



Older former drivers' health, activity, and transport in New Zealand

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ABSTRACT

Objectives: Describe characteristics of New Zealand older adults who are no longer driving - their health, activity patterns, and mobility/transport practices.

Methods: Cross-sectional study of 102 former drivers, recruited from a population-based sample of community-dwelling older adults (≥ 65 years), the first wave of an older driver longitudinal study.

Results: Most common reasons for stopping driving were feeling unsafe/uncomfortable or health issues. Most participants did not plan ahead for driving cessation and travelled by car with family or friends; very few used alternative transport modes. Compared with healthier former drivers, former drivers with poor self-reported health expressed more dissatisfaction with their lives and their ability to get places, were lonelier, and went out less than before they stopped driving.

Conclusion: The older New Zealand former drivers studied were mostly female, widowed, and living alone. Very few had planned ahead for driving cessation, and most transport was heavily dependent on private cars driven by others.

1. Introduction

In the first three decades of the 21st century, the maturation of the “baby boom” population, combined with increased longevity and declining birth rates, is predicted to transform the developed world's demographics (Organisation for Economic Co-Operation and Development, 2001). In most member countries of the Organization for Economic Cooperation and Development (OECD), older adults (i.e., those aged 65+ years) comprise the fastest growing population segment. As governments contend with the implications of increased life expectancy and ageing populations, one aspect that is difficult to predict is the health trajectory and quality of life that this age cohort will experience. Quality of life (independence and life satisfaction) is greatly affected by car ownership and driving (Chihuri et al., 2016; Ragland et al., 2005), as the most-preferred personal transport mode. Further, driving is an important part of personal freedom, associated with a sense of control over one's life (Ragland et al., 2005).

While the ability to continue to drive is key to maintaining independence, quality of life, and mobility for older people, for their own wellbeing as well as that of others, it is important that older drivers remain as safe as possible. Driving is a complex psychomotor task, requiring physical, cognitive, behavioral, and sensory-perceptual abilities that can be affected by ageing, although individuals vary greatly in when and if functional limitations or declines occur. As driving becomes more difficult, or individuals experience serious health or safety issues, older adults may limit their driving or stop driving completely.

Ceasing driving, and the associated loss of independent mobility, can have serious consequences for older people. In the research

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literature review by Chihuri and colleagues on the consequences of driving cessation, cessation was associated with “declines in general health and physical, social, and cognitive function and with greater risks of admission to long-term care facilities and mortality” [2; p.332]. Ceasing driving clearly has the potential to negatively affect social participation, so important to quality of life. When older adults cease driving, questions arise about how they manage their transport needs, and if those needs are adequately met.

For the majority of older New Zealanders, as in other developed countries, the private car is the main means of transport (Ministry of Transport, 2015) and is likely to remain so for the foreseeable future (Insurance Institute for Highway Safety, 2016). By 2036, almost one quarter of New Zealand's (NZ) population will be 65+ years old (currently it is 1 in 7). It is important to understand the circumstances leading to driving cessation, and former drivers' post-cessation adaptation. The study's aims were to describe the characteristics of NZ's former drivers, including their health, activity patterns, quality of life, and mobility/transport practices. Such information will enable development of appropriate resources for older persons who no longer drive to ensure health maintenance, sustain quality of life, and meet mobility needs.

2. Methods

2.1. Participants and procedures

This study surveyed persons aged 65 years and older who (1) lived independently (community dwelling), and (2) had driven a car at some point in their life. The survey was part of the first wave of an older driver longitudinal study (NZPATHS: New Zealand Prospective Older Adult Transport and Health Study). NZPATHS is examining the transition toward non-driving, and identifying factors facilitating positive outcomes following driving cessation (Brookland et al.). Stratified random sampling was used to draw a sample of 4000 persons, aged 65 years and older from the electoral roll, with Māori (indigenous population) and adults 75 years and older over-sampled. Invitation to participate was by mail, followed with computer assisted telephone interviews by trained interviewers between July 28th, 2016 and April 3rd, 2017. Of the sample of 4000, 1375 were excluded (n = 469 ineligible; n = 906 untraceable). In addition to the two main eligibility criteria (ever driven and community dwelling), several other conditions also

Table 1
Socio-Demographic characteristics of older former drivers, by gender.

	Men		Women		Total	
	n	%	n	%	n	%
Gender	29	28.4	73	71.6	102	100
Age						
65–69 years	4	13.8	8	11.0	12	11.8
70–74 years	8	27.6	5	6.9	13	12.8
75–79 years	6	20.7	13	17.8	19	18.6
80–84 years	7	24.1	28	38.4	35	34.3
85 + years	4	13.8	19	26.0	23	22.6
				DF = 4	X ² 9.8	P = .04
Ethnicity						
Māori	6	20.7	14	19.2	20	19.6
NZ European	20	69	54	74.0	74	72.6
Other	3	10.3	5	6.9	8	8.8
				DF = 2	X ² .4	P = .8
Marital status						
Married/partnered	15	51.7	27	37.0	42	41.2
Widowed	5	17.2	34	46.6	39	38.2
Single/separated/divorced	9	31	12	16.4	21	20.6
				DF = 2	X ² 7.9	P = .02
Living arrangement						
With spouse/partner	15	51.8	26	35.6	41	40.2
Alone	8	27.6	41	56.2	49	48.0
With others (no spouse)	6	20.7	6	8.2	12	11.8
				DF = 2	X ² 7.6	P = .02
Education						
None	15	51.7	30	41.0	45	44.1
Secondary	4	13.8	18	24.7	22	21.6
Post-Secondary	10	34.5	25	34.3	35	34.3
				DF = 2	X ² 1.7	P = .4
Deprivation						
1 least deprived	6	20.7	6	8.2	12	11.8
2	3	10.3	13	17.8	16	15.7
3	6	20.7	16	21.9	22	21.6
4	7	24.1	21	28.8	28	27.5
5 most deprived	7	24.1	17	23.3	24	23.5
				DF = 4	X ² 3.7	P = .5

Table 2

Licensing, driving history and cessation, activity, travel distance and satisfaction, by gender.

	Men (N = 29)		Women (N = 73)	
	n	%	n	%
Age at first licence				
15 years	12	41.4	6	8.4
16–20	12	41.4	20	28.2
21–30	4	13.8	31	43.7
31–40	1	3.4	14	19.7
		DF = 3	X ² 22.4	P < .001
Time since last drove				
3–12 months ago	8	27.6	16	22.2
Between 1 and 4 years	13	44.8	26	36.1
More than 4 years	8	27.6	30	41.7
		DF = 2	X ² 1.7	P = .4
Driving cessation				
Reasons for stopping driving^a				
Health issues - various	17	60.7	43	60.6
Alternative transport available	9	32.1	31	44.3
Feel unsafe, don't enjoy driving	22	78.6	49	70.0
Recommended by doctor	12	42.9	18	25.7
Recommended by family	3	10.7	11	15.7
Financial	4	14.3	10	14.3
Licence/testing	8	28.6	13	18.8
Upset when stopped driving				
0–2 A little	16	57.1	30	42.3
3–7 Some	5	17.9	22	31.4
8–10 A lot	7	25.0	18	25.7
		DF = 2	X ² 2.2	P = .3
Still upset at not driving				
0–2 A little	16	57.1	42	60.0
3–7 Some	6	21.4	17	24.3
8–10 A lot	6	21.4	11	15.7
		DF = 2	X ² .5	P = .7
Had you made any plans for the possibility of stopping driving				
Yes	1	3.6	6	8.5
No	27	96.4	65	91.6
				P = .7
Who decided you should stop driving				
Self	18	64.3	50	73.5
Others	7	25.0	13	18.3
Self and others	3	10.7	8	11.3
		DF = 2	X ² .6	P = .8
Timing of stopping driving				
About right	18	64.3	44	62.0
Too early	6	21.4	23	32.4
Too late	2	7.1	2	2.8
Don't Know	2	7.1	2	2.8
		DF = 3	X ² 2.7	P = .4
Activity				
Level of engagement in social activities beyond the house (in past three months)				
Low	13	44.8	24	33.3
Medium	9	31.0	23	31.9
High	7	24.1	25	34.7
		DF = 2	X ² 1.5	P = .5
How often do you go out (leave the house)				
Few times a month or less	5	17.2	7	9.9
Once or twice a week	8	27.6	21	29.6
Daily or 3–4 days a week	16	55.2	43	60.6
		DF = 2	X ² 1.1	P = .6
Travel distance and satisfaction				
Furthermost destination travelled to (in past three months)				
Within immediate neighbourhood	6	20.7	7	9.9
Just beyond immediate neighbourhood	2	6.9	10	14.1
Neighbouring towns	8	27.6	21	29.6
More distant towns in another region	13	44.8	33	46.5
		DF = 3	X ² 2.8	P = .4
Do you go out more, less, or same as before you stopped driving				

(continued on next page)

Table 2 (continued)

	Men (N = 29)		Women (N = 73)	
	n	%	n	%
A lot or a little less	18	62.1	46	64.8
About the same	9	31.0	16	22.5
A little or a lot more	2	6.0	9	12.7
		DF = 2	X ² 1.2	P = .5
How satisfied are you that you can get to where you want to go				
Completely satisfied	10	35.7	29	40.9
Not completely satisfied	18	64.3	42	59.1
		DF = 1	X ² .2	P = .6
If not completely satisfied:				
Are there places you want to go to but can't because of transport issues				
No	10	55.6	11	26.8
Yes	8	44.4	30	73.2
		DF = 1	X ² 4.5	P = .03

^a Multiple reasons possible.

rendered someone ineligible to participate, and were either confirmed by the respondent or a family member. These included advanced ill health, living overseas, or deceased. A large number of the sample were untraceable. As the sample was drawn from the electoral roll, this was expected. The electoral roll does not include phone numbers, and these had to be manually searched for. Of the remaining eligible population (n = 2625) 1283 (49%) agreed to participate in the study. Participants who had driven within the previous three months were classified as **current drivers** (n = 1181). Participants who had not driven in the previous three months (Marshall et al., 2013) were classified as **former drivers** (n = 102), and these former drivers were the focus of this paper.

This project has ethical approval from the University of Otago Human Ethics Committee (Health: H15/080). Informed consent was obtained from participants prior to their interview.

2.2. Measures

2.2.1. Socio-demographics (Table 1 by gender)

Gender was self-identified. Age was calculated from birthdate and interview date. Ethnicity was self-identified using the 2013 NZ Census ethnicity question. For participants reporting more than one ethnicity, the highest priority ethnicity from the NZ Ministry of Health was assigned (order is Māori, Pacific, Asian, NZ European and Other) (Ministry of Health, 2008). Overall severity of deprivation was classified from least deprived (level 1) to most deprived (level 5) using the Index of Multiple Deprivation (IMD) which has 28 indicators, defining seven deprivation domains: Employment, Income, Crime, Housing, Health, Education, and Geographical Access (Exeter et al., 2017). Participants were asked their marital status, with whom they lived most of the time, and their highest level of education.

2.2.2. Licensure, driving, social engagement, travel distance, travel satisfaction (Table 2)

Participants were asked their age when first licensed and how long ago they last drove (3–6 months, 6–12 months, 1–2 years, 2–3 years, 3–4 years, 4–5 years, more than 5 years). Responses were recoded to 3–12 months; 1–4 years; more than 4 years.

2.2.2.1. Driving cessation. Several questions were asked about the circumstances surrounding driving cessation (Charlton et al., 2006). Participants were read a list of possible reasons (Table 2) why people stop driving and asked which applied to them. The impact of driving cessation was assessed by asking how upset they were about stopping driving (at the time), as well as how they currently felt about no longer driving. Responses were rated from zero (*not at all upset*) to ten (*extremely upset*) and categorised as 0–2 a little, 3–7 some, 8–10 a lot. Participants were also asked if they made plans for stopping driving, whose decision stopping driving was (*self, others or both*), and whether they thought it was the right time to do so (*about right, too early, too late*) (Charlton et al., 2006).

2.2.2.2. Social engagement. Social engagement was measured by how often over the past three months participants took part in eight types of social activities outside of the home involving: family/friends; church/religion; sports/physical; recreation; courses/concerts/museums; organisations/clubs/special interest groups; neighbourhood/community/professional association; volunteer/charity work. Response options were at least once a day (4), at least once/week (3), at least once/month (2), not in last 3 months (0) (Gilmour, 2012). Scores were summed and categorised as low (≤ 4), medium (5–9), high (≥ 10). Participants reported how often they go out (i.e., leave the house, any transport means) with responses of *daily, almost daily, 3–4 days/week* (recoded 2); *once or twice/week* (recoded 1); *a few times/month, once a month or less* (recoded 0) (Charlton et al., 2006). They were then asked if they go out a lot more, a little more, about the same, a little less, or a lot less than before they stopped driving. Responses were grouped as: *a lot or a little less* (0), *about same* (1), *a little or a lot more* (2) (Charlton et al., 2006).

Travel space, a modified measure of the 'life space' concept (Li et al., 2017), was used to measure distance travelled. Participants were asked if they travelled (by any mode) to destinations *within their immediate neighbourhood* (1), *just beyond their neighbourhood* (2),

Table 3

Measures of health and well-being, general activity and current transport of older former drivers, by self-reported general health status.

General Health Status	Excellent/Very Good		Good		Fair/Poor	
	(N = 37)		(N = 29)		(N = 34)	
	n	%	n	%	n	%
How would you say your health is?						
Men	10	35.7	10	35.7	8	28.6
Women	27	37.5	19	26.4	26	37.1
				DF = 2	X ² 1.0	P = .6
How is your health compared with one year ago?						
Much/somewhat better	5	13.5	3	10.3	3	8.8
Same	27	73.0	18	62.1	10	29.4
Much/somewhat worse	5	13.5	8	27.6	21	61.8
				DF = 4	X ² 19.5	P = .0006
Quality of Life (EQ5D)						
No problems	13	35.1	4	13.8	1	2.9
Problem with one domain	7	18.9	5	17.2	2	5.9
Problem with two domains	8	21.6	8	27.6	7	20.6
Problem with three domains	7	18.9	6	20.7	6	17.7
Problem with four domains	2	5.4	2	6.9	13	38.2
Problem with all domains	0	0.0	4	13.8	5	14.7
				DF = 10	X ² 32.5	P = .0003
Life satisfaction						
Not satisfied	2	5.4	6	20.7	18	54.6
Satisfied	16	43.2	10	34.5	10	30.3
Very satisfied	19	51.4	13	44.8	5	15.1
				DF = 4	X ² 24.1	P < .0001
Loneliness						
No	30	80.0	13	44.8	15	48.4
Yes	7	20.0	16	55.1	16	51.6
				DF = 2	X ² 11.4	P = .003
Depression						
No	31	83.8	20	69.0	20	66.7
Yes	6	16.2	9	31.0	10	33.3
				DF = 2	X ² 3.1	P = .2
In past 12 months, level of social engagement in activities beyond the house						
Low	10	27.0	12	42.9	13	38.2
Medium	9	24.3	10	35.7	13	38.2
High	18	48.7	6	21.4	8	23.5
				DF = 4	X ² 7.3	P = .1
How often do you go out (leave the house)						
Few times a month or less	2	5.4	3	10.3	6	18.2
Once or twice a week	10	27.0	10	34.5	9	29.3
Daily or 3–4 days a week	25	67.6	16	55.2	18	59.6
				DF = 4	X ² 3.6	P = .5
Do you go out more, less, or same as before you stopped driving						
A lot or a little less	18	48.9	18	62.1	27	81.8
About the same or more	19	51.3	11	37.9	6	18.2
				DF = 2	X ² 8.4	P = .05
Furthermost destination travelled to (in past three months)						
Immediate neighbourhood or just beyond	7	18.9	10	34.5	8	24.2
Neighbouring towns	11	29.7	7	24.1	11	33.4
More distant towns in another region	19	51.4	12	41.4	14	42.4
				DF = 4	X ² 2.5	P = .6
Are you satisfied you can go to most of the places you want to go to						
Completely satisfied	20	54.1	12	41.4	7	21.2
Not completely satisfied	17	46.0	17	58.6	26	78.8
				DF = 2	X ² 7.9	P = .02

neighbouring towns (3), and towns in another region (4), within the past three months. Responses to each destination were yes/no and a score was assigned based on the furthest distance they had travelled (1 - within immediate neighbourhood to 4 - towns in another region).

2.2.3. Health and well-being (Table 3)

General health status was self-rated using the first two questions of the SF-36 measure (Hays et al., 1993). Responses to “In general, would you say your health is: *excellent, very good, good, fair, or poor?*” were collapsed: Excellent/very good; good; and fair/poor. Responses to “Compared to one year ago, how would you rate your health in general now” were collapsed into three groups:

Table 4

Former driver travel destinations in the last three months: How often do you go to the following places, and how do you usually travel there?

Place	n	Most common mode of transport reported (n)
Shops, post office, bank etc.		
Never	8	–
Few times a month or less	13	Partner (5), family (5)
1-2 times a week	62	Partner (15), family (11), friend (6), walk (12), mobility scooter (6), bus/train (4), taxi (3)
3 + times a week	18	Partner (6), family (3), walk (6)
Doctor, physiotherapist etc.		
Never	6	–
Few times a month or less	91	Partner (26), family (18), friend (5), walk (15), mobility scooter (4), bus/train (5), taxi (11)
1-2 times a week	3	Partner (1), family (1), walk (1)
3 + times a week	0	
Sports, social, educational or unpaid work		
Never	39	–
Few times a month or less	28	Partner (13), family (5), friend (1), taxi (2)
1-2 times a week	24	Partner (3), family (3), friend (8), volunteer service (4)
3 + times a week	9	Partner (2), friend (3)
Visit family or friends		
Never	16	–
Few times a month or less	48	Partner (13), family (23), friend (2), bus/train (3)
1-2 times a week	24	Partner (9), family (7), friend (2), bus/train (3)
3 + times a week	12	Family (3), friend (2), walk (4)
Places of worship		
Never	68	–
Few times a month or less	15	Partner (3), family (2), friend (3), walk (3)
1-2 times a week	16	Partner (5), family (3), friend (6)
3 + times a week	1	Bus/train (1)

much/somewhat better; same; much/somewhat worse.

Quality of Life was assessed using the EQ-5D-5L (Derrett et al., 2011) which addresses five domains of quality of life: mobility, self-care, usual activities, pain/discomfort, and anxiety/depression. For each, participants indicated their current state: *no problems* (level 1), *slight problems* (level 2), *moderate problems* (level 3), *severe problems* (level 4), and *extreme problems* (level 5). Domain-specific responses were dichotomised into ‘no problems’ (level 1) and ‘problems’ (levels 2–5), and these scores were summed to give an overall measure ranging from 0 (no problems with any domain) to 5 (problems in all five domains). **Life satisfaction** was measured using the OECD single item measure “Overall, how satisfied are you with life as a whole these days?” (Organisation for Economic Co-operation and Development, 2013). Response ratings on a scale from 0 “not at all satisfied” to 10 “completely satisfied” were recoded to 0–6 not satisfied; 7–8 satisfied; 9–10 very satisfied.

Loneliness was assessed using the 6-item Loneliness Scale (De Jong Gierveld and Van Tilburg, 2006) and total score was recoded to *not lonely* (0–1); *lonely* (2–6).

The 15 item Geriatric Depression Scale Short Form was used to measure depression. Responses were summed with scores of 5 or more indicating depressive symptomatology (Kerse et al., 2016).

2.2.4. Destinations, frequency of travel and modes of transport (Table 4)

Participants were asked how often they went to various places and how they usually travelled there (modified from (Charlton et al., 2006)). The SuperGold Card (SGC) is a card offering discounts and concessions (including free off-peak public transport) for seniors and veterans, in recognition of their contribution to NZ society, and is automatically issued to those aged 65 or over. Participants were asked if they used their SGC for cheaper public transport, and if so, how often. They were also asked whether they had heard of the Total Mobility Scheme (subsidised taxi service for people with impairments who cannot complete journeys unaccompanied) and whether they had used it. Regarding satisfaction with transport, participants were asked how satisfied they were with their ability to go where they wanted to go (scale of 1–7) (Li et al., 2017). If not completely satisfied, they were asked what places they wanted to go to but couldn't because of transport issues. These responses were recorded and later coded by theme.

2.3. Analysis

Analysis was done using SAS (SAS Institute Inc, 2010). Descriptive analysis used the Chi Square statistic, and Fisher exact test where appropriate, for relationships between categorical variables. Where possible, measures were categorised in line with previous studies except where the numbers were too small and similar responses needed to be combined for the analysis.

Missing data were minimal (2%), and missing responses were excluded from relevant analyses.

3. Results

In this former driver sample, there were 2.5 times more women (72%) than men (Table 1). Because gender differences were likely, and of interest, results are presented by gender. Women were significantly older than men, with 64% aged 80 + years compared with 38% of men. Ethnicity did not differ by gender, with around 20% Māori overall. Living arrangement differed with more men (52%) living with a spouse/partner than women (36%). Many men (52%) and women (41%) had not attained any educational qualification. One third had post-secondary qualifications. Deprivation level did not differ by gender. Not surprisingly (given this age cohort), men were significantly younger than women when first licensed (Table 2). Most had not driven for more than one year.

The most common reason for stopping driving was not feeling safe/comfortable or not enjoying driving (79% of men, 70% of women), followed by health reasons (61% both genders). Most (69%) stopped suddenly, the rest having gradually stopped. Most (70 + %) were not very upset when they stopped, and even fewer were still upset. The majority felt it was their own decision to stop driving and that the timing was “about right”. The vast majority of both genders had made no plans for the possibility of driving cessation (except three who stopped suddenly and four who stopped gradually).

Most men and women had medium to high levels of social engagement, were able to leave their house several times a week, and travelled to towns in distant regions. Nevertheless, they went out less than before they stopped driving, and the majority were not completely satisfied they could go to places they wanted (64% men, 59% women). Significantly more women than men had places they wanted to go but couldn't because of transport issues. These places included social activities, visiting people, shopping, travel to other towns and “lots of places”.

About half (n = 51) had used their SGC for cheaper transport, and of these, most used it fortnightly or less (n = 27). For non-users, most reported they didn't use the SGC because someone else was available to drive them; it was not easy to use; or the service was not available in their area. Nearly 60% (n = 59) had heard of the Total Mobility Scheme, but only 28 had used this service.

Self-reported health status (Table 3) did not differ significantly by gender, so men and women were combined for analysis of health and wellbeing measures examined by health status categories: fair/poor; good; very good/excellent. Among those with fair/poor health status, 62% reported their health was now worse/much worse than a year ago. The excellent/very good and good health status groups reported their health was much the same as a year ago (73% and 62% respectively).

The fair/poor health group had significantly more quality of life problems than the other groups, with nearly 53% having problems in at least four domains compared with 21% of the good and 5% of the excellent/very good groups. Life satisfaction followed a similar pattern with 55% of the fair/poor group not satisfied compared with 5% of the excellent/very good and 21% of the good groups. The excellent/very good health group was significantly less lonely than the other two groups. Health status groups did not differ on depression.

Health status groups did not differ significantly in levels of outside engagement, how often they left home, or distances travelled, but the fair/poor health group went out significantly less than before they stopped driving (Table 3). Those with fair/poor health were significantly less likely to be completely satisfied (21%) that they could go to most places they wanted, because of transport issues than the excellent/very good (54%) and good (41%) groups.

Travel to various places (Table 4) showed infrequent trips to worship or sport/social/educational/unpaid work destinations. Reported transport modes showed a predominance of rides obtained from partners, families, and friends, with very little use of mobility scooter, bus/train, taxi, or walking.

4. Discussion

These NZ former drivers are in many ways similar to those in other studies in other locales – they are more likely to be women (Choi et al., 2012), with women older than men, and also more likely to be widowed (Chipman et al., 1998) and living alone. It is interesting, and perhaps important, that these former drivers are not exclusively older – nearly one quarter of them are under 75 years old.

Most (69%) made their own decisions to stop driving, similar to what an Australian study found (Oxley and Charlton, 2009). Not feeling safe/comfortable was the most common reason for stopping driving, followed by health issues, which was also found by others (Choi et al., 2012). Interestingly, more men than women (43% vs. 26%) gave doctors' recommendation and licence/testing (29% vs. 19%) as reasons for stopping driving, which might fit with the observation that men may be more likely than women to keep driving, even without a licence (Kostyniuk and Shope, 2003). Similar to another finding by the same authors (Kostyniuk and Shope, 2003), very few former drivers (7% overall, 1% men 6% women) had planned ahead for driving cessation.

While the former drivers reported a range of health status, there was a trend among the less healthy former drivers to report poorer health than a year previous, declining health having also been noted in other studies (Chihuri et al., 2016; Anstey et al., 2017). Quality of life and life satisfaction have been found to be lower among former drivers (Liddle et al., 2012), and were lower among these former drivers who reported poorer health. Those with poorer health also reported more loneliness, but not significantly more depression as some studies have found (Chihuri et al., 2016; Ragland et al., 2005; Anstey et al., 2017; Choi and DiNitto, 2016). In a United States longitudinal study, Curl and colleagues found that “*productive engagement (paid work, formal volunteering, and informal volunteering) was negatively affected when older adults stopped driving, but social engagement was not immediately compromised*” [26; p.423]. Social engagement was, however, negatively affected over time, as Marotoli et al. also found (Marotoli et al., 2000). Similarly, former drivers in this NZ study mostly reported getting out less than before (although frequency did not differ by health status), and (especially those in poorer health) not being completely satisfied they could go where they wanted. Women more than men reported that there were places they wanted to go (including social activities), but couldn't because of transport issues,

supporting Chihuri and colleagues' comment that "*Loss of social functioning appears to affect women more than men ...*" [2; p.339].

Similar to others' findings (Kostyniuk and Shope, 2003; Choi and DiNitto, 2016), transport modes used by these former drivers reflect a heavy dependence on rides in private cars from others, which are not always easy to find or comfortable to request (Adler and Rottunda, 2006), and infrequent use of public transport (Kostyniuk and Shope, 2003). Planning for mobility after driving cessation is clearly a high priority (Curl et al., 2014).

Also, due to the small numbers the results should be interpreted with caution.

The findings from this small, mostly female, descriptive study of a sample of NZ former drivers study should be interpreted with caution, due to small numbers. In spite of this limitation, the findings show considerable similarity to those of other studies. This study was not longitudinal, nor a comparison study, but was population-based, and is important for bringing attention to the issue of former drivers' quality of life and resource needs, while the larger longitudinal study continues. Future research results should highlight further the practical and policy implications that have emerged already – the need for planning ahead, and adequate resources to meet older people's mobility needs in order to sustain their quality of life.

4.1. Impact statement

Most former drivers had not planned for their mobility needs following driving cessation. Transport was predominantly provided via private cars of family and friends. Policy implications include the need for planning ahead and for resources to meet the mobility needs of an ageing population that relied heavily on private cars.

Conflicts of interest

None to disclose.

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