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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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Relationships between frequency of driving under the influence of cannabis, self-reported reckless driving and risk-taking behavior observed in a driving simulator

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ABSTRACT

Introduction: The role of cannabis consumption in traffic crashes is unclear and the causal link between cannabis and collisions is still to be demonstrated. While cannabis use is very likely to impair driving ability, there is as yet no overwhelming evidence that cannabis use in isolation contributes more to collisions than other characteristics inherent to cannabis users. As noted in a growing body of literature, individuals driving under the influence of cannabis (DUIC) seem to exhibit a general reckless driving style putting them at higher risk to be involved in traffic crashes. *Method:* This study aims at investigating the relationship between self-reported DUIC and reckless driving by means of self-reported measures and direct observations made in a driving simulator. Participants (n = 72) were required to be between 18 and 25 years of age, to hold a valid driver's license, and to drive at least twice a week. They completed standard driving simulation tasks recreating everyday on-road trivial conditions. *Results:* Results show that people admitting that they commit more real-life dangerous driving behaviors reached higher maximum speed and demonstrated more reckless driving behaviors on the driving simulation tasks. Self-reported DUIC is associated with a risky driving style including a broad range of reckless on-road behaviors and support the problem driving behavior theory. Moreover, beyond confounding factors, both self-report DUIC and observed dangerous behaviors are associated with real-life traffic violations. *Practical applications:* Since DUIC appears to be related to an overall reckless style of driving, it is proposed that public safety policies should be more holistic, simultaneously targeting multiple on-road dangerous behaviors for intervention.

1. Introduction

Over a span of 20 years, rates of cannabis use have actually doubled in the very countries in which driving under the influence of alcohol (DUIA) and other risky driving behaviors have been reduced. Despite being regulated in many jurisdictions, cannabis is the most frequently consumed illegal drug worldwide, and its use appears to be an increasingly common phenomenon (Johnson, Kelley-Baker, Voas, & Lacey, 2012; Thompson, 2012; World Drug Report, 2011; Young, 2011). Results from the 2009 Canadian Alcohol and Drug Use Survey have indicated that 11.4% of Canadians overall and 33% of those aged 15–24 years used cannabis at least once in the previous year (Young, 2011). In fact, adolescents and young adults are, as a general rule, the most frequent users of cannabis. Extrapolating from surveys, more than 70% of individuals between 18 and 25 years of age have consumed cannabis at least once in their lives, while up to 30% of these same individuals will have used cannabis within the 12 previous months. At the same time, cannabis is only second to alcohol among psychoactive substances found in the bodily fluids of drivers involved in collisions (Beasley, Beirness, & Porath-Waller, 2011). Further deconstruction of these figures reveals that cannabinoids can be detected in the bodily fluids of 1.4% to 27.5% of all drivers killed in driving accidents and in 5% to 15.7% of all drivers who have been injured in crashes (Beirness & Porath-Waller, 2009). Studies of American, European, and Australian drivers have yielded comparable figures (Drummer et al., 2004; Laumon, Gadegbeku, Martin, & Biecheler, 2005; Lenné et al., 2010). Converging with these histological findings are self-reported rises in driving after using cannabis. Although the total number of drivers who engage in DUIC is relatively low, DUIC is disproportionately prevalent among young drivers. Nearly a quarter (23%) of drivers between 18 and 19 years of age report having DUIC in the 12 months preceding their participation in surveys (Walsh & Mann, 1999). Even more striking is the finding of DUIC occurring among high school students (Asbridge, Poulin, & Donato, 2005). In fact, DUIC occurs more frequently than DUIA; Beirness and Porath-Waller (2009) found that 19.7% of their respondents, nearly all of whom were male teenagers,

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