

Seat Belts and Air Bags

CSCrandall et al. *American Journal of Epidemiology* Feb (2001) Vol. 153 #3 p.219.

An analysis of fatalities, following 9859 head-on collisions of passenger cars in the USA. Data taken from the Fatality Analysis Reporting System. Fatalities must have occurred within 30 days of accident.

Use and deployment of seat belts and air bags recorded by police at the scene. Car types used to indicate vehicle mass. Age of vehicle also recorded. Victims could be passengers or drivers.

Crude odds ratios (OR) were calculated as follows:

Presence of air bag OR = 0.37 (95% CI = 0.32 to 0.42)
Use of lap/shoulder belt OR = 0.28 (95% CI = 0.25 to 0.31)
Use of lap belt OR = 0.43 (95% CI = 0.29 to 0.62)



Multivariate model analysis reveals OR as follows:

Presence of air bag OR = 0.71 (95% CI = 0.58 to 0.87)
Use of lap/shoulder belt OR = 0.18 (95% CI = 0.13 to 0.25)

Multivariate models allow for rollover, vehicle age, driver ejection.

Comment

Most of the protection of life is attributed to the use of seat belts, lap/shoulder belts being most effective. Air bags would seem to afford some additional protection of life.

No data on non-fatal injuries (e.g. whiplash) was available.

It is possible that records of seat belt use were biased by uncertainty. The recording officer may not have witnessed the scene before driver/passengers were removed.