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Motorcycle Helmet Laws

Motorcycle Helmet Law History

In the United States, the debate over motorcycle helmet laws focuses on two primary issues. The first is what is commonly known as “Public Burden Theory.” This theory is concerned with the supposed financial burden on society created by motorcyclists not wearing helmets, specifically hospital costs not covered by the operators’ insurance. The second is the total number of outright deaths resulting from motorcycle accidents. Advocates of helmet requirements believe that the total number of deaths and the financial burden placed on non-motorcyclist taxpayers are sufficient to justify mandatory helmet laws. Those opposed to mandatory helmet requirements believe that the total number of deaths resulting from motorcycle accidents (relative to other automotive accidents) is not high enough to justify denying motorcycle riders the choice of whether to wear a helmet. Additionally, opposition groups argue that not wearing a helmet does not necessarily increase the burden on taxpayers. Both groups cite numerous studies that support their positions. Most of these studies, however, are incomplete, in that they do not control for a number of significant factors: rises or drops in motorcycle registrations and sales, alcohol and drug use, and whether or not the riders were wearing a helmet at the time of the accident.¹

Relevant Research

One of two relevant studies found in our research includes a study released in 2000 by the United States Department of Transportation (DOT). Researchers for the DOT examined a number of statistical changes in motorcycle accidents in Arkansas and Texas, the first two states since 1983 to repeal “universal” laws requiring all motorcycle riders to wear helmets. “Helmet use among motorcyclists receiving Emergency Medical Services (EMS) in Arkansas dropped from about 55% in 1996 and in 1997 before the law change,

¹ Jonathan P. Goldstein, PhD. “The Effect of Motorcycle Helmet Use on the Probability of Fatality and the Severity of Head and Neck Injuries: A Latent Variable Framework.” *Evaluation Review*. June, 1986.

to 33.5% in the remainder of 1997 and to 29% in 1998.”² Additionally, “Arkansas EMS data showed an increase in the number of motorcyclists with head injuries.”³ The DOT study also uses data from the Texas Trauma Registry that “showed that the proportion of cases involving head injury increased and that the cost per case of treating head injury increased substantially after the law change. Arkansas motorcycle operator fatalities increased by 21% comparing 1998 with 1996.”⁴

It must be noted that despite the following cautionary study released fourteen years prior to the Department of Transportation’s study, the DOT study still did not address issues of rider psychology even though they rectified the analytical shortcomings of previous studies by analyzing changes in percentages rather than raw numerical increases.

Using data collected by the National Highway Traffic Safety Administration, Jonathan P. Goldstein, Ph.D., chair of the Economics department at Bowdoin College conducted a 1986 study on motorcycle injuries and fatalities entitled “*The Effect of Motorcycle Helmet Use on the Probability of Fatality and the Severity of Head And Neck Injuries: A Latent Variable Framework*”. He begins by stating “Previous studies simply divide accident victims into a helmeted group and non-helmeted group. As a result, all differences in fatality rates, injury rates and injury severities between groups are erroneously attributed to helmet use. These comparisons fail to consider other differences between helmet users and non-users which influence the probability of death and the severity of injuries. The most plausible hypothesis is that helmeted riders are more risk-averse and thus: (1) have lower pre-crash and thus crash speeds; and (2) are less likely to combine alcohol consumption and driving. Such behavior, rather than helmet use per se, may dramatically reduce the probability of fatality or the severity of an injury. Only a causal model that considers crash speed, helmet use, alcohol use and other pertinent variables can isolate the separate contribution of each determinant of the severity of injury or probability of death.”⁵

In addition to drug and alcohol use and rider psychology, Goldstein also takes into account both the health benefits and potential detriments of wearing a motorcycle helmet. He evaluates the speeds at which helmets are effective and at what speed helmets are rendered virtually ineffective. Goldstein asserts “helmets have a statistically significant effect in reducing head injury severity.” However, “It is shown that past a critical impact velocity to the helmet (approximately 13 mph), helmet use has a statistically significant effect which increases the severity of neck injuries. As a result of [the aforementioned factors] we establish that a tradeoff between head and neck injuries confronts a potential helmet user.”⁶

² Preusser, D.F.; Hedlund, J.H.; Ulmer, R.G.. *Evaluation Of Motorcycle Helmet Law Repeal In Arkansas And Texas*. 2000 <http://www.nhtsa.dot.gov/people/injury/pedbimot/motorcycle/EvalofMotor.pdf> . April, 26, 2004.

³ Ibid

⁴ Ibid

⁵ Jonathan P. Goldstein, PhD. “The Effect of Motorcycle Helmet Use on the Probability of Fatality and the Severity of Head and Neck Injuries: A Latent Variable Framework.” *Evaluation Review*. June, 1986.

⁶ Goldstein

Policy Implications

Dr. Goldstein has also put forward a policy framework for legislators based on economic and safety priorities. Goldstein claims, “If a major concern of policy makers is the prevention of fatalities, helmet legislation may not be effective in achieving that objective.” He also asserts, “If the overall cost to society of motorcycle accidents is the issue, then cost-benefit analyses that adequately consider the tradeoff between head and neck injuries must be conducted before the cost effectiveness of helmets can be determined. Until the injury tradeoff issue is more carefully studied, it cannot be concluded that mandatory helmet use laws are an effective method to eradicate the slaughter and maiming of individuals involved in motorcycle accidents.”⁷

Goldstein believes that the following policies would both “prevent accidents and... effectively reduce the probability of death and the severity of injuries... Policies to prevent accidents include: (1) the education of the general driving public; (2) the education of a younger and more inexperienced population of motorcyclists on the issues of accident avoidance and the proper use and control of high horsepower machines; (3) stricter enforcement of drunk driving laws; and (4) implementation of alcohol awareness programs.”⁸ Also, “Policies to reduce death and injury severity include: stricter enforcement of (motorcycle operators violating) speed limits... and mandatory driver training and education programs which emphasize the proper execution of evasive action.”⁹

Motorcycle Helmet Requirements across the United States

States have taken two general approaches to helmet requirements for motorcycle riders. The first is to require helmets for juvenile riders only. Twenty-eight states require helmets of juvenile riders, although the laws in these states vary for adults. In Louisiana, motorcycle riders 18 and over are permitted to ride without a helmet if they can show proof of medical insurance coverage; the same is true in Florida and Kentucky for riders 21 and over. Texas helmet use laws allow riders 21 and over to ride without a helmet if they can show either proof of completing a motorcycle safety course or proof of medical insurance.¹⁰ The second approach is to require helmets across the board for all motorcycle riders. Twenty states, including Vermont, have taken this approach. Only two states, Colorado and Iowa, do not require helmets for any motorcycle riders.¹¹

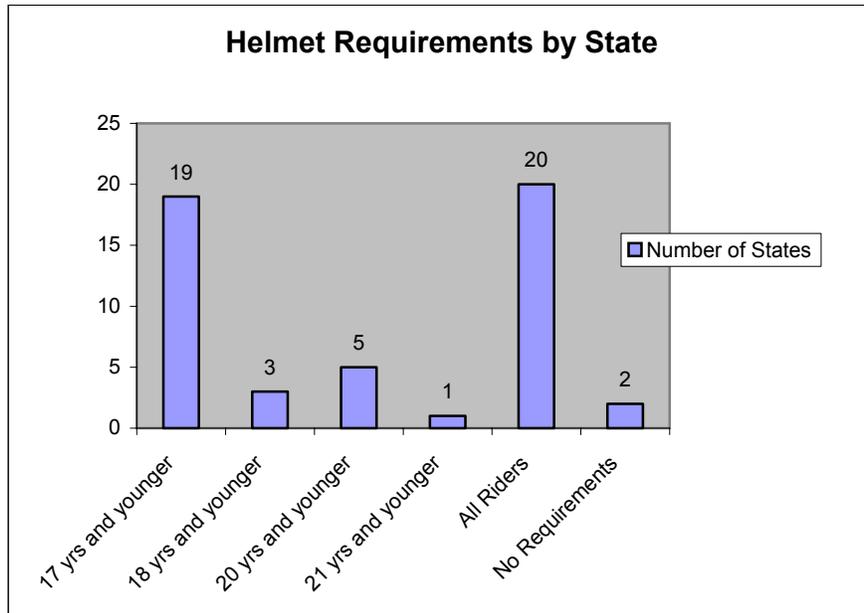
⁷ Ibid

⁸ Ibid

⁹ Ibid

¹⁰ Ibid

¹¹ Ibid



Source: Iron Horse Helmets website ¹²

This report was prepared on May 3, 2004 by J. W. Dunnivant, Selene M. Hofer-Shall, and Rebecca McCarty.

Disclaimer: This report was prepared by undergraduate students at the University of Vermont under the supervision of Professor Anthony Gierzynski. The material contained in this report does not reflect official policy of the University of Vermont.

¹² Iron Horse Helmets website. <http://www.ironhorsehelmets.com/laws.htm> viewed on April 19, 2004.