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Prevalence of texting while driving and other risky driving behaviors among young people in Ontario, Canada: Evidence from 2012 and 2014

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ABSTRACT

This paper reports on the prevalence of texting while driving and other risky driving behaviors by age and gender in two large samples of youth aged 16–19 years in Ontario, Canada. In Study 1 ($N = 6133$), we found that males reported more frequent texting while driving and speeding than females and, in terms of age, sixteen year olds reported frequent texting while driving than older participants. In Study 2 ($N = 4450$), which was conducted two years later, males again reported more frequent texting while driving, however there was no difference in the rate of talking on the phone while driving among males and females. Participants also reported on experiences that led to a significant reduction in their texting while driving. The most common reasons were the perceived danger of texting while driving, laws and fines against texting while driving, and observing close-calls and accidents experienced by other people. The results of both studies suggest that driving-related risk-taking behaviors co-occur and that young passengers in vehicles, including 14 and 15 year olds, are bystanders to texting while driving. Finally, there was a substantial decline in the prevalence of texting while driving across the studies. In Study 1, 27% of participants reported "sometimes" to "almost always" texting while driving compared to 6% of participants in Study 2. Limitations and implications for public campaigns targeted youth distracted driving are discussed.

1. Introduction

Young drivers are significantly overrepresented in driving-related crashes and fatalities with wide-ranging human and economic consequences (e.g., OECD, 2006). Meta-analytic evidence shows that typing and reading text messages and talking on a phone while driving impair safe driving performance by adversely effecting hazard response time, speed, and headway (Caird et al., 2014, 2008). Of the total fatal crashes involving teenage drivers in the United States, 21% are attributed to cell phone usage (Distraction.gov, 2015). At the same time, adolescents are also more likely than adult drivers to engage in speeding and other forms of risky driving behavior (e.g., Rhodes and Pivik, 2011).

Large-scale prevalence studies on cell phone use combined with other risky driving behaviors among teens remain very limited, especially outside of the United States. This paper reports on findings from two large sample studies examining the prevalence by age and sex of texting while driving, talking on a phone while driving, and speeding among teenagers primarily residing in Ontario, Canada. We also examine the prevalence of texting among youth passengers, as well as the prevalence of youth traveling in vehicles operated by a driver who is using a cell phone. Finally, we explore self-reported experiences among participants that they credit for reducing their texting while driving.

We begin by reviewing the current literature on youth texting while driving, talking on a phone while driving, and speeding. Next, we describe the research context for our two studies: a short survey at the beginning of an online safety test completed by tens of thousands of Canadian youth annually. We then report on the findings from two large samples. We conclude by discussing our findings and highlighting the practical implications for preventing distracted driving among youth.

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2. Literature review

2.1. Texting while driving

Texting while driving is pervasive among young people even though they seem to be aware of its dangers (Atchley et al., 2011). Approximately 87% of young people aged 14–17 own a mobile phone (Lenhart, 2012). While only 39% of teens use their mobiles to make voice calls on a daily basis, 63% of young people communicate by text daily (Lenhart, 2012). Harrison (2011) found that a staggering 91% of college-aged survey participants reported texting while driving, while Cook and Jones (2011) found that 74% of college-aged respondents reported texting while driving a few times per month or more. In a representative sample of high school students, Olsen et al. (2013) reported that 45% of respondents had texted while driving in the past 30 days. And a large-scale study in Ontario, Canada, found that over one-third of students in Grades 10–12 had texted while driving at least once in the past year (CAMH, 2013).

Studies examining differences in the prevalence of texting while driving by sex and age are inconclusive. Olsen et al. (2013) reported that rates of texting while driving are higher among males and older adolescents. A similar study in Ontario also found that older high school students were more likely to text while driving, but no differences were identified based on sex (CAMH, 2013). Other studies have also found no differences between young males and females. Nemme and White (2010) found that males and females in the 17–24 age group were equally likely to text while driving. Similarly, Zhou et al. (2009) found that while females reported a higher frequency of texting in daily life than males did, there was no difference between males and females with respect to their intention to text while driving. In summary, texting while driving is prevalent among adolescents; however, there are conflicting findings regarding differences in prevalence by sex and limited research on differences by age.

2.2. Talking on the phone while driving

Research indicates that the prevalence of youth talking on a mobile phone while driving is similar to the prevalence of youth texting and driving. A study of Australian youth aged 16–24 found that 100% reported talking on their cell phone while driving at least once, compared to 73% who reported texting while driving (Nelson et al., 2009). Prevalence research from the United States and Canada on talking on a phone while driving indicates relatively lower rates compared to this Australian study. For instance, Ginsburg et al. (2008) study of a representative sample of over 5000 high school students found that 57% had witnessed frequent cell phone usage by drivers. Further, a large-scale observational study in Canada found that drivers under the age of 25 had a higher rate (6.7%) of cell phone usage during daylight hours compared to older drivers (Burns et al., 2008). Finally, a recent study in Alberta, Canada, noted that 50% of 16 to 24-year-olds reported using their cell phones while driving, and males of all ages reported higher usage than females (Nurullah et al., 2013).

2.3. Speeding

In contrast with studies on cell phone usage while driving, research on speeding consistently finds that younger people are more likely to speed than older people (e.g., Rhodes and Pivik, 2011), with male youth being more likely to speed than female youth. For example, in a study of 17 to 20-year-old Australian students, Machin and Sankey (2008) found that males were more likely to report speeding than females were. In a study of high school students from New Zealand, Harré et al. (1996) found that males were significantly more likely to speed than females were. Finally, in a driving simulation with students, males reported a higher driving speed than females did (Schwebel et al., 2006).

The few studies that have investigated differences in speeding prevalence by youth age are inconclusive (e.g., Bina et al., 2006; Harre et al., 2000). In summary, speeding while driving is prevalent among young people, particularly males; however, to date, knowledge of within-group age differences is limited.

2.4. Research on the concurrence of texting while driving, talking on the phone while driving, and speeding

While there is abundant research on young drivers' texting, talking on the phone, and speeding behaviors, there is relatively limited research on the concurrence of these risky behaviors from large prevalence studies. O'Brien et al. (2010) reported that 15% of high school-aged teens both texted and talked on their phones while driving. Olsen et al. (2013) found that youth who text while they drive are more likely to engage in other risky motor vehicle behavior; however, they did not specifically investigate speeding. General cell phone use while driving is associated with more positive attitudes toward speeding and higher mean driving speeds among adults (e.g., Zhao et al., 2013). Scott-Parker et al. (2013) measured the relatively broad category of "bending the road rules," which encompassed texting as a sample behavior, and found a positive association between violating road rules and speeding.

Speeding and texting while driving has also been linked in research on compensatory driving behaviors. A meta-analysis by Caird et al. (2008) found that drivers reduced their speed to a limited extent when using their mobile phone compared to baseline conditions. A study of spontaneous driving observations in a speeding zone of 100 km/h provided further insight into this relationship. Drivers who engaged in short calls reduced their speeds from an average of 106 km/h to 101 km/h while drivers who engaged in longer calls actually increased their speeds from 106 km/h to 109 km/h (Rosenbloom, 2006). Taken together these results suggest the possibility that drivers who use their mobile phone for a short period of time may have a lower likelihood of speeding because they recognize, albeit implicitly, the dangers of driving too quickly.

Overall, research that concurrently examines texting and other driving-related risk-taking behaviors is sparse, especially among youth populations.

3. Research context

Data were collected between October 2012 and July 2013 (Study 1) and September 2014 and February 2015 (Study 2) from Canadian adolescents taking an online safety test called Passport to Safety (PS) (www.passporttosafety.parachutecanada.org). This educational tool aims to increase young peoples' knowledge of occupational safety and is typically taken as part of a high school class. A small percentage of respondents for these studies took the test at a workplace as part of their safety training. The vast majority of participants resided in Ontario, which has the highest fines for distracted driving in Canada, with minimum fines having increased from $60 CDN to $280 CDN in 2014 (Ontario Ministry of Transportation, 2015).

Before beginning the online test, participants were invited to complete a voluntary one-minute "user survey" designed by the authors and approved by a university research ethics board. The survey stated that their responses were anonymous and confidential, and that the data would be used in research. Respondents to the surveys who indicated they were employed provided data for