Influencing Behavioral Intentions toward Texting and Driving: Lessons Learned from a Multifaceted Prevention Campaign

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Abstract

Context
Impaired and distracted driving among youth is a serious national issue which results in numerous fatalities and injuries each year. According to the Centers for Disease Control, car crashes are the leading cause of death among people ages 16 to 21. On average, eight young people die every day due to car crashes. Contributing to the carnage is the growing problem of distracted driving. Drivers who frequently engage in inattention-related activities are more likely to be involved in inattention-related crashes and near-crashes. Drivers who are engaging in moderate to complex non-driving tasks are between 1.6 and 5.5 times as likely to be involved in a crash or near-crash (Klauer, S.G. et al., The Impact of Driver Inattention On Near-Crash/Crash Risk, April 2006)

Objectives
This project implements a distracted and impaired driving prevention campaign targeted at teenagers (aged 16 to 19) in two U.S. rural community high schools. Known as M.E.T.H.O.D. (Mind, Eyes, Two Hands On Driving), this teen-led campaign was designed by U.S. based company, Innocorp, Ltd., to reduce behavioral intentions toward impaired and distracted driving by addressing their multifaceted determinants. These include self-efficacy, response efficacy, threat and coping appraisal, barriers and benefits to change, subjective norms and public commitment toward change. The research-based campaign activities were designed to be hands-on, fun, and engaging for youth. We analysed survey data on 100 students to illuminate behavioral intentions toward impaired and distracted driving.

Key Outcomes
Using a youth-led multifaceted campaign, incorporating a definitive call-to-action, and involving school and community leaders in the initiative proved crucial for program success. The survey analysis indicates that students’ disproportionate belief that they are effective drivers even when distracted was a key predictor of distracted driving among the students we surveyed.

Discussion and conclusions
A call to action must be easy to understand, easy to commit to doing, relevant to addressing the problem of distraction, and relevant to the individuals committing to the action. Programs may need to tailor their interventions to their targeted populations and forms of distracted driving.

Introduction
In 2011, 3,331 people were killed in crashes involving a distracted driver, compared to 3,267 in 2010. An additional, 387,000 people were injured in motor vehicle crashes involving a distracted driver, compared to 416,000 injured in 2010. (Key Facts and Statistics, Retrieved April 20, 2013 from http://www.distraction.gov/content/get-the-facts/facts-and-
The problem of distracted driving is compounded as new communications technology, GPS, mobile phones, and other devices that call for our attention are introduced into the driving environment. In 2008, an estimated 28% of all crashes, or 1.6 million, on U.S. highways are caused by drivers using cell phones (National Safety Council White Paper, 2010). In fact, using a cell phone while driving increases one’s crash risk by a factor of 23 (Virginia Tech Transportation Institute, Retrieved April 22 from http://www.vtti.vt.edu/featured/0413-distracted-driving.html).

Federal observational data from the NHTSA 2010 study shows that about 5 percent of drivers in 2009 were talking on hand-held phones at any moment during the day. This equates to about 672,000 passenger vehicles on the road at any moment during the day were driven by people talking on hand-held phones.

In this age of limited resources and shrinking budgets, it is imperative that social scientists continue to develop theories and approaches for message construction and prevention campaigns to ensure these are both effective and efficient (Fishbein, M. et al., 2006). To reduce crash risk and the injuries and fatalities that result, it is important to identify interventions that encourage drivers to turn off their cell phones while driving. Research is needed to identify methods for influencing the behavioral intentions of drivers who intend to use a cell phone while driving. This paper addresses this need by exploring teens’ behavioral intentions toward using cell phones while driving through the implementation of a distracted driving prevention campaign. We present findings on the behavioral intentions of distracted driving as well as lessons learned from the implementation of the campaign in two high schools in a suburban U.S. community.

**Behavioral Intentions toward Distracted Driving**

Distracted driving involves the diversion of a driver’s attention away from activities critical for safe driving and toward a competing non-driving task (Regan et al., 2009). It is not unusual to see drivers simultaneously engaging in distracting activities while driving. This may include reading a book or a map, interacting with the GPS, eating, putting on makeup, or talking or texting on a cell phone while driving. Research suggests two key mechanisms through which teens’ develop behavioral intentions to drive while distracted: sensation-seeking and perceived self-efficacy.

*Sensation-Seeking*

Sensation-seeking is the “seeking of varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experience” (Zuckerman, 1978, p. 139-149). Sensation-seeking tendency has been positively linked to participation in a number of risky behaviors, such as smoking, heavy drinking, drug abuse, and driving under the influence of alcohol (Curran, M.F. et al., 2010, The Association of Sensation Seeking and Impulsivity to Driving while under the Influence of Alcohol). Therefore, high sensation-seeking teens may have strong behavioral intentions to drive distracted regardless of whether they believe they are equipped to do it well.

*Perceived Self-Efficacy*

Perceived self-efficacy refers to confidence in one’s ability to complete a given task. In many domains, people’s sense of self-efficacy is optimistically biased. That is, they tend to overestimate the probability of positive events and underestimate the probability of negative ones (Sharot, 2011). A consistent finding in cognitive science is that attention has a limited...
capacity (Fougnie et al., 2006). Nowhere are these limitations more evident than in situations in which people attempt to multitask, that is, perform two or more attention-demanding tasks concurrently. Ironically, a recent study looking at multitasking ability found that individuals who report multitasking more frequently (as it relates to multimedia consumption from multiple sources) multitask less well than those who are multitasking less frequent (Ophir et al., 2009).

With regard to driving, people tend to mistakenly believe they can simultaneously engage in non-driving related tasks, like texting on a cell phone, without affecting their driving performance. In other words, drivers have a blind spot for loss of attention due to cell phone use, and thus they are unaware of their own driving impairments (Strayer & Drews, 2007). Rather, many people insist that they are not impaired when they use a cell phone while driving, despite readily admitting that they have seen others who drive erratically when they use their cell phones (Watson et al., 2003). This optimistic bias may give people a false sense of control over driving while distracted.

In a modern context in which teens are increasingly accustomed to multitasking, they may be particularly at risk for optimistic bias in their perceptions of their ability to safely drive while using a cell phone. Teens are especially likely to underestimate their susceptibility to harm or the severity of potential negative consequences of some behaviour, and this belief increases the likelihood that they will engage in the behavior (Sharot, 2011). Greater perceived self-efficacy to multitask while driving (or in general) may increase the likelihood that teens will use their phones while driving.

Approach

The aim of this paper is two-fold: (1) to ascertain the degree to which perceived self-efficacy and sensation-seeking are associated with behavioral intention to drive while distracted; (2) to report lessons learned from implementing an intervention designed to address behavioral intentions toward distracted driving among teens. We implemented a distracted and impaired driving prevention campaign targeted at teenagers (aged 16 to 19) in two U.S. rural community high schools. Known as M.E.T.H.O.D. (Mind, Eyes, Two Hands On Driving), this teen-led campaign was designed by U.S. based company, Innocorp, ltd., to reduce behavioral intentions toward impaired and distracted driving by addressing multifaceted potential determinants. These include self-efficacy, response efficacy, threat and coping appraisal, barriers and benefits to change, subjective norms and public commitment toward change.

The M.E.T.H.O.D. campaign is collaboratively implemented by students, school resource officers, and administrators. Teen leaders work with school and community leaders to engage peers in activities that promote responsible driving. The research-based campaign activities are designed to be hands-on, fun, and engaging for youth. These include educational activities that provide evidence-based and locally-specific information to the community, and experiential activities that demonstrate our susceptibility to the serious consequences of driving while distracted. This non-authoritarian approach is designed to allow people to come to their own, well-informed conclusions about adopting responsible driving behaviors. The campaign culminates in a concrete call-to-action, a teen-led initiative asking peers and community members to commit to specific responsible driving behaviors.

A key component of the program is the “multitasking demonstration,” which is designed to create cognitive dissonance between people’s optimistically biased beliefs about their self-
efficacy and a direct experience demonstrating their actual ability to multitask. In the multitasking demonstration, students are asked to do two tasks: counting backward from 100 as far as they can without missing numbers, and correctly matching as many differently colored shapes as possible without making mistakes. Students first complete these tasks separately for 30 seconds each. Students are then asked to guess how well they will do on each task if they do them simultaneously, after which they complete the tasks simultaneously for 30 seconds. At the end of the demonstration, students are faced with concrete dissonance between their perceptions and direct evidence of their ability to multitask.

As part of the campaign, we also collected survey data on 100 students to illuminate their behavioral intentions toward distracted driving, which was measured using the prompt:

You are driving in your vehicle down a road in town. There are some shops and parked cars. It is about 2 o’clock on a fine dry afternoon. You hear your cell phone ring in the seat beside you.

Students were then asked how likely they would be to use their cell phone in the hypothetical situation and, if they used it, how likely different consequences would be (e.g., “I would find it difficult to pay attention to the road”). In addition, students responded to 10 items designed to measure their sensation-seeking tendency by indicating their level of agreement with statements such as, “I enjoy the feeling of fast driving or riding in a speeding car.”

Evidence about Behavioral Intention to Drive while Distracted

As shown in figure 1, high school students in the target community have high behavioral intentions to use a cell phone while driving, where the majority of students reported they would be likely or very likely to answer their cell phone (67%) or to check the phone (84%). Conversely, less than 10% reported these behaviours were “not at all likely.” Figures 2 and 3 demonstrate that students disproportionately believe that they are effective drivers even when distracted or using a cell phone and that they are less susceptible than others to distraction. Students varied more widely in their sensation-seeking, with a mean of 2.5 (Std. Dev.=0.53) on the 10-item scale ranging from 1 (not at all sensation-seeking) to 4 (very much).

![Fig. 1 Distribution of Behavioral Intention to Use Cell Phone while Driving](image-url)
Correlational analyses indicated that the behavioral intention to use a cell phone while driving (i.e., would answer phone, would check phone, would not let phone go to voicemail) is positively associated with perceived self-efficacy but not sensation-seeking. The 10 survey measures on sensation-seeking were not significantly related to student reports about the likelihood that they would use a cell phone in the hypothetical scenario. Measures of self-efficacy (i.e., better than others at multitasking, less affected than others by distraction, have effective ways to drive and use phone, drive quite well using phone) were positively and significantly associated with students’ behavioral intentions to drive while distracted, regardless of whether the items were treated separately or combined into composite scales (Cronbach’s $\alpha > .80$). The association was consistently positive, statistically significant ($p < 0.01$), and moderately sized ($0.314 \leq \text{Pearson’s } r \leq 0.668$). The correlation coefficient for the association between the scaled items was 0.640 ($p < 0.01$).

**Lessons Learned from Implementation of M.E.T.H.O.D. Campaign**

Three aspects of the program stood out as particularly crucial for the success of the campaign: use of a youth-led multifaceted campaign, incorporating a definitive call-to-action, and involving school and community leaders. A youth-led and multifaceted campaign was important because research suggests youth have more influence among their peers in promoting positive driving behaviours. It was also important that the call-to-action was easy
to understand, easy to commit to doing, relevant to addressing the problem, and relevant to the individuals committing to the action (Fishbein, et al., 2006).

**Conclusion**

The goal of this study was to identify variables that impact teens’ behavioral intentions to text and drive, and to ascertain lessons learned from a distracted driving prevention campaign that was successfully implemented in two U.S. rural community high schools. As the National Transportation Safety Board noted in their recent call for a ban on all cell phones in cars, laws alone will not solve the problem of distracted driving. It will take aggressive (and effective) educational campaigns and enforcement.

Our survey analysis suggests that optimistic bias about self-efficacy to drive while using a phone indeed is a strong predictor of students’ behavioral intentions to drive distracted. This suggests that our campaign, which provided information and experiential activities, created dissonance between teens’ naïve beliefs about their ability to multitask and their actual ability to do so. The identification of behavioral intentions improves our ability to intervene on them in ways that deter the use of a cell phone while driving.

Future research should explore whether the behavioral intentions are the same for other forms of distracted driving (e.g., due to eating, listening to music, talking in the car) or other populations (e.g., the elderly, the general population). Programs seeking to reduce crashes and injuries caused by distracted driving may need to tailor their interventions to their targeted populations and forms of distraction.

**References**


Curran, M.F. et al., 2010, The Association of Sensation Seeking and Impulsivity to Driving while under the Influence of Alcohol. Journal of Addictions & Offender Counseling, v30 n2 p84-98 Apr 2010


