

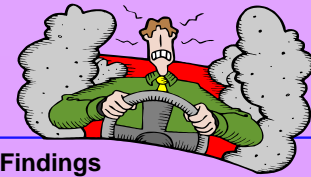


# Gender, Driving Anger, and Alcohol Use among Washington State Drivers

Heather S. Lonczak<sup>1</sup>, Dennis M. Donovan<sup>1</sup>, Brent L. Baxter<sup>1</sup>, David B. Rosengren<sup>1</sup>, and Philip M. Salzberg<sup>2</sup>

<sup>1</sup> Alcohol and Drug Abuse Institute, University of Washington

<sup>2</sup> Washington Traffic Safety Commission



## Background

Driving-related anger and aggressive driving behavior have been most typically reported as male phenomena. However, despite research suggesting important gender differences in terms of both the expression and triggers of driving-related anger, few studies have addressed such distinctions. Additionally, links between alcohol use and driving-related anger have rarely been examined across genders.

## Sample

The sample included 1,217 drivers identified by the Washington State Department of Licensing. In 2001, participants were recruited from a pool identified as either *high risk drivers* (55%) or a matched sample from the *general driving population* of WA state. For this study, the two samples were divided.

## Measures

**Driving Anger Scale, Long Form** (DAS; Deffenbacher et al., 1994). Ratings on the DAS are based on how much anger a driving situation would elicit if it happened to the person (e.g., "someone cuts in front of you on the freeway"). Response choices vary from 1 (not at all) to 5 (very much). The scale contains 6 reliable subscales: 1) *discourtesy*; 2) *traffic obstructions*; 3) *hostile gestures*; 4) *slow driving*; 5) *police presence*; and 6) *illegal driving*. High scores on the DAS are associated with higher general trait anger, impulsiveness, and trait anxiety (Deffenbacher et al., 1994).

**Alcohol Use Disorders Identification Test** (AUDIT; Babor et al., 1989; Saunders et al., 1993). The AUDIT is a 10-item instrument designed to screen for hazardous and harmful drinking patterns. It is scored on a 5-point scale (0 to 4). The present study used the first 3 items of the AUDIT, which include 1) *how often the respondent consumed a drink*; 2) *number of drinks on a typical drinking day*; and 3) *frequency of consuming 6 or more drinks on one occasion*.

## Method

- 1). The relationship between gender and each of the DAS scales was examined using linear regression.
- 2). The relationship between driving anger and drinking was examined using an index based on the sum of the DAS scales. Correlations between this scale and each of the 3 AUDIT items were examined.
- 3). The potential moderating effect of gender on the relationship between drinking and driving anger was examined using linear regression. For this analysis, the 3 AUDIT items were summed into one variable.

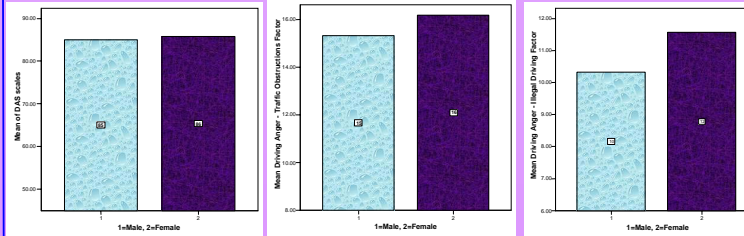
\*In order to address any confounds due to sampling, risk group membership (high risk versus general population) was controlled in all analyses.



"Hey moron, nice driving! Where'd you get your license!!?!"



### Table 1. Relationship between Driving Anger and Gender



Males and females almost exactly the same in on the full DAS

Females significantly higher in their anger at **Traffic Obstructions**  $p < .01$

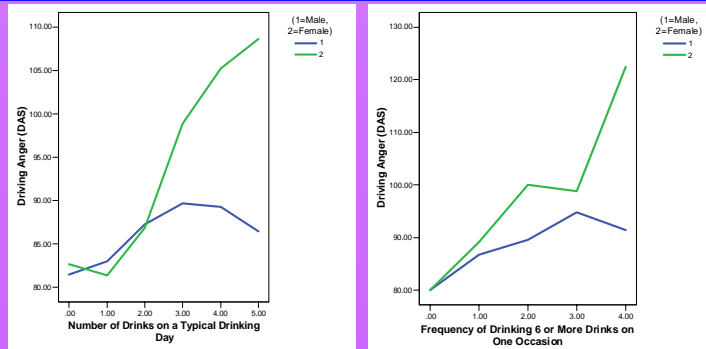
Females significantly higher in their anger at **Illegal Behavior**  $p < .001$

### Table 2. Partial Correlations (Controlling for Driving Risk Group) between Driving Anger and Drinking

	Driving Anger	Drinking Frequency	Drinks on a Typical Drinking Day	Frequency of 6 or More Drinks on One Occasion
<b>How often Consumed a Drink</b>	.16***	---	.15***	.65***
<b>Drinks on a Typical Drinking Day</b>	.15***	.56***	---	.69***
<b>Frequency of 6 or More Drinks on One Occasion</b>	.21***	.65***	.69***	---

\*\*\*  $p < .001$

### Table 3. The Moderating Effect of Gender on Alcohol Use and Driving Anger



The Relationship between Two Types of Drinking Behavior and Driving Anger is More Robust among Females

## Demographic Findings (N = 1,217)

Mean Age = 32  
Males: n = 785 (64.5%)  
Females: n = 432 (35.5%)

**Driving Anger (DAS) by Gender**  
Males: Mean = 49.89  
Females: Mean = 50.20

## Drinking Behavior (AUDIT) by Gender

### Mean Drinking Frequency

Males: 1.546  
Females: 1.374  
 $t(1194) = 2.325$  ( $p = .020$ )

### Mean Number of Drinks on a Typical Drinking Day

Males: 1.558  
Females: 1.325  
 $t(1186) = 2.854$  ( $p = .004$ )

### Mean Frequency of Drinking 6 or more Drinks on 1 Occasion

Males: .935  
Females: .653  
 $t(1194) = 4.644$  ( $p = .000$ )

Note: the AUDIT is scored on a 5-point scale from 0 to 4.

## Results: Gender and Driving Anger

There were no significant gender differences in driving anger on the DAS summed score.

Two DAS scales were significantly predicted by gender: *Traffic Obstructions* ( $B = .942$ ,  $SE = .316$ ,  $p < .01$ ) and *Illegal Driving* ( $B = 1.083$ ,  $SE = .225$ ,  $p < .001$ ). In both cases, female gender predicted increased anger.

## Results: Gender, Alcohol Use, & Driving Anger

Using the overall DAS index, there were significant correlations between driving anger and 3 types of alcohol use: 1) drinking frequency; 2) number of drinks on a typical drinking day; and 3) frequency of consuming 6 or more drinks on one occasion.

Regression analyses indicated that relationships between both number of drinks on a typical drinking day and consumption of 6+ drinks, and overall driving anger were moderated by gender ( $B = .233$ ,  $SE = 1.12$ ,  $p < .05$ ; and  $B = .219$ ,  $SE = 1.53$ ,  $p < .05$ ), with more robust relationships evident for males than females.

## Discussion

These findings suggest that there may be some important differences in terms of what elicits driving anger among males versus females. At least within this driving population, females are more angered by traffic obstructions and the illegal behavior of other drivers. The latter relationship may suggest that greater rule conformity among females may lead to increased indignation and anger toward others who violate driving laws.

Additionally, females who engage in greater amounts of drinking behavior may also experience increased driving anger. Alcohol use may, therefore, pose a greater risk for driving-related anger and its potential consequences among female drivers.

Considering these results, treatment and policy approaches aimed at the reduction of driving-related injuries and fatalities may need to pay special attention to the potential relationship of gender to key triggers of driving-related anger and aggression.

This research was funded by the Washington Traffic Safety Commission