Massey University

Research Centre for Māori Health & Development

Māori in Nelson-Marlborough: 2009

Best Outcomes for Māori : Te Hoe Nuku Roa

A Report for the Nelson-Marlborough District Health Board based on data collected from the longitudinal study of Māori households.

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1 Executive Summary

During the last quarter of 2008, 150 randomly selected Māori households in the Nelson-Marlborough District participated in a health and social survey based on the longitudinal study *Best Outcomes for Māori : Te Hoe Nuku Roa*. This research was undertaken by the Research Centre for Māori Health & Development at Massey University and funded through the Nutrition and Physical Activity Programme of the Nelson Marlborough District Health Board.

The sample of participants

The survey had a stratified random sampling approach. Based on knowledge gained in the most recent Census, areas within the Nelson-Marlborough district were randomly selected and every household in those areas was 'door-knocked' to ascertain those households with Māori occupants (Māori households). These 'enumerated' Māori households were then invited randomly to participate in the survey until a total of 150 households – the agreed target – was achieved. The study was approved by the Southern B Health & Disability Ethics Committee.

A questionnaire with about 150 questions was used, including a section where adult participants were invited to be physically measured (height, weight, body composition). These adults were also invited to have their blood tested at a local laboratory for (fasting) glucose, insulin, cholesterol and triglycerides.

187 Māori adults and 135 Māori children agreed to participate. Of the adults, 155 agreed to physical measures and 88 agreed to having blood tests. Of the 150 households, half (75) were asked to participate in a household audit using the Healthy Housing Index (HHI)[1]. The results for the audit are reported separately.

What the survey tells us

Most Māori in NMDHB district are healthy, they are in contact with the health system (primary care), and they are knowledgeable about healthy lifestyles. They are culturally diverse, they value Māori culture and participate in Māori society. Most Māori adults are in work and a very high proportion of Māori children had attended pre-school (including Te Kohanga Reo) and were immunised. Yet many Māori in the district are at risk of poor health outcomes in the future. And DHB services are not taking the opportunity to secure best outcomes in every case.

Most working-age Māori are employed (54% full time; 30% part time) and at the end of 2008 were optimistic about their futures. Māori households are not wealthy, and most Māori individual workers are modest earners. As cost-cutting measures, a third of Māori had postponed a visit to the doctor and one in five had not picked up prescribed medication.

Obesity is a current and future concern, reflected not only in the description of body mass index but also shown in the very high rates of adverse blood markers. Alarmingly while over 80% of Māori adults tested had high cholesterol, and over 80% of Māori adults had visited a GP in the year previous to the survey, only 15% had diagnosed high cholesterol. While our health survey is descriptive not diagnostic, the large difference in described and diagnosed high cholesterol in a population which **does** have good contact with the health system is a major concern.

[1] The HHI was developed by *He Kainga Oranga – Healthy Housing Research Programme*, run out of the Wellington School of Medicine. Professor Cunningham is a Director of *He Kainga Oranga*.

Tobacco smoking, particularly in pregnancy, is a current concern. While most Māori were confident and reasonably optimistic when they considered their current health status, they were less confident about their oral health.

A more detailed summary of results is presented in the next section of this report, with each theme of the survey covered in the subsequent sections.

Opportunities for improving outcomes

This survey identifies a number of areas where the Nelson-Marlborough District Health Board has opportunities to improve Māori health outcomes.

Primary Care: In spite of good access to primary care, health risks for many Māori are not being identified and treated, possibly because these risks typically present as co-morbidities and are being missed. High cholesterol, smoking, incomplete childhood immunisation, are obvious target areas.

Smokefree: Half of Māori adults in the district are regular smokers and clearly targets for smoking cessation programmes. Māori mothers and pregnant Māori women are particular target populations.

Diabetes and Cardiovascular Risks: Up to half on Māori adults can be categorised as being insulin resistant. In this population insulin resistance increases with body mass index and the majority of Māori adults have high BMI (overweigh and obese). While no undiagnosed diabetics were identified, too many Māori have risk profiles for which they should be treated.

Exclusive Breast feeding: Rates of breast feeding are moderate and gains could be made for mothers and children if longer periods of appropriate, exclusive breast feeding for the first six months' of life, were encouraged. Responsive support services are needed and Māori providers may be well placed to enhance outcomes.

Immunisation: While there appeared sound coverage for many, rates of child immunisation for Māori children are not ideal and fall below national and district targets[2]. Some caregivers (8%) were not aware of the immunisation status of children – provider record keeping will be important for these whānau.

Physical Activity and Nutrition: Older Māori adults reported having healthier eating habits than younger Māori adults. One-third of Māori adults said nobody encouraged them to eat healthily. About a quarter of Māori adults (more for women) found it difficult to be regularly physically active. Clearly this population remains a target for health promotion and education activities.

Oral health: Māori adults are less happy with their oral health than their overall health. While almost all school-aged Māori children had seen a dentist, only 43% of children aged under 5 years had seen a dentist. Considerable gains could be made if this rate for younger children were increased.

Cultural Responsiveness: Opportunities to respond to Māori cultural expectations exist. The learning and use of Te Reo Māori (Māori Language) is relevant for most Māori and will become increasingly so as educated Māori children become a larger part of the population of the district. Whānau centred and culturally centred services will meet expectations more fully, but need to be technically competent to address the priorities identified above.

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[2] National target : 95% completed vaccination at age 2; NMDHB target : 84% completed vaccination at age 2.

2 Summary of Results

This report provides a statistical profile based on a sample of 322 Māori surveyed. The survey covers a wide range of topics, including culture, health, education, employment and living standards. Parents/caregivers were asked a separate set of questions about children aged less than 15 years.

As the sample size was relatively small, the estimated percentages have a substantial sample error and comparisons among age and gender groups were only statistically significant if differences were large.

Culture and language

- Most people of Māori ancestry identified as Māori, though less than a third said 'Māori' was the *single* category that best described their identity. Half the population rated their knowledge of marae tikanga as good, very good or excellent.
- Of those eligible, over half (56%) were on the Māori electoral roll, over a third (37%) were on the General electoral roll, while 8% were not on any roll. Two-thirds of eligible voters voted in the last general election.
- Most adult Māori and almost all school-aged children had participated in some type of cultural practice over the preceding year, especially in the collection or preparation of Māori kai and in the visual or performing arts.
- Most Māori said their whānau had Māori land and just over half had a financial interest in Māori land, although only a small proportion received money from the land (or other assets) or lived on the land.
- Most people said that Māori language was important and three-quarters were not satisfied with their own language skills. Over a third of adults could understand speech about everyday things (or better), and one in ten could conduct all or most conversations equally well in English or Māori.
- Four out of five Māori children had been actively learning te reo Māori. Almost all school-aged children could understand at least basic greetings and more than half could understand at least basic orders/instructions.
- The majority of adults had grown up in English-speaking households and had learnt Māori as a second language through education or whānau. More than a third of people said more Māori was being spoken now than three years ago and that their own ability had improved.

Health

- Three-quarters of adult Māori rated their overall health as good, very good or excellent, whereas half rated their dental health as good, very good or excellent.
- Half of adult Māori were regular smokers, three-quarters were overweight.
- The majority of adult Māori had total cholesterol, and LDL cholesterol levels outside the recommended range; 13% had cholesterol levels in the high-risk range (NZ Heart Foundation recommended levels).
- Insulin Resistance was calculated from blood tests: 33% (MacAuley) or 49% (HOMA-IR) of adult Māori tested were insulin resistant, indicating possible future risk of developing diabetes.
- 3% of adult Māori (all women) had a high level of HaemogloblinA$_{1c}$, indicating high glucose levels over the previous several weeks before the blood test.

- 22% had diagnosed high blood pressure, 15% had high cholesterol, 8% had heart disease and 7% had diabetes.
- One-fifth of Māori did not know what could be done to prevent diabetes and nearly one-fifth did not know what could be done to prevent cardiovascular disease.
- Two-thirds of mothers currently smoke, and over half smoked during the first year of the child's life or during pregnancy.
- GPs were the most commonly used health service, with 88% of adult Māori having visited a GP at least once in the last 12 months, and over two-thirds having visited more than once. Four out of five adults had had a prescription filled at least once in the last 12 months, half had received advice or treatment from a nurse or visited a medical specialist, and a third had been treated at an emergency facility or received dental treatment. Almost all school-aged children had seen a dentist in the last 12 months, compared to 43% of children aged less than five years.
- Estimated child immunisation rates were 86% for whooping cough, 83% for measles and 71% for tuberculosis. (These estimates exclude the 6% of children for whom the parent/caregiver was unsure of immunisation status.) The percentage of children who had ever had these diseases was 12% for whooping cough and 8% for measles.
- 16% of children had a disability, 21% had a medical condition that required medication and 20% had another health-related condition. Disabilities were mainly hearing/speech, learning/behavioural or physical disabilities. Asthma and eczema accounted for the majority of medicated and other health conditions.
- Fifteen percent of babies were born more than three weeks before the calculated birth date. Most babies were breast-fed and, of these, 46% were breast-fed for at least six months. Adults in general viewed breastfeeding positively, although only half agreed that babies should be fed only breast milk for the first six months or felt comfortable with breastfeeding toddlers in public.
- During their first year of life, the majority of children shared a bedroom with other people and had contact with animals. A quarter of all parents/caregivers had made changes in the home because their child had asthma or allergic problems.

Nutrition and physical activity

- Younger adults were less likely to say they had healthy eating habits than older Māori. Barriers to healthy eating included an unwillingness to give up unhealthy foods and the cost of healthy food. Almost a third of adult Māori said that nobody encouraged them to eat healthily.
- Half the adult population said they had two or more servings of fruit per day, while 41% said they had three or more servings of vegetables. Men were less likely than women were to have three or more servings of vegetables.
- Two-thirds of adult Māori had had a fizzy or energy drink in the last week and half regularly have takeaways once a week or more. Almost half the population ate fresh or canned fish less than once a week, whereas only 8% ate red meat less than once a week. Most Māori added salt to food at least some of the time.
- Whereas almost all children aged less than 10 years had had breakfast every day of the preceding week, this was true for only three-quarters of 10 to 14 year olds.
- The majority of Māori adults had done some moderate physical activity or brisk walking in the past week, whereas only about half had done any vigorous exercise. A quarter of adult Māori found it difficult to be regularly physically active, with more women finding it difficult than men, especially due to lack of time.

- Almost all boys were involved in either team or individual sports, compared to two-thirds of girls.

Education

- A quarter of adult Māori had trade, university or professional qualifications, while over one in five had no qualifications.
- Over two-thirds of Māori were satisfied with their current level of education, although two-thirds also said they had further educational goals such as professional development or tertiary qualifications.
- More Māori women than men were currently in education or had further educational goals, and women were more likely to have a qualification than men were.
- Over half of adult Māori would have preferred to have been taught in a Māori or bilingual class at pre-school and school. About a third of parents wanted their child to be educated in a Māori or bilingual environment.
- Almost all Māori children had attended a pre-school and over a fifth had attended a kohanga reo. One in five school-aged children had attended a bilingual class in a state primary school.

Employment, income, standard of living and housing

- Most working-age Māori were in full-time paid employment (54%) or part-time paid employment (30%), with a further 3% unemployed and 13% in unpaid work, retired or sick. Most employed people were satisfied with their job and few thought their employment prospects would come under threat over the next three years.
- Income often came from multiple sources – mainly from wages or salary and government income support payments, although around one in five Māori received some income from investments or a business. Over two-thirds of individual Māori earned $40,000 or less before tax, whereas only a third had a total household income of $40,000 or less. Around half of Māori were satisfied with their income.
- Almost one third of the population had, as yet, made no financial provision for their old age. The most common provisions were regular savings and Kiwisaver.
- Only one in ten adults rating their standard of living as low or were dissatisfied with their living standard. However, almost two in ten Māori felt they did not have enough money from their total income to meet everyday needs and a further three in ten said they had just enough.
- The most common cost-cutting measures were to cut back on local trips, buying clothes and hobbies. A third of Māori had postponed a visit to the doctor at some time over the last year, while one in five had not picked up a prescription, and one in four had gone without fresh fruit and vegetables or continued wearing worn-out clothing.
- Most people were satisfied with their current accommodation. Thirty-seven percent of Māori lived in their own home. Almost all home-owners had home and contents insurance, whereas only half of renters had contents insurance.
- One in eight houses did not have a smoke alarm, half were not fully insulated, a fifth had problems with damp or mould and a fifth of houses had someone who smoked inside. Almost a third of households said affording heating was not always possible.

3 Survey, sample and methods

Focus of the report

This report provides a statistical profile of Māori living in the Nelson-Marlborough region. The results are based on a sample of 322 Māori surveyed during the last quarter of 2008 as part of the fifth wave of *Best Outcomes for Māori* :*Te Hoe Nuku Roa* a longitudinal survey of Māori households. The report provides an overview of almost the full range of the survey, which in total encompasses over 150 questions.

Te Hoe Nuku Roa involves households in which Māori people live, that is, people who self-identify as being descended from a Māori ancestor. The survey covers a wide range of issues, including:

- language, cultural identity and participation;
- education, living standards, employment, income, and housing.

The study began in 1994 and has covered six geographical areas: Northland, Auckland, Gisborne, Manawatu, Hutt City, and Southland.

Nelson-Marlborough is the seventh ‘cell’ of the study and the second in the South Island. The inclusion of this new cell has involved three steps:

- an enumeration phase, where groups of about 90 houses at a time are door-knocked in order to identify those houses where Māori live (over 380 candidate households were identified);
- an invitation phase where the candidate households are invited in random order to participate, until a quota of 150 households are interviewed;
- an interview phase, including the piloting of a new set of schedules on health, nutrition and physical wellbeing, including direct physical measurements and, optionally, fasting blood tests (for adult participants).

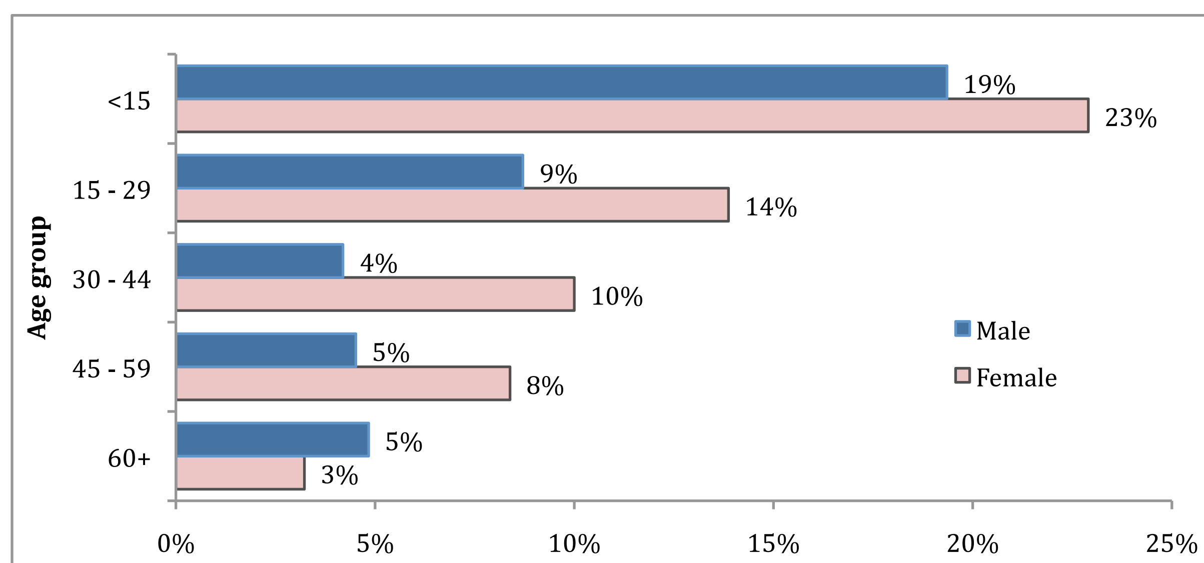
There are separate questionnaires for adults and children (aged less than 15), and some questions relating to households. Ethical approval was given in 2008 by the Upper South B Health & Disability Ethics Committee (Protocol URB/08/08/034). The results for adults and children are presented in separate Parts of this report.

The results focus on the overall population results, with information on sub-groups of the population limited to selected age and gender groups where these differ markedly from the general population (see ‘Analysis’ section below).

Demographic profile of the sample

The Nelson-Marlborough sample comprised 322 Māori – 187 adults (aged 15 or over) and 135 children – from 150 households. The sample had more females than males and had a relatively young age profile (Figure 1). The survey results presented in this report have been weighted to adjust for any sample biases relative to the population age and gender distribution (see ‘Analysis’ section below).

Figure 1: Age and gender of sample



Over half the sample were in partnered relationships (31% married and 24% de facto) and the rest had never been married (36%), or were divorced/separated (5%) or were a widow/widower (4%).

Survey methods

The *Te Hoe Nuku Roa* survey was developed in conjunction with Statistics New Zealand to measure a range of geographic, economic, cultural and social circumstances representing the diverse realities of contemporary Māori in Aotearoa/New Zealand. The initial survey was begun late in 1995, with those participating generously consenting to be re-surveyed at 3-year intervals. The Nelson-Marlborough region was included for the first time in the current (fifth) wave of sampling.

The sample from each region was selected using a differential sampling approach based on information from past census, Household Labour Force Surveys (HLFS), and Household Economic Surveys (HES), all conducted by Statistics New Zealand. Based on stratifications within each region (strata are geographically related areas with similar attributes), and in relation to Māori population density, certain Primary Sampling Units (PSUs) were chosen to be surveyed (PSUs consist of 18,800 geographically defined areas which make up the country). An enumeration phase involving a door-to-door survey within each PSU was undertaken to establish which households were eligible for inclusion in the study (i.e. which households said they had at least one Māori resident). For methodological consistency, each PSU was surveyed three times or until each dwelling had been contacted and an interview time arranged. Repeat surveys were conducted at different times of the day and on different days of the week to increase the likelihood of contacting households. Eligible households were then selected at random to achieve predetermined totals (allowing for non-participation and no-contact) in line with the population stratum proportions.

To allow for unequal sampling of the populations sampled, a weighting variable was calculated, which is related to the probability of selecting that particular individual from the survey population. The weighting variable accounts for unequal sampling of the populations and adjusts the resulting dataset so that it better resembles the regions from which the sample was drawn. Extreme weights were truncated to prevent these values 'dominating' the weighting distribution.

Post-stratification was also carried out to ensure the final sample reflected the gender and age distribution of the region as assessed by the most recent census results. This post-stratification calculation is recalculated after each census for the whole study.

Analysis methods

This report provides a simple descriptive analysis of the data. All percentages calculated for this report were based on weighted sample data and thus are representative of the Māori population of the Nelson-Marlborough area. Sample errors were estimated using the Complex Samples module of the SPSS statistical software, which takes into account the stratified sample design.

The main focus of this report is on the overall results, as the modest total sample size meant that estimates for subgroups within the population had high sample errors. However, selected results by age or gender have been noted if there were very substantial differences among groups that were statistically significant at the 95% level using the weighted sample errors. The adult age groups compared were: 15 to 29 year olds (n=73), 30 to 44 year olds (n=46), 45 to 59 year olds (n=41) and ages 60 and over (n=28). Age was not known for three adults. The children's age groups compared were: 0 to 4 year olds (n=43), 5 to 9 year olds (n=50) and 10 to 14 year olds (n=36). Age was not known for six children.

All percentages in this report, unless otherwise noted, exclude 'don't know' and 'refused' responses, of which there were relatively few. 'Don't know' and 'refused' percentages have been noted separately if they accounted for more than 5% of responses for any question.

Percentages may not always add up to 100% due to rounding error.

A comparative analysis of this cell and the other six cells will be undertaken at the conclusion of the fifth wave data collection toward the end of 2010.

Further analysis

As this survey progresses we will have longitudinal data on this population of Māori in the NMDHB district. Longitudinal analysis will allow us to assess change over time and identify those factors which are correlated with these changes for this population.

Limitations of the study

As with all studies which involve sampling there is a risk that unknown biases will cause the results to be unrepresentative. This problem can be amplified by the weighing procedures which are necessary to balance the sample characteristics with the population they are intended to represent. We have removed extreme weightings from our analysis.

Māori diabetics and those with diagnosed high cholesterol – both likely to be under medication – were not excluded from the survey and a number did volunteer for blood testing. Their inclusion is likely to have increased the estimate of those with insulin resistance.

The study is comparatively small, sampling fewer than 5% of Māori in the wider district. As a national comparison this size would equate to a NZ sample of 25,000 – 30,000 Māori.

Part 1: Results for Māori Adults

4 Cultural indicators and Te Reo

Summary of Results

The 187 adult Māori in the sample were asked a range of questions in relation to cultural participation, ethnic identification and language, as well as questions about whānau land and assets. The percentages shown below were weighted to be representative of the adult Māori population (ages 15 years and over) of the Nelson-Marlborough region.

- Most people of Māori ancestry identified as Māori, though less than a third said 'Māori' was the *single* category that best described their identity.
- Half the eligible voters were on the Māori electoral roll, 8% were not on any roll and two-thirds voted in the last general election.
- The majority of Māori could name their iwi and marae, while around half could name their waka, hapu and three or more generations of ancestors. Half the population rated their knowledge of marae tikanga as good, very good or excellent.
- Most Māori had participated in some type of cultural practice over the preceding year, especially in the collection or preparation of Māori kai. Around half had participated in the visual or performing arts, while around one in six people had participated in traditional healing.
- Most Māori said their whānau had Māori land and just over half had a financial interest in Māori land, although only a small proportion received money from the land (or other assets) or lived on the land.
- Most Māori rated their Te Reo skills as 'fair' or 'poor'. About four in ten Māori felt they 'usually' or 'nearly always' spoke Māori correctly, 36% could understand speech about everyday things (or better), and one in ten could conduct all or most conversations equally well in English or Māori.
- The majority had grown up in English-speaking households and had learnt Māori as a second language through education or whānau.
- Most Māori said that the language was important and three-quarters were not satisfied with their own language skills.
- More than a third of people said more Māori was being spoken now than three years ago and that their own ability had improved.

Ethnic identification

Most of the population surveyed (88%), all of whom had Māori ancestry, identified as Māori.

When asked to choose a *single* category that best described their identity:

- 31% chose 'Māori' (including two people who specified an iwi and two who said 'NZ Māori'),
- 24% chose 'Kiwi' and 12% chose 'New Zealander',
- 15% chose 'Māori/Pakeha' (or Māori/European) and 11% chose 'Part-Māori',
- 7% chose 'Polynesian' or other descriptions.

Voter Behaviour

Adults aged 18 years and over are required by law to be registered to vote in New Zealand. Māori New Zealanders have the electoral option of choosing to be registered on the Māori electoral roll or the General electoral roll.

Of those eligible to vote, over half (56%) were on the Māori electoral roll, over a third (37%) were on the General electoral roll, while 8% were not on any roll. Two-thirds of eligible voters voted in the last general election.

Voting behaviour can be used as a measure of 'social capital' or social participation. Existing research has indicates that the choice of roll is an important social measure for Māori.

Cultural knowledge and participation

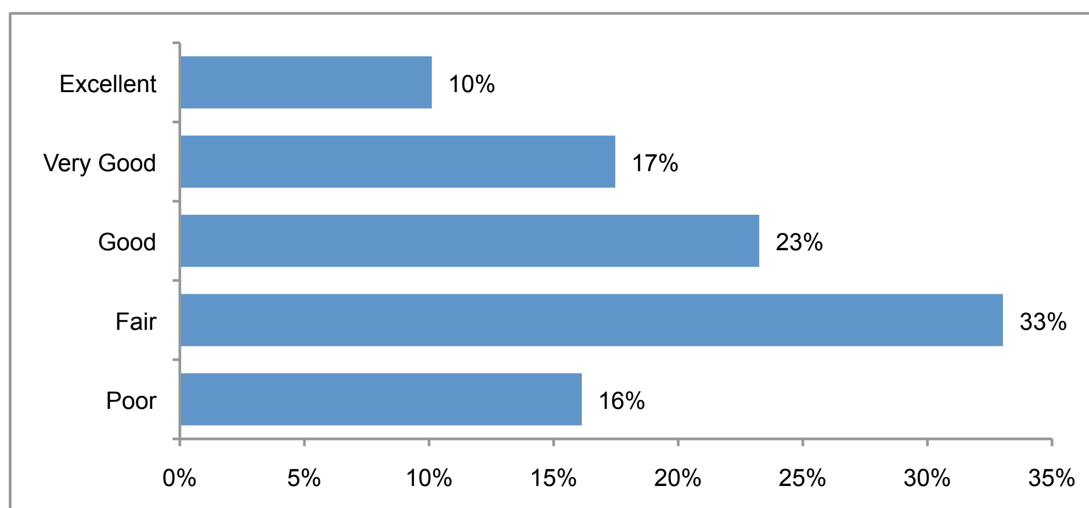
A number of questions were asked to ascertain the degree to which Maori are accessing Te Ao Māori (the Māori world). These questions serve to demonstrate the diversity of contemporary Māori and the range of opportunities which exist to exercise cultural preferences.

When asked 'How many generations of your Māori ancestry can you name?', the population was fairly evenly split between those who could name two generations (36%), three generations (31%), or more than three generations (27%). Very few people could name only one generation (that is, only their parents).

The majority of Māori could name their iwi (89%) and marae (65%). Around half could name their waka (51%) and hapu (53%). Almost everyone (94%) had visited a marae at least once in their life, while 63% had visited at least once in the past year. The latter group includes those who visited a marae once in the last year (16%), those who had visited a few or several times (36%) and those who had visited more than once a month (11%).

There was a wide spread of responses for self-rating of marae tikanga knowledge (Figure 2). Half the population rated their knowledge as good, very good or excellent.

Figure 2: Self-rating of marae tikanga knowledge



More Māori said their whānau preferred to use urupa (44%) than a town cemetery (32%), with 24% expressing no preference.

Most the population thought that whānau play a very large part (51%) or large part (26%) in their lives, while 18% said 'a small part' and just 5% thought whānau play a very small or no part in their lives.

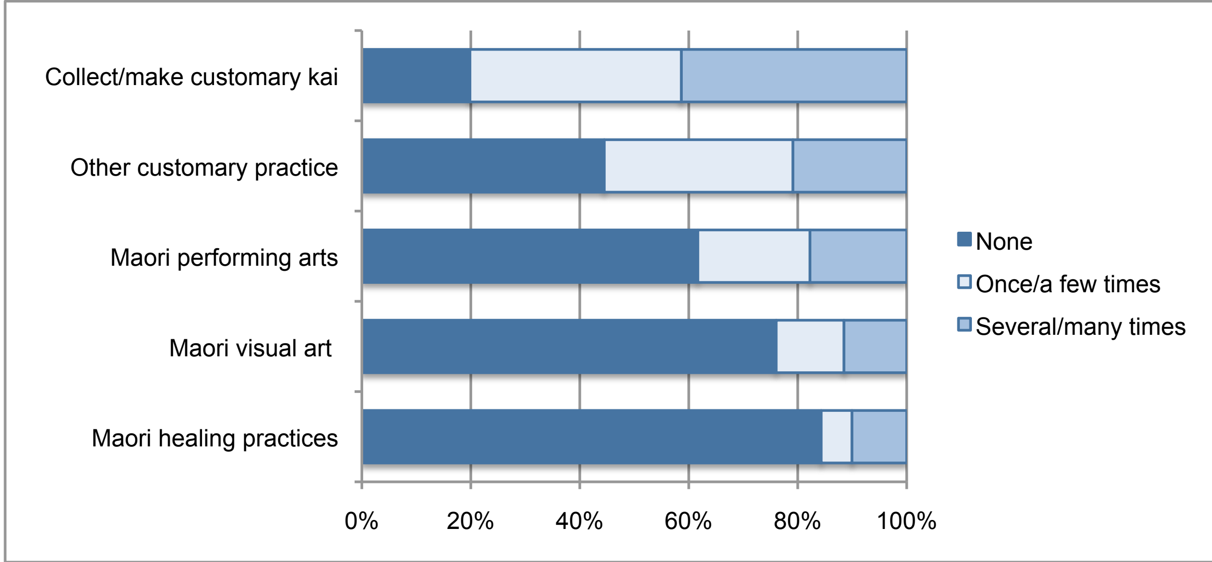
Table 1: In general, who would you say that your contacts are with?

	At work	At sport	At church	At school	At home
Mainly Māori	14%	12%	4%	5%	54%
Some Māori	20%	16%	5%	1%	16%
Few Māori	33%	16%	6%	4%	12%
No Māori	13%	3%	3%	5%	15%
Not applicable	21%	52%	82%	85%	3%
Total	100%	100%	100%	100%	100%

Contact with other Māori varied depending on the context (Table 1), with the greatest contact occurring at home. Relatively few Māori (fewer than one in six) worked, played sport or attended church in a place where there were no other Māori. However, of the 35 Māori aged 15 or over who attended school, a third had no contact with other Māori.

Most Māori had participated in some type of cultural practice over the preceding year, especially in the collection or preparation of Māori kai (Figure 3). Around half had participated in the Arts, including 24% in visual arts (such as carving or weaving) and 38% in performing arts (such as performing, learning, or teaching a waiata or haka). Around one in six people had participated in traditional healing. Over half the population had participated in some other type of customary practice, such as attending a tangi or hui.

Figure 3: Participation in cultural practices over the last year



Whānau land and assets

Most Māori (79%) said their whānau had some land (of any type), with 9% saying they did not and 12% saying were unsure. A slightly lower proportion (70%) said their whānau had some Māori land (customary or freehold), with 13% saying they did not and 17% saying were unsure. Just over half (53%) had a financial interest in Māori land, with 28% saying they didn't and 19% saying were unsure.

Of those who had an interest in Māori land, 65% keep well informed about the land, 34% visit regularly, 26% attend owners' meetings and 26% attend Māori Land Court hearings. Only five percent of Māori lived on the land.

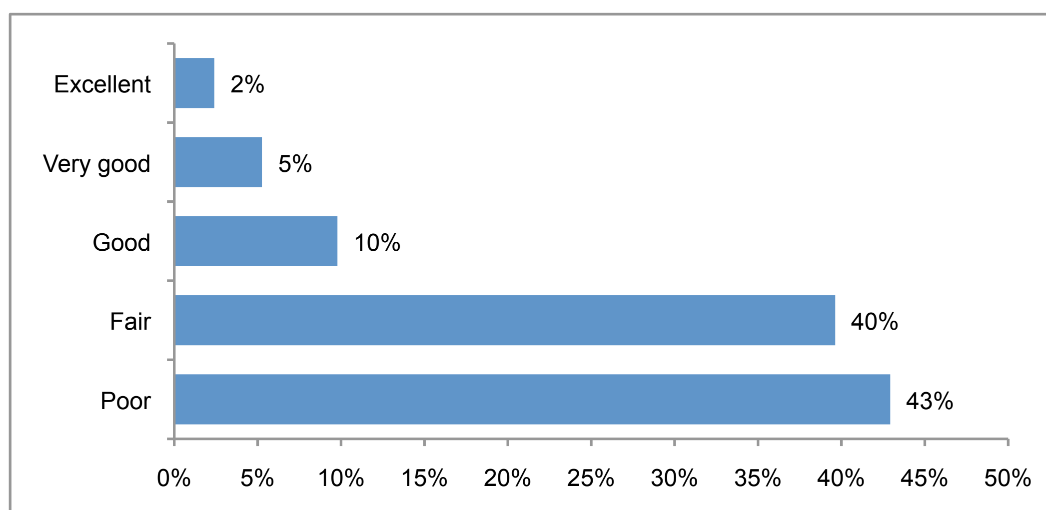
A minority of the Māori population received any monies (10%) or benefits (4%) from Māori land. Fewer than ten people in the sample (less than 5% of the population) received any monies or benefits from other Māori assets, such as fisheries or forestry.

Te Reo Māori

Māori language rates are known to be lower in the NMDHB district when compared to NZ as a whole. The 2006 census identified the Māori language rate as 24%, which was the second lowest of eight regions in NZ.

A number of questions on Māori language use were asked. A minority of Māori rated their overall ability with Māori language as good, very good or excellent, with the majority split between 'fair' and 'poor' (Figure 4).

Figure 4: Self-rated overall ability with Te Reo



When asked: 'How often do you feel you speak Māori correctly?', about four in ten Māori answered 'usually' or 'nearly always' (Table 2), while about the same proportion felt they spoke correctly 'rarely', 'very rarely' or they did not speak Māori. The ability to express the same thought in a variety of ways was less common, with almost two-thirds saying they could do this 'rarely', 'very rarely' or not at all. One in ten Māori could conduct all or most conversations equally well in English or Māori.

Table 2: Self-rated ability in Te Reo

How often do you feel you speak Māori correctly?						
Nearly always	Usually	Sometimes	Rarely	Very Rarely	Not applicable	Total
18%	20%	21%	10%	11%	20%	100%
How often are you able to express the same thought in a variety of ways in te reo Māori?						
Nearly always	Usually	Sometimes	Rarely	Very Rarely	Not applicable	Total
6%	10%	21%	21%	17%	25%	100%
Of the conversations that you have had in the past two to three days, how many do you think could have been carried out equally well in English or Māori?						
All	Most	Half	A few	Almost none	Not applicable	Total
5%	5%	3%	18%	43%	26%	100%

Most people learned Te Reo as a second language at an educational institution (51%) or as a second language from family/whānau (35%). For a small number of people, Māori was the main language they were brought up to speak (7%) or they were self-taught (6%). The remaining 21% acquired Te Reo skills in a variety of ways, such as from friends or work, at marae or kapa haka, or by hearing it spoken generally or by the media, or at courses.

Understanding of spoken Māori varied widely:

- 6% cannot understand any Māori at all;
- 37% can understand most basic greetings e.g. kia ora;
- 21% can understand most basic survival language (basic orders and instructions);
- 21% can understand speech about everyday things (simple everyday exchanges);
- 9% can understand longer conversations and most radio news broadcasts about familiar subjects;
- 6% can understand conversations in Māori about more difficult topics or almost everything.

Only one in four Māori were satisfied with their level of Māori language: 5% were very satisfied, 21% were satisfied, 54% were dissatisfied and 20% were very dissatisfied.

More people said their language ability was better now than three years ago (33%), compared to those who thought it was poorer (17%), but the most common response was that their ability was about the same as three years ago (50%). Most people thought their ability would improve over the next three years (59%).

Many more people said Māori was spoken in their household more often now than three years ago (37%) compared to less often (5%), with 49% saying Māori was spoken about the same as three years ago and 9% saying Māori was not spoken.

Most Māori felt it was important to use Māori language, especially at a hapu and iwi level, but also within families and in accessing public services (Table 3).

Table 3: Importance of Te Reo Māori

	Extremely important	Important	Unimportant	Extremely unimportant	Total
How important do you think it is for Māori language to be used...					
Within household	18%	41%	40%	2%	100%
Within whānau	22%	47%	28%	3%	100%
Within hapu	54%	37%	7%	2%	100%
Within iwi	58%	35%	5%	2%	100%
How important do you think it is for people to be able to access public services using Māori language? (e.g. health care, local council services, Income support, IRD)					
	37%	41%	18%	4%	100%

When asked: 'If you wanted to increase your ability to speak or understand Māori language, what would you do?', the most common responses were to 'enrol in Māori language course at polytech or university' (32%) or to 'enrol in another Māori language course' (33%; such as a marae-based or correspondence course) or learn from whānau (23%). Only a few people said they would teach themselves or learn from kaumatua.

A minority of survey respondents grew up in homes where Māori was mostly spoken, either amongst adults (10%) or to children (5%). A slightly greater proportion grew up in households where Māori and English were both used amongst adults (19%) or to children (18%). However, the majority grew up in homes where English was mostly spoken.

5 Health, nutrition and physical activity

Summary of Results

The 187 adult Māori in the sample were asked a range of questions on health status, medical conditions, use of health services, diet and health issues related to nutrition, and levels of physical activity. The percentages shown below were weighted to be representative of the adult Māori population (ages 15 years and over) of the Nelson-Marlborough region.

- About a quarter of Māori said their health status was either 'excellent' or 'very good', while around half considered their health to be good and a quarter rated their health as either 'fair' or 'poor'.
- Over half of those with teeth rated their dental health as either 'fair' or 'poor'.
- Two-thirds of adult Māori described themselves as overweight, but physical measurement of Body Mass Index (BMI), using standard cut-points, suggested that three-quarters were overweight.
- Insulin Resistance was calculated from blood tests: 33% (MacAuley) or 49% (HOMA-IR) of adult Māori tested were insulin resistant, suggesting risk of future development of diabetes.
- 3% of adult Māori (all women) had a high level of HaemogloblinA$_{1c}$, indicating high glucose levels over the previous several weeks before the blood test.
- The majority of adult Māori had total cholesterol, and LDL cholesterol levels outside the recommended range; 13% had cholesterol levels in the high-risk range (NZ Heart Foundation recommended levels), suggesting unmanaged risks.
- Half of adult Māori smoked tobacco cigarettes regularly (one or more a day). Of the smokers, 71% smoked twenty or more cigarettes a day. Māori women and young people had high smoking rates.
- 22% of Māori had been diagnosed with high blood pressure, 15% with high cholesterol, 8% with heart disease and 7% with diabetes. One in five Māori did not know what could be done to prevent diabetes and one in six did not know what could be done to prevent cardiovascular disease.
- GPs were the most commonly used health service, with 88% of Māori having visited a GP at least once in the last 12 months, and over two-thirds having visited more than once.
- Four out of five people had had a prescription filled at least once in the last 12 months, half had received advice or treatment from a nurse or visited a medical specialist, and a third had been treated at an emergency facility or received dental treatment.
- Two-thirds of Māori rated the healthiness of their own eating habits as at least 'good'. Younger people were less likely to say they had healthy eating habits than older Māori.
- Half the population said they had two or more servings of fruit per day, while 41% said they had three or more servings of vegetables. Men were less likely than women to have three or more servings of vegetables.
- Two-thirds of adult Māori had had a fizzy or energy drink in the last week and half regularly have takeaways once a week or more. Almost half the population ate fresh or canned fish less than once a week, whereas only 8% ate red meat less than once a week. Most Māori added salt to food at least some of the time.
- Almost everyone was able to identify something that experts recommend in order to remain healthy, such as 'eating more fruit and vegetables' and 'keeping fit or active' and most agreed that healthy eating was important. Barriers to healthy eating included an unwillingness to give up

unhealthy foods and the cost of healthy food. Almost a third of Māori said that nobody encouraged them to eat healthily.

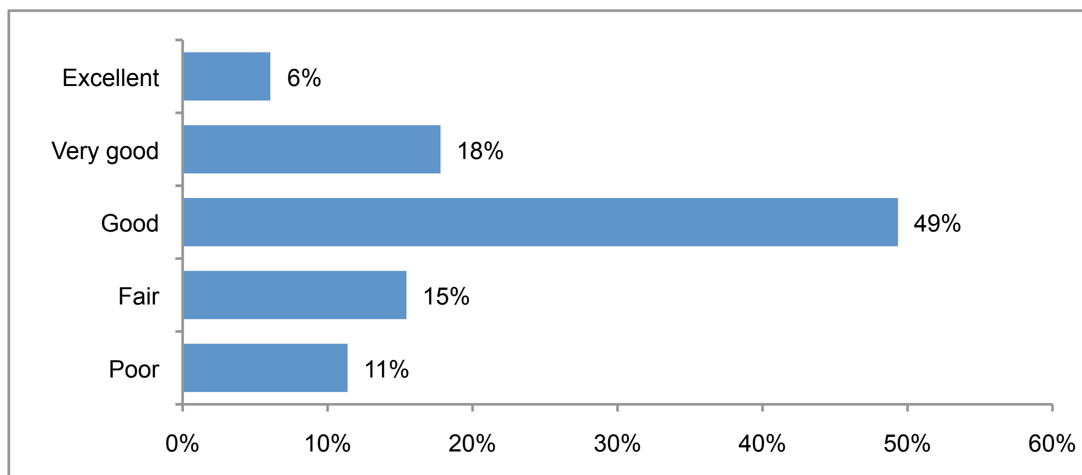
- Over a quarter of Māori said that they had at least sometimes run out of food and couldn't afford to buy more and one in six said that adults in the household had at least sometimes reduced the size of their meals or skipped meals because there wasn't enough money for food. Both of these were particularly likely amongst younger Māori.
- Breastfeeding was viewed positively, although only half of Māori agreed that babies should be fed only breast milk for the first six months or felt comfortable with breastfeeding toddlers in public.
- The majority of Māori adults had done some moderate physical activity or brisk walking in the past week, whereas only about half had done any vigorous exercise. Three-quarters of commuters usually took a car or motorbike and a third of Māori said they would rarely or never walk or bike for a short journey.
- A quarter of adult Māori found it difficult to be regularly physically active, with more women finding it difficult than men, especially due to lack of time. Women were also less likely to rate their level of activity positively, although there was no difference in actual levels of activity between men and women.

Health status and behaviours

Self-rated health status is known to be strongly associated with objective health status, and is an accurate predictor of future health status. A number of tools for measuring self-assessed health status have been developed and we asked a number of questions of adult Māori using these questions[3].

About a quarter of Māori said their health status was either 'excellent' or 'very good', while around half considered their health to be good and a quarter rated their health as either 'fair' or 'poor' (Figure 5).

Figure 5: Self-rated health status



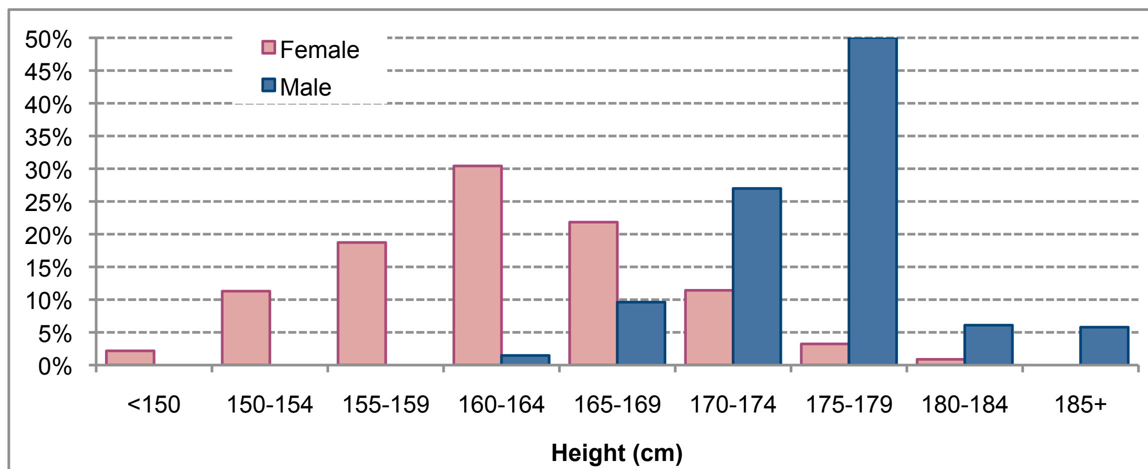
A larger proportion of Māori rated the health of their teeth negatively. Excluding people with dentures, 4% of Māori said the health of their teeth was 'excellent', 14% said 'very good', 29% said 'good', 25% said 'fair' and 28% said 'poor'.

[3] See www.SF-36.org for information of the SF-36 self-assessed health survey.

Physical measures

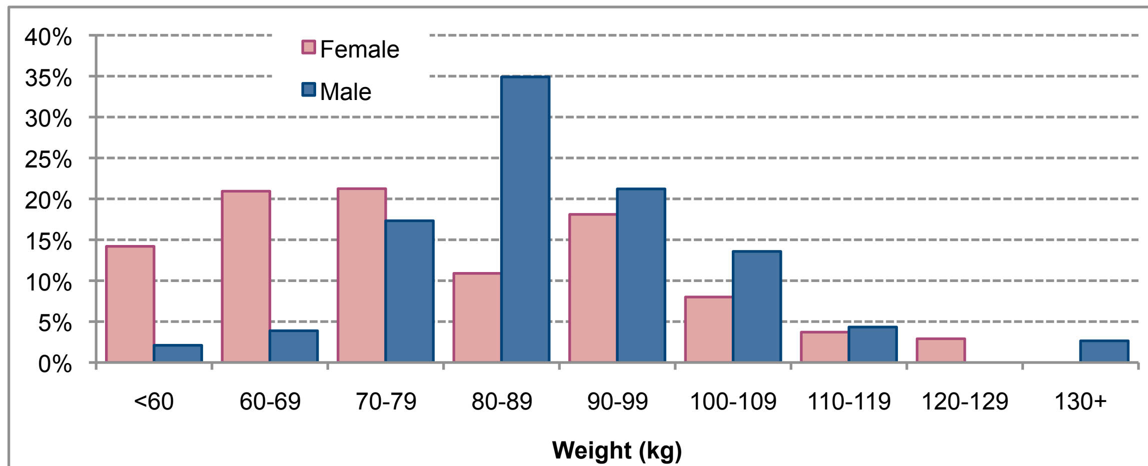
A variety of physical characteristics were directly measured for 155 out of the 187 adult participants, including height, weight, body fat and handgrip strength. Height was measured using a portable stadiometer and weight was measured using a set of electrical bioimpedance scales.

Figure 6: Distribution of Adult Heights (%)



As expected Māori women were shorter (160-164cm), on average, than Māori men (175-179cm). Māori in the district were well distributed across a range of heights.

Figure 7: Distribution of Adult Weights (%)



Māori men were, on average, heavier than Māori women with a peak in the distribution at about 85kg. Women's weights showed a bimodal distribution with peaks at about 70kg and at about 95kg.

Two-thirds of adult Māori described themselves as overweight, with 22% saying 'very overweight' and 44% saying 'slightly overweight'. Most of the rest thought they were about the right weight (26%), although 7% felt they were underweight. More women (76%) than men (55%) described themselves as overweight or very overweight, with most of the difference being due to the higher proportion of women who described themselves as very overweight (36%) compared to men (8%).

Calculation of Body Mass Index from the measures taken (BMI = weight / height^2) indicated that 78% were overweight (40% very overweight, 38% overweight). Only 1% were underweight and 21% were in the normal weight range. Based on measured BMI, a smaller proportion of women (70%) were overweight/very

overweight compared to men (84%) and more were in the normal weight range. However, more women were very overweight compared to men based on BMI (Figure 8).

Figure 8: Body Mass Index (BMI) by gender

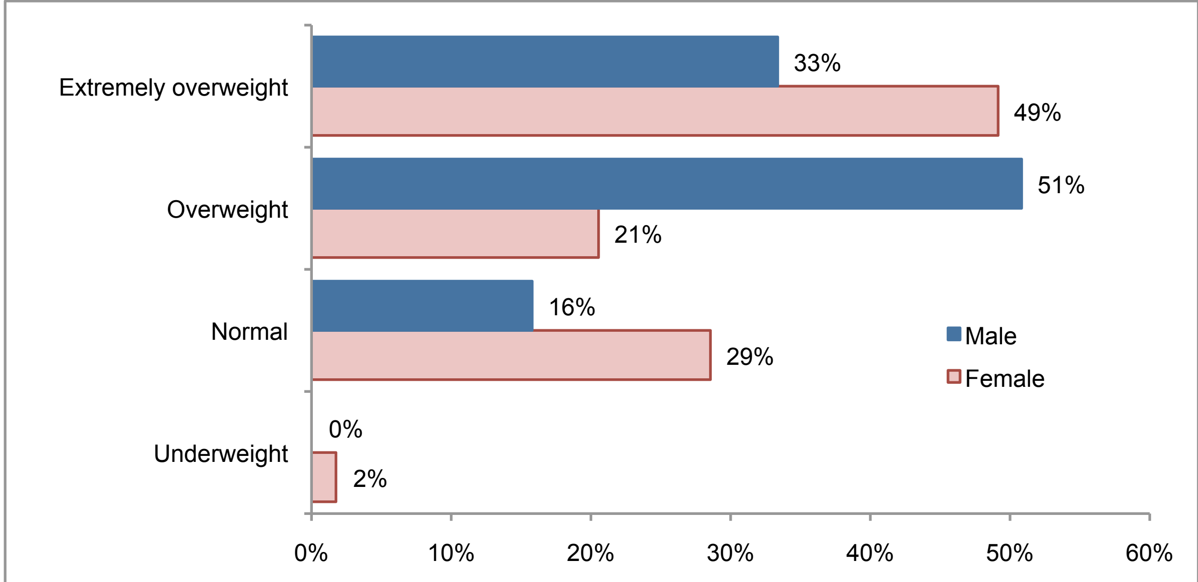


Figure note: BMI categories are <18.5 for 'underweight', 18.5-25 for 'normal', 25-30 for 'overweight' and 30+ for 'extremely overweight'.

When compared with other datasets (Table 4) Māori men and women in NMDHB were both more likely to be overweight. Māori women were more likely to extremely overweight. A recent report from the School of Population Health for the Nelson-Marlborough district identified 34 of Māori as overweight and 20.8% of Māori as obese[4].

Table 4: Māori Overweight and Obese

	NM Sample (Measured)	NM Sample (Self-Report)	Māori Chart Book (2006) (Measured)
Māori Females			
Overweight	21%	40%	31.1%
Obese	49%	36%	26.1%
Māori Males			
Overweight	51%	47%	37.2%
Obese	33%	8%	26.5%

Overall, women had a similar average BMI to men, with a lower average height and weight (Table 5). Women had a higher average percentage of body fat than men and a lower average handgrip

[4] See Nutrition & Physical Activity Baseline Summary Report.

strength. Men and women aged over 60 years had a lower average handgrip strength and a higher average percentage of body fat than young adults.

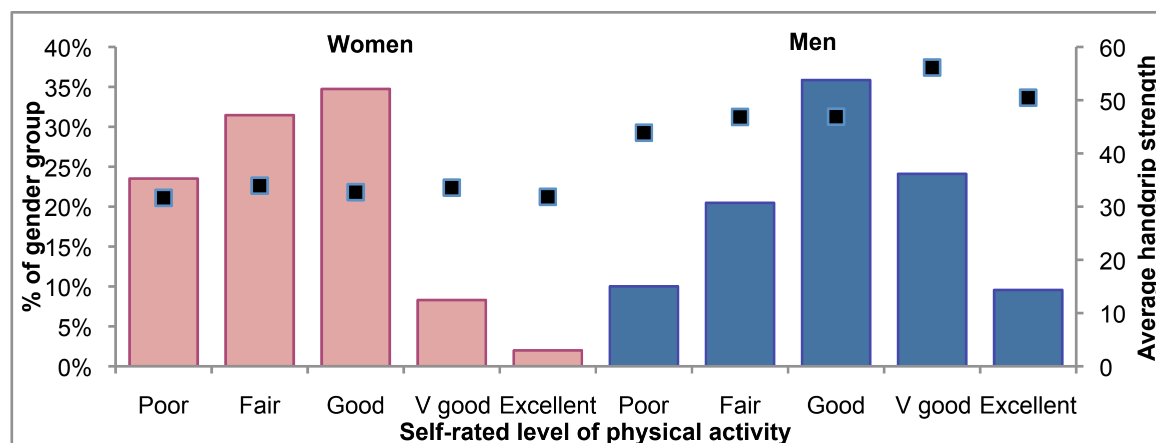
Table 5: Average physical measurements by gender, with 95% confidence intervals (CI)

Physical measurement	Gender	Average	Lower 95% CI	Upper 95% CI
Height (cm)	Female	162	160	164
	Male	175	174	177
Weight (kg)	Female	80	75	84
	Male	92	86	99
Body Mass Index	Female	30	29	32
(BMI, m/kg^2)	Male	29	28	30
% body fat	Female	38	37	40
	Male	24	22	26
Handgrip strength	Female	33	31	35
(right, kg)	Male	49	46	53
Handgrip strength	Female	32	30	34
(left, kg)	Male	48	46	51

Handgrip Strength and Physical Activity

Hand grip strength has been shown to be a good measure of the muscular strength of an individual[5]. Hand grip strength has been found to have a positive correlation with lean body mass and physical activity. It can also be used as a functional measure of nutritional status[6, 7].

Figure 9: Handgrip Strength and Self-Rated Physical Activity



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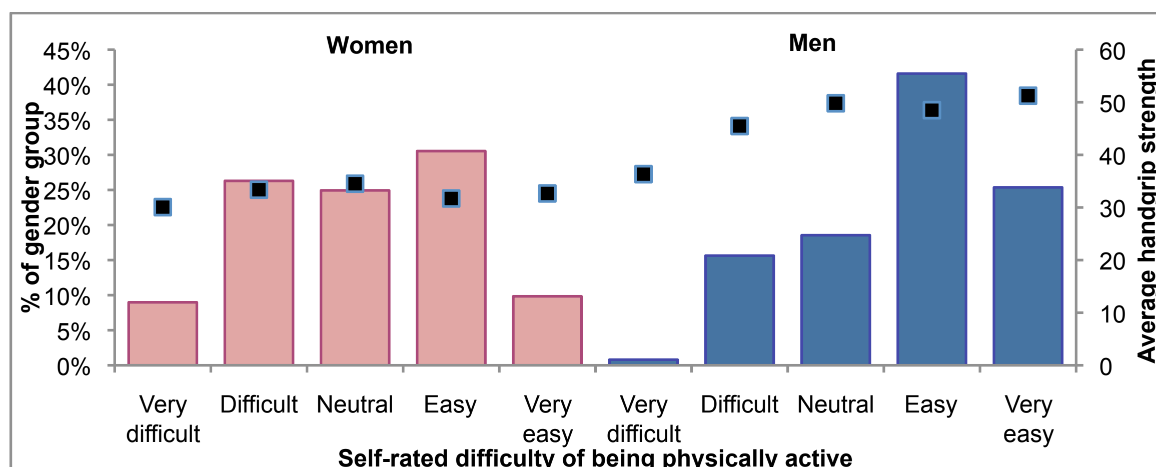
[5] Foo LH (2007) Influence of body composition, muscle strength, diet and physical activity on total body and forearm bone mass in Chinese adolescent girls. Br. J Nutr., 98(6): 1281-1287.

[6] Brozek J (1984) The assessment of motor function in adults. In Malnutrition and Behaviour: Assessment of key issues, Nestle Foundation Publication series vol 4, edited by J. Brozek and B. Schurch (Lausanne: Nestle Foundation), pp. 268-279.

[7] Vaz M, Thangam S, Prabhu A and Shetty PS (1996) Maximal voluntary contraction as a functional indicator of adult chronic undernutrition. Br. J. Nutr., 76: 9-15

Figure 10: Handgrip Strength and Self-Rated Difficulty of Being Physically Active



Blood tests

A subsample of 88 adults gave blood samples (after fasting) for analysis of glucose levels, insulin resistance and cholesterol/lipid levels.

The average for each measure is shown in Table 6. As the distributions of some measures (notably HOMA-IR and triglycerides) were skewed, medians are shown as well as averages. There were no significant differences between the averages for men and women, based on this sample. Older people, and especially the 45 to 50 year old age group, tended to have higher cholesterol than younger adults. It should be noted that because this is a random survey, those with diagnoses of diabetes and high cholesterol will be incuded.

Table 6: Median and average concentrations of various blood markers, with 95% confidence intervals (CI)

Marker	Median	Average	Lower 95% CI	Upper 95% CI
HOMA-IR	1.8	2.4	2.0	2.9
McCauley	7.4	7.7	7.2	8.3
Insulin	50	67.2	54.3	80.1
Glucose	5.1	5.4	5.1	5.7
HaemoglobinA$_{1c}$ (%)	5.7	5.6	5.2	6.0
Cholesterol (mmol/L)	5.1	5.1	4.8	5.4
Triglyceride (mmol/L)	1.2	1.6	1.3	1.8
HDL Cholesterol (mmol/L)	1.3	1.3	1.2	1.4
LDL Cholesterol (mmol/L)	3.0	3.0	2.7	3.3
Total/HDL Cholesterol Ratio	4.1	4.1	3.8	4.4

Table note: See text for marker descriptions and derivations of HOMA and McCauley measures of insulin resistance.

Insulin resistance is a treatable precursor of diabetes and potentially cardiovascular disease as well. Insulin resistance was tested using the homeostatic model assessment (HOMA-IR) and McCauley methods:

- HOMA-IR = serum glucose concentration (mmol/l) * serum insulin concentration (iU) /22.5
- McCauley score = exp[2.63 – 0.28*ln(serum insulin) – 0.31*ln(triglycerides)]

Stern et al. (2005)[8] developed decision rules to identify insulin resistance using measurements of obesity and blood markers. Based on their model, insulin resistance is indicated if:

- HOMA-IR >4.65, or
- BMI >28.9, or
- HOMA-IR >3.60 and BMI >27.5

Using this approach, 49% of the sample would be classified as insulin-resistant. Fifteen percent had HOMA-IR greater than 4.65, while 34% had a BMI greater than 28.9 and HOMA-IR less than 4.65. No-one had a HOMA-IR between 3.60 and 4.65 and BMI between 27.5 and 28.9.

Figure 11: Insulin Resistance (HOMA) by BMI Group

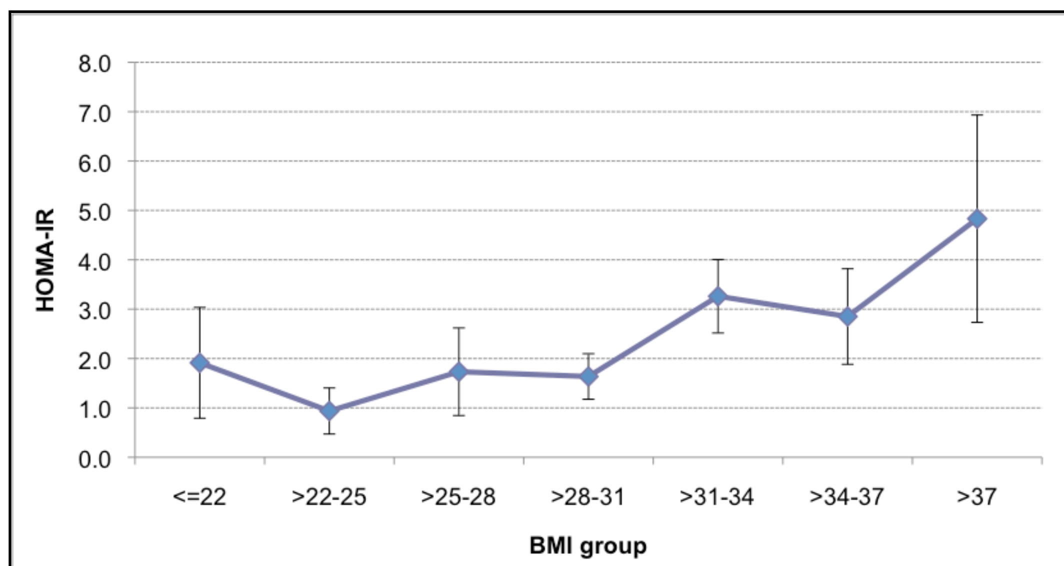


Figure 11 shows the relationship between BMI group and calculated HOMA score (95% confidence intervals are shown). There is a trend of increasing insulin resistance with body mass, with the greatest variation for the very under- and very over-weight individuals.

A McCauley score of less than 6.3 defined individuals with insulin resistance (McCauley et al. 2001[9]). Using this approach, 33% of the sample would be classified as insulin-resistant.

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[8] Stern, S.E., Williams, K., Ferrannini, E., DeFronzo, R.A., Bogardus, C., and Stern, M.P. (2005) *Identification of individuals with insulin resistance using routine clinical measures*. Diabetes 54: 333-339.

[9] McAuley K.A., Williams S.M., Mann J.I., Walker R.J., Lewis-Barned N.J., Temple L.A., Duncan A.W. (2001) *Diagnosing insulin resistance in the general population*. Diabetes Care 24:460-464.

Figure 12: Insulin Resistance (McCauley score) by BMI group

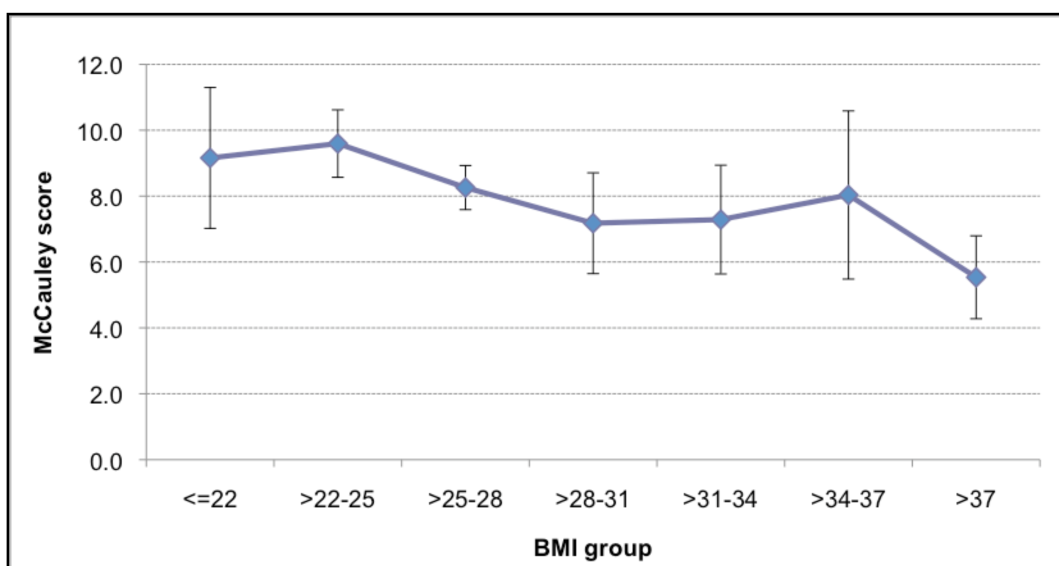


Figure 12 shows the relationship between insulin resistance (McCauley score) and BMI group (95% confidence interval). Again there is a trend of increasing insulin resistance (lower score) with increasing body mass index.

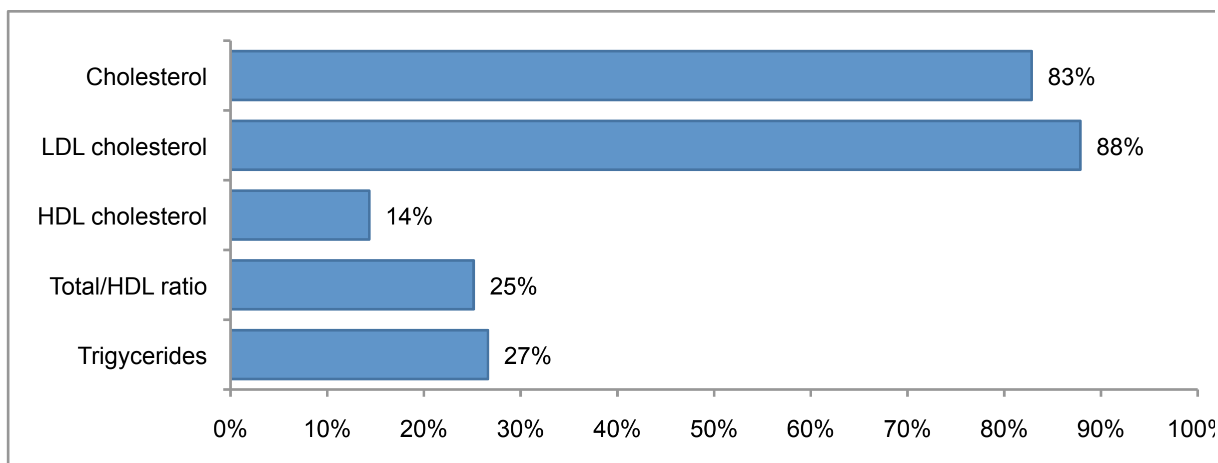
Uncontrolled diabetes was tested using the concentration of haemoglobinA_{1C} (glycosylated haemoglobin), which represents the average blood glucose level over the previous several weeks. Almost everyone (97%) had a level within the acceptable range (<7%). The five people who had a high level of haemoglobinA_{1C} were all women aged 49 years or over.

Both cholesterol and triglycerides are fats (lipids) that the body produces normally, but high levels are associated with an increased risk of heart disease. A high level of LDL cholesterol (colloquially known as 'bad cholesterol') is a risk factor, while HDL cholesterol ('good cholesterol') offers a degree of protection. Therefore, a high total/HDL cholesterol ratio equates to high risk. The National Heart Foundation (www.nhf.org.nz) identifies optimal levels as:

- total cholesterol <4 mmol/L
- LDL cholesterol <2 mmol/L
- HDL cholesterol =>1 mmol/L
- total cholesterol /HDL ratio <4.5
- triglycerides <1.7 mmol/L

The majority of adults had total cholesterol and LDL cholesterol levels outside this recommended range (Figure 13). Thirteen percent had cholesterol in the high-risk range (>6.2 mmol/l).

Figure 13: Percent of adults with cholesterol and triglyceride outside the recommended range



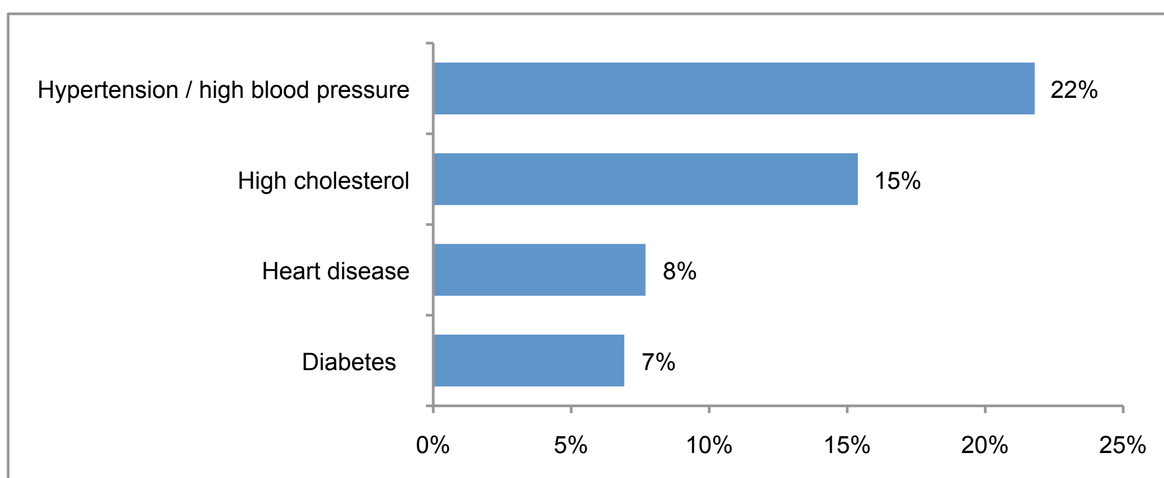
Tobacco Smoking

Half of adult Māori smoked tobacco cigarettes regularly (one or more a day). Of the smokers, 71% smoked twenty or more cigarettes a day, including 22% who smoked forty or more a day. Māori women were more likely to be smokers (60%) than men (40%). Young Māori also had high smoking rates – 62% of 15 to 29 year olds smoked compared to 42% for other Māori.

Diagnosed medical conditions and health education knowledge

The survey asked whether the respondent had ever been diagnosed with diabetes, hypertension or high blood pressure (not including borderline high, pre-hypertensive, or hypertension during pregnancy), high cholesterol, or heart disease (including heart attack, myocardial infarction, angina, coronary cardiovascular disease or a stroke). High blood pressure was the most common diagnosis (Figure 14). Diabetes included type 1 diabetes (1%), type 2 diabetes (2%) and diabetes of unknown type (4%).

Figure 14: Medical conditions, as diagnosed by a health professional



When asked 'What could be done to prevent diabetes', the majority of people mentioned having a healthy diet, including 29% of people who specifically mentioned reducing sugar intake and 34% of people who

mentioned aspects of diet without mentioning sugar specifically (e.g. generally eat healthily, reducing fat). A third of Māori mentioned the need to keep fit or active and one in five mentioned reducing weight or not being overweight. One in five Māori did not know what could be done to prevent diabetes.

When asked what could be done to prevent cardiovascular disease, the most common responses were to keep fit or active (54%) and to improve diet (47%). Within the diet category, 17% of people specifically mentioned reducing fat and 5% mentioned reducing alcohol, while most of the rest were more general suggestions (such as 'eat healthy food'). Other common responses were to stop smoking (32%) and to reduce weight (18%). One in six Māori did not know what could be done to prevent cardiovascular disease.

Health services

When asked: 'If you had a health problem that you knew needed treatment, who would you usually see first?', 87% of Māori said they would see a doctor/general practitioner (GP). No other provider was named by more than a few people.

Seventy percent of people said they were always able to get treatment when they needed it and a further 21% said they were usually able to get treatment when they needed it. However, 5% said they could not get needed care, while 4% said they only sometimes got treatment when they needed it.

GPs were the most commonly used health service, with 88% of Māori having visited a GP or doctor at least once in the last 12 months (Table 7). Over two-thirds of adult Māori had visited a GP more than once in the last year.

Four out of five people had had a prescription filled at least once in the last 12 months and around half had received advice or treatment from a nurse or visited a medical specialist. Over a third of people had been treated at an emergency facility or received dental treatment. A fifth of Māori had seen a community health worker or attended a community health centre, while 16% had been an inpatient at a hospital. The least-used services were chiropractor, naturopath and Māori healer.

Table 7: Frequency of use of health services in the last 12 months

	Not at all	Once or more	Once	A few times	Several times	Total
GP/doctor	12%	88%	20%	28%	40%	100%
Had prescription filled	20%	80%	14%	31%	35%	100%
Nurse	50%	50%	19%	19%	13%	100%
Medical specialist	53%	47%	19%	11%	16%	100%
Emergency (A&E)	62%	38%	20%	15%	3%	100%
Dental treatment	64%	36%	20%	13%	3%	100%
Community health worker	79%	21%	7%	8%	6%	100%
Community health centre	79%	21%	7%	9%	5%	100%
In-patient at hospital	84%	16%	8%	7%	1%	100%
Chiropractor	87%	13%	5%	6%	2%	100%
Naturopath	93%	7%	4%	2%	1%	100%
Māori healer	94%	6%	1%	3%	2%	100%

Men were more likely than women to have been treated at an emergency facility, while women were more likely than men to have seen a community health worker.

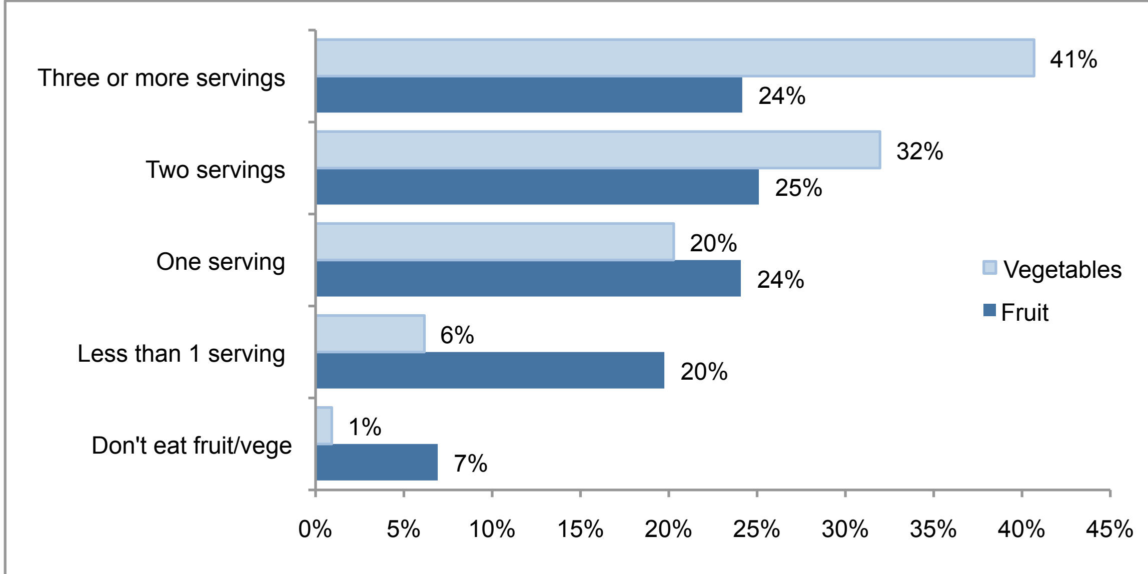
Diet

Two-thirds of Māori rated the healthiness of their own eating habits as at least ‘good’ (5% excellent, 29% very good and 33% good), while 23% said ‘fair’ and 9% said ‘poor’. Younger Māori , aged 15 to 29 years, were less likely to say they had healthy eating habits (47% poor or fair) compared to older Māori (27% poor or fair).

Half the population said they had the recommended two or more servings of fruit per day, while 41% said they had had the recommended three or more servings of vegetables (Figure 15). Half of women had the recommended three or more servings of vegetables, compared to just 30% of men.

Survey participants were asked whether they agreed with a series of statements about the factors that influenced their consumption of fruit and vegetables. The majority of respondents agreed that fruit and vegetables cost too much (61%), while smaller proportions agreed that they spoil too quickly (34%), or they are not available at work (26%). Fewer people agreed with the statements that good quality fruit and vegetables are not available at the local shops (14%) or that fruit and vegetables take too much time to prepare (10%). Very few people said they were unsure how to cook vegetables (3%) or that they did not like fruit and vegetables (4%).

Figure 15: Daily consumption of fruit and vegetables



Two-thirds of adult Māori had had a fizzy or energy drink in the last week (not including diet or zero sugar drinks). Thirty-one percent had had a fizzy drink on one or two days of the last week, 25% had had a fizzy drink on three to six days, and 11% had had a fizzy drink every day of the last week.

Half the Māori population had takeaways once a week or more. The usual consumption of takeaways was:

- Less than once a month 20%

- One to three times a month 26%
- About once a week 32%
- About twice a week 14%
- Three or more times a week 8%

The frequency with which the main meal was prepared at home (excluding things like frozen or convenience meals) was:

- Twice a week or less 2%
- About three to four times a week 8%
- About five to seven times a week 89%

Red meat was more frequently eaten than white meat or fish, with over three-quarters of people eating red meat several times a week (Table 8).

The consumption of fresh or canned fish was particularly low, with almost half the population eating fish less than once a week, including 11% who never ate fish. [Note that deep fried fish, processed fish such as fish fingers, and canned fish in oil were included in the 'processed meat/fish' category, along with processed meat such as sausages, nuggets, salami, and meat patties.]

Table 8: Meat consumption

	Never	Less than once per week	Once per week	2-4 times per week	5+ times per week	Total
Chicken and pork	1%	12%	25%	60%	2%	100%
Fresh or canned fish	11%	34%	28%	25%	2%	100%
Red meat	3%	5%	15%	62%	15%	100%
Processed meat /fish	4%	25%	44%	25%	2%	100%

The population was fairly evenly divided over whether the fat was removed from red meat before consumption (Table 9). In contrast, over two-thirds of people never removed the skin of chicken and added salt to food either 'often' or 'always'.

Table 9: Food preparation

	Always	Often	Occasionally	Never	Total
Red meat: trim/drain fat or buy lean	29%	17%	18%	36%	100%
Chicken: remove skin	12%	7%	13%	69%	100%
Salt added to food	49%	19%	20%	12%	100%

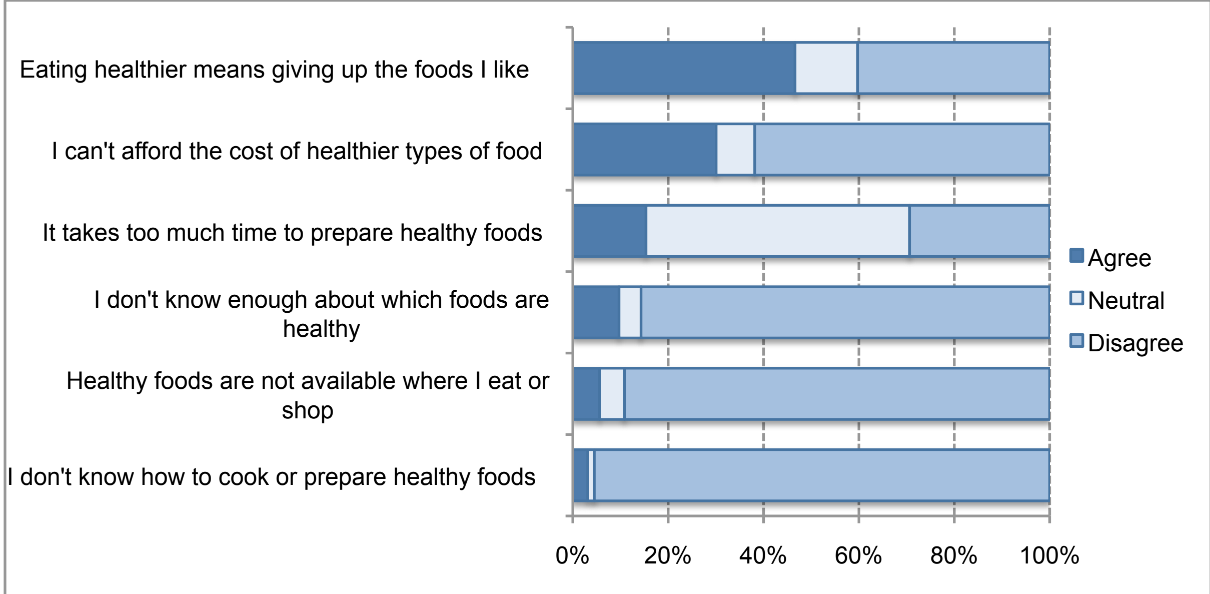
Views on nutrition and health

Māori respondents in the survey were asked to identify some of the things that experts recommend in order to remain healthy. Almost everyone was able to identify something. The most commonly named items (mentioned by around two-thirds of people) were 'eating more fruit and vegetables' and 'keeping fit or active'. The following items were mentioned by 10% to 20% of people: 'controlling or reducing fat intake', 'stop smoking', 'drink more water', 'control/reduce sugar intake', 'eat less takeaways', and 'control/reduce portion size/ amount of food'.

Most Māori agreed with the statement that 'having healthy eating habits is very important to me', with 40% strongly agreeing and 49% agreeing. The greatest barrier to healthy eating (based on the options shown in Figure 16) was an unwillingness to give up unhealthy foods, although this was a factor for less than half the population. Just under a third of Māori agreed that the cost of healthy food was an issue, while knowledge and availability of healthy food were issues for a minority of people. More women than men agreed that they could not afford the cost of healthier food and that eating healthier meant giving up the foods they like.

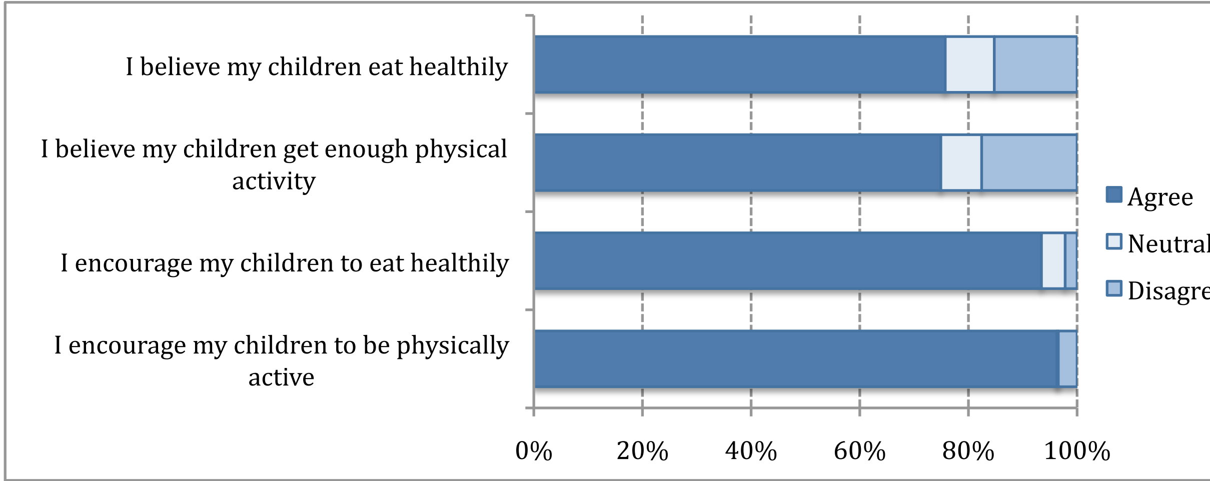
When asked: 'Who encourages you or does things to make it easier for you to eat healthily?', the most common responses were 'spouse/partner' (34%) and 'wider family/whānau' (other than your spouse/partner) (29%). Almost a third of Māori said that nobody encouraged them to eat healthily.

Figure 16: Agreement with various statements about healthy eating



There was a high level of agreement that children in the household were eating healthily and getting enough physical activity, and these behaviours were encouraged (Figure 17), as answered by those responsible for the children. However, 18% disagreed that their children get enough physical activity and 15% disagreed that their children ate healthily.

Figure 17: Agreement with statements about healthy behaviours of children in the household



Twenty-seven percent of Māori said that they had at least sometimes run out of food and could not afford to buy more (including 8% who said this was 'often true'). This was particularly likely amongst young people – 41% of Māori aged 15 to 29 years had at least sometimes run out of food and could not afford to buy more compared to 19% for other people.

Sixteen percent said that adults in the household had at least sometimes reduced the size of their meals or skipped meals because there wasn't enough money for food (including 5% who said this was 'often true'). This was most likely to occur within the younger two age groups (15-29 and 30-44 year olds).

Regarding breastfeeding:

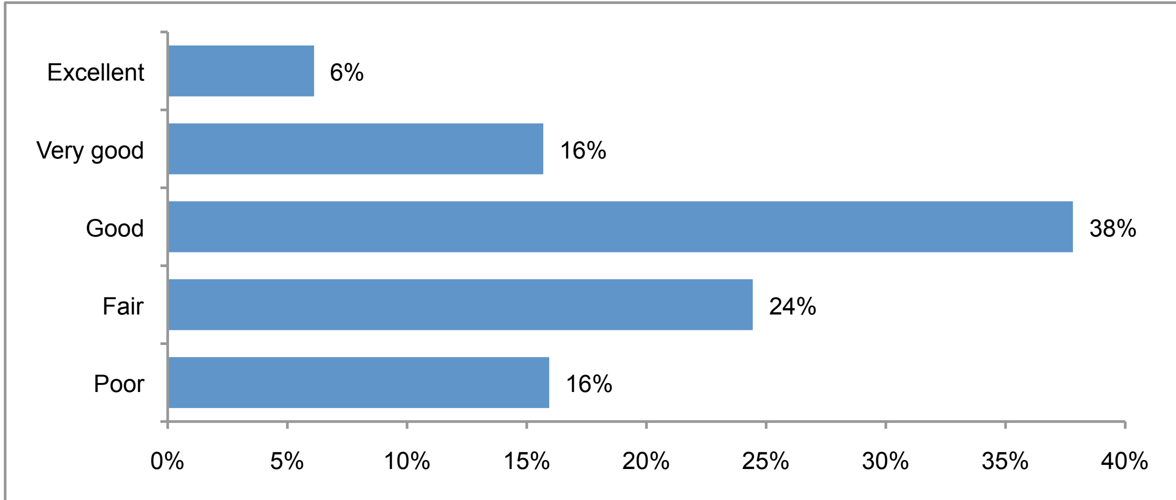
- 95% of adult Māori agreed with the statement that 'breast milk is the ideal food for babies';
- 53% agreed that 'babies should be fed only breast milk for the first six months';
- 90% agreed that 'I feel comfortable when a mother breastfeeds her infant (0-12 months) in public';
- 50% agreed that 'I feel comfortable when a mother breastfeeds her toddler (12-24 months) in public'.

Levels of physical activity

Respondents were asked a number of questions asking them to self-report in relation to their physical activity.

Sixty percent of Māori rated the healthiness of their current level of physical activity as 'good', 'very good' or excellent', compared to 40% who said 'fair' or 'poor' (Figure 18). Women (53%) were more likely than men (29%) to rate their activity level as 'fair' or 'poor'.

Figure 18: 'Overall, how healthy would you rate your current level of physical activity?'



The majority of Māori adults had done some moderate physical activity or brisk walking in the past week, whereas only about half had done any vigorous exercise (Table 10). These activities included time spent doing leisure activities as well day-to-day activities such as physical work or walking to work. Only five percent of Māori had done none of these physical activities in the previous week.

Table 10: Number of days over the past week that included at least 10 minutes of activity

Number of days	Brisk walking	Moderate activity	Vigorous activity
None	35%	22%	54%
1 to 2 days	17%	29%	27%
3 to 4 days	22%	14%	10%
5 to 6 days	12%	21%	7%
7 days	14%	14%	2%
Total	100%	100%	100%

Table notes:

Brisk walking includes walking which caused you to breathe harder than normal and includes any type of walking (at work, home or school, while getting from place to place, and at any activities that you did solely for recreation, sport, exercise or leisure.

'Moderate' activities make you breathe harder than normal, but only a little - like carrying light loads, bicycling at a regular pace, or doubles tennis – excluding walking.

'Vigorous' activities make you breathe a lot harder than normal - like heavy lifting, digging, aerobics, jogging or fast bicycling.

Despite the marked gender difference in self-rating of activity, there was little difference between men and women in the actual levels of activity undertaken in the previous week, whether measured by brisk walking, moderate exercise and vigorous exercise.

A quarter of the population walked briskly on at least five days in the previous week and almost half walked on at least three days. About a third of the population did moderate physical activity on at least five days in the previous week and half were moderately active on at least three days. Only 18% of Māori did vigorous physical activity on at least three days in the previous week. The typical duration of activity was at least 30 minutes for around two-thirds of those who did any of these activities.

The pattern of hours spend sitting did not differ greatly between weekdays and weekends (Table 11), with just over a third of people spending more than five hours sitting or reclining (excluding sleeping).

Table 11: Number of spent sitting or reclining on a typical week day/weekend day

Number of hours	Weekday	Weekend
1 hour or less	7%	11%
>1 to 3 hours	30%	28%
>3 to 5 hours	29%	26%
>5 to 7 hours	19%	18%
>7 to 9 hours	3%	10%
>9 hours	12%	8%
Total	100%	100%

Table notes:

Include time spent sitting at a desk or chair, reading, driving, watching TV or videos/dvds, working on a computer or playing games on a computer or games console, but does not include time spent sleeping.

When asked: 'For a short journey, up to 2.5km, how often do you usually walk or bicycle?', 17% of Māori answered 'almost always', 20% said 'very often', 30% said 'occasionally', 18% said 'rarely' and 15% said 'never'. Three-quarters of commuters (to work or education) usually took a car or motorbike, while 19% walked all or part of the way, 4% cycled and 3% took a bus.

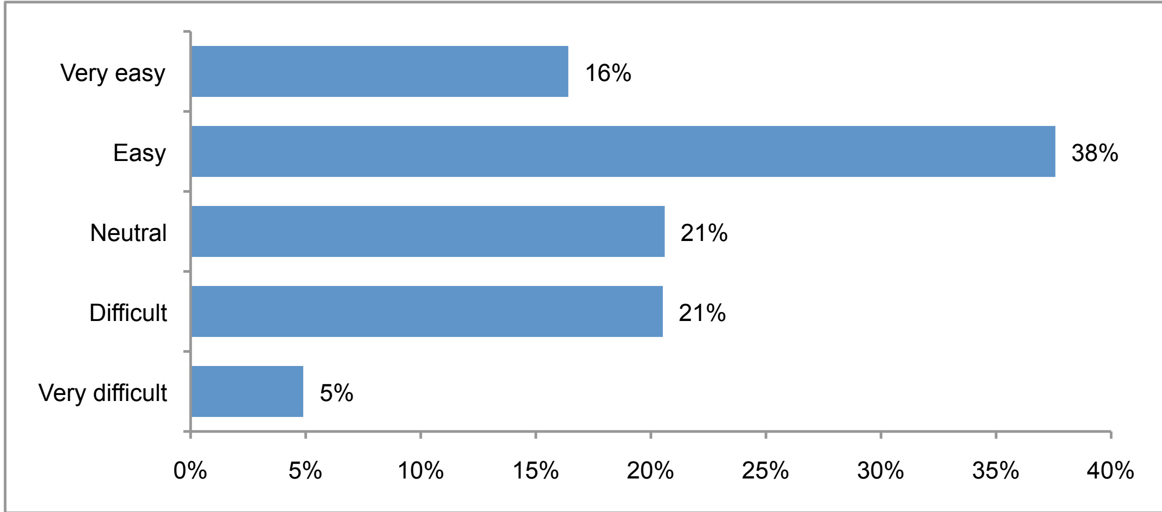
When asked: ‘Who encourages you or does things to make it easier for you to be physically active?’, the most common responses were ‘spouse/partner’ (23%) and ‘wider family/whānau’ (other than your spouse/partner) (21%). Over a third of Māori said that nobody encouraged them to be active.

Barriers to activity

Māori in the survey were asked about difficulty they experience in being regularly physically active.

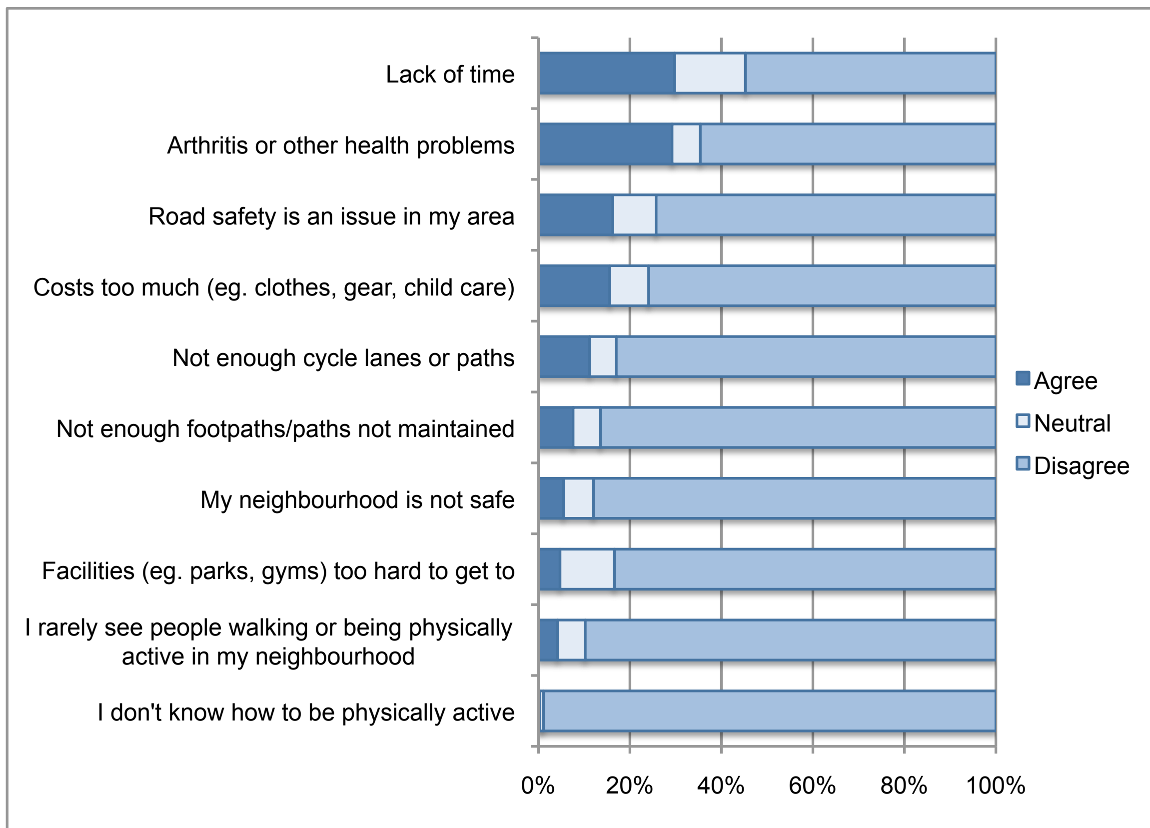
A quarter of adult Māori found it difficult to be regularly physically active (Figure 19), with more women finding it difficult (33%) than men (18%).

Figure 19: ‘How difficult do you find it to be regularly physically active?’



Survey participants were asked about the factors that influenced their own level of physical activity, in terms of their agreement with a series of statements. The majority of people disagreed that these factors affected their level of physical activity (Figure 20). Only four of the factors affected more than 15% of people: lack of time, health problems, road safety and cost. Lack of time was significantly more of an issue for women than men, as was road safety. Conversely, health problems were more of a barrier to activity for men than women.

Figure 20: Factors influencing physical activity level



6 Education, employment, income and housing

Summary of Results

The 187 adult Māori in the sample were asked a range of questions about education, employment, income, economic standard of living and housing. The percentages shown below were weighted to be representative of the adult Māori population (ages 15 years and over) of the Nelson-Marlborough region.

- Over two-thirds of Māori were satisfied with their current level of education and rated it as good, very good or excellent. A quarter of the population had trade, university or professional qualifications, but over one in five adult Māori (ages 15 and over) had no qualifications. Māori men were more likely to have no qualifications than women.
- More women than men were currently in education
- Over half of Māori would have preferred to have been taught in a Māori or bilingual class at pre-school and school. Four out of five people felt there were enough choices today for Māori who are seeking an education for themselves or their children.
- Two-thirds of adult Māori had further educational goals, such as professional development or tertiary qualifications. Men and older Māori were less likely to have educational goals.
- Most working-age Māori were in full-time paid employment (54%) or part-time paid employment (30%), with a further 3% unemployed, 7% in unpaid work, 3% retired and 3% sick or invalids. Most employed people were satisfied with their job and few thought their employment prospects would come under threat over the next three years.
- Income often came from multiple sources. Almost three-quarters of all adult Māori received income from wages/salary, 45% received government income support payments, 19% received some income from investments, 21% received income from self-employment or a business and 8% received income from other sources.
- Over two-thirds of individual Māori earned $40,000 or less before tax, whereas only a third had a total household income of $40,000 or less. Thirty-seven percent of Māori had a total household income over $70,000. Māori were fairly evenly divided over their level of satisfaction with income, with 54% satisfied and 46% dissatisfied.
- Thirty percent of the population had as yet made no financial provision for their old age. The most common provisions were regular savings and kiwisaver.
- A majority of Māori had given some money to help others in the last four weeks, mostly to help whānau or charity causes. Contributions to the last family hui were most commonly made by 'just giving what you could'.
- Forty percent of Māori rated their material standard of living as high and 50% rated it as medium, while 10% rated their standard of living as low. Similarly, 10% of Māori were dissatisfied with their living standard. However, almost 20% of Māori felt they did not have enough money from their total income to meet everyday needs and a further 30% said they had just enough.
- The most common cost-cutting measures were to cut back on trips to the shops or other local places, to put off buying clothes, and to spend less on hobbies. A third of Māori had postponed a visit to the doctor at some time over the last year, while one in five had not picked up a prescription. A quarter of Māori had gone without fresh fruit and vegetables at some time over the last year, a

quarter had continued wearing clothing that was worn out, and 13% had stayed in bed longer to save on heating costs.

- A fifth of Māori had lived in their current house for less than a year. Fifty-five percent of Māori were renting a house or paying board, while 37% lived in their own home and 7% had other arrangements. Half the people who did not already own their home had plans to buy a house.
- Less than one in ten people were dissatisfied with their current accommodation.
- Home-owners had very high levels of insurance uptake for home and contents insurance, whereas only half of renters had contents insurance.
- One in eight houses did not have a smoke alarm, half were not fully insulated, a fifth had problems with damp or mould, and a fifth of houses had someone who smoked inside. Almost a third of households said affording heating was not always possible.

Educational attainment and goals

Those surveyed were asked about their current level of education.

Self-rating of current level of education produced a fairly even balance, with 8% rating their education level as ‘excellent’, 15% ‘very good’, 47% ‘good’, 21% ‘fair’, and 10% rating their education as ‘poor’.

Just over one in five adult Māori (ages 15 and over) had no qualifications and a further 29% had school qualifications only (Figure 21). A quarter of the population had trade, university or professional qualifications, and a similar proportion had other types of qualifications. Māori men (28%) were more likely to have no qualifications than women were (16%), and older people were less likely than younger people to have any qualifications.

Figure 21: Highest level of educational attainment

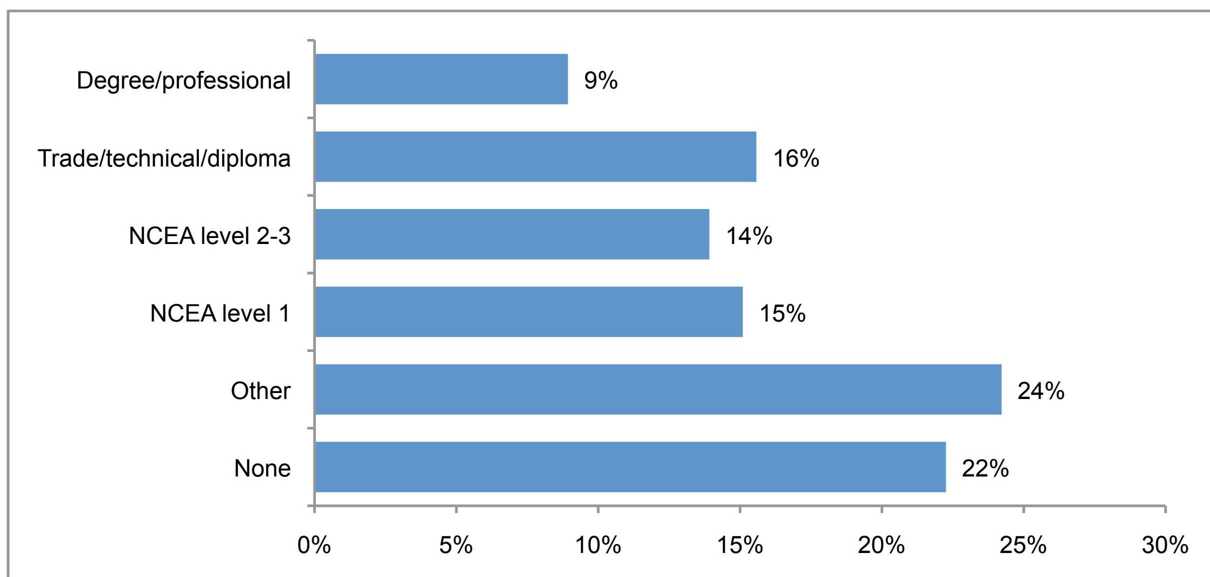


Figure notes: Includes only complete qualifications that take 3 months or more.

Degree/Professional includes qualifications such as degrees, ACA, teaching and nursing.

NCEA Level 1 includes School Certificate or National Certificate Level 1. NCEA Level 2-3 includes Sixth Form Certificate, UE, Bursary, National Certificate Level 2-3.

Over two-thirds of adult Māori were satisfied with their level of education, including 62% who were satisfied and 7% who were very satisified. However, 26% were dissatisfied and 5% were very dissatisfied. Those with school qualifications were the least likely to be satisfied compared to those people with higher qualification and people with no qualifications. Satisfaction levels were lower for older people.

Eighteen percent of adult Māori (ages 15 or over) were currently attending an educational institution, with more women (29%) than men (8%), and more young people than older people, in education. Sixty-two percent of people were studying part-time and 38% full-time. A quarter of those currently in education were at secondary school, 31% were doing tertiary study and 45% were doing other types of study, such as community-run courses, correspondence courses and specialist training (e.g. hairdressing).

Almost everyone had at some stage attended a primary school and secondary school, with 45% having attended a preschool, 11% a kohanga, 9% a kura, 3% a whare kura. Just over one in three had attended a post-secondary institution (36%) and one in ten a wananga.

Most of the people who had attended Māori schools were in the 15 to 29 year old age group. Of this group, 28% had attended a kohanga, 22% had attended a kura, and 4% a whare kura. This reflects changes in the options available over time. Therefore, the survey also asked: 'If you had the choice of the following options, where would you now prefer to have been educated?' More than half of Māori would have preferred to attend kohanga and kura and this was true across all age groups. The overall preferences were:

- The preferred options for preschool were te kohanga reo (58%), kindergarten (23%), play centre (3%) and creche (2%), with 14% citing other options or unsure of which they would chose.
- The preferred options for primary school were bilingual class in state school (38%), mainstream class in state school (35%), and kura kaupapa Māori (20%), with 5% citing other options or unsure of which they would chose.
- The preferred options for secondary school were bilingual class in state school (32%), mainstream class in state school (35%), whare kura (15%), and Māori boarding school or private school (17%), with 2% citing other options or unsure of which they would chose.
- The preferred options for post-secondary were university (42%), polytechnic (18%), tribal wananga (17%), and marae-based programmes (9%), with 18% citing other training options or being unsure, and 6% saying none.

Four out of five people felt there were enough choices today for Māori who are seeking an education for themselves or their children.

When asked 'Where would you go to get help with your learning of things Māori? (e.g. Māori history, whakapapa, tikanga Māori), the most common responses were whānau (55%), educational institution or wananga (21%), marae (16%) and kaumatua (15%).

When asked: 'What goals do you have for your own education?', the most common responses were to 'pursue a personal interest or development' (52%) and to 'complete a tertiary qualification' (11%). The majority of the people who wanted to 'pursue a personal interest or development' cited professional development or training, such as courses in computing, business, nursing, teaching or social work.

One in three adult Māori said they had no educational goals. A higher proportion of men (41%) than women (28%) had no educational goal. Older people were more likely to have no educational goals – 53% of those aged 45 or over had no goal, compared to 24% of those aged less than 45 years.

Employment

Most working-age Māori (aged 17 to 64 years) were in full-time paid employment (54%) or part-time paid employment (30%), with a further 3% unemployed and actively seeking a job. Of the remaining 13%, 7% were in unpaid work, 3% were retired and 3% were sick or invalids.

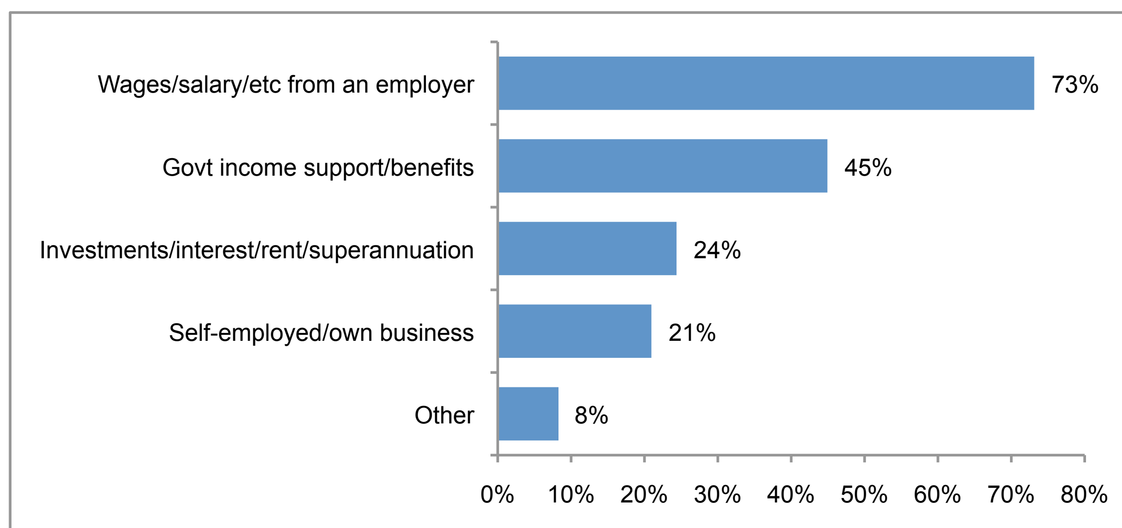
Job satisfaction levels were reasonably high amongst employed people, with 21% very satisfied and 57% satisfied, although 17% were unsatisfied and 5% were very unsatisfied. Satisfaction levels were lower for young people – only 57% of employed 15 to 29 year olds were satisfied or very satisfied with their job, compared to 88% of people aged 30 years or over.

People were generally positive about employment prospects, with 58% thinking their present employment situation will improve over the next three years and 30% thinking their situation would remain the same. Only 5% felt their job could come under threat, while a further 8% did not know. Young people were more likely to think their prospects would improve, whereas older people were more likely to think their prospects would stay the same.

Income

Almost three-quarters of all adult Māori received income from wages, salary or commissions paid by an employer (Figure 22), while 45% received government income support payments (including 6% on National Superannuation or Veterans Pensions). A quarter of the population received some income from investments (including interest, dividends, rent and non-government superannuation). A fifth received income from self-employment or their own business and 8% received income from other sources.

Figure 22: Source(s) of income received over the last 12 months

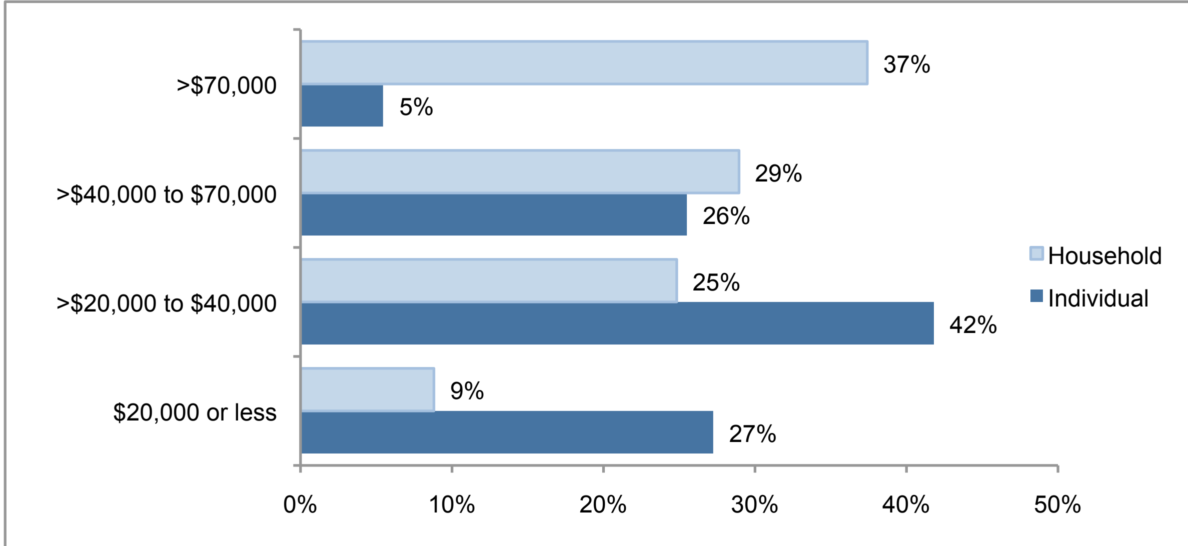


As expected, lifestage had a significant impact on income sources. Older people (ages 60 or over) were less likely to get income from salary/wages and more likely to get income from government or other superannuation and investments. People aged 30 to 44 years, and to a lesser extent those aged 15 to 29, were more likely than older people to receive government income support. Women were more likely than men to be receiving government income support and less likely to be self-employed or a business owner.

Over two-thirds of individual Māori earned $40,000 or less before tax and over half had an income of $30,000 or less (Figure 23). Age and gender differences were substantial – the proportion of the population with an income of $30,000 or less was 37% for men compared to 71% of women, and 65% for people aged 15 to 29 years, 42%for those aged 30 to 59 years and 70% for people aged 60 years or over.

In contrast, only a third of Māori had a total household income of $40,000 or less. Thirty-seven percent of people had a total household income over $70,000. These figures exclude the incomes of the 26% of people who did not know their own income or the household's total income or did not wish to respond. Household income includes the income for all adults who normally live in and who contribute to the household, but excludes the income of flatmates or boarders. The average number of income earners per household was two.

Figure 23: Total income before tax, for individuals and households



Māori were fairly evenly divided over their level of satisfaction with income, with 9% very satisfied, 45% satisfied, 37% dissatisfied and 9% very dissatisfied.

Thirty percent of the population had as yet made no financial provision for their old age. The most common provisions were regular savings (25%), kiwisaver (31%), super schemes (16%), and property investments (13%). Only a few people had other options such as insurance investments, business investments, or shares in stock market.

A majority of Māori had given some money to help others in the last four weeks, including:

- 58% to help whānau,
- 13% to a church,
- 9% to the marae,
- 17% to other Māori causes, and
- 40% to charity causes.

Contributions to the last family hui (tangi, unveiling, 21st, etc) were most commonly made by 'just giving what you could' (67%). However, some Māori had contributed by 'saving up for it' (11%) or 'borrowing from

friends/family' (6%). Few people had delayed payment of bills, taken out a loan from a bank or elsewhere or raised money through fundraising.

Economic standard of living

The questions in the 'Economic Standard of Living' section of the adult questionnaire were derived from the 'Economic Living Standard Index Short Form ($ELSI_{SF}$)[10], a standardised survey tool for measuring people's economic standard of living. Economic standard of living refers to the material aspect of wellbeing that is reflected in a person's consumption and personal possessions – their household durables, clothing, recreation, access to medical services, and so on.

The majority of Māori rated their material standard of living as medium or high:

- 16% rated their standard of living as very high and 24% as fairly high;
- 50% rated their standard of living as medium;
- 7% rated their standard of living as fairly low and 3% as low.

Similarly, the majority of Māori were satisfied with their current standard of living:

- 21% were very satisfied and 55% were satisfied with their current standard of living;
- 14% were neither satisfied nor dissatisfied ;
- 9% were dissatisfied and 1% were very dissatisfied.

Almost a fifth of Māori felt they did not have enough money from their total income (theirs and their partners) to meet everyday needs for such things as accommodation, food, clothing and other necessities:

- 18% said they did not have enough money for everyday needs;
- 30% said they had just enough;
- 38% had enough and 14% had more than enough money for everyday needs.

Māori aged between 15 and 44 were more likely to have a negative perception of their standard of living than Māori aged 45 or over. Of 15 to 44 year olds, 15% were dissatisfied with their standard of living, 13% rated it as low or fairly low and 21% said they did not have enough money for everyday needs. In contrast, the figures for older Māori were 3% dissatisfied, 1% rating their standard of living as low and 12% had not enough money.

For seven material items, survey participants were asked whether they had the item (or had access to it in their household), whether they would like the item if they didn't have it, and why they didn't have it (cost versus other reasons). Most people had the listed items:

- A washing machine 99%
- A good pair of shoes 97%
- A best outfit for special occasions 96%
- A telephone 90%
- Heating available in all rooms 89%
- A personal computer 71%

[10] Ministry of Social Development (2005) *ELSI Short Form: User Manual for a Direct Measure of Living Standards.*

- Home contents insurance 70%

As very few people did not have the first five items, the sample sizes were not sufficient to say whether these people would like the item and why they did not have it. However, overall for the first five items combined, two-thirds of people who did not have the item would have liked it and 72% of these did not have the item due to cost.

Of those people who did not have a personal computer, 64% would like one and, of these, 51% did not have one due to cost. For people who did not have home contents insurance, 49% would like it and, of these, 45% did not have it due to cost.

For seven social activities, Māori in the survey were asked whether they do or do not participate, and whether those who do not participate would like to do the activity and why they do not do it (cost versus other reasons). Participation was highest for activities related to family and friends such as having family/friends over for a meal or to stay and giving presents (Table 12). These things were also highly rated for 'would like to do' by people who did not currently do the activity. However, less than half the people who would have liked to do these activities did not do them do to cost.

Having an overseas holiday was the activity with the lowest participation rate. Three-quarters of people who did not holiday overseas would like to and most of these did not go due to cost. Almost two-thirds of people took holidays and, of those who didn't, most would like to but didn't due to cost.

Table 12: Social participation and restrictions

	% who do this activity	% who would like to (of those who don't do activity)	% who don't due to cost (of those who would like to)
Have enough room for family to stay the night	93%	80%	43%
Give presents to family/friends on special occasions	89%	74%	49%
Have family/friends over for a meal once a month	83%	69%	41%
Have holidays away from home every year	65%	88%	79%
Have a night out at least once a fortnight	57%	55%	46%
Visit the hairdresser once every three months	50%	32%	70%
Have a holiday overseas at least every three years	30%	76%	77%

Of a list of eight possible ways to keep down costs, the most common cost-cutting measures were to cut back on trips to the shops or other local places, to put off buying clothes, and to spend less on hobbies (Table 13). In general, women were more likely than men to have used these cost-cutting measures, and younger people were more likely than older people to have had to cut costs.

A third of Māori in the survey said they had postponed a visit to the doctor at some time over the last year, while one in five had not picked up a prescription. A quarter of the population had gone without fresh fruit and vegetables at some time over the last year, a quarter had continued wearing clothing that was worn out, and 13% had stayed in bed longer to save on heating costs.

Table 13: What have you done in the last 12 months to help keep down costs?

	A lot	A little	Not at all	Total
Done without or cut back on trips to the shops or other local places	31%	32%	37%	100%
Put off buying clothing for as long as possible	29%	29%	42%	100%
Spent less time on hobbies than you would like	21%	23%	55%	100%
Postponed or put off visits to the doctor	12%	20%	67%	100%
Continued wearing clothing that was worn out	15%	11%	74%	100%
Gone without fresh fruit and vegetables	8%	17%	75%	100%
NOT picked up a prescription	11%	9%	80%	100%
Stayed in bed longer to save on heating costs	4%	9%	87%	100%

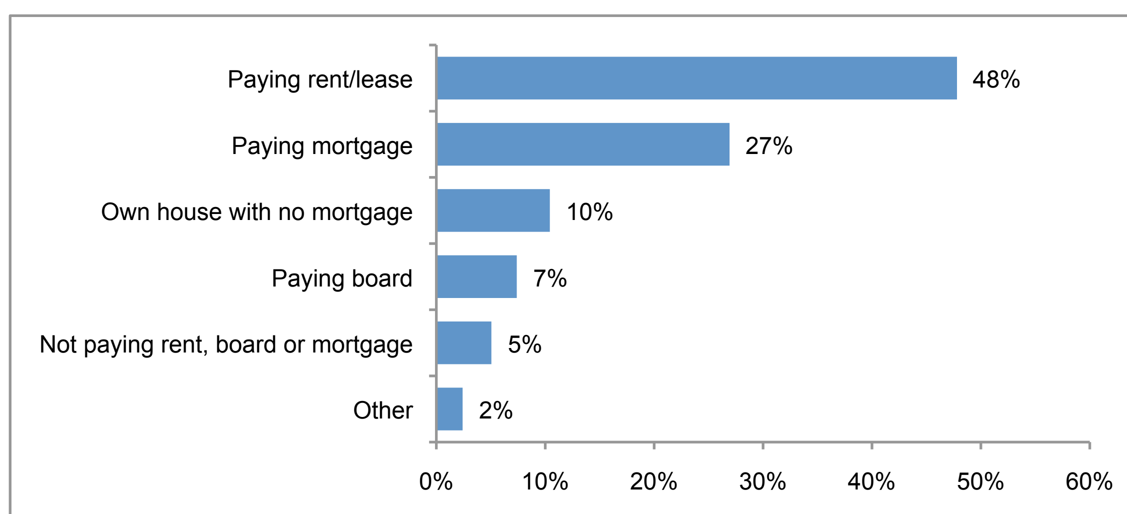
Housing

A fifth of the Māori had lived in their current house for less than a year, while 43% had lived there between one and five years and 37% had lived there for five years or more. Over a third of people aged 15 to 29 years had lived in their current house for less than a year, compared to quarter of 30 to 44 year olds and just 2% of people aged 45 or over.

Most people were satisfied with their current accommodation, including 35% who were very satisfied and 57% who were satisfied. Just 6% were dissatisfied and 3% were very dissatisfied.

Fifty-five percent the population were renting their house or paying board, while 37% lived in their own home, either owned freehold or with a mortgage (Figure 24). Just 8% of Māori aged 15 to 29 owned their home, compared to 46% of people aged 30 to 44 years and 59% of people aged 45 or over.

Figure 24: Housing tenure



Of those who did not already own their home, most people felt it was important to buy or own a house, including 45% who thought it 'very important' and 31% who thought it 'important'. Only 20% thought owning a house to be unimportant and 4% thought it very unimportant.

Half the people who did not already own their home had plans to buy a house. Those who had plans to buy a house were asked who they would approach first about buying a house. The most common response was family or whānau (44%), followed by banks (29%). A variety of reasons were given by people with no plans to buy a house, with age/lifestage (41%) and financial reasons (38%) being the most commonly cited.

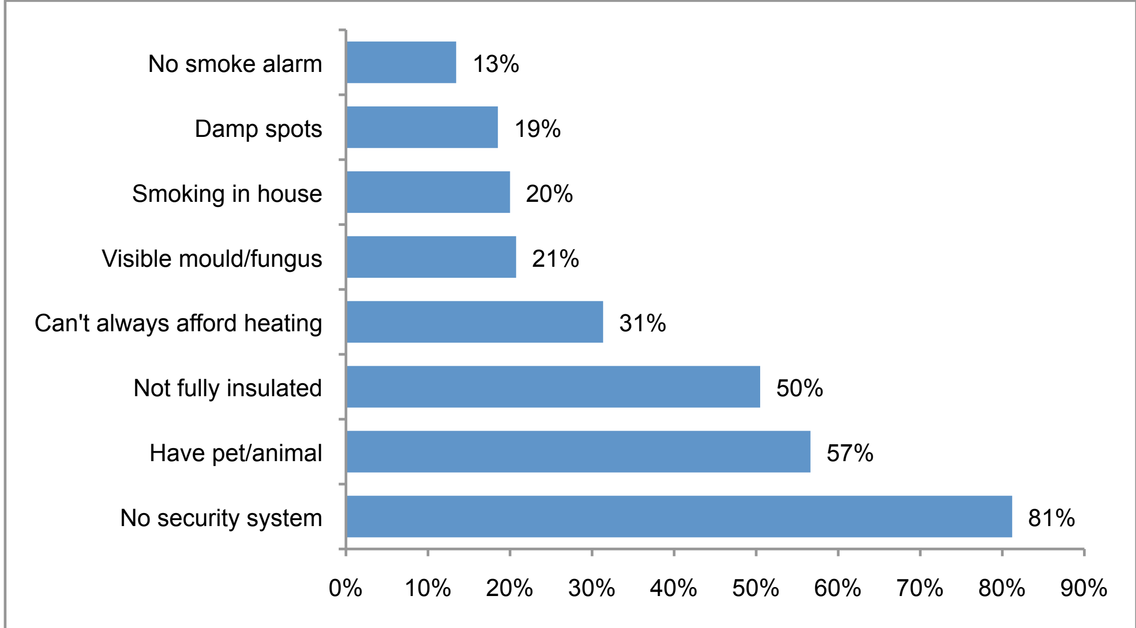
Most people felt that their housing situation would stay about the same (60%) or improve (39%) or over the next few years, with just 1% feeling it would deteriorate.

People who owned their home (with or without a mortgage) had a very high level of insurance uptake, with 100% having house insurance and 96% having contents insurance. Six in ten mortgage holders had mortgage repayment insurance. Half of renters (and others who did not own their home) had contents insurance.

There were significant issues related to health and safety of the home environment (Figure 25):

- most households had a smoke alarm, but one in eight households did not;
- half of houses were not fully insulated and 16% were not insulated at all;
- a fifth of houses had problems with damp or mould;
- a fifth of houses had someone who smoked inside;
- almost a third of households said affording heating was not always possible, with half of this group saying they could mostly afford heating and the other half saying they could not afford it or could only sometimes afford it;
- more than half of households had pets, most of which were furry animals such as dogs and cats;
- most houses did not have a security system.

Figure 25: Home health and safety issues



Other housing features were:

- two-thirds of Māori households had a kai/vegetable garden;

- two-thirds had the internet;
- thirty-seven percent had an air-conditioner or heat pump.

Part 2: Results for Māori Children

7 Children's experience of culture and Te Reo Māori

Summary of Results

A parent or principal caregiver answered questions on behalf of the 135 Māori children in the sample. The percentages shown below were weighted to be representative of the Māori population aged less than 15 years of the Nelson-Marlborough region.

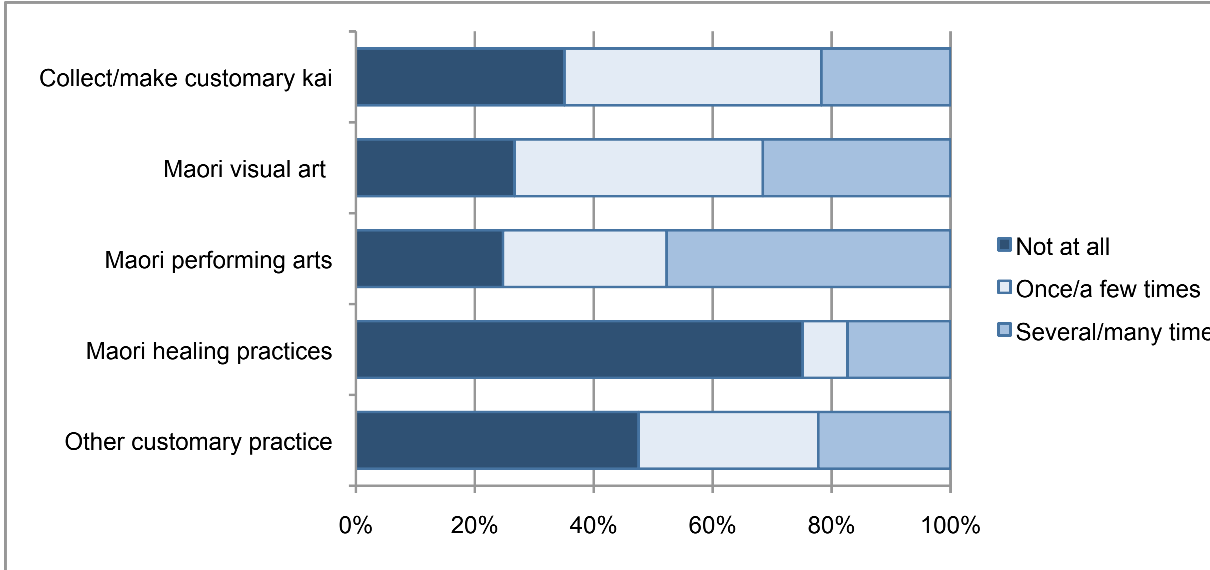
- Most Māori children had participated in some type of cultural activity or practice over the preceding year, especially in the visual and performing arts and in the collection or preparation of Māori kai.
- Four out of five Māori children had been actively learning te reo Māori. Almost all school-aged children could understand at least basic greetings and more than half could understand at least basic orders/instructions.

Cultural participation

Most Māori children had participated in some type of cultural activity or practice over the preceding year, especially in the visual and performing arts and in the collection or preparation of Māori kai (Figure 26). Around three-quarters of children had participated in visual arts (such as painting or weaving) and performing arts (such as waiata or kapa haka), while two-thirds had collected or prepared kai. Participation was particularly high for school-aged children, with around 90% participation in the arts and 80% participation in kai collection or preparation.

A quarter of the children had participated in traditional healing and half had participated in some other type of customary practice, such as attending a tangi or hui.

Figure 26: Children's participation in cultural practices over the last 12 months



Te Reo Māori

Four out of five Māori children had been actively learning Māori language over the past 12 months.

The child's understanding of te reo Māori varied by age (Table 14). Almost all school-aged children could understand at least basic greetings and more than half could understand basic orders or instructions. Four in ten children aged 10 to 14 years could understand at least simple everyday exchanges.

Table 14: Children's understanding of te reo Māori, by age group

Child's understanding of te reo Māori	0 to 4 years	5 to 9 years	10 to 14 years
Too young for reliable response	13%	0%	0%
Cannot understand any Māori at all	25%	4%	0%
Can understand basic greetings	34%	42%	42%
Can understand basic orders/instructions	25%	29%	16%
Can understand simple everyday exchanges	3%	23%	35%
Can understand more complex conversations	0%	2%	7%
Total	100%	100%	100%

8 Children's health

Summary of Results

A parent or principal caregiver answered questions on behalf of the 135 Māori children in the sample. The percentages shown below were weighted to be representative of the Māori population aged less than 15 years of the Nelson-Marlborough region.

- Only 8% of boys were not involved in either team or individual sport, compared to 34% of girls.
- Whereas 97% of children aged less than 10 years had had breakfast every day of the preceding week, this was true for only 74% of 10 to 14 year olds.
- 16% of children had a disability, 21% had a medical condition that required medication and 20% had another health-related condition. Asthma and eczema accounted for the majority of medicated and other health conditions. Disabilities were mainly hearing/speech, learning/behavioural or physical disabilities.
- Almost all school-aged children (96%) had seen a dentist in the last 12 months, compared to 43% of children aged less than five years.
- Estimated immunisation rates were 86% for whooping cough, 83% for measles and 71% for tuberculosis. Nine percent of children had had none of these immunisations. [These estimates exclude the 6% of children for whom the parent/caregiver was unsure of immunisation status.] The percentage of children who had ever had these diseases was 12% for whooping cough and 8% for measles.
- Fifteen percent of babies were born more than three weeks before the calculated birth date. Most babies (89%) were breast-fed and, of these, 46% were breast-fed for at least six months and 31% were breast-fed with no other foods for at least five months.
- During their first year of life, the majority of children shared a bedroom with other people, had pets in the house, had contact with animals outside the house, and lived in a house at least partly heated by wood. A quarter of parents/caregivers had made changes in the home because their child had asthma or allergic problems.
- 67% of mothers currently smoke, 58% smoked during the first year of the child's life, 53% smoked during pregnancy.

Activity and nutrition

Parents/caregivers were asked whether their child had they been actively involved in an individual sport or a team sport in the preceding month. The 31% of children whom the parents considered too young to be involved were excluded from the analysis. Of the rest, 58% had been actively involved in an individual sport, 72% had played a team sport in the preceding month and 22% had been involved with neither type of sport. The most common individual sports were swimming, biking, dance and gymnastics, while the most commonly played team sports were rugby & netball.

More boys than girls were involved in sport: 69% of boys were involved in an individual sport and 86% in a team sport, compared to 44% and 55% respectively for girls. Only 8% of boys were not involved in either type of sport, compared to 34% of girls.

Ninety percent of children had had something to eat for breakfast on each of the seven preceding days. Whereas 97% of children aged less than 10 years had had breakfast every day, this was true for only 74% of 10 to 14 year olds. Of the 10 to 14 year olds, 11% had had breakfast on 4-6 days of the preceding week, 8% had had breakfast on 1-3 days and 7% had had breakfast on none of the days.

Health status

Parents/caregivers reported that 16% of children had a major or minor disability, 21% had a medical condition that required medication, and 20% had another health related condition. The disabilities mainly related to hearing/speech, learning/behavioural or physical disabilities. Almost half of the children with medicated conditions and a fifth of those with other health conditions had asthma. Half of the children with other health conditions and a fifth of those with medicated conditions had eczema.

When asked: 'Over the past 12 months, have you been able to get treatment for your child when you needed it?', most parents replied that they could always (79%) or usually (18%) get treatment, with just 2% saying they could only sometimes get treatment.

Twenty-seven percent of children were currently involved in or enrolled in a Māori health programme. Fourteen percent of children were covered by health insurance.

Almost all school-aged children (96%) had seen a dentist in the last 12 months, compared to 43% of children aged less than five years.

Early childhood and immunisations

At birth, most children weighed 2.5 to 3.5kg (48%) or more than 3.5kg (44%), with just 8% weighing under 2.5kg (excluding the 10% of children for whom the parent did not know birth weight).

Fifteen percent of babies were born more than three weeks before the calculated birth date, 84% were born within three weeks of the due date and just one child was born more than three weeks late. Seven percent of children were twins.

Most babies (89%) were breast-fed and, of these, 54% were breast-fed for less than six months, 28% for 6 to 12 months and 17% for more than a year. Of breast-fed babies, 27% were breast-fed (with no other foods or juices) for less than two months, 43% for 2 to 4 months, 24% for 5 to 6 months and 7% for more than six months.

Parents/caregivers were asked whether their child had been immunised for pertussis (whooping cough), measles and tuberculosis. Nine percent of children had had none of these immunisations and 6% of parents/caregivers were unsure of immunisation status. Excluding the 'unsure' group, estimated immunisation rates were 86% for pertussis (whooping cough), 83% for measles and 71% for tuberculosis.

The percentage of children who had ever had these diseases was 12% of whooping cough, 8% for measles and 1% for tuberculosis, with 84% of children never having had any of these diseases.

Home environment

Parents/caregivers were asked a range of questions about their child's home environment, both at the present time and during the child's first year of life. Their responses indicated that:

- 57% of children share a bedroom with other people (adults or children) at present and 76% shared a room during their first year;
- 56% of children currently live in a home with a pet that lives inside (28% have a dog, 39% a cat, and 11% have other types of pet), while 70% of children lived in a home with a pet in their first year (37% had a dog, 41% had a cat, and 18% had other types of pet);
- 66% of children have or had at least once a week contact with animals outside their home, both now and during their first year (39% with a dog, 37% with a cat, 30% with farm animals, 11% with other animals);
- 67% of mothers currently smoke, 58% smoked during the first year of the child's life, 53% smoked during pregnancy and 27% did not smoke at any of these times.
- At present, 54% of homes are heated at least partly by wood, 53% by electricity and 18% by LPG. During the child's first year, home heating was most often by wood (54%), electricity (35%) or LPG (12%).
- Most children have fitted carpets in their bedroom (87% currently and 71% during the first year), with bare floors being the next most common option (12% and 22% respectively);
- Most children currently have a synthetic pillow (67%) or foam pillow (20%), whereas most children (63%) did not have a pillow during their first year. Most children currently have a synthetic quilt (59%) or blankets (45%) as bedding. Blankets (66%) and synthetic quilts (37%) were the most common options during the first year of the child's life.
- Both currently and during the first year, most children lived in suburban areas, either with few parks and gardens (46%) or with many parks and gardens (41%). A further 6% lived in predominantly rural areas, while 6% lived in urban areas with no parks and gardens.

A quarter of parents/caregivers had made changes in the home because their child had asthma or allergic problems. The most common changes made were to cleaning (switching washing powders, vacuuming more), changes to diet (especially in relation to milk), changes to bedding or floor coverings, and removal of pets.

9 Children's education

Summary of Results

A parent or principal caregiver answered questions on behalf of the 135 Māori children in the sample. The percentages shown below were weighted to be representative of the Māori population aged less than 15 years of the Nelson-Marlborough region.

- Almost all Māori children (94%) had attended a pre-school and 22% had attended a kohanga reo.
- Most school-aged children had attended state primary and secondary schools, and one in five had attended a bilingual class in a state primary school.
- About a third of parents wanted their child to be educated in a Māori or bilingual environment.

Pre-school education

Almost all school-aged Māori children (94%) had attended one or more types of pre-school. Most commonly, children had attended a kindergarten (51%). Twenty-two percent had attended a kohanga reo and 33% had attended some other type of preschool, such as a crèche, daycare centre, playcentre or other preschool.

When parents or caregivers were asked what pre-school education they would wish their child to have (or have had), the preferences were roughly evenly divided between kohanga reo (31%), kindergarten (30%) and other pre-school options (39%).

School education

Most school-aged Māori children either currently attended or had attended a state-primary school (66%) or a bilingual class in a state primary school (21%). Very few had attended other types of primary school, such as kura kaupapa (one child), private primary school (two children) or Catholic school (two children). Of the children who had had some secondary schooling, all had attended a state secondary school.

When parents or caregivers were asked what primary school education they would wish their child to have (or have had), most preferred a state primary school (41%) or a bilingual class in a state primary school (34%), with 10% preferring kura kaupapa Māori, 11% a private school and 3% home-schooling.

The preferences for secondary education were: state secondary school (53%), bilingual class in a state secondary school (18%), private secondary school (15%), Māori boarding school (7%), whare kura (5%) and other school/home-school (2%).