

The safety of child passengers of adult cyclists

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Abstract

There is a global lack of knowledge regarding the safety of children transported as the passenger on a bicycle. To address this gap a survey was conducted with cyclists who transport their children by bicycle. This paper examines the causes and circumstances leading to the injury of child passengers, including characteristics of the types of carriers used, bicycles, and cyclists involved. This research is the first of its kind to explore the safety of child passengers in great detail and has the potential to improve the safety for these children.

Introduction

In Australia, the increasing popularity of new bicycle child carriers such as front-mounted seats, cargo bikes, and trailers has produced an interest in the safety of child bike carriers (Carroll, 2014). While much research has addressed the safety of adult cyclists very little is known about the safety implications associated with the transportation of children as passengers on a bicycle. There is a need for research in this area.

In order to address this significant gap the Centre for Automotive Safety Research, in conjunction with the Monash University Accident Research Centre, undertook a study examining the safety of different transportation options for child passengers on bicycles through an investigation of the occurrence of incidents and injuries associated with each. This larger research project involved the analysis of hospital injury data, surveys of parent cyclists, and discussions with key stakeholders. This paper reports findings from the parent survey component which examined the causes and circumstances leading to any incidents involving child bicycle passengers.

Method

Data was collected by means of an on-line self-report survey. Cyclists who were parents of children aged five years or younger, reside in Australia, and transported at least one child by bike were eligible for the study. A total of 94 participants (76% male) aged 24-58 ($M=39.59$, $SD=6.36$) completed the survey. In the 12 months preceding the survey 74% reported riding "3-4 times per week" or more and 73% reported transporting child passengers "once or twice a week" or more often. The number of children transported per trip ranged from 1-6 with the majority transporting one (69%) or two (29%) children.

As there is limited information about either parents who transport child passengers, crash or non-crash incidents involving child passengers, or injuries to child passengers, an on-line self-report survey was used to collect data about a range of factors including experience transporting children, crash and non-crash incidents, and injury mechanisms and outcomes.

Results

Twelve cases of a crash involving a child passenger were identified; no injuries to child passengers were reported. Eight children were injured in non-crash incidents, half of which were due to a bike tipping over when stationary or nearly stopped ($n=4$). The non-crash incident was unknown in three cases due to missing data. In all cases the child passenger received minor injuries (bruise $n=4$, scratches $n=1$) the treatment for which was most commonly administered at home and involved observation of the child ($n=3$), pain management ($n=1$), or cleaning and dressing a wound ($n=1$).

Discussion

This study is the first of its kind to explore the causes and circumstances leading to the injury of child bicycle passengers. A survey of 94 parent-cyclists found that no child passenger was injured due to a crash event and very few were injured in non-crash events. In order to better understand child passenger safety the findings will be discussed with reference to the mechanisms of the event and the characteristics of the carrier and cyclists involved. This research addresses an important gap in current knowledge and has the potential to further improve the safety of child passengers.

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References

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