

DUI-Related Offense Correlation to Increased Crash Involvement

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Researchers examined more than 40,000 crashes to determine if multiple citations for driving-under-the-influence (DUI) related offenses are linked with higher crash rates. The analysis indicates that such a relationship exists, but additional analysis is needed to assess how much of the crash rate increase is attributable to DUI-related violations.

For this analysis, a homogenous driving population was identified from North Dakota Department of Transportation (DOT) driving records from Jan. 1, 2008, to Dec. 31, 2010. The 40,320 crashes for this three-year period were compiled into three categories: all crashes, property damage only (PDO) crashes, and injury crashes, which represent both minor and incapacitating injuries, as well as fatal crashes. Drivers were then classified by whether they had zero, one, or two or more DUI-related violations during the same time frame. In addition, gender and age were considered as driver population segments in understanding the DUI-related crash risk. (See Figure 1.)

The fact that there is a larger percentage of male drivers having no DUI-related violations that are involved in crashes than the corresponding female group, 9.3% compared to 8.2%, is not unexpected as males are typically found to be more prone to risky driving and thrill-seeking behavior. However, the percentages are reversed for drivers who have at least one DUI-related violation, 15.0% compared to 16.1%, and is even more pronounced for drivers with two or more violations, 19.0% for males compared to 26.1% for females. Reasons for both of the unusual crash percentages include the possibility that male drivers may be less likely to report crashes in general, or it may be that DUI violations are more closely linked to the actual crashes for female drivers than they are for male drivers.

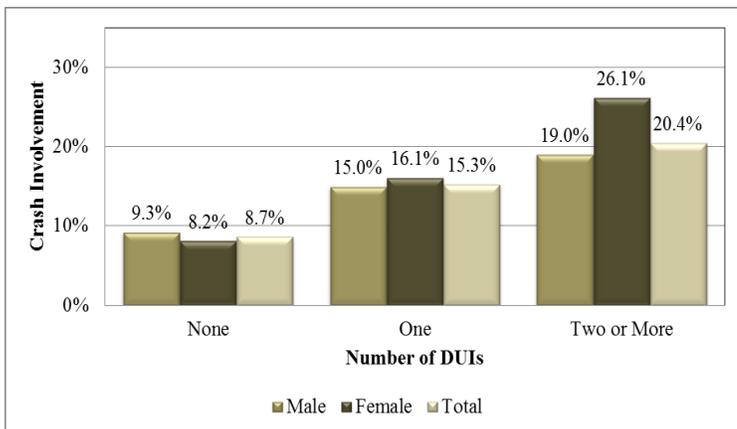


Figure 1: Share of drivers involved in a crash, by number of DUI violations from 2008 to 2010

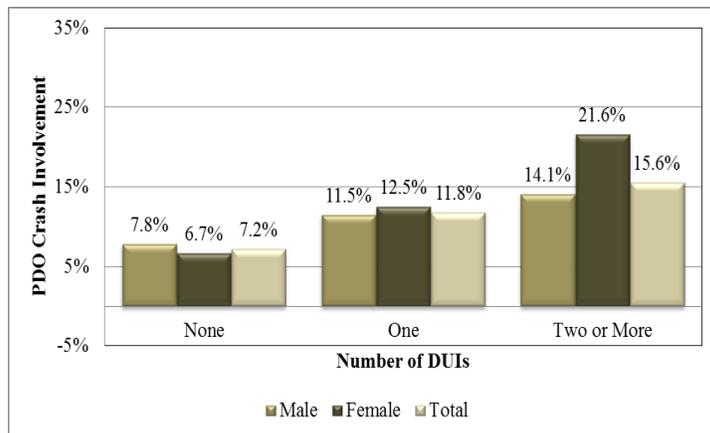


Figure 2: Percent of drivers involved in property damage only crashes by gender and number of DUI violations from 2008 to 2010

When analysis is limited to PDO crashes, Figure 2, similar types of trends are exhibited. Minor PDO crashes, however, are not required to be reported to law enforcement. Therefore, a share of total PDO crashes would not be included in state driver record or crash incident files which are based on law enforcement reports.

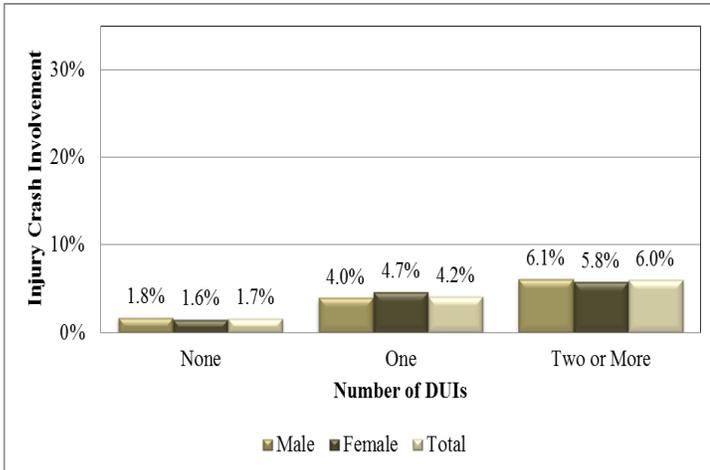


Figure 3: Percent of drivers involved in injury crashes by gender and number of DUI violations from 2008 to 2010

The percentages of drivers involved in injury related crashes, Figure 3, are almost identical for females and males regardless of the number of DUI-related violations, which further suggests that males underreport less serious crashes. Figure 3 also indicates that drivers with more DUI-related violations are involved in more crashes. Fewer than 2% of drivers with no violations are involved in injury related crashes compared to over 4% for drivers with one and roughly 6% for drivers with two or more violations.

Figure 4 displays crash percentages by the age of the drivers as of January 1, 2008. While crash rates do not show any correlation to age when stratified by the number of DUI-related violations, all three age groups show increasing crash trends as more violations are noted.

This analysis indicates there is an increased crash risk associated with DUI-related violations. Although the actual DUI-related violations may be just part of the risky behavior these drivers engage in and may not alone explain the increased crash rates, the significant increase in rates suggests that it is related. Directly linking DUIs to crashes may lend some insight to this correlation, but it is more likely that this increase is part of the overall risk behavior of these drivers.

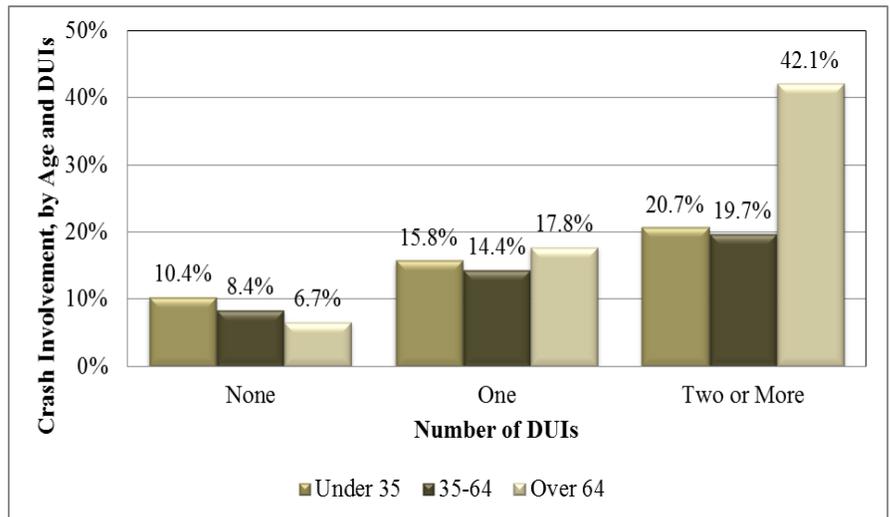


Figure 4: Percent of drivers involved in crashes by age and number of DUI violations from 2008 to 2010

Disclaimer

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