Title

Transport safety for older drivers: a study of their experiences, perceptions and management needs.

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Abstract

The study aimed to identify transport options and licensing issues for older Queenslanders across a range of cognitive functioning. Ninety-five participants aged 75 and over were interviewed about their driving status and accident record and tested for cognitive ability. After stratification on cognitive level and driver status (current, ex-driver or non-driver), 30 were selected for further in-depth interview concerning demographics, licence status and impact of change, travel options available and used, and travel characteristics.

Considerable reliance on the motor vehicle as the mode of transport and the decision to cease driving were major quality of life issues. There was little evidence of planning and support in making the decision to stop driving. Although significant differences in transport decisions on the basis of cognitive level were not detected, people with severely compromised cognitive ability (eg unable to give informed consent) had been excluded. The study suggested the need for resources to assist older people/carers/health professionals to plan for transition from driver to non-driver and manage alternative transport options more effectively.

Introduction

In a society dependent on the car, the capacity to drive safely is a primary prerequisite for mobility. Maintenance of independence and social support networks is significant for quality of life, particularly for older Australians, which makes ability to drive and access to a motor vehicle especially important.

As the number of older drivers increases with ageing of the population, management of driver safety is becoming a major issue.[1] Research has focussed on the greater crash risk of older drivers and the effects of age-related declines in health and cognition on driver performance. However, the scope of research has recently widened from treating older drivers mainly as a safety problem to encompass transportation and quality of life issues.[2] There is now a policy shift to foster driving as long as it is safe to do so, while helping those who can no longer drive safely to make the transition to alternate options for mobility.[3]

Although the decision to give up driving is a major one, the actual process of stopping driving, either voluntarily or involuntarily is not well documented.[4] To the extent that older individuals are aware of their declining functional abilities, they may adjust their driving patterns accordingly.[5] However, people with cognitive disorders such as dementia may be unaware of their losses and unwilling or unable to compensate adequately.[6]

Currently there is little information about the driving needs and transport practices of older people, especially those with cognitive impairment. This paper reports on a qualitative research project to identify transport needs and options for older people and the effect on decision-making of cognitive functioning. A better understanding of the process will assist in the development of strategies to promote the safe mobility of older people and ease the transition when driving is no longer possible.

Methods

Ethical clearance for the study was obtained from the Behavioural and Social Sciences Ethical Review Committee of the University of Queensland. The study design used both quantitative and qualitative methods to examine issues identified through literature search, liaison with key informants and focus groups with stakeholders. Questionnaires were developed on the basis of issues identified.

The target population comprised older Queenslanders aged 75 years and over. After first round interviews, the population sample was stratified by driving status (driver, ex-driver, non-driver) and cognitive measure (presence/absence of cognitive impairment). Five persons were selected from each of these six stratification groups (30 people in all) to participate in further in-depth interviews. To yield sufficient numbers in each

stratification level, it was anticipated that the sample size of 100 people would be needed to participate in first round interviews. This estimate was based on available figures for driver status[7] and prevalence of cognitive impairment in the older community[8,9].

Participants were recruited from community health centres and medical practices in urban and rural areas in South-East Queensland with high proportions of older people in their population. Patients were excluded if the health practitioner considered they were too frail or ill to participate or unable to give informed consent.

In the initial home interview, information was obtained about participant demographics, driving status, transport modes used, and accident record. Cognitive functioning was assessed using the Mini-Mental State Examination[10] in widespread use by Aged Care Assessment Teams. Details sought from those selected for second interview included health status, activities of daily living and social networks, impact of change in licence status, travel options available and used, and travel characteristics. With the consent of the participant, a carer or close relative was also interviewed, if available.

Standard quantitative methods were used to analyse relationships among variables of interest. A p value of less than .05 was taken as the level of statistical significance. Textual analysis was used to explore qualitative data.

Results

Participant Profiles

Ninety-five participants completed first round interviews, of whom 45 (47%) were current drivers, 28 (30%) were no longer driving and 22 (23%) had never driven.

Scores for the 95 participants on the Mini Mental State Examination (MMSE) ranged from 16 to 30 (the maximum possible) with a mean of 26.8. The 25th percentile was 26. For classifying participants into the cognitively impaired group, scores below the 25th percentile (ie below 26) were used. This cut-off point accords with a study suggesting that a Clinical Dementia Rating of 0.5 (indicating mild impairment) is roughly equivalent to an MMSE score of 25.[11] A profile of the 95 participants by driving status is shown in Table 1.

Table 1: Characteristics of drivers, ex-drivers and non-drivers (N=95)

		Drivers (n=45)	Ex-drivers (n=28)	Non-drivers (n=22)	Significance
Gender	Female	17	12	20	p=.0001
	Male	28	16	2	
Age group	<80	20	5	5	
	80-84	18	12	8	
	85 and over	7	11	9	
	Mean age	79.8	83.1	82.8	p=.005
Setting[a]	Rural	11	7	1	n.s.
	Urban	34	21	21	
MMSE score	26-30	38	20	18	
	<26	7	8	4	
	Mean MMSE	27.07	26.36	26.82	n.s.
Transport mode	Private car	44	15	9	
	Other	1[b]	13	13	

Notes: n.s. = p values not significant at the p<.05 level

[a] classification as 'urban' or 'rural' based on Cowan J. The Queensland Classification of Rural, Remote and Metropolitan Towns and Postcodes. Brisbane: QMEC, University of Queensland; 1997.

[b] retained current licence but had sold car for financial reasons

Current drivers were significantly more likely to be male, while the lifelong non-drivers were mostly female. The mean age of drivers was 79.8 years making them a significantly younger group than ex-drivers (mean age

83.1 years) and non-drivers (mean age 82.8 years). While the mean MMSE score was higher for drivers than ex-drivers or non-drivers, the differences were not significant.

For 72 percent of participants, their usual mode of transport was the private motor vehicle, either their own (53%) or other private vehicle (19%). While 14 percent used taxis, an equal number nominated public transport as their usual mode of travel. These transport modes were used almost exclusively by those in urban areas. Men were significantly more likely than women to use a private vehicle for transport, as were married people (of either sex) and those living in rural areas. Table 2 shows characteristics of participants by mode of transport.

Table 2: Characteristics of participants by usual mode of transport (N=95)

		Private Car n=68	Other Transport n=27	Significance
Gender	Females	29	20	p=.006
	Males	39	7	
Marital status	Married	39	7	p=.006
	Not married	29	20	
Setting	Rural	17	2	p=.05
	Urban	51	25	

For in-depth interviews, five participants were selected from each of the six groups defined by driving status and cognitive level. In the group of non-drivers, because only four cognitively impaired participants were available, six non-drivers were selected from the group with MMSE score 26 and above. Within the groups, selection was also designed to encompass a broad range of experiences and include both rural and urban participants. Carer interviews were available for 23 of the 30 participants (for 8 drivers, 8 ex-drivers and 7 non-drivers). A profile of the participants selected for in-depth interviews is outlined in Table 3.

Table 3: Characteristics of drivers, ex-drivers and non-drivers selected for in-depth interview (N=30)

		Drivers n=10	Ex-drivers n=10	Non-drivers n=10
Gender	Female	4	4	9
	Male	6	6	1
Age	Mean	81.8	85.2	81.9
Marital status	Married	4	5	4
	Not married	6	5	6
Setting	Urban	6	7	10
	Rural	4	3	0
MMSE score	26-30	5	5	6
	<26	5	5	4

Issues Identified at In-Depth Interviews

Perception of driving capabilities of older drivers

Older people's opinions about the driving capabilities of their cohort ranged from favourable to critical, irrespective of their own driving status. Favourable comments emphasised the care, caution and experience of older drivers such as:

> "(Older drivers are) very careful, pretty cautious, safe, not impatient, prepared to let the traffic go rather than beat them."

Unfavourable comments focussed on slow reactions and unsafe practices such as:

"(Older drivers are) too slow, drive in wrong lane, don't give enough indication changing lanes."

In general, family members expressed concern about the driving capabilities of their older relatives, irrespective of the driver's cognitive ability.

"Wouldn't put her in traffic. Let her drive as little as possible. Her perspective and distance are affected and she is not always aware of other people."

"Never go out with him- he's slow and forgetful. He can't go out on his own as he gets disorientated."

Licensing assessment

Older drivers reported that, in the medical assessment of fitness to drive, particular attention was paid to physical factors such as blood pressure and eyesight. They did not report any assessment of cognitive ability. While some drivers and ex-drivers in the study felt current licensing requirements were adequate and that "older people should be allowed to drive for as long as they can", others felt that there should be more rigorous licence testing, including on-road tests and refresher courses.

"People should have an on-road test every year, whatever the age."

"(Older people) should have to stop driving at an arbitrary age-people over 90 shouldn't be driving."

Driving patterns

Modification of driving patterns through self-regulation rather than medically imposed restrictions was reported by the drivers in the study. Most were unhappy to drive at night and on unfamiliar roads. In general, drivers in the cognitively normal group were more likely to report avoiding certain driving situations including "busy" times of increased traffic volume, highways undergoing road-works, parking in main street (because of having to back out into traffic), roundabouts, and wet conditions. Drivers whose cognitive scores were in the upper range were also more likely to have undertaken long trips in the previous year and to drive greater average distances per trip than cognitively impaired drivers.

While most drivers reported they were happy to drive alone, those who were married were usually accompanied by their spouses. Irrespective of the driver's cognitive ability, carers expressed concerns about the driver being unaccompanied.

"Can't go out on his own. Mum goes with him (to navigate)."

"Like to sit near him, am apprehensive." [Wife always accompanies him and is a 'back seat driver'.]

Transition planning

For those currently driving, there was little evidence of planning for the future when no longer driving. Some older drivers preferred not to think about it, as being "too difficult" to contemplate:

"It would be a death knell."

"I would be shattered."

Carers too expressed reluctance to face the issue, some dreading the consequent impact on lifestyle, not only for the older person, but also for themselves.

"Made a promise not to put him in a home. He will have to come here, or I'll have to go up there."

Many carers expressed difficulty discussing the issue with elderly parents.

"Didn't talk about it-knew he wouldn't take any notice."

"Tried to talk to him but it wasn't easy."

Availability of close family support and feasible alternatives eased transition planning.

"We've discussed it (giving up driving). It's not a problem. He lives with us (son and daughter-in-law) and we can drive him. We have two cars."

Decision to cease driving

A majority of ex-drivers, regardless of cognitive ability, reported that the decision to cease driving was their own, sometimes with medical and/or family advice. Most justified the decision on the basis of health-related problems affecting ability to drive safely.

"Had a heart attack. Knew I wasn't capable and went along with that."

Other factors which also led to licence surrender included failure to pass an on-road test, costs of maintaining a vehicle, family pressure to give up driving because of safety concerns, nervousness and fear of an accident.

"Harassed by daughters concerned for my safety. There were times when I didn't observe cars coming."

Carers resorted to a number of strategies to encourage the driver to cease.

"Asked him if he thought it was worth driving. Worked out he could afford cabs or walk. He gave up his licence. It was no drama."

"Talked to the doctor. Doctor told him he shouldn't do it (driving) any more. He took it well."

"We arranged with the GP to send her for a driving test (which she failed)."

"Take the keys off her so she can't drive any more."

Many of the carers, particularly of those with cognitive impairment, expressed relief when driving ceased.

Impact of driving cessation

Some of the consequences of stopping driving reported by ex-drivers were loss of independence and identity, isolation, restriction of social contacts and activities, change in lifestyle, and emotional reactions such as frustration, stress, anger and depression. There was an unwillingness to rely on others and "be a burden" to the family.

"Feel sad, stressed and tired. Lost the two most important things in my life- my wife and being able to drive."

"Miss the convenience of the car. Try to be independent. Don't like to ask daughter (who works full time)."

There were ramifications beyond the driver to other family members and friends.

"(Giving up licence) has affected Mum more than Dad. Mum is depressed- has lost the ability to socialise."

Transport options

There was considerable reliance on the motor vehicle to access services, not only by drivers but also by ex-drivers and non-drivers. For older people, especially in rural areas, driving was often the only option available.

"There are no buses. Apart from the car we ain't got any (other transport)."

Apart from unsuitability or lack of services, barriers to using public transport included health related problems such as arthritis, stroke and osteoporosis affecting mobility. Fear of falling, 'nerves' and anxiety also affected confident use of public transport for some. Inability to manage public transport on their own also limited its use by those with cognitive impairment.

"She was independent on the bus and train, but lately is getting lost and confused. Now I drive her or she walks locally." [Carer of non-driver]

For ex-drivers and non-drivers, those with higher cognitive scores were more likely to use a range of transport options, while those with lower scores were more dependent on being driven by the family. The burden of providing transport often presented some difficulties with disruption to lifestyle and consequent stress for carers.

"Try to get up to him frequently and stay for a few days although running two households keeps me going. Put my life on hold for him."

There was favourable acceptance of community transport schemes and taxi vouchers as alternative options to driving.

Implications

The study has shown that older people's access to a motor vehicle is important in the maintenance of independence, mobility and social networks. However, from the concerns expressed about the safety and ability of older drivers, there is some recognition by older people, and particularly by their carers/families, that there will be a time when driving is no longer possible or feasible.

To promote successful management of transport for older people, the study has identified the need for:

- raising awareness of the issues concerning safe mobility of older people among older people, carers and licensing authorities
- further research into the application of guidelines to assess medical fitness to drive and alternative models of driver assessment for licence renewal
- improved services and resources to aid planning, decision-making and support for the transition to non-driving, available to older drivers, families and those involved in the decision to cease driving
- provision of alternative transport, particularly for those with physical and/or cognitive impairment
- provision of information about alternative transport options
- improved transport services to take into account the needs of older people.

Limitations of the Study

Because the recruitment process required that subjects not be too ill or frail, and that they give informed consent to participate, those with moderately to severely compromised cognitive ability (a high dependency group) would have been excluded. This exclusion limited the ability of the study to detect major differences in transport decisions on the basis of cognitive level.

Acknowledgments

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