



Independence in daily activities in advanced age: *Findings from LiLACS NZ*

Te Puāwaitanga O Ngā Tapuwae Kia Ora Tonu

This report presents key findings about independence in basic and advanced daily activities 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 independence in daily activities 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

In general, people in advanced age were able to perform most of their daily activities. Fewer men completed advanced daily activities independently than women.

This report describes independence in daily activities for those in advanced age by sex, ethnic group and socioeconomic deprivation. This report excludes people in residential care

For this report the following definitions are used: **Basic daily activities** are activities for self-care: feeding oneself, personal care, going to the toilet, and getting in and out of bed. **Advanced daily activities** are activities for independent living: walking around outside, making a hot drink, carrying hot drinks from one room to another, doing housework, going shopping, doing a full clothes wash, and using the telephone. **Independence** or performing **independently** is the ability to complete either basic or advanced daily activities without help.

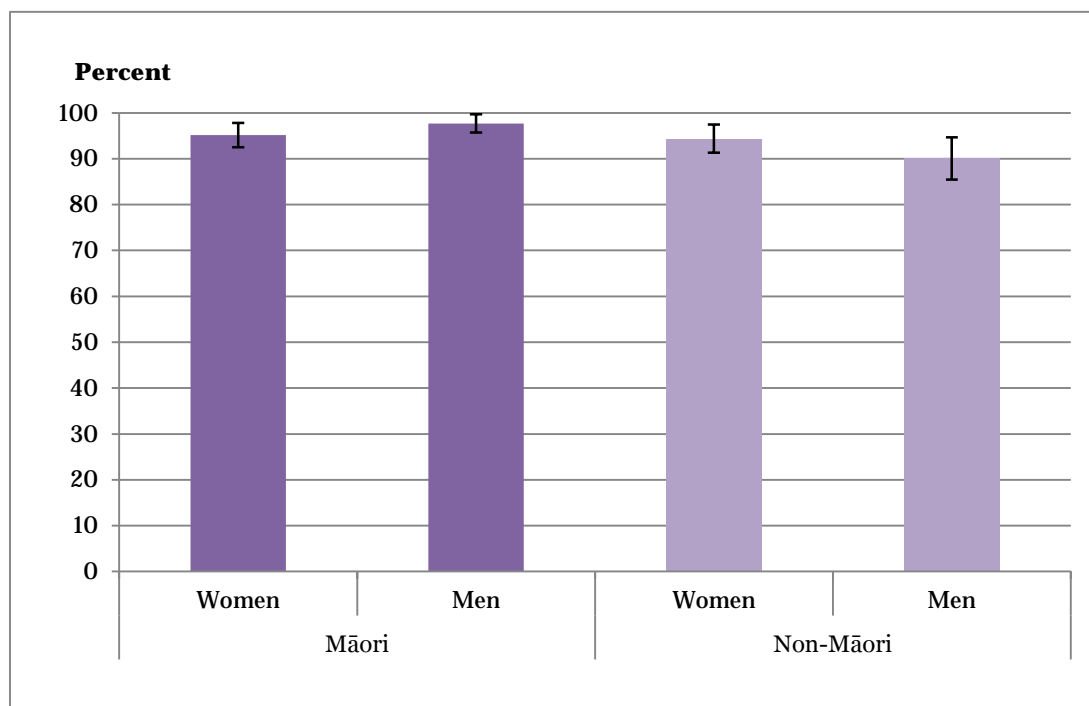
Findings

Most people in advanced age could perform daily activities independently.

Ninety-five percent of people in advanced age were independent in all basic daily activities (Figure 1).

Independence in basic daily activities did not vary by sex or by socioeconomic deprivation.

Figure 1: Independence in basic daily activities of people 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. Percent is percent of those living in the community who were able to complete the activity independently, and excludes people in residential care.

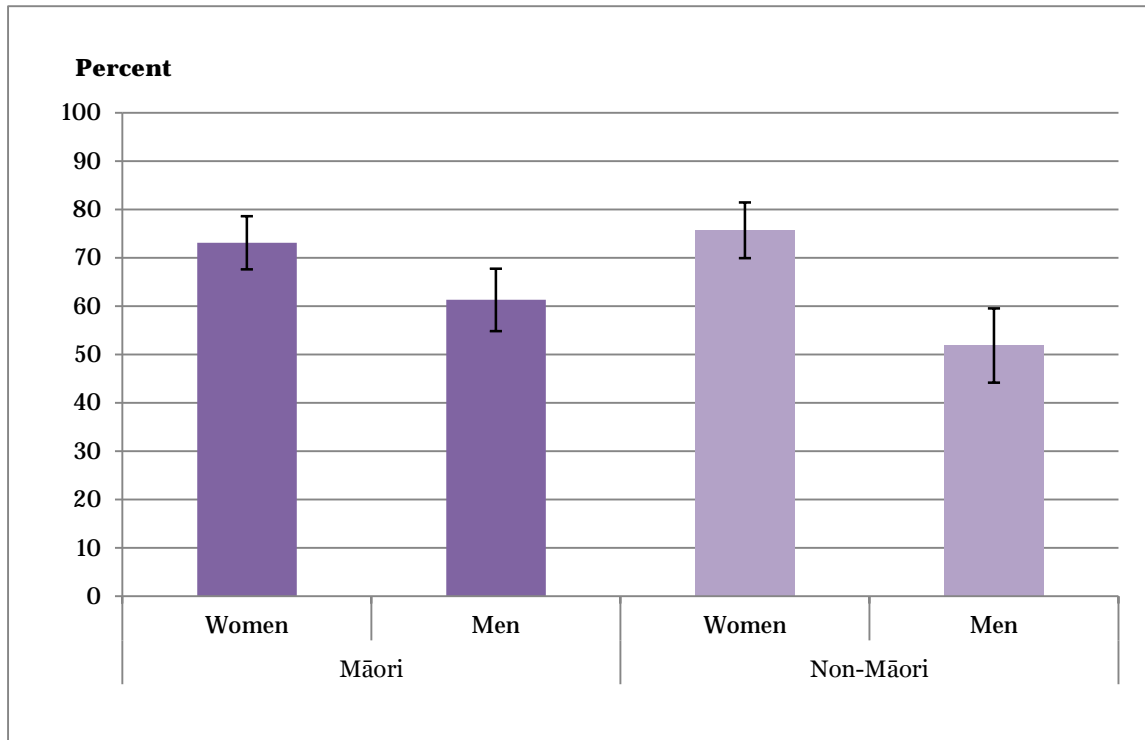
Most people in advanced age could perform advanced daily activities independently

Sixty-seven percent of people in advanced age were independent in all advanced daily activities.

Independence in advanced daily activities was significantly higher in women than men (Figure 2).

There was no significant difference between Māori and non-Māori in being able to perform advanced daily activities independently. There was also no significant difference in being able to perform advanced daily activities independently by socioeconomic deprivation.

Figure 2: Independence in advanced daily activities of people 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. Percent is percent of those living in the community who were able to complete the activity independently, and excludes people in residential care.

People in advanced age received support with some advanced daily activities; this was mainly for housework

Across advanced daily activities, 39% of people were independent in all 7 advanced daily activities, 27% were independent in 6 advanced daily activities and the remainder were independent in fewer advanced daily activities with 3% independent in only 1 or none at all (Appendix Tables A-2 and A-3).

Over 90% of people were independent in these activities: walked around outside, made a hot drink, or carrying hot drinks from one room to another (Table A-3, Table A-4).

The most common advanced daily activities that people in advanced age received support with were housework (50%); shopping (29%) and doing a full clothes wash (27%).

What is the source of the data?

The source of these 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 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 independence in daily activities data reported on is from 671 participants who completed the full questionnaire (see Appendix Figure A-1).

What were the survey questions?

Participants were asked, for both basic daily activities and advanced daily activities, whether they did the activity on their own or on their own with difficulty (scored as 1), or with help from another person or did not do the activity at all (scored as 0). The basic daily activities questions on feeding oneself, personal care, going to the toilet and getting in and out of bed, were adapted from the Barthel Index.³ Advanced daily activities were assessed by asking all full participants about 7 of the activities from the Nottingham Extended Activities of Daily Living (NEADL)⁴ scale - being able to walk around outside, make a hot drink, carry hot drinks from one room to another, do housework, go shopping, do a full clothes wash, and use the telephone.

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 those who provide help with activities of daily living (*Extra help with daily tasks 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: 33.
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. Mahoney, FI & Barthel, DW. 1965. Functional evaluation: The Barthel Index. *Maryland State Medical Journal* 14: 61-65.
4. Essink-Bot, ML, Krabbe, PF, et al. 'An Empirical Comparison of Four Generic Health Status Measures', *Med Care*, 35 (1997), 522-37

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 wave of data gathering in 2010.

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 breadth 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, completion of all 4 basic daily activities (feeding, toileting, personal care and getting in and out of bed) dichotomised by the median, and achieving 6 or more out of the 7 advanced daily activities (housework, washing clothes, shopping, walking outside, making hot drink, carrying hot drinks, using telephone) dichotomised by the median, controlled for age, sex and ethnic group.

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

	Māori		Non-Māori	
	Men	Women	Men	Women
Basic daily activities				
Independent in all 4 basic daily activities	161	217	218	249
Do you manage to feed yourself?	164	217	218	249
Do you manage to go to the toilet?	163	217	218	249
Do you manage your personal care for instance brushing your teeth and hair, washing your hands and face?	162	217	218	249
Do you get in/out of bed?	162	217	218	249
Advanced daily activities				
Independent in all 7 advanced daily activities	163	216	217	248
Do you walk around outside?	164	217	218	249
Do you manage to make yourself a hot drink?	164	217	218	249
Do you take hot drinks from one room to another?	163	217	218	249
Do you do your own housework?	164	217	218	249
Do you do your own shopping?	164	216	218	249
Do you do a full clothes wash?	164	217	217	248
Do you use the telephone?	164	217	218	249

Table A-2: Living arrangement

	Men					
	Māori			Non-Māori		
	n	(%)	(95% CI)	n	(%)	(95% CI)
Living arrangement - Men						
Alone	27	26	(18 - 36)	60	33	(26 - 40)
Lives with spouse only	39	38	(28 - 48)	105	58	(51 - 65)
Other	37	36	(27 - 46)	16	9	(5 - 14)
Other, including spouse	9	9	(4 - 16)	10	6	(3 - 10)
Other, without spouse	28	27	(19 - 37)	6	3	(1 - 7)
Other, residential care	0	(0)	(0 - 0)	0	(0)	(0 - 0)
Living arrangement - Women						
Alone	79	51	(43 - 59)	131	65	(58 - 72)
Lives with spouse only	30	19	(13 - 26)	48	24	(18 - 30)
Other	47	30	(23 - 38)	22	10	(7 - 16)
Other, including spouse	8	5	(2 - 10)	5	2	(1 - 6)
Other, without spouse	39	25	(18 - 33)	17	8	(5 - 13)
Other, residential care	0	(0)	(0 - 0)	0	(0)	(0 - 0)

Table A-3: Basic and advanced daily activities for men

	Men					
	Māori			Non-Māori		
	n	(%)	(95% CI)	n	(%)	(95% CI)
Basic daily activities						
Independent in all 4 basic daily activities	145	(88)	(83 - 93)	212	(97)	(94 - 99)
Do you manage to feed yourself	156	(96)	(92 - 99)	216	(100)	(97 - 100)
Do you manage your personal care	148	(93)	(87 - 96)	214	(99)	(96 - 100)
Do you manage to go to the toilet	154	(96)	(91 - 98)	214	(99)	(96 - 100)
Do you get in/out of bed	153	(96)	(91 - 98)	214	(99)	(96 - 100)
Advanced daily activities						
Independent in all 7 advanced daily activities	50	(32)	(25 - 40)	71	(33)	(27 - 39)
Independent in 6 advanced daily activities	34	(22)	(15 - 29)	62	(29)	(23 - 35)
Independent in 5 advanced daily activities	28	(18)	(12 - 25)	42	(19)	(14 - 24)
Independent in 2-4 advanced daily activities	41	(26)	(19 - 34)	41	(20)	(14 - 25)
Independent in 0 or 1 advanced daily activities	4	(3)	(1 - 6)	2	(1)	(0 - 3)
Do you walk around outside	150	(93)	(87 - 96)	208	(96)	(92 - 98)
Do you manage to make yourself a hot drink	152	(94)	(89 - 97)	215	(99)	(97 - 100)
Do you take hot drinks from one room to another	142	(88)	(82 - 93)	204	(94)	(90 - 97)
Do you do your own housework	74	(46)	(38 - 54)	98	(45)	(38 - 52)
Do you do your own shopping	101	(62)	(54 - 70)	156	(72)	(65 - 78)
Do you do a full clothes wash	83	(51)	(43 - 59)	137	(63)	(57 - 70)
Do you use the telephone	144	(89)	(83 - 93)	210	(97)	(93 - 99)

Table A-4: Basic and advanced daily activities for women

	Women					
	Māori			Non-Māori		
	n	(%)	(95% CI)	n	(%)	(95% CI)
Basic daily activities						
Independent in all 4 basic daily activities	202	(93)	(89 - 96)	237	(95)	(91 - 97)
Do you manage to feed yourself	208	(97)	(94 - 99)	246	(99)	(97 - 100)
Do you manage your personal care	204	(95)	(92 - 98)	239	(96)	(93 - 98)
Do you manage to go to the toilet	205	(96)	(92 - 98)	246	(99)	(97 - 100)
Do you get in/out of bed	205	(96)	(92 - 98)	247	(99)	(97 - 100)
Advanced daily activities						
Independent in all 7 advanced daily activities	112	(54)	(47 - 61)	93	(38)	(32 - 44)
Independent in 6 advanced daily activities	50	(24)	(18 - 30)	89	(36)	(30 - 42)
Independent in 5 advanced daily activities	23	(11)	(7 - 16)	40	(16)	(12 - 21)
Independent in 2-4 advanced daily activities	16	(8)	(4 - 12)	23	(9)	(6 - 14)
Independent in 0 or 1 advanced daily activities	7	(3)	(1 - 7)	2	(1)	(0 - 3)
Do you walk around outside	198	(93)	(88 - 96)	232	(93)	(89 - 96)
Do you manage to make yourself a hot drink	200	(93)	(89 - 96)	244	(98)	(95 - 99)
Do you take hot drinks from one room to another	192	(90)	(85 - 93)	231	(93)	(89 - 96)
Do you do your own housework	138	(64)	(58 - 71)	108	(43)	(37 - 50)
Do you do your own shopping	153	(72)	(65 - 78)	188	(76)	(70 - 81)
Do you do a full clothes wash	178	(83)	(77 - 88)	216	(87)	(82 - 91)
Do you use the telephone	198	(93)	(88 - 96)	244	(98)	(95 - 99)

Table A-5: Independence in all 4 basic daily activities

Group of interest	Reference group	Adjusted Odds Ratio (95% CI)	Significant (*)	Adjustment variables
Men	Women	0.89 (0.49 - 1.64)	ns	Age
Māori	Non-Māori	0.38 (0.20 - 0.73)	*	Age, sex
Māori men	Non-Māori men	0.19 (0.06 - 0.56)	*	Age
Māori women	Non-Māori women	0.69 (0.29 - 1.61)	*	Age
Most deprived areas	Least deprived areas	0.77 (0.35 - 1.72)	ns	Age, sex, ethnic group
Most deprived areas - men	Least deprived areas - men	0.99 (0.29 - 3.34)	ns	Age, ethnic group
Most deprived areas - women	Least deprived areas - women	0.66 (0.23 - 1.94)	ns	Age, ethnic group

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

Table A-6: Independence in 6 of 7 advanced daily activities

Group of interest	Reference group	Adjusted Odds Ratio (95% CI)	Significant (*)	Adjustment variables
Men	Women	0.46 (0.34 - 0.62)	*	Age
Māori	Non-Māori	0.75 (0.54 - 1.05)	ns	Age, sex
Māori men	Non-Māori men	0.65 (0.40 - 1.05)	ns	Age
Māori women	Non-Māori women	0.89 (0.56 - 1.41)	ns	Age
Most deprived areas	Least deprived areas	1.02 (0.68 - 1.53)	ns	Age, sex, ethnic group
Most deprived areas - men	Least deprived areas - men	1.27 (0.72 - 2.24)	ns	Age, ethnic group
Most deprived areas - women	Least deprived areas - women	0.84 (0.47 - 1.49)	ns	Age, 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-7 shows the age, sex, ethnic group, living arrangements and socioeconomic deprivation area of the LiLACS NZ participants in the first wave.

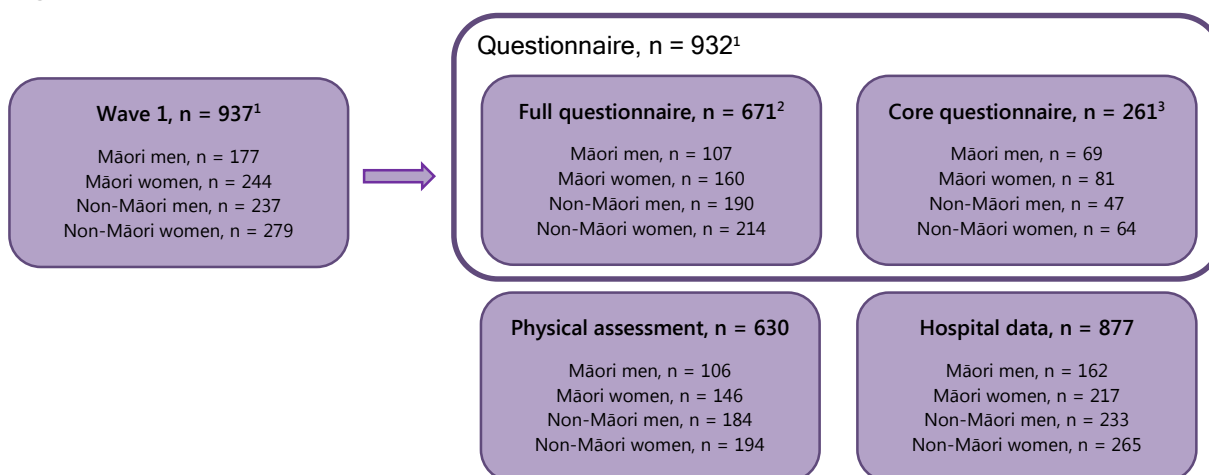
Table A-7: Demographic summary of LiLACS NZ participants

	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 independence questions were part of the full questionnaire.

Figure A-1: LiLACS NZ recruitment process



Note:

1: n = 4 recruits withdrew before first interview; n = 1 questionnaire lost, no data

2: 23 participants live in residential care; 648 live in the community

3: 52 participants live in residential care; 209 live in the community