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Older Adults' Expectations about Mortality, Driving Life and Years Left without Driving

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Abstract

People are living and driving longer than ever before, with little preparation for transitioning to being non-drivers. We investigated driving expectations among drivers age 65 and older, including sociodemographic and driving context predictors. Cross-sectional data from 349 older drivers were explored to determine variation in how many years they expected to continue driving. General linear models examined predictors of both expectations. In this predominantly Black/African American sample, 76% of older drivers (mean age = 73 ± 5.7 years) expected a non-driving future, forecasting living an average of 5.75 ± 7.29 years after driving cessation. Regression models on years left of driving life and years left to live post-driving cessation predicted nearly half of the variance in older drivers' expectations with five significant predictors: income, current age, age expected to live to, self-limiting driving to nearby places and difficulty, visualizing being a non-driver. Many older drivers expect to stop driving before end of life.

Keywords

Driving expectancy; older adults; driving; mobility planning; driving cessation

Introduction

In the United States, driving remains common among older adults even as they age with and without functional impairments (National Center for Statistics and Analysis, 2017; United States National Highway Traffic Safety Administration, 2004). Older adults rely on driving and prefer to drive themselves in the same way as younger adults do because of necessity and convenience (Dickerson et al., 2017). Driving is vital for work, access to healthcare and services, and social participation, making it a cornerstone supporting autonomy, identity, and independence. Accordingly, older adults who reduce or stop driving, report negative

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financial, psychosocial, and emotional costs (Chihuri et al., 2016; Curl, Proulx, Stowe, & Cooney, 2015; Siren & Haustein, 2015).

Yet, older drivers face increased risks. Studies have shown that advanced age is associated with functional impairments, greater difficulty with maintaining driving skills and a higher risk of motor vehicle crashes (Cicchino & McCartt, 2015; Dobbs, 2005; Insurance Institute for Highway Safety, 2019). Even healthy, cognitively normal older adults may experience decline in driving skills due to preclinical neurological diseases and comorbidities (Carr et al., 2016; Lim, Son, Jang, & Hong, 2017; Roe et al., 2017; Stout et al., 2017). The reality of driving cessation will eventually occur for a majority of older adult drivers (Foley, Heimovitz, Guralnik, & Brock, 2002), thus understanding attitudes toward driving cessation and mobility planning is important (Alsnih, & Hensher, 2003; Choi & Mezuk, 2013; Harmon, Babulal, Vivoda, Zikmund-Fisher, & Carr, 2018; Johnson, 2003; Liddle, Reaston, Pachana, Mitchell, & Gustafsson, 2014).

Driving cessation itself is a difficult topic due to its highly individualized and personal nature. Older drivers struggle to balance dynamic factors from multiple domains, including current functional health, personal history, family responsibilities, and the environment (Clarke, Yan, Keusch, & Gallagher, 2015; Musselwhite & Shergold, 2012; Pachana, Jetten, Gustafsson, & Liddle, 2017; Vivoda, Heeringa, Schulz, Grengs, & Connell, 2017). Health is a major reason for cessation; studies have shown that advanced age is associated with functional impairments, greater difficulty with maintaining driving skills and a higher risk of motor vehicle crashes (Insurance Institute for Highway Safety, 2019; MacLeod, Satariano, & Ragland, 2014; Ott et al., 2013). Older drivers with functional limitations may not have other options; if they continue driving, impaired older adults are at higher risk of crashes and injury per miles driven, while simultaneously posing a threat to other roadway users, particularly in complex driving situations (Insurance Institute for Highway Safety, 2019; Koepsell et al., 2002; Li, Braver, & Chen, 2003; Thompson, Baldock, & Dutschke, 2018). Conversely, those who engage in driving reduction and cessation experience not only mobility loss, but numerous adverse health outcomes, including higher prevalence of depression, decreased functional outcome, earlier admission into institutional care, and even mortality (Chihuri et al., 2016; Edwards, Perkins, Ross, & Reynolds, 2009; Freeman, Gange, Muñoz, & West, 2006; Unsworth, Wells, Browning, Thomas, & Kendig, 2007). Given the complexities associated with aging, it is important to help older adults prepare for transitioning out of driving. Unfortunately, few older drivers plan for mobility changes, leaving them and their loved ones scrambling to accommodate their transportation needs after cessation occurs (Harmon et al., 2018; Musselwhite & Shergold, 2012).

Furthermore, across the United States, older adults' tendencies toward continuing to drive are reinforced by the lack of transportation options available to supplement or replace driving. Drivers in smaller cities, suburban settings, or rural areas have limited access to mass transportation and providing alternative transportation options presents greater challenges (Bond, Brown, & Wood, 2017; J. P. Thompson, Baldock, Mathias, & Wundersitz, 2013). While traditional alternative transportation options (e.g., light rail/buses, taxicabs, or e-hail/ridesharing services: Uber/Lyft) are more common in densely populated areas, older adults in low density areas rely on more flexible services (e.g., dial-a-ride, shuttles,

vanpools, reimbursement/subsidies for taxi services) when driving is not an option (Hanson & Hildebrand, 2011; Israel Schwarzlose et al., 2014; U.S. Department of Transportation, 2015). Indeed, data from the National Household Travel Survey (NHTS) suggests that people who live in rural areas are more likely to own a vehicle, to have multiple vehicles (Federal Highway Administration, 2019), and to avoid driving reduction and cessation (Vivoda et al., 2017). Throughout most of the U.S., most older drivers prefer to drive themselves or be transported in a personal vehicle, even when public transportation is available (Dickerson, Reistetter, & Gaudy, 2013). As a result, driving is synonymous with personal transportation mobility, and driving cessation is associated with loss of independence combined with becoming a burden to family and friends (Goins et al., 2015; King et al., 2011).

Even though, for many reasons, the thought of becoming a non-driver is terrifying to older adults, most older adults undergo a period of non-driving at some point during their lives. Older motorists must first attain awareness of the need to stop driving, then make and own the decision to cease driving, and finally find alternative mobility (Liddle, Turpin, Carlson, & McKenna, 2008). Research suggests that, on average, men spend the last seven years of their lives as non-drivers, whereas women experience a full decade reliant on other modes of transportation (Foley et al., 2002), with earlier and higher rates of cessation reported among women and minorities (Choi, Mezuk, Lohman, Edwards, & Rebok, 2012; Choi, O'Connor, Mingo, & Mezuk, 2015; (Vivoda et al., 2017)). Prior work on driving cessation among older adults also found differences across race, where Black/African Americans were at greater risk at later life of driving cessation (more time to live post-cessation) compared to White/ Caucasians (Choi et al., 2012).

There are also key differences in vehicle ownership by race and income level, which could affect driving expectations in older adulthood. Using the race of the household respondent, data from the 2017 NHTS shows that 6% of White U.S. households do not have a vehicle, compared to 23.3% of Black households (Federal Highway Administration, 2019). Income also plays a key role in vehicle ownership, with 43.5% of households with an income less than $10,000 reporting no vehicles. This percentage decreases rapidly as income increases modestly, with 26.8% reporting no vehicles for households in the $10–15,000 range, 12.6% for those reporting incomes between $15–25,000, and dramatic decreases following that, with no-vehicle households for only 6.9% of those reporting $25–35,000 incomes (Federal Highway Administration, 2019).

Given the complexities associated with aging and the projected growth of older drivers in the future, it is important to help older adults prepare for a non-driving future. This preparation cannot occur unless they have realistic expectations about both their driving futures and their options as non-drivers. Understanding which factors affect older drivers' expectations can help inform efforts to engage older drivers in talking about their driving future. With accurate expectations and better preparation, the negative effects of driving cessation on former drivers and their loved ones could be mitigated (Musselwhite & Shergold, 2012).

The design of interventions to assist older drivers must depend on whether they anticipate forthcoming changes in their lives. In other words, do driving expectations align with actual

driving behaviors and are some groups (e.g., women, minorities) at a greater risk of misaligned expectations? Unfortunately, up to this point, few studies have measured older drivers' expectations for their driving futures (Chihuri et al., 2016; Foley et al., 2002), and even less have examined driving outcomes in Black/African American samples despite being the largest racial/ethnic group in the United States (Babulal, Williams, Stout, & Roe, 2018).

The goal of this study is to explore driving expectancy among older adult drivers via the number of years older drivers expect to continue driving and live after driving cessation. We examined two hypotheses: (1) older drivers will vary in how many years they expected to continue driving; and (2) older drivers' future driving expectations will be predicted by sociodemographic characteristics (e.g., gender, race), as well as driving context (e.g., driving frequency).

Design and methods

Setting and data source

The participant sample was developed from two research volunteer registries in the Southeastern Michigan area that included older adults who had agreed to be contacted with invitations to participate in research projects. One registry, the Healthier Black Elders Center (HBEC), is maintained by Wayne State University (WSU) – part of University of Michigan and WSU's Michigan Center for Urban African American Aging Research (MCUAAR), a National Institutes of Aging (NIA) Grant Program. The other is part of the University of Michigan (U-M) Claude D. Pepper Older American Independence Center.

Data were collected between April and August 2015, using a mailed questionnaire that surveyed adults ages 55 to 85 (n= 1,322 total: 1,137 from HBEC; 185 from U-M) about their current and future transportations needs and expectations. More detailed information about the sample and development of the survey has been published (Harmon et al., 2018). The overall response rate was 67.8% (n= 872). For this specific study, participants were limited to current drivers, age 65 years of age or older at the time of sampling. The U-M Health Sciences and Behavioral Sciences Institutional Review Board reviewed and granted approval to the project.

Measures

Two dependent variables measuring driving expectations were assessed. The first assessed *expected driving years remaining* by asking participants "How long do you expect to continue driving?" (years). The second dependent variable assessed *time participants expected to live without driving* (years), as calculated using three questionnaire items, including the previously described item, "To what age you expect to live" (years old), and participants' current age (years). The items were spread throughout the questionnaire to minimize participants reconciling or adjusting how long they expected to drive to match how long they expect to live.

Specific driving, social, and demographic predictors of these outcomes, which were assessed using the following questionnaire items: "Are you responsible for anyone else's transportation?" (yes/no), "How many drivers live with you (not including yourself, if you

currently drive)?" (number), "Do you limit your driving to nearby places?" (yes/no), "Do you drive on longer trips?" (yes/no), "In the past year, how many days (on average) did you drive each week?" (number of days/week) and "How difficult is it for you to believe that you may become a non-driver someday?" (5-point scale anchored by not at all and very difficult). Self-rating of health was assessed by asking, "In general, would you say your health is" (excellent, very good, good, fair, poor). Demographic information included age (years), gender (male/female), race (White/Caucasian; Black/African-American, Other), Hispanic/Latino ethnicity (yes/no), income (<$10,000, $10,000–14,999, $15,000–24,999, $25,000–49,000, $50,000–99,000, $100,000–149,999, $150,000–199,999, and $200,000 and above), and education (less than high school, high school diploma, some college, some graduate/professional school, master's/professional degree, and doctorate). To ease interpretation and account for low numbers of respondents within groups, some variable categories were combined.

Statistical analyses

The primary dependent variables for analyses included, (1) expected driving time remaining (years) and, (2) time to live without driving (years). The latter outcome was calculated for each participant individually by subtracting the number of years they expected to continue driving from the number of years they expected to live (age expected to live to – current age). The resulting number was years expected to live without driving. For example, a 65-year-old who expected to live until age 90 and drive 15 more years would score a 10 (90-65-15), indicating they expect to live 10 years as a non-driver.

Descriptive statistics examined variables for missing or extreme values. Participants who reported they expected to live beyond 114 years old or expected to drive for more than 50 years were excluded (n = 19) based upon visual examination of box plots of the data and outliers present. The education variable was recoded for ease of analysis and categories with low numbers were collapsed into others. Only four persons identified as Hispanic/Latino in the final sample, so this variable was not used in this study.

General linear models were fit to analyze predictors (aforementioned) of driving expectations among older adult drivers, while adjusting for demographic variables. Models used the type III sums-of-square method and were also analyzed for presence of multicollinearity. Collinearity diagnostics and residual analysis for both models were conducted to determine that variance inflation factor (VIF) and tolerance were below/above accepted levels. P values ≤ 0.05 were considered statistically significant. Analyses were performed using SPSS version 23 for Mac (Chicago, IL, USA) and SAS version 9.4 for windows (SAS Institute Inc, 2013).

Results

A total of 349 participants met inclusion criteria for analysis. Current age ranged from 65 to 85 years with a mean of 72.7 years, and over 80% of participants were women (Table 1). Approximately 70% of participants identified as Black/African American, 25% as White/Caucasian, and 5% as other. Participants were well educated overall; nearly 55% had completed a bachelors degree or higher. Nearly 90% of participants reported good to

excellent health. In terms of driving context (Table 2), only 24% were responsible for someone else's transportation, most households (58%) had one or more drivers aside from the respondent, 73% of participants did not limit their driving to nearby places and 59% of the participants reported that they take longer trips.

The majority of participants (n = 264, 75.6%) expected to stop driving before they died. Among this subgroup with positive values, participants expected to live from one year to 30 years after they stopped driving. A minority of participants (10.3%) estimated zero years, indicating they expect to drive up until (but not after) their death, whereas 49 participants estimated years with a negative number. In other words, 14% of participants expected they would drive up to 12 years longer than they expected they would be alive.

Given that the focus of one of our hypotheses was to assess potential differences in driving expectations by race, it is worthwhile to examine differences in our sample by race, and to assess how our sample compares to the U.S. as whole on several key factors. Table 2 shows education and income by race; differences in the proportions were explored with one-way analysis of variance (ANOVA) tests, using the Tukey correction for pairwise comparisons, as well as chi-square tests. Statistically significantly higher education and income was observed for White compared to Black respondents in our sample. To compare the education and income levels of Black and White respondents in our sample to the U.S. as a whole, we adjusted our original education and income categories to match available data (from the U.S. Census Bureau and the Bureau of Labor Statistics), and then used chi-square tests to compare to the proportions in the larger U.S. population. These tests revealed that our Black and White respondents were statistically significantly more educated than their counterparts in the general U.S. population (Noël, 2018). In terms of income, both White and Black respondents in our sample were statistically significant different from the larger U.S. population, but with a curvilinear pattern. Within both groups, our sample had fewer people in both the lowest and the highest income groups, compared to the U.S. in general (Fontenot, Semega, & Kollar, 2018). Specifically, we had more respondents in the $25,000–99,999 range for Whites and in the $15,000–49,999 for Black respondents.

Hypothesis 1

As a group, participants anticipated driving for 13 more years and living an additional 20 years (Table 3). In support of Hypothesis 1, older drivers in this sample varied significantly in their driving expectations. Participants differed greatly in their beliefs as to how many more years they expected to drive, ranging from one to 50 years. Similarly, life expectancies had a large range (70 to 114 years). Participants had an even wider spread in how long they expect to live after they stop driving. On average, participants expected to live 5.75 years after they stopped driving; estimates ranged 42 years, from −12 to 30 years with negative values indicating people who gave responses expecting to drive more years than they expected to live.

Hypothesis 2

The second hypothesis was partially supported, with the driving context playing a significant role, along with some (but not all) sociodemographic factors. Both general linear models

accounted for nearly half of the variance in how many more years people expect to continue driving (Model 1) and the number of years they expect to live post driving cessation (Model 2). Model 1 predicted 48% of the variance with five statistically significant predictors: income, current age, life expectancy, whether a participant limited their driving to nearby places and level of difficulty imagining themselves as a non-driver (Table 4). In Model 2, 45% of the variance in the number of years older drivers expected to live after driving cessation, with the same predictors reaching statistical significance (Table 5).

In Model 1, respondents expected to drive longer if they had a higher income, were younger, expected to live longer, did not currently limit how far they drive, and if they had higher difficulty imagining being a non-driver (Table 4). Compared to those with an income less than $25,000, those between $25,000–49,999 and $50,000–99,999 expected to drive 2.63 and 2.70 years longer, respectively. There was no significant difference for those in the $100,000 or more group. For every one-year increase in current age, there was a corresponding 0.72 years decrease in the number of years respondents expected to continue driving. For each additional year older drivers expected to live, there was an associated 0.38-year increase in the number of years they expected to drive. Participants who self-reported not limiting their driving to nearby places expected to drive 2.6 years longer than those who currently limited their driving to nearby places. Difficulty imagining being a non-driver someday was associated with a decrease in the number of years expected left to drive. Interestingly, race and gender were not significant in this model.

In Model 2, participants estimated living fewer years after driving cessation if they had a higher household income, were older, expected to live to a younger age, currently limited their driving to nearby places, and found it very difficult to imagine themselves as a non-driver (Table 5). Compared to respondents who had an income less than $25,000, those in the two middle income groups expected 2.63 and 2.70 fewer years, respectively, of unmet driving need. For every one-year increase in current age, older drivers expected to experience 0.28 fewer years as a non-driver, while a one-year increase in the age expected to live was associated with a 0.62 year increase. Respondents who did not currently limit their driving to nearby places expected to spend about two and a half years as a non-driver than those who did limit. There was also a statistically significant divide between participants who found it very difficult to imagine themselves as a non-driver and those who endorsed lower levels of difficulty, with the very difficult group (n = 91) estimating they would live almost four fewer years as a non-driver compared to those who had no difficulty (n = 96). As in Model 1, gender and race were not significant predictors in Model 2.

Discussion

The goal of this study was to explore two types of driving expectancies among older adult drivers: the number of years older drivers personally expect to (1) continue driving and (2) live after driving cessation. In this predominantly Black/African American, and urban sample, older drivers age 65–85 expected to drive for 13 more years on average, estimating they will spend the final six years of their lives as non-drivers. Additionally, whether older adults currently limited their driving to nearby places and how difficult it was for them to imagine being a non-driver were significant predictors of expectancies. To the authors'

collective knowledge, there are no other studies that quantify older drivers' personal expectations of their driving future. Finally, the participant sample itself is another advantage of these data since the majority of participants were Black/African Americans. The extant literature on aging and especially driving, has not prioritized recruitment, enrollment, and retention of ethnic and racial minorities (Babulal et al., 2018). Although Black respondents in our sample were more educated and had somewhat higher incomes on average than their counterparts across the U.S., this study represents an important beginning in understanding how issues of aging and driving may differ by race or be universal for everyone.

The primary finding from this study is the variation in older drivers' expectations for their driving futures. Many older drivers in this sample (76%) expected to outlive their driving lives by at least one year. However, there was a nearly three-decade difference in the number of years this subset of older drivers expected to live without driving. When considering the sample as a whole, the range was over 40 years, with older drivers estimating up to 30 years without driving down to driving 12 years after they expected to die (−12 years). Such heterogeneity in expectations among older drivers indicates how individualized these expectations are, highlighting the importance of using older drivers' personal expectations as the foundation for conversations about current and future driving (Lowsky, Olshansky, Bhattacharya, & Goldman, 2013).

It is challenging to determine the accuracy of older drivers' expectations (Musselwhite & Haddad, 2010). However, these results are generally consistent with published literature that suggests older adults spend the final seven to 10 years of their lives as non-drivers (Foley et al., 2002). In contrast, we found a small but substantial group of older drivers whose expectations are clearly unrealistic. That is, 14% of older drivers in this sample expected to drive up to 12 years longer than they expected to live. The overestimation of driving longevity may be a result of their inability to accurately plan for the future, narrow insight into age as a linear process, greater optimism about driving than living, denial of normal age-related decline, or poor judgment with respect to life and driving expectancy (Wood, Lacherez, & Anstey, 2012). Methodologically, both questions were spaced from each other on purpose and some participants may not have reflected on how they answered the life expectancy question. Further longitudinal research is required to determine whether group differences across driving expectations are related to health differences, a realistic outlook on aging, or an accurate expectation of driving cessation.

The second important finding is that each of the statistically significant predictors of older adults' future driving expectations (household income, current age, expected longevity, limiting driving to nearby places, and difficulty imagining being a non-driver) are factors that can and will change. This suggests that individuals' driving expectations are not static, but instead dynamic beliefs that may change over time. Therefore, it is vital to not only consider older drivers' current expectations, but to revisit the topic regularly to determine if they have changed.

Age is the one characteristic guaranteed to change; however increasing age was not directly proportional to the number of years older adults expect to (1) drive and (2) live without driving. In this sample, each additional year in older drivers' current age lowered the number

of years they expected to drive by about a third of a year, and the number of years they expected to live after driving cessation by about two-thirds of a year. These data imply that older adults become progressively less well calibrated in terms of their expectations as they age.

Finally, the fact that there were not significant differences by race, gender, or self-rated health is a valuable finding. It is well known that women stop driving earlier and self-regulate their driving behavior more than men (Choi et al., 2012; D'Ambrosio, Donorfio, Coughlin, Mohyde, & Meyer, 2008), However, consistent with prior work on predicting driving expectancy (Foley et al., 2002), our results showed no gender difference in driving expectancy or years expected to live without driving, suggesting that neither men or women are particularly correct. Prior work on driving cessation among older adults found differences across race, where Black/African Americans were at greater risk at later life of driving cessation (more time to live post-cessation) compared to White/Caucasians (Choi et al., 2012;). The lack of difference across race/ethnicity in this sample may suggest that older adults have similar expectations, even if life circumstances may be different. However, these results may also be an artifact of the nature of our more educated and higher earning sample. Although we controlled for income in our study (and found a significant effect), we had fewer low SES individuals in our sample than would be expected in the U.S. population as a whole. It is vital that future research includes a racially and income diverse sample, particularly given factors like the lower likelihood of vehicle ownership described earlier, among those in historically marginalized groups. Understanding how current vehicle ownership and/or access, as well as expectations about future vehicle access is likely to play an important role in understanding transportation expectations and planning.

There were several limitations of this study. A lack of longitudinal follow up to explore changes in driving behavior over time and validate the accuracy of expectations limits interpretation. The sample itself was not representative; respondents were drawn from a limited region (southeastern Michigan). The majority (~89%) of participants rated their health as good to excellent, and our respondents had higher education and more income than the general U.S. population. It is likely that participants with worse health or lower education/income may have performed differently in the models. It would have been helpful to have more detailed data on health and functional outcomes to better analyze how older adults' current health affect their driving expectations. This study did not assess availability of alternative transportation options (e.g., E-hail, public, paratransit) and mobility preferences and it is likely some older adults may elect to use other options compared to driving themselves. Finally, despite race not being a statistically significant predictor, the study sample challenged conventional paradigms of sample composition with a proportionally larger sample of black/African American participants compared to white/Caucasians. Even with the sample differences noted earlier, the findings from this study offer a unique insight into driving and life expectancy among Black older adults residing in a predominantly urban setting.

Policy implications

This study showed that two simple, self-report questions assessing how long one expects to live and how many years remaining they expect to drive, give vital information about an older adult drivers' expectation about driving needs. Driving outcomes are individualized and changes in routines are inextricably rooted in a person's driving habits (Hakamies-Blomqvist & Siren, 2003). These two questions can help to start a conversation about an older adult's assumptions and expectations about aging and driving but importantly, it can help to identify mobility gaps and start the planning regarding how to bridge those gaps. In the healthcare domain, both the American Medical Association and American Academy of Neurology have published a number of resources and recommendations to help physicians speak with older patients with functional and/or medical impairments who continue to drive (American Academy of Neurology, 2019; Carr, Schwartzberg, Manning, & Sempek, 2010). However, barriers associated with heavy caseload, time commitments and acute medical concerns may take priority over discussing driving safety. These two questions are not invasive, take little time, can be asked by anyone, and provide information needed to help to initiate a dialog about aging and transportation needs. They are not intended to replace practice guidelines (Iverson et al., 2010), but serve as an adjunct to screens like the Mini-Mental State Examination or the Clinical Dementia Rating in helping to determine fitness to drive.

In the social domain, friends and family could use this information to begin a discussion about mobility planning. Previous research suggests that there could be a mismatch in terms of the importance placed on certain trips, particularly those viewed as discretionary (Parkhurst, Galvin, Musselwhite, Shergold, & Todres, 2013). Older adults also experience a better transition to non-driving when planning occurs (Musselwhite & Shergold, 2012). Asking about expectations related to longevity and driving could be a good way to begin a discussion about these issues, and identify any mismatched expectations within the older driver or between that individual and their family.

An agency like the Department of Motor Vehicles may also use these questions in their resource sections to raise awareness and generate discussion among older drivers as a community. These items could also be used in conjunction with existing programs and tools, like CarFit (AARP, AAA, & The American Occupational Therapy Association, Inc., 2019), GrandDriver (Virginia Department for Aging and Rehabilitative Services, 2019), AARP's Fitness-to-Drive Tool (AARP, University of Western Ontario, & University of Florida, 2015), or AAA Foundation for Traffic Safety's Drivers 65 Plus tool (AAA Foundation for Traffic Safety, 2019). CarFit events occur throughout the U.S. and assess how well a given car "fits" an individual from a safety perspective, and what changes can be made to improve it (AARP et al., 2019). CarFit participants could be asked about their longevity and driving expectations during a CarFit event, to facilitate more discussion about how mobility needs could be met in the future. Because the majority of our respondents expect to live for a number of years after they give up driving, CarFit events could also be suggested as a way to potentially extend safe driving for as long as possible, in any intervention that asked the questions assessed in the current study. These questions could also be used by GrandDriver or added to self-assessment tools, like Fitness-to-Drive or Drivers 65 Plus. GrandDriver is an

educational resource based in Virginia, with the goal of helping older adults remain safe drivers for as long as possible, and the others are self-assessment tools to help older adults understand possible current driving challenges. Understanding whether older adults believe they will live longer than drive could engender further discussion with family or experts about these issues, and could be particularly valuable as a first step toward identifying other mobility options.

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Table 1.

Demographics of older adult (≥65) drivers.

Variable	Mean or *n* ± SD or (%)	
Age, y	72.7	±5.68
Education level, *n*		
High School	55	(15.8%)
Some College	106	(30.4%)
College	56	(16.0%)
Graduate/Professional	132	(37.8%)
Women, *n*	283	(81.1%)
Race, *n*		
White/Caucasian	88	(25.3%)
Black/African American	244	(70.1%)
Other	16	(4.6%)
Self-rated health		
Excellent	26	(7.4%)
Very Good	151	(43.3%)
Good	132	(37.9%)
Fair	38	(10.9%)
Poor	2	(0.6%)

The sample size was n = 349, with one missing value for race; y = years; SD = Standard deviation; n = number; % = percentage.

Table 2.

Education and income by race.

Variable	White		Black		Other	
	n= 88	%	*n*= 244	%	*n*= 16	%
Education level						
High School	6	6.8%	49	20.1%	0	0.0%
Some College	22	25.0%	74	30.3%	9	56.3%
College	15	17.1%	38	15.6%	3	18.8%
Graduate/Professional	45	51.1%	83	34.0%	4	25.0%
Income						
< $25,000	10	11.6%	72	31.6%	4	26.7%
$25,000 – < $50,000	33	38.4%	94	41.2%	7	46.7%
$50,000 – < $100,000	31	36.1%	44	19.3%	4	26.7%
$100,000 or more	12	14.0%	18	7.9%	0	0.0%

The sample size was n = 349, with missing values for race (1), income (19); y = years; n = number; % = percentage. Percentages may not add to 100 due to rounding.

Table 3.

Driving context.

Variable	Mean or *n* ± SD or (%)	
Driving frequency (days/per week)		
1	12	(3.4%)
2	20	(5.7%)
3	30	(8.6%)
4	48	(13.8%)
5	70	(20.1%)
6	42	(12.0%)
7	127	(36.4%)
Difficulty being a non-driver someday		
1 - Not at all difficult	96	(27.6%)
2	39	(11.2%)
3	54	(15.5%)
4	69	(19.8%)
5 - Very Difficult	91	(26.1%)
Is responsible for someone else's transport, *n*	82	(24.4%)
Only driver in household, *n*	146	(41.8%)
Does not limit driving to nearby places, *n*	254	(72.8%)
Does take longer trips, *n*	204	(58.5%)
Driving Expectancy, y	13.4	±7.54
Life Expectancy, y	92.8	±7.35
Expected to live without driving, y	5.75	±7.29

The sample size was n = 349; y = years; SD = Standard deviation; n = number; % = percentage.

Table 4.

General linear model of number of years expected to drive.

Variable	B	SE	*P*	95% CI
Race (Other = ref)				
White/Caucasian	0.94	1.64	0.57	−2.29, 4.16
Black/African American	0.52	1.56	0.74	−2.55, 3.58
Education (Grad/Prof = ref)				
High School	−0.29	1.03	0.78	−2.31, 1.73
Some College	0.71	0.80	0.37	−0.86, 2.27
College	0.93	0.98	0.34	−0.99, 2.85
Gender (Male = ref)				
Female	−0.67	0.89	0.45	−2.42, 1.08
Income (< $25,000 = ref)				
$25,000 – $49,999	2.63	0.82	0.00	1.02, 4.25
$50,000 – $99,999	2.70	1.01	0.01	0.71, 4.68
$100,000 or more	1.52	1.27	0.23	−0.98, 4.02
Current age	−0.72	0.06	0.00	−0.84, −0.61
Age expected to live	0.38	0.05	0.00	0.30, 0.47
Limit Driving (Yes = ref)				
No	2.60	0.74	0.00	1.15, 4.04
Be a non-driver (5 - Very difficult = ref)				
1 - Not at all difficult	−3.72	0.88	0.00	−5.45, −1.98
2	−2.04	1.11	0.07	−4.23, 0.15
3	−2.25	0.98	0.02	−4.18, −0.32
4	−2.95	0.91	0.00	−4.74, −1.16

B = Standardized regression parameter estimates; SE = Standard Error; CI = Confidence Interval R Squared = 0.50 (Adjusted R Squared = 0.48).

Table 5.

General linear model of years expected to live without driving.

Variable	B	SE	*P*	95% CI
Race (Other = ref)				
White/Caucasian	−0.94	1.64	0.57	−4.16, 2.29
Black/African American	−0.52	1.56	0.74	−3.58, 2.55
Education (Grad/Prof = ref)				
High School	0.29	1.03	0.78	−1.73, 2.32
Some College	−0.71	0.80	0.37	−2.28, 0.86
College	−0.93	0.98	0.34	−2.85, 0.99
Gender (Male = ref)				
Female	0.67	0.89	0.45	−1.08, 2.42
Income (< $25,000 = ref)				
$25,000 – < $50,000	−2.63	0.82	0.00	−4.25, −1.02
$50,000 – < $100,000	−2.70	1.01	0.01	−4.68, −0.72
$100,000 or more	−1.52	1.30	0.23	−4.02, 0.98
Current age	−0.28	0.06	0.00	−0.39, −0.16
Age expected to live	0.62	0.05	0.00	0.53, 0.70
Limit Driving (Yes = ref)				
No	−2.60	0.74	0.00	−4.04, −1.15
Be a non-driver (5 - Very difficult = ref)				
1 - Not at all difficult	3.72	0.88	0.00	1.98, 5.45
2	2.04	1.11	0.07	−0.15, 4.23
3	2.25	0.98	0.02	0.32, 4.18
4	2.95	0.91	0.00	1.16, 4.74

B = Standardized regression parameter estimates; SE = Standard Error; CI = Confidence Interval R Squared = 0.48 (Adjusted R Squared = 0.45)