

The influence of alcohol, age and number of passengers on the night-time risk of driver fatal injury in New Zealand

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Abstract

This paper describes the estimation of driver fatal injury risk associated with alcohol, age and number of passengers carried, using essentially the same data described in a previous paper (Keall, M. D., Frith, W. J & Patterson, T. L. (2001). A case-control study of the effect of alcohol on the risk of driver fatal injury in New Zealand. Paper presented at the Road Safety Research, Policing and Education Conference, Melbourne). The present analysis differs from the previous paper in the following respects:

1. The risk associated with the number of passengers carried was estimated. Controlling for age and driver BAC (blood alcohol concentration), driving with a single passenger was found to be associated with approximately half the night-time risk of driver fatal injury relative to driving either solo or with two or more passengers.
2. The analysis was restricted to BAC less than 200mg/dL (ie 0.2%). The model fitted to the data provided good representation of the data at low BAC values, which were relatively poorly fitted by the model described by the previous paper. For all the driver groups defined, risk was found to double for each 20mg/dL increase in BAC.
3. The inclusion of passengers carried in the model and the exclusion of data at high BAC values had little effect on the relative risks estimated for drivers in their twenties (they were still found to be at approximately three times the risk of drivers aged 30 plus over the entire BAC range). However, teenage drivers were found to have a risk that was consistently more than five times the risk of drivers aged 30 plus when controlling for effect of passengers carried. There was no evidence that their risk increased proportionately at a higher rate than for the two older driver groups considered.

The high relative risk of teenage drivers means that they reach high risk levels commonly regarded as unacceptable in the field of road safety even at their current legal limit of 30mg/dL, particularly when more than one passenger is carried in the car.