



Crash Rates Over Time Among Novice and Older Drivers in the SHRP 2 Naturalistic Driving Study



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Background

Research gaps:

- Young drivers have high crash rates early in licensure that decline rapidly
- There are few comparisons of young and experienced drivers
- Few objective, naturalistic studies
- Age and experience may be important

Purpose and Research Questions

Purpose: Examine variability in crash rates by driver age and sex over a period of 24 months

Research Questions:

- Do crash rates vary by age and if so for how long?
- Do crash rates vary according to sex?
- Does sex moderate the relationship between age and crash rates?

Sample

SHRP 2 Sample: 857 total, by age group:

- 16-17 y.o. = 254
- 18-20 y.o. = 200
- 21-25 y.o. = 200
- 35-55 y.o. = 200

Method

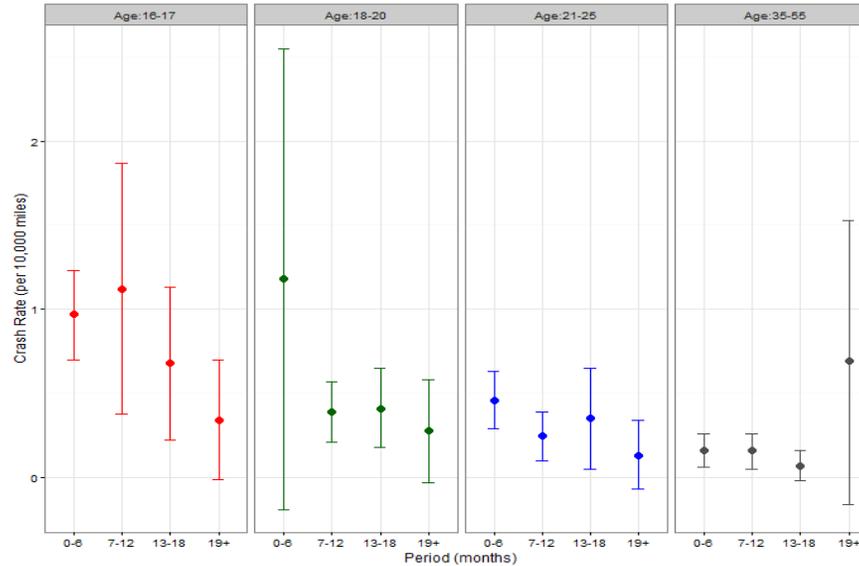
Data Acquisition System: GPS, accelerometer, cameras

Crash Measure:

- Severity Levels 1-3
- Rear end
- Road departure

Analyses: Average crash rates and 95% confidence intervals (CIs) calculated for each 6-month period

Crash Rates and 95% Confidence Intervals by Age



Findings

Age: 16-17 y.o. had higher rates over 24 mo. compared to 21-25 and 35-55 y.o. drivers; rates among youngest drivers declined after 12 mo.
Sex: Over 24 mo. 16-17 y.o. female drivers had lower rates than young male drivers (OR= 0.75, CI=0.54, 0.95); rates declined after 12 mo. among 16-17 y.o. females, but not males

Discussion

Young age helps explain elevated crash rates
A minimum of 12 months needed before rates declined, longer for males

- Longer period of risk for novices than previous research
- Adolescent males take more risks than females, take longer to learn, or become over-confident

Strengths: large national data set; multiple ages compared over time

Limitations: variable duration of participation

Future directions: Model individual variability; determine change point among 16-17 y.o. drivers

Conclusions

The findings suggest the following: (1) more strict Graduated Driver Licensing limits, including extending the provisions to cover older novices; (2) greater parental involvement in teen driving, including parent limits on exposure; (3) feedback on driving behavior to teen drivers and their parents from instruments added to the vehicle.

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Crash Rates and Confidence Intervals by Age and Sex

