COMMENTARY

Cycle helmet effectiveness in New Zealand

Povey LJ, Frith WJ, Graham PG. Accident Analysis and Prevention 1999 Nov;31(6):763-70

Summary of original paper

This paper considers the effect of helmet wearing on hospital admissions for head injury from 1990 to 1996, using cyclist limb injuries as a proxy for exposure. Cycle helmet wearing became compulsory in New Zealand from January 1994. The authors conclude that the relatively large increase in helmet wearing following the law reduced head injuries by 24% - 32% in non-motor vehicle crashes, and by 20% in motor vehicle crashes. No change in the severity of head injuries over this period could be detected.

BHRF Commentary

A detailed criticism of this paper, published in a subsequent issue of Accident Analysis and Prevention (Robinson, 2001), needs to be considered when assessing the original paper. The author explains:

The pre-law increase in adults wearing helmets (from 30% in 1990 to 43% in 1993) was accompanied by a fall of 45 head injuries per 100 limb injuries (i.e. -3.47 for every 1% increase in helmet wearing) compared to a fall of just 11 head injuries when helmet wearing increased from 43% to 93% with the law (-0.23 for every 1% increase in wearing). Unless voluntary wearing is 15 times more effective in reducing head injuries, it seems likely that the claimed 20% - 32% falls in head injuries with increased helmet wearing were, in reality, an artefact caused by failure to fit time trends in their model.

Inconsistency of effects over periods of substantial change, compared with periods of little change in helmet wearing, may be a useful indicator of the presence of trends. Because the large increases in wearing with helmet laws did not result in any obvious change over and above existing trends, helmet laws and major helmet promotion campaigns are likely to prove less beneficial and less cost effective than proven road-safety measures, such as enforcement of speed limits and drink-driving laws, education of motorists and cyclists and treatment of accident black spots and known hazards for cyclists.

References

Robinson, 2001

http://www.cyclehelmets.org/1146.html

The Bicycle Helmet Research Foundation (BHRF), an incorporated body with an international membership, exists to undertake, encourage and spread the scientific study of the use of bicycle helmets. Also to consider the effect of the promotion and use of helmets on the perception of cycling in terms of risk and the achievement of wider public health and societal goals.

BHRF strives to provide a resource of best-available factual information to assist the understanding of a complex subject, and one where some of the reasoning may conflict with received opinion. In particular BHRF seeks to provide access to a wider range of information than is commonly made available by those that take a strong helmet promotion stance. It is hoped that this will assist informed judgements about the pros and cons of cycle helmets.

For more information, please visit www.cyclehelmets.org.