

Drinking Drivers: A Cluster of Risk-Taking Behaviors

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Abstract

Three of every ten Americans will be involved in an alcohol-related motor vehicle crash (MVC) at some time in their lives. Driving under the influence of alcohol may or may not be illegal depending on the driver's blood alcohol concentration (BAC). State laws also differ across the U.S.A. in terms of legal intoxication, the legality of drinking and driving among teenagers, and mandatory seat belt use among drivers and passengers. However, most experts consider drinking and driving and lack of safety restraint compliance as risk-taking behaviors. The purpose of this study was to determine the extent of risk-taking behaviors among young-adult drinking drivers who were seriously injured in MVC. The data for this study were collected as part of a randomized clinical trial testing the effectiveness of brief interventions to decrease drinking following alcohol-related vehicular injury. 108 young-adult drinking drivers (85 males and 23 females) were enrolled in the study following a serious vehicular injury. Mean age was 29.41 years (range 18-45, SD 8.05), mean BAC was 166.80 mg/dL (range 12-315, SD 64.23), and mean Injury Severity Score was 10.29 (range 1-36; SD 7.53). In addition to drinking and driving, one risk-taking behavior was defined as lack of safety restraint use as identified by the police crash report. Self-reported tobacco and drug use as well as questions about precocious (prior to the age of 15) sexual practices and violent behavior were also considered indicators of risk-taking. Within the protocol for the randomized clinical trial, subjects were interviewed by specially trained nurse clinicians during hospitalization for alcohol-related MVC. Subjects who had a positive screen for alcohol dependence were excluded from the study and referred for more intensive evaluation. Subjects were interviewed in private with assurances of confidentiality. Crash records were obtained from the municipality where the crash took place. 61% of seriously injured drinking drivers did not use safety restraints. 84% used at least one tobacco product per day. Prior to the age of 15, more than a fourth of seriously injured drinking drivers often skipped school, got suspended or expelled from school, shoplifted or stole, or had sexual intercourse with more than one person. In addition, 58% acknowledged marijuana use in the year preceding the crash. Non-alcohol dependent, young-adult drinking drivers demonstrated a pattern of risky behaviors that exceeded national norms. Legislation and interventions targeted solely to reduce driving while under the influence of alcohol may be ineffective in managing a more

pervasive pattern of risk-taking. A comprehensive health policy program to explore the impact of a broad spectrum of risky behaviors such as alcohol and drug use, seat belt compliance, and safe sexual practices are needed. Implementation of interventions may then limit the risk of future injury, disability, and death in the at-risk population of drinking drivers. In addition, when drinking drivers change risky driving behaviors, the population at large will be safer on the road.

Introduction

Motor vehicle crashes (MVCs) cause over 2 million disabling injuries and 40,000 deaths in the U.S.A. each year (National Safety Council, 1999). Approximately 40% of all traffic fatalities are alcohol-related (blood alcohol concentration ≥ 0.01 g/dL [10 mg/dL]; CDC, 1999); therefore drinking and driving is considered by experts to be an important risk-taking behavior that places the health of Americans at risk. For young adults, driving itself may be considered a form of risk-taking. The National Institute of Alcohol Abuse and Alcoholism (1996) notes: "Young people's lack of driving experience renders them less likely than more experienced drivers to cope successfully with hazardous situations. This, combined with a penchant for risk-taking driving behavior such as speeding- along with a tendency both to underestimate the dangerous consequences of such behaviors and to overestimate their driving skill- contributes to the high crash rate among young drivers."

Risk-taking behaviors are distinguished from developmentally appropriate explorative behavior by their potentially serious, long-term, and negative consequences. Risky behaviors jeopardize health and well-being and may be defined by their adolescent age of onset. Behaviors considered to be risk-taking in teenagers such as sexual activity, certain eating behaviors, driving a car, drinking alcohol, and leaving home may be considered normal developmental behaviors in a young adult of 25 years (Irwin, Igra, Eyre, & Millstein, 1997). Dryfoos (1990) classified risk-taking behaviors in four categories: alcohol and drug consumption/abuse, unsafe sexual behavior (the potential for sexually transmitted disease and/or pregnancy), school-related problems (under-achievement, school failure, dropping out of school), and antisocial and delinquent behavior involving crime and violence. Certainly adolescents and individuals in their early 20's are over-represented in statistics for risk-taking behaviors. Although licensed drivers between the ages of 16 and 24 comprise 13.8% of American drivers, they are responsible for 26.9% of all traffic crashes and 24.1% of all traffic fatalities (National Safety Council, 1999).

Risk-taking behaviors do not happen in isolation. Fergusson and Lynskey (1996) found that that adolescents who reported misusing alcohol had odds of early onset sexual activity, multiple partners, and unprotected intercourse that were 6 to 23 times those of young people who did not misuse alcohol. Ketterlinus, Lamb, Nitz, and Elster (1992) found that sexually active youth, in comparison to sexually inexperienced youth, were more likely to be involved in other problems such as theft, personal violence, drug abuse, and school problems. Therefore health-care sponsored programs that focus on reduce drinking after injury, and in particular after alcohol-related vehicular crashes (Dunn, Donovan, & Gentilello, 1997; Dyehouse & Sommers, 1995) probably fall short of reducing risk for further injury if they do not address a cluster of risk-taking behaviors. The purpose of this study was to determine the extent of risk-taking behaviors among young-adult drinking drivers who were seriously injured in MVCs. For the purpose of the study, risk-taking behaviors were defined as:

- Drinking and driving (positive blood alcohol concentration [≥ 0.01 g/dL] resulting in an alcohol related crash in which the subject was the driver)

- Lack of seat belt use as identified by the police crash report
- Self-reported tobacco and drug use
- Self-reported questions about precocious (prior to the age of 15) sexual practices and violent behavior

Materials and Methods

The data for this study were collected as part of a randomized clinical trial testing the effectiveness of brief interventions to decrease drinking following alcohol-related vehicular injury. Young adults, ages 18 to 45 years and injured in MVC, were the target population for the investigation. Other inclusion criteria included: hospital admission within 24 hours of the crash; BAC \geq 10 mg/dL; English-speaking; intact cognition as judged by nurse clinicians upon physical assessment and chart review; and potential for discharge from hospital to home within 4 weeks after entry into the study (so that the subject is able to resume normal patterns of drinking). Subjects were excluded from the clinical trial if they had a positive screen for alcohol dependence based on the Alcohol Use Disorders Identification Test (AUDIT). A positive screen was defined as a score of 2 or higher on any or all of the AUDIT dependency items (numbers 4, 5, or 6). Other indicators of alcohol dependence were also used to exclude alcohol-dependent subjects.

Vehicular trauma patients admitted to either of two Level I Trauma Centers in southwestern Ohio were eligible for study enrollment. Nurse clinicians identified eligible subjects through a daily review of the Emergency Department (ED) or Trauma Service admitting logs. To calculate when subjects were alcohol-free, clinicians divided the admission BAC by an alcohol metabolism rate of 20 mg/dL/hour. This calculation determined the approximate number of hours needed for the subjects to clear the alcohol prior to study enrollment and the interview.

The nurse clinician then used a health interview schedule with embedded questions on risk-taking and pre-injury alcohol consumption. One aspect of the health interview survey contained questions derived from the criteria for childhood conduct disorder from the Diagnostic and Statistical Manual of Mental Disorders, Third Edition Revised. Childhood conduct disorder refers to a disorder marked by a variety of behavior problems at home and school that begin before the age of 15. Persons with the disorder tend to be risk-takers with aggressive and impulsive behavior and often lack normal capacities for cooperation with authority figures (Barry, Fleming, Manwell, & Copeland, 1997). To determine safety restraint use, crash records were obtained from local police departments on all subjects.

Results

From October, 1994 through December 1998, 108 young-adult drinking drivers (85 males and 23 females) were enrolled in the study following a serious vehicular injury. Mean age was 29.41 years (range 18-45, SD 8.05), mean BAC was 166.80 mg/dL (range 12-315, SD 64.23), and mean Injury Severity Score was 10.29 (range 1-36; SD 7.53).

As indicated in Table 1, 60.6% of seriously injured drinking drivers did not use safety restraints for one of several reasons.

Table 1: Use of safety restraints by drinking drivers as reported by the police on crash reports (N=108)

Category	%
Not used	50.6%
No safety restraint available	10.1%
Lap/shoulder belt used	16.5%
Use not reported	22.8%

Prior to the age of 15, the more than a fourth of seriously injured drinking drivers often skipped school, got suspended or expelled from school, shoplifted or stole, or had sexual intercourse with more than one person (See Table 2). 84% used at least one tobacco product per day. In addition, 58% acknowledged marijuana use in the year preceding the crash.

Table 2: Number of drinking young-adult drivers who exhibited behaviors associated with conduct disorder (N=108)

Behavior prior to age 15	%
Skipped school more than 10 times	34.3
Got suspended or expelled from school	41.7
Got arrested	20.4
Ran away from home more than one time	13.9
Vandalized or destroyed property	18.5
Started fires	8.3
Shoplifted or stole	31.5
Had sexual intercourse with more than one person	26.2
Started physical fights	41.7

Discussion

Considerable effort has been focused on developing and testing interventions to decrease drinking in individuals injured in alcohol-related MVCs. The results of this study and others demonstrate, however, that drinking does not occur in isolation, and that drinking drivers evidence multiple risk-taking behaviors.

These risk-taking behaviors exceeded national norms in the United States. While safety restraint compliance in the U.S.A. is lower than norms for most developed countries, 68% of Americans wear safety restraints when in vehicles (National Safety Council, 1999). National compliance in the U.S.A. is more than three times the rate of compliance (16.5%) of the drinking drivers in this study. Similar trends existed with smoking and marijuana use. Of the drinking and driving subjects, 84% used at least one tobacco product and 58% acknowledged marijuana use in the past year. These rates are quite high when compared to the national rates of usage of 47% (tobacco) and 24% (marijuana) of young adults ages 18 to 25 in a national sample in the U.S.A. (SAMHSA, 1998).

Non-alcohol dependent, young-adult drinking drivers demonstrated a pattern of risky behaviors that exceeded national norms. Legislation and interventions targeted solely to reduce driving while under the influence of alcohol may be ineffective in managing a more pervasive pattern of risk-taking. A comprehensive health policy program to explore the impact of a broad spectrum of risky behaviors such as alcohol and drug use, safety restraint compliance, and safe sexual practices are needed. Implementation of interventions may then limit the risk of future injury, disability, and death in the at-risk population of drinking drivers. In addition, when drinking drivers change risky driving behaviors, the population at large will be safer on the road.

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