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AN EXAMINATION OF THE CRASH INVOLVEMENT RATES OF NOVICE DRIVERS AGED 16 TO 55

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Abstract—There is general agreement in the literature that both age and driving experience correlate with aggregated accident risk for driver populations. The very young and beginning drivers have been classified as groups that are overrepresented in crashes, but unfortunately the former is often used as a surrogate for conclusions concerning the latter. The research that we undertook examined the interactions of various driving exposure and accident characteristics with both culpable and nonculpable crash involvements for 149,000 British Columbia novice drivers between the ages of 16 and 55. In assessing the results of our enquiry we were unable to substantiate that any of the supposed "risky" driving situations often proposed for graduated licencing system exposure restrictions (such as nighttime curfews, no highway driving, etc.) more adversely affected drivers in their first as compared to subsequent two years of driving, even though some (such as alcohol presence) were significantly correlated with accident fault assessment. The results did, however, suggest that licence restrictions or some other form of sanction applied following initial traffic law contraventions could address a substantial proportion of subsequent crash involvement likelihood. When considering only young novices (aged 16 to 18 years), the results were not greatly different, although for these drivers the carrying of passengers was found to be significantly more associated with first-year crashes than with those in subsequent years.

INTRODUCTION

Recently, in Canada, the concept of graduated licencing for novice drivers has received considerable attention (Mayhew and Simpson 1990). This concept is based upon the reasonable premise that driving proficiency is enhanced through experience but that certain types of early exposure to risk before adequate proficiency has been gained increase the chance of collision involvement. The proposed solution is to restrict exposure by novice drivers to "low-risk" situations through application of such things as nighttime curfews and freeway driving prohibitions. There is a promise to such logic that is very appealing to legislators. But one of the major shortcomings of the underlying justifications is that they are often based on aggregate research concerning young drivers but not specifically novices. Further, this research generally fails to establish the necessary causal linkages between age and individual crash risk.

In British Columbia, about half of all newly licenced drivers are 16 years old (the minimum age for obtaining a licence) and about two-thirds are aged

16-18. Thus, even a program targeting all novices would still primarily affect school-age youth. Those aged 16-18 have been shown to have significantly different accident experience from those aged 19-21 (Rothe 1987), and the young generally appear to display group accident characteristics different from those of older drivers (Rothe 1987; Bergeron 1991). Recent research at the Insurance Corporation of British Columbia (Bath 1992) has established the importance of both quantity and quality of driving exposure in differentiating young drivers with high accident risk from those with low risk. The exposure characteristics of high-risk groups were found to be different in quality and significantly higher in quantity from those of low-risk groups. As a group, the 16-year-olds had significantly less driving exposure than did those aged 18 or older. It is important to note here that lower amounts of travel have also been specifically associated with inexperienced drivers (Maycock, Lockwood, and Lester 1991).

It seems evident (Rothe 1987; Laberge-Nadeau, Maag, and Bourbeau 1992; Maycock et al. 1991; for example) that both age group and experience are correlated with driver crash risk. Further, there is