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Editorial

Letter from the Editors

The *Journal of Safety Research* is pleased to publish in this special issue the proceedings of several papers presented at the 4th International Conference on Road Safety and Simulation convened at Roma Tre University in Rome, Italy, October 2013. This conference serves as an interdisciplinary forum for the exchange of ideas, methodologies, research, and applications aimed at improving road safety globally.

Conference proceedings provide the opportunity for research in its formative stages to be shared, allowing our readers to gain early insights in the type of work currently being conducted and for the researchers to receive valuable feedback to help inform ongoing activities. This conference in particular offers an array of research topics not often covered by this journal from researchers practicing in over 11 countries. As is common with publishing conference proceedings, the papers published in this issue did not go through the normal *JSR* review process. Each paper included in this issue did meet the Road Safety and Simulation conference review requirements. They reflect varying degrees of scientific rigor, methodological design, and groundbreaking application.

The proceedings published in this special issue of *JSR* draw from the following road safety research sectors represented at the conference: driving simulation, crash causality, naturalistic driving, and new research methods.

It is our hope that the publication of these important proceedings will stimulate vigorous dialogue, rigorous research, and continuing innovative initiatives and applications, leading, ultimately, to fewer traffic fatalities, injuries, and crashes.

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Gender differences of young drivers on injury severity outcome of highway crashes

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ABSTRACT

Problem: Gender differences of young drivers involved in crashes and the associated differences in risk factors have not been fully explored in the United States (U.S.). Accordingly, this study investigated the topic, where the odds ratios (ORs) were used to identify differences in crash involvements between male and female young drivers. *Method:* Logistic regression models for injury severity of young male drivers and young female drivers were developed. Different driver, environmental, vehicle, and road related factors that have affected young female drivers' and young male drivers' crash involvements were identified using the models. *Results:* Results indicated that some variables are significantly related to female drivers' injury risk but not male drivers' injury risk and vice versa. Variables such as driving with valid licenses, driving on weekends, avoidance or slow maneuvers at time of crash, non-collision and overturn crashes, and collision with a pedestrian were significant variables in female driver injury severity model but not in young male driver severity model. Travel on graded roadways, concrete surfaces, and wet road surfaces, collision with another vehicle, and rear-end collisions were variables that were significant in male-driver severity model but not in female-driver severity model. *Summary:* Factors which increase young female drivers' injury severity and young male drivers' injury severity were identified. This study adds detailed information about gender differences and similarities in injury severity risk of young drivers. *Practical applications:* It is important to note that the findings of this study show that gender differences do exists among young drivers. This sends a message to the industry that the transportation professionals and researchers, who are developing countermeasures to increase the traffic safety, may need to pay attention to the differences. This might be particularly true when developing education materials for driver training for young/inexperienced drivers.

1. Introduction

In 1970, the ratio of licensed male drivers to licensed female drivers in the United States was 13:10 (USDOT, 2011). In 2005, the number of female drivers exceeded the number of male drivers for the first time in the United States. According to 2011 driver license data, over 50.4% of U.S. drivers were females (USDOT, 2013). Females and males have some differences in driving behavior and attitudes that affect their safety and crash experience. According to the literature, males in general take more risk on the road, commit more driving violations, receive more traffic citations, and are involved in more motor vehicle crashes than females (Butters, Mann, Wickens, & Boase, 2012). The basis for these differences may be due to neurochemical structure of humans, hormonal process, global socialization practices, and many others. However, studies based on crash data report that older females are overrepresented in crashes compared to males (Classen, Wang, Crizzle, Winter, & Lanford, 2012). The causes for this over representation have been identified as errors of yielding and gap acceptances.

Even though many studies identified the gender differences of young drivers involved in crashes, the main objectives of those studies were not the investigation of the gender differences. Also, a number of studies have focused on the relationship between gender and crash risk but those studies have not consistently investigated gender differences related to different driver, environmental, road, vehicle, and crash factors. Some variables can be significantly related to female drivers' injury risk but not male drivers' injury risk and vice versa. The advantage of investigating all these factors separately is that it allows researchers to account for many injury severity factors for female and male drivers. Separate injury severity models for females and males

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