

Driving styles and crash risk in a representative sample of drivers in Australia

Abstract

Background

The Driving Behaviour Questionnaire (DBQ) is a widely adopted self-report measure of behaviours purported to contribute to motor-vehicle crash risk. However, there are inconsistent findings regarding the most appropriate structure of the DBQ, as well as which DBQ factor is the better predictor of crash risk. The aim of the current research was two-fold: i) to confirm whether a four-factor (Violations, Errors, Aggressive Violations and Lapses) DBQ solution was suitable for drivers in Australia, and ii) to explore the association between DBQ factor scores and self-reported crash-involvement.

Method

A stratified sampling procedure was used to obtain a large sample with a representative distribution of age, sex and driving jurisdiction in Australia. Participants were recruited via an online panel and data were collected across a two phase questionnaire. Data from 2,771 participants (46% males) were used in the final sample. Participants ranged in age from 17 to 75 years and all held a licence to drive a motor vehicle.

Results

Confirmatory factor analysis supported a 28-item, four factor solution for the DBQ in the Australian sample. Further analysis showed that this structure was stable across sex, and also between drivers aged 26 to 64 years of age. Lapses were reported as the most frequent behaviours while Errors were the least frequent. Errors were significantly associated with crash involvement and this relationship was not confounded by sex or age. No other DBQ factor was associated with crash involvement. However, Violations were associated with self-reported speed-related illegal driving behaviour.

Discussion

We recommend that the 28-item four-factor structure is suitable for use on drivers in Australia and is a valid measurement of self-reported aberrant behaviours that are either deliberate Violations, Aggressive Violations, unintentional Errors or Lapses in attention. Although infrequent, Error behaviours pose a significant risk to drivers in Australia and measures to reduce these behaviours are needed.

Implications

Further research is required to investigate the association between DBQ factors with recorded crashes and identify appropriate training strategies to reduce Error behaviours and subsequent crash involvement.