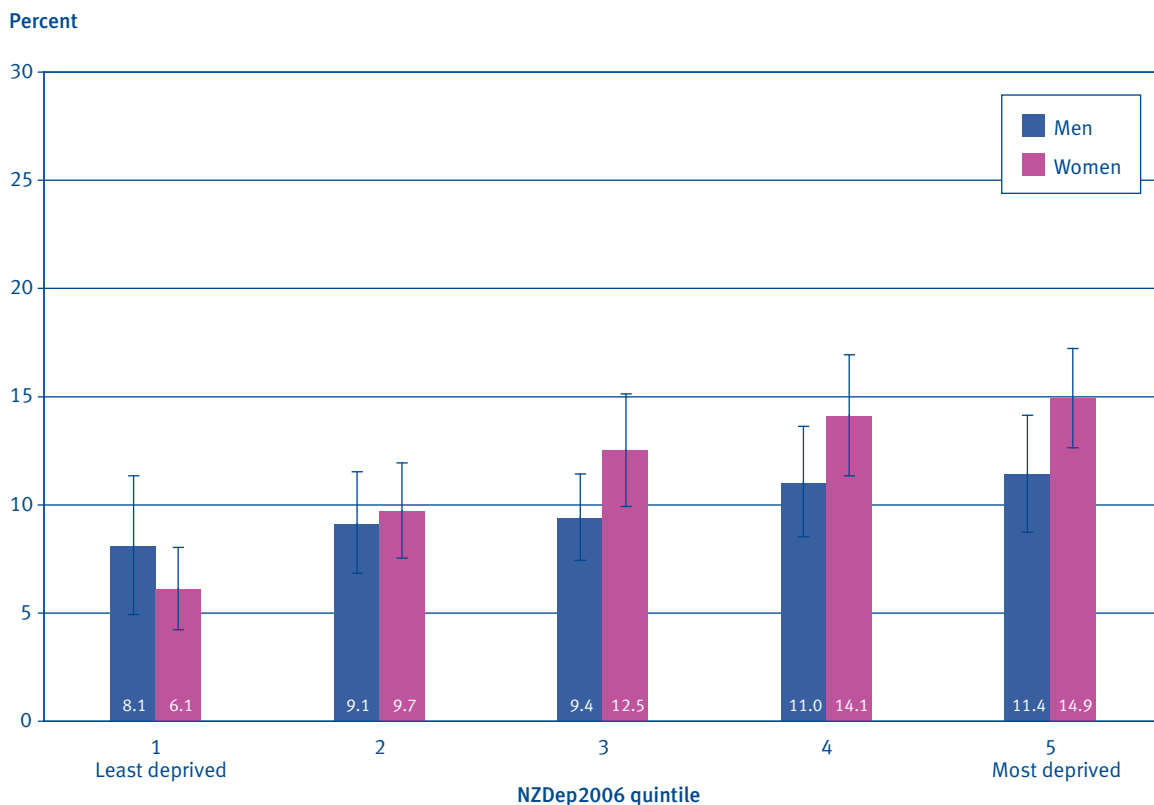
Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Unmet need for oral health care services, by neighbourhood deprivation

There were no significant differences in unmet need for oral health care services between NZDep2006 quintile 1 (least deprived) and quintile 5 (most deprived) for children aged 2–14 years.

Women in NZDep2006 quintile 5 (most deprived) were significantly more likely to have been unable to see an oral health care worker in the previous 12 months compared to those in quintiles 1 (least deprived) or 2. There were no statistically significant differences in unmet need for oral health care services by neighbourhood deprivation for men (Figure 6.38).

Figure 6.38: Unmet need for an oral health care worker in the previous 12 months, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Unmet need for oral health care services, by DHB area

The proportion of children aged 2–14 years with an unmet need for oral health care services was significantly lower in the Counties Manukau and Canterbury DHB areas than nationally (Table 6.10).

The proportion of adults with an unmet need for oral health care services was significantly lower in the Canterbury DHB area than the national rate, while this proportion was significantly higher in Northland / Tairāwhiti / Hawke’s Bay / Lakes / Whanganui and Waikato DHB areas than nationally (Table 6.10).

Table 6.10: Unmet need for oral health care services for children aged 2–14 years and adults, by DHB area (unadjusted)

DHB area	Prevalence in children (95% CI)	Number of children	Prevalence in adults (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke’s Bay / Lakes / Whanganui	4.0 (2.4–5.6)	4000	13.0 (11.0–14.9) +	44100
Waitemata	2.7 (1.1–5.5)	2500	11.3 (9.0–13.7)	41300
Auckland	4.3 (1.8–8.4)	2900	8.4 (6.4–10.5)	26500
Counties Manukau	0.9 (0.4–1.8) –	800	8.0 (5.7–10.4)	24700
Waikato	2.8 (1.4–5.1)	1800	12.6 (10.1–15.2) +	30500
Bay of Plenty / Taranaki / MidCentral	4.2 (2.5–6.5)	3600	10.7 (8.9–12.4)	34300
Wairarapa / Hutt Valley / Capital and Coast	6.1 (3.3–10.3)	4600	10.1 (7.7–12.5)	33500
Canterbury	0.9 (0.2–2.6) –	700	8.0 (6.0–10.0) –	27300
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	5.4 (2.6–9.9)	4600	8.4 (6.2–10.7)	29200
New Zealand total	3.4 (2.8–4.1)	25600	10.0 (9.3–10.7)	291300

Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Reason for unmet need for oral health care services

For children aged 2–14 years the main barrier to seeing an oral health care worker was inability to get an appointment soon enough or at a suitable time, followed by needing to see an oral health care worker after hours and cost (Table 6.11). A large proportion of parents of child participants gave other reasons for their child being unable to see an oral health care worker when they needed to, including the child was unwell, didn't know where to go or who to contact, away from usual oral health care worker and school dental clinic closed.

For adults, the main reason for being unable to see an oral health care worker was cost, followed by inability to get an appointment soon enough or at a suitable time and couldn't spare the time (Table 6.11).

Table 6.11: Unmet need for oral health care services in the previous 12 months for children aged 2–14 years and adults, by reason (unadjusted)

Reason for unmet need	Prevalence in children (95% CI)	Prevalence in adults (95% CI)
Cost	8.0 (3.7–14.7)	52.9 (50.0–55.8)
Couldn't get appointment	48.2 (37.4–59.0)	18.7 (16.0–21.3)
Couldn't spare time	2.9 (0.8–7.3)	14.1 (11.3–16.9)
Fear / anxiety	2.2 (0.6–5.9)	10.5 (8.3–12.7)
Didn't want to make a fuss	2.6 (0.7–6.6)	8.3 (6.2–10.5)
Transport	1.8 (0.6–4.3)	1.7 (1.0–2.7)
Child care	–	0.8 (0.3–1.6)
After hours	10.1 (4.2–19.5)	1.7 (1.0–2.7)
Couldn't get in touch	–	2.2 (1.0–4.0)
Other	31.7 (22.1–41.3)	2.1 (1.1–3.5)

Source: 2006/07 New Zealand Health Survey

Note: – indicates that numbers were very small.

Complementary and alternative health care professionals

Introduction

Complementary and alternative health care is a term used to describe a broad range of healing techniques that encompass all health systems, practices and their accompanying theories and beliefs, other than those in the mainstream health system of New Zealand. Complementary and alternative health care services generally take a holistic approach to health care, including the interactions between physical, spiritual, social and psychological aspects (Ministerial Advisory Committee On Complementary and Alternative Health 2004).

What were the survey questions?

In the 2006/07 New Zealand Health Survey, adult participants were asked how many times they had seen a complementary or alternative health care worker in the previous 12 months, the reason (health condition) for the visit, and whether they had seen a GP about the same condition. A show card which listed the following types of complementary and alternative health care workers was used:

- massage therapist
- homoeopath or naturopath
- acupuncturist
- traditional Chinese medicine practitioner
- herbalist
- aromatherapist
- spiritual healer
- Māori traditional rongoā healer
- Pacific traditional healer
- other, please specify.

Use of complementary and alternative health care in the previous 12 months

Overall, one in five (18.2%, 17.3–19.1) adults reported that they had seen a complementary or alternative health care worker in the previous 12 months. Women (22.3%, 21.1–23.5) were significantly more likely than men (14.1%, 12.7–15.6) to have seen a complementary or alternative health care worker in the previous 12 months, adjusted for age.

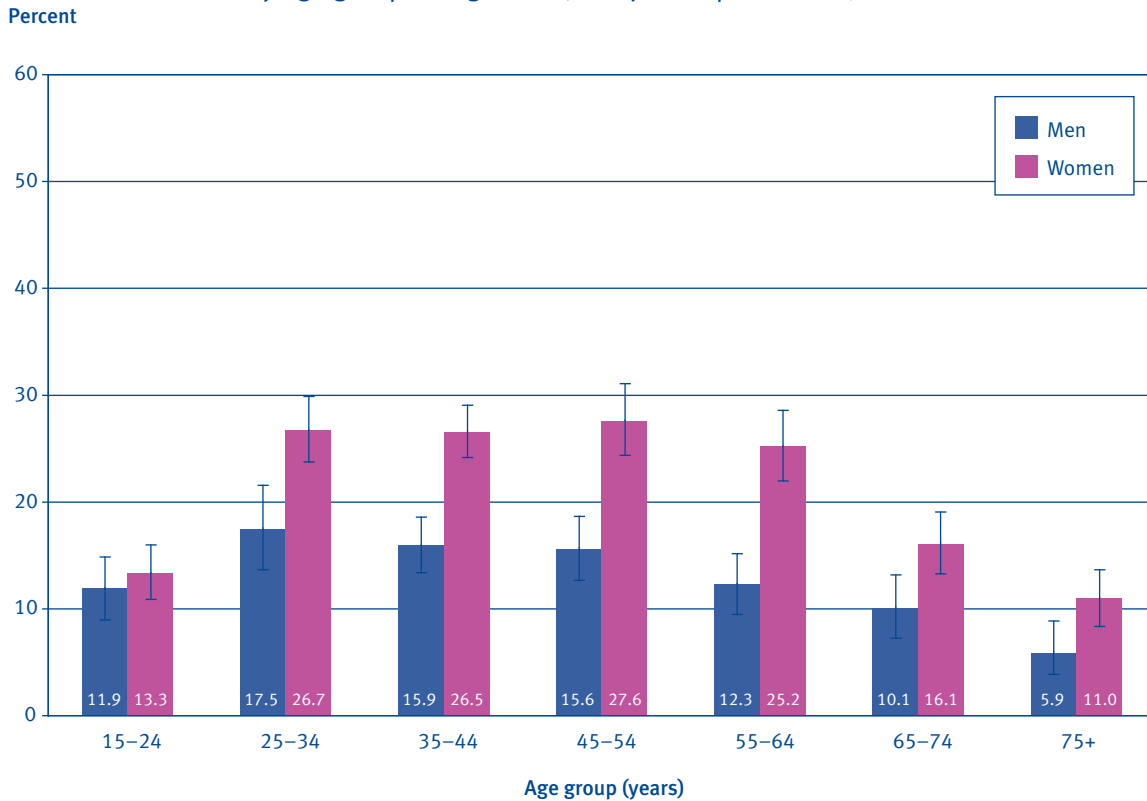
Less than 0.5% of adults said they go to a complementary or alternative health care worker first when they are feeling unwell or injured (that is, they had a complementary or alternative health care worker as their primary health care provider).

One in three (29.0%, 26.7–31.3) adults who visited a complementary or alternative health care worker in the previous 12 months said that the last time they saw a complementary or alternative health care worker they also saw a GP about the same condition.

Use of complementary and alternative health care, by age group

Women aged 25–64 years were significantly more likely to have seen a complementary or alternative health care worker in the previous 12 months than women aged 15–24 or over 65 years. Women aged over 25 years were also significantly more likely to have seen a complementary or alternative health care worker than men of the same age (Figure 6.39).

Figure 6.39: Use of complementary and alternative health care in the previous 12 months for adults, by age group and gender (unadjusted prevalence)

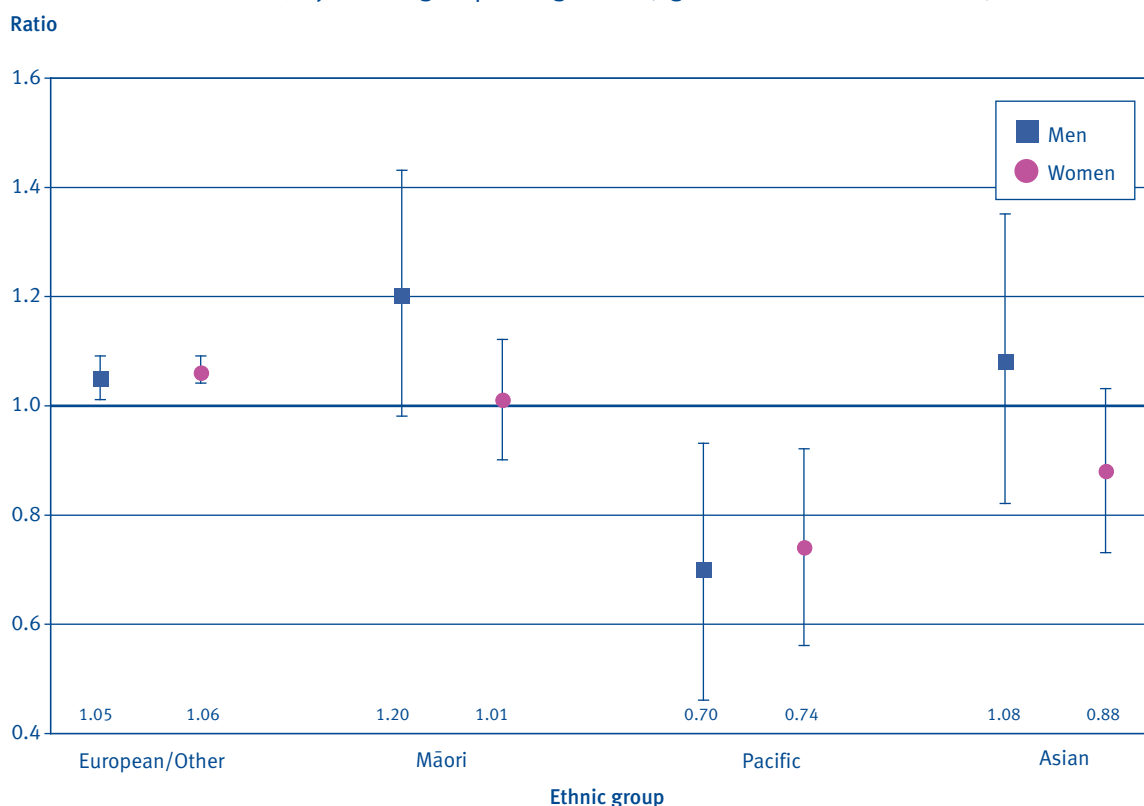


Source: 2006/07 New Zealand Health Survey

Use of complementary and alternative health care, by ethnic group

European/Other men and women were significantly more likely than men and women in the total population to have seen a complementary or alternative health care worker in the previous 12 months, while Pacific men and women were significantly less likely to have seen a complementary or alternative health care worker in the previous 12 months (Figure 6.40).

Figure 6.40: Adults who saw a complementary or alternative health care worker in the previous 12 months, by ethnic group and gender (age standardised rate ratio)



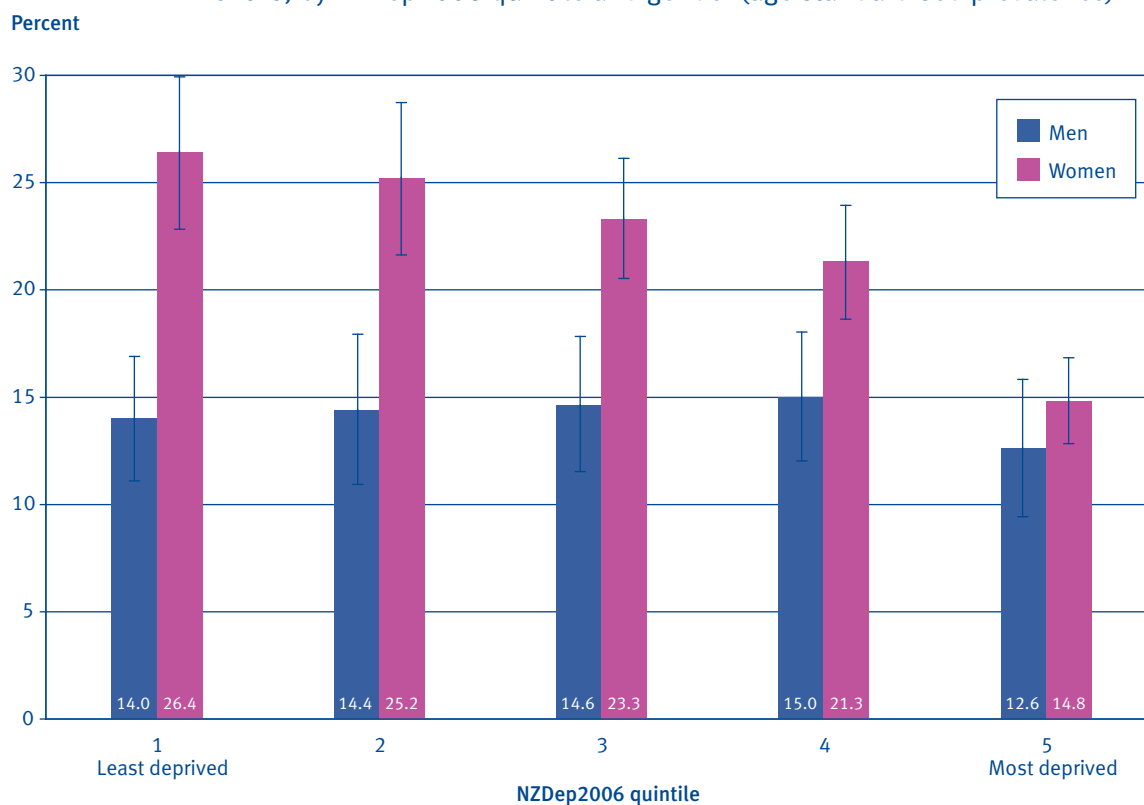
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Use of complementary and alternative health care, by neighbourhood deprivation

The proportion of women who saw a complementary or alternative health care worker in the previous 12 months decreased with increasing deprivation, with women in NZDep2006 quintile 5 (most deprived) being significantly less likely than women in any other NZDep2006 quintile to have seen a complementary or alternative health care worker in the previous 12 months (Figure 6.41). There were no significant differences for men who saw a complementary or alternative health care worker in the previous 12 months by neighbourhood deprivation.

Figure 6.41: Adults who saw a complementary or alternative health care worker in the previous 12 months, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Type of complementary and alternative health care workers seen

Of those adults who saw a complementary or alternative health care worker in the previous 12 months, over half (55.8%, 53.3–58.3) saw a massage therapist, one in four (25.8%, 23.5–28.2) saw a homoeopath or naturopath, and one in five (18.5%, 16.6–20.4) saw an acupuncturist. Other types of complementary health care workers seen were:

- spiritual healer (9.1%, 7.6–10.7)
- traditional Chinese medicine practitioner (6.7%, 5.2–8.2)
- herbalist (6.5%, 5.2–7.8)
- Māori traditional rongoā healer (3.2%, 2.5–3.8)
- aromatherapist (2.3%, 1.4–3.3)
- Pacific traditional healer (1.4%, 0.8–1.9).

Reason for using complementary and alternative health care

The most common reason given for visiting a complementary or alternative health care worker was physical wellbeing, with 41.9% (39.3–44.5) of those who had seen a complementary health care worker citing this as a reason. One in four reported short-term illness (25.2%, 22.9–27.5) and one in four reported chronic illness (25.1%, 23.1–27.2) as the reason for their visit, while 15.8% (13.8–17.9) cited injury or poisoning and 8.6% (7.4–9.9) mental health.

Other health care workers

Introduction

Other health care workers are those who also work in the primary health sector and have not already been covered in earlier sections of this report. This includes any health care worker other than GPs, primary health care nurses, oral health workers and complementary and alternative health care workers.

What were the survey questions?

In the 2006/07 New Zealand Health Survey, adult participants and parents of child participants were asked how many times they had seen another health care worker about their own (or their child's) health. A show card which listed the following types of health care workers was used:

- Well Child nurse
- other nurse
- pharmacist
- physiotherapist
- chiropractor
- osteopath
- dietitian
- optician or optometrist
- occupational therapist
- speech-language therapist
- midwife
- mental health worker (eg, social worker, psychologist or counsellor).

Use of a Well Child nurse for children aged under five years

Well Child nurses include Plunket nurses as well as other community workers who provide support services for the development, health and wellbeing of children under five years of age.

Over half (54.6%, 51.4–57.9) of children aged under five were reported by their parent to have seen a Well Child nurse in the previous 12 months. European/Other (SRR 1.05, 1.02–1.09) children aged under five years were significantly more likely than all children aged under five years to have seen a Well Child nurse in the previous 12 months. There were no significant differences for those who saw a Well Child nurse by gender or neighbourhood deprivation.

For those who saw a Well Child nurse in the previous 12 months, the median number of visits was two.

Use of other health care workers in the previous 12 months

Other types of health care workers most commonly seen by children in the previous 12 months, other than a Well Child nurse, were pharmacists, followed by opticians then midwives. Other types of health care workers most commonly seen by adults in the previous 12 months were pharmacists, followed by physiotherapists and opticians (Table 6.12).

Table 6.12: Use of other health care workers in the previous 12 months for children and adults (unadjusted)

Type of health care worker	Prevalence in children (95% CI)	Prevalence in adults (95% CI)
Pharmacist	8.8 (7.8–9.9)	18.4 (17.4–19.3)
Physiotherapist	2.7 (2.1–3.4)	13.0 (12.2–13.7)
Chiropractor	3.0 (2.4–3.6)	5.4 (4.9–5.9)
Osteopath		4.4 (3.9–4.9)
Dietitian	0.9 (0.5–1.3)	1.9 (1.6–2.2)
Optician or optometrist	6.1 (5.0–7.2)	12.9 (12.1–13.7)
Occupational therapist	0.7 (0.4–1.2)	0.8 (0.6–1.0)
Speech-language therapist	2.3 (1.7–2.9)	–
Midwife	5.3 (4.6–6.1)	2.9 (2.5–3.2)
Psychologist, counsellor or social worker	3.3 (2.5–4.0)	3.5 (3.1–3.9)

Source: 2006/07 New Zealand Health Survey

Note: – indicates that numbers were very small. Chiropractor and Osteopath were not asked about separately in the child questionnaire.

Medical specialists

Introduction

A medical specialist, as defined in this report, is a doctor who specialises in a branch of medicine other than general practice. Medical specialists include general physicians, general surgeons, paediatricians, cardiologists, dermatologists, geriatricians, obstetric and gynaecology specialists, neurologists, urologists, ear nose and throat surgeons, rheumatologists, ophthalmologists, orthopaedic surgeons, and many more types of doctors. Medical specialists can see patients in public hospitals or in private clinics.

What were the survey questions?

In the 2006/07 New Zealand Health Survey, adult participants and the parents of child participants were asked how many times they/their child had seen a medical specialist (most common types were listed on a show card) in the previous 12 months. If they had seen a specialist they were asked where the last visit took place.

Participants were asked to exclude medical specialists they had seen as an inpatient at a hospital.

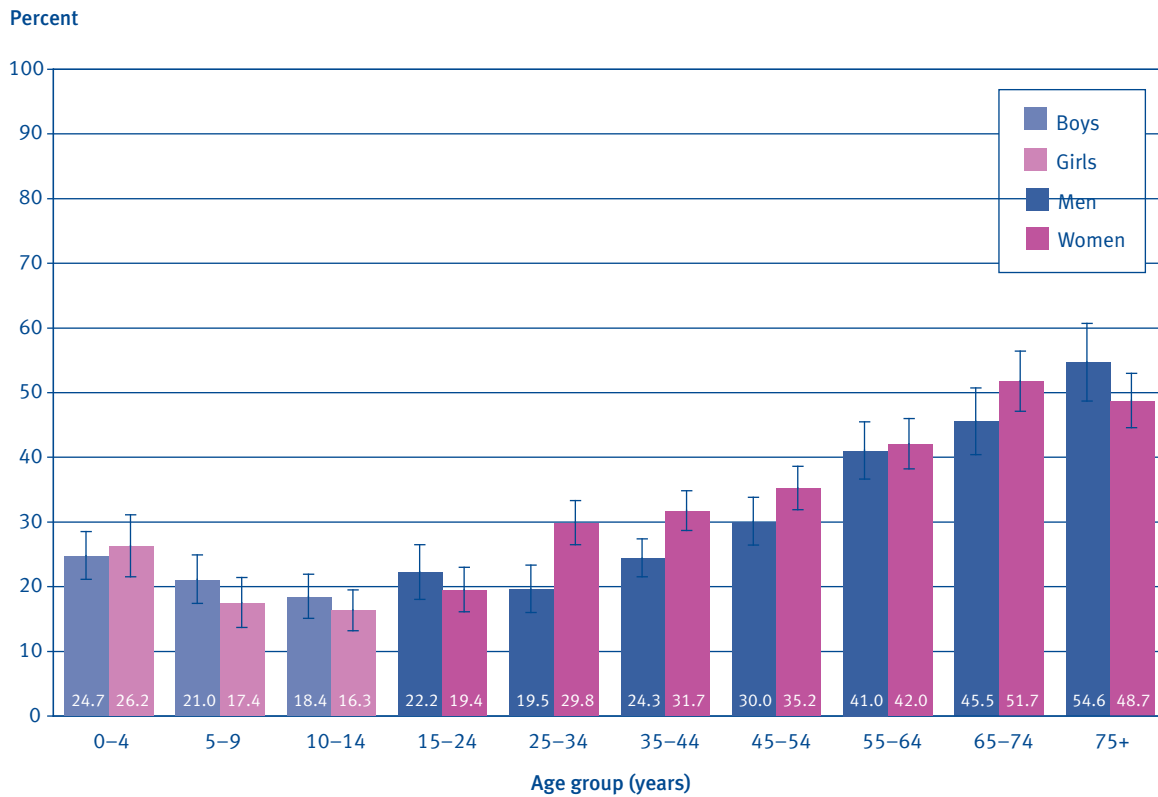
Seen a medical specialist in the previous 12 months

Overall, one in five children (20.6%, 19.2–22.0) and one in three adults (32.2%, 31.2–33.3) had seen a medical specialist in the previous 12 months. Women (32.3%, 31.0–33.6) were significantly more likely than men (28.3%, 26.7–30.0) to have seen a medical specialist in the previous 12 months, while boys and girls were equally likely, adjusted for age. For those who saw a medical specialist in the previous 12 months, the median number of visits for children was one and for adults it was two.

Seen a medical specialist, by age group

For children the proportion who had seen a medical specialist in the previous 12 months decreased with age, while for adults the proportion who had seen a specialist increased with age (Figure 6.42). Women aged 25–44 years were significantly more likely to have seen a medical specialist in the previous 12 months than men of the same age.

Figure 6.42: Children and adults who saw a medical specialist in the previous 12 months, by age group and gender (unadjusted prevalence)

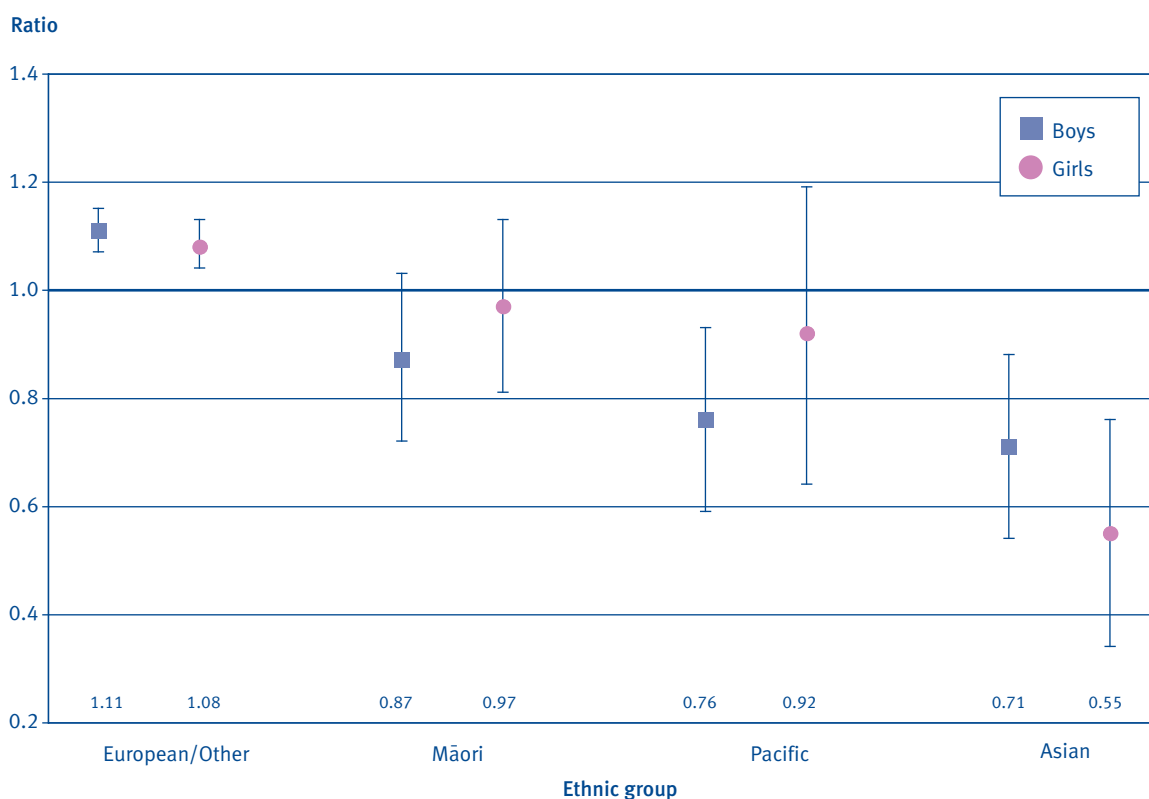


Source: 2006/07 New Zealand Health Survey

Seen a medical specialist, by ethnic group

European/Other boys and girls were significantly more likely than boys and girls in the total population to have seen a medical specialist in the previous 12 months. Pacific boys and Asian boys and girls were significantly less likely (Figure 6.43).

Figure 6.43: Children who saw a medical specialist in the previous 12 months, by ethnic group and gender (age standardised rate ratio)

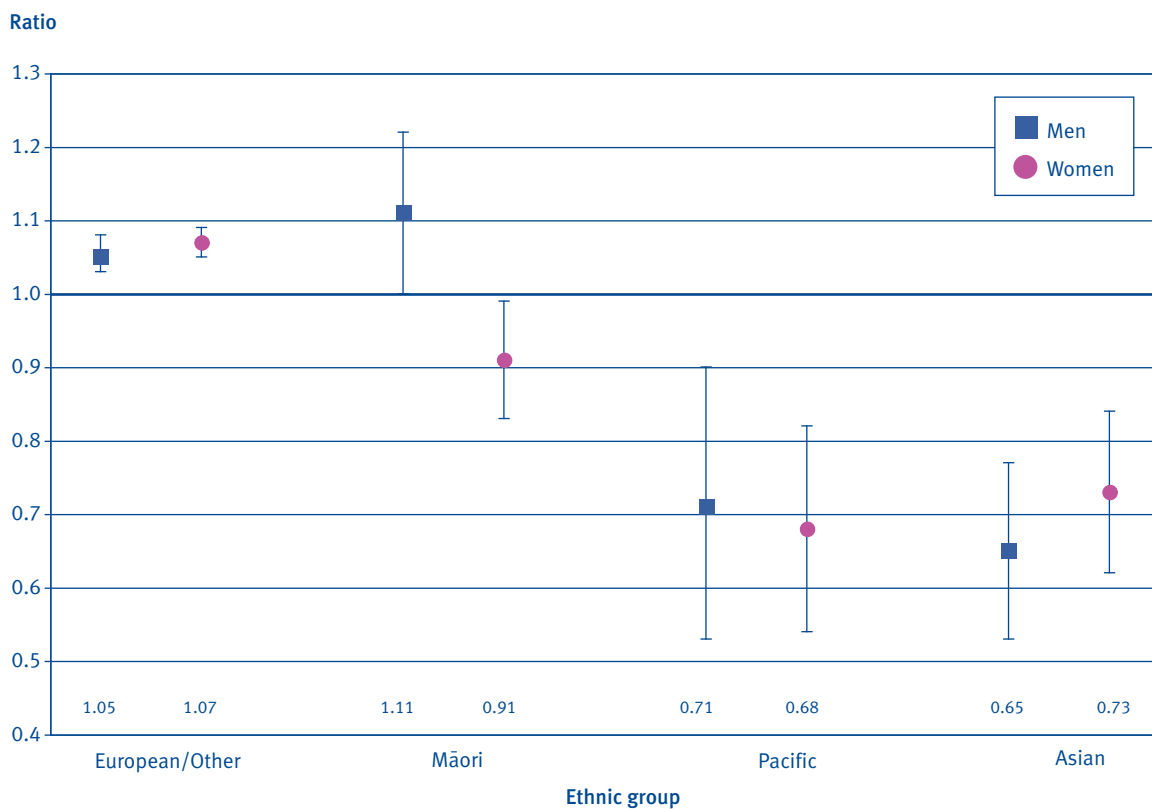


Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged birth to 14 years. Total response standard output for ethnic groups has been used.

European/Other men and women were significantly more likely than men and women in the total adult population to have seen a medical specialist in the previous 12 months. Pacific and Asian men and women were significantly less likely. Māori women were significantly less likely than women in the total population to have seen a medical specialist in the previous 12 months (Figure 6.44).

Figure 6.44: Adults who saw a medical specialist in the previous 12 months, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

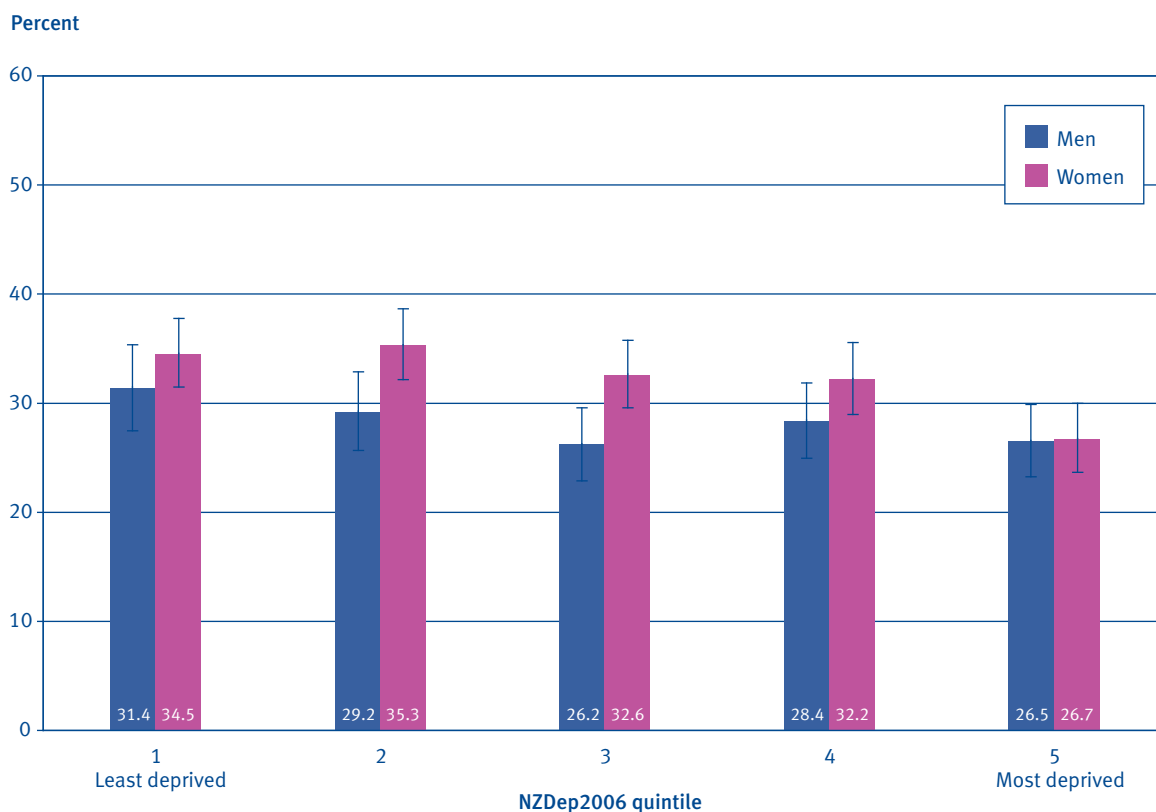
Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Seen a medical specialist, by neighbourhood deprivation

There were no significant differences for children who saw a medical specialist in the previous 12 months by neighbourhood deprivation.

Women in NZDep2006 quintile 5 (most deprived) were less likely than those in quintiles 1 (least deprived) or 2 to have seen a medical specialist in the previous 12 months (Figure 6.45). There were no significant differences for men who saw a medical specialist in the previous 12 months by neighbourhood deprivation.

Figure 6.45: Adults who saw a medical specialist in the previous 12 months, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Location of visit to medical specialist

Questions on medical specialists in the New Zealand Health Survey specifically excluded visits as an inpatient at a public hospital.

Almost three out of five (60.6%, 56.6–64.5) children who saw a medical specialist in the previous 12 months had their last visit as an outpatient at a public hospital, with one-third (35.7%, 32.0–39.3) visiting the medical specialist at private consulting rooms.

For adults, equal proportions had their last visit to a medical specialist as a public hospital outpatient (44.6%, 42.5–46.7) as at the specialist's private rooms (46.6%, 44.5–48.7). A further 8.1% (6.9–9.3) of adults saw a medical specialist at a private hospital.

Public hospital use

Introduction

Public hospitals are run and owned by District Health Boards, which are responsible for ensuring the delivery of health and disability services in their district. Public hospitals provide a variety of services such as medical, surgical, maternity, diagnostic and emergency services. The range of services offered by an individual hospital is affected both by the size of the local population and the services offered by other hospitals in the region.

Hospital services are provided on an emergency department, inpatient, day case and outpatient basis, depending on the type of care a patient needs:

- emergency department patients attend for assessment and treatment and may be discharged or become inpatients
- inpatients are admitted to hospital and stay a minimum of one night in hospital
- day case patients are admitted to hospital and discharged later the same day
- outpatients attend clinics, where they receive specialist services without being admitted to hospital.

It is important to note that hospital discharge data from the New Zealand Health Information Service (NZHIS) are a better source of information on public hospital use than the New Zealand Health Survey because they are not dependent on respondents' recall of events. However, there is variation among DHBs in the level of reporting emergency department events to the NZHIS. Therefore, the New Zealand Health Survey, in spite of depending on recall of events, is likely to provide more accurate information on the use of emergency departments in New Zealand. As a result, there is a focus in this section on the use of emergency departments.

What were the survey questions?

In the 2006/07 New Zealand Health Survey, adults participants and the parents of child participants were asked whether they/their child had used a service at, or been admitted to, a public hospital in the previous 12 months. If they had used a public hospital service, they were asked the type of service(s): emergency department, outpatient, day treatment or inpatient.

Maternity admissions (that is, 'born in the hospital in previous 12 months') were specifically excluded from these analyses for children. Adults were not asked about maternity admissions; therefore these are included in the data.

Emergency department use in the previous 12 months

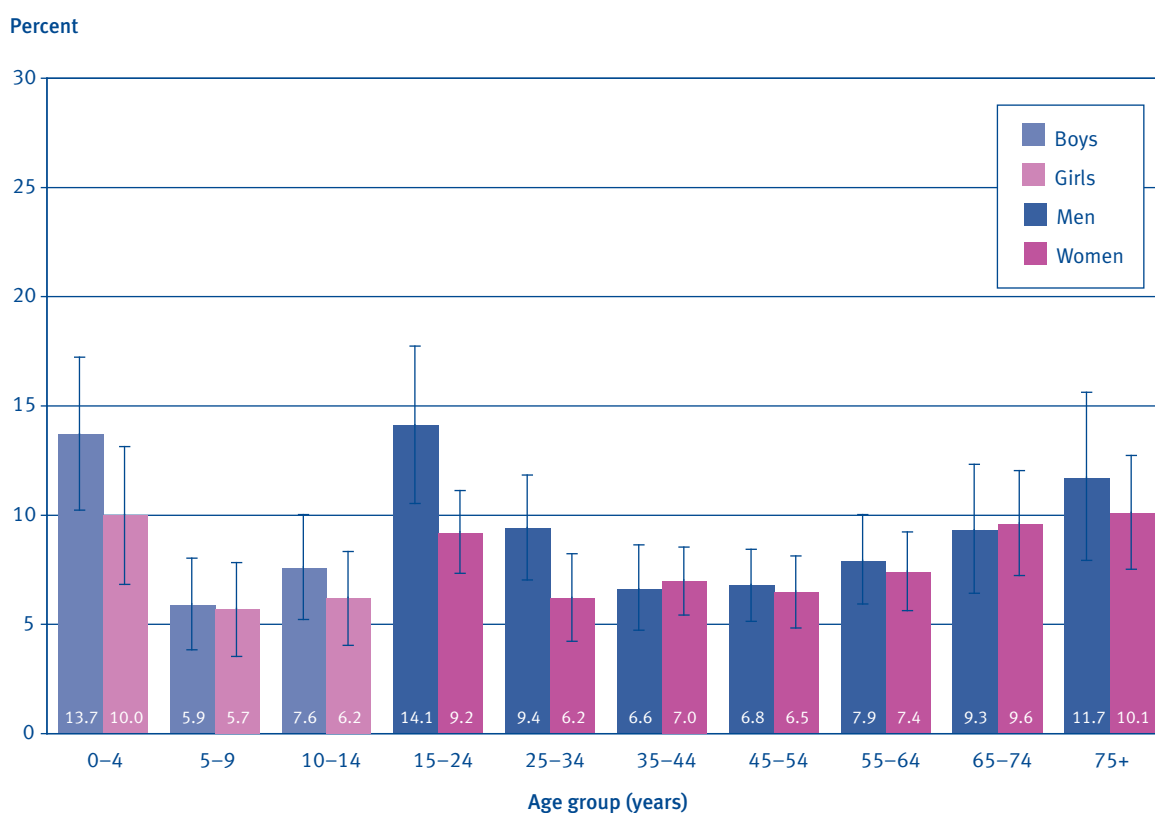
Emergency departments seek to provide care and treatment for those with serious injuries or illness and are usually open 24 hours a day, seven days a week. They are publicly funded, although some hospitals may charge for GP-level care at an emergency department.

One in twelve children (8.2%, 7.0–9.3) and 1 in 12 adults (8.4%, 7.7–9.0) had used an emergency department at a public hospital in the previous 12 months. There were no significant differences in emergency department use by gender for children or adults, adjusted for age.

Emergency department use in the previous 12 months, by age group

Boys aged 0–4 years, were significantly more likely than older boys to have used an emergency department in the previous 12 months. Men aged 15–24 years were significantly more likely than men aged 35–64 years to have used an emergency department in the previous 12 months. There were no significant differences by age for women for emergency service use (Figure 6.46).

Figure 6.46: Emergency department use in the previous 12 months for adults and children and adults, by age group and gender (unadjusted prevalence)

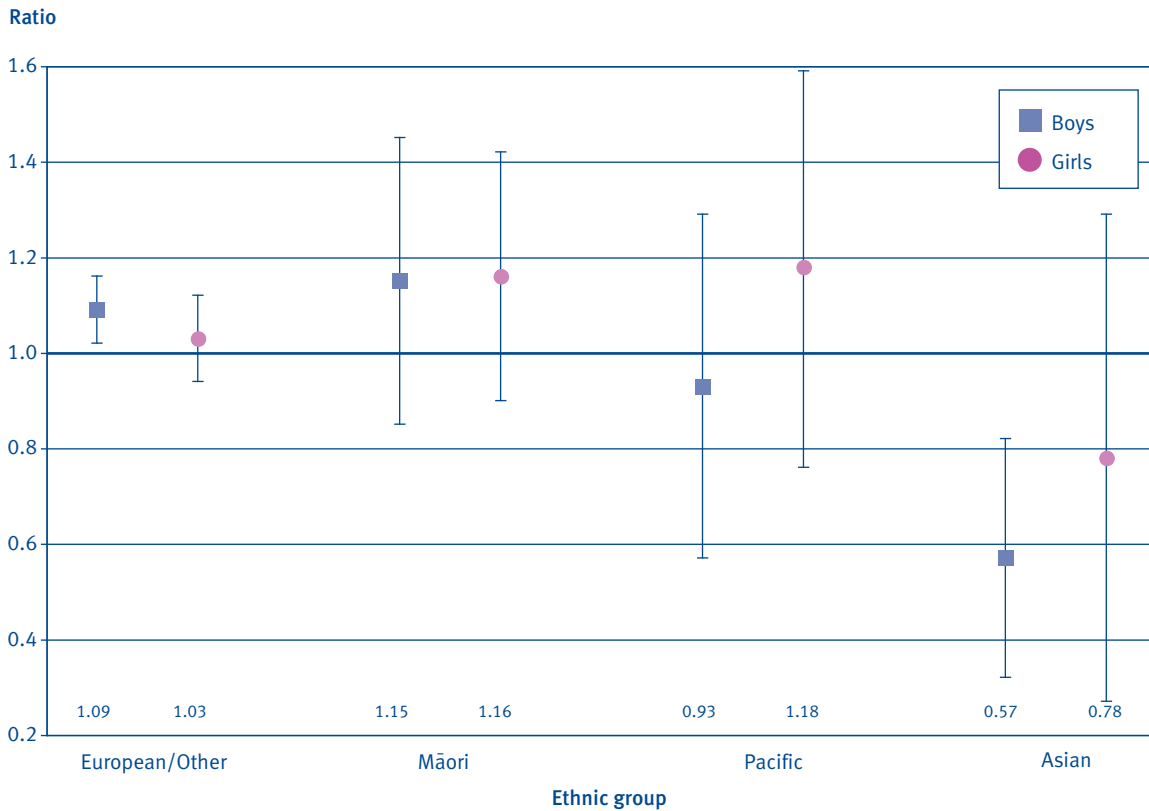


Source: 2006/07 New Zealand Health Survey

Emergency department use in the previous 12 months, by ethnic group

European/Other boys were significantly more likely than boys in the total population to have used an emergency department in the previous 12 months, while Asian boys were significantly less likely (Figure 6.47).

Figure 6.47: Children who used an emergency department in the previous 12 months, by ethnic group and gender (age standardised rate ratio)

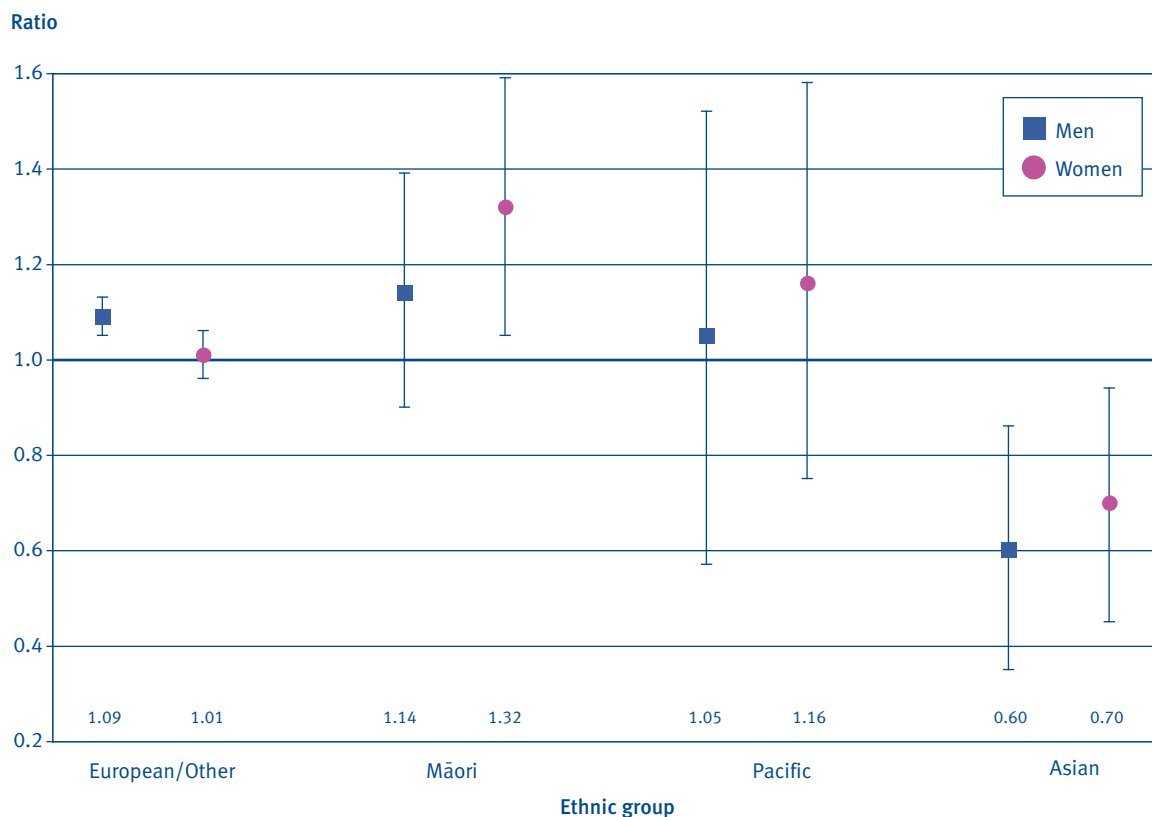


Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged from birth to 14 years. Total response standard output for ethnic groups has been used.

European/Other men and Māori women were significantly more likely to have used an emergency department in the previous 12 months than men and women in the total population. Asian men and women were significantly less likely to have used an emergency department in the previous 12 months than men and women in the total adult population (Figure 6.48).

Figure 6.48: Adults who used an emergency department in the previous 12 months, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

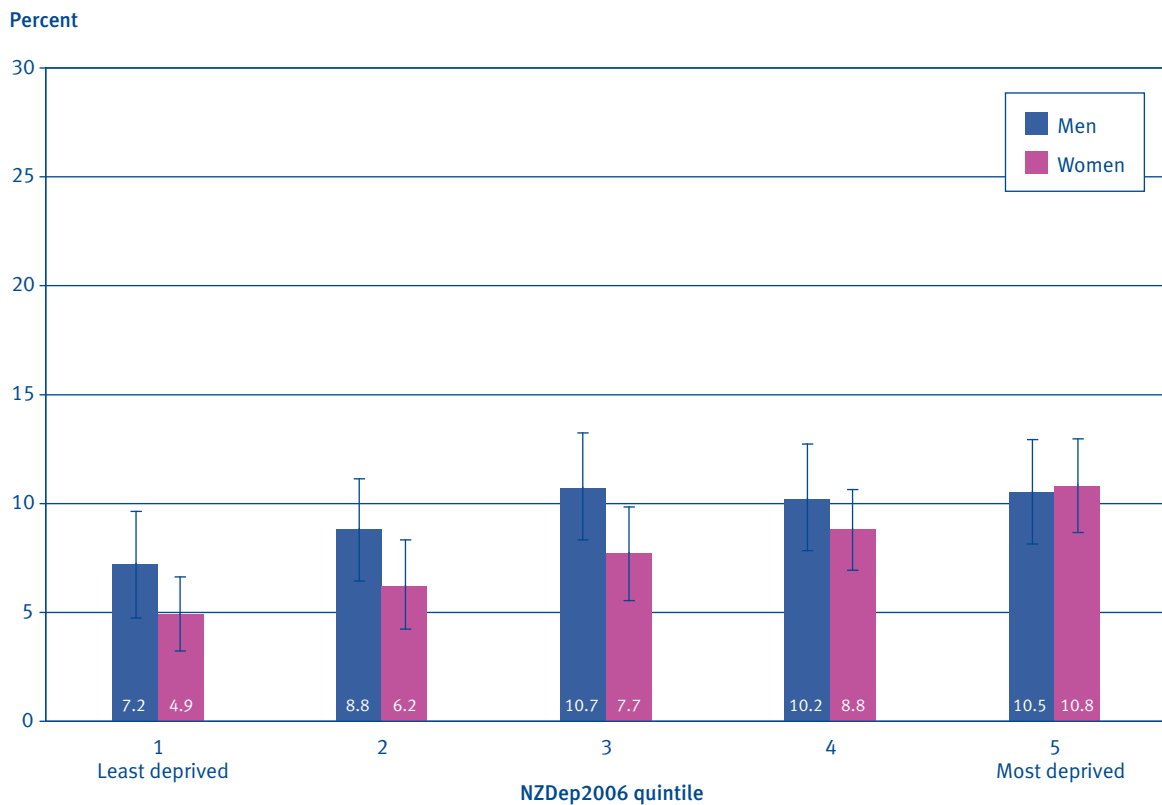
Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Emergency department use in the previous 12 months, by neighbourhood deprivation

There were no statistically significant differences for children who used an emergency department at a public hospital in the previous 12 months by neighbourhood deprivation.

Women in NZDep2006 quintile 5 (most deprived) were significantly more likely than those in quintile 1 (least deprived) to have used an emergency department in the previous 12 months (Figure 6.49).

Figure 6.49: Emergency department use in the previous 12 months by adults, by NZDep2006 quintile and gender (age standardised prevalence)



Source: 2006/07 New Zealand Health Survey

Emergency department use in the previous 12 months, by DHB area

The proportion of children using an emergency department in the previous 12 months was significantly lower in the Counties Manukau and Canterbury DHB areas than the national rate. The Nelson Marlborough / West Coast / South Canterbury / Otago / Southland DHB areas had significantly higher rates than nationally (Table 6.13).

The proportion of adults using an emergency department in the previous 12 months was significantly lower in the Auckland, Counties Manukau and Canterbury DHB areas than the national rate. The Wairarapa / Hutt Valley / Capital and Coast and Nelson Marlborough / West Coast / South Canterbury / Otago / Southland DHB areas had significantly higher rates than nationally (Table 6.13).

Table 6.13: Emergency department use in the previous 12 months, children and adults, by DHB area (unadjusted)

DHB area	Prevalence in children (95% CI)	Number of children	Prevalence in adults (95% CI)	Number of adults
Northland / Tairāwhiti / Hawke's Bay / Lakes / Whanganui	7.0 (4.8–9.2)	8100	9.5 (7.9–11.0)	35600
Waitemata	7.5 (5.0–10.0)	7800	6.9 (5.0–8.7)	26000
Auckland	7.6 (4.7–10.5)	5600	4.9 (3.2–6.6) –	15700
Counties Manukau	4.7 (2.5–6.9) –	5200	4.1 (3.0–5.3) –	13400
Waikato	7.0 (4.8–9.1)	5300	8.9 (6.8–11.0)	23100
Bay of Plenty / Taranaki / MidCentral	10.3 (8.0–12.6)	10100	9.9 (8.3–11.4)	34700
Wairarapa / Hutt Valley / Capital and Coast	10.8 (7.3–14.4)	9700	11.1 (8.6–13.7) +	38600
Canterbury	3.8 (1.7–7.3) –	3500	6.5 (4.6–8.4) –	24100
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	15.2 (9.3–21.1) +	14300	13.0 (10.5–15.4) +	50900
New Zealand total	8.2 (7.0–9.3)	69600	8.4 (7.7–9.0)	261800

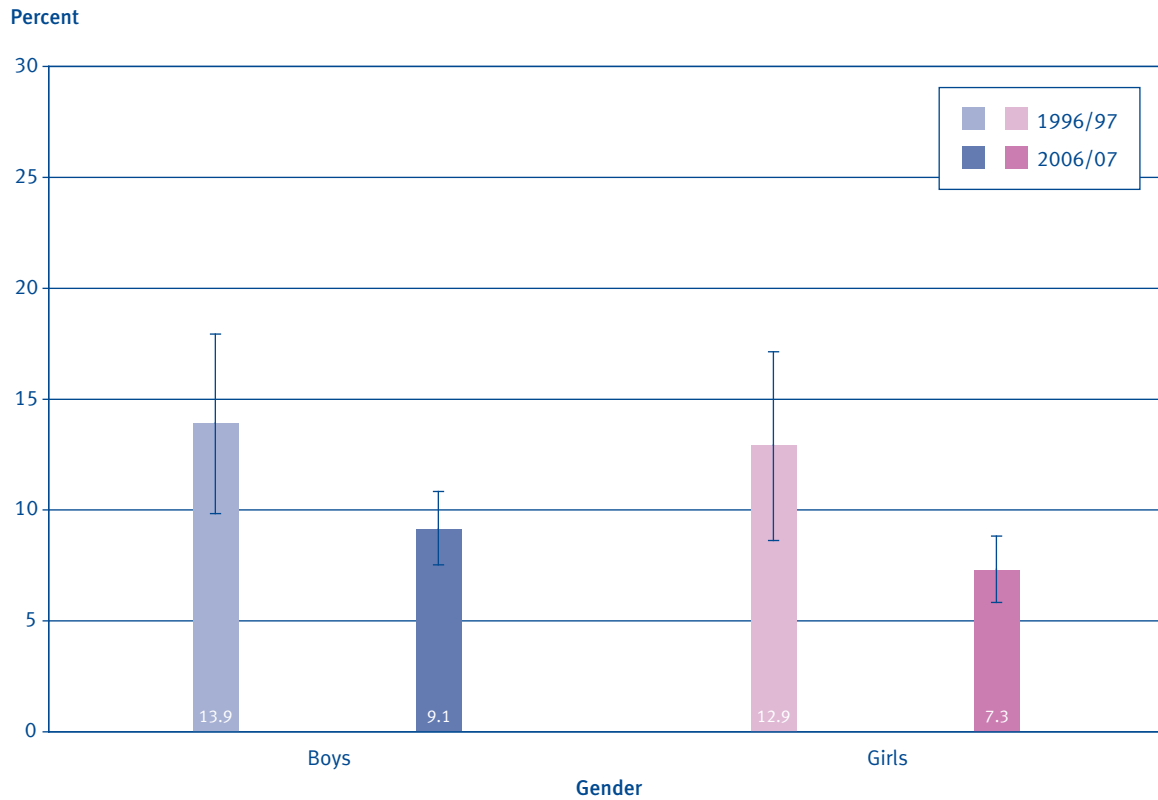
Source: 2006/07 New Zealand Health Survey

Notes: Estimates indicated with a + are significantly higher than the national rate, and estimates indicated with a – are significantly lower than the national rate. Data are based on direct survey estimates and could be confounded by different population characteristics in each DHB. Due to small sample size, some DHB areas have been combined. Survey population is the estimated resident population living in permanent private dwellings at 31 June 2007.

Time trends in use of emergency departments

For boys and girls there was a significant decline (p -values < 0.05) in the use of emergency departments between 1996/97 and 2006/07, adjusted for age (Figure 6.50).

Figure 6.50: Use of emergency departments in previous 12 months for children, by gender, 1996/97, 2006/07 (age standardised prevalence)

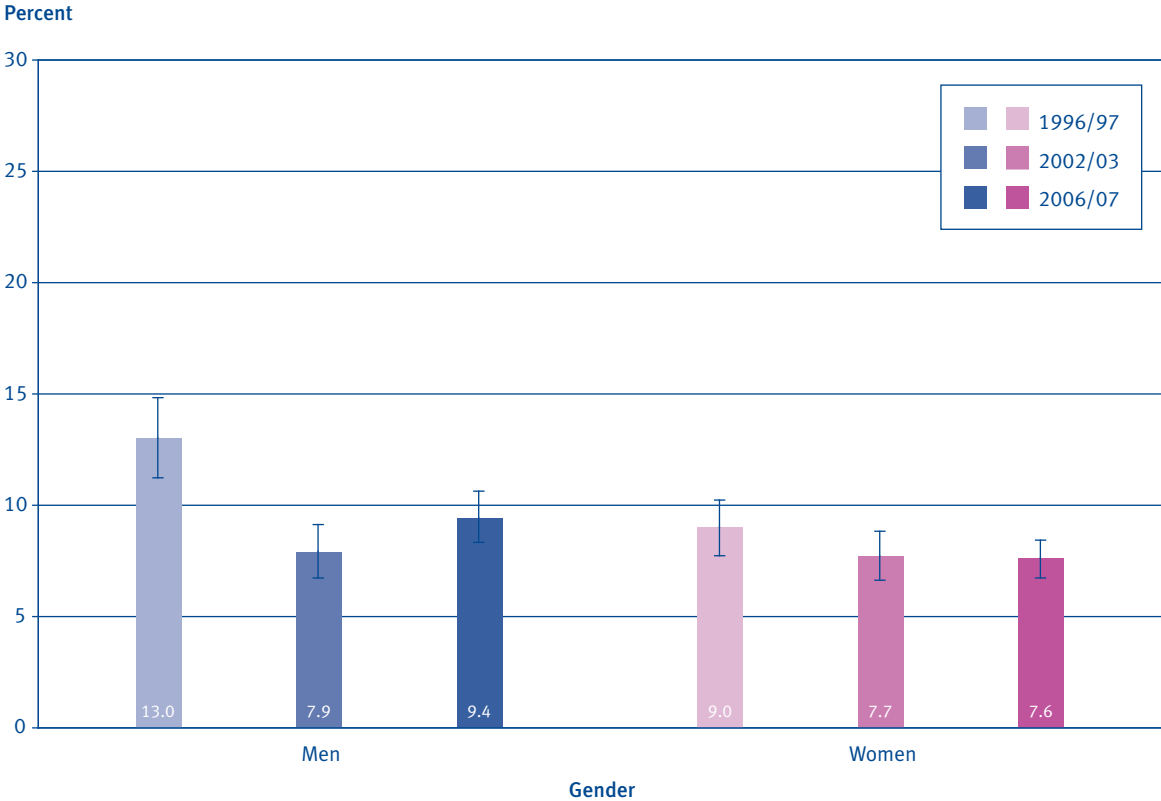


Source: 1996/97 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability. Data not available for 2003/03.

Adjusting for age, there was a decline in the use of emergency departments for men between 1996/97 and 2002/03, with the proportion remaining steady since 2002/03 (Figure 6.51). For women, there was no significant change in the use of emergency departments between 1996/97 and 2006/07. The same trend was also seen for Māori men and women (Figure 6.52).

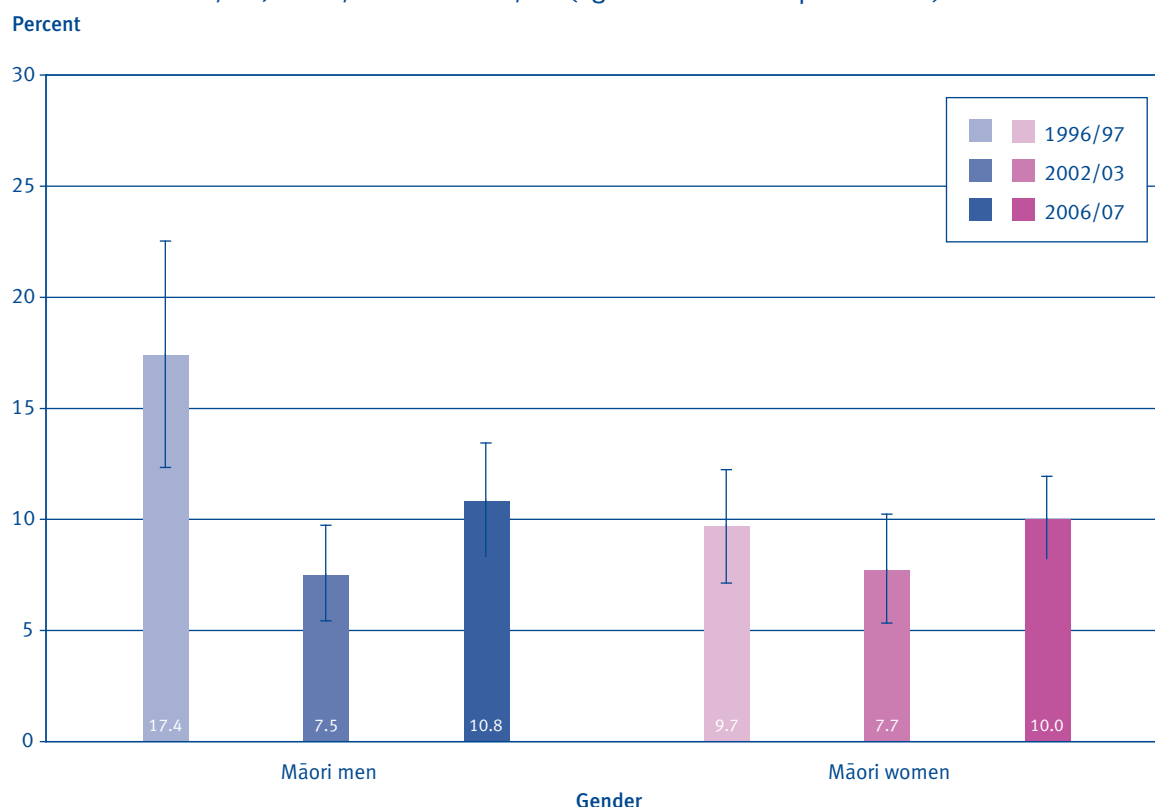
Figure 6.51: Use of emergency departments in the previous 12 months for adults, by gender, 1996/97, 2002/03 and 2006/07 (age standardised prevalence)



Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Figure 6.52: Use of emergency departments in previous 12 months for Māori adults, by gender, 1996/97, 2002/03 and 2006/07 (age standardised prevalence)



Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Public hospital use (excluding emergency departments) in previous 12 months

One in five children (18.2%, 16.8–19.7) and adults (18.3%, 17.4–19.2) used a service other than an emergency department at a public hospital in the previous 12 months. After adjusting for age, women (20.2%, 19.0–21.3) were significantly more likely than men (14.5%, 13.3–15.8) to have used a service other than an emergency department at a public hospital in the previous 12 months. There was no significant difference in public hospital use for boys and girls, adjusted for age.

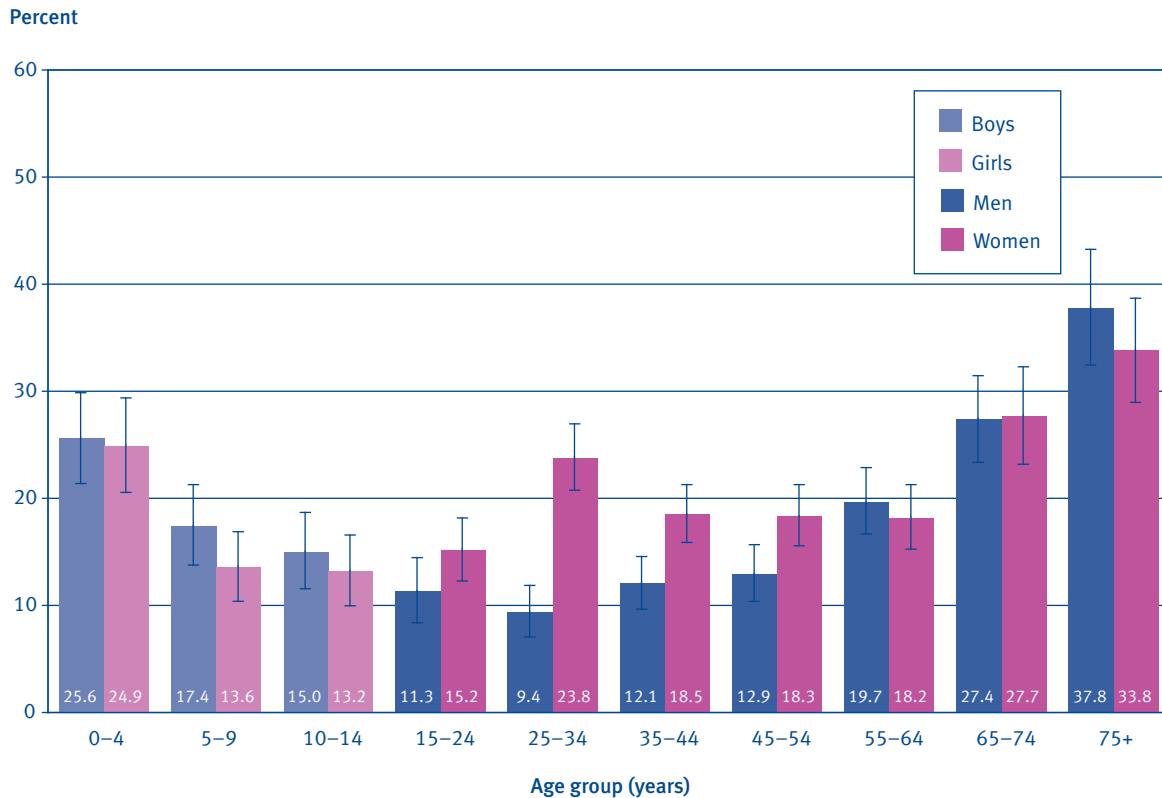
One in fourteen children (7.3%, 6.4–8.3) in the total population had been treated as an outpatient at a public hospital in the previous 12 months, 4.2% (3.5–4.9) were admitted as an inpatient and 2.9% (2.2–3.6) were admitted for day treatment. Māori boys (SRR 1.40, 1.02–1.77) were significantly more likely than boys in the total population to be admitted as an inpatient.

One in eleven adults (8.9%, 8.2–9.6) in the total population had been treated as an outpatient at a public hospital in the previous 12 months, 7.9% (7.3–8.4) were admitted as an inpatient and 3.6% (3.2–3.9) were admitted for day treatment. Māori adults (SRR 1.54, 1.35–1.73) were significantly more likely to be admitted as an inpatient than the total adult population. Adults in NZDep2006 quintile 5 (most deprived) (10.1%, 8.8–11.4) were significantly more likely than those in quintiles 1 (least deprived) (5.4%, 4.2–6.6), 2 or 3 to be admitted as an inpatient.

Public hospital use (excluding emergency departments) in the previous 12 months, by age group

Children aged 0–4 years and adults aged 65 years and over were significantly more likely than other age groups to use public hospital services other than an emergency department. Women aged 25–34 years and 35–44 years were significantly more likely than men of the same age to have used public hospital services other than an emergency department in the previous 12 months (Figure 6.53), which is likely to be due to use of maternity services.

Figure 6.53: Public hospital use (excluding ED) in the previous 12 months for children and adults, by age group and gender (unadjusted prevalence)

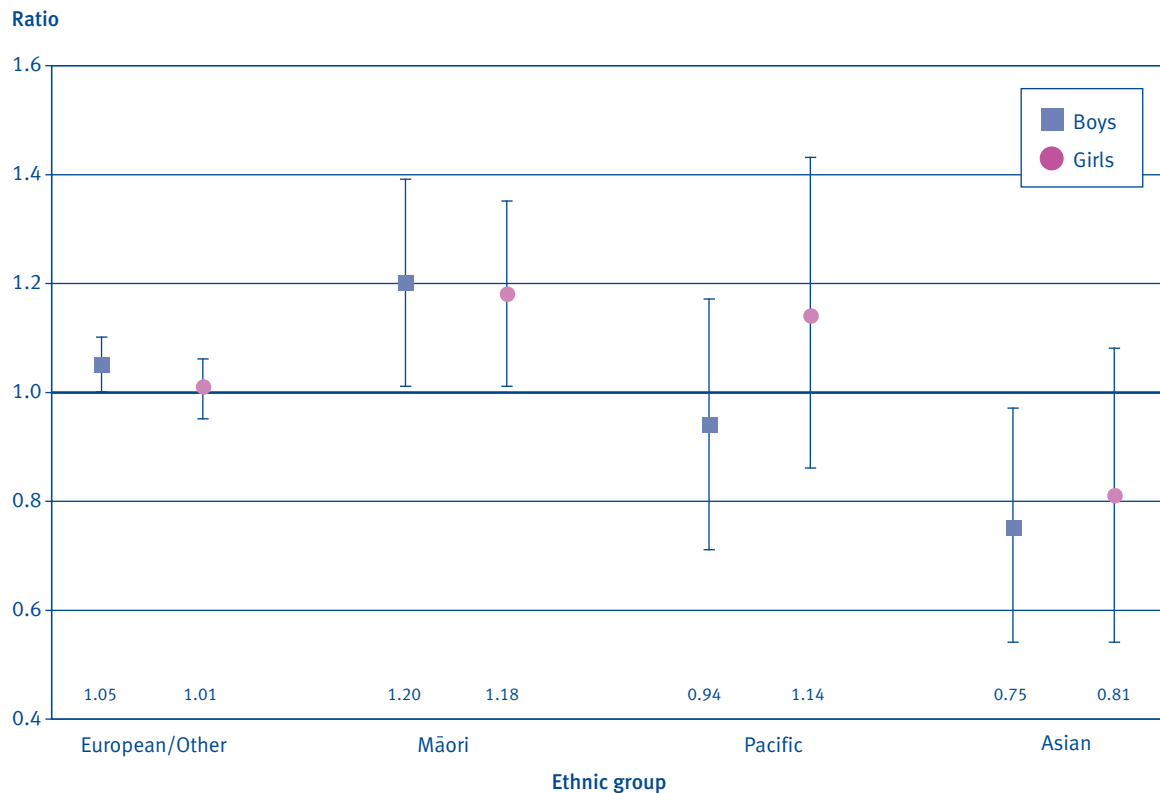


Source: 2006/07 New Zealand Health Survey

Public hospital use (excluding emergency departments) in the previous 12 months, by ethnic group

Māori boys and girls were significantly more likely than boys and girls in the total population to have used public hospital services other than an emergency department in the previous 12 months. Asian boys were significantly less likely than boys in the total population to have used public hospital services other than an emergency department in the previous 12 months (Figure 6.54).

Figure 6.54: Children who used a public hospital service (excluding ED) in the previous 12 months, by ethnic group and gender (age standardised rate ratio)

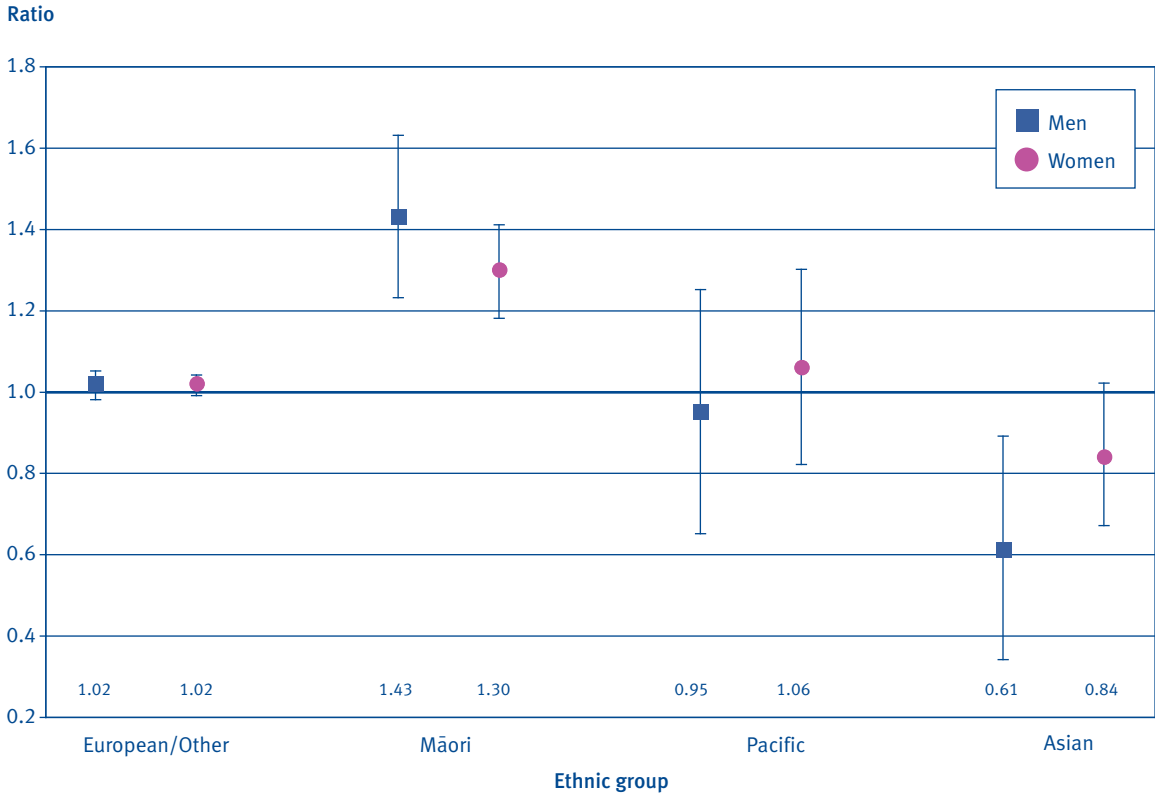


Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged from birth to 14 years. Total response standard output for ethnic groups has been used.

Māori men and women were significantly more likely to have used public hospital services other than an emergency department in the previous 12 months than men and women in the total adult population, while Asian men (SRR 0.61, 0.34–0.89) were significantly less likely than all men (Figure 6.55).

Figure 6.55: Adults who used a public hospital service (excluding ED) in the previous 12 months, by ethnic group and gender (age standardised rate ratio)



Source: 2006/07 New Zealand Health Survey

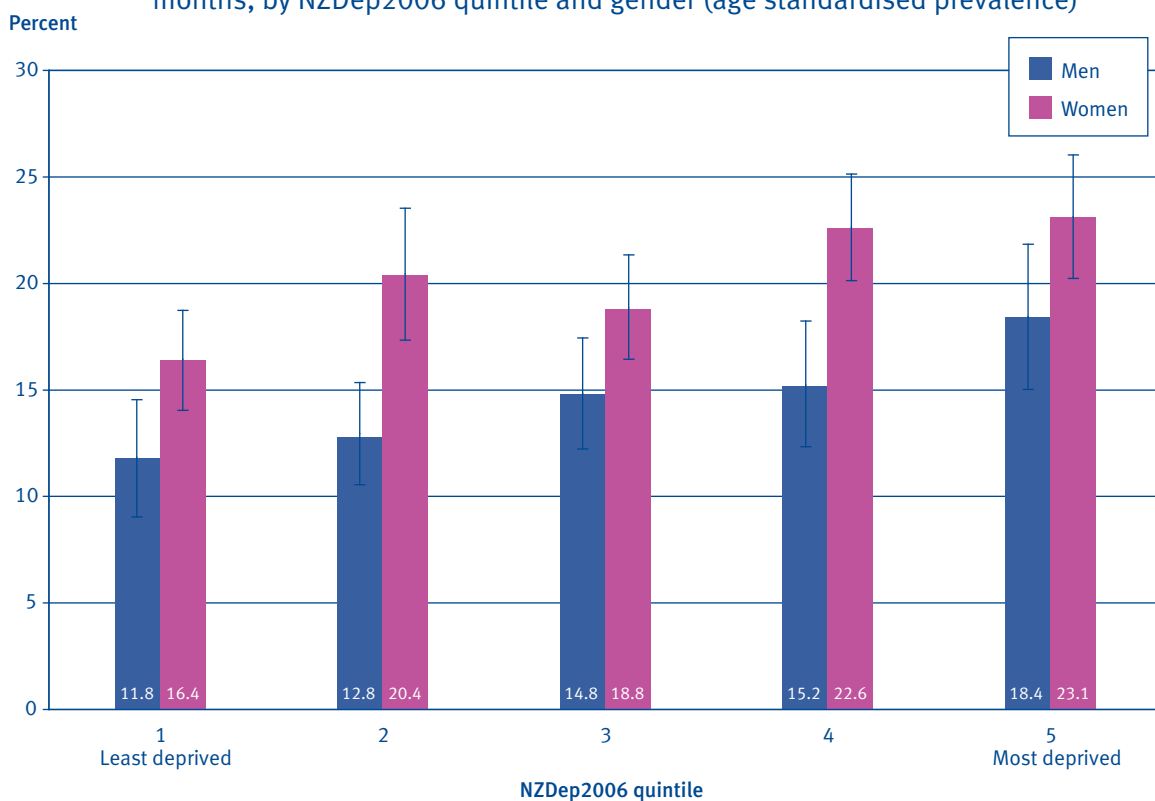
Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Public hospital use (excluding emergency departments) in the previous 12 months, by neighbourhood deprivation

There were no statistically significant differences for children who used public hospital services other than an emergency department in the previous 12 months by neighbourhood deprivation.

Men and women in NZDep2006 quintile 5 (most deprived) were significantly more likely than those in quintile 1 (least deprived) to have used public hospital services other than an emergency department in the previous 12 months (Figure 6.56).

Figure 6.56: Adults who used public hospital services (excluding ED) in the previous 12 months, by NZDep2006 quintile and gender (age standardised prevalence)



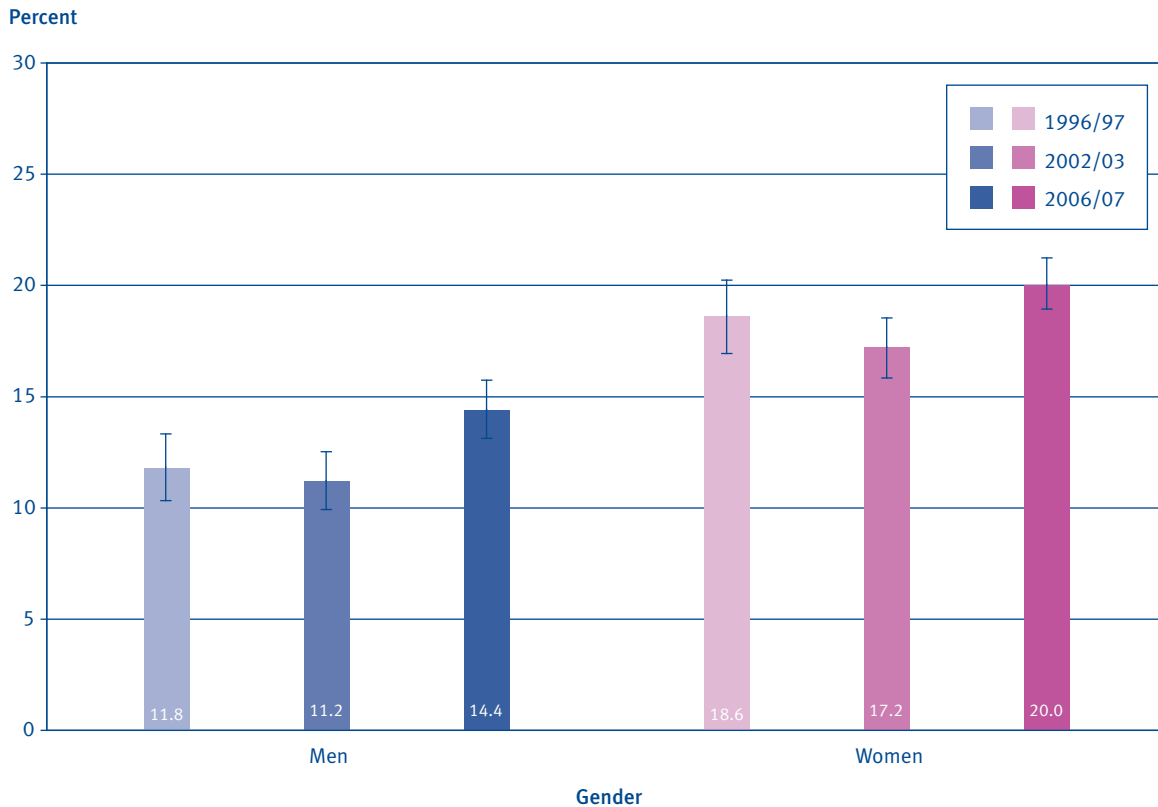
Source: 2006/07 New Zealand Health Survey

Time trends in use of public hospitals (excluding emergency department)

There were no significant differences in public hospital use from 1996/97 to 2006/07 for children, adjusted for age.

For both men and women, there was a significant increase in the use of public hospital services between 2002/03 and 2006/07, adjusted for age (Figure 6.57). This same pattern occurred for Māori men and women (Figure 6.58).

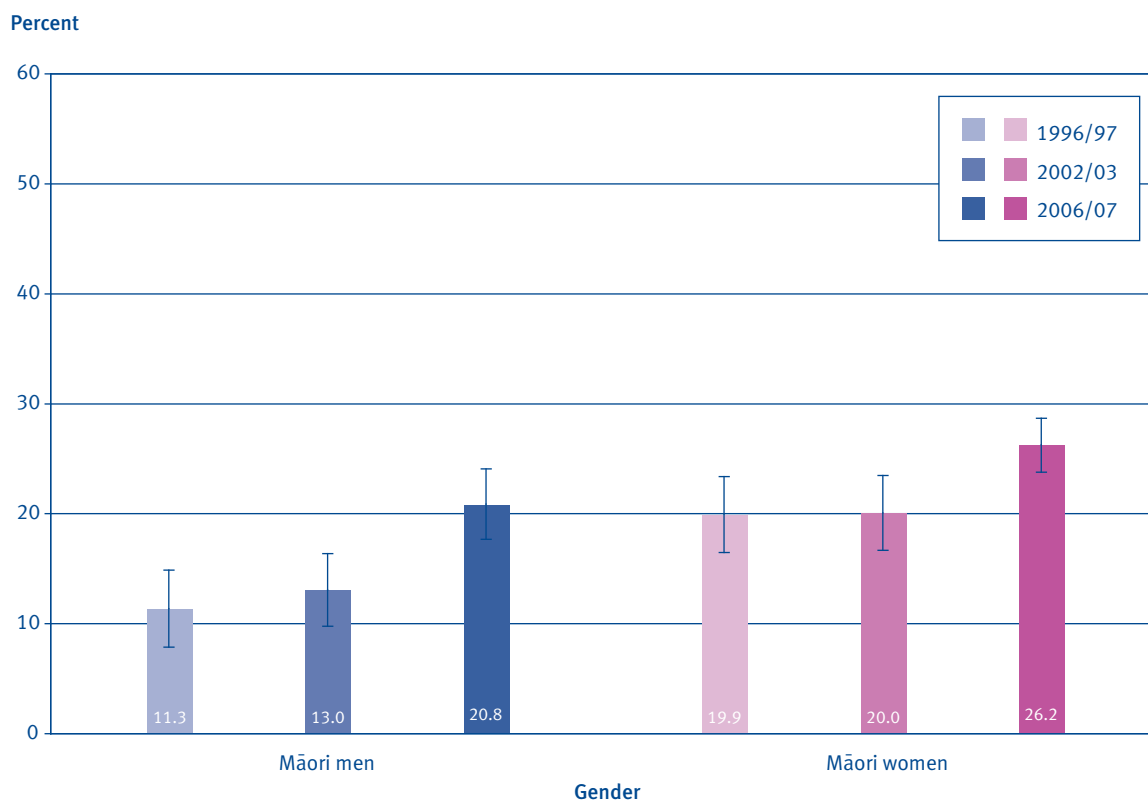
Figure 6.57: Use of public hospital in previous 12 months (excluding ED) for adults, by gender, 1996/97, 2002/03, 2006/07 (age standardised prevalence)



Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Figure 6.58: Use of public hospital in previous 12 months (excluding ED) for Māori adults, by gender, 1996/97, 2002/03, 2006/07 (age standardised prevalence)



Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Private hospital use

Introduction

There are a number of private hospitals in New Zealand that provide treatment for non-urgent conditions. The use of private hospitals is generally funded by individuals themselves or through medical insurance.

What were the survey questions?

In the 2006/07 New Zealand Health Survey, adult participants and the parents of child participants were asked whether they/their child had used a service at or been admitted to a private hospital in the previous 12 months, and if so, the type of service(s): outpatient, day treatment or inpatient (stayed overnight).

Parents of child participants were also asked what type of procedure was carried out if their child had day treatment or was an inpatient.

Private hospital use in previous 12 months

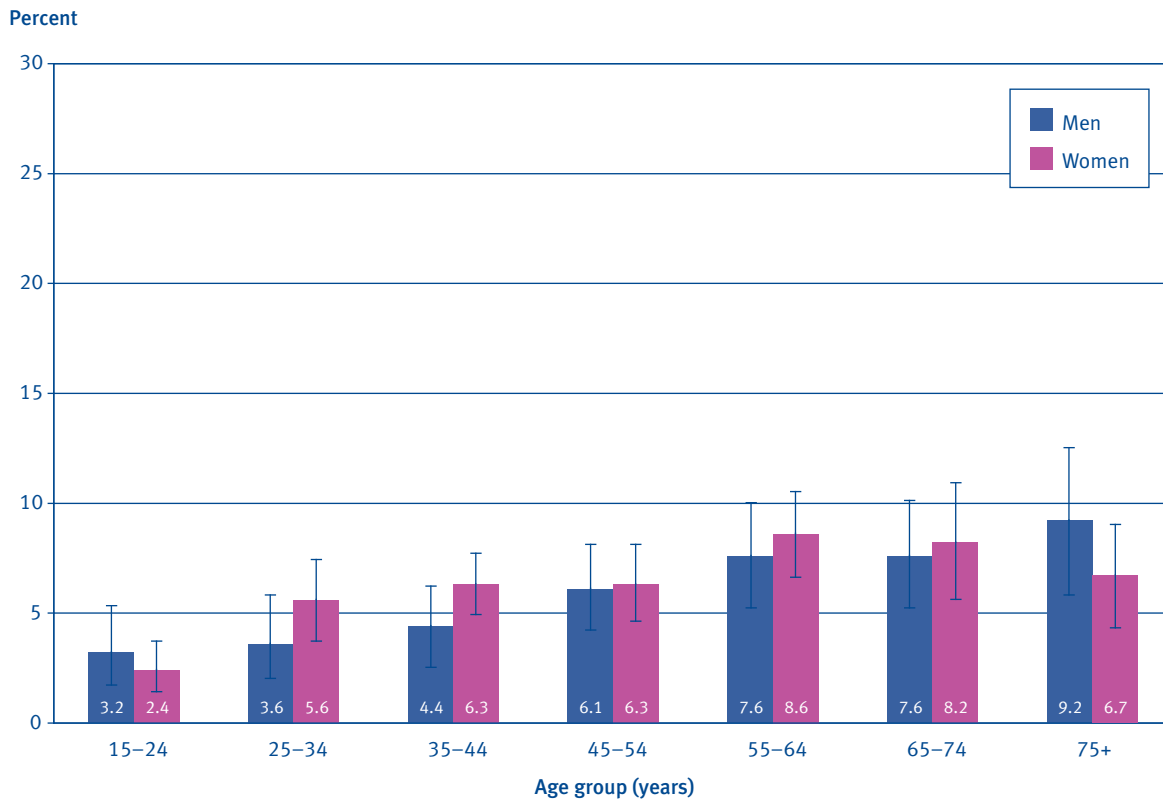
One in eighteen (5.7%, 5.2–6.2) adults and 1 in 59 (1.7%, 1.2–2.3) children had used a service at a private hospital in the previous 12 months. There were too few children who used private hospital services in the survey for any meaningful comparison to be made by age, ethnic group or neighbourhood deprivation.

Of those adults who had used private hospital services in the previous 12 months, 45.2% (40.4–49.9) were admitted for day treatment and 34.6% (30.3–38.9) were admitted as an inpatient.

Private hospital use in previous 12 months, by age group

For adults, the use of private hospital services increased with age, although none of the differences between age groups was significant. Women aged 15–24 years were significantly less likely than older women to have used a service at a private hospital in the previous 12 months (Figure 6.59).

Figure 6.59: Use of private hospital services in the previous 12 months for adults, by age group and gender (unadjusted prevalence)

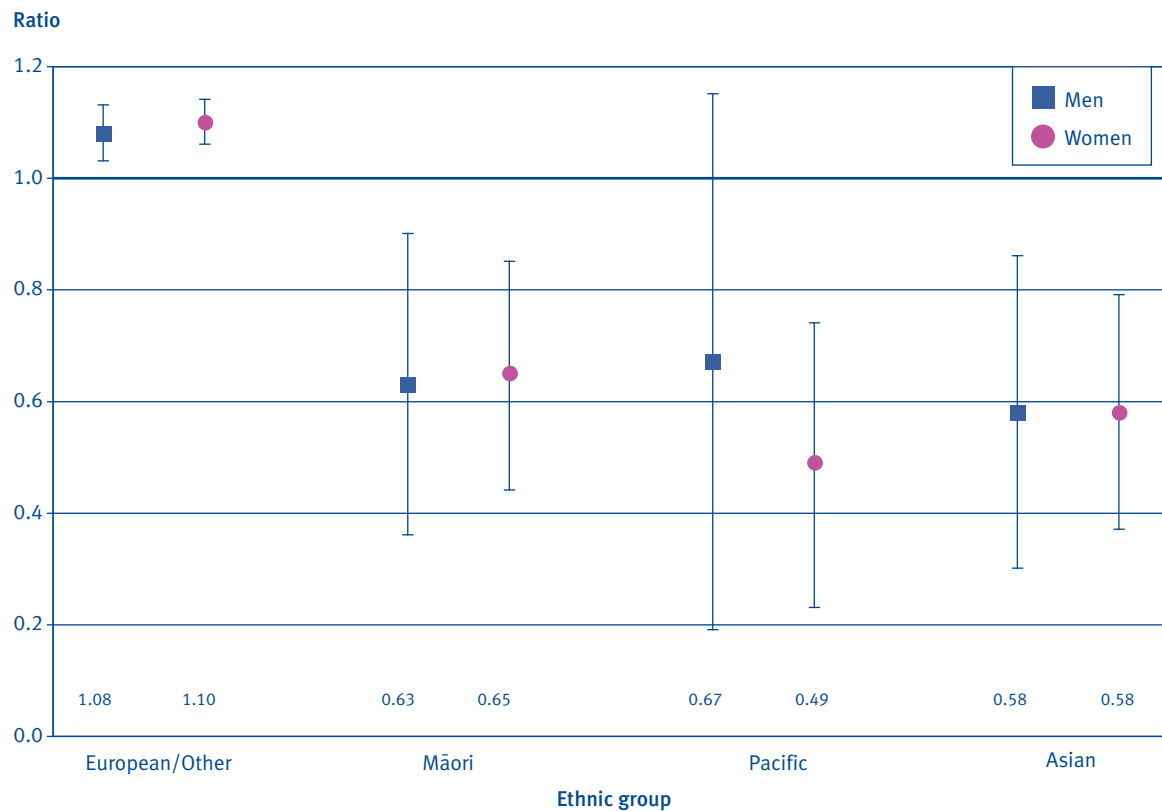


Source: 2006/07 New Zealand Health Survey

Private hospital use in previous 12 months, by ethnic group

European/Other men and women were significantly more likely to have used private hospital services in the previous 12 months than men and women in the total adult population, while Māori and Asian men and women were significantly less likely to have used such services (Figure 6.60). Pacific women were also significantly less likely to have used a private hospital service than women in the total population.

Figure 6.60: Adults who used private hospital services in the previous 12 months, by ethnic group and gender (age standardised rate ratio)



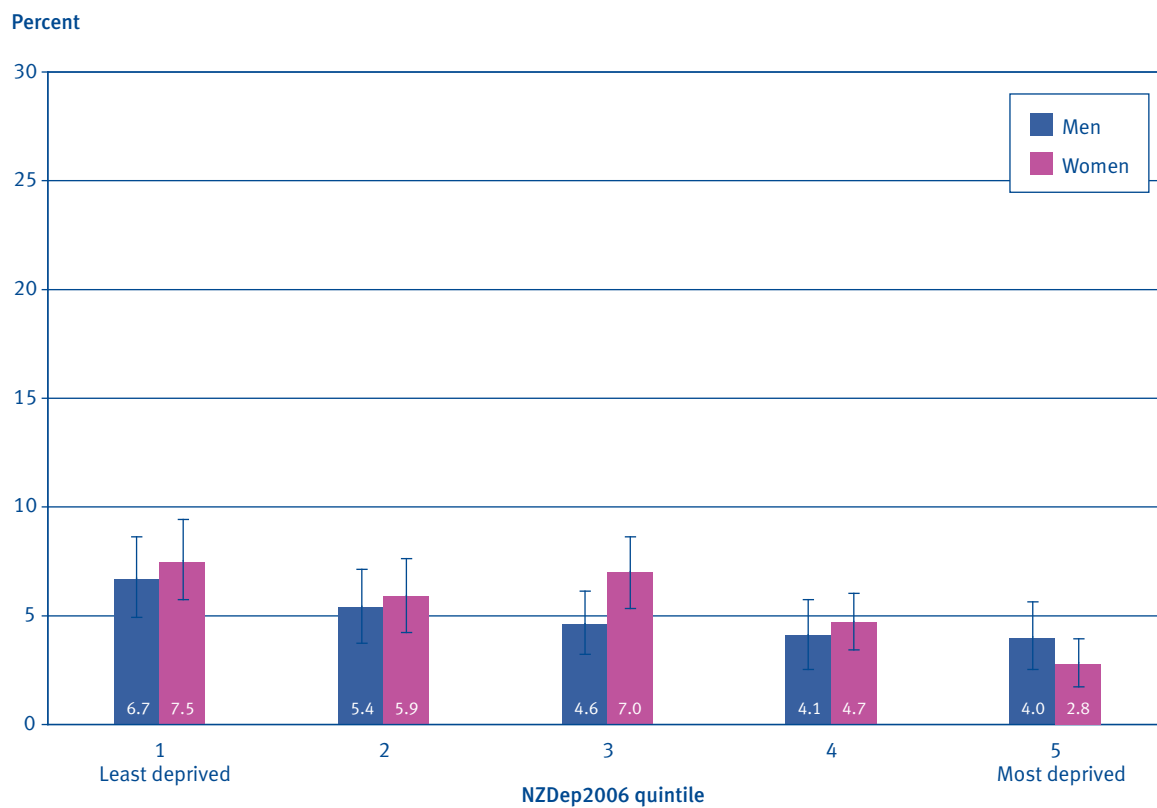
Source: 2006/07 New Zealand Health Survey

Notes: Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Private hospital use in previous 12 months, by neighbourhood deprivation

Women in NZDep2006 quintile 5 (most deprived) were significantly less likely than those in NZDep2006 quintiles 1 (least deprived), 2 and 3 to have used private hospital services in the previous 12 months (Figure 6.61).

Figure 6.61: Adults who used private hospital services in the previous 12 months, by NZDep2006 quintile and gender (age standardised prevalence)

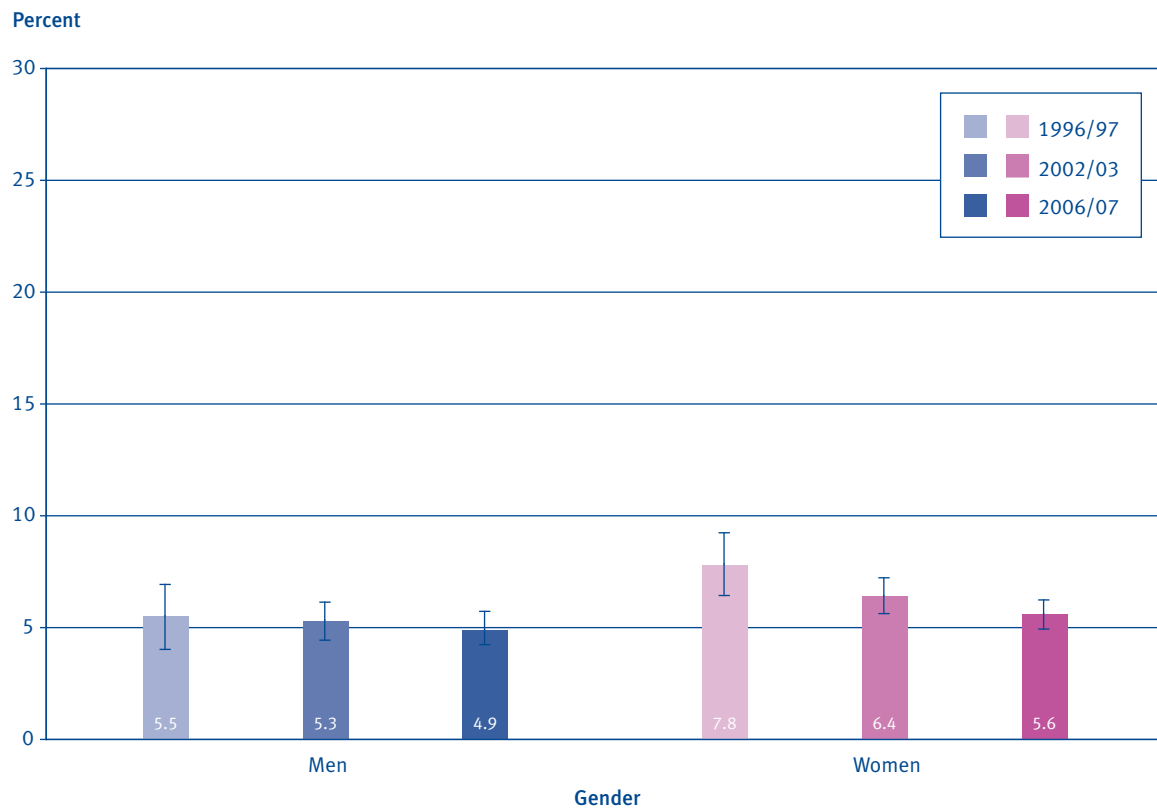


Source: 2006/07 New Zealand Health Survey

Time trends in private hospital use

For children, there were no significant changes in the use of private hospitals between 1996/97 and 2006/07, adjusted for age. From 1996/97 to 2006/07 there was a decreasing trend in the use of private hospital services for women, with no change for men, adjusted for age (Figure 6.62). There were no changes in the use of private hospitals between 1996/97 and 2006/07 for Māori adults, adjusted for age (graph not shown).

Figure 6.62: Private hospital use in previous 12 months for adults, by gender, 1996/97, 2002/03 and 2006/07 (age standardised prevalence)



Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Medical insurance

Individuals with medical insurance may have more timely access to medical treatment than those without insurance, particularly in the case of surgery for non-acute conditions. Medical insurance can also pay for GP visits and prescription costs, and may also include dental and optical care.

What were the survey questions?

In the 2006/07 New Zealand Health Survey, adult participants and the parents of child participants were asked whether they/their child were covered by any health or medical insurance scheme. Adult participants were also asked what type of insurance they had.

Medical insurance coverage

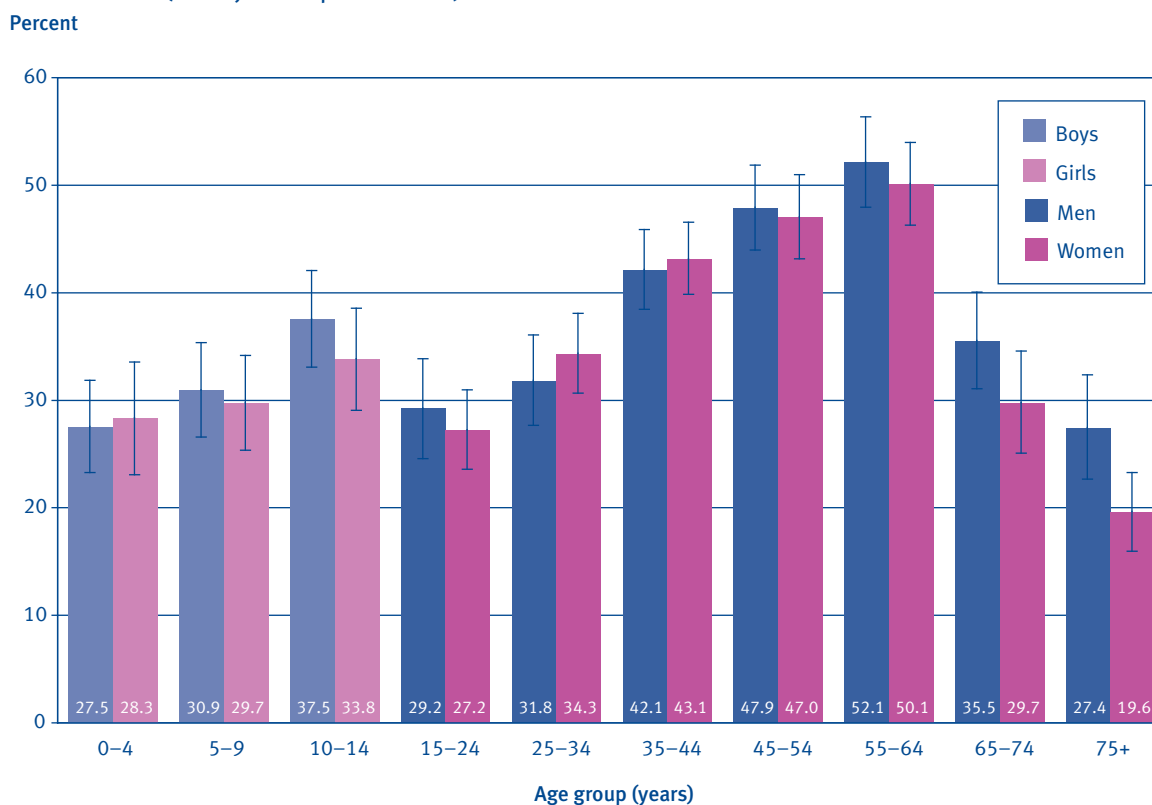
Around one-third of children (31.3%, 29.5–33.2) and almost 40% of adults (38.4%, 37.2–39.5) were covered by medical insurance. There were no statistically significant differences in medical insurance coverage by gender for children or adults, adjusted for age.

One in five (19.4%, 18.6–20.3) adults had comprehensive medical insurance and one in five (18.3%, 17.4–19.2) had medical insurance that covered their hospital bills only.

Medical insurance coverage, by age group

For children, 10–14-year-olds, and for adults, 45–64-year-olds, were more likely to have medical insurance than those in other age groups. Adults aged 15–34 years and those aged over 65 years were significantly less likely to have medical insurance than those aged 45–64 years (Figure 6.63).

Figure 6.63: Medical insurance coverage for children and adults, by age group and gender (unadjusted prevalence)



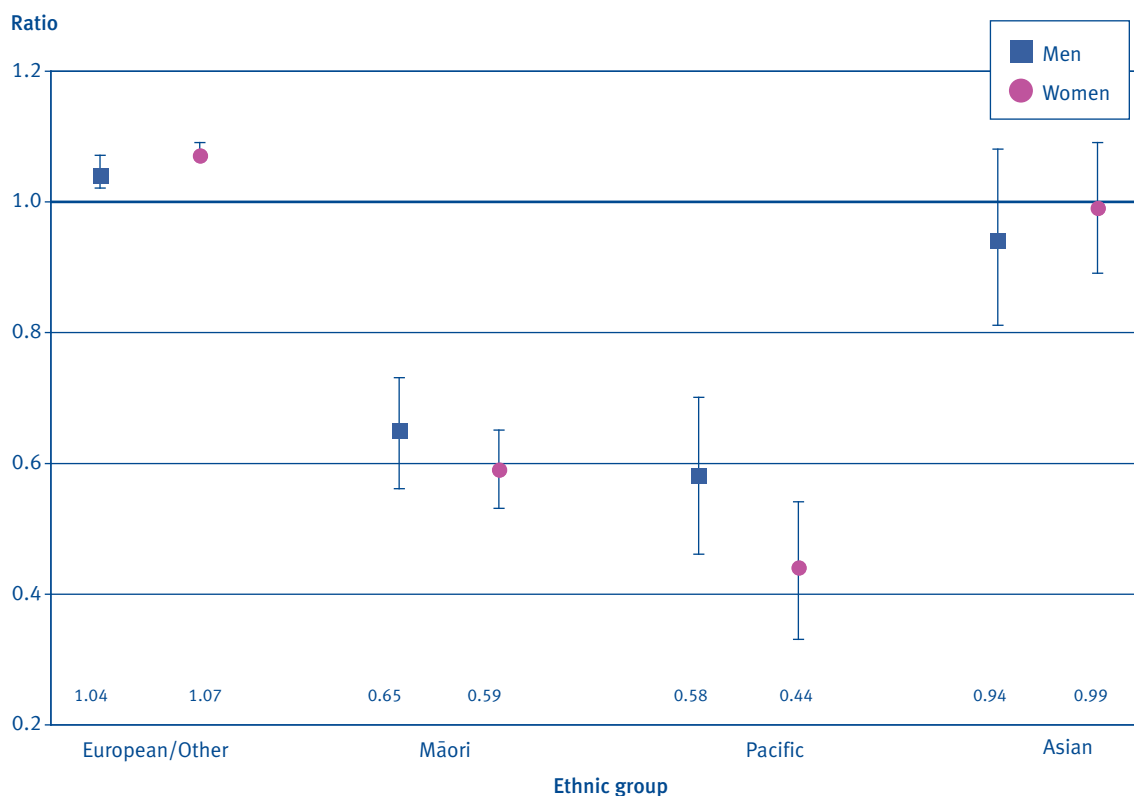
Source: 2006/07 New Zealand Health Survey

Medical insurance coverage, by ethnic group

European/Other children (SRR 1.14, 1.12–1.16) were significantly more likely to have medical insurance cover than all children, while Māori (SRR 0.65, 0.57–0.72) and Pacific (SRR 0.51, 0.42–0.60) children were significantly less likely to have such insurance.

European/Other men and women were significantly more likely to have medical insurance cover than men and women in the total adult population, while Māori and Pacific men and women were significantly less likely to have such insurance (Figure 6.64).

Figure 6.64: Adults with medical insurance, by ethnic group and gender (age standardised rate ratio)



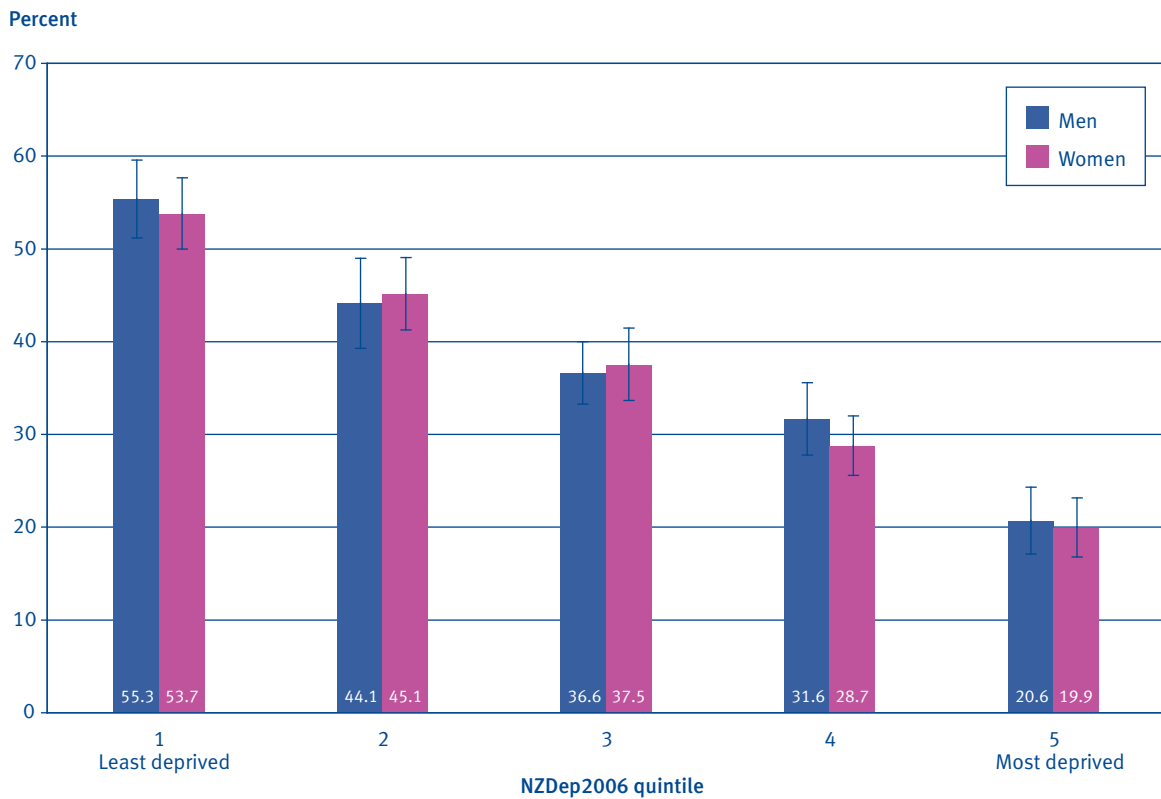
Source: 2006/07 New Zealand Health Survey

Notes: Age standardised to the WHO world population. Reference group, with a rate ratio of 1.0 (indicated by the bold line), is the total male or female population aged 15 years and over. Total response standard output for ethnic groups has been used.

Medical insurance coverage, by neighbourhood deprivation

Medical insurance cover decreased with increasing deprivation for both children (graph not shown) and adults. Men and women living in NZDep2006 quintile 5 (most deprived) were significantly less likely than all other adults to have medical insurance (Figure 6.65).

Figure 6.65: Medical insurance coverage for adults, by NZDep2006 quintile and gender (age standardised prevalence)



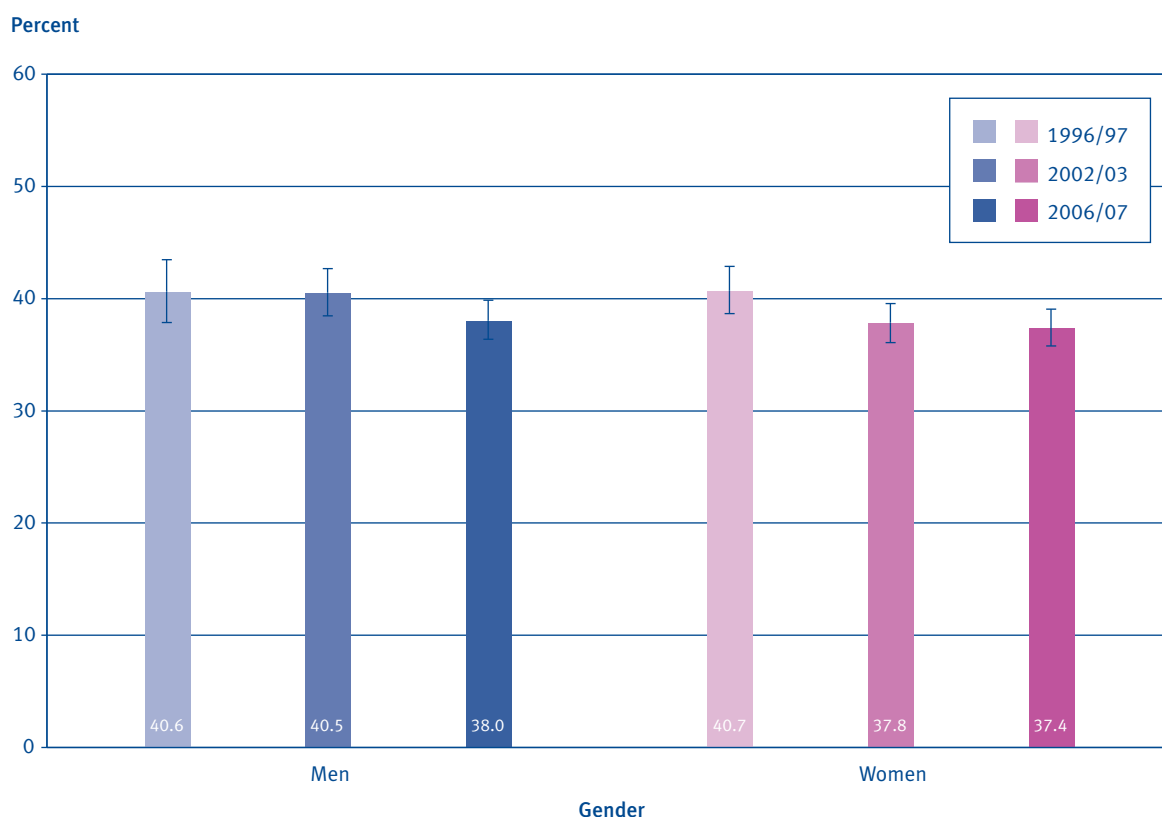
Source: 2006/07 New Zealand Health Survey

Time trends in medical insurance coverage

There was a significant decline in the proportion of women who had medical insurance coverage between 1996/97 and 2002/03 (p-value < 0.05), but there was no change between 2002/03 and 2006/07 (Figure 6.66). There were no significant changes in the prevalence of medical insurance coverage among men between 1996/97 and 2002/03.

Among Māori, there were no changes in the prevalence of medical insurance coverage between 1996/97, 2002/03 and 2006/07, adjusted for age (graph not shown).

Figure 6.66: Medical insurance coverage for adults, by gender, 1996/97, 2002/03 and 2006/07 (age standardised prevalence)



Source: 1996/97, 2002/03 and 2006/07 New Zealand Health Surveys

Note: Data from previous years have been reanalysed to allow for comparability.

Appendix 1: Summary Tables of Key Findings

The following tables summarise the key findings from the 2006/07 New Zealand Health Survey, for children and adults separately, presenting the population prevalence, differences by gender, ethnic group and NZDep2006 quintile, and the time trend where available. Child data is for 0–14 years and adult data is for 15 years and over, unless otherwise stated. Total rates are unadjusted.

For definitions of topics and indicators, please refer to the appropriate section of this report as indicated by the page number in the table.

All differences noted are statistically significant at the 95% level (p-value < 0.05).

Gender differences

Differences by gender compare men and women, or boys and girls, standardised for age. For example if “+ Men” is shown, this means that men have a higher prevalence of the selected topic than women.

Ethnic group differences

Differences by ethnic group are based on the age standardised rate ratios for all adults or children in the ethnic group (genders combined). Each ethnic group is compared to the reference group which is the total population. For example, if “+ M” is shown, this means that Māori have a higher prevalence of the selected topic than the total population. Results may differ slightly from those found earlier in this report where men and women in each ethnic group are presented separately.

Neighbourhood deprivation differences

Differences by neighbourhood deprivation compare NZDep2006 quintile 1 (least deprived) and NZDep2006 quintile 5 (most deprived), standardised for age. For example, if “+ Q5” is shown, this means that people living in neighbourhoods of high deprivation (NZDep2006 quintile 5) have a higher prevalence of the selected topic than people living in the least deprived neighbourhoods (NZDep2006 quintile 1). Differences are the same for both genders unless otherwise specified.

Trends

In the time trend summaries, only obvious increasing or decreasing trends are noted. Trends for males and females are presented separately, standardised for age. See page 14 for more information on comparisons between surveys.

All data presented in the summary tables are available in Excel format at www.moh.govt.nz/moh.nsf/indexmh/portrait-of-health.

Table A1.1: Summary of findings for adult health

Key: N/A not available, nd no difference, + significantly higher, – significantly lower, M Māori, P Pacific, A Asian, E European/Other
 † increasing trend, ‡ decreasing trend, nc no change. Refer to the main body of the report for confidence intervals and the magnitude of differences.

Topic	Page	2006/07 population prevalence (unadjusted)	Differences between population groups in 2006/07 (age standardised)			Trends (age standardised)
			Gender	Ethnic group	Neighbourhood deprivation	
Health behaviours and risk factors						
Second-hand smoke exposure in non-smokers in their home	53	7.5 %	nd	+ M, P E	+ Q5	N/A
Current smokers (time trend is only for daily smokers)	60	19.9 %	nd	+ M, P - E, A	+ Q5	‡ Men since 2002/03 ‡ Women since 2002/03
Hazardous drinking (in total population)	67	17.7 %	+ Men	+ E, M - A	+ Q5	nc Men since 1996/97 nc Women since 1996/97
Problem gambling (in total population)	76	0.4 %	nd	+ M, P - E, A	+ Q5	N/A
Problems due to someone's gambling	76	2.8 %	nd	+ M, P - E, A	+ Q5	N/A
Adequate vegetable intake (3 or more servings per day)	82	64.1 %	+ Women	+ E - P, A	+ Q1	‡ Men since 2002/03 ‡ Women since 1997
Adequate fruit intake (2 or more servings per day)	82	60.0 %	+ Women	- M	+ Q1	‡ Men since 1997 ‡ Women since 1997
Regular physical activity (30 mins a day, five or more days of week)	93	50.5 %	+ Men	+ E - A, P	nd	nc Men since 1996/97 nc Women since 1996/97
Sedentary (less than 30 mins activity in previous week)	93	15.0 %	+ Women	+ P, A - E	+ Q5	nc Men since 2002/03 ‡ Women since 2002/03

Topic	Page	2006/07 population prevalence (unadjusted)	Differences between population groups in 2006/07 (age standardised)			Trends (age standardised)
			Gender	Ethnic group	Neighbourhood deprivation	
Mean BMI	104	27.4 kg/m ²	nd	+ P, M - A	+ Q5	↑ Men since 1997 ↑ Women since 1997
Obesity	104	26.5 %	nd	+ P, M - E, A	+ Q5	nc Men since 2002/03 nc Women since 2002/03
Health conditions						
Diagnosed with any chronic health condition	119	65.7 %	+ Women	+ E, M - P, A	nd	N/A
Medicated high blood pressure	119	13.6 %	nd	+ M, P - E	nd	↑ Men since 2002/03 nc Women since 2002/03
Medicated high cholesterol	123	8.4 %	+ Men	- E	nd	↑ Men since 2002/03 nc Women since 2002/03
Diagnosed ischaemic heart disease	129	5.2 %	+ Men	+ M - E	+ Q5	N/A
Stroke	134	1.8 %	nd	Small numbers	nd	nc Men since 2002/03 nc Women since 2002/03
Diagnosed diabetes	137	5.0 %	+ Men	+ M, P, A - E	+ Q5	nc Men since 1996/97 nc Women since 1996/97
Medicated asthma	143	11.2 %	+ Women	+ E, M - P, A	+ Q5 women nd men	nc Men since 2002/03 ↓ Women since 2002/03
Chronic obstructive pulmonary disease (45 years or over)	150	6.6 %	+ Women	+ M - A	+ Q5 women nd men	N/A
Teeth removed due to decay, abscess, infection or gum disease	153	48.7 %	+ Men	+ M, P - E	+ Q5	N/A

Topic	Page	2006/07 population prevalence (unadjusted)	Differences between population groups in 2006/07 (age standardised)			Trends (age standardised)
			Gender	Ethnic group	Neighbourhood deprivation	
Arthritis	163	14.8 %	+ Women	+ E, M - P, A	nd	↓ Men since 2002/03 nc Women since 2002/03
Osteoporosis	167	2.9 %	+ Women	Small numbers	nd	nc Men since 2002/03 nc Women since 2002/03
Diagnosed mood disorders	170	10.9 %	+ Women	+ E - P, A	nd men + Q4 women**	N/A
Diagnosed anxiety disorders	174	4.3 %	+ Women	+ E - A	nd + Q4 women**	N/A
Health status						
General health is excellent or very good	181	60.6 %	+ Women	+ E - M, P, A	+ Q1	nc Men since 2002/03 ↓ Women since 2002/03
Chronic pain	202	16.9 %	nd	+ E, M - P, A	+ Q5 men nd women	N/A
High or very high probability of psychological distress	206	6.6 %	+ Women	+ M, P - E	+ Q5	N/A
Primary health care						
Has a primary health care provider	218	93.3 %	+ Women	+ E - A	+ Q1	N/A
Able to see primary health care provider within 24 hours	224	82.3 %	+ Men	- M	+ Q1	N/A
Changed primary health care provider in previous 12 months	240	7.8 %	nd	+ E	nd	N/A
Mammogram in previous 2 years (women aged 45 to 69 years)	226	71.2 %	N/A	+ E - M, P, A	+ Q1	N/A

** compared to NZDep2006 quintile 1.

Topic	Page	2006/07 population prevalence (unadjusted)	Differences between population groups in 2006/07 (age standardised)			Trends (age standardised)
			Gender	Ethnic group	Neighbourhood deprivation	
Cervical smear in previous 3 years (women aged 20 to 69 years)	226	79.6 %	N/A	+ E - M, P, A	+ Q1	N/A
Influenza vaccination given by primary health care provider in previous 12 months	232	23.0 %	nd	- E	nd	N/A
Treated with respect and dignity by health professional all of the time	242	91.7 %	nd	+ E - M, P, A	+ Q1	N/A
Health professional listened carefully all the time	242	75.9 %	nd	- M	+ Q1	N/A
Health professional discussed health care as much as they wanted all the time	242	74.8 %	nd	+ E - M, P	+ Q1	N/A
Use of health professionals and hospitals						
Saw a general practitioner in previous 12 months	248	81.3 %	+ Women	+ E - A	nd	↑ Men since 1996/97 ↓ Women since 2002/03
Last visit to general practitioner in previous 12 months was free	257	10.0 %	nd	+ M, P	+ Q5	nc Men since 2002/03 nc Women since 2002/03
Unmet need for GP visit in previous 12 months (any reason)	266	6.3 %	+ Women	+ M, P - E	+ Q5	↓ Men since 2002/03 ↓ Women since 2002/03
Unable to see a GP due to cost in previous 12 months	276	1.7 %	+ Women	+ M, P	+ Q5	↓ Men since 2002/03 ↓ Women since 2002/03
Uncollected prescription due to cost in previous 12 months	277	1.4 %	nd	+ M, P - E	+ Q5	↓ Men since 2002/03 ↓ Women since 2002/03
Saw a primary health care nurse in previous 12 months	279	40.8 %	+ Women	+ M, E - A	nd	nc Men since 2002/03 nc Women since 2002/03

Topic	Page	2006/07 population prevalence (unadjusted)	Differences between population groups in 2006/07 (age standardised)			Trends (age standardised)
			Gender	Ethnic group	Neighbourhood deprivation	
Saw an oral health care worker in previous 12 months	285	51.0 %	+ Women	+ E - M, P, A	+ Q1	N/A
Unmet need for oral health care services in previous 12 months	292	10.0 %	nd	+ M, P - A	+ Q5	N/A
Saw a medical specialist in previous 12 months	305	32.2 %	+ Women	+ E - P, A	+ Q1	N/A
Emergency department use in previous 12 months	310	8.4 %	nd	+ E, M - A	+ Q5	nc Men since 2002/03 nc Women since 2002/03
Use of public hospital services (excluding ED) in previous 12 months	318	18.3 %	+ Women	+ M - A	+ Q5	† Men since 2002/03 † Women since 2002/03
Use of private hospital services in previous 12 months	325	5.7 %	nd	+ E - M, P, A	+ Q1	nc Men since 1996/97 ‡ Women since 1996/97
Medical insurance coverage	329	38.4 %	nd	+ E - M, P	+ Q1	nc Men since 1996/97 nc Women since 1996/97

Table A1.2 Summary of findings for child health

Key: N/A not available, nd no difference, + significantly higher, – significantly lower, M Māori, P Pacific, A Asian, E European/Other

‡ increasing trend, † decreasing trend, nc no change. Refer to the main body of the report for confidence intervals and the magnitude of differences.

Topic	Page	2006/07 population prevalence (unadjusted)	Differences between population groups in 2006/07 (age standardised)			Time trend
			Gender	Ethnic group	Neighbourhood deprivation	
Health behaviours and risk factors						
Ever breastfed	23	87.8 %	nd	+ E - M, P	+ Q1	N/A
Exclusive breastfeeding at 6 weeks	23	72.9 %	nd	nd	nd	N/A
Exclusive breastfeeding at 3 months	23	55.8 %	nd	nd	+ Q1	N/A
Exclusive breastfeeding at 6 months	23	7.6 %	nd	- E	- Q2 (compared to Q5)	N/A
Given solids before 4 months of age (under 5 years)	23	10.6 %	nd	+ M - E, A	+ Q5	N/A
Breakfast at home every day in previous 7 days (2–14 years)	29	87.8 %	+ Boys	+ E - M, P	+ Q1	N/A
Three or more fizzy drinks in previous 7 days (2–14 years)	32	19.6 %	+ Boys	+ M, P - E	+ Q5	N/A
Fast food 3 or more times in previous 7 days (2–14 years)	37	7.2%	nd	+ M, P - E	+ Q5	N/A
Active transport to school (5–14 years)	41	47.0 %	nd	+ P - E	nd	N/A
Usually watched 2 or more hours of television per day (5–14 years)	44	64.1 %	nd	+ M - E	+ Q5	N/A

Topic	Page	2006/07 population prevalence (unadjusted)	Differences between population groups in 2006/07 (age standardised)			Time trend
			Gender	Ethnic group	Neighbourhood deprivation	
Physical punishment by the primary caregiver in previous 4 weeks (2–14 years)	48	10.4 %	nd	+ M, P – E, A	nd	N/A
Second-hand smoke exposure in children in the home	53	9.6 %	nd	+ M – E, A	+ Q5	N/A
Mean BMI (2–14 years, time trend 5–14 years)	104	18.7 kg/m ²	nd	+ P, M – E, A	+ Q5	nc Boys
Obesity (2–14 years, time trend 5–14 years)	104	8.3 %	nd	+ P, M – E	+ Q5	nc Boys since 2002 nc Girls since 2002
Health conditions						
Diagnosed with any chronic health condition	119	36.5 %	nd	+ E, M – A	nd	N/A
Medicated asthma (2–14 years)	143	14.8 %	nd	+ M – A	nd	N/A
Never had a filling (2–14 years, time trend 5–14 years)	153	50.9 %	nd	+ A – M	nd	nc Boys since 2002 nc Girls since 2002
Teeth removed due to decay, abscess, infection or gum disease (2–14 years, time trends 5–14 years)	153	11.3 %	nd	+ M, P – E	nd Boys + Q5 Girls	nc Boys since 2002 nc Girls since 2002
Health status						
General health is excellent or very good	181	87.2 %	nd	+ E – P, A	+ Q1	N/A

Topic	Page	2006/07 population prevalence (unadjusted)	Differences between population groups in 2006/07 (age standardised)			Time trend
			Gender	Ethnic group	Neighbourhood deprivation	
Family cohesion is excellent or very good	212	77.9 %	nd	- M	+ Q1	N/A
Primary health care use						
Has a primary health care provider	218	97.4 %	nd	+ E, M - A	nd	N/A
Attend same primary health care provider as their parents	218	92.2 %	nd	+ A	nd	N/A
Use of health professionals and hospitals						
Saw a general practitioner in previous 12 months	248	79.2 %	nd	+ P	nd	nc Boys since 1996/97 nc Girls since 1996/97
Last visit to general practitioner was free (all ages)	257	42.5 %	nd	+ M, P, A - E	+ Q5	nc Boys since 1996/97 nc Girls since 1996/97
Unmet need for GP visit in previous 12 months (any reason)	266	4.0 %	nd	+ M	nd	nc Boys since 1996/97 nc Girls since 1996/97
Unable to see a GP due to cost in previous 12 months	276	0.8 %	nd	+ M - A	nd	↓ Boys since 1996/97 ↓ Girls since 1996/97
Uncollected prescription due to cost in previous 12 months	277	1.1 %	nd	- A	+ Q5	nc Boys since 1996/97 nc Girls since 1996/97
Saw a primary health care nurse in previous 12 months	279	44.7 %	nd	+ M - A	nd	N/A
Saw an oral health care worker in previous 12 months (2-14 years)	285	80.4 %	nd	+ E - P, A	+ Q1	N/A
Unmet need for oral health care in previous 12 months	292	3.4 %	nd	- P	nd	N/A

Topic	Page	2006/07 population prevalence (unadjusted)	Differences between population groups in 2006/07 (age standardised)			Time trend
			Gender	Ethnic group	Neighbourhood deprivation	
Saw a medical specialist in previous 12 months	305	20.6 %	nd	+ E - A	nd	N/A
Emergency department use in previous 12 months	310	8.2 %	nd	- A	nd	↓ Boys since 1996/97 ↓ Girls since 1996/97
Use of public hospital services in previous 12 months (excluding ED and maternity services)	318	18.2 %	nd	+ M - A	nd	nc Boys since 1996/97 nc Girls since 1996/97
Use of private hospital services in previous 12 months	325	1.7 %	nd	- M	nd	nc Boys since 1996/97 nc Girls since 1996/97
Medical insurance coverage	329	31.3 %	nd	+ E - P, M	+ Q1	N/A

Appendix 2: Survey Sample Sizes and Population Counts

Tables A2.1 to A2.5 contain the 2006/07 New Zealand Health Survey sample sizes and the total usually resident population counts (as of 31 June 2007) for the population groups in this report; that is, grouped by gender, age, ethnicity, NZDep2006 quintile and DHB area.

Tables A2.6 and A2.7 contain the sample sizes of previous health surveys used in the time series analyses in this report.

Due to the complex sample design of the survey, the sample size is not the only determinant of the reliability of the results. The geographic clustering of the sample, the unequal probabilities of selection, and the boosted sampling of Māori, Pacific and Asian peoples in the survey also affect the precision of estimates. Refer to the methodology report for more information (www.moh.govt.nz/moh.nsf/indexmh/portrait-of-health).

Table A2.1: Sample sizes and population counts for children and adults, by gender

Population group	Gender	Sample size	Population
Children (0–14 years)	Boys	2589	437200
	Girls	2332	417200
	Total	4921	854400
Adults (15 years and over)	Men	5273	1497600
	Women	7215	1623100
	Total	12488	3120700

Table A2.2: Sample sizes and population counts, by ethnic group and gender

Ethnic group	Gender	Sample size	Population
European / Other	Boys	1600	329300
	Girls	1439	316100
	Men	3652	1227600
	Women	4941	1324000
Māori	Boys	1040	100500
	Girls	943	95100
	Men	1205	164800
	Women	1955	190600
Pacific	Boys	435	50800
	Girls	363	48600
	Men	433	78400
	Women	600	86300
Asian	Boys	385	39300
	Girls	357	37100
	Men	657	130200
	Women	856	148800

Table A2.3: Sample sizes and population counts, by age group and gender

Age group	Gender	Sample size	Population
< 2 years	Boys	380	53800
	Girls	366	58400
2–4 years	Boys	517	89100
	Girls	441	78400
0–4 years	Boys	897	142900
	Girls	807	136700
5–9 years	Boys	748	145400
	Girls	728	138600
10–14 years	Boys	944	148900
	Girls	797	141800
15–17 years	Men	271	100900
	Women	293	98500
18–24 years	Men	439	176900
	Women	660	176900
15–24 years	Men	710	277900
	Women	953	275400
25–34 years	Men	785	240300
	Women	1295	267500
35–44 years	Men	1108	286900
	Women	1469	322600
45–54 years	Men	923	269500
	Women	1156	286500
55–64 years	Men	744	205300
	Women	985	212800
65–74 years	Men	598	129000
	Women	706	139100
75 years and over	Men	405	88800
	Women	651	119200

Table A2.4: Sample sizes and population counts, by NZDep2006 quintile and gender

NZDep2006 quintile	Gender	Sample size	Population
Quintile 1 (least deprived neighbourhoods)	Boys	380	96600
	Girls	353	86500
	Men	894	324800
	Women	1117	349400
Quintile 2	Boys	409	78000
	Girls	346	76300
	Men	947	298000
	Women	1175	310800
Quintile 3	Boys	489	82700
	Girls	437	83200
	Men	1065	314500
	Women	1436	330300
Quintile 4	Boys	518	80800
	Girls	535	83800
	Men	1116	298800
	Women	1615	340900
Quintile 5 (most deprived neighbourhoods)	Boys	793	99100
	Girls	661	87400
	Men	1251	261500
	Women	1872	291800

Table A2.5: Sample sizes and population counts, by District Health Board area

District Health Board area	Age group	Sample size	Population
Northland / Lakes / Tairāwhiti / Hawke's Bay / Whanganui	0–14	982	115500
	15 +	2426	375600
Waitemata	0–14	522	104000
	15 +	1213	378800
Auckland	0–14	425	74600
	15 +	1104	322600
Counties Manukau	0–14	672	111200
	15 +	1301	322400
Waikato	0–14	589	76200
	15 +	1417	259400
Bay of Plenty / Taranaki / MidCentral	0–14	597	98500
	15 +	1643	351400
Wairarapa / Hutt Valley / Capital and Coast	0–14	469	89400
	15 +	1264	346600
Canterbury	0–14	328	90900
	15 +	1019	371100
Nelson Marlborough / West Coast / South Canterbury / Otago / Southland	0–14	337	94000
	15 +	1101	392900

Table A2.6 Sample sizes in previous surveys used in time trends, total population, by gender

Population group	Gender	Sample size				
		1996/97 NZHS	1997 NNS	2002/03 NZHS	2002 CNS	2006/07 NZHS
Children (0–14 years)	Boys	548	–	–	1697	2589
	Girls	471	–	–	1578	2332
	Total	1019	–	–	3275	4921
Adults (15 years and over)	Men	3258	1927	5075	–	5273
	Women	4604	2709	7854	–	7215
	Total	7862	4636	12929	–	12488

Note: NZHS = New Zealand Health Survey
 NNS = National Nutrition Survey
 CNS = National Children’s Nutrition Survey, only 5–14 year olds
 – indicates data was not collected for that age group

Table A2.7 Sample sizes in previous surveys used in time trends, Māori population, by gender

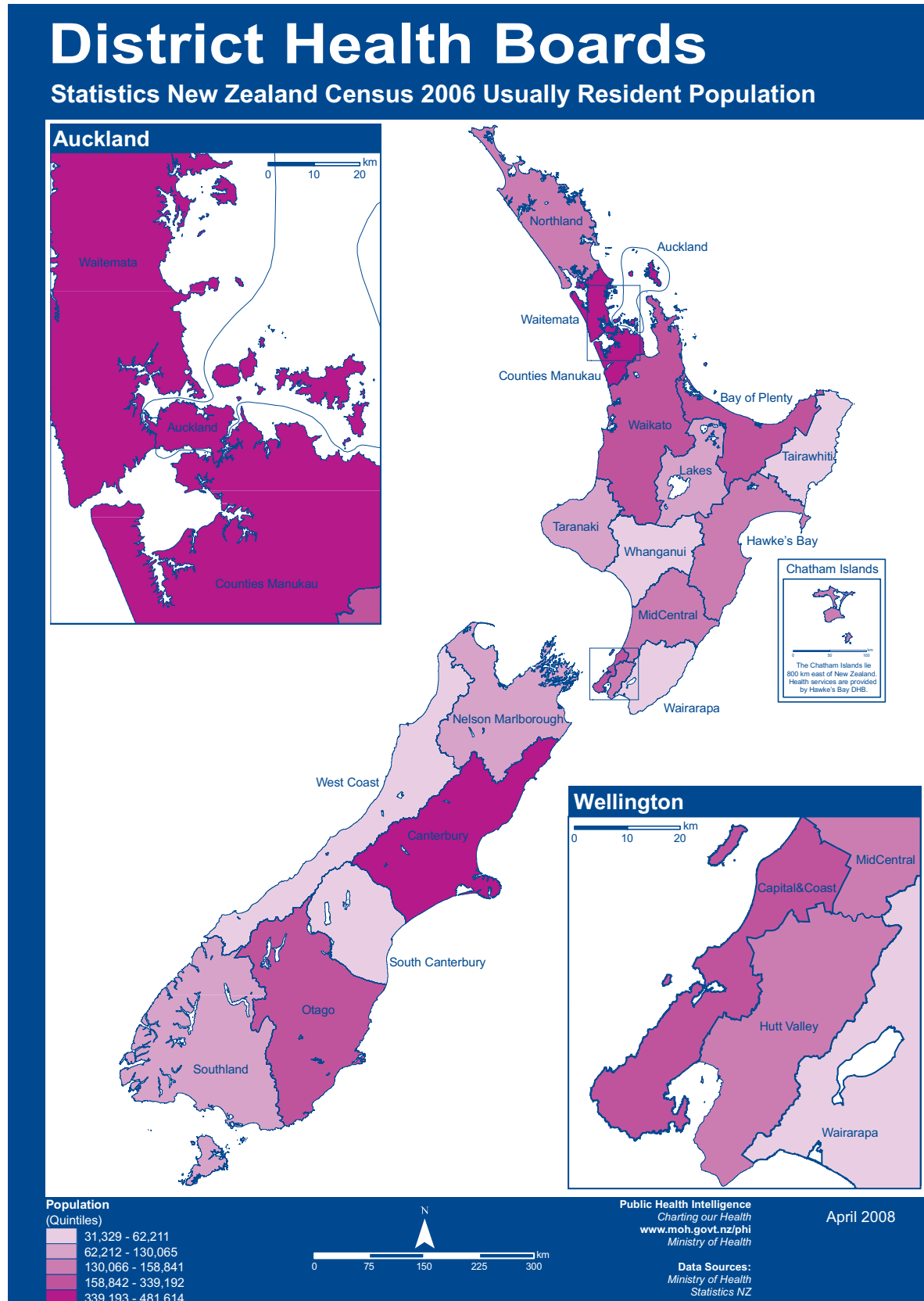
Population group	Gender	Sample size				
		1996/97 NZHS	1997 NNS	2002/03 NZHS	2002 CNS	2006/07 NZHS
Children (0–14 years)	Boys	132	–	–	631	1040
	Girls	99	–	–	593	943
	Total	231	–	–	1224	1983
Adults (15 years and over)	Men	510	268	1550	–	1205
	Women	811	436	2819	–	1955
	Total	1321	704	4369	–	3160

Note: NZHS = New Zealand Health Survey
 NNS = National Nutrition Survey
 CNS = National Children’s Nutrition Survey, only 5–14 year olds
 – indicates data was not collected for that age group

Appendix 3: District Health Board Areas

Figure A3.1 shows the 21 District Health Board (DHB) areas in New Zealand, shaded according to their usually resident population.

Figure A3.1: Map of the District Health Board (DHB) areas in New Zealand



Appendix 4: Child BMI Cut-offs, by Age

Table A4.1: International Obesity Taskforce BMI cut-offs for overweight and obesity in children and adolescents

Age	Thinness		Overweight		Obese	
	Males	Females	Males	Females	Males	Females
2	15.14	14.83	18.41	18.02	20.09	19.81
2.5	14.92	14.63	18.13	17.76	19.80	19.55
3	14.74	14.47	17.89	17.56	19.57	19.36
3.5	14.57	14.32	17.69	17.40	19.39	19.23
4	14.43	14.19	17.55	17.28	19.29	19.15
4.5	14.31	14.06	17.47	17.19	19.26	19.12
5	14.21	13.94	17.42	17.15	19.30	19.17
5.5	14.13	13.86	17.45	17.20	19.47	19.34
6	14.07	13.82	17.55	17.34	19.78	19.65
6.5	14.04	13.82	17.71	17.53	20.23	20.08
7	14.04	13.86	17.92	17.75	20.63	20.51
7.5	14.08	13.93	18.16	18.03	21.09	21.01
8	14.15	14.02	18.44	18.35	21.60	21.57
8.5	14.24	14.14	18.76	18.69	22.17	22.18
9	14.35	14.28	19.10	19.07	22.77	22.81
9.5	14.49	14.43	19.46	19.45	23.39	23.46
10	14.64	14.61	19.84	19.86	24.00	24.11
10.5	14.80	14.81	20.20	20.29	24.57	24.77
11	14.97	15.05	20.55	20.74	25.10	25.42
11.5	15.16	15.32	20.89	21.20	25.58	26.05
12	15.35	15.62	21.22	21.68	26.02	26.67
12.5	15.58	15.93	21.56	22.14	26.43	27.24
13	15.84	16.26	21.91	22.58	26.84	27.76
13.5	16.12	16.57	22.27	22.98	27.25	28.20
14	16.41	16.88	22.62	23.34	27.63	28.57
14.5	16.69	17.18	22.96	23.66	27.98	28.87
15	16.98	17.45	23.29	23.94	28.30	29.11
15.5	17.26	17.69	23.60	24.17	28.60	29.29
16	17.54	17.91	23.90	24.37	28.88	29.43
16.5	17.80	18.09	24.19	24.54	29.14	29.56
17	18.05	18.25	24.46	24.70	29.41	29.69
17.5	18.28	18.38	24.73	24.85	29.70	29.84
18	18.50	18.50	25.00	25.00	30.00	30.00

Appendix 5: Online Data Tables of 2006/07 New Zealand Health Survey Results

All results presented in this report and some additional results are available in Excel format at www.moh.govt.nz/moh.nsf/indexmh/portrait-of-health.

On the website under Appendix 5 there are Excel spreadsheets for Chapters 2 to 6 of this report, with separate spreadsheets for child (0–14 years) and adult (15 years and over) 2006/07 New Zealand Health Survey data.

Within each spreadsheet, there are separate tabs along the bottom of the spreadsheet for each topic. Simply click on the topic tab of interest and you will see five tables for the selected topic:

1. unadjusted prevalence by age group and gender
2. unadjusted prevalence by ethnic group and gender
3. age-standardised prevalence by ethnic group and gender
4. age-standardised rate ratio of prevalence by ethnic group and gender
5. age-standardised prevalence by NZDep2006 quintile and gender

Within each topic there may be several indicators in each table, for example, in the Chapter 3 Adult data spreadsheet, on the high blood pressure tab, there are two indicators in each of the five tables: ever diagnosed high blood pressure and currently taking pills for high blood pressure.

There are also separate Excel spreadsheets for each chapter of the report which present age-standardised ethnic group by gender estimates with a distinct comparison group, that is, Māori/non-Māori, Pacific/non-Pacific, and Asian/non-Asian. These spreadsheets follow the same format as above, with separate tabs for each topic within the Chapter.

Data presented in the online tables have been analysed according to the protocols and procedures detailed in Chapter 1 of this report.

Appendix 6: Online Data Tables of trends

All results for the time trends presented in this report are available in Excel format at www.moh.govt.nz/moh.nsf/indexmh/portrait-of-health.

On the website under Appendix 6 there are Excel spreadsheets for Chapters 2 to 6 of this report, with separate spreadsheets for child (0–14 years) and adult (15 years and over) time trend data.

Within each spreadsheet, there are separate tabs along the bottom of the spreadsheet for each topic. Simply click on the topic tab of interest and you will see three tables for the selected topic:

1. age-standardised prevalence for total population by gender for the survey years where data is available
2. age-standardised prevalence for Māori population by gender for the survey years where data is available
3. age-standardised prevalence for Pacific population by gender (only available for diabetes, body size and tobacco use).

Data presented in the online tables have been analysed according to the protocols and procedures detailed in Chapter 1 of this report.

Glossary

Term	Definition
Age standardised prevalence	Used when comparing different populations (eg, between gender or ethnic group). Age standardisation involves adjusting for the effects of any differences in the age distributions between population groups.
Age standardised rate ratios (SRR)	The ratio of the prevalence rate of one group compared to the prevalence rate of another group. In this report, rate ratios are used to compare each ethnic group with the total New Zealand population, and they have been age standardised.
Anthropometry	Measurements of the size, weight and proportions of the body.
Body mass index (BMI)	A measure of body size calculated by dividing weight (in kilograms) by height (in metres squared).
Confidence interval	The sampling error for the estimates. A 95% confidence interval indicates that there is a 95% probability that the true value of the estimate lies within the interval between the lower and upper confidence interval values.
Prevalence (unadjusted)	The actual burden experienced by the population of interest (not adjusted/standardised for age).
Current smoker	In this report, a current smoker is someone who has smoked more than 100 cigarettes in their lifetime and currently smokes at least once a month.
District Health Board (DHB)	District Health Boards are responsible for providing, or funding the provision of, health and disability services in their area. There are 21 District Health Boards in New Zealand.
Ethnicity	<p>A social construct of group affiliation and identity. Members of an ethnic group have one or more of the following four characteristics (Statistics NZ):</p> <ul style="list-style-type: none">• they share a sense of common origins• they claim a common and distinctive history and destiny• they possess one or more dimensions of collective cultural individuality• they feel a sense of unique collective solidarity. <p>Ethnicity is self-perceived and people can belong to more than one ethnic group. People can and do change their ethnic affiliation, both over time and in different contexts.</p>
Health condition	A doctor-diagnosed physical or mental illness that has lasted, or is expected to last, for more than 6 months. The symptoms may come and go or may be present all the time.
Kish grid	A widely used standard technique for randomly selecting one household member for participation in a survey. Developed by Leslie Kish in 1949.

NZDep2006	The New Zealand Index of Socioeconomic Deprivation, created from the Census 2006 data. NZDep2006 describes the deprivation of small areas and is used in this report as a proxy for individual socioeconomic position. NZDep2006 scores have been divided into 5 even groups (quintiles) to compare areas with the least deprivation (quintile 1) and areas with the most deprivation (quintile 5).
Obesity	A body size associated with moderately to very severely increased risk of multiple chronic health conditions. Definitions are discussed on page 105 of this report.
p-value	A statement of probability which represents the significance of a t-test. If the p-value is less than 0.05, the difference between two rates is said to be statistically significant.
Parent (primary caregiver of a child)	An adult who has the day-to-day responsibility for the care of a person aged less than 15 years.
Population estimate	The estimated number of people in a population group with the health behaviour or condition, or who use a health service. It is calculated by applying the prevalence rates to the Statistics New Zealand June 2007 population estimates for New Zealand.
Prevalence	The proportion or percentage of the specified population at a given time with the health behaviour or condition, or who used a health service.
Primary health care provider	Health providers that have responsibility for the care of a given population over time, as the usual point of first contact with the health system, except in serious emergencies. In this report, a primary health care provider is a GP clinic, student health service, 24 hour Accident and Medical centre or nurse clinic (without a GP), that the respondent goes to first when feeling sick or injured.
Proxy respondent	An adult who has answered the questionnaire on behalf of a person in their care who is unable to answer for themselves (either because they are aged less than 15 years old or they are cognitively impaired).
Total response standard output for ethnic groups	A standard output classification that measures the distribution of the population across ethnic categories. Because individuals may be counted in each of the four ethnic groups (European/ Other, Māori, Pacific and Asian), the sum of the ethnic populations exceeds the total New Zealand population. For more information refer to Statistics New Zealand's classification for ethnicity output, www.stats.govt.nz/statistical-methods/classifications-and-related-statistical-standards/ethnicity/output.htm .

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