RESEARCH BRIEF

Discussions with Older Family Members about Safe Driving: Findings from the AAA LongROAD study

This research brief used baseline data from the Longitudinal Research on Aging Drivers (LongROAD) study to examine the frequency of, and reasons for, older drivers having discussions with family members about driving safety. Prior studies suggest that many older adults outlive their safe-driving ability and need to transition to other forms of mobility, and family members are often involved in the decision to continue or stop driving. This brief presents findings on conversations with family about safe driving as reported by 2,990 drivers ages 65-79 in five states, along with the reasons for the discussions. Overall, 82.7% of aging drivers had not spoken with a family member or physician in the past about driving safety. Within this cohort, only 14.2% had spoken with a family member at some point in the past about their driving safety and only 2.2% of the drivers said someone had, in the past year, suggested they limit their driving. The majority (60.6%) of these conversations were initiated by family members, and they were commonly triggered by a driving safety concern (43.8%).

METHODS

Cross-sectional baseline data from the LongROAD study was used. This data was designed to examine safe driving among older adults, including the influences of social, mental and physical health, as well as medical and behavioral factors. LongROAD enrollment occurred in five sites (Ann Arbor, Michigan; Baltimore, Maryland; Cooperstown, New York; Denver, Colorado; and San Diego, California). The study collects self-reported and objectively measured data on health, functioning and driving behaviors, as described in detail elsewhere (Li et al., 2017).

Potential participants were recruited from health care systems affiliated with the LongROAD sites. Individuals were eligible if they:

- Were ages 65-79; possessed a valid driver's license; drove at least once weekly on average; had no significant cognitive impairment (measured by initial medical chart review at some sites and the six-item screener during telephone screening at all sites, Callahan, 2002).
- Drove one car that was a 1996 model or newer more than 80% of the time; were not already enrolled in programs involving installation of driving-behavior monitoring devices in their primary vehicle
- lived in the study site area at least 10 months per year and had no plans to move to another city within five years.
- Were not married to or living with a current LongROAD participant.

Written informed consent was obtained during an in-person enrollment session. The study was approved by each site's Institutional Review Board.

At enrollment, research staff administered questionnaires about health, functioning and driving. Questions concerning discussions surrounding driving safety were used for the analysis. This also included questions about what triggered these discussions, and any recommendations after these discussions. For a point of comparison, drivers were asked if they had, at any point in the past, discussed driving safety with their family doctor or any other doctor. Additional variables of interest included demographic characteristics, self-report of driving reduction and driving experiences. Average driving ability was scored as the mean of five items asking participants to rate the following items for their safe driving: ability to see during the day; ability

to see at night; ability to remember things; ability to concentrate on more than one thing at once; and strength, flexibility or general mobility. Each of these items was scored separately from 1 (poor) to 7 (excellent). Average driving comfort was scored in a similar fashion, with participants being asked how comfortable they felt in the following situations: driving at night, making left turns across oncoming traffic where there are no left turn arrows, driving in bad weather, driving on busy roads, driving in unfamiliar areas, driving alone and backing up. Each of these situations was scored separately from 1 (not at all comfortable) to 7 (completely comfortable). Participants were also asked to report how often they experienced various driving lapses, errors and violations on separate scales from 1 (never) to 6 (nearly all the time). Self-regulation was derived from questions asking whether, in the past year, participants had reduced their amount of driving in any way, and if so, the reason why (e.g., difficulty seeing during the day or night; difficulty remembering things; reduced strength, flexibility or mobility).

The prevalence of discussions with family members was reported using percentages with 95% confidence intervals (95% CI). We used bivariate associations to compare participant characteristics with the types of discussions reported. A chi-square test was used to see if there were statistically significant associations between having family conversations about driving safety and categorical variables including but not limited to age, gender, race, education and income. A one-way analysis of variance (ANOVA) was used to determine if there were differences in the means of driving ability, comfort, self-reported driving reduction or driving experience between those who had a conversation with family and those who did not.

RESULTS

Among the 2,990 LongROAD study participants, 41.6% were 65-69 years old, 34.7% were 70-74 and 23.7% were 75-79 (Table 1). Approximately half (53.0%) were female; most were non-Hispanic and white. A majority were married, had yearly incomes of at least $50,000 and had at least a bachelor's degree (Table 1). Only 2.2% indicated that in the past year, someone suggested they limit their driving. Regardless of whether they had spoken with someone about driving safety, 337 (11.3%) participants reported decreasing their driving due to any health condition(s) in the past year.

Overall, 17.3% of participants said they had ever spoken with a family member or physician, more commonly a family member (14.2%) than a physician (5.5%; Figure 1), about driving safety. Seventy-four participants (2.5%) had spoken with both a family member and a doctor. These overall patterns were similar across genders and age groups (Figure 1), but conversations with family members were significantly more common among those ages 75-79 (17.5% versus 13.2% among younger age groups) and among men (15.9% versus 12.8% among women; Table 1). Conversations with family were also more commonly reported by those who were married or living with a partner (15.3%) versus those who were not (12.0%). Those who reported having reduced their driving due to self-regulation were also much more likely to report having had a discussion with family (26.7% versus 13.5%), although we could not assess whether the conversation preceded or followed the self-regulation.

Compared with drivers who had discussed their driving with family, those who had not had discussions rated their driving ability higher (mean 5.95 versus 5.65, $p<0.001$) and their driving comfort higher (mean 5.84 versus 5.46, $p<0.001$). Those who had not discussed driving with families also reported having significantly fewer lapses (mean 1.75 versus 1.92), errors (mean 1.41 versus 1.54) and violations (mean 1.62 versus 1.70; all $p<0.001$).

The family member, rather than the older driver, had initiated the majority (60.6%) of conversations. The most commonly cited reasons were driving safety concern (64.8%), followed by a health issue (22.3%), driving infraction or crash (15.3%), and planning for the future (6.8%; Figure 2). Overall patterns were similar by age and gender (Figure 2).

DISCUSSION

In this large-scale study of older drivers, the overwhelming majority (almost 85%) had not spoken with a family member about their driving safety. Yet driving safety, self-regulation and eventual cessation are topics that most older adults will have to face at some point, as driving ability is affected by medical conditions, medications and normal physiologic changes from aging (Foley, 2002; NHTSA, 2016). Early, routine discussions about driving

safety might benefit older drivers in helping them identify needed strategies to prolong safe mobility, such as driver assessment or retraining with driving specialists, or vehicle modifications to mitigate physical challenges (Betz, 2016; Lane, 2014; Stressel, 2014).

Prior work suggests older adults' family members and health care providers have influence on these topics, albeit with variation among individuals based on their preferences and on the availability and involvement of family or providers (Betz, 2016; Liddle, 2017; Johnson, 1998; Kostyniuk, 2009; Meuser, 2015). Many older adults may prefer to have driving discussions with family rather than providers. In a survey of 457 older adults age 55 and older, 64% were open to discussing with family how to decide when to stop driving, and 32% were open to having a family member decide the timing of driving cessation (Lum, 2015). Family members may have objective observations about older drivers' safety behind the wheel, and their assessments of older drivers' overall health and function may also correlate with risk of future crash (Nakagawa, 2013). At the same time, family members may not always be accurate in their assessment of an older driver's ability (Eby, 2009). Perhaps understandably, in this analysis, driving safety concerns were the most common reason that family members initiated a conversation with older drivers.

Drivers who were 75 or older or who were male were more likely to report having discussed driving safety with family members. For many, age comes with physiologic declines and a greater likelihood of medical comorbidities, so it is not surprising that family may be more likely to talk about driving as someone ages. In prior work, women appear more likely to self-regulate or reduce driving as they age, so it may be that family members feel more need to intervene with their male relatives (Choi, 2013a; Choi, 2013b). This may also be a function of older women being more likely to be widowed, and therefore having fewer opportunities for discussion with a family member. The issue of gender and driving behaviors deserves further attention.

Study limitations include an inability to determine when participants had the conversations with a family member or doctor, and reliance on participants' self-report of driving behaviors and crashes. Temporal relationship between discussions and subsequent driving behaviors in future studies may be better addressed through the LongROAD study's longitudinal follow-up.

The LongROAD study offers the opportunity to examine, in a large cohort of older drivers, the self-reported prevalence of discussions with family members or with physicians about driving. Understanding the relative rarity of such discussions, as well as the demographic and driving characteristics associated with them, could enhance development and refinement of communication strategies.

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ABOUT THE AAA FOUNDATION FOR TRAFFIC SAFETY

The AAA Foundation for Traffic Safety is a 501(c)(3) nonprofit, publicly supported charitable research and education organization. It was founded in 1947 by the American Automobile Association to conduct research to address growing highway safety issues. The organization's mission is to identify traffic safety problems, foster research that seeks solutions, and disseminate information and educational materials. AAA Foundation funding comes from voluntary, tax-deductible contributions from motor clubs associated with the American Automobile Association and the Canadian Automobile Association, individual AAA club members, insurance companies and other individuals or groups.

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Table 1. Demographic and health characteristics, by older drivers' reported discussions with family members about driving (N=2990)

Characteristic	Total	Ever Discussed Driving with			*p**
	n	Family Member	%	95% CI	
Total	**2990**	**426**	**14.2**	**13, 15.5**	
Age					
65-69	1243	172	13.8	11.9, 15.8	0.0135
70-74	1037	130	12.5	10.5, 14.6	
75-79	710	124	17.5	14.7, 20.3	
Gender					
Male	1404	223	15.9	14, 17.8	0.0163
Female	1586	203	12.8	11.2, 14.4	
Race					
White	2557	373	14.6	13.2, 16	0.5631
Black	212	24	11.3	7.1, 15.6	
Asian	64	9	14.1	5.5, 22.6	
Other	157	20	12.7	7.5, 18	
Hispanic					
Yes	83	11	13.3	6, 20.6	0.7416
No	2794	406	14.5	13.2, 15.8	
Education					
Some College or Less	1062	127	12	10, 13.9	0.0001
Bachelor's	698	84	12	9.6, 14.4	
Master's or Higher	1221	214	17.5	15.4, 19.7	
Marital Status					
Married/Living with Partner	1974	302	15.3	13.7, 16.9	0.0391
Separated/ Divorced/ Never Married	608	69	11.3	8.8, 13.9	
Widowed	378	49	13.0	9.6, 16.4	
Income					
≤$49,999	775	98	12.6	10.3, 15	0.2296
$50,000-$79,999	719	103	14.3	11.8, 16.9	
$80,000-$99,999	431	64	14.8	11.5, 18.2	
≥$100,000	959	155	16.2	13.8, 18.5	
Driving infraction in past year**					
Yes	703	113	16.1	13.4, 18.8	0.1171
No	2286	313	13.7	12.3, 15.1	
Driving reduction					
No Reduction	2444	327	13.4	12, 14.7	0.0001
Reduction Due to Self-Regulation	173	46	26.6	20, 33.2	
Reduction Due to Other Reason(s)	355	48	13.5	10, 17.1	
Someone depends on you for driving					
Yes	762	121	15.9	13.3, 18.5	0.1403
No	2222	305	13.7	12.3, 15.2	
Have family or friends to give rides if needed					
Yes	2826	401	14.2	12.9, 15.5	0.8404
No	148	20	13.5	8.0, 19.0	

Note: Due to missing data, column frequencies may not add up to 2990

Legend

* P values represent comparisons between those who reported having a discussion with family versus those who reported no discussion, under chi-square tests.

** In past year, had a crash when driving, was pulled over by police or received a traffic ticket other than a parking ticket.

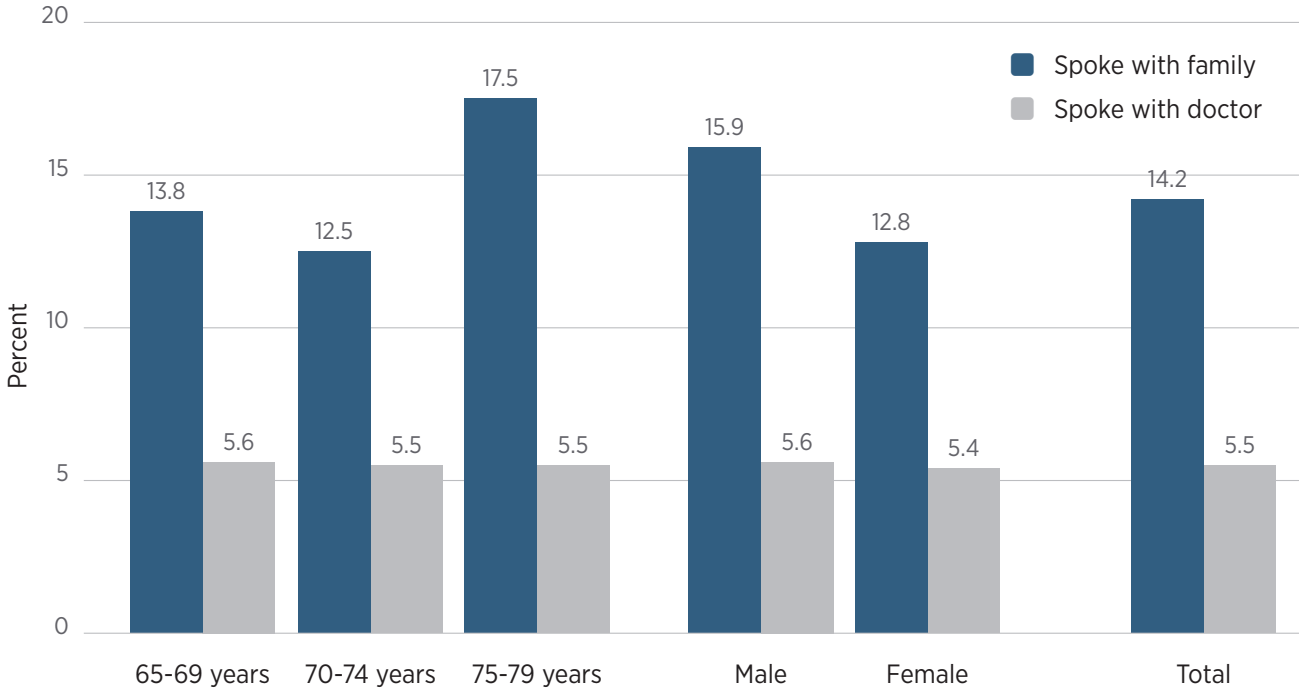
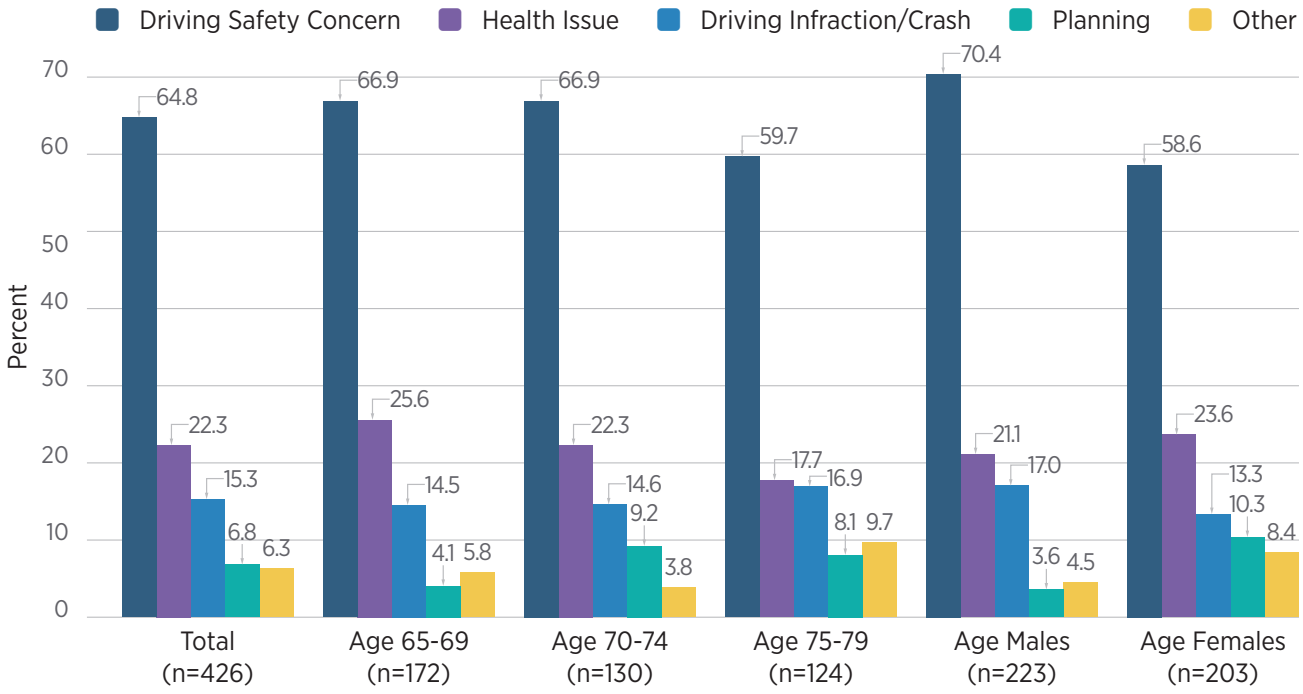


Figure 1. Reported discussions with family or physicians about driving safety, by age and gender



More than one response allowed per participant.

"Other" includes family relationships, insurance discounts, and education or retraining.

Figure 2. Among those reporting a discussion about driving with family, reported triggers for discussion