

PERSON, VEHICLE, ENVIRONMENT INTERACTIONS PREDICTING CRASH-RELATED INJURY AMONG OLDER DRIVERS

ABSTRACT (192 WORDS)

OBJECTIVE: To identify interactions among person, vehicle, and environment factors associated with older driver crash/ injury outcomes.

METHOD: Using a national dataset and log-linear modeling we quantified risk factors and interactions for 5,744 drivers ≥ 65 years.

RESULTS: *Person-environment* interactions showed a higher crash risk for females during mornings (8 AM-1 PM) ($OR = 1.73$; $CI = 1.40 - 2.14$), or afternoons (2PM-8PM) ($OR = 1.74$; $CI = 1.41 - 2.15$); drinking and driving crashes were less likely occurring during mornings ($OR = 0.19$; $CI = 0.12 - 0.31$) or afternoons ($OR = 0.68$; $CI = 0.50 - 0.94$). *Vehicle-environment* interactions showed the greatest crash risk with another motor vehicle during mornings ($OR = 2.59$; $CI = 1.82 - 3.68$) or afternoons ($OR=3.89$; $CI = 2.41-5.05$). *Injury* showed most significant interactions with fixed object crashes ($OR = 427$; $CI = 182.9 - 998.24$), no seatbelt ($OR = 5.69$; $CI = 3.90 - 8.29$), female gender ($OR = 1.54$; $CI = 1.67 - 1.92$), and mornings ($OR = 1.40$; $CI = 1.01 - 1.94$).

CONCLUSION: Recommendations include further researching crash/ injury prevention strategies related to performance patterns, contexts, and activity demands of driving. An opportunity to shape longer range evaluation policies emerges.

Key words: older driver safety; log-linear analysis; risk factors, two-way interactions