Seniors face serious driving safety and mobility issues.

Older Adults' Preferences for Communication with Healthcare Providers About Driving

A LongROAD Study

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Title

Older Adults' Preferences for Communication with Healthcare Providers About Driving. *(September 2015)*

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Acknowledgments

MEB participated in study concept and design, literature search and study review, theme analysis, and manuscript preparation. She takes responsibility for the manuscript as a whole. KS participated in literature search and study review, theme analysis, and manuscript preparation. JJ and CD participated in study concept, theme analysis, and manuscript preparation. JJ also participated in study design.

About the Sponsor

AAA Foundation for Traffic Safety
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Founded in 1947, the AAA Foundation in Washington, D.C. is a not-for-profit, publicly supported charitable research and education organization dedicated to saving lives by preventing traffic crashes and reducing injuries when crashes occur. Funding for this report was provided by voluntary contributions from AAA/CAA and their affiliated motor clubs, from individual members, from AAA-affiliated insurance companies, as well as from other organizations or sources.

About LongROAD

Safe mobility is essential to healthy aging. Recognizing that lifestyle changes, along with innovative technologies and medical advancements, will have a significant impact on the driving experiences of the baby boomer generation, the AAA Foundation for Traffic Safety has launched a multi-year research program to more fully understand the driving patterns and trends of older drivers in the United States. This multi-year prospective cohort study is being conducted at 5 sites throughout the country, with 3,000 participants, tracking 5+ years of driving behaviors and medical conditions. The multidisciplinary team assembled to investigate this issue is led by experienced researchers from Columbia University, University of Michigan Transportation Research Institute and the Urban Institute.

The LongROAD (Longitudinal Research on Aging Drivers) Study is designed to generate the largest and most comprehensive data base about senior drivers in existence and will support in-depth studies of senior driving and mobility to better understand risks and develop effective countermeasures. Specific emphasis is being placed on issues related to medications, medical conditions, driving patterns, driving exposure, self-regulation, and crash risk, along with mobility options for older Americans who no longer drive.

Abstract

Aim

To synthesize published qualitative studies to identify older adults' preferences for communication about driving with healthcare providers.

Background

Healthcare providers play a key role in addressing driving safety and driving retirement with older adults, but conversations about driving can be difficult. Guides exist for family members and providers, but to date less is known about the types of communication and messages older drivers want from their healthcare providers.

Design

Qualitative metasynthesis of studies published on or before October 10, 2014, in databases (PubMed, CINAHL, PsycINFO and Web of Science) and grey literature.

Review Methods

22 published studies representing 518 older adult drivers met the following inclusion criteria: (1) the study was about driving; (2) the study involved older drivers; (3) the study was qualitative (rather than quantitative or mixed methods); and (4) the study contained information on older drivers' perspectives about communication with healthcare providers.

Results

We identified five major themes regarding older adults' communication preferences: (1) driving discussions are emotionally charged; (2) context matters; (3) providers are trusted and viewed as authority figures; (4) communication should occur over a period of time rather than suddenly; and (5) older adults desire agency in the decision to stop driving.

Conclusion

Various stakeholders involved in older driver safety should consider older drivers' perspectives regarding discussions about driving. Healthcare providers can respect and empower older drivers—and support their family members—through tactful communication about driving safety and mobility transitions during the life course.

Key words: Driving cessation, Transportation safety, Older drivers, Communication, Attitudes and beliefs, Qualitative, Mobility

Introduction

Driving has been recognized as a key factor in the well-being and independence of older adults, with studies showing negative health outcomes from premature "driving retirement" (Chihuri et al. 2015; Edwards et al. 2009; Foley et al. 2002; Fonda et al. 2001; Freeman et al. 2006; Marottoli et al. 2000; Taylor and Tripodes 2001). At the same time, a myriad of medications and conditions common with aging (including cognitive, visual, and physical impairments) can affect driving performance (McGwin et al. 2000), and fatal crash rates per mile travelled rise at age 75 (2013). The challenge lies in assessing the relative benefits and risks of continued driving for an individual, and this issue has gained increasing attention with the rapid growth of the older adult population (2010a).

Physicians and other healthcare providers have been identified as playing a key role in older driver safety (Carr et al. 2010), including identifying potentially at-risk drivers and counseling older patients about driving safety and driving retirement (Wang and Carr 2004). There have been calls for integration of questioning about driving status in routine clinical care, as healthcare providers may avoid bringing up the topic of driving until "red flags" or concerns arise (Betz et al. 2013a). There is some evidence that both older drivers and healthcare providers would support such routine questioning about driving (Betz et al. 2014), but barriers remain in implementing such approaches (Betz et al. 2015; Friedland et al. 2006). These barriers have been identified as including inadequate education of providers and the general public along with inadequate communication between providers and patients (Classen et al. 2007).

To optimize the likelihood of success, any program to support regular questioning about driving in clinical settings should use communication strategies most likely to engage both providers and older adults in productive conversations about driving safety and proactive planning for future mobility changes. This requires an understanding of older adults' perceptions and preferences for messaging about driving. For example, Levy and Myers (Friedland and Rudman 2009) found that older adults with positive self-perceptions of aging were more likely to practice preventive health behaviors; less is known about how driving relates to such self-perceptions, or whether clinicians should use positive messaging to combat the belief equating driving retirement with loss of independence.

We therefore sought to synthesize qualitative studies of older adults' preferences concerning communication with their healthcare providers about driving, including driving safety and planning for future "driving retirement". Analyzing existing qualitative studies provides opportunity to access a diverse range of older adult perspectives and driving contexts to help move the field forward with a novel, overarching perspective of this phenomenon. These results should inform the future development and refinement of messaging to older drivers, which in turn could support the integration of questioning about driving into routine clinical care or the development of community-based programs. This could be utilized by doctors, other healthcare providers, caregivers, driver licensing officials and others to assist older drivers in making decisions about driving cessation.

Methods

Study Design

We designed a qualitative metasynthesis grounded in social constructivist epistemology consisting of: (1) identification of a research question; (2) definition of the scope and nature of studies to be included; (3) team-based quality appraisal of each relevant identified study as a preliminary step in data analysis at the macro level; (4) team-based, inductive theme analysis at the micro text data level; and (5) development of an authenticity map by producing a reciprocal translation table (Goins et al. 2014). As a rigorous systematic interpretive study of a body of qualitative research literature (Bondas and Hall 2007; Sandelowski and Barroso 2007), the aim was the production of new knowledge beyond the original studies. The process involves interpretations of interpretations (McCormick et al. 2003) and an interpretive integrative synthesis (Thorne et al. 2004). In addition, we adopted the following assumptions: (1) the whole published paper, not just any included participant comments, is treated as qualitative data for interpretation; (2) the strength of our multidisciplinary analytic team adds context variation to interpretation of studies and perceived relevance to our question; (3) when qualitative studies are about similar things, they can be "added together." In this way, individual studies added together can be understood with a larger and different interpretive meaning.

Inclusion and exclusion criteria

The inclusion criteria for this study were (a) published studies that: (b) included drivers (or former drivers) aged ≥65 years; (c) mentioned communication with healthcare providers about driving issues surrounding driving; (d) used qualitative methods; and (e) were indexed in a bibliographic database by October 2014. Exclusion criteria were studies that were: (a) not written in English; (b) combined qualitative and quantitative data; or (c) did not include primary data collection (i.e., were systematic reviews, meta-syntheses, editorials, or literature reviews). Although the focus was the perspectives of older drivers, studies remained eligible if they included other types of participants (e.g., family members of older drivers) in addition to older drivers.

Search Strategy

In consultation with a health sciences librarian, we searched PubMed using the National Library of Medicine's Medical Subject Headings (MeSH) and additional key words related to: (1) older adults ("Geriatrics", "Aged", "Elderly", "Older adult"); (2) driving ("Automobile driving", "driving"); and (3) qualitative research ("Qualitative Research", "qualitative", "focus group", "interview"). This search was supplemented by similar subject heading and key word searches in CINAHL, PsychINFO, Web of Science, and Google Scholar. We also conducted general internet searches to identify relevant grey literature, including reports from studies done by organizations involved in policy development or education in the area of older driver safety (e.g., AAA Foundation for Traffic Safety, AARP, Massachusetts Institute of Technology Agelab, and National Transportation Research Board). Reference lists of included studies were reviewed to identify additional relevant studies.

Study Selection and Appraisal

Article adjudication

Two reviewers independently performed the above searches and examined each title for relevance to our study question: older adults' preferences for communication with healthcare providers about driving. The two reviewers then examined the abstracts of those titles deemed potentially relevant by either reviewer; subsequently, they reviewed the full text of those studies whose abstracts were deemed relevant by either reviewer. Both reviewers agreed upon the final set of articles without the need for adjudication by other team members. Final inclusion in our study was confirmed during our whole analytic team discussions following methodological critical review.

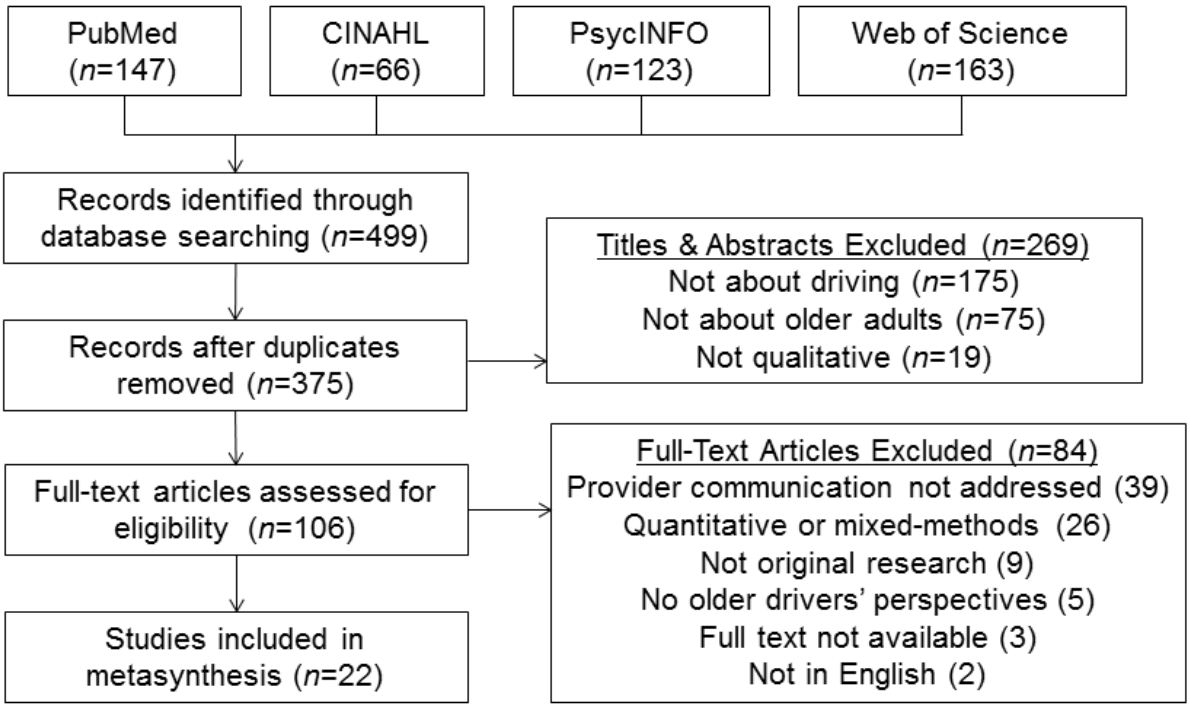
Methodological critical review

For critical review of each study, we chose the McMaster University tool (Letts et al. 2007) because of its comprehensive criteria for study rigor and other methodological points.

Interpretive Analysis

We used a general inductive approach (Thomas 2006) to qualitative theme analysis of similarities and differences across the published studies. We applied our well-established, team-based, inductive and deductive analytic toolkit, including line-by-line reading and definition of emergent ideas, codes and then themes (Betz, Jones, Genco, Carr, DiGuiseppi, Haukoos, Lowenstein, Schwartz 2014; Jones et al. 2014). Using a question and answer format, we interrogated the text in terms of how it helps us understand about older adults' preferences for messaging around driving in conversations with health professionals. This process was iterative, building consensus through visual mapping of themes, naming, re-naming and contextualizing themes through team discussion. This approach extends analysis to going beyond the original studies to more abstract level theme development. Congruent with our metasynthesis framework (Thorne, Jensen, Kearney, Noblit, Sandelowski 2004), we then used a reciprocal translation approach adapted from Noblit and Hare (Noblit and Hare 1988). The individual published study contexts provided the foreground of assumption we drew upon to interpret the findings, as well as the sense or interpretations made of them. Our unit of analysis was interpretation. We used a parts-and-whole movement as a team within and across each study, each team member, and at each team analysis discussion. We maintained an analytic audit trail of our decisions.

Figure 1. Article Selection Process



Results

Search Results

Our search strategy and inclusion and exclusion criteria yielded 499 studies (Figure 1). Both reviewers examined the full article for all abstracts deemed relevant by at least one reviewer (n=106 studies). The final 22 studies included in this metasynthesis were chosen by consensus after full article review.

Study and Participant Characteristics

Table 1 displays the characteristics of the included studies. Half (n=11) of the studies were conducted in the United States, with five from Australia, four from Canada, and one from Sweden. All but one study were published in or after 2000, with the exception published in 1993. Most studies used a qualitative descriptive approach with interviews, focus groups, or a combination. Eight studies included only older adults, while the others included a range of participants (including caregivers, spouses and medical professionals). The sample sizes ranged from four to 216. The combined qualitative data from these 22 studies represents a total of 518 individual older adults.

Methodological Critical Review

Critical review results are summarized in Table 2. All studies had a defined purpose and review of relevant literature, and all identified a descriptive or exploratory scope to their qualitative approach. Four studies further defined their approach as phenomenological and one as empirical grounded theory. Consistent with contemporary debates (Jones 2013), in naming of the stated type of qualitative approach and the associated method, slippage was evident in the majority of manuscripts examined. While all studies appeared to include participant samples appropriate for the research question, two did not provide information about how participants were recruited, and only eight stated whether sampling was continued until the point of data saturation. All studies had analytic rigor, including inductive analyses and findings that appeared consistent with and reflective of data. However, no study described an auditable decision trail, and five did not describe data analysis techniques in detail. In all but two studies, a meaningful picture emerged of the phenomenon in question. Regarding overall study rigor, concerns about transferability were most common, followed by confirmability; only two studies had issues related to either credibility or dependability. This process of critical review was used as a first step in the analytic process, and no study was excluded based on critical review findings (Sandelowski and Barroso 2007).

Metasynthesis

Five analytic themes, each with subthemes, emerged from our metasynthesis (Table 3). By identifying common and unique features within and across these 22 studies, we found that communication about driving is an (1) emotionally charged and (2) context-sensitive topic for older drivers that best occurs (3) with trusted providers (4) over time and (5) in a way that allows the older adult to maintain agency. We linked the primary studies to these

themes through reciprocal translation as described in Table 3 and in the narrative below, with illustrative quotes from participating older drivers.

Theme 1—Driving discussions are emotionally charged:

This theme reflects the idea that driving is a sensitive topic for most older adults, and discussions can therefore trigger strong emotions. Older adults named a range of negative emotions when describing driving cessation, including sadness, powerlessness, frustration, anger, and decreased self-esteem. Communication about driving can stir fears of the consequences of the conversation, especially loss of driving privileges: "Nope, I'd never talk about it with [my nurse practitioner]. Too scared that I'd have to stop driving and then where would I be?" (#10, p. 112). As one woman who had to stop driving after a stroke said: "Just to hear the words telling you that you can't drive. It didn't make me feel very comfortable or happy … you lose your independence, your life really" (#19, p.834). Denial and disbelief were also common in discussions about driving, as older adults disagreed with providers' assessments or recommendations, and some whose licenses are revoked felt victimized or persecuted. One woman reported feeling justified in ignoring her provider's advice: "My doctor is badly mistaken about my driving skills. There is absolutely nothing wrong with them; I'm just a bit slower than before, but that's no reason to quit" (#11, p. 240). But some older drivers also expressed anxiety over harming others, often to a greater extent than of hurting themselves, and they spoke of how providers' comments about community safety could influence their decisions about driving.

Concerning provider communication, older drivers generally wanted acknowledgment of how difficult the topic can be, along with offers of emotional support. They also spoke of a need for hope, like assurances about addressing transportation needs. There were also suggestions to reframe conversations to focus on the positive aspects of driving evaluations, such as adaptive equipment or future re-testing, and to make conversations a routine or normal occurrence.

Theme 2—Context matters:

This theme refers to the importance of context in conversations about driving, as the interaction between the driver, provider, environment and point in time can affect both the tone and outcome of the conversation. While some studies put forth a recommendation for routine conversations and advance planning for future changes, there was also recognition of the need to acknowledge variability in older driver opinions, ability, and anticipated reactions to conversations. Older adults spoke of a desire to be recognized as an individual and have personalized counseling, rather than feeling like a "name on a list" (#20, p. 177). One participant summarized her advice for providers: "'Let me get to know you….are you still driving? Do you have any issues with that?' That kind of question, rather than 'an old person like yourself shouldn't be driving.' As in most things, it's in how you present the question" (#5, p. 8). Another important consideration was the older driver's gender, which can affect both self-perceptions of driving ability and also self-identity as related to driving.

Participants also suggested providers place concerns about driving into a particular context, such as risk posed by a medical condition or medication, as this may make older adults more comfortable with the conversation. Medical conditions mentioned in the included studies included dementia, macular degeneration, stroke, and arthritis, and

participants recommended having disease-specific recommendations and resources. But it was also clear that the presence of a particular diagnosis or risky medication alone does not ensure a conversation about driving would occur. Geographic location was another important contextual factor, in that it affects the availability and accessibility of resources for driver evaluations and for alternative transportation. Older adult values may also vary by geography; for example, rural values such as self-reliance and independence appeared to play a role in driving discussions. Similarly, societal emphasis on the well-being of the community (e.g., Australia) versus the individual (e.g., United States) may also affect how providers discuss driving safety with older patients. For example, one Australian woman said: "The doctor didn't approach me to give it up. I approached him. I said to him that I was thinking about it and he said: 'It wouldn't hurt. You have to think of other people.' That's exactly what he said. Yes, I would hate to have an accident and hurt anyone, let alone children" (#12, p. 318). State or national regulations concerning reporting of potentially unsafe drivers were also recognized as influencing communication. While regulations might inhibit conversations out of fear of license revocation, they might also help drivers to understand and accept providers' recommendations.

Theme 3—Healthcare providers as trusted and influential:

This theme speaks to the idea that older adults viewed healthcare providers as authority figures but also to point that driving discussions are best conducted by a well-known, trusted provider. Providers were generally described as fair, knowledgeable and influential; one driver said, "I'd listen to my doctor first" (#1, p. 54). In another study, a participant elaborated: "Well, [my nurse practitioner] takes good care of me every other way, so why wouldn't I trust her to lead me down the right path when it come to the stuff I needed to drive good?" (#10, p. 112). Participants spoke of providers' authority on the topic of driving in mentioning that they would follow recommendations even if they disagreed or felt the decision was forced upon them: "My doctor told me I had to [stop driving]. I just had to do what he said" (#3, p. 315). Although many participants hoped to make decisions about driving themselves (see Theme 5), they also spoke of providers as a back-up: "I'm sure I'll know enough to quit driving when I should, but I'm not certain that I will. I hope that I will, but I'll be told when I musn't" (#7, p. 20). A problem with this approach was that some participants took the absence of guidance from providers as implicit approval to continue driving (#14).

Participants mentioned the provider's role vis-à-vis both family members and clinical support staff. Specifically, many felt healthcare providers would be more influential than family members, though collaboration would be useful; one man with early dementia said: "I would give my wife a more difficult time, probably, than I would my doctor. That's why we've kind of asked her [physician] to step in" (#1, p. 52). Participants recognized that time constraints in clinical settings may inhibit conversations about driving, but they preferred to have counseling from their provider rather than medical assistants. Many older drivers saw driving as related to other health conditions and therefore relevant to medical providers and an acceptable topic of discussion: "[My providers] ask me everything else" (#4, p.1575). However, there were also strong statements from some who saw driving as a personal issue: "My driving is my business and no one else's" (#10, p. 112). A participant in another study said: "I still got [my license] in my pocket, because the man who was giving me his biased opinion, he was a doctor, thank you very much, but he wasn't in the position to take away my license" (#6, p. 158). In some cases this was related to a feeling that

providers didn't have enough training, knowledge or resources to justify revoking a driver's license.

Theme 4—Continued communication over time:

This theme reflects the need for communication about driving to occur over time to allow older drivers to process recommendations, make plans, and adapt their lifestyles. This included both specific guidance once a medical condition arose (e.g., after a diagnosis of dementia), but also the idea that routine discussions about driving should begin long before there are problems. Older adults spoke of the need for support and time to reflect on the process of adjusting driving to new physical challenges or medication effects and of eventual driving retirement. This may even take the form of "grief counseling" (#13), given the potential emotional consequences of driving retirement. Older drivers supported the idea of advance planning, with conversations beginning sooner to avoid the need for abrupt and unexpected changes. One study included an appendix of recommendations for healthcare professionals caring for older drivers with dementia; first on the list was preparing patients for future driving retirement: "...they hit you with that, bang, you should be warned" (#6, p.163).

Theme 5—Desire for agency:

A strong emergent theme, with evidence in all included studies, was older adults' desire to maintain control over their decisions, albeit with input from trusted individuals. Some participants spoke of choosing to stop driving, even when providers said they were still "legal to drive" (#3, p. 315); as one said, "I am in control of this body, and I decide what this body can do and can't do" (#16, p.89). Participants also spoke of wanting objective evidence, such as test results or a specialist's opinion, to help them make decisions or believe recommendations from others: "If somebody said to me that they were concerned with the way I drove, I would want to know what concerns you. And take a look at what they're saying" (#5, p. 4). Although some related frustrations with driver testing process, it was seen as potentially helpful; one mentioned knowing how to drive but not "the finer points…which I have now learnt, and everything's going alright" (#19 p.5 836).

Yet a strong subtheme was that participants felt they had received inadequate and inconsistent information about driving safety and the process of testing and cessation, and this lack of information was identified as a source of stress. One man said that, when he was discharged after being hospitalized with a stroke, "I was never told you couldn't…that you couldn't drive straight away…" (#19, p. 836). Conversely, better education and conversations was identified as a way to empower older drivers to seek assistance or retraining, to self-restrict their driving, or to transition to other modes of transportation. The best approach, as suggested by the included studies, may be a collaborative one in which the provider engages and empowers the older driver to make informed, rather than forced, decisions.

Table 1. Description of Included Studies

Authors, year & country	Study purpose	Design	Methods	Participants	Summary of findings
(#1) Adler 2010[†]; United States	To understand how persons with dementia and their spouses make driving decisions	Qualitative exploratory	Focus groups (n=13) Basic theme analysis	20 current drivers with dementia (mean age=69.9, SD=8.9, range=53-83); 20 spouses of current drivers with dementia; 25 spouses of former drivers with dementia	Compensation strategies by drivers with dementia to maintain safe driving; lack of planning for driving cessation even in light of expectations of cessation; desire that driving decisions be responsibility shared between families and professionals
(#2) Barnsley et al. 2012[‡]; Australia	To explore the experiences and attitudes related to travelling outdoors early after hospital discharge after a stroke	Grounded Theory approach (Strauss and Corbin 1998)	Semi-structured interviews (2 per person, at baseline and 3 months later) Grounded theory	19 current and former drivers receiving rehabilitation post-stroke to increase outdoor travel (mean age=68.6, SD=11.7); 7 close family members and 1 friend of post-stroke participants	Categorizable as hesitant or confident explorer; modes of transport (driving, walking, public transport); gate-keeping by occupational therapists, primary care providers and family members adversely affected travel
(#3) Bauer et al. 2003; United States	To understand the lived-experience of driving cessation for older women	Qualitative, collective case study	Semi-structured interviews Theme analysis	6 women aged ≥65 years who had stopped driving within the past 2 years (mean age=82.5, SD=4.1, range=74.7-85.5)	Adaptation to driving cessation came easiest to those who planned ahead and made the decision voluntarily
(#4) Betz et al. 2013a[‡]; United States	To examine older driver and clinician perspectives on driving discussions and advance planning	Qualitative descriptive	Semi-structured interviews and focus groups (n=3) Theme analysis	33 current drivers aged ≥65 years (median age=80, IQR=75-84.5); 8 internal medicine physicians, physician assistants or nurse practitioners working at 3 university-affiliated clinics	Drivers open to conversations about driving; clinicians (not drivers) usually initiate conversations; general questions about driving should be a part of routine primary care
(#5) Betz et al. 2014[‡]; United States	To explore perspectives about and identify barriers and facilitators to tiered older driver				General support for tiered older driver assessment but concerns about its consequences and affect on program viability; tension in generalized approach to individualized issue;

	assessment in primary care settings				logistical considerations for screening in primary care settings
(#6) Byszewski & Molnar 2010†; Canada (Ontario)	To examine the process of disclosure of unfitness-to-drive of persons with newly diagnosed dementia	Descriptive, exploratory	Semi-structured interviews; Focus groups (n=3) with caregivers Theme analysis	15 current and former older adult drivers with newly diagnosed dementia who had a discussion about permanent driving cessation (mean age=81); 15 caregivers (1 per older adult)	Reactions to physician recommendation to stop driving included acceptance, resignation, and disagreement/rejection
(#7)* Friedland & Rudland 2009; Canada (Ontario)	To explore the interpersonal aspects of driving self-regulation	Descriptive, exploratory, inductive (secondary analysis)	Homogenous focus groups (n=17) Theme analysis	29 pre-senior drivers (aged 55-64 years, mean age=59.6); 24 senior drivers (≥65 years, mean age=75.5) 26 senior ex-drivers (≥65 years, mean age=81.8) who stopped driving of their own volition 20 healthcare providers	Barriers to open dialogue include: reluctance of "others" to broach topic; concern over harming relationships or being a burden; uncertainty; differing views on self-regulation Facilitators include: getting & providing feedback the "right way"; seniors' expectation that someone will "step in"
(#8) Jett et al. 2005; United States (Florida)	To identify and describe effective and ineffective strategies for driving cessation	Concurrent analysis, grounded theory	Semi-structured interviews Theme analysis	40 current older drivers (age data not listed); 101 family members of older drivers; 63 paraprofessionals or professionals in aging 13 adults who are family members of older drivers and also work in the field of aging	Context of unsafe driving; intervening conditions that affected cessation; intervention strategies employed to effectuate cessation of unsafe driving (involved versus imposed strategies)
(#9) Johansson & Stromberg 2010; Sweden	To describe how implantable cardioverter defibrillator (ICD) recipients perceive driving restrictions	Phenomenography	Semi-structured interviews Theme analysis	20 ICD recipients currently driving with driving restrictions in the last 12 months (age range=43-82)	Consider individual's unique relationships with driving in terms of achieving adherence to restrictions, emotional influence, and altered views on driving; participants had gotten insufficient information
(#10)	To explore the role of	Descriptive	Semi-structured	25 urban NPs;	Trust of NPs versus view driving as

Johnson 2000; United States (urban area)	nurse practitioners (NPs) in driving evaluation and cessation		interviews Conceptual coding & constant comparative (Strauss 1978)	35 of their older patients who had forfeited a driver's license (mean age=81.2, range=73-89)	personal business; half had discussed driving with NP; NP was the one to raise topic
(#11) Johnson 2002[‡]; United States (20 rural areas in the West)	To describe the reasons rural elders continue to drive against the advice of health professionals, family, or friends	Descriptive, exploratory	Semi-structured interviews Conceptual coding and the constant comparative method	45 current older adult drivers who had been told to stop driving but had not done so (mean age=81.9, range=71.4-91.4)	Theme categories: declining health; "I'm right, they're wrong," independence and self-reliance, universal fear, reassurance, frustration, and disappointment
(#12) Johnson et al. 2013; Australia	To investigate the views of older people with mild cognitive impairment about decision-making for driving cessation	Qualitative descriptive (sub-study of larger project on management of dementia)	Semi-structured interviews Thematic analysis (Braun and Clarke 2006)	9 current and former older adult drivers with mild cognitive impairment but no formal diagnosis of dementia (mean age=84.7, SD=3.8, range=79-91)	Major theme; 'maintaining agency'; subthemes: driving self-regulation, deciding to stop driving, and provider's role in maintaining agency
(#13) Liddle 2013[†]; Australia (small rural & urban)	To explore when and how to best help people with dementia who are ceasing driving	Descriptive phenomenology	Semi-structured interviews Constant comparative analysis (Patton 2002)	4 former drivers with a dementia diagnosis (median age=70, range=67-75) 11 caregivers 15 health professionals	Driving cessation in dementia has stages: early worried waiting, acute adjustment after crisis, and long journey after cessation Received inadequate and inconsistent advice, need personalized support and empowerment
(#14) Moore & Miller 2005; United States (Ohio)	To explore the driving strategies used by older adults with macular degeneration	Modified phenomenology (secondary analysis of two prior studies)	Semi-structured interviews Theme analysis	8 women (study 1; age range=63-85) and 8 men (study 2; age range=68-87) with macular degeneration; driving status not provided	Strategies used while driving and also to continue driving; providers should discuss progressive nature of macular degeneration in "tactful' manner
(#15) Perkinson et al. 2005[†]; United States (Missouri)	To assess beliefs and perceptions of driving and Alzheimer's disease (AD), including barriers to and successful strategies for achieving driving	Grounded theory	Homogenous focus groups (n=10) Theme analysis	14 older adults with AD (9 current drivers, age range=65-84; 5 former drivers, age range=71-74) 14 family caregivers of adults with AD (9 current drivers, 5 former	Need support from physicians in counseling and evaluation of health-related fitness of older drivers; mild AD alone does not preclude driving; family member involvement is key Need education of stakeholders and resources concerning AD and driving

	cessation when appropriate			drivers) 10 advocates for older adults 8 transportation and law enforcement professionals 22 health professionals	
(#16) Persson 1993; United States (Oklahoma)	To examine how and when an older adult decides to stop driving, and the role of the family and physician in this decision.	Qualitative descriptive	Focus groups (n=10) Content analysis	56 adults living in retirement communities who had stopped driving within the past 5 years (mean age=81, range=66-96)	Most reluctantly decided to stop driving after trying compensatory behaviors; most felt physician was in the best position to evaluate driving.
(#17)* Rudman, et al. 2006; Canada (Ontario)	To examine the experiences and perspectives on driving of well elderly individuals who did not have a medical condition that required reporting by a physician to a regulatory body	Qualitative descriptive	Focus groups (n=14) Constant comparative method	29 pre-senior drivers (55-64 years, mean age=59.6); 24 senior drivers 66-92 years, mean age=75.5) 26 senior ex-drivers (65-94 years, mean age=81.8) who stopped driving of their own volition	Self-regulation is a process that evolves over time for well elderly drivers. The process includes self-monitoring and regulation as well as the ultimate decision to stop. The process is influenced by intrapersonal, interpersonal and environmental factors and it is open to intervention at multiple points.
(#18) Tuokko & McGee 2002; Canada (British Columbia)	To address ways to improve the driving conditions of older adults	Qualitative descriptive	Focus groups with older adults (n=2) Semi-structured interviews with healthcare providers Theme analysis	10 older adults (age data and driving status not listed) 4 healthcare providers	Areas for improvement were education, road engineering and alternative transportation; recommended driver training and self-appraisal and discussions with physicians
(#19) Vrkljan,et al. 2010; Canada (Ontario)	To explore the information needs of clinicians and consumers related to arthritis and driving	Qualitative exploratory	Homogenous focus groups Theme analysis	11 adult licensed drivers living with arthritis (median age=58, range=30-75) 12 clinicians involved with arthritis care	Importance of driving, but also concerns about driving safety and strategies to facilitate driving safety (including arthritis-specific resources)
(#20) White et al.	To explore the impact of driving issues post-	Longitudinal descriptive	Semi-structured interviews at	22 community-dwelling current and former	Changed lifestyle after stroke; "emotional turmoil" from driving

2012‡; Australia	stroke in community-dwelling stroke survivors	qualitative study	baseline and every three months post-stroke for 1 year Inductive thematic approach using modified grounded theory	drivers who survived a stroke (mean age=71.5, SD=16.0, range=50-94)	cessation; process of adjustment and adaptation to losing license or return to driving
(#21) Whitehead et al. 2006‡; Australia (Victoria)	To understand older people's lived experience of driver license cancellation	Descriptive phenomenology	Semi-structured interviews Phenomenological analysis (Colazzi 1978)	5 older adults with license cancelled due to failure to meet medical guidelines or as a result of an occupational therapist's assessment (mean age=78.6, range=68-87)	Failing the assessment was a severe shock; emotions included anger, disbelief, and a sense of persecution and victimization
(#22) Yassuda et al.2006; United States (Florida)	To examine older drivers' perceptions of driving cessation aging-related difficulties, and advance planning, in order to develop ways to avoid "forced" driving cessation	Exploratory	Focus groups (n=14) Content analysis	59 current and former older adult drivers (mean age=80, range=62-94)	Reluctant to stop driving; interest in driving management and ways to maintain mobility; driving associated with independence and self-worth Wanted input from others on making decision (family, friends, doctors); little advance planning

† These studies explicitly include participants with cognitive impairment (incl. dementia)
‡These studies explicitly exclude participants with cognitive impairment
Unless otherwise noted, studies did not explicitly include or exclude participants with cognitive impairment
*These studies appear to have used the same source-population

Table 2: Critical Review of the Identified Studies

	Study number (per Table 1)																					
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**	**18**	**19**	**20**	**21**	**22**
Study purpose: Was the purpose and/or research question clearly stated?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Literature: Was relevant background literature reviewed?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Study design: Was a theoretical perspective identified?	N	Y	Y	N	N	Y	Y	Y	Y	N	N	N	Y	Y	Y	N	Y	N	Y	Y	Y	N
Sampling: Were the sampling methods appropriate? Was sampling done until redundancy in data was reached?	Y N	Y N	Y Y	Y Y	Y Y	Y N	Y N	Y Y	Y Y	Y N	Y N	Y N	Y N	Y N	Y N	N N	Y N	Y N	Y Y	Y Y	Y Y	N N
Descriptive clarity Clear and complete description of participants Role of researcher and relationship with participants	Y Y	Y Y	Y Y	Y Y	Y Y	Y N	Y Y	Y N	Y Y	Y N	Y Y	N Y	Y N	Y Y	Y Y	Y N	Y N	N Y	Y N	Y Y	Y Y	N N
Data collection: Was procedural rigor used?	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y	Y	Y	N	Y	N	Y	Y	Y	Y
Analytical rigor Were data analyses inductive? Were findings consistent with and reflective of data?	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y	Y Y
Auditability Was a decision trail developed? Was the process of analyzing data described adequately?	N Y	N Y	N Y	N Y	N Y	N N	N Y	N Y	N Y	N N	N Y	N N	N Y	N Y	N Y	N N	N Y	N N	N Y	N Y	N Y	N Y
Theoretical connections: Did a meaningful picture	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N

of the phenomenon under study emerge?																						
Credibility: Do the descriptions and interpretations of the participants appear to capture the phenomenon?	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
Transferability: Can the findings be transferred to other situations?	Y	Y	Y	Y	Y	Y	Y	N	Y	N	Y	N	Y	N	Y	N	Y	N	Y	Y	Y	N
Dependability: Was there consistency between the data and findings?	Y	Y	Y	Y	Y	Y	Y	N	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	N
Confirmability: Were strategies employed to minimize bias?	Y	Y	Y	Y	Y	Y	Y	Y	Y	N	N	N	Y	Y	Y	N	Y	N	Y	Y	Y	Y

Table 2 Legend: Y, Yes; N, No

Table 3. Team Synthesis and Reciprocal Translation

Derived analytic theme & subthemes	In paper # (per Table 1)	Themes from primary studies
1. Emotionally charged: This theme reflects the idea that discussions about driving are sensitive and can trigger strong emotions		
Fear of emotionality and consequences of conversation	2, 5, 7, 10, 11, 13, 14, 17, 19	Older drivers and providers reluctant to bring up topic of driving because of potential consequences, including harm to provider-patient relationship; some drivers fear license loss if they ask for help
Driving cessation is painful	2, 6, 9, 13, 17, 20, 21	Emotions triggered by driving discussions (especially by driving cessation) include sadness, powerlessness, frustration, decreased self-esteem, anger and anxiety.
Denial and disbelief	6, 11, 14, 15, 16, 21	May react with disagreement, denial and disbelief; after license revocation, some may feel victimized or persecuted
Anxiety over community safety	5, 6, 8, 12, 17	Fear of harming others may be stronger than fear of harming self
Acknowledgment that topic is emotional	6, 8, 13, 14, 17, 21	Want providers to recognize that driving discussions and safety trigger many emotions, also want emotional support.
Need for hope	3, 5, 14, 15, 17, 19, 21	Reframe discussion to focus on positive aspects (evaluations, car adaptations, disability permits, off-road driving, re-testing in future, decreased anxiety after cessation)
Normalization of discussion may reduce emotionality	4, 5, 7	Less emotionally charged if make questions/ discussion routine
2. Context: This theme refers to the context of conversations about driving (individual driver, environment, and point in time)		
Context affects emotionality & agency	5, 6, 17	The interaction between driver, provider, environment and time can affect conversations and support for driving conversations and evaluations; Recommendations for constructive conversations (routine, anticipatory guidance)
Want to be recognized as individual	2, 4, 5, 8, 13, 16, 17, 19, 21	Standardized approaches can be useful but must be personalized to acknowledge variability in driver opinions, ability, and reactions to conversations
Gender	3, 12, 20	Gender can affect perceptions of driving and relation to self-identity
Medical diagnoses	6, 13, 14, 15, 16, 17, 18, 19, 20	Prefer conversation prompted by diagnosis (or "red flag") rather than age alone; for some conditions (e.g., dementia), need to acknowledge emotional impact of

		diagnosis itself; useful to provide resources specific to condition
Medications	13, 16, 20, 22	Medication effects or changes can prompt conversation though often don't
Geographic location	11, 12, 17	Values may differ by locale (urban versus rural) and country (Australia, US, Canada)
Regulations	6, 10, 13, 17, 18, 19	Legal reporting requirements can inhibit conversations but may also help drivers understand or accept recommendations to retire from driving
3. Trusted, influential provider: This theme speaks to the idea that older adults are open to discussions with a trusted healthcare provider		
Provider as trusted authority figure	1, 2, 3, 4, 5, 6, 8, 9, 10, 12, 15, 16, 17, 20, 22	Providers generally identified as fair, knowledgeable and influential concerning driving; discussions are best when there is an established relationship; provider recommendations often followed even if older adult disagreed
Provider as safety net	7, 12, 14, 16, 17, 18, 22	Want a "back-up" in case they don't recognize own limitations; absence of guidance may be taken as implicit approval to keep driving
Provider's role vis-à-vis clinic staff	5, 10	Time constraints may limit conversations, but prefer to have counseling by physician (not nurse or medical assistant)
Provider's role vis-à-vis family	1, 3, 6, 16	Provider's input may be more influential or palatable; collaboration or back-up by family helpful; family welcomes / prefers physicians to introduce topic
Driving as health issue	5, 7, 15, 19	Driving is related to other health conditions; framing driving as a health issue facilitates conversations
Driving as personal issue	4, 6, 9, 10, 16, 17	Some older adults not open to discussions with or recommendations from providers
Providers don't know their driving ability	4, 5, 6, 7, 17	Providers don't always know patient's abilities; patients may disagree with provider's assessment of their fitness to drive
Providers need education on driving as a health issue	2, 3, 6, 17	Providers need information, resources to be able to advise and assist their patients
4. Communication over time: This theme reflects the need for communication about driving to occur over time to allow drivers to process, plan and adapt		
Facilitated reflection	3, 6, 7, 8, 9, 11, 13, 15, 20, 21	Want support and time to reflect
Want advance planning	3, 4, 5, 6, 7, 13, 14, 15, 20, 21	Conversations need to begin earlier to help prepare for future transitions
5. Desire for agency: This theme concerns older adults' desire to maintain control over their decisions and their driving, albeit with input.		

Want to make decisions	2, 3, 7, 8, 12, 13, 16, 17, 21	Controlling decisions about driving may enhance satisfaction and decrease sense of victimization; some may decline testing and proactively choose to stop driving; may be especially important for those with early progressive dementia
Want objective evidence	4, 5, 6, 9, 11, 12, 13, 16, 17	Objective evidence helps older drivers feel comfortable with decisions; this can include testing or referral to specialists for a second opinion (9: "had not received any acceptable explanation to why they were not permitted to drive")
Testing and retraining	5, 15, 16, 17, 20	Testing seen as helpful but potentially frustrating process
Need for education (often inadequate or inconsistent)	1, 5, 9, 12, 13, 14, 15, 16, 18, 19, 20, 22	Process of driving cessation would be easier with better education and support; education may lead drivers to seek assistance, self-restrict, retrain, or switch to other modes; lack of information or clear advice is a source of stress
Empowerment	7, 13, 18, 20	Discussions with providers can empower older adults to monitor themselves and make informed decisions
Collaborative approach	3, 8, 9, 13, 15, 22	Collaborative approach engages older driver and avoids forced decisions; can involve peer discussions or "driving contracts"

Discussion

The findings from this metasynthesis support the role of healthcare providers and others in talking with older adults about driving safety and preparation for possible future driving cessation. While various guides for healthcare providers and family members exist, the evidence basis for their communication recommendations was unclear. *The synthesis of these qualitative studies with older drivers support suggestions advocating an empathetic and engaging approach to the emotionally-charged topic of driving. Our findings also suggest that providers look for ways to make conversations both routine but also context-specific and individualized.* Integrating questioning about driving into regular primary care visits, for example through the annual Medicare Wellness Exam (Betz, Jones, Petroff, Schwartz 2013a), might allow older adults time to process, prepare and adapt. An important gap to address is the need for improved education of patients, providers, and the general public.

One of the themes in this metasynthesis—the view of healthcare providers as trusted authority figures—*confirms prior identification of healthcare providers as playing an important role in assessing and counseling older drivers* (Carr, Schwartzberg, Manning, Sempek 2010). However, our findings suggest that discussions about driving may occur only sporadically and that guidance from various providers may be inconsistent. Another theme from this metasynthesis—*that older drivers want conversations to occur over time so they can reflect and process*—adds weight to the argument that driving should be discussed long before there are specific concerns. Such anticipatory conversations might empower older adults to seek out information or driver retraining and to make their own decisions, and they might also lay the groundwork for future conversations about driving retirement (2010b).

Although routine questioning about driving might "normalize" the topic, *our findings also emphasize the need for counseling to be personalized.* Older drivers vary in their openness to discussing driving and their preferences for when and with whom to have such conversations. However, the fact that a subset of older drivers will not want to talk about driving should not be used as a reason for healthcare providers to avoid the topic with all older patients. Rather, providers should contextualize the topic by relating it to an objective concern or potential risk, such as a medical diagnosis or medication (2006), and should discuss the risks and benefits of driving with individual patients. Tools to help individualize the conversation include decision aids (Carmody et al. 2014) or "advance driving directives" (Betz et al. 2013b). The Assessment of Readiness for Mobility Transition (Berg-Weger et al. 2013) is a recently-developed tool to help gauge an individual's attitudes towards driving and driving retirement; while the full version might be too long for use in routine primary care visits, a short form is also available and the tool might be useful for social workers. These approaches can help providers adapt their style of feedback and conversation with older adults to better help older drivers progress through the stages of change related to driving retirement (Hassan et al. 2015).

An important area for future research is the idea of positive reframing in discussions about driving. While providers need to acknowledge the emotionality of the topic and the way that driving is often linked to independence, overemphasis of this link has the potential to perpetuate the idea that driving retirement inevitably leads to depression, social isolation

and death. Positive reframing can occur within a conversation with an individual, for example through emphasizing the financial savings and decreased anxiety over crashes that may come with driving retirement. *Providers should support and encourage older adults in making their own decisions about driving as long as they are able*, as maintaining this control can enhance satisfaction and decrease a sense of victimization after driving retirement.

At the level of the public, positive reframing could take the form of educational campaigns featuring older adults who have retired from driving but remain socially-engaged and happy. While these ideas were suggested in some of the synthesized studies and have been mentioned previously (2006; 2010b), there is inadequate empirical qualitative or quantitative evidence about how such campaigns could be successfully developed or disseminated.

The finding that older drivers received inadequate or inconsistent recommendations from their healthcare providers suggests an education gap for providers. The American Medical Association (AMA), in collaboration with the National Highway Traffic Safety Administration (NHTSA), developed the "Physician's Guide to Assessing and Counseling Older Drivers", a comprehensive reference for physicians (Carr, Schwartzberg, Manning, Sempek 2010). More recently, the AMA developed a related web-based curriculum for healthcare providers, and initial results suggested training effectiveness (Irmiter and Schwartzberg 2011; Meuser et al. 2014). Unfortunately, the curriculum and guide are no longer available online from the AMA(2014), although a new joint initiative by NHTSA and the American Geriatrics Society (AGS) aims to educate healthcare providers about older driver safety (Hurd 2014). These educational efforts will likely include the AMA online curriculum along with other materials available through NHTSA and AGS (2015). Efforts to disseminate these materials to current and newly trained health care providers, particularly those caring for older adults, are recommended.

Limitations

Study limitations include that we may have missed materials that were unpublished, were in languages other than English, used mixed methods, or were published after October, 2014. However, we searched multiple databases and the grey literature and enlisted help from a medical librarian to optimize our search yield. There was heterogeneity among the included studies in terms of sampling, scope, and quality, which may have affected our results, and there was limited information about the perspectives of various population subgroups. Future work examining the views of older drivers of varying races and ethnicities, for example, would be useful to optimize targeted messaging. Opposing these limitations, our study has several notable strengths. Our multidisciplinary team included perspectives from medicine, nursing, gerontology, and public health, perspectives that enriched the metasynthesis of these 22 studies by allowing examination through different disciplinary and contextual lenses.

Conclusion

This metasynthesis, incorporating 22 studies from four countries with over 500 older adult participants, brings new understanding to older drivers' preferences for communication with healthcare providers. Our findings could inform efforts to support respectful and effective conversations about driving between older drivers and their providers; these efforts could include provider education, and embedding of appropriate questions within the electronic medical record (Betz, Jones, Carr 2015), and other system changes. While conversations about driving can be emotionally charged for all parties involved, healthcare providers are uniquely positioned to engage in trusting, tactful conversations with their older adult patients regarding the risks and benefits of driving and future transitions to other forms of transportation.

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