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Social Norms and Risk Perception: Predictors of Distracted Driving Behavior Among Novice Adolescent Drivers

 Patrick M. Carter, M.D.^{a,b,c,*}, C. Raymond Bingham, Ph.D.^{a,c,d,e}, Jennifer S. Zakrajsek, M.S., M.P.H.^d, Jean T. Shope, Ph.D.^{a,d,e}, and Tina B. Sayer, Ph.D.^f
^a University of Michigan Injury Center, Ann Arbor, Michigan^b Department of Emergency Medicine, University of Michigan School of Medicine, Ann Arbor, Michigan^c Department of Psychiatry, University of Michigan School of Medicine, Ann Arbor, Michigan^d University of Michigan Transportation Research Institute, Ann Arbor, Michigan^e Department of Health Behavior and Health Education, University of Michigan School of Public Health, Ann Arbor, Michigan^f Toyota Engineering and Manufacturing North America, Ann Arbor, Michigan

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 A B S T R A C T

Purpose: Adolescent drivers are at elevated crash risk due to distracted driving behavior (DDB). Understanding parental and peer influences on adolescent DDB may aid future efforts to decrease crash risk. We examined the influence of risk perception, sensation seeking, as well as descriptive and injunctive social norms on adolescent DDB using the theory of normative social behavior.

Methods: 403 adolescents (aged 16–18 years) and their parents were surveyed by telephone. Survey instruments measured self-reported sociodemographics, DDB, sensation seeking, risk perception, descriptive norms (perceived parent DDB, parent self-reported DDB, and perceived peer DDB), and injunctive norms (parent approval of DDB and peer approval of DDB). Hierarchical multiple linear regression was used to predict the influence of descriptive and injunctive social norms, risk perception, and sensation seeking on adolescent DDB.

Results: 92% of adolescents reported regularly engaging in DDB. Adolescents perceived that their parents and peers participated in DDB more frequently than themselves. Adolescent risk perception, parent DDB, perceived parent DDB, and perceived peer DDB were predictive of adolescent DDB in the regression model, but parent approval and peer approval of DDB were not predictive. Risk perception and parental DDB were stronger predictors among males, whereas perceived parental DDB was stronger for female adolescents.

Conclusions: Adolescent risk perception and descriptive norms are important predictors of adolescent distracted driving. More study is needed to understand the role of injunctive normative influences on adolescent DDB. Effective public health interventions should address parental role modeling, parental monitoring of adolescent driving, and social marketing techniques that correct misconceptions of norms related to around driver distraction and crash risk.

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 IMPLICATIONS AND
 CONTRIBUTION

Reducing adolescent distracted driving behavior (DDB) could decrease the high crash rates observed among novice drivers. Utilizing a telephone survey of adolescent–parent dyads, we found that parents' role modeling as well as the observed behavior of parents and peers influenced adolescent DDBs, providing important information for future intervention efforts.

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* Address correspondence to: Patrick M. Carter, M.D., Department of Emergency Medicine, University of Michigan School of Medicine, 24 Frank Lloyd Wright Drive—Suite H 3200, Ann Arbor, MI 48105.

E-mail address: cartpatr@med.umich.edu (P.M. Carter).

Motor vehicle crashes are the leading cause of death and a leading cause of nonfatal injury among adolescents aged 16–20 years [1,2]. Adolescent drivers are three times more likely than drivers over the age of 20 to be in a fatal crash and have the highest crash risk per mile driven of all age groups apart from the most elderly drivers [1]. This elevated crash risk, which is highest during the first 6 months of licensure [3], has been attributed to

several adolescent-specific risk factors, including immaturity and developmental characteristics such as heightened impulsivity and sensation-seeking behavior [4–6], a lack of driving skills, exposure to higher risk adolescent driving environments (e.g., driving at night or with adolescent passengers), risk-taking behavior (e.g., impaired driving and seatbelt nonuse), and greater willingness to engage in DDBs [7–13]. The rapid proliferation of interactive mobile technologies, in addition to other distractions, has increased the need to understand DDBs and their role in adolescents' elevated crash risk.

Driver distraction results from secondary activities that disrupt the visual, auditory, biomechanical, or cognitive tasks required for safe driving [14]. In 2011, 11% of adolescent drivers involved in fatal crashes were distracted, 21% of those by cell phone usage [15]; however, the accurate rate of driver distraction is likely under-reported [14]. Naturalistic driving studies, such as the 100-car study, provide the most accurate data, where, among all ages, driver distraction contributed to 22% of all crash and near-crash events [16]. Epidemiological studies conducted among drivers of all ages have also identified an increased crash risk associated with various potential distractions, including the presence of young passengers [17–20], cell phone use, and eating/smoking, or reaching for objects [21–25]. Crash risk is highest when DDBs involve complex visual-manual tasks, require several steps to complete, and do not involve built-in vehicle features [16,26]. Overall, naturalistic driving studies estimate that these high-risk DDBs that involve complex visual-manual tasks increase the crash or near-crash risk by 600%–2,300% [26].

Adolescents have higher rates of distracted driving crashes compared with older drivers [15,27]. This is partly due to their developmental stage but also reflects inexperience, as younger drivers lack critical driving skills possessed by more experienced adult drivers [3,28]. Adolescent drivers also overestimate their ability to multitask while driving [29] and are more willing than adults to adopt and intensely utilize new technologies (e.g., cell phones) that are an important source of driver distraction [30,31]. Elevated risk-taking and sensation-seeking behaviors, combined with underdeveloped driving skills and high rates of technology use, increase the likelihood that adolescents will engage in DDBs that increase their crash risk [32].

Similar to other health-related behaviors, adolescent driving is strongly influenced by parenting styles and modeling of behaviors [33–38]. Observational studies demonstrate significant concordance between parent and adolescent driving styles [39]. Furthermore, young drivers who have strong parental role models that provide positive feedback about safe driving,

establish open lines of communication with their adolescent drivers, and convey specific and clear messages/limits about traffic safety report less risk taking and more commitment to safe and less aggressive driving [40]. Although parents are important influences on teen driving, adolescents are also highly susceptible to peer influences, where perceived and actual peer behaviors can influence risk behaviors [41,42]. Prior research demonstrates that having friends who engage in risky driving predicts future-driving risk for newly licensed adolescent drivers [43] and impaired driving among adolescents, generally [44].

The theory of normative social behavior provides a framework for understanding how adolescent risk taking and sensation seeking combine with parent and peer influences to shape adolescent DDBs (Figure 1). Social norms are observed or perceived patterns that define acceptable beliefs, attitudes, and behaviors. Descriptive norms refer to an individual's beliefs about a behavior that are gained as a result of observing the actions of others. Injunctive norms are individual perceptions about the expectations and resulting approval of valued family members or peers [45]. Within this framework, injunctive norms modify the effect of descriptive norms on health-related behavior, strengthening it when descriptive and injunctive norms are aligned and reducing or negating it when they are opposed [45]. Furthermore, individual levels of risk perception and sensation seeking may modify the influence of social norms on negative health behaviors such as distracted driving.

This study examines the contributions of social normative influences (parent and peer), individual risk perception, and sensation seeking on adolescent DDBs. It was hypothesized that, compared with descriptive normative influences, injunctive normative influences would more strongly predict adolescent DDBs and also would partially account for descriptive normative influences, although both were hypothesized to be positively associated with adolescent DDBs. Furthermore, individual-level risk taking and risk perception were hypothesized to have the strongest association with adolescent DDB. The influences of social norms were examined overall and by individual sex. Prior distracted driving literature has not examined how social normative influences vary by sex, and given the higher crash risk observed among male adolescents [10,46–50], understanding DDB influences by sex may also aid in our understanding of differential crash risk. Results will also aid the development of behavioral interventions aimed at reducing DDBs among adolescent populations and mitigating the risk for crash-associated injury.

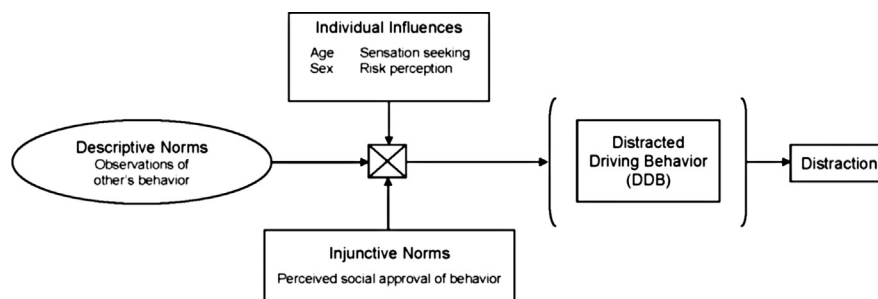


Figure 1. A conceptual model for adolescent distracted driving building on the theory of normative social behavior.

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