## **Supplementary Material**

## Opportunities to be active in retirement villages and factors associated with physical activity in residents

Aoi Yoshihara<sup>A</sup>, Katherine Bloomfield<sup>A,B,C,\*</sup>, Zhenqiang Wu<sup>A</sup>, Annie Tatton<sup>B</sup>, Joanna Hikaka<sup>A</sup>, Michal Boyd<sup>A</sup>, Kathy Peri<sup>A</sup> and Martin J. Connolly<sup>A,B</sup>

<sup>&</sup>lt;sup>A</sup>Faculty of Medicine and Health Sciences, University of Auckland, Auckland, New Zealand

<sup>&</sup>lt;sup>B</sup>Older Adult Services, Waitematā District Health Board, Auckland, New Zealand

<sup>&</sup>lt;sup>C</sup>Waitematā Clinical Campus, North Shore Hospital, PO Box 93503, Takapuna, Auckland 0740, New Zealand

<sup>\*</sup>Correspondence to: Email: Katherine.bloomfield@waitematadhb.govt.nz

## Supplementary Table S1. Comparison of RV residents' activity level by socio-demographics, health status and RV environment.

Risk Factor	All residents (n=577)	<1 hour (n=252)	>=1 hour (n=325)	<i>p</i> value
Gender, n (%)				0.1305
Female	419 (72.6)	191 (75.8%)	228 (70.2%)	
Male	158 (27.4)	61 (24.2%)	97 (29.8%)	
Age (ys) – continuous				0.0001
Mean (SD)	81.3 (6.8)	82.5 (6.0)	80.4 (7.3)	
Median	81.6	83.4	79.8	
Q1; Q3	76.4; 86.5	78.8; 86.9	75.3; 86.1	
Min; Max	59.9; 100.4	62.3; 95.6	59.9; 100.4	
Age (ys), n (%) – categorical				0.0000
60-69	26 (4.5)	5 (2.0%)	21 (6.5%)	
70-79	222 (38.5)	77 (30.6%)	145 (44.6%)	
80-89	282 (48.9)	150 (59.5%)	132 (40.6%)	
=>90	47 (8.1)	20 (7.9%)	27 (8.3%)	
Ethnicity, n (%)				0.0777
European	557 (96.5)	247 (98.0%)	310 (95.4%)	
Others	20 (3.5)	5 (2.0%)	15 (4.6%)	
Marital status, n (%)				0.2975
Never married	18 (3.1)	11 (4.4%)	7 (2.2%)	
Married/Civil union/Defacto	243 (42.1)	107 (42.5%)	136 (41.8%)	
Previously but no longer married*	316 (54.8)	134 (53.2%)	182 (56.0%)	
*Includes widowed, separated and divorced				
Living arrangement				0.7656
Alone	352 (61.0)	152 (60.3%)	200 (61.5%)	
With others	225 (39.0)	100 (39.7%)	125 (38.5%)	
Time since last hospital stay, n (%)				0.5158
No hospitalization within 90 days	518 (90.7)	225 (89.3%)	293 (91.8%)	
0-30 days	18 (3.2)	10 (4.0%)	8 (2.5%)	
31-90 days	35 (6.1)	17 (6.7%)	18 (5.6%)	
Hearing, n (%)				0.0567
Adequate	323 (56.0)	127 (50.4%)	196 (60.3%)	
Minimal difficulty	193 (33.4)	94 (37.3%)	99 (30.5%)	
Moderate difficulty to severe hearing loss	61 (10.6)	31 (12.3%)	30 (9.2%)	
Vision, n (%)				0.2423
Adequate	493 (85.4)	210 (83.3%)	283 (87.1%)	
Minimal difficulty	68 (11.8)	36 (14.3%)	32 (9.8%)	

Risk Factor	All residents (n=577)	<1 hour (n=252)	>=1 hour (n=325)	<i>p</i> value
Moderate difficulty to severe vision loss	16 (2.8)	6 (2.4%)	10 (3.1%)	
Participation in social activities of long-standing interest				0.0877
Never/more than 30 days ago	27 (4.9)	17 (7.2%)	10 (3.2%)	
4-30 days ago	57 (10.3)	25 (10.6%)	32 (10.1%)	
In last 3 days	467 (84.8)	193 (82.1%)	274 (86.7%)	
Missing	26	-	-	
Lonely: says or indicates that he/she feels lonely, n (%)				0.1850
No	428 (74.2)	180 (71.4%)	248 (76.3%)	
Yes	149 (25.8)	72 (28.6%)	77 (23.7%)	
Decline in level of participation in social/ religious / occupational / other preferred activities in last 90 days, n (%)				0.0606
No Decline	516 (89.6)	218 (86.9%)	298 (91.7%)	
Decline	60 (10.4)	33 (13.1%)	27 (8.3%)	
Missing	1	-	-	
Major life stressors in last 90 days, n (%)				0.4899
No	407 (70.5)	174 (69.0%)	233 (71.7%)	
Yes	170 (29.5)	78 (31.0%)	92 (28.3%)	
Days went out of the house in which he / she resides in LAST 3 DAYS, n (%)				0.0000
Been out daily for 3 days	526 (91.2)	209 (82.9%)	317 (97.5%)	
Been out less than daily in last 3 days	51 (8.8)	43 (17.1%)	8 (2.5%)	
Drove car in the last 90 days, n (%)				0.0364
No	180 (31.3)	90 (35.9%)	90 (27.7%)	
Yes	396 (68.8)	161 (64.1%)	235 (72.3%)	
Missing	1	-	-	
Bladder continence, n (%)				0.1162
Continent	501 (87.0)	212 (84.5%)	289 (88.9%)	
Incontinent	75 (13.0)	30 (11.9%)	37 (11.4%)	
Missing	1	-	-	
Stroke/CVA, n (%)				0.8467
Not present	510 (88.4)	222 (88.1%)	288 (88.6%)	
Present	67 (11.6)	30 (11.9%)	37 (11.4%)	
Coronary heart disease, n (%)				0.0021
Not present	381 (66.0)	149 (59.1%)	232 (71.4%)	
Present	196 (34.0)	103 (40.9%)	93 (28.6%)	
Chronic obstructive pulmonary disease, n (%)				0.5673
Not present	544 (94.3)	236 (93.7%)	308 (94.8%)	
Present	33 (5.7)	16 (6.3%)	17 (5.2%)	
Congestive heart failure, n (%)				0.0137

Risk Factor	All residents (n=577)	<1 hour (n=252)	>=1 hour (n=325)	<i>p</i> value
Not present	535 (92.7)	226 (89.7%)	309 (95.1%)	
Present	42 (7.3)	26 (10.3%)	16 (4.9%)	
Depression, n (%)				0.0700
Not present	500 (86.7)	211 (83.7%)	289 (88.9%)	
Present	77 (13.3)	41 (16.3%)	36 (11.1%)	
Cancer, n (%)				0.9619
Not present	501 (86.8)	219 (86.9%)	282 (86.8%)	
Present	76 (13.2)	33 (13.1%)	43 (13.2%)	
Diabetes mellitus, n (%)				0.3000
Not present	504 (87.3)	216 (85.7%)	288 (88.6%)	
Present	73 (12.7)	36 (14.3%)	37 (11.4%)	
Falls, n (%)				0.0840
Falls in last 90 days	61 (10.6)	33 (13.1%)	28 (8.6%)	
No falls in last 90 days	516 (89.4)	219 (86.9%)	297 (91.4%)	
Problem frequency: dizziness, n (%)				0.1401
Not present	413 (71.6)	171 (67.9%)	242 (74.5%)	
Present but no exhibited in last 3 days	113 (19.6)	53 (21.0%)	60 (18.5%)	
Exhibited on 1, 2 or 3 days of last 3 days	51 (8.8)	28 (11.1%)	23 (7.1%)	
Problem frequency: unsteady gait, n (%)				0.1011
Not present	361 (62.6)	146 (57.9%)	215 (66.2%)	
Present but no exhibited in last 3 days	29 (5.0)	16 (6.3%)	13 (4.0%)	
Exhibited on 1, 2 or 3 of last 3 days	187 (32.4)	90 (35.7%)	97 (29.8%)	
Problem frequency: chest pain, n (%)				0.3448
Not present	546 (94.6)	236 (93.7%)	310 (95.4%)	
Present but no exhibited in last 3 days	30 (5.2)	16 (6.3%)	14 (4.3%)	
Exhibited on 1, 2 or 3 of last 3 days	1 (0.2)	0 (0.0%)	1 (0.3%)	
Problem frequency: constipation, n (%)				0.0001
Not present	480 (83.2)	201 (79.8%)	279 (85.8%)	
Present but no exhibited in last 3 days	61 (10.6)	23 (9.1%)	38 (11.7%)	
Exhibited on 1, 2 or 3 of last 3 days	36 (6.2)	28 (11.1%)	8 (2.5%)	
Problem frequency: difficulty falling asleep, n (%)				0.0870
Not present	384 (66.6)	174 (69.0%)	210 (64.6%)	
Present but no exhibited in last 3 days	40 (6.9)	11 (4.4%)	29 (8.9%)	
Exhibited on 1, 2 or 3 of last 3 days	153 (26.5)	67 (26.6%)	86 (26.5%)	
Dyspnoea (shortness of breath), n (%)				0.0000
Absent	389 (67.4)	145 ( 57.5%)	244 ( 75.1%)	
On day to day or rest	130 (22.5)	43 ( 17.1%)	15 ( 4.6%)	

Risk Factor	All residents (n=577)	<1 hour (n=252)	>=1 hour (n=325)	<i>p</i> value
Present on moderate activity	58 (10.1)	64 ( 25.4%)	66 ( 20.3%)	
Fatigue: inability to complete normal daily activities, n (%)				0.0000
None	272 (47.1)	63 ( 25.0%)	209 ( 64.3%)	
Minimal	244 (42.3)	140 ( 55.6%)	104 ( 32.0%)	
Moderate to Severe	61 (10.6)	49 ( 19.4%)	12 ( 3.7%)	
Pain frequency, n (%)				0.0007
Not present	197 (34.1)	67 ( 26.6%)	28 ( 8.6%)	
Present but not in last 3 days	44 (7.6)	16 ( 6.3%)	28 ( 8.6%)	
Exhibited on 1, 2 or 3 of last 3 days	336 (58.2)	169 ( 67.1%)	167 ( 51.4%)	
Pain intensity, n (%)				0.0029
No pain	196 (34.0)	67 ( 26.6%)	129 ( 39.7%)	
Mild	146 (25.3)	67 ( 26.6%)	79 ( 24.3%)	
Moderate to horrible	235 (40.7)	118 ( 46.8%)	117 ( 36.0%)	
Pain consistency, n (%)				0.0027
No pain	197 (34.1)	67 ( 26.6%)	130 ( 40.0%)	
Single or intermittent	284 (49.2)	136 ( 54.0%)	148 ( 45.5%)	
Constant	96 (16.6)	49 ( 19.4%)	47 ( 14.5%)	
Breakthrough pain, n (%)				0.3232
No	538 (93.2)	232 ( 92.1%)	306 ( 94.2%)	
Yes	39 (6.8)	20 ( 7.9%)	19 ( 5.8%)	
Self-reported health, n (%)				0.0000
Excellent	60 (10.5)	4 ( 1.6%)	56 ( 17.4%)	
Good	382 (66.8)	160 ( 63.7%)	222 ( 69.2%)	
Fair or poor	130 (22.7)	87 ( 34.7%)	43 ( 13.4%)	
Missing	5	-	-	
Resident sampling method, n (%)				0.0044
Sampled	216 (37.4)	78 ( 31.0%)	138 ( 42.5%)	
Volunteer	361 (62.6)	174 ( 69.0%)	187 ( 57.5%)	
Large chain, n (%)				0.1664
Yes	321 (55.6)	132 ( 52.4%)	189 ( 58.2%)	
No	256 (44.4)	120 ( 47.6%)	136 ( 41.8%)	
Access to your residence, n (%)				0.0000
From outdoors (only)	263 (46.2)	140 ( 56.2%)	123 ( 38.4%)	
Includes internal access, for example from atrium or corridor	306 (53.8)	109 ( 43.8%)	197 ( 61.6%)	
Missing	8	-	-	
Factors in decision to RV: Other services offered within the village, n (%)				0.9741
No	243 (44.5)	107 ( 44.6%)	136 ( 44.4%)	

Risk Factor	All residents (n=577)	<1 hour (n=252)	>=1 hour (n=325)	<i>p</i> value
Yes	303 (55.5)	133 ( 55.4%)	170 ( 55.6%)	
Missing	31	-	-	
Factors in decision to RV: Improved social life / access to social activities, n (%)				0.4715
No	384 (68.4)	173 ( 70.0%)	211 ( 67.2%)	
Yes	177 (31.6)	74 ( 30.0%)	103 ( 32.8%)	
Missing	16	-	-	
Factors in decision to RV: Security and safety, n (%)				0.0236
No	288 (51.5)	140 ( 56.9%)	148 ( 47.3%)	
Yes	271 (48.5)	106 ( 43.1%)	165 ( 52.7%)	
Missing	18	-	-	
Are you widowed, n (%)				0.5977
No	318 (55.2)	136 ( 54.0%)	182 ( 56.2%)	
Yes	258 (44.8)	116 ( 46.0%)	142 ( 43.8%)	
Missing	1	-	-	
How would you describe your quality of life, n (%)				0.0001
Poor/Fair	50 (8.7)	32 ( 12.7%)	18 ( 5.6%)	
Good/Very good	358 (62.4)	166 ( 65.9%)	192 ( 59.6%)	
Excellent	166 (28.9)	54 ( 21.4%)	112 ( 34.8%)	
Missing	3	-	-	
How satisfied: Opportunities to be active, n (%)				0.1047
Very dissatisfied/Dissatisfied/Neutral	49 (8.6)	19 ( 7.7%)	30 ( 9.3%)	
Satisfied	176 (30.8)	83 ( 33.5%)	93 ( 28.8%)	
Very satisfied	320 (56.0)	140 ( 56.5%)	180 ( 55.7%)	
Not relevant	26 (4.6)	6 ( 2.4%)	20 ( 6.2%)	
Missing	6	-	-	
How satisfied: Security, n (%)				0.0385
Very dissatisfied/Dissatisfied/Neutral	32 (5.6)	130 ( 52.2%)	204 ( 63.0%)	
Satisfied	204 (35.6)	104 ( 41.8%)	100 ( 30.9%)	
Very satisfied	334 (58.3)	14 ( 5.6%)	18 ( 5.6%)	
Not relevant	3 (0.5)	1 ( 0.4%)	2 ( 0.6%)	
Missing	4	-	-	
Have you been out of the village in the past 2 weeks, n (%)				0.0335
No No	14 (2.4)	10 ( 4.0%)	4 ( 1.2%)	
Yes	563 (97.6)	242 ( 96.0%)	321 ( 98.8%)	
How many times in the past 2 weeks: Driven yourself				0.0070
Mean (SD)	7.7 (5.0)	8.53 (4.44 )	7.28 (5.32 )	
Median	8.0	9.00	7.00	

Risk Factor	All residents (n=577)	<1 hour (n=252)	>=1 hour (n=325)	<i>p</i> value
Q1; Q3	4.0; 13.0	5.00 ;13.00	2.00 ;12.00	
Min; Max	0.0; 16.0	0.00 ;14.00	0.00 ;16.00	
Missing	119	-	-	
How many times in the past 2 weeks: Driven by friends or family				0.0010
Mean (SD)	2.9 (3.0)	3.78 (3.23 )	2.52 (2.81 )	
Median	2.0	2.00	2.00	
Q1; Q3	1.0; 4.0	2.00 ;5.50	1.00 ;3.00	
Min; Max	0.0; 15.0	0.00 ;14.00	0.00 ;15.00	
Missing	303	-	-	
How many times in the past 2 weeks: In a taxi				0.0038
Mean (SD)	0.6 (1.2)	1.75 (1.96 )	0.45 (0.92 )	
Median	0.0	1.00	0.00	
Q1; Q3	0.0; 1.0	0.00 ;3.50	0.00 ;1.00	
Min; Max	0.0; 6.0	0.00 ;6.00	0.00 ;4.00	
Missing	410	-	-	
How many times in the past 2 weeks: In the village bus/shuttle/van				0.0000
Mean (SD)	1.2 (1.5)	1.92 (1.26 )	0.88 (1.48 )	
Median	1.0	2.00	0.00	
Q1; Q3	0.0; 2.0	1.00 ;2.00	0.00 ;1.00	
Min; Max	0.0; 10.0	0.00 ;5.00	0.00 ;10.00	
Missing	380	-	-	
How many times in the past 2 weeks: Used public transport (bus, train)				0.2775
Mean (SD)	1.5 (3.1)	1.15 (1.35 )	1.52 (3.30 )	
Median	1.0	1.00	0.00	
Q1; Q3	0.0; 2.0	0.00 ;1.00	0.00 ;2.00	
Min; Max	0.0; 20.0	0.00 ;7.00	0.00 ;20.00	
Missing	365	-	-	
How many times in the past 2 weeks: Walking				0.0168
Mean (SD)	6.1 (5.3)	5.00 (4.27 )	6.43 (5.55 )	
Median	5.0	3.00	6.00	
Q1; Q3	1.0; 10.0	2.00 ;7.00	1.00 ;14.00	
Min; Max	0.0; 20.0	0.00 ;14.00	0.00 ;20.00	
Missing	240	-	-	
How often do you currently care for or				0.0004
assist other people, n (%)  Never	265 (47.2)	139 ( 55.6%)	126 ( 40.4%)	
Occasionally (less than once a week)	93 (16.5)	29 ( 11.6%)	64 ( 20.5%)	
Once a week	34 (6.0)	18 ( 7.2%)	16 ( 5.1%)	

Risk Factor	All residents (n=577)	<1 hour (n=252)	>=1 hour (n=325)	<i>p</i> value
2-5 times weekly	63 (11.2)	19 ( 7.6%)	44 ( 14.1%)	
Daily (6-7 times a week)	107 (19.0)	45 ( 18.0%)	62 ( 19.9%)	
Missing	15	-	-	
Main forms of exercise: Village fitness program or similar, n (%)				0.0007
No	385 (66.7)	187 ( 74.2%)	198 ( 60.9%)	
Yes	192 (33.3)	65 ( 25.8%)	127 ( 39.1%)	
Main forms of exercise: Dancing, n (%)				0.0007
No	536 (92.9)	244 ( 96.8%)	292 ( 89.8%)	
Yes	41 (7.1)	8 ( 3.2%)	33 ( 10.2%)	
Main forms of exercise: Walking, n (%)				0.0000
No	229 (39.7)	244 ( 96.8%)	292 ( 89.8%)	
Yes	348 (60.3)	8 ( 3.2%)	33 ( 10.2%)	
Main forms of exercise: Sports bowls golf croquet swimming, n (%)				0.0000
No	410 (71.1)	204 ( 81.0%)	206 ( 63.4%)	
Yes	167 (28.9)	48 ( 19.0%)	119 ( 36.6%)	
Main forms of exercise: Relaxation exercise yoga tai chi, n (%)				0.0472
No	479 (83.0)	218 ( 86.5%)	261 ( 80.3%)	
Yes	98 (17.0)	34 ( 13.5%)	64 ( 19.7%)	
Main forms of exercise: Gardening				0.0371
No	458 (79.4)	210 ( 83.3%)	248 ( 76.3%)	
Yes	119 (20.6)	42 ( 16.7%)	77 ( 23.7%)	
Would you say that you, n (%)				0.3801
Always or often feel lonely	55 (9.6)	29 ( 11.6%)	26 ( 8.1%)	
Sometimes feel lonely	160 (28.0)	70 ( 27.9%)	90 ( 28.1%)	
Never feel lonely	356 (62.3)	152 ( 60.6%)	204 ( 63.8%)	
Missing	6	-	-	
How many prescribed medications did you take yesterday (over a 24 hour period)?				0.0000
Mean (SD)	5.0 (3.2)	6.01 (3.36 )	4.21 (2.91 )	
Median	5.0	6.00	4.00	
Q1; Q3	3.0; 7.0	4.00 ;8.00	2.00 ;6.00	
Min; Max	0.0; 20.0	0.00 ;18.00	0.00 ;20.00	
Missing	42	-	-	
How many prescribed medications did you take yesterday (over a 24 hour period), n (%)				0.0000
≥9	78 (14.6)	54 ( 22.8%)	24 ( 8.1%)	
<9	457 (85.4)	183 ( 77.2%)	274 ( 91.9%)	
Missing	42	-	-	
How often do you have a drink containing alcohol, n (%)				0.2550

Risk Factor	All residents (n=577)	<1 hour (n=252)	>=1 hour (n=325)	<i>p</i> value
Never in recent years	118 (20.6)	53 ( 21.2%)	65 ( 20.2%)	
Less than 4 times per week	243 (42.5)	114 ( 45.6%)	129 ( 40.1%)	
4 or more times a week	211 (36.9)	83 ( 33.2%)	128 ( 39.8%)	
Missing	5	-	-	
How many drinks containing alcohol on a typical occasion when drinking, n (%)				0.6843
One or two	416 (91.8)	183 ( 92.4%)	233 ( 91.4%)	
Three or more	37 (8.2)	15 ( 7.6%)	22 ( 8.6%)	
Missing	124	-	-	
In terms of using the internet do you, n (%)				0.0000
Use the internet without help	370 (64.5)	151 ( 60.4%)	219 ( 67.6%)	
Use the internet with some help	52 (9.1)	12 ( 4.8%)	40 ( 12.3%)	
Do not use the internet	152 (26.5)	87 ( 34.8%)	65 ( 20.1%)	
Missing	3	-	-	
Over the past 6 months, internet use: searching for health information, n (%)				0.0215
Never	106 (26.0)	32 ( 19.9%)	74 ( 30.0%)	
Once or more times	302 (74.0)	129 ( 80.1%)	173 ( 70.0%)	
Missing	169	-	-	
Health professionals come into the				0.2369
village: Physiotherapist, n (%)  No	58 (15.3)	29 ( 17.8%)	29 ( 13.4%)	
Yes	322 (84.7))	134 ( 82.2%)	188 ( 86.6%)	
Missing	197	-	-	
Any (other) health or support initiatives offered, n (%)				0.1712
No	175 (40.8)	71 ( 37.2%)	104 ( 43.7%)	
Yes	254 (59.2)	120 ( 62.8%)	134 ( 56.3%)	
Missing	148	-	-	
Services are available to residents: Roads/paths/gardens/external building maintenance, n (%)				NA
No	0 (0.0)	-	-	
Yes	438 (100.0)	197 (100.0%)	241 (100.0%)	
Missing	139	-	-	
Services are available to residents: IT-computers and internet in central area, n (%)				0.0346
No	123 (28.5)	45 ( 23.4%)	78 ( 32.6%)	
Yes	308 (71.5)	147 ( 76.6%)	161 ( 67.4%)	
Missing	146	-	-	
Services are available to residents:				0.0552
Shuttle/bus/transport-for shopping/outings, n (%)  No	35 (7.6)	21 ( 10.2%)	14 ( 5.5%)	
Yes	426 (92.4)	184 ( 89.8%)	242 ( 94.5%)	
Missing	116	-	-	

Risk Factor	All residents (n=577)	<1 hour (n=252)	>=1 hour (n=325)	<i>p</i> value
Outdoor activities: Walking groups, n (%)				0.3861
No	62 (15.8)	30 ( 17.6%)	32 ( 14.4%)	
Yes	330 (84.2)	140 ( 82.4%)	190 ( 85.6%)	
Missing	185	-	-	
Outdoor activities: Bowls or petanque, n (%)				0.5732
No	65 (14.1)	31 ( 15.1%)	34 ( 13.3%)	
Yes	396 (85.9)	174 ( 84.9%)	222 ( 86.7%)	
Missing	116	-	-	
Outdoor activities: Mini-golf or putting green, n (%)				0.0007
No	271 (81.9)	121 ( 90.3%)	150 ( 76.1%)	
Yes	60 (18.1)	13 ( 9.7%)	47 ( 23.9%)	
Missing	246	-	-	
Outdoor activities: Other outdoor exercise, n (%)				0.0036
No	130 (29.6)	44 ( 22.6%)	86 ( 35.2%)	
Yes	309 (70.4)	151 ( 77.4%)	158 ( 64.8%)	
Missing	138	-	-	
Indoor activities: Exercise classes, n (%)				0.2390
No	58 (13.6)	29 ( 15.8%)	29 ( 11.9%)	
Yes	369 (86.4)	154 ( 84.2%)	215 ( 88.1%)	
Missing	150	-	-	
Indoor activities: Tai chi sessions, n (%)				0.1735
No	79 (20.3)	29 ( 17.2%)	50 ( 22.7%)	
Yes	310 (79.7)	140 ( 82.8%)	170 ( 77.3%)	
Missing	188	-	-	
Indoor activities: Yoga sessions, n (%)				0.2945
No	214 (55.7)	97 ( 58.8%)	117 ( 53.4%)	
Yes	170 (44.3)	68 ( 41.2%)	102 ( 46.6%)	
Missing	193	-	-	0.1761
Indoor activities: Fitness gym, n (%)				
No	68 (16.3)	34 ( 19.2%)	34 ( 14.2%)	
Yes	348 (83.7)	143 ( 80.8%)	205 ( 85.8%)	
Missing	161	-	-	
Indoor activities: Dancing, n (%)				0.0004
No	142 (38.8)	42 ( 28.0%)	100 ( 46.3%)	
Yes	224 (61.2)	108 ( 72.0%)	116 ( 53.7%)	
Missing	211	-	-	
Indoor activities: Swimming club, n (%)				0.8437

Risk Factor	All residents (n=577)	<1 hour (n=252)	>=1 hour (n=325)	<i>p</i> value
No	216 (61.2)	89 ( 61.8%)	127 ( 60.8%)	
Yes	137 (38.8)	55 ( 38.2%)	82 ( 39.2%)	
Missing	224	-	-	
Indoor activities: Aquarobics sessions, n (%)				0.0023
No No	133 (40.7)	67 ( 50.8%)	66 ( 33.8%)	
Yes	194 (59.3)	65 ( 49.2%)	129 ( 66.2%)	
Missing	250	-	-	
Indoor activities: Other indoor exercise, n (%)				0.0001
No No	127 (31.2)	37 ( 20.9%)	90 ( 39.1%)	
Yes	280 (68.8)	140 ( 79.1%)	140 ( 60.9%)	
Missing	170	-	-	
Environment for indoor activity:				0.1168
Community centre/function room, n (%)  No	12 (2.6)	8 ( 3.9%)	4 ( 1.6%)	0.1100
Yes	449 (97.4)	197 ( 96.1%)	252 ( 98.4%)	
Missing	116	-	-	
Environment for indoor activity:	110			0.7726
Swimming pool/spa pool, n (%)  No	06 (24.0)	43 ( 25.6%)	E2 ( 24 20/s)	0.7720
	96 (24.0)		53 ( 24.3%)	
Yes	290 (75.1)	125 ( 74.4%)	165 ( 75.7%)	
Missing Environment for indoor activity:	191	-	-	0.0252
Gymnasium/fitness centre, n (%)				0.9253
No	72 (16.4)	33 ( 16.6%)	39 ( 16.3%)	
Yes	367 (83.6)	166 ( 83.4%)	201 (83.8%)	
Missing Environment for indoor activity:	138	-	-	
Other indoor facilities, n (%)				0.4637
No	94 (26.5)	43 ( 28.5%)	51 ( 25.0%)	
Yes	261 (73.5)	108 ( 71.5%)	153 ( 75.0%)	
Missing	222	-	-	
Environment for outdoor activity: Bowling green/bocce/petangue, n (%)				0.3038
No	68 (15.0)	34 ( 16.9%)	34 ( 13.4%)	
Yes	385 (85.0)	167 ( 83.1%)	219 ( 86.6%)	
Missing	123	-	-	
Environment for outdoor activity: Mini-golf/putting green, n (%)				0.0245
No	271 (79.5)	121 ( 85.2%)	150 ( 75.4%)	
Yes	70 (20.5)	21 ( 14.8%)	49 ( 24.6%)	
Missing	236	-	-	
Environment for outdoor activity: Vegetable gardens, n (%)				0.4262
No	99 (25.5)	46 ( 27.5%)	53 ( 24.0%)	

Risk Factor	All residents (n=577)	<1 hour (n=252)	>=1 hour (n=325)	<i>p</i> value
Yes	289 (74.5)	121 ( 72.5%)	168 ( 76.0%)	
Missing	189	-	-	
Environment for outdoor activity: Other outdoor facilities, n (%)				0.8411
No	199 (59.9)	86 ( 60.6%)	113 ( 59.5%)	
Yes	133 (40.1)	56 ( 39.4%)	77 ( 40.5%)	
Missing	245	-	-	
How far from the village to supermarket, n (%)				0.7469
Under 0.5 km	145 (31.5)	64 ( 31.2%)	81 ( 31.6%)	
0.5 km-1.0 km	180 (39.0)	77 ( 37.6%)	103 ( 40.2%)	
Over 1 km	136 (29.5)	64 ( 31.2%)	72 ( 28.1%)	
Missing	116	-	-	
How far from the village to dairy/small shops, n (%)				0.5343
Under 0.5 km	275 (59.7)	119 ( 58.0%)	156 ( 60.9%)	
0.5 km-1.0 km	139 (30.2)	67 ( 32.7%)	72 ( 28.1%)	
Over 1 km	47 (10.2)	19 ( 9.3%)	28 ( 10.9%)	
Missing	116	-	-	
How far from the village to bus stop, n (%)				0.7673
Under 0.5 km	338 (73.3)	147 ( 71.7%)	191 ( 74.6%)	
0.5 km-1.0 km	88 (19.1)	42 ( 20.5%)	46 ( 18.0%)	
Over 1 km	35 (7.6)	16 ( 7.8%)	16 ( 7.8%)	
Missing	116	-	-	
How far from the village to train station, n (%)				0.0011
Under 0.5 km	11 (2.6)	0 ( 0.0%)	11 ( 4.6%)	
0.5 km-1.0 km	21 (4.9)	8 ( 4.2%)	13 ( 5.4%)	
Over 1 km	399 (92.6)	183 ( 95.8%)	216 ( 90.0%)	
Missing	146	-	-	
Who owns and operates the village, n (%)				0.0000
A private company	344 (60.7)	176 ( 72.1%)	168 ( 52.0%)	
A registered charitable, not for profit, trust	95 (16.8)	38 ( 15.6%)	57 ( 17.6%)	
Owned by a private individual/partnership	22 (3.9)	13 ( 5.3%)	9 ( 2.8%)	
Other (specify):	106 (18.7)	17 ( 7.0%)	89 ( 27.6%)	
Missing	10	-	-	

## Supplementary Table S2. Multivariable analysis of factors associated with ≥1-hour physical activity in last three days

Variable	Odds ratio (95%CI), p	P for overall
variable	Guas ratio (55%ci), p	effect
Gender		0.007
Female	0.46 (0.26, 0.81), 0.007	
Male	1.00 (ref)	
Age (year)	0.97 (0.93, 1.01), 0.10	0.10
Ethnicity		0.72
European	0.77 (0.19, 3.20), 0.72	
Māori/Pasifika/Asian/Other	1.00 (ref)	
Marital status		0.14
Never married	1.00 (ref)	
Married/Civil union/Defacto	1.40 (0.41, 4.81), 0.59	

	Variable Odds ratio (95%CI), p	P for overall	
Variable		effect	
Previously but no longer married	2.25 (0.67, 7.54), 0.19		
Hearing		0.14	
Adequate	1.00 (ref)		
Minimal difficulty	0.71 (0.44, 1.14), 0.15		
Moderate to severe hearing loss	1.47 (0.68, 3.22), 0.33		
Participated in social activities of long-standing interest		0.47	
Never/more than 30 days ago	1.00 (ref)		
4–30 days ago	1.86 (0.52, 6.68), 0.34		
In last 3 days	2.12 (0.64, 6.96), 0.22		
Decline in level of participation in social/religious / occupational/		0.24	
other preferred activities in last 90 days		0.24	
No Decline	1.00 (ref)		
Decline	1.66 (0.71, 3.88), 0.24		
Drove car (vehicle) in the last 90 days		0.36	
No	1.31 (0.74, 2.33), 0.36		
Yes	1.00 (ref)		
Coronary heart disease		1.00	
Present	1.00 (0.60, 1.66), 1.00		
Not present	1.00 (ref)		
Congestive heart failure		0.85	
Present	1.09 (0.45, 2.61), 0.85		

Variable	Odds ratio (95%CI), p	P for overall	
		effect	
Not present	1.00 (ref)		
Depression		0.82	
Present	0.92 (0.45, 1.87), 0.82		
Not present	1.00 (ref)		
Falls		0.21	
Falls in last 90 days	0.63 (0.31, 1.29), 0.21		
No falls in last 90 days	1.00 (ref)		
Constipation		0.046	
Not present	1.00 (ref)		
Present but no exhibited in last 3 days	2.13 (1.02, 4.45), 0.04		
Exhibited on 1, 2 or 3 of last 3 days	0.55 (0.20, 1.51), 0.24		
Difficulty falling asleep		0.09	
Not present	1.00 (ref)		
Present but no exhibited in last 3 days	2.81 (1.11, 7.14), 0.03		
Exhibited on 1, 2 or 3 of last 3 days	1.13 (0.68, 1.88), 0.63		
Dyspnoea		0.74	
Absent	1.00 (ref)		
On day to day or rest	0.72 (0.30, 1.71), 0.45		
Present on moderate activity	0.98 (0.56, 1.71), 0.95		
Fatigue: inability to complete normal daily activities		<0.001	
None	1.00 (ref)		

Variable	Odds ratio (95%CI), p	P for overall effect
Minimal	0.34 (0.21, 0.55), <0.001	
Moderate to Severe	0.11 (0.04, 0.27), <0.001	
Pain frequency		0.23
Not present	1.00 (ref)	
Present but not in last 3 days	0.95 (0.39, 2.32), 0.91	
Exhibited on 1, 2 or 3 of last 3 days	0.67 (0.41, 1.09), 0.10	
Self-reported health		0.006
Poor or Fair	1.00 (ref)	
Good	1.43 (0.78, 2.62), 0.25	
Excellent	8.39 (2.26, 31.10), 0.008	
Resident sampling method		0.50
Sampled	0.83 (0.50, 1.40), 0.50	
Random	1.00 (ref)	
Access to residence		0.008
From outdoors (only)	0.51 (0.31, 0.84), 0.008	
Includes internal access, for example from atrium or corridor	1.00 (ref)	
Security and safety was a factor in moving to village		0.03
Yes	1.63 (1.05, 2.54), 0.03	
No	1.00 (ref)	
Self-reported quality of life		0.96
Excellent	1.00 (ref)	

		P for overall
Variable	Variable Odds ratio (95%CI), p	effect
Good/Very good	1.08 (0.64, 1.82), 0.77	
Poor or Fair	1.09 (0.42, 2.87), 0.86	
Satisfaction with opportunities to be active		0.04
Very dissatisfied/Dissatisfied/Neutral	2.02 (0.86, 4.78), 0.11	
Satisfied	1.02 (0.60, 1.74), 0.93	
Very satisfied	1.00 (ref)	
Not relevant	5.13 (1.34, 19.60), 0.02	
Satisfaction with security		0.59
Very dissatisfied/Dissatisfied/Neutral	0.87 (0.31, 2.43), 0.79	
Satisfied	0.70 (0.43, 1.16), 0.17	
Very satisfied	1.00 (ref)	
Not relevant	1.15 (0.06, 23.16), 0.93	
Been out of the village in the past 2 weeks		0.86
No	0.87 (0.19, 4.07), 0.86	
Yes	1.00 (ref)	
Frequency of caring for or assisting other people		0.42
Never	1.00 (ref)	
2-5 times/daily	1.26 (0.72, 2.20), 0.41	
Once a week	1.47 (0.82, 2.63), 0.20	
Take part in village fitness program or similar		0.007
No	0.51 (0.32, 0.84), 0.007	

	Variable Odds ratio (95%CI), p	P for overall	
Variable		effect	
Yes	1.00 (ref)		
Number of regular medications (interRAI)	0.89 (0.81, 0.97), 0.01	0.01	
Use of internet		0.02	
Use the internet without help	1.00 (ref)		
Use the internet with some help	2.77 (1.15, 6.69), 0.02		
Do not use the internet	0.76 (0.43, 1.35), 0.35		
Village owner/operator		0.007	
A private company	1.00 (ref)		
A registered charitable, not for profit, trust	1.06 (0.57, 1.95), 0.86		
Owned by a private individual/partnership	0.19 (0.07, 0.54), 0.002		

Notes, 95%CI, 95% confidence interval; interRAI, international Resident Assessment Instrument.