Primary care in advanced age: *Findings from LiLACS NZ*

Te Puāwaitanga O Ngā Tapuwae Kia Ora Tonu

This report describes use of a wide range of primary health care professionals and services by people in advanced age, by sex and ethnic group.

The findings are from a population-based sample of Māori (aged 80 to 90 years) and non-Māori (aged 85 years), living in the Bay of Plenty, who are taking part in a longitudinal study of advanced ageing, called Life and Living in Advanced Age: a Cohort Study in New Zealand - Te Puāwaitanga O Ngā Tapuwae Kia Ora Tonu (LiLACS NZ).

For data tables about primary care in advanced age and the LiLACS NZ sample, see the Appendix. For details on methodology, recruitment, and data presented in this report that do not feature in the appendix, see https://www.fmhs.auckland.ac.nz/en/faculty/lilacs.html and published articles.[1, 2]

Key findings

The GP and pharmacist were the primary health care professionals seen by most people in advanced age. Nearly all participants had seen a GP at some time in the last 12 months.

Fewer Māori in advanced age reported that the doctor was excellent or very good at putting them at ease during their physical examination than did non-Māori.

Visits to a GP or an optometrist varied by level of socioeconomic deprivation.

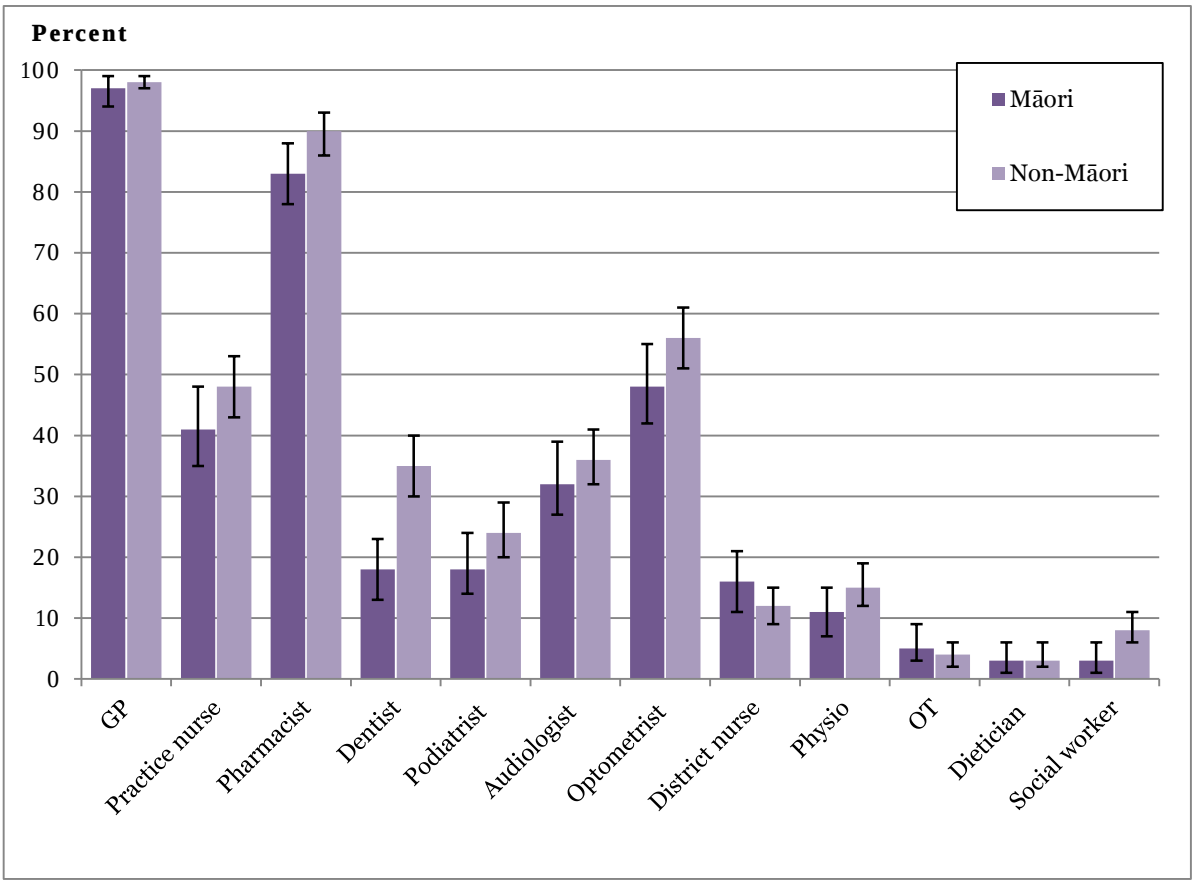
This report presents key findings about the use of a wide range of primary health care professionals and services by people in advanced age. It also explores whether there were differences in primary health care use between Māori and non-Māori, living within two different district health board areas.

Findings

The GP was the primary health care professional seen by most people in advanced age

Nearly all participants had seen a GP at some time in the last 12 months (98%). Over 87% had seen a pharmacist, 46% a practice nurse and 53%, an optometrist.

Figure 1: Primary care visits in the last 12 months in advanced age, by ethnic group



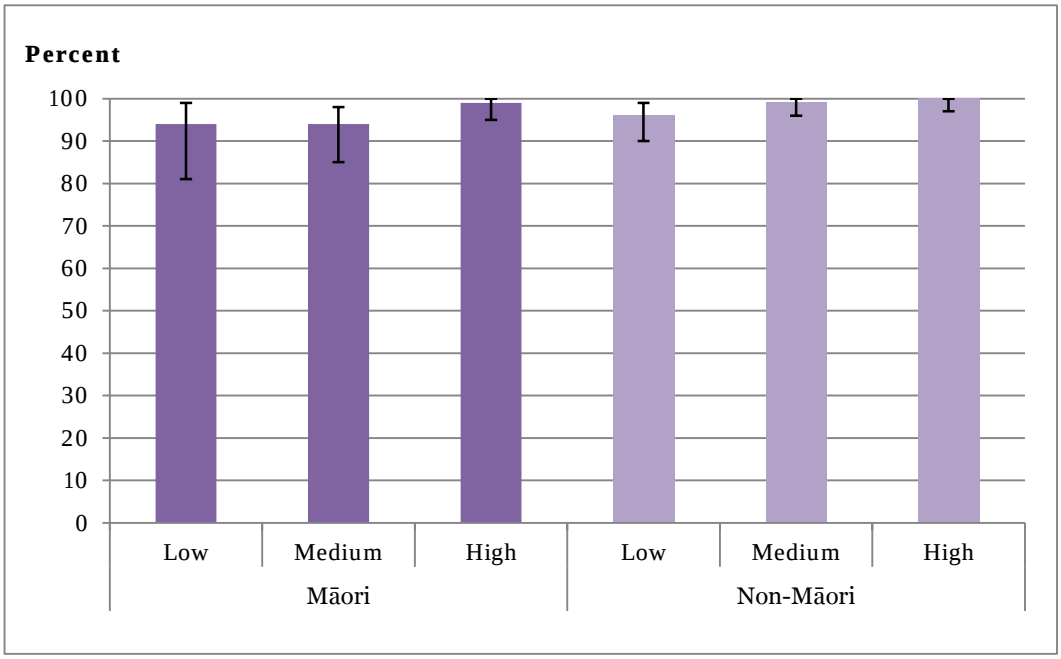
Source: LiLACS NZ

People in the most socioeconomically deprived areas were more likely to visit the GP

GP visits varied by the socioeconomic deprivation of the area in which people lived. More people in the most socioeconomically deprived areas visited the GP (99%) than those in the least deprived areas (96%) (Appendix Table A-4).

More women in the most socioeconomically deprived areas (99%) visited the GP than women in the least socioeconomically deprived areas (95%).

Figure 2: GP visits in the last 12 months in advanced age, by deprivation and ethnic group



Source: LiLACS NZ

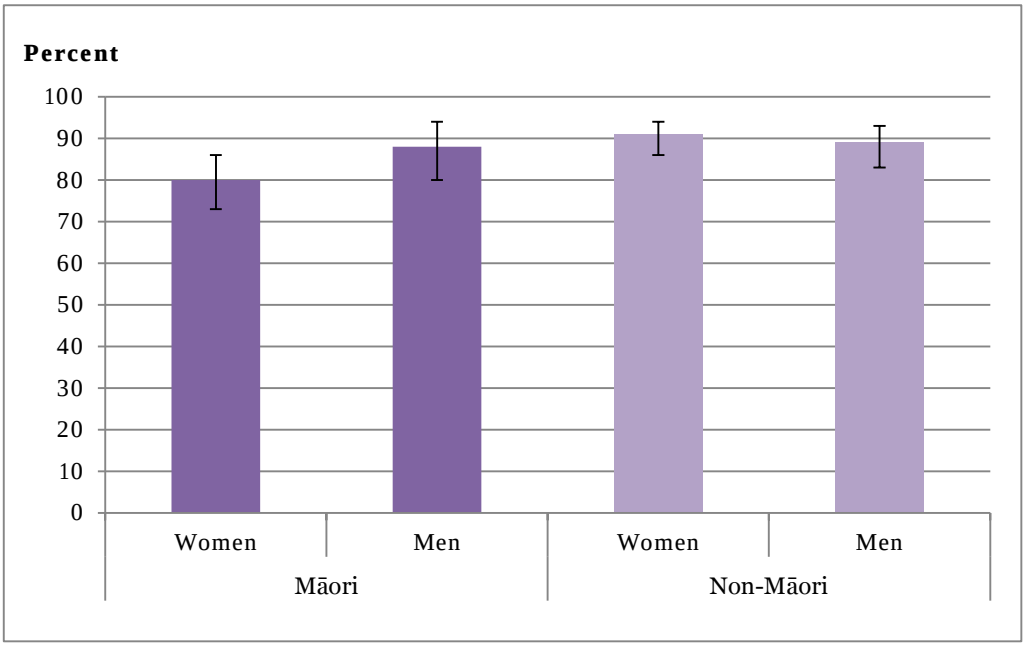
Note: This report uses prioritised ethnicity; self-identification as Māori was prioritised over other ethnicities if more than one was given. The deciles in the New Zealand Deprivation Index (NZDep2006[3]) were used to define the level of socioeconomic deprivation in participants' neighbourhoods as 'Low' (Decile 1-4), 'Medium' (Decile 5-7) or 'High' (Decile 8-10). The higher the decile, the greater the level of deprivation in the neighbourhood

Pharmacist services were used by 87% of participants

Fewer Maori (83%) visited a pharmacist than non-Māori (90%), adjusting for age and sex. Fewer Māori women (80%) visited a pharmacist than non-Māori women (91%).

There were no significant differences in visits to the pharmacist by socioeconomic deprivation (Appendix Table A-5).

Figure 3: Pharmacist visits in the last 12 months in advanced age, by sex and ethnic group

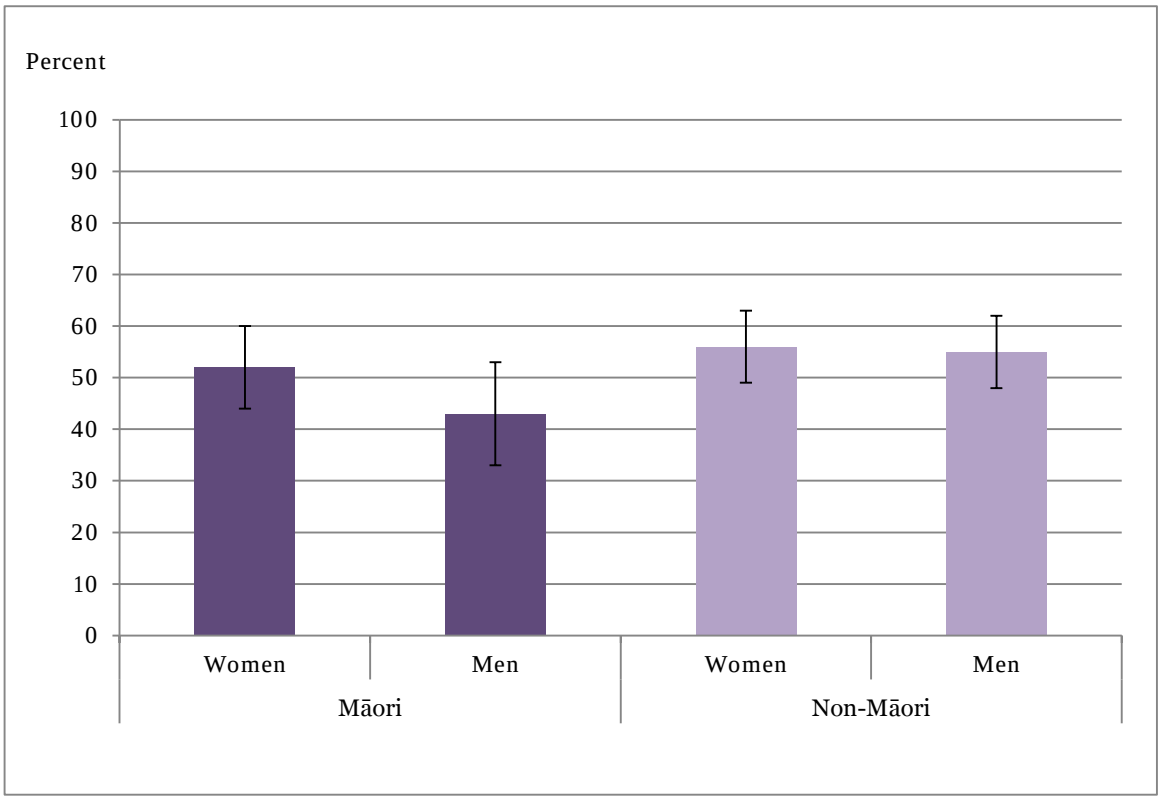


Source: LiLACS NZ

Optometrist services were used by 53% of participants

More non-Māori (56%) had seen the optometrist than Māori (48%), after adjusting for age, sex, and socioeconomic deprivation (Figure 4).

Figure 4: Optometrist visits in the last 12 months in advanced age, by sex and ethnic group



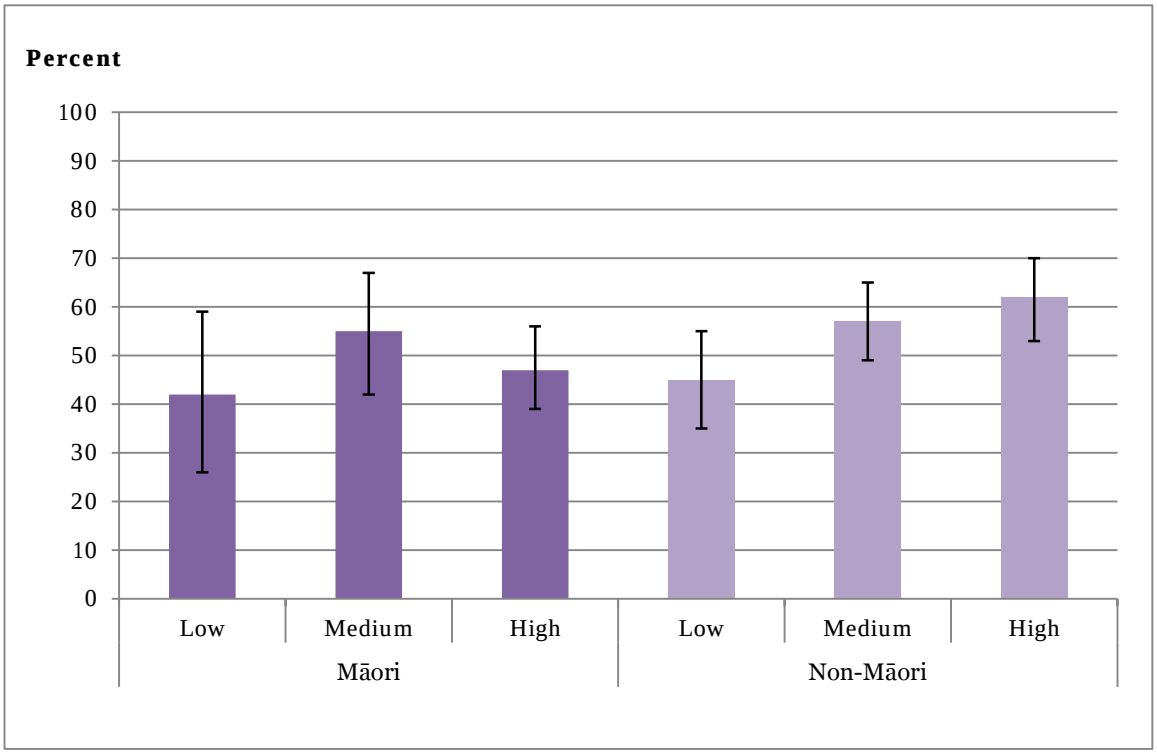
Source: LiLACS NZ

Visits to an optometrist varied by level of socioeconomic deprivation

More people in the most socioeconomically deprived areas (54%) visited the optometrist than those living in the least socioeconomically deprived areas (44%) adjusting for age, sex and ethnic group (Appendix Table A-6).

More non-Māori (62%) in the most socioeconomically deprived areas visited an optometrist than non-Māori in the least deprived areas (45%), adjusting for age and sex.

Figure 5: Optometrist visits in the last 12 months in advanced age, by ethnic group and socioeconomic deprivation

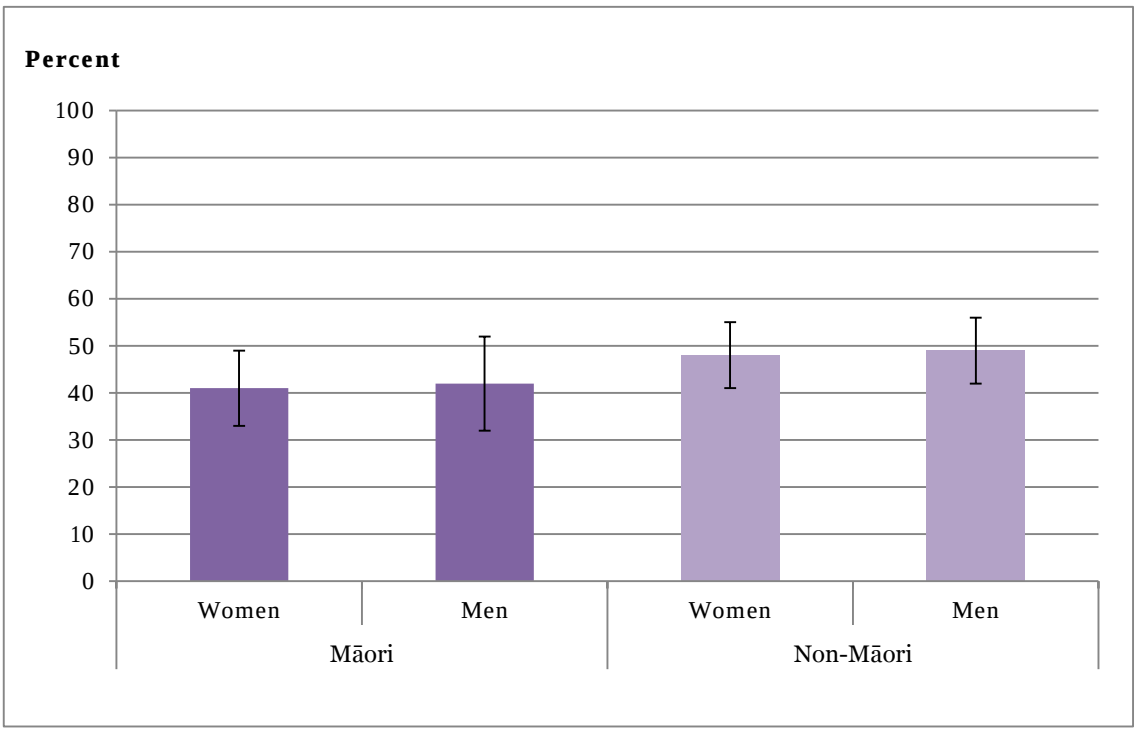


Source: LiLACS NZ

The Practice Nurse had been visited by 46% of participants

Forty one percent of Māori and 48% of non-Māori visited the practice nurse. Visits to the practice nurse did not vary by sex, ethnic group, or socioeconomic deprivation. (Appendix Table A-7)

Figure 6: Practice nurse visits in the last 12 months in advanced age, by sex and ethnic group



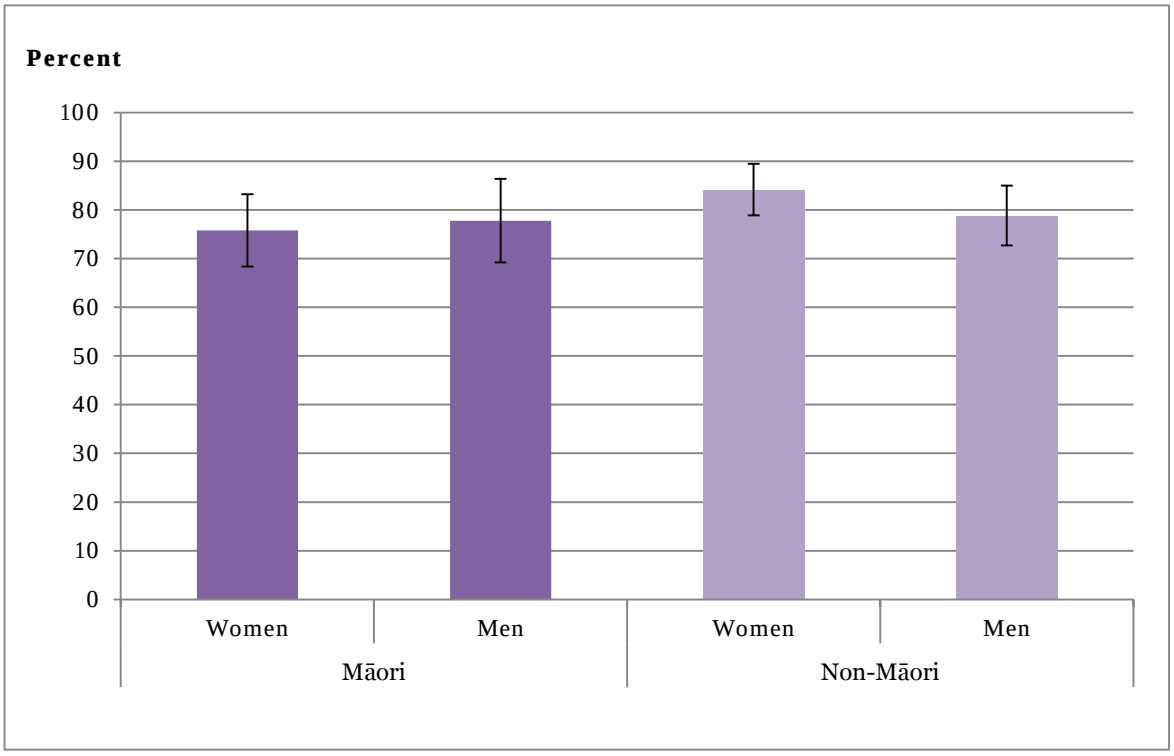
Source: LiLACS NZ

Māori felt less at ease during physical examinations than did non-Māori

Fewer Māori (77%) in advanced age reported that the doctor was excellent or very good at putting them at ease during their physical examination than did non-Māori (82%), adjusting for age and sex (Figure 7).

More non-Māori women (84%) reported that the doctor was excellent or very good at putting them at ease during their physical examination than Māori women (76%)

Figure 7: Put at ease during physical examination by a GP in advanced age, by ethnic group and sex.



Source: LiLACS NZ

More Māori men (78%) reported that they had sufficient time with the doctor than non-Māori men (63%).

Reported satisfaction with their GP's care and concern did not vary according to the socioeconomic deprivation of the area in which participants lived.

What is the source of the data?

The source of the data is Life and Living in Advanced Age: a Cohort Study in New Zealand—Te Puāwaitanga O Ngā Tapuwae Kia Ora Tonu (LiLACS NZ). Data were gathered in face-to-face, standardised interviews with Māori aged 80-90 and non-Māori aged 85 at home. Nursing assessments of physical function and cardiorespiratory health were also completed.

The LiLACS NZ sample lives within the boundaries of the Bay of Plenty and Lakes District Health Boards, excluding the Taupo region of Lakes DHB. The participants were first interviewed and assessed in 2010 (the 'first wave' of data collection). This is a longitudinal study with annual data collection, subject to mortality and participant retention.

This report is based on data from Wave 1 about primary health care services used by participants, and on data from Wave 2 about perceptions of their GP care.

What were the survey questions?

Participants were asked, 'In the last year have you visited or had a visit from any of the following health professionals?' and they could choose as many as were relevant from the following list: general practitioner, practice nurse, pharmacist, optometrist.

Further information

You can find more information about the LiLACS NZ study on the website (https://www.fmhs.auckland.ac.nz/en/faculty/lilacs.html) and see also Hayman et al (2012)[1] for the study protocol and Dyall et al (2013)[2] for the recruitment detail.

Refer to the LiLACS NZ short report series for additional findings on GP satisfaction (*Medication use in advanced age)* or dentist use (*Oral health in advanced age).*

References

1. Hayman K, Kerse N, Dyall L, et al. 2012. Life and living in advanced age: A cohort study in New Zealand, *Te Puāwaitanga O Ngā Tapuwae Kia Ora Tonu* – LILACS NZ: Study protocol. *BMC Geriatrics* 12(June). DOI: 10.1186/1471-2318-12-33 (accessed 18 March 2014).

2. Dyall L, Kepa M, Hayman K, et al. 2013. Engagement and recruitment of Māori and non-Māori people of advanced age to LiLACS NZ. *Australian & New Zealand Journal of Public Health* 37(2): 124-31.

3. Salmond C, Crampton P, Atkinson J. 2007. *NZDep2006 Index of Deprivation User's Manual.* Wellington: Department of Public Health, University of Otago.

LiLACS NZ – at a glance

Sample: 932 people of advanced age; Māori aged 80–90 years and non-Māori aged 85 years living in the Bay of Plenty and Lakes District Health Boards region. Non-Māori are 90% NZ European, 9% other European and 1% other. Participant numbers vary slightly according to topic being discussed.

Mode: Standardised home-based interview and standardised nursing assessment, repeated annually. Hospitalisation and mortality outcomes data were obtained, with permission, by matching the NHI with nationally held hospitalisation data from the Ministry of Health.

Timing: Results refer to the population sample recruited in the first and second waves of data gathering in 2010 and 2011.

Funding: LiLACS NZ was originally funded by a programme grant from the Health Research Council of New Zealand. Ngā Pae o te Māramatanga, Heart Foundation NZ, Oakley Mental Health Foundation, Auckland Medical Research Foundation, the Faculty of Medical and Health Sciences also provided project support. The University of Auckland, the Rotorua Energy Trust and the Ministry of Health have funded LiLACS NZ from 2013.

Representation: The study is strengthened by the extensive breath of domains investigated and is designed to engage with a full cohort of Māori allowing equal explanatory power for separate analyses. The findings for Māori and non-Māori may not be generalizable beyond the Bay of Plenty region. However, the overall response rate in the first wave is consistent with other longitudinal studies of ageing; 56% of all Māori and 59% of all non-Māori who were invited participated. In gender and age the sample engaged was similar in proportion to the population of the area and the population of New Zealand. Although all age-eligible older adults were sought and invited, lower enrolments than expected from residential care facilities limits separate analyses of frailer participants.

For more information, see the LiLACS NZ webpage: https://www.fmhs.auckland.ac.nz/en/faculty/lilacs.html and other Ministry of Health short reports.

Appendix: Detailed data tables

The following tables provide detailed data for the key indicators presented in this report. The tables present the prevalence and number of people by sex and ethnic group and 95% confidence intervals for all estimates. Generalised linear models were used for analysis of potentially significant predictors of outcomes and controlled for age, sex and ethnic group.

Table A-1: Number of participants who answered the questions

	Māori		Non-Māori	
	Men	Women	Men	Women
In the last year have you visited or had a visit from any of the following health professionals: General practitioner	101	155	188	211
In the last year have you visited or had a visit from any of the following health professionals: Pharmacist	101	155	188	211
In the last year have you visited or had a visit from any of the following health professionals: Optometrist	101	155	188	211
In the last year have you visited or had a visit from any of the following health professionals: Practice Nurse	101	155	188	211

Table A-2: Primary health care services used in the last 12 months by men

	Men					
	Māori			Non-Māori		
	n	(%)	(95% CI)	n	(%)	(95% CI)
General practitioner	98	97	(92 - 99)	184	98	(95 - 99)
Pharmacist	89	88	(80 - 94)	167	89	(83 - 93)
Optometrist	43	43	(33 - 53)	103	55	(47 - 62)
Practice nurse	42	42	(32 - 52)	92	49	(42 - 56)

Table A-3: Primary health care services used in the last 12 months by women

	Women					
	Māori			Non-Māori		
	n	(%)	(95% CI)	n	(%)	(95% CI)
General practitioner	150	97	(93 - 99)	209	99	(97 - 100)
Pharmacist	124	80	(73 - 86)	191	91	(86 - 94)
Optometrist	81	52	(44 - 60)	119	56	(49 - 63)
Practice nurse	64	41	(33 - 49)	101	48	(41 - 55)

Table A-4: Visited GP

Group of interest	Reference group	Adjusted Odds Ratio (95% CI)	Significant (*)	Adjustment variables
Men	Women	0.78 (0.27 - 2.26)	ns	Age
Māori	Non-Māori	0.35 (0.11 - 1.06)	ns	Age, sex
Māori	Non-Māori	0.25 (0.08 - 0.78)	*	Age, sex, decile
Māori men	Non-Māori men	0.46 (0.10 - 2.20)	ns	Age
Māori women	Non-Māori women	0.24 (0.04 - 1.36)	ns	Age
Most deprived areas	Least deprived areas	8.60 (1.64 - 45.27)	*	Age, sex, ethnic group
Most deprived areas - men	Least deprived areas - men	4.61 (0.38 - 55.90)	ns	Age, ethnic group
Most deprived areas - women	Least deprived areas - women	13.24 (1.38 - 127.29)	*	Age, ethnic group
Most deprived areas - Māori	Least deprived areas - Māori	3.93 (0.52 - 30.04)	ns	Age, sex
Most deprived areas - Non-Māori	Least deprived areas - Non-Māori	--	--	Age, sex

*Significant odds ratio for comparison of group of interest to the reference group. ns = no significant difference

Table A-5: Visited Pharmacist

Group of interest	Reference group	Adjusted Odds Ratio (95% CI)	Significant (*)	Adjustment variables
Men	Women	1.26 (0.79 - 2.01)	ns	Age
Māori	Non-Māori	0.47 (0.28 - 0.79)	*	Age, sex
Māori	Non-Māori	0.50 (0.30 - 0.86)	*	Age, sex, decile
Māori men	Non-Māori men	1.12 (0.39 - 3.22)	ns	Age
Māori women	Non-Māori women	0.32 (0.17 - 0.62)	*	Age
Most deprived areas	Least deprived areas	1.28 (0.72 - 2.29)	ns	Age, sex, ethnic group
Most deprived areas - men	Least deprived areas - men	1.11 (0.43 - 2.88)	ns	Age, ethnic group
Most deprived areas - women	Least deprived areas - women	1.44 (0.69 - 3.01)	ns	Age, ethnic group
Most deprived areas - Māori	Least deprived areas - Māori	0.73 (0.27 - 1.96)	ns	Age, ethnic group
Most deprived areas - Non-Māori	Least deprived areas - Non-Māori	1.87 (0.86 - 4.08)	ns	Age, sex

*Significant odds ratio for comparison of group of interest to the reference group. ns = no significant difference

Table A-6: Visited Optometrist

Group of interest	Reference group	Adjusted Odds Ratio (95% CI)	Significant (*)	Adjustment variables
Men	Women	0.85 (0.62 - 1.16)	ns	Age
Māori	Non-Māori	0.70 (0.48 - 1.03)	ns	Age, sex
Māori	Non-Māori	0.68 (0.46 - 1.00)	*	Age, sex, decile
Māori men	Non-Māori men	0.58 (0.31 - 1.09)	ns	Age
Māori women	Non-Māori women	0.80 (0.49 - 1.29)	ns	Age
Most deprived areas	Least deprived areas	1.64 (1.07 - 2.52)	*	Age, sex, ethnic group
Most deprived areas - men	Least deprived areas - men	1.63 (0.85 - 3.16)	ns	Age, ethnic group
Most deprived areas - women	Least deprived areas - women	1.65 (0.94 - 2.89)	ns	Age, ethnic group
Most deprived areas - Māori	Least deprived areas - Māori	1.27 (0.60 - 2.68)	ns	Age, sex
Most deprived areas - Non-Māori	Least deprived areas - Non-Māori	1.98 (1.17 - 3.37)	*	Age, sex

*Significant odds ratio for comparison of group of interest to the reference group. ns = no significant difference

Table A-7: Visited Practice Nurse

Group of interest	Reference group	Adjusted Odds Ratio (95% CI)	Significant (*)	Adjustment variables
Men	Women	1.06 (0.77 - 1.44)	ns	Age
Māori	Non-Māori	0.72 (0.49 - 1.06)	ns	Age, sex
Māori	Non-Māori	0.72 (0.49 - 1.07)	ns	Age, sex, decile
Māori men	Non-Māori men	0.64 (0.33 - 1.21)	ns	Age
Māori women	Non-Māori women	0.77 (0.47 - 1.25)	ns	Age
Most deprived areas	Least deprived areas	1.30 (0.85 - 1.99)	ns	Age, sex, ethnic group
Most deprived areas - men	Least deprived areas - men	0.98 (0.51 - 1.88)	ns	Age, ethnic group
Most deprived areas - women	Least deprived areas - women	1.60 (0.91 - 2.83)	ns	Age, ethnic group
Most deprived areas - Māori	Least deprived areas - Māori	1.69 (0.77 - 3.71)	ns	Age, sex
Most deprived areas - Non-Māori	Least deprived areas - Non-Māori	1.19 (0.70 - 2.01)	ns	Age, sex

*Significant odds ratio for comparison of group of interest to the reference group. ns = no significant difference

Table A-8: Views of the GP from men

	Men					
	Māori			Non-Māori		
	n	(%)	(95% CI)	n	(%)	(95% CI)
Importance of seeing the same GP every time there is a health problem						
Not important at all/Not very important	23	25%	(17–35)	62	35%	(28–43)
Quite important	39	42%	(32–53)	58	33%	(26–41)
Very important	30	33%	(23–43)	55	31%	(25–39)
Doctor puts patient at ease during physical examinations						
Very poor/poor/fair	3	3%	(1–9)	4	2%	(1–6)
Good	17	19%	(11–29)	32	19%	(13–26)
Very good/Excellent	70	78%	(68–86)	134	79%	(72–85)
Amount of time the doctor spends with patient						
Very poor/poor/fair	3	3%	(1–9)	7	4%	(2–8)
Good	17	19%	(11–28)	56	33%	(26–40)
Very good/Excellent	71	78%	(68–86)	109	63%	(56–71)

Table A-9: Views of the GP from women

	Women					
	Māori			Non-Māori		
	n	(%)	(95% CI)	n	(%)	(95% CI)
Importance of seeing the same GP every time there is a health problem						
Not important at all/Not very important	33	25%	(18–33)	51	27%	(20–33)
Quite important	50	38%	(30–47)	68	35%	(29–43)
Very important	49	37%	(29–46)	73	38%	(31–45)
Doctor puts patient at ease during physical examinations						
Very poor/poor/fair	1	1%	(0–4)	6	3%	(1–7)
Good	30	23%	(16–32)	23	13%	(8–18)
Very good/Excellent	97	76%	(67–83)	154	84%	(78–89)
Amount of time the doctor spends with patient						
Very poor/poor/fair	3	2%	(0–7)	11	6%	(3–10)
Good	30	23%	(16–31)	45	24%	(18–31)
Very good/Excellent	98	75%	(66–82)	133	70%	(63–77)

Table A-10: Views of the GP

Group of interest	Reference group	Adjusted Odds Ratio (95% CI)	Significant (*)	Adjustment variables
Doctor puts patient at ease during physical examinations - very good or excellent				
Men	Women	0.87 (0.58 - 1.32_	ns	Age
Māori	Non-Māori	0.61 (0.38 - 0.98)	*	Age, sex
Māori men	Non-Māori men	0.91 (0.43 - 1.94)	ns	Age
Māori women	Non-Māori women	0.45 (0.24 - 0.85)	*	Age
Most deprived areas	Least deprived areas	0.80 (0.46 - 1.39)	ns	Age, sex, ethnic group
Amount of time the doctor spends with patient - very good or excellent				
Men	Women	0.83 (0.58 - 1.19)	ns	Age
Māori	Non-Māori	1.43 (0.91 - 2.24)	ns	Age, sex
Māori men	Non-Māori men	2.37 (1.09 - 5.11)	*	Age
Māori women	Non-Māori women	1.02 (0.57 - 1.82)	ns	Age
Most deprived areas	Least deprived areas	1.14 (0.71 - 1.84)	ns	Age, sex, ethnic group

*Significant odds ratio for comparison of group of interest to the reference group. ns = no significant difference

LiLACS NZ background and sample

LiLACS NZ is a programme of research that is based on a longitudinal cohort study of New Zealanders in advanced age. In 2010, LiLACS NZ invited all Māori aged 80-90 years and all non-Māori aged 85 years within the Bay of Plenty and Lakes District Health Board regions (excluding Taupo area) to undertake a detailed health interview and physical assessment, and to give a blood sample. Those who agreed were interviewed between March 2010 and April 2011, defined as the *2010 first wave*. These participants were then followed up annually at the same time of year, which produced the 2011 second wave and in 2012 the third wave. Table A-11 shows the age, sex, ethnic group, living arrangements and socioeconomic deprivation area of the LiLACS NZ participants in the first wave.

Table A-11: Demographic summary of LiLACS NZ participants

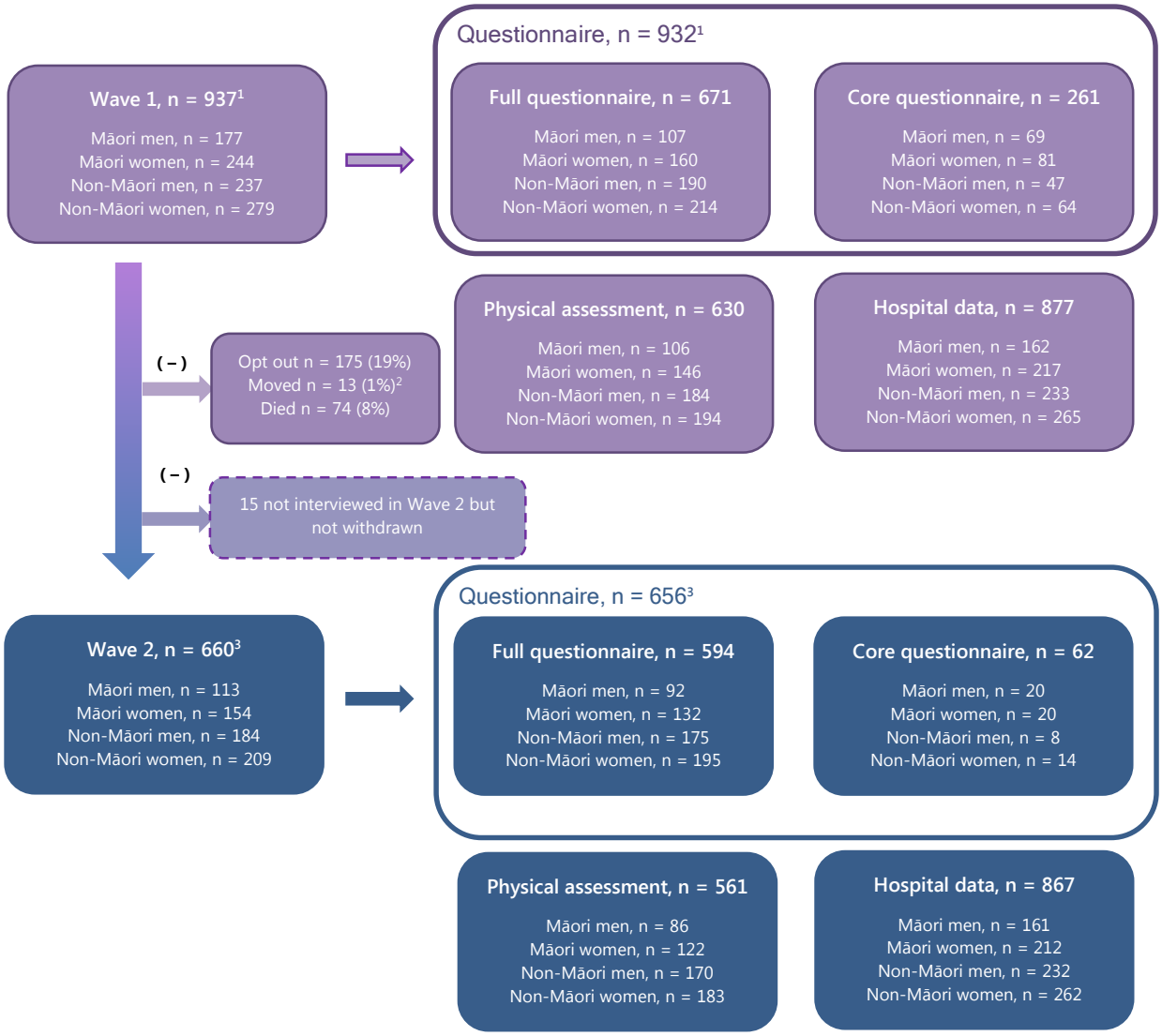
	Māori						Non-Māori					
	Men		Women		Total		Men		Women		Total	
Age - Mean (SD)	82.5	(2.8)	82.8	(2.7)	82.7	(2.8)	84.6	(0.5)	84.6	(0.5)	84.6	(0.5)
Living - n (%)												
Alone	29	(27%)	81	(51%)	110	(41%)	61	(32%)	134	(63%)	195	(48%)
Spouse only	40	(37%)	30	(19%)	70	(26%)	106	(56%)	48	(22%)	154	(38%)
Other	38	(36%)	49	(31%)	87	(33%)	23	(12%)	32	(15%)	55	(14%)
Deprivation - n (%)												
Decile 1-4 (Low)	19	(11%)	41	(17%)	60	(14%)	60	(25%)	69	(25%)	129	(25%)
Decile 5-7 (Med)	53	(30%)	56	(23%)	109	(26%)	91	(38%)	117	(42%)	208	(40%)
Decile 8-10 (High)	104	(59%)	147	(60%)	251	(60%)	86	(36%)	93	(33%)	179	(35%)

Source: LiLACS NZ

During their interview, all participants completed a *core* questionnaire of three pages about health and function. The majority of participants also completed the full questionnaire during their interview where, in addition to the core questions, they were asked more detailed questions about social, environmental, cultural, and health status. The primary care utilisation questions were part of the full questionnaire.

In the second wave of data collection many questions about health, health services and quality of life (QOL) were asked again so that comparisons could be made over time. Wave 2 also focused on nutrition, with a detailed food intake record being collected. Questions about the GP and satisfaction with care were asked in Wave 2 also.

Figure A-1: LiLACS NZ recruitment process



Notes:
1 Wave 1: n = 4 recruits withdrew before first interview; n = 1 questionnaire lost, no data
2 Moved out of area and unwilling to be interviewed by phone (Wave 2 and 3)
3 Wave 2: n = 4 questionnaires lost, no data; plus n = 4 did a nutrition interview but not the rest of the full or core questionnaire