Risk Factors for Riding and Crashing a Motorcycle Unhelmeted

Abstract

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Background:
Currently, less than half of all U.S. states require helmets for motorcycle operators. Although research has demonstrated the effectiveness of helmets, less is known about the characteristics of individuals who choose to ride motorcycles unhelmeted.

Objectives:
The specific aims of this study were to identify risk factors leading to riding and crashing a motorcycle without a helmet and to compare outcomes of helmeted vs. unhelmeted motorcyclists involved in a motorcycle crash.

Methods:
This 13-year (1994–2006) retrospective study of adult motorcycle crashes admitted to a Level II trauma center compares helmeted to unhelmeted motorcyclists.

Results:
There were 1738 motorcyclists admitted, including 978 (56%) helmeted (38 years old, 87% male) and 760 (44%) unhelmeted (38 years old, 85% male). Unhelmeted riders had a higher Injury Severity Score (16 vs. 13, $p < 0.001$), lower Glasgow Coma Scale score (13 vs. 14, $p < 0.001$), and more hypotension (6% vs. 4%, $p = 0.03$). Unhelmeted riders had worse outcomes, including higher rate of severe disability (16% vs. 10%, $p < 0.001$), more days in the hospital (7 vs. 6, $p < 0.001$) and intensive care unit (2 vs. 1, $p < 0.001$), incurred higher hospital charges ($44,744 vs. $31,369, $p < 0.001$), and had higher mortality (6% vs. 2%, $p < 0.001$). Independent predictors of riding without a helmet included alcohol intoxication, riding as a passenger, and lack of health insurance.

Conclusions:
Unhelmeted motorcyclists sustain more severe injuries and adverse outcomes. Motorcyclists who are intoxicated, uninsured, or passengers are less likely to wear a helmet. Education and prevention strategies should be targeted at these high-risk populations.