

Cycling collisions in Germany. Alcohol use, helmet use and head injuries

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ABSTRACT

Cycling is becoming one of the most common modes of transportation across the entire world, due to its simplicity, low cost, and health-related benefits. In a road crash, however, cyclists are among the most vulnerable road users and they can suffer more severe consequences compared to users of motorised vehicles. Alcohol consumption is a risk factor for being involved in a crash and for the consequences of a crash. Few studies have analysed the role of alcohol in bicycle crashes and the corresponding severity of outcome [1,2].

The aim of this study is to evaluate which cyclist and crash characteristics are associated with alcohol consumption among cyclists who have been involved in a crash.

The data source is the German In-Depth Accident Study database. All cyclists that were involved in a road crash between 2000-2010 and on whom an alcohol test was conducted were selected. A logistic regression analysis was carried out to evaluate the association between the rider's blood alcohol level (<0.05 mg/l vs ≥0.05 mg/l) and the following variables: age, gender, use of cycle path, crash consequences, collision partner, type of road, road condition, maximum permitted speed, weather conditions, day of the week. The importance of null or missing data for alcohol test results is discussed in the paper.

Female bicycle riders were less likely to have consumed alcohol compared to men (OR=0.24, CI=0.08-0.66); cyclists who did not wear a helmet were more likely to have consumed alcohol (OR=2.45, CI=1.20-4.97); cyclists who were not responsible for causing the road crash were less likely to have consumed alcohol compared to cyclists who were responsible (OR=0.12, CI: 0.05-0.34).

Alcohol consumption is associated with unsafe cycling practices, for example not using a helmet, and with being the cause of a road crash. Preventing or limiting alcohol consumption and corresponding testing of cyclists must be improved.

Keywords: bicycle, road accident, alcohol, injury, helmet.

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