

MOTORCYCLE HELMET USE AND FATALITIES IN THE SOUTHEAST REGION OF THE USA

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ABSTRACT

Introduction: The federal government estimates that per mile traveled in 2018, the number of deaths on motorcycles was nearly 27 times the number in cars. In the United States there is no universal helmet law. In twenty-two states, motorcycle helmets are entirely optional, while in nineteen states and the District of Columbia universal motorcycle helmets laws requiring helmets for all riders regardless of age are implemented and nine states only require younger motorcycle riders to wear a helmet, with varying age limits. **Objectives:** The overall objectives of this study were to evaluate the following: (1) number of fatalities (with and without helmet use), (2) fatality rate per motorcycle registration, (3) fatality percentage with age, (4) percent fatality due to alcohol impairment, and (5) location of collision impact to the rider in two southern states (Mississippi and Alabama) where helmet laws are established compared with a southern state (Florida) that only requires riders less than 20 years of age to be helmeted. **Methods:** Data from 2015-2018 were obtained from the National Highway Transportation Safety Administration Reporting System (FARS) and supplemented with state related and CDC data. **Results:** In all three states, the most common collision was a front-end impact. Mississippi had the highest percentage of motorcycle fatalities even with >80% of riders helmeted when the fatal accident occurred, followed by Florida motorcyclist who are only 50% of the time helmeted. In all three southern states similar percentage of fatalities were seen in each age group with higher fatalities associated with age range of 30-39 years. **Conclusions:** Variables such as helmet type, distance from a level 1 trauma center, poor roads, weather conditions, and visibility of the rider may also be factors that contribute to a higher incidence of fatality and need to be further investigated to improve motorcycle safety.

Keywords: Helmet use, Alcohol, Fatality Rates, Motorcycles, Site of Collision Impact, Trauma

INTRODUCTION

According to the National Highway Traffic Safety Administration (NHTSA), motorcycle-related deaths have increased by 55% since 2000 [1]. In addition to death, there is also an increase in traumatic brain injury (TBI) [2,3]. A report from the Department of Transportation (2012) indicates that 41% of motorcycle operators and 50% of the passengers who died in collisions in 2010 were not using helmets [4]. Helmet use is the only proven safety measure to save lives [3]. The NHTSA estimates that helmets reduce the likelihood of death by 37% [5,6] and additional research has shown a 69% reduction in head injury [7,8].

Prior to 1997, the policy states that in order for states to receive federal highway safety appropriate funds, they had to enact a mandatory helmet law. That law was appealed in 1997 and many states have no mandatory or minimally restrictive helmet law for motorcyclists over the age of 21. Mississippi and Alabama are two southern states that did not repeal the federal mandate that required the use of a helmet.