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Young driver risk in relation to parents' retrospective driving record

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Abstract

Problem: Parents are an important potential influence on the driving safety of their children. This study examined the relationship of parental driving record on male and female offspring's at-fault collision risk. *Method:* Drivers aged 16–21 on the date of full licensure were selected from driver records and a matching process was used to identify putative parents in two-parent households. Poisson regression models were developed to predict at-fault collisions of male and female youth in the three years following full licensure from parents' at-fault collisions, speeding offenses, and other moving offenses in the four years prior to children's licensure. One set of models examined the relative risk associated with increasing numbers of maternal and paternal at-fault collisions and offenses. Other models examined the joint versus separate maternal and parental contributions. *Results:* Controlling for region of residence, both mothers' and fathers' at-fault collisions were associated with an increased risk in both male and female youth at-fault collisions. Mothers' and fathers' speeding offenses were also associated with increased relative risk of at-fault collisions for both sons and daughters, while fathers' other moving offenses increased collision risk for sons but not daughters. *Discussion:* Further research is required to identify how parental driving risk is transmitted to children. *Impact on Industry:* (a) Parents of young children should be informed of their role in influencing their children's future driving risk; (b) The results identify risk factors that could be of interest to licensing authorities and the insurance industry.

Keywords: Young drivers; Crash risk; Parents; Children; Driving records

1. Introduction

Young drivers are at elevated risk of collision per unit distance traveled up to the age of about 30 (Williams, 2003). The problem is particularly serious among young drivers in their first year of unsupervised driving (Preusser & Leaf, 2003). In British Columbia, one in five new drivers was involved in a crash in their first two years following full licensure (Wiggins, 2003).

On the other side of the coin, many young drivers remain collision-free, or at least are not responsible for their collision involvements. Much research has been devoted to the identification and measurement of characteristics that render some youths higher risks than others (e.g., Beirness & Simpson, 1988; Gregersen & Bjurulf, 1996; Jessor, 1987). The present study investigates the role of one of these potential factors that has received only recent attention: the influence of parental driving history. This relationship is important from both a theoretical and practical perspective given the importance of parents in the socialization process, as role models, and in later adolescence, their direct influence on the education, monitoring, and control of their children's driving.

A number of studies have examined the characteristics associated with youth driving risk. From these studies several classes of variables emerge as predictors or correlates of young driver collisions and/or violations. These include: lifestyle factors such as alcohol and other substance use, and unhealthy sleeping habits (Beirness & Simpson, 1988; Jessor, 1987); personality factors such as sensation-seeking, depression, and personal maladjustment (Wilson & Jonah, 1988); as well as low school grades and educational achievement (Carlson & Klein, 1970; Murray, 1998) and

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delinquency (Jessor, 1987). Much of the research in this area has been conducted in the context of problem behavior theory (Jessor, 1987). The theory postulates that risky driving among adolescents is part of a syndrome of problem behavior that tends to be in opposition to conventional legal and social norms.

In a longitudinal study, Begg, Langley, and Williams (1999) studied a wide variety of factors measured at age 15 or 18 that predicted involvement in four outcomes at age 21. The outcomes were: any collision, an injury collision, a non-injury collision, or a serious non-traffic injury. Outcomes were based on self-reports of events from the last 3 years. Prediction models were developed separately for males and females. These authors found only partial support for problem behavior theory, with high substance use and possession of a motorcycle licence being the only variables that consistently predicted collision involvement. Begg et al. (1999) found that injury and non-injury collisions were predicted by different factors, as were collisions of males and females. Of interest to the present study is the finding that low involvement with family predicted males' injury collisions. Males with low family involvement were three times more likely to have been in an injury collision.

Other recent research also points to an important role of parents and parenting style in mediating the driving behavior of children, from adolescence through young adulthood. In a longitudinal study that followed new drivers from the age of 16 through age 23–24, Shope, Waller, Raghunathan, and Sujata, (2001) found that the degree of parental monitoring, nurturing, and family connectedness reduced the risk of serious collisions and offenses. Conversely, negative parental influence (low scores on these same factors) increased young drivers' risk of serious collisions and violations, as well as risk of substance use. Higher substance use predicted higher collision risk — however it was not the principal mediator. The risk factors of high substance use and low parental influence were additive, but positive parental influence had a greater effect on lowering collision risk than did low substance use.

Bianchi and Summala (2004) investigated the relationship between self-reported driving behavior of Brazilian youth and their parents, evaluated by means of the Manchester Driving Behaviour Questionnaire. They found that parents' self-reported driving errors and violations predicted those of their children, but parents' tickets and collisions did not explain the respective measures in their children. One reason for the lack of correlation of the latter could be the small sample size (111 pairs) and the tendency of the self-report method to underestimate tickets and collisions. Children's aggressive driving was predicted more by children's lifestyle and family connectedness than by parents' aggressive driving. Taubman–Ben-Ari, Mikulincer, and Gillath (2005) report associations between parents' and children's driving styles, as measured by the Multildimensional Driving Style Inventory (Taubman–Ben-Ari, Mikulincer, & Gillath, 2004). Both mothers' and fathers' driving styles influenced those of both sons and daughters, although parents had differential influence depending on the gender of their offspring. For example, a careful driving style by a father was correlated with a careful driving style in both sons and daughters, whereas a parent's reckless driving style was transmitted only to a same-gender offspring (fathers to sons and mothers to daughters).

Very few studies have linked official driving records of parents with those of their offspring to measure the relationship of driving collisions or convictions. An early study (Carlson & Klein, 1970) compared only fathers' and sons' driving records and reported a positive correlation for traffic offense convictions, but not for collisions. Fathers' convictions and collisions were examined for a five-year retrospective period. The authors note that collisions were not reliably reported across the state, and therefore records may have been incomplete. The only published study to use a large sample size and to examine children and parents of both sexes was conducted by Ferguson, Williams, Chapline, Reinfurt, and De Leonardis (2001). Because this study used a methodology very comparable to the present one, it will be described in some detail.

Ferguson et al. (2001) selected driving records of over 300,000 currently licensed drivers, aged 18–21 from North Carolina Motor Vehicle Department files, and matched 47% of them with at least one putative parent. To maximize the chances that children were matched to their correct parents, only drivers with the same last names and addresses were used. Furthermore, parents were required to be between 36 and 65 years of age. The authors then modeled the likelihood of police-reported collision involvement for the young drivers as a function of child gender, combined parent collisions, combined parent convictions, and whether the child was matched with one or both parents (presumed single vs. two-parent household). Thus the study considered the sum of all parent collisions and the sum of all parent convictions, but did not distinguish between maternal and paternal contributions. The results showed that in both single- and two-parent households, parents with poor driving records were more likely to have children with poor driving records. Parents' collisions were more predictive of children's collisions than were parent's violations, and parents' violations were better predictors of children's violations than were parents' collisions. The model predicted a 7% increase in the likelihood of a child collision involvement for each additional parental collision. Children's expected violations increased by 13% for each additional parental violation.

The present study is a replication, extension, and refinement of the pioneering work of Ferguson et al. (2001). The primary aim was to confirm the earlier study's principal finding and to further investigate the impact of parents' driving history in terms of collisions and different types of offenses on the collision rate of young drivers in