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Health, safety, self-regulation and the older driver: It's not just a matter of age

Laura K.M. Donorfio [a,*], Lisa A. D'Ambrosio [b,*], Joseph F. Coughlin [b], Maureen Mohyde [c]

[a] University of Connecticut, 99 East Main Street, Waterbury, CT 06702 USA
[b] MIT AgeLab, 77 Massachusetts Avenue, Cambridge, MA 02139 USA
[c] The Hartford Financial Services, Inc., 200/2 Executive Boulevard, Southington, CT 06489 USA

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ABSTRACT

Problem: The purpose of this research was to examine the impact of age and health on patterns of driving and self-regulation among older adults who still drive. *Method:* This analysis presents the results of a nationwide survey of drivers who are 50+(*N*=3,824, 53.11% response rate), focusing on questions about the impact of their self-reported health on attitudes toward and self-regulation of driving. *Results:* The data indicate that as age increases, so too does reported self-regulation of driving, increasing sharply among those ages 70 and older. The data also indicate that respondent's reported confidence in driving and their enjoyment of driving decline as they age. Health status bears a significant relationship with all three of these variables, positively related to confidence in driving skills and to enjoyment in driving, but negatively related to self-regulation reports. As self-reported health declines, respondent's report engages in greater voluntary restrictions of their driving. *Discussion:* All too often, the driving decision is linked primarily to chronological age. Analysis done here indicates that age alone is not the best indicator of self-regulation and how older adults change their driving behaviors. *Summary:* This research presents the results of a nationwide survey of 50+ drivers and their self-reported driving, self-regulation behaviors, and health status. Strong support was found for the argument that chronological age is not an adequate measure of self-regulating behaviors and driver safety among those 50+. In particular, it was found that a person's health status and the interaction between age and health are essential considerations in the decisions around self-regulation and driving. People tend to self-regulate more with age, but the effect becomes much more pronounced as health status declines. *Impact on industry:* In the coming years, if older adults can't get to where they want to go and continue to be viable consumers in our national fabric, all industries will eventually suffer. Transportation is a key component to the nation's social contract with older individuals and their families.

1. Problem

Recent tragic crashes involving older drivers are continuing to rouse the attention of state legislators across the country, whose political instincts usually tell them to steer clear of anything that antagonizes this important voting bloc. Heightened awareness, due to mounting concern for the safety of pedestrians and other drivers, has, once again, resulted in public discussion of age as a risk factor for unsafe driving. And, once again, the media are asking such questions as "How old is too old to drive?" Perhaps it is time to put this question and stereotype to rest and formally acknowledge that it's not just a matter of age that accounts for declines in driving-related abilities and the increased risk of crashes (Dickerson et al., 2007).

As a group, the majority of older drivers are considered cautious and relatively safe drivers. According to Ball (2003), "In the absence of disease or functional impairment, there is no empirical evidence that the subtle age-related changes in visual sensory or cognitive skills detected in a controlled laboratory study or in a clinic affect the ability of older persons to operate a motor vehicle safely. The impairments that do affect driving ability do so for individuals of all age groups, not just the older driver" (p. 1499). Even though older drivers are considered cautious and safe drivers, when compared with all other age groups except the youngest drivers, older drivers are at increased crash risk per mile (National Highway Traffic Safety Administration, 2000). What is concerning is the future rate of growth of the older population and hence, the increased number of older drivers and the associated older driver fatalities. By 2030 the 65-plus population is expected to double to 71 million, making up one-quarter of all U.S. drivers and 9.5 million 85-plus who will have spent most of their lives driving (Karaim, 2006).

While chronological age is regularly defined as a predictor of traffic safety and driving behavior, other risk factors and functional impairments can affect driving skills and indeed, are more prevalent in the older driver population (Ball, 2003; Jette & Branch, 1992; Marotoli, 2007; Shaheen & Niemeier, 2001; Viamonte, Ball, & Kilgore,

* Corresponding authors. Donorfio is to be contacted at University of Connecticut, 99 East Main Street, Waterbury, CT 06702 USA. Tel.: +1 203 560 0760; fax: +1 203 236 9805. D'Ambrosio, MIT AgeLab, 77 Massachusetts Avenue, Cambridge, MA 02139 USA.
E-mail address: laura.donorfio@uconn.edu (L.K.M. Donorfio).

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2006). In addition to age, the other potential risk factors that have been evaluated relative to older driver safety include: impaired vision; reduced visual information processing speed and other cognitive abilities; physical impairments; flexibility and dexterity; medical conditions; deteriorating health; dementia; medications; declining driving-related functional abilities; and gender (Bauer, Adler, Kuskowski, & Rottunda, 2003; D'Ambrosio, Donorfio, Coughlin, Mohyde, & Meyer, 2008; DeRaedt & Ponjaert-Kristoffersen, 2000; Owsley, McGwin, & Ball, 1998; Owsley, McGwin, Phillips, McNeal, & Stalvey, 2004; Siren, Hakamies-Blomqvist, & Lindeman, 2004; Viamonte et al., 2006; Windsor, Anstey, & Walker, 2008).

Recent attention has focused on how to meet the future income and health needs of older adults, with much less attention given to how older adults will retain their mobility (Coughlin, 2001). The private automobile is an essential means of transportation for the majority of older adults and critical to feeling independent and in control of one's life, especially because many live where they lack access to public transit or other acceptable modes of transportation (D'Ambrosio, Donorfio et al., 2008). A range of negative consequences have been documented when older adults stop driving, such as loneliness and social isolation, depression, decreased participation in out-of-home activities, and strained relations with others to provide transportation (Fonda, Wallace, & Herzog, 2001). We have grown into a nation that relies primarily on the private automobile for our mobility.

Thus far, researchers have mainly focused their attention on the impact of specific impairments on older drivers' ability to drive and self-regulation behaviors. While physical and cognitive impairments are important, comparatively little research has focused on the role of perceived decreasing health among those who have experienced age-related changes, but who do not have a diagnosable medical condition they must report to a transportation authority (Rudman, Friedland, Chipman, & Sciortino, 2006). Jette and Branch (1992) concur, "Declining health status appears to be an important risk factor for losing self-reliance in driving a car in old age."

The purpose of this research was to examine the impact of age and health on patterns of driving and self-regulation among older adults who still drive. By looking at older adults who still drive, rather than those who have already given up driving, insight can be gained into the actual modifications and changes people make as they age while continuing to drive (Donorfio, Mohyde, Coughlin, & D'Ambrosio, 2008). This analysis presents the results of a nationwide survey of drivers who are 50+, focusing on questions about the impact of their self-reported health on attitudes toward and self-regulation of driving. Self-regulation of driving, voluntarily avoiding driving under challenging and/or demanding situations as well as reducing the number of miles traveled, is widely acknowledged as the means by which older drivers make adjustments to their driving to continue to drive safely (Ball et al., 1998; Benekohal, Michaels, Shim, & Resende, 1994; Marotolli et al., 1997). While specific health conditions may affect overall driving distance and frequency, less attention has been given to how self-perceived declines in health may undermine people's enjoyment of the driving task itself, and their confidence in their skills, in turn leading to increased self-regulation. The paper also includes a discussion of ways in which new technologies in vehicles may help drivers to compensate for health-related driving challenges they may face, perhaps improving their driving confidence and enjoyment, and keeping them on the road safely longer.

2. Method

The MIT AgeLab and The Hartford Financial Services Group partnered to conduct the "Safe Driving for a Lifetime Project," a three-phase research project specifically designed to identify and define the factors that influence older drivers over the age of 50 to self-regulate and change their driving behaviors. The first phase consisted of exploratory focus groups. The second phase comprised a representative national survey. A third phase entailed conducting confirmatory in-depth interviews with older adults and their families. This paper outlines some of the findings from phase II of this project. While some of the findings from phase II have been reported previously (D'Ambrosio, Donorfio, et al., 2008; D'Ambrosio, Meyer, et al., 2008), this paper outlines additional findings not reported from phase II related to health, age, and self-regulation.

A nationally representative sample of 7,200 adults (4,800 households) aged 50+ was sent a 14-page written questionnaire in Spring 2002. The sample was drawn from a consumer market research panel, stratified by age and gender. To be considered a viable participant for this research, individuals had to be licensed and to have driven a car within the past 12 months. A pre-alert postcard was sent approximately two-weeks before the survey with a $1 incentive to complete the questionnaire. In May, 7,200 surveys were sent out and by June, 3,824 valid questionnaires were returned for an overall response rate of 53.11%. The data were weighted to the 2001 Current Population Study (CPS) quotas on gender, household designation and size, age, and region to be representative of adult consumers aged 50+ who lived in households headed by someone age 50+. The final sample consisted of the following: gender - 1,704 males and 2,120 females; household status - 1984 one-person and 1840 two-person; age - 1,591 50-59, 1,040 60-69, 811 70-79, and 382 80+; and self-reported health status - 549 excellent, 1,529 very good, 1,252 good, 401 fair, and 93 poor. The effective weighted sample size was 3,819. The data were analyzed using SPSS Version 11.5.

The questionnaire included several measures to assess health, driving attitudes, and self-regulation behaviors. Self-regulation was measured by asking respondents about their willingness to drive under a variety of different conditions. Specifically they were asked how often they were willing to drive in a typical week: at night; at dusk or dawn; on highways or freeways; in heavy traffic congestion; in poor weather; distances requiring more than one hour of travel time one way; and in unfamiliar areas. Response options were: absolutely never, never unless I can't avoid it, will sometimes, and it does not usually affect my willingness to drive. A self-regulation index was created for each respondent by averaging their responses across these items. Respondents also answered questions pertaining to their current levels of enjoyment and confidence in driving, compared with 10 years earlier.

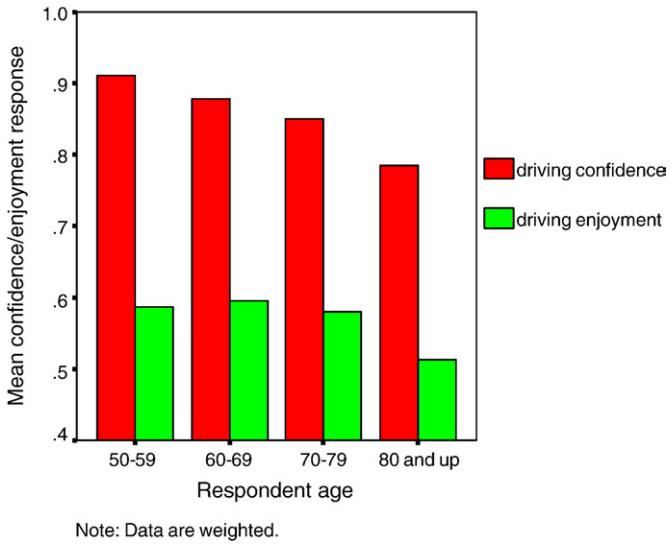

Fig. 1. Mean reported confidence and enjoyment in driving responses by age.