



## Does gender moderate the relationship between driver aggression and its risk factors?☆

Christine M. Wickens<sup>a,\*</sup>, Robert E. Mann<sup>a,b</sup>, Gina Stoduto<sup>a</sup>, Jennifer E. Butters<sup>a</sup>, Anca Ialomiteanu<sup>a</sup>, Reginald G. Smart<sup>a</sup>

<sup>a</sup> Centre for Addiction and Mental Health, Toronto, Ontario, Canada

<sup>b</sup> Dalla Lana School of Public Health, University of Toronto, Toronto, Ontario, Canada

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### ABSTRACT

**Aim:** The current study assessed gender as a potential moderator of the relationship between self-reported driver aggression and various demographic variables, general and driving-related risk factors.

**Methods:** Using data from a general-population telephone survey conducted from July 2002 through June 2005, two approaches to binary logistic regression were adopted. Based on the full dataset ( $n = 6259$ ), the initial analysis was a hierarchical-entry regression examining self-reported driver aggression in the last 12 months. All demographic variables (i.e., gender, age, income, education, marital status), general risk factors (i.e., psychological distress, binge drinking, cannabis use), and driving-related risk factors (i.e., driving exposure, stressful driving, exposure to busy roads, driving after drinking, driving after cannabis use) were entered in the first block, and all two-way interactions with gender were entered stepwise in the second block. The subsequent analysis involved dividing the sample by gender and conducting logistic regressions with main effects only for males ( $n = 2921$ ) and females ( $n = 3338$ ) separately.

**Results:** Although the prevalence of driver aggression in the current sample was slightly higher among males (38.5%) than females (32.9%), the difference was small, and gender did not enter as a significant predictor of driver aggression in the overall logistic regression. In that analysis, difficulty with social functioning and being older were associated with a reduced risk of driver aggression. Marital status and education were unrelated to aggression, and all other variables were associated with an increased risk of aggression. Gender was found to moderate the relationships between driver aggression and only three variables: income, psychological distress, and driving exposure. Separate analyses on the male and female sub-samples also found differences in the predictive value of income and driving exposure; however, the difference for psychological distress could not be detected using this separate regression approach. The secondary analysis also identified slight differences in the predictive value of four of the risk factors, where the odds ratios for both males and females were in the same direction but only one of the two was statistically significant.

**Conclusions:** The results demonstrate the importance of conducting the gender analysis using both regression approaches. With few exceptions, factors that were predictive of driver aggression were generally the same for both male and female drivers.

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### 1. Introduction

Driver anger and aggression are frequent occurrences in our everyday lives (Neighbors et al., 2002; Underwood et al., 1999). In Ontario, Canada nearly half of survey respondents reported that

they had been shouted at, cursed at, or had rude gestures directed at them in the past year, and about 8% of respondents reported having had another driver threaten to hurt them or to damage their vehicle (Mann et al., 2004; Smart et al., 2003). A smaller but still substantial proportion of drivers reported being a perpetrator of aggression, with a third of drivers reporting that they had shouted at, cursed at, or made rude gestures at another driver, and approximately 2% of drivers admitting to having threatened to hurt another driver or damage another driver's vehicle. Research worldwide has consistently shown that driver aggression is a primary contributor to the risk of motor vehicle collisions (Lawton et al., 1997; Mann et al., 2007; Mesken et al., 2002; Wells-Parker et al., 2002; Xie and Parker, 2002).

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\* Corresponding author at: Centre for Addiction and Mental Health, Public Health and Regulatory Policy Section, 2626 Russell Street, T417, Toronto, ON M5S 2S1, Canada. Tel.: +1 416 535 8501x4711; fax: +1 416 595 6899.

E-mail address: [christine.wickens@camh.net](mailto:christine.wickens@camh.net) (C.M. Wickens).