Supplemental Table 1. Selected Evidence for the Effects of Policy and Community Mobility Programs on the Performance and Participation of Older Adults

Author/Year	Study Objectives	Level/Design/ Participants	Intervention and Outcome Measures	Results	Study Limitations
Braitman, Chaudhary, & McCartt (2010)	To assess compliance with state license restrictions and whether the program is identifying older drivers who are at a greater risk of crash	Level III Cross-sectional survey $N = 522$ drivers age 70 yr and older	*Intervention* No intervention; two telephone surveys *Outcome Measures* Driving behavior; crashes; violations; and self-reported visual impairments, medications, and limitations in physical mobility	Telephone interviews found that 232 renewed without a road test. Of the 290 taking the road test, 191 renewed with no restrictions, 93 received restricted licenses, and 6 had their licenses suspended. Compared with unrestricted drivers, drivers with restricted licenses were significantly older, $F(2) = 11.5$, $p < .001$; drove significantly fewer miles per week, $F(2) = 7.2$, $p = .008$; drove less at night ($\chi^2 = 37.2$, $p < .001$); drove less on high-speed roads ($\chi^2 = 19.0$, $p < .0001$); and drove closer to home within 5 mi ($\chi^2 = 3.6$, $p = .06$). No significant relationship was found between the groups and number of moving violations 2 yr or 6 mo prior.	The recruitment process was inconsistent. The drivers were interviewed for self-reported information on driving habits, vision, and physical impairments after learning the outcome of their driver's license renewal, which may have affected the information reported to the examiners. The 6-mo time period for the study was not long enough to evaluate the effects of license restrictions on crashes.
Di Stefano, Lovell, Stone, Oh, & Cockfield (2009)	To develop, trial, and evaluate a health promotion education program to allow individuals to make informed choices about mobility transitions	Level III Program evaluation with pretest–posttest $N = 137$; age 50 yr or older	*Intervention* Attendance at 1 of 3 health promotion education programs *Outcome Measures* Questionnaire related to transportation use and knowledge, beliefs about the impact of health on driving, usefulness of the program, and behavior change associated with the program	Knowledge on community mobility increased significantly at the time of the posttest, $t = 5.22$, $p < .01$) as well as at the time of the follow-up interview, $t = 3.19$, $p < .01$. 95% rated the program informative or very informative.	Small sample size and high attrition rate. Participants had attended a program within the past 2 yr, which may have resulted in a higher baseline than the general population.
Dobbs (2008)	To summarize published literature on current licensing policies and procedures, identify limitations, and provide recommendations	Level I Systematic review $N = 13$ peer-reviewed research studies	Literature review of scientific articles pertaining to licensing policies and procedures, limitations, and recommendations *Outcome Measures* Fatality or crash	Current policies and procedures are ineffective in identifying high-risk older drivers. A new approach to identify these drivers is needed.	Study did not indicate the parameters of the time period of the search or the jurisdictions from which the policies and procedures were selected.
Dobbs, Harper, & Wood (2009)	To assess the effectiveness of support group interventions to address loss of driving for people with dementia and caregivers	Level II Nonrandomized quasi-experimental design	*Intervention* Driving cessation support groups led by a psychologist; weekly groups lasting 90 min for 16 wk	Support groups are effective in alleviating the negative consequences associated with driving cessation, including improvements in depression ($p = .03$) and quality of life ($p = .08$.	Control group was not a true control because they were participating in support services of their own accord, not as a function of being part of the study.

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Supplemental Table 1. Selected Evidence for the Effects of Policy and Community Mobility Programs on the Performance and Participation of Older Adults (*cont.*)

Author/Year	Study Objectives	Level/Design/ Participants	Intervention and Outcome Measures	Results	Study Limitations
		$N = 74$ (44 individuals with dementia and 30 caregivers)	Control group participated in Alzheimer's Society support groups *Outcome Measures* Included Geriatric Depression Scale and Quality of Life (Alzheimer's Disease)		
Edwards, Lunsman, Perkins, Rebok, & Roth (2009)	To determine whether health declines are a result of transition to driving cessation or an exacerbation of health declines caused by driving cessation	Level I Comparative study $N = 690$ older adults age 65 yr or older with 20/50 vision or better	*Intervention* No intervention; telephone interviews used to confirm eligibility *Outcome Measures* Driving Habits Questionnaire, SF–36 questionnaire, Turn 360° Test, and 12-item short form Center for Epidemiological Studies Depression Scale	Participants experienced significant declines consistent with precessation health trajectories over the course of the study in physical and social functioning, physical performance, physical role, and self-rated health ($p < .05$). Health trajectories were significantly steeper in decline after driving cessation in the area of general health, $t(1383) = -2.97$, $p = .003$).	Analyses were calculated using multiple t tests across the repeated measures over time, which violates statistical assumptions and increases the possibility of Type I errors.
Frank, Saelens, Powell, & Chapman (2007)	To evaluate the effect of neighborhood selection and preference specific to the built environment on walking, car use, and obesity	Level II Cross-sectional design $n = 2{,}056$ neighborhood selection $n = 1{,}455$ neighborhood preference	*Intervention* No intervention; survey *Outcome Measures* Sociodemographic characteristics, travel behavior, built environment, commercial floor area ratio, land-use mix, net residential density, connectivity, walkability, neighborhood selection, and neighborhood preference	Respondents in less walkable environments drove more (45.5 mi/day) than those in walkable environments (28.2 mi/day). Significantly more walking trips and higher likelihood of walking trips were found among those living in the highest quartile of walkability (23.8%; OR = 2.56) compared with those living in the lowest quartile of walkability (5.9%; OR = .79). Findings suggest that walkable environments may result in higher levels of physical activity and less driving for those living in walkable environments.	The cross-sectional design limits its understanding of how the environment or moving to an environment affects mobility. This study examined walking in living environments and preferred walkability but did not account for other factors associated with living in walkable environments, such as availability, cost, and social and economic influences.
Gómez et al. (2010)	To examine the association between built environments and walking patterns of older adults	Level III Multilevel cross-sectional study	*Intervention* No intervention; survey A geographic information system (GIS) measured a 500-m buffer around the neighborhood.	Older adults who lived in the areas with highest connectivity were significantly less likely to walk for at least 60 min during the week (OR = .64, $p = .021$). Those in the middle tertile of public park density were more likely to walk	The cross-sectional design prevented determination of the temporality of observed associations. Participants may have overestimated walking levels.

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Supplemental Table 1. Selected Evidence for the Effects of Policy and Community Mobility Programs on the Performance and Participation of Older Adults (*cont.*)

Author/Year	Study Objectives	Level/Design/ Participants	Intervention and Outcome Measures	Results	Study Limitations
		N = 1,966 (age 60 yr or older from 50 neighborhoods in Bogotá, Columbia)	GIS measured the following built variables: public park density, street connectivity, presence of a Ciclovia corridor, and number of TransMilenio stations *Outcome Measures* Adapted version of the International Physical Activity Questionnaire (short form)	60 min/wk than those in the lowest tertile (POR = 1.42, p = .039). When the slope was >5%, the participants were less likely than those with a slope ≤5% to walk 60 min/wk (POR = .61, p = .038). Participants who reported feeling very safe from traffic when crossing the street were more likely than those who reported feeling unsafe to walk 60 min/wk (POR = 1.5, p = .007).	There is no way to know whether people self-selected their residential areas on the basis of environmental attributes.
Kim & Richardson (2006)	To examine self-rated health and functional status and the association between consumption and driving status among older people	Level III Cross-sectional design N = 1,287 surveys from the agencies	*Intervention* No intervention; the 1998, 2000, and 2002 Health and Retirement Study and the 2003 Health and Retirement Study Consumption and Activities Mail Survey were used to gather data. *Outcome Measures* Dependent variables included money expenditures in food, dining out, clothing, tickets, and trips. The independent variables included never drove, stopped driving by 1998, and stopped driving after 1998.	Individuals who ceased driving after 1998 had significantly decreased expenditures in spending on tickets (−1.832, p < .05), dining out (−0.828, p < .05), and trips (–1.79, p < .05). Those who ceased driving before 1998 had significantly decreased spending on tickets (−1.795, p < .05).	The cross-sectional design limits its causality. There was no control over the spouse's driving status. The study looked at expenditures and not real consumption.
Langford, Bohensky, Koppel, & Newstead (2008)	To assess whether different licensing policies were associated with different fatality levels	Level II Cohort study N = 2 Australian state licensing entities (Victoria and New South Wales)	*Intervention* Observational study; no intervention was provided. *Outcome Measures* State-level licensing and crash fatality data as reported by the Australian Transport Safety Bureau's National Fatalities Database	Age-based mandatory assessments do not result in safety benefits for drivers or other road users. Passengers traveling with drivers age 80 yr or older in the jurisdiction without mandatory age-based assessment were at higher risk when examined per population (RR = 2.75, p = .002) and per licensed driver (RR = 1.94, p = .04).	Crashes occurred with relative infrequency, resulting in low crash values. Comparison of driving in two different jurisdictions is not an equitable examination because of varying population densities, roadway infrastructure, and travel patterns.
Langford & Koppel (2011)	To analyze license and crash data to assess the extent to which license restrictions are currently used for older drivers,	Level II Cohort study	*Intervention* Observational study; no intervention was provided.	Inconsistent results of RR crash rates depending on the type of restriction.	Classification as driving restricted was too inclusive because 95% of restrictions were for corrective lenses and did not

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Supplemental Table 1. Selected Evidence for the Effects of Policy and Community Mobility Programs on the Performance and Participation of Older Adults (*cont.*)

Author/Year	Study Objectives	Level/Design/ Participants	Intervention and Outcome Measures	Results	Study Limitations
	assess the safety benefits of current license restrictions for older drivers, and recommend means to improve the use of license restrictions for older drivers	N = 409,640 drivers n = 32,932 with driving restrictions n = 376,708 without driving restrictions	*Outcome Measures* State-level license and crash data as reported by the State of Victoria	Some restrictions resulted in higher RR: required automatic transmission (RR = 1.79, p = .02) and required hearing aid (RR = 6.50, p = .04).	capture the driving performance and safety concerns of older drivers. Numbers of both drivers with restrictions and those with crashes are relatively small and do not yield sufficient data to formulate a conclusion.
McGwin, Sarrels, Griffin, Owsley, & Rue (2008)	To evaluate the impact of a state visual acuity licensing standard for drivers age 80 yr and older on fatal motor vehicle crashes	Level II Cohort study N = 3 state licensing entities (Florida, Alabama, and Georgia)	*Intervention* Observational study; no intervention was provided. *Outcome Measures* Comparison of state-level crash fatality data as reported in the Fatality Analysis Reporting System	Fatality rates for drivers age 80 yr and older decreased after the implementation of the required visual acuity testing (RR = .83, p = .01). Fatality rates for all drivers in Florida increased slightly during that same time and did not change in Alabama and Georgia.	Study was conducted only 3 yr after the law went into effect, which is less than the licensing period for older drivers, so not all drivers age 80 and older renewed their license. There was a preexisting trend of reduced fatal crashes, so the improved safety may be a result of the instituted licensing law.
Mezuk & Rebok (2008)	To evaluate the impact of driving cessation on social integration and perceived support from relatives and friends among older adults	Level III Prospective study N = 398 people age 60 yr or older with a history of driving	*Intervention* No intervention; interviews from the Baltimore Epidemiological Catchment Area Study were used for the study. *Outcome Measures* Driving status, social integration, perceived social support, and health characteristics	Former drivers were more likely to have lower education and to be female and non-White. Cessation was associated with reduced networks of friends (OR = .49, p < .05). Inability to use public transportation was a predictor of reduced social integration. Support from friends and relatives was not affected by cessation.	The study took place in an urban environment and should not be generalized to more rural areas with less public transportation. Driving cessation was measured by self-report. The categories of integration and support may not have been sensitive enough to capture changes in social activity resulting from driving cessation.
Morrisey & Grabowski (2005)	To examine the effects of state licensure laws on fatalities among drivers and others age 65 yr and older	Level II Cohort study	*Intervention* Observational study; no intervention was provided.	Limited evidence that state laws matter for older driver safety. For drivers age 65–74 yr, vision testing reduced driver fatalities by 8.8% (IRR = .912, p = .01), and road	Although the researcher performed calculations controlling for year and state, innumerable contextual factors such as population and traffic density,

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Supplemental Table 1. Selected Evidence for the Effects of Policy and Community Mobility Programs on the Performance and Participation of Older Adults (*cont.*)

Author/Year	Study Objectives	Level/Design/ Participants	Intervention and Outcome Measures	Results	Study Limitations
		$N = 48$ contiguous state licensing agencies for 16 yr of licensure and fatality data	*Outcome Measures* Motor vehicle fatality data as reported in the Fatality Analysis Reporting System	testing reduced driver fatalities by 8.9% (IRR = .901, $p = .05$). For drivers age 75–84 yr, road test laws reduced driver fatalities by 15.7% (IRR = .843, $p = .01$). For drivers age 85 and older, in-person renewal reduced driver fatalities by 12% (IRR = .880, $p = .05$), and longer renewal cycles increased driver fatalities by 4% (IRR = 1.041, $p = .01$).	terrain, weather, or roadway infrastructure can influence driving and safety across the contiguous Unites States.
Nasvadi & Wister (2009)	To determine whether restricted licenses are successful at mitigating number of crashes per year and whether they can extend the period of crash-free driving for aging adults	Level II Cohort study $N = 151,284$ licensed drivers age 66 and older in British Columbia, 2.5%–4.7% with age-related licensing restrictions	*Intervention* Observational study; no intervention was provided. *Outcome Measures* Period of licensure, crashes, and crash severity data as reported by the Insurance Corporation of British Columbia	Following implementation of restrictions, drivers had fewer crashes over the 6.5-yr duration of the study ($Z = -13.03$, $p < .001$). When driving of restricted drivers was compared with their prerestriction driving they experienced a decrease, $t = 3.25$, $p = .001$. Drivers with restrictions drove crash-free longer than those without restrictions, $t = -5.453$, $p < .001$.	Driving exposure data were not available, so the decrease in crashes may be a reflection of reduced driving and subsequent decreased exposure. Study was conducted in a single Canadian province and included only the restrictions available in that province.
Stepaniuk, Tuokko, McGee, Garrett, & Benner (2008)	To examine the impact of group transit training for older adults in Victoria, British Columbia, Canada, between 2005 and 2006	Level I RCT $N = 41$ senior citizens	*Intervention* Three groups: (1) control group with no transit training or bus pass, (2) group with group transit training, and (3) group transit training and a free bus pass *Outcome Measures* Days or miles driven per week and bus use	No significant differences in the number of days driven. Both groups that received group transit training used the bus more frequently ($\chi^2 = 10.89$, $p < .01$).	A pilot study with a small sample. Unable to generalize the results.
Stern et al. (2008)	To develop a group intervention to assist caregivers with driving issues of people with dementia and to evaluate the comparative effectiveness	Level I RCT $N = 66$ $n = 31$, active psychoeducational group intervention	*Intervention* Three groups: (1) active psychoeducational group intervention, (2) written materials only, (3) control groups with no intervention, but received written materials after the posttest	The active intervention group was significantly different from the other groups on several measures; it was higher than the other groups on self-efficacy; communication; preparedness, $F(2, 60) = 4.42$, $p < .05$; the Venting subscale, $F(2, 65) = 3.85$,	Small sample size, and control group was smaller than the other two groups. Participants needed to be motivated to participate in lengthy evaluations.

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Supplemental Table 1. Selected Evidence for the Effects of Policy and Community Mobility Programs on the Performance and Participation of Older Adults (*cont.*)

Author/Year	Study Objectives	Level/Design/ Participants	Intervention and Outcome Measures	Results	Study Limitations
		$n = 23$, written materials only $n = 12$, control group	*Outcome Measures* Battery of self-report and interview-based questionnaires at baseline and again 2 mo later including the Self-Efficacy Questionnaire, the Brief COPE, stages of change, and concern about relationship	$p < .05$, suggesting they were more likely to vocalize their feelings; and the Acceptance subscale, $F(2, 65) = 3.22$, $p < .05$, suggesting they were more accepting of their circumstances and more prepared for the transition to driving cessation, $F(2, 62) = 3.80$, $p < .05$.	

Note. IRR = incidence rate ratio; OR = odds ratio; POR = prevalence odds ratio; RCT = randomized controlled trial; RR = relative risk.

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