



AOTA Critically Appraised Topics and Papers Series

**Driving and Community Mobility
for Older Adults**

**A product of the American Occupational Therapy Association's
Evidence-Based Literature Review Project*

CRITICALLY APPRAISED PAPER (CAP)

Focused Question

What is the evidence for the effect of interventions to address cognitive and visual function, motor function, driving skills intervention, self-regulation/self-awareness, and the role of passengers and family involvement in the driving ability, performance, and safety of the older adult? Intervention approaches include adaptation, remediation, prevention, and maintenance.

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Ker, K., Roberts, I., Renton, F., & Bunn, F. (2003). Post-license driver education for the prevention of road traffic crashes. *Cochrane Database of Systematic Reviews*, 3, CD003734.

PROBLEM STATEMENT (JUSTIFICATION OF THE NEED FOR THE STUDY)

State the problem the authors are investigating in this study.

Worldwide, each year over a million people are killed and some 10 million people are permanently disabled in road traffic crashes. Postlicense driver education is used by many as a strategy to reduce traffic crashes. However, the effectiveness of postlicense driver education has yet to be ascertained.

RESEARCH OBJECTIVE(S)

List study objectives.

To quantify the effectiveness of postlicense driver education in reducing road traffic accidents

DESIGN TYPE:

Systematic review and meta-analysis of randomized controlled trials.

This publication is a report of a Cochrane Systematic Review, which is a standardized approach to searching, appraising, and conducting meta-analyses of high-quality evidence related to interventions. Since this is a systematic review, much of this worksheet cannot be completed (sections noted with *). However, see Results, Conclusions, and Clinical Implications for discussion of how this review contributes to the evidence-based review question. References of the articles included in the systematic review are also included.

Level of Evidence:

I

Limitations (appropriateness of study design):

Was the study design type appropriate for the knowledge level about this topic? *If no, explain.*

Yes

No

SAMPLE SELECTION

How were subjects selected to participate? Please describe.

A search was conducted of a number of databases to locate randomized controlled trials comparing postlicense driver education versus no education or one form of postlicense education versus another.

Inclusion Criteria

The studies included motor vehicle drivers (including motorcyclists) of all ages and driving experience who hold a valid driving license. The types of interventions included were postlicense driver education versus no education, and one form of postlicense driver education versus another form. The outcome measures used were traffic offenses, road traffic crashes, and injury crashes (fatal and nonfatal injuries caused by a crash. The publication date ranged over a 40-year time span, from 1962 to 2002. Only 1 study included only older adult drivers.

Exclusion Criteria

- Nonrandomized controlled trials
- Driving skills as an outcome measure, since it was unknown if there was a direct relationship between improvements in driving skills and reduced risk of road crashes

Sample Selection Biases: If yes, explain.

Volunteers/Referrals

Yes

No

Attention

Yes

No

Others (list and explain):

*** SAMPLE CHARACTERISTICS**

Sample sizes of the studies varied from 105 to more than 95,068 drivers. Eighteen trials recruited more than 1000 participants.

$N =$

% Dropouts

#/(%) Male

#/(%) Female

Ethnicity

Disease/disability diagnosis

Check appropriate group:

<20/study group	20–50/study group	51–100/study group	101–149/study group	150–200/study group
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Sample Characteristics Bias: If no, explain.

If there is more than one study group, was there a similarity between the groups?

Yes

No

Were the reasons for the dropouts reported?

Yes

No

* **INTERVENTION(S)**—Included are only those interventions relevant to answering the evidence-based question.

Add groups if necessary.

Group 1

Brief Description	
Setting	
Who Delivered?	
Frequency?	
Duration?	

Intervention Biases: *Explain, if needed.*

Contamination

Yes

No

Co-intervention

Yes

No

Timing

Yes

No

Site

Yes

No

Use of different therapists to provide intervention

Yes

No

* **MEASURES AND OUTCOMES**—Included are measures relevant to answering the focused question.

Two reviewers independently extracted data, and assessed methodological quality from each eligible study, using a standard form. Twenty-four studies of driver education were found. Nineteen trials reported traffic offenses as an outcome, 15 reported traffic crashes, and 4 reported injury crashes.

Name of measure:

Outcome(s) measured (what was measured?):

Is the measure reliable (as reported in article)?

Yes

No

NR

Is the measure valid (as reported in article)?

Yes

No

NR

NR = Not reported

How frequently was the measure used for each group in the study?

Measurement Biases

Were the evaluators blinded to treatment status? *If no, explain.*

Yes

No

Recall or memory bias? *If yes, explain.*

Yes

No

Others (list and explain):

Limitations (appropriateness of outcomes and measures) If no, explain.

Did the measures adequately measure the outcome(s)?

Yes

No

RESULTS

List results of outcomes relevant to answering the focused question.

Include statistical significance where appropriate ($p < 0.05$).

Include effect size if reported.

The systematic review of randomized controlled trials provides no evidence that postlicense driver education programs are effective in preventing road traffic injuries or crashes. The results are compatible with a small reduction in the occurrence of traffic offenses. Limitations of the studies included in the review include inadequate allocation concealment, lack of blinding of outcome assessment, and large losses to follow-up in many of the included trials. In addition, there was significant heterogeneity in several of the meta-analyses, and the authors report that these should be interpreted with caution. This heterogeneity may be due to differences in the study populations, in the type of education programs, or in the way that the outcome data were defines and collected.

Was this study adequately powered (large enough to show a difference)? *If no, explain.*

Yes

No

Were appropriate analytic methods used? *If no, explain.*

Yes

No

Were statistics appropriately reported (in written or table format)? *If no, explain.*

Yes

No

CONCLUSIONS

State the authors' conclusions that are applicable to answering the evidence-based question.

Postlicense driver education was not effective in preventing vehicle crashes or injuries from such crashes. The recommendation is that driving less will reduce crashes and injuries.

Were the conclusions appropriate for the Study Design (Level of Evidence)? *If no, explain.*

Yes

No

Were the conclusions appropriate for the statistical results? *If no, explain.*

Yes

No

Were the conclusions appropriate given the study limitation and biases? *If no, explain.*

Yes

No

IMPLICATIONS FOR OCCUPATIONAL THERAPY

This section provides guidance about clinical practice, program development, and other implications of the study findings as they relate to the focused question.

Therapists are usually not involved in classroom teaching of driving rules of the road. Rather, they are engaged in assessing the skills that underlie driving, and where deficits are noted, therapists educate clients how these deficits impact driving. Several studies are demonstrating that in-class education of driving is not an effective method to decrease crashes and injuries. The authors do make a valid conclusion: Driving less will reduce crashes and accidents. Therapists have the opportunity to educate clients to manage their driving trips to reduce driving exposure as a safety behavior.

This work is based on the evidence-based literature review completed by Linda Hunt, PhD OTR.

CAP Worksheet adapted from: Critical Review Form – Quantitative Studies ©Law, M., Stewart, D., Pollack, N., Letts, L., Bosch, J., & Westmorland, M., 1998, McMaster University. Used with permission.

For more information about the Evidence-Based Literature Review Project, contact the American Occupational Therapy Association, 301-652-6611, x 2052.



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