LILACS NZ

Medication use and perceptions of GP care in advanced age: *Findings from LiLACS NZ*

Te Puāwaitanga O Ngā Tapuwae Kia Ora Tonu

This report presents key findings about medication use, use of medication aids and perceptions of General Practitioner (GP) care by people in advanced age.

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 medication use and perceptions of GP 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

Most people in advanced age took prescribed medications (92%). Thirty percent of people used medication aids and aids were more often used by people who at times forgot to take their medications. Māori in areas of higher socioeconomic deprivation were less likely to know what their medications were for.

Seeing the same GP was important for most people in advanced age, most people rating their relationship with the GP as very good. People who rated their GP's care and concern as very good or excellent were more likely to have known the correct reasons for taking their medication, compared with those who rated their GP's care and concern as good or poor.

This report describes the use of medication, medication aids and the perception of GP care by people in advanced age, by sex and ethnic group.

For this report, **medication aids** include items such as a weekly medication box, blister pack or medication summary card (yellow card). Medication aids enable people to sort and store medications or record when medications should be taken.
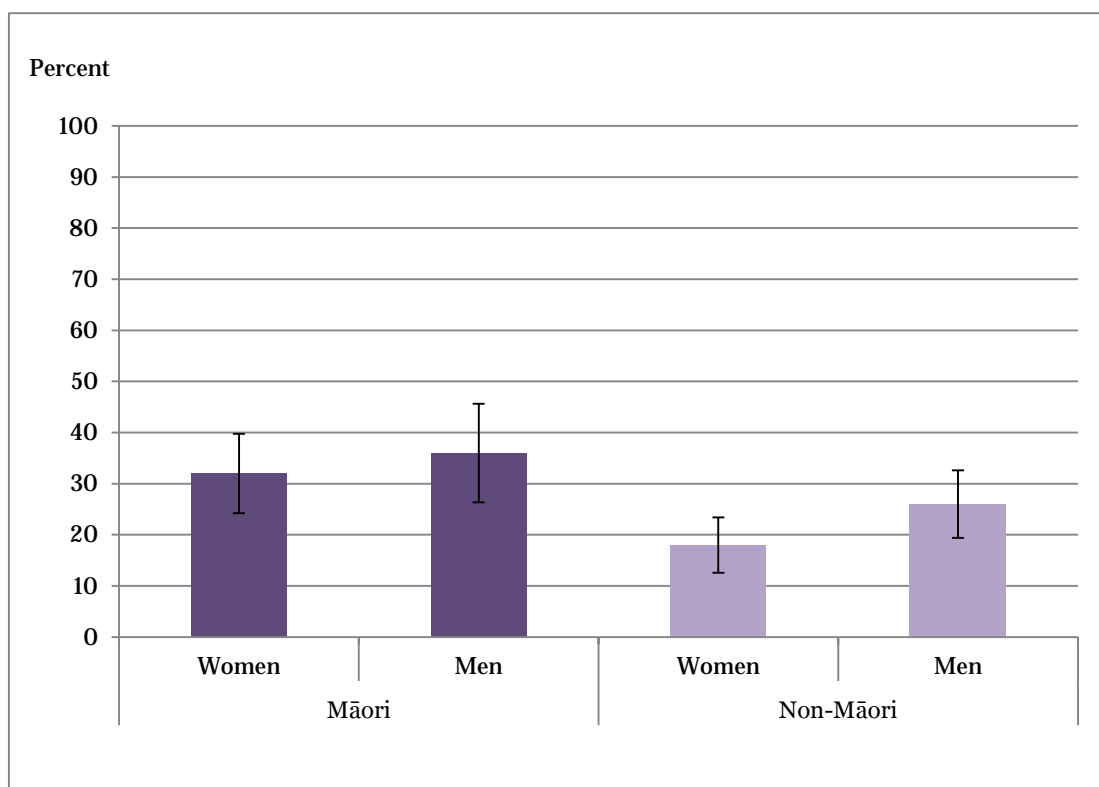
Findings

Medications were prescribed to almost all people in advanced age

Most people took prescribed medications (92%). About three-quarters (74%) of those who took medications reported that they never forgot to take their medications.

Thirty-three percent of Māori and 22% of non-Māori reported that they forgot to take their medications at times (Figure 1).

Men forgot to take their medications at a similar rate to women and the proportion of people forgetting to take medication did not differ by socioeconomic deprivation[i], adjusting for age and ethnic group.

Figure 1: Sometimes forgot to take medications in advanced age, by sex 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
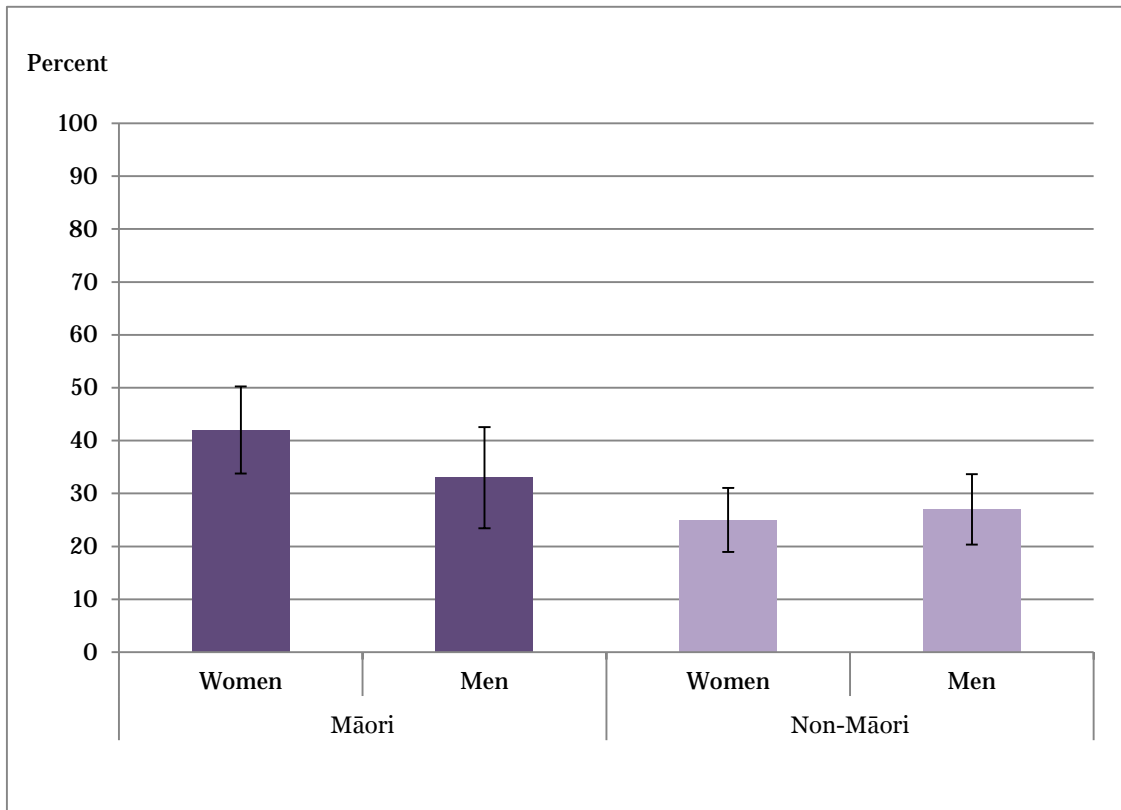
Medication aids were used by almost a third of people in advanced age

Thirty-one percent of those who took prescribed medications reported that they used a medication aid. Those who reported forgetting to take their medications were more likely to use medication aids. This was a significant difference for women compared with men.

Figure 2 shows that 38% of Māori and 26% of non-Māori used a blister pack, medication summary card, weekly medication box or other aid in helping them to take their medication. There was no significant difference by ethnic group or socioeconomic deprivation when adjusted for age and sex.

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[i] The deciles in the New Zealand Deprivation Index (NZDep20065) 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

Figure 2: Use of medication aids in advanced age, by sex 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

People in advanced age were able to explain what about three quarters of their medications were for

People correctly identified a reason for 73% of their prescribed medications (See Appendix Tables A-2 & A-3).

Figure 3: Percentage of medications where the purpose was correctly identified by people in advanced age, by socioeconomic deprivation and ethnic group
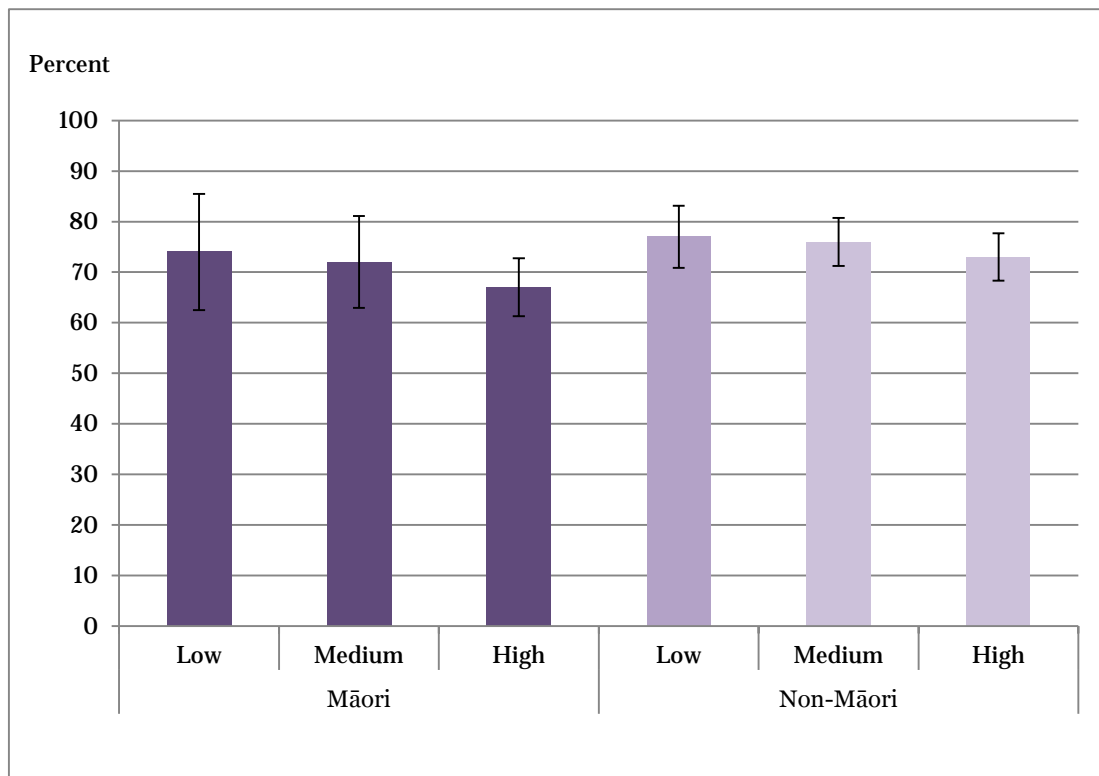

Source: LiLACS NZ

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. Percent of medications with a correct reason per person is displayed: mean and 95% confidence interval bars

Māori in areas of higher socioeconomic deprivation were less likely to know what their medications were for

Māori living in areas of high socioeconomic deprivation were significantly less likely to know what a medication they were taking was for than Māori living in areas of low socioeconomic deprivation (Table A-5).

People in advanced age felt that seeing the same GP was important

Nearly three quarters (71%) of people reported that seeing the same GP was quite important or very important.

Forty percent of people had had the same GP for more than 10 years (see Appendix Tables A-2 and A-3). Sixty percent of people had had the same GP for more than 6 years.

People in advanced age reported good relationships with their GPs

Most people reported good relationships with their GPs, with 74% of people reporting that their GP's concern for them was very good or excellent. Nine out of ten of all people (94%) considered that their GP was 'good' to 'excellent' at explaining problems or treatment that was needed (Appendix Table A-2 and A-3).

There were no differences between Māori and non-Māori in the rating of their GPs nor between those living in areas of higher or lower socioeconomic deprivation.

People who rated their GP's care and concern as very good also identified the correct reasons for taking more of their medications, compared with people who did not rate their GP's care and concern very good. Similarly, people who rated their GP as excellent or very good at putting them at ease, or spending a satisfactory amount of time with them, were significantly more likely to know the correct reason for taking their medications, adjusting for age, sex, ethnic group and socioeconomic deprivation.

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, plus nursing assessments of physical function and cardiorespiratory health.

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.

The medication use data reported on is from 671 participants from the first wave of data collection. The views of GP care data was collected from 594 participants 12 months after the first wave (second wave of data collection).

What were the survey questions?

People were asked about what medications they had been prescribed, whether they forgot to take them at times, and whether they used aids to help take them. They were also asked to list the reason for taking each medication. Before analyses, a medical practitioner read all the lists of reasons and the medication lists and decided whether the reason was correct or incorrect. After 12 months, in the second wave of data collection, people were asked how long they had been seeing their GP and to rate how important it was that they see the same GP for health problems. This is clearly identified in the appendix data tables. They were then asked to rate how well their GP listened, explained problems and treatment, spent time with them, and showed care and concern.

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.

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 percent estimates. In Table A-5, generalised linear regression models were used for analysis of potentially significant predictors (NZ Dep, ethnic group, sex) of outcomes (forget to take medications, use of medications, use of medication aids) and controlled for age, sex and ethnic group.

Table A-1: Total number of participants who answered the questions

	Māori		Non-Māori	
	Men	Women	Men	Women
Wave 1				
Do you currently take any medications prescribed by the doctor?	103	152	188	213
At times do you forget to take your prescription meds?	95	138	167	193
Do you use any aids to help you take your prescribed medication?	98	149	186	207
What is this for (asked after each line of the medication chart)	97	146	182	206
Wave 2				
Do you currently take any medications prescribed by the doctor?	92	132	175	194
How long have you been seeing your doctor?	92	128	173	192
How important is it to you that you see the same GP every time you have a health problem	92	132	175	192
How well the doctor listens to what you have to say?	91	129	172	189
How well the doctor puts you at ease during your physical examination	90	128	170	183
The amount of time your doctor spends with you?	91	131	172	189
The doctor's care and concern for you	90	129	171	189

Table A-2: Medication use and views of GP care for men in advanced age

	Men					
	Māori			Non-Māori		
	n	(%)	(95% CI)	n	(%)	(95% CI)
Currently take medications prescribed by the doctor						
Wave 1	95	92	(85–97)	171	91	(86–95)
Wave 2	88	96	(89–99)	159	91	(86–95)
Forget to take prescription meds						
Never	61	64	(54–74)	124	74	(66–80)
Sometimes	28	29	(21–40)	38	23	(17–30)
Often	1	1	(0–6)	2	1	(0–4)
All the time	5	5	(2–12)	4	2	(1–6)

Forget to take prescription meds						
Never	58	67	(56–76)	115	71	(64–78)
Rarely	21	24	(16–35)	31	19	(13–26)
Sometimes	7	8	(3–16)	14	9	(5–14)
Often or Very often	1	1	(0–6)	1	1	(0–3)
Aids to help take prescribed medication	30	31	(22–41)	46	25	(19–32)
Aids to help take prescribed medication	35	39	(29–50)	62	35	(28–43)
Duration seeing doctor n (%)						
Less than 1 year	8	9	(4–16)	21	12	(8–18)
1-2 years	11	12	(6–20)	22	13	(8–19)
3-5 years	19	21	(13–30)	32	18	(13–25)
6-10 years	16	17	(10–27)	21	12	(8–18)
More than 10 years	38	41	(31–52)	77	45	(37–52)
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)
How well the doctor listens to what the patient says						
Very poor/poor/fair	5	5	(2–12)	7	4	(2–8)
Good	15	16	(10–26)	32	19	(13–25)
Very good/Excellent	71	78	(68–86)	133	77	(70–83)
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)
Doctor explains problems or any treatment that is needed						
Very poor/poor/fair	9	10	(5–18)	10	6	(3–10)
Good	12	13	(7–22)	35	20	(15–27)
Very good/Excellent	68	76	(66–85)	126	74	(66–80)
Self-identified reason for taking prescription medication (percent correct per person)						
Correct	66%	38	(59–74)	74	32	(69–78)
Incorrect	4%	11	(2–6)	4	9	(3–5)
Don't know	30%	38	(22–37)	22	33	(18–27)

Table A-3: Medication use and views of GP care for women in advanced age

| | Women | | | | | |
| | Māori | | | Non-Māori | | |
	n	(%)	(95% CI)	n	(%)	(95% CI)
Current prescribed medications by the doctor						
Wave 1	140	92	(87–96)	198	93	(89–96)
Wave 2	122	92	(87–96)	185	95	(91–98)
Forgotten to take prescription medications						
Never	94	68	(60–76)	160	82	(75–87)
Sometimes	39	28	(21–37)	33	17	(12–23)
Often	2	1	(0–5)	1	1	(0–3)
All the time	3	2	(0–6)	2	1	(0–4)
Forgotten to take prescription medications						
Never	77	64	(54–72)	151	81	(75–87)
Rarely	26	21	(15–30)	29	16	(11–22)
Sometimes	16	13	(8–21)	6	3	(1–7)
Often or Very often	2	2	(0–6)	0	0	
Use of aids to with prescribed medication	58	39	(31–47)	53	26	(20–32)
Use of aids to with prescribed medication	59	45	(37–54)	64	33	(27–40)
Duration seeing doctor n (%)						
Less than 1 year	23	18%	(12–26)	23	12%	(8–17)
1-2 years	14	11%	(6–18)	14	7%	(4–12)
3-5 years	18	14%	(9–21)	30	16%	(11–22)
6-10 years	24	19%	(12–27)	42	22%	(16–28)
More than 10 years	49	38%	(30–47)	83	43%	(36–51)
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)
How well the doctor listens to what the patient says						
Very poor/poor/fair	3	2%	(0–7)	12	6%	(3–11)
Good	32	25%	(18–33)	27	14%	(10–20)
Very good/Excellent	94	73%	(64–80)	150	79%	(73–85)
Doctor puts patient at ease during physical examination						
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)
Doctor explains problems or any treatment that is needed						
Very poor/poor/fair	4	3%	(1–8)	12	6%	(3–11)
Good	27	21%	(14–29)	28	15%	(10–21)
Very good/Excellent	98	76%	(68–83)	148	79%	(72–84)

Amount of time doctor spent 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)
The doctor's care and concern						
Very poor/poor/fair	3	2%	(0–7)	11	6%	(3–10)
Good	31	24%	(17–32)	35	19%	(13–25)
Very good/Excellent	95	74%	(65–81)	143	76%	(69–82)
Self-identified reason for taking prescription medication (percent correct per person)						
Correct	71	34	(66–77)	77	27	(73–80)
Incorrect	3	11	(1–5)	3	8	(2–4)
Don't know	25	34	(20–31)	20	27	(17–24)

Table A-4: Medication use and views of GP in advanced age

Group of interest	Reference group	Adjusted Odds Ratio (95% CI)	Significant (*)	Adjustment variable
Forgetting medication				
Men	Women	1.34 (0.93–1.94)	ns	Age
Māori	Non-Māori	1.30 (0.80–2.10)	ns	Age, sex
Māori men	Non-Māori men	0.82 (0.36–1.86)	ns	Age
Māori women	Non-Māori women	1.72 (0.94–3.18)	ns	Age
Most deprived areas	Least deprived areas	1.13 (0.68–1.88)	ns	Age, sex, ethnic group
Most deprived areas - men	Least deprived areas - men	1.49 (0.68–3.25)	ns	Age, ethnic group
Most deprived areas - women	Least deprived areas - women	0.88 (0.45–1.76)	ns	Age, ethnic group
Use of medication aids				
Men	Women	0.80 (0.57–1.14)	ns	Age
Māori	Non-Māori	1.43 (0.94–2.18)	ns	Age, sex
Māori men	Non-Māori men	1.42 (0.71–2.82)	ns	Age
Māori women	Non-Māori women	1.49 (0.87–2.54)	ns	Age
Most deprived areas	Least deprived areas	1.10 (0.69–1.75)	ns	Age, sex, ethnic group
Most deprived areas - men	Least deprived areas - men	1.19 (0.58–2.45)	ns	Age, ethnic group
Most deprived areas - women	Least deprived areas - women	1.05 (0.56–1.94)	ns	Age, ethnic group
Forgot to take medications	Did not forget to take medications	1.68 (1.13–2.50)	*	Age, sex, ethnic group, dep
Forgot to take medications - men	Did not forget to take medications - men	1.61 (0.89–2.91)	ns	Age, ethnic group, dep
Forgot to take medications - women	Did not forget to take medications - women	1.76 (1.03–3.01)	*	Age, ethnic group, dep
Rating the GPs care and concern as very good/excellent				
Men	Women	0.92 (0.63–1.33)	ns	Age
Māori	Non-Māori	0.84 (0.54–1.32)	ns	Age, sex
Māori men	Non-Māori men	1.10 (0.55–2.24)	ns	Age
Māori women	Non-Māori women	0.70 (0.39–1.25)	ns	Age

Most deprived areas	Least deprived areas	0.90 (0.55–1.49)	ns	Age, sex, ethnic group
Most deprived areas - men	Least deprived areas - men	0.86 (0.41–1.82)	ns	Age, ethnic group
Most deprived areas - women	Least deprived areas - women	0.93 (0.47–1.84)	ns	Age, ethnic group
Forgot to take medications	Did not forget to take medications	0.83 (0.53–1.28)	ns	Age, sex, ethnic group, dep
Forgot to take medications - men	Did not forget to take medications - men	0.66 (0.36–1.22)	ns	Age, ethnic group, dep
Forgot to take medications - women	Did not forget to take medications -- women	1.06 (0.57–2.00)	ns	Age, ethnic group, dep
Forgot to take medications - Māori	Did not forget to take medications - non-Māori	1.49 (0.96 - 2.32)	ns	Age, sex, dep
Knew the correct reason for the medication				
Men	Women	0.92 (0.63–1.33)	ns	Age
Māori	Non-Māori	0.84 (0.54–1.32)	ns	Age, sex
Māori men	Non-Māori men	1.10 (0.55–2.24)	ns	Age
Māori women	Non-Māori women	0.70 (0.39–1.25)	ns	Age
Most deprived areas	Least deprived areas	0.90 (0.55–1.49)	ns	Age, sex, ethnic group
Most deprived areas - Māori	Least deprived areas Māori	0.51 (0.35–0.76)	*	Age, sex
Most deprived areas - non-Māori	Least deprived areas non-Māori	0.78 (0.60–1.03)	ns	Age, sex

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

LiLACS 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-5 shows the age, sex, ethnic group, living arrangements and socioeconomic deprivation area of the LiLACS NZ participants in the first wave.
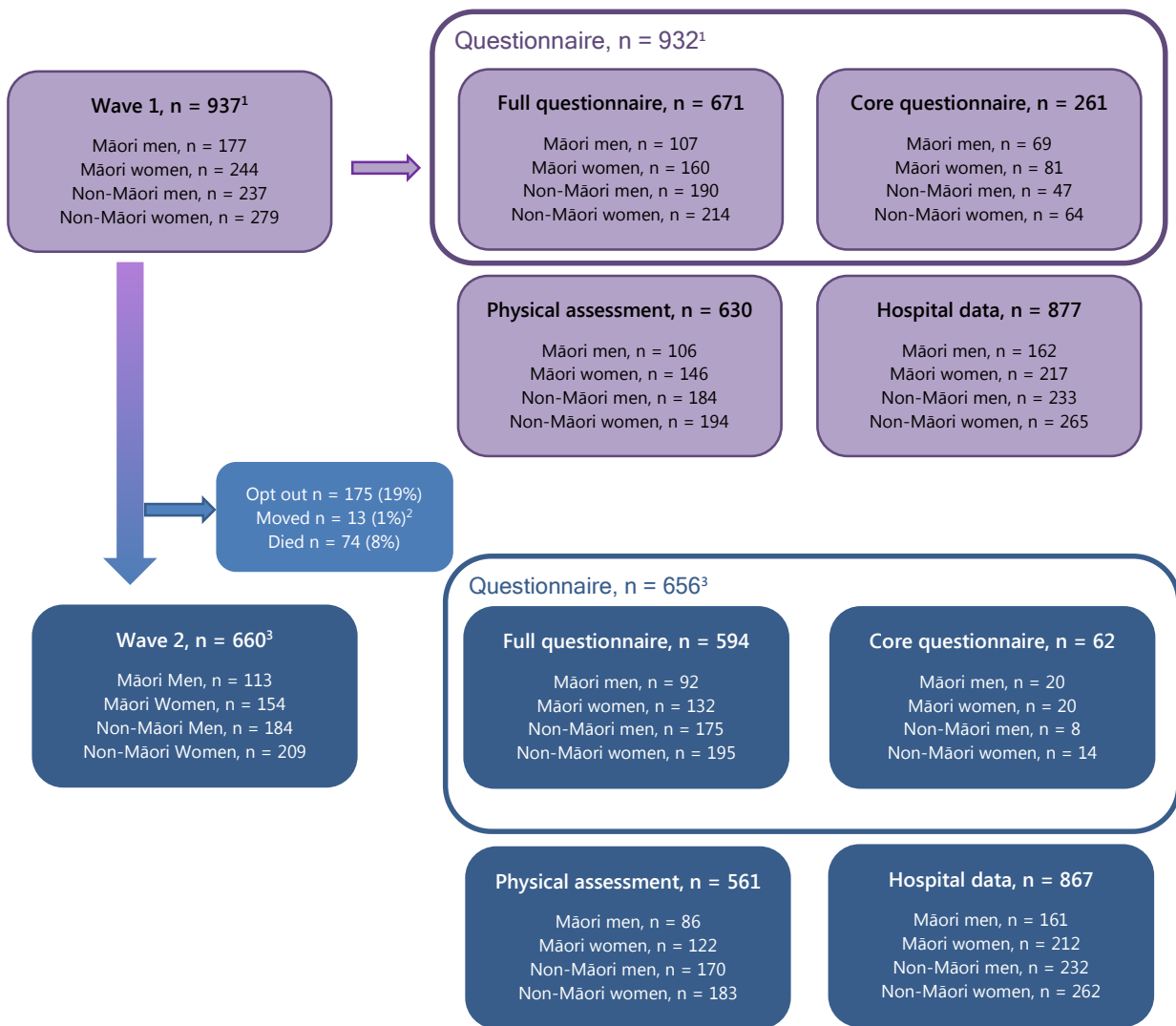
Table A-5: Demographic summary of LiLACS NZ participants

	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 medication use questions were part of the full questionnaire.

Figure A-1: LiLACS NZ recruitment process

Wave 1, n = 937[1]

Māori men, n = 177
Māori women, n = 244
Non-Māori men, n = 237
Non-Māori women, n = 279

Questionnaire, n = 932[1]

Full questionnaire, n = 671

Māori men, n = 107
Māori women, n = 160
Non-Māori men, n = 190
Non-Māori women, n = 214

Core questionnaire, n = 261

Māori men, n = 69
Māori women, n = 81
Non-Māori men, n = 47
Non-Māori women, n = 64

Physical assessment, n = 630

Māori men, n = 106
Māori women, n = 146
Non-Māori men, n = 184
Non-Māori women, n = 194

Hospital data, n = 877

Māori men, n = 162
Māori women, n = 217
Non-Māori men, n = 233
Non-Māori women, n = 265

Opt out n = 175 (19%)
Moved n = 13 (1%)[2]
Died n = 74 (8%)

Questionnaire, n = 656[3]

Wave 2, n = 660[3]

Māori Men, n = 113
Māori Women, n = 154
Non-Māori Men, n = 184
Non-Māori Women, n = 209

Full questionnaire, n = 594

Māori men, n = 92
Māori women, n = 132
Non-Māori men, n = 175
Non-Māori women, n = 195

Core questionnaire, n = 62

Māori men, n = 20
Māori women, n = 20
Non-Māori men, n = 8
Non-Māori women, n = 14

Physical assessment, n = 561

Māori men, n = 86
Māori women, n = 122
Non-Māori men, n = 170
Non-Māori women, n = 183

Hospital data, n = 867

Māori men, n = 161
Māori women, n = 212
Non-Māori men, n = 232
Non-Māori women, n = 262

Notes:
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
3 n= 4 questionnaires lost, no data