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Illicit drug use, alcohol use and problem drinking among infrequent and frequent road ragers

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Abstract

The purpose of this paper is to investigate the relationships between illicit drug and alcohol use, problem drinking, and road rage. Particular attention is devoted to the association between these behaviors and frequent involvement in road rage activities. The data are taken from the 2002 Centre for Addiction and Mental Health (CAMH) Monitor, a representative telephone survey with a sample of 2421 adults aged 18 and older in Ontario. A cluster analysis was performed and analysis of variance procedures were used to test for group differences. The cluster analysis revealed five distinct groups involved in various types of road rage behavior. Frequent road ragers, accounting for 5.3% of the sample, were involved in the most severe forms of road rage behavior and were most likely (24%) to report problem drinking and past year cannabis (23.8%), cocaine (5.4%), and ecstasy (10%) use. These data indicate that illicit drug use and alcohol problems are significantly greater for those involved in the most serious forms of road rage behavior. Further work is needed to identify the mechanisms by which illicit drug use and problem drinking are linked to road rage.

Keywords: Road rage; Automobile driving; Road safety; Illicit drug use; Problem drinking

1. Introduction

Substantial research demonstrates relationships among alcohol, illicit drugs, violence, and injury (Grisso et al., 1990; Macdonald et al., 2003; Mann et al., 1993, 2001; Moss and Tarter, 1993; Pernanen, 1991; Potter and Jenson, 2003; Reiss and Roth, 1993; Smart et al., 1997; Wells et al., 2000). While the causal nature of these relationships remain unclear, heavy users of these substances, and those under the influence, are more likely to receive injuries from various causes (e.g., Macdonald et al., 2003) and also to be involved in violence as either victims or perpetrators (e.g., Wells et al., 2000).

Road rage is a form of violence that is considered by some to be a relatively new phenomenon. Road rage has been defined as "a situation where a driver or passenger attempts to kill, injure, or intimidate a pedestrian or another driver or passenger or to damage their vehicle in a traffic accident" (Smart and Mann, 2002a,b). Experiencing road rage, at least in its milder forms, is a common occurrence for most motorists or passengers. Smart et al. (2003a) found that about 50% of Ontario adults had been victims of shouts and verbal threats in the previous year, while nearly 1 in 10 reported being threatened with, or actually experiencing, injury or damage. Fewer people reported perpetration, with 30% reporting shouting at or threatening another driver, and 3% reporting attempts to injure another driver or damage their vehicle. Road rage perpetration and victimization is most commonly seen in young males and those living in major urban areas, and victimization and perpetration often overlap (Asbridge et al., 2003).

Recent evidence suggests a relationship between road rage and alcohol. Rathbone and Huckabee (1998), in a survey of police, observed that 25.5% of road rage cases involved alcohol consumption. Wells-Parker et al. (2002) found an association between angry/threatening driving and driving over

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the legal BAC limit in the previous year. Mann et al. (2004) examined the alcohol consumption correlates of road rage victimization and perpetration. They found both bivariate and multivariate relationships between alcohol measures and road rage behaviors. The problems subscale of the AUDIT (i.e. alcohol problems) was found to be most consistently associated with measures of road rage perpetration and victimization, including the most serious forms of road rage behavior.

The dangers and risks associated with illicit drug use have been the subject of much research (Dawkins, 1997; Erickson, 1980; Erickson et al., 2000; Zhang et al., 1999). Cannabis and cocaine have been identified in the literature as two more commonly used illicit drugs (Adlaf et al., 1994) and their relationship to risk of injury has been well documented (see Macdonald et al., 2003 for a review). Smart et al. (1997) found that stimulant, cocaine, and cannabis use were all associated with more aggressive behaviors among Ontario students. While no studies have assessed the connection between illicit drug use and road rage perpetration and victimization, an association of these drugs with aggression or violent behavior may suggest that a relationship between road rage and use of these drugs would be predicted.

Currently, little is known about how ecstasy use might affect driving behavior. However, given the mood altering properties and psychomotor impairment associated with stimulant drugs in general, it is reasonable to suggest that ecstasy use may cause aggressive driving among some users (Logan and Couper, 2001). Further, some research finds evidence of an association between stimulant drug use and aggression (Moss and Tarter, 1993; Potter and Jenson, 2003; Smart et al., 1997). We therefore hypothesize that road ragers, especially frequent road ragers, would be more often users of illicit drugs.

Although research has examined illicit drug use and injury associated with motor vehicle collisions, there remains a substantial gap in the literature regarding the relationship between illicit drug use and road rage behavior. This paper addresses the gap by exploring the associations among illicit drug use, alcohol use and road rage behaviors that vary in severity and frequency. We are particularly concerned here with illicit drug and alcohol use among the most frequent road rage perpetrators.

2. Methods

The data were taken from the 2002 cycle of the Centre for Addiction and Mental Health (CAMH) Monitor, a repeated cross-sectional telephone survey of Ontario Adults conducted by CAMH and administered by the Institute for Social Research at York University, Toronto. Each cycle of the CAMH Monitor was regionally stratified and consists of 12 independent month samples (January to December). Respondents were selected via random-digit-dialing methods with the help of computer-assisted telephone interviewing. Monthly sample sizes were between 212 and 240 respondents, with response rates that ranged from 55 to 61%, rates similar to recent Canadian household surveys. Overall, these data were representative of Ontario adults aged 18 years and older (Goldberg, 1978). Data from January 2002 to December 2002 were employed, with a total sample of 2421.

The road rage indicators were taken from a taxonomy of road rage behavior developed by Smart and Mann (2002a). Two sets of four indicators were used in these analyses. The first set was directed at experiences of road rage victimization and the second focused on road rage offending. These indicators reflect involvement in progressively more severe forms of road rage behavior and ranged from minor expressions of anger directed at other drivers (e.g. waving hands, gesturing, shouting), to physical intimidation (e.g. tailgating), verbal threats, physical injury, damage to other vehicles, and death. A similar set of road rage items have been developed and successfully tested in empirical studies of road rage in the US (James and Nahl, 2002; Wells-Parker et al., 2002).

Three illegal drug use items, measuring past 12-month cannabis, cocaine, and ecstasy use, were analysed. These items were coded as dichotomous measures (1, 0) reflecting any or no use in the past 12 months. Individuals who reported no lifetime use of these substances were included in the "no past 12-month use" category. The alcohol items included in the analyses consisted of a dichotomous measure of alcohol consumption in past 12 months, and a measure of problem drinking assessed by the Alcohol Use Disorders Identification Test (AUDIT) (Saunders et al., 1993). A cut-off score of eight or more on the AUDIT indicated problem drinking.

Six demographic indicators (sex, age, employment status, marital status, educational attainment, and geographic locale) were adopted to control for variations in road rage and illicit drug use.

A cluster analysis procedure was used to develop a typology of road rage behavior and determined whether individuals form distinct groups of relatively homogenous entities (Everitt et al., 2001). The clusters formed should be highly internally homogeneous (members are similar to each other) and highly externally heterogeneous (members are not like members in other clusters). The road rage indicators are included in the cluster analysis to ascertain whether individuals form discrete groups based on their patterns of road rage involvement as either a victim or offender. In order to uncover clusters of road rage behavior, a hierarchical agglomerative clustering analysis was first used on a sub-sample of the data to investigate the "natural" number of clusters. Following this, a *k*-mean clustering procedure was used to classify the full sample of cases. Using the cluster centroids from the hierarchical clustering procedure, a 5-cluster solution was specified as part of a *k*-means cluster analysis of the full sample. The five identified clusters reflect the range in severity of road rage behaviors.

After the road rage typology was created, differences in illicit drug use, alcohol consumption and problems, and