

A Social Norms Approach to Reduce Drinking-Driving Among University Students

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Background and Objectives

Excessive alcohol use by university students is a persistent concern among public health and university officials. Many campuses have increased efforts to inform students of the risks of excessive drinking. Despite these efforts, heavy drinking among university students has remained stable. Two multi-year national surveys report that throughout the 1990s, about two of five university students in the United States had consumed five or more drinks (four or more for females) on a single occasion at least once in the 2 weeks before the survey – a behavior usually labeled “heavy episodic” or “binge” drinking.¹⁻²

Excessive consumption of alcohol by university students exposes them to a wide range of risks as a result of impaired cognitive functioning. Excessive drinking is associated with physical and sexual assault, unsafe and unplanned sexual activity, sexual harassment, impaired sleep, and interpersonal problems.³⁻⁵ However, the greatest damage from excessive drinking among university students may result from driving after drinking. One study estimated that over 2 million university students drive after drinking alcohol each year, and that approximately 1,100 students died in 1998 from alcohol-related motor vehicle crashes.⁶

In recent years, a new approach has been developed to reduce alcohol use by university students. “Social norms” programs are designed to reduce myths about drinking among students by presenting accurate information about student alcohol use. During the 1980s, researchers began to recognize that there are substantial misperceptions about the amount of drinking that occurs at universities.⁷ By providing accurate information about the drinking culture of a campus – rather than “preaching” to students about the dangers of alcohol use – social norms programs seek to reduce the pressure that light- or non-drinkers feel to drink, and help heavier drinkers realize that their behavior is atypical. Early studies have suggested that social norms programs show considerable promise for reducing alcohol use among university students.⁸⁻⁹

The present paper focuses on the long-term effects of a social norms program to reduce drinking-driving among students at the University of North Carolina – Chapel Hill (UNC-CH). Although the primary focus of the program was to reduce the overall alcohol consumption by students, we hypothesized that less drinking by students would lead to reductions in drinking-driving.

Methodology

To obtain a baseline of drinking among UNC-CH students, a field survey was conducted in the fall of 1997. The sampling procedure was designed to obtain a representative sample of students as they returned to their residences in the late evening (10 p.m. to 3 a.m.) on all nights of the week. Research teams followed predetermined routes that passed by every residence hall and fraternity/sorority house on or near campus. In addition, several apartment complexes known to house large concentrations of university students were also visited by research teams. As individuals approached residences, a member of the research team asked them to participate in a brief interview. During these interviews, students were asked about their activities during the evening and whether they had been drinking (where, when, what, how much). A unique feature of this survey was the collection of breath samples, allowing for a direct measurement of blood alcohol concentration (BAC). Breath samples were obtained using a portable breath test device, the Lion S-D2 Intoxylizer. An extensive description of the data collection procedure is available in Foss, Marchetti and Holladay (2000).¹⁰

An important study finding from this baseline survey was that two-thirds of students returned home with a zero BAC on traditional “party” nights. Based on this, a comprehensive social norms campaign was developed and implemented around the following message:

“Whether it’s Thursday, Friday, or Saturday night, 2 out of 3 UNC students return home with a .00 BAC.”

The “2 out of 3” campaign began in June 1999 and was sustained through December 2002. The campaign included presentations at first-year student orientation sessions, dissemination of print materials, and coordination with the university’s general alcohol program. Also, a web site was developed to provide additional information about student drinking and explain the source of the data (i.e., the BAC survey) to help provide credibility to the information. To determine the effects of the “2 out of 3” program, additional field survey data were obtained from students during the fall semesters of 1999 and 2002. The procedures during these follow-up surveys were identical to those employed during the 1997 baseline survey. Since the program was initiated in the summer of 1999, the fall 1999 data reflect possible early effects of the program, while the 2002 data represent enduring changes that may have occurred as the result of a sustained program.

Results and Analysis

A total of 8,351 persons across the three waves of the survey were sampled and asked to participate in the study; 6,910 (83%) of these individuals provided a breath sample. Although students returning home in the late evening used a variety of modes of transportation, the present study focused on the 975 students who drove themselves home.

Table 1 presents respondent characteristics for each wave of the survey. Only slight variations in the characteristics of the sample were observed between the three survey years. The small percentage of Freshmen reflects the fact that first year students at UNC-CH are not allowed to have on-campus parking privileges.

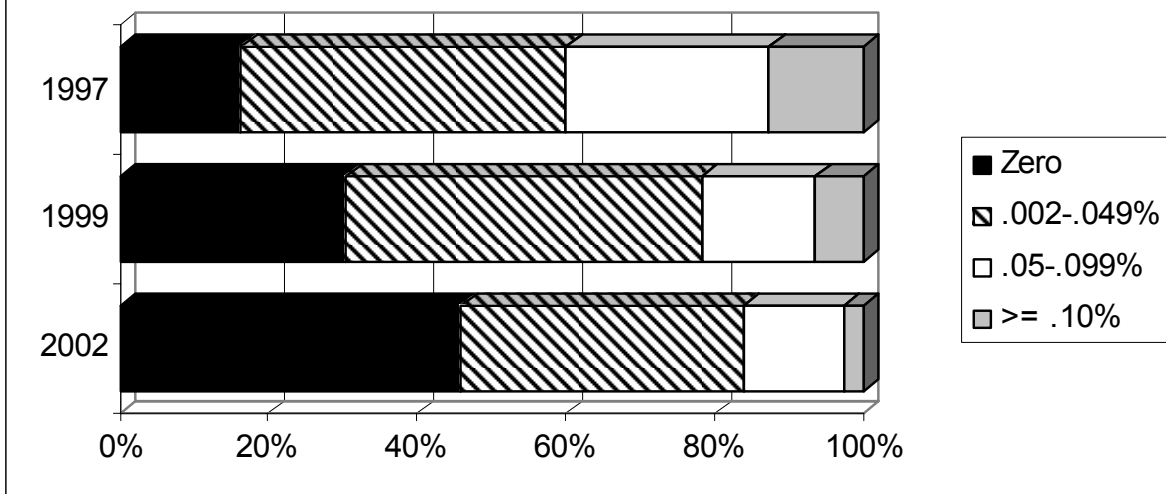
Table 1. Respondent characteristics, by survey year

	1997	1999	2002
N	349	351	275
Mean age (in years)	20.6	20.4	20.6
Class Year			
Freshman	9.2%	8.3%	12.8%
Sophomore	22.1%	26.7%	24.5%
Junior	29.8%	31.3%	20.4%
Senior	27.3%	24.7%	29.9%
Graduate	11.7%	8.9%	12.4%
Sex			
Male	51.7%	57.5%	56.7%
Female	48.3%	42.5%	43.3%
Race			
White	82.8%	82.3%	77.6%
Black	12.0%	12.2%	11.2%
Other	5.2%	5.5%	11.2%
Fraternity/Sorority Status			
Member	22.2%	22.6%	27.7%
Non-member	77.8%	77.4%	72.3%

As part of the interviews, students were asked about their awareness and understanding of the basic message of the “2 out of 3” campaign. Awareness for the campaign was generally high among UNC-CH students. In 1999, 55% of students indicated that they had heard of the campaign. This increased to 79% in the 2002 survey ($\chi^2=34.46$, $p<.01$). Furthermore, a majority of students who had heard of the campaign were correctly able to tell the interviewer what the campaign was about (69% in 1999; 80% in 2002).

During the baseline assessment in 1997, 15.3% of drivers registered a positive BAC. This showed a marginally significant decrease to 10.8% in 2002 ($\chi^2=2.55$, $p=.11$). Figure 1 displays the recorded BAC among those drivers who had been drinking on the night of the interview. Drivers registering a BAC over .05% decreased from 40% in 1997 to 16% in 2002 ($\chi^2=5.91$, $p<.05$). Meanwhile, the percentage of drinking drivers registering a zero BAC increased from 16% to 46% ($\chi^2=9.55$, $p<.01$).

Figure 1. BAC Distributions Among Drivers Who Had Been Drinking, by Survey Year



The mean BAC of drinking-drivers also decreased over the course of the “2 out of 3” campaign. In 1997, the mean BAC of drivers who had been drinking was .043%; this figure decreased to .022% in 2002 ($t=2.62$, $p<.05$).

Finally, student self-reports of alcohol consumption on the night of the interview corresponded closely to the findings from the BAC measurements. The mean number of drinks consumed by drinking-drivers decreased from 3.84 in 1997, to 2.24 in 2002 ($t=2.73$, $p<.05$). In addition, the percentage of drinking-drivers who could be classified as “binge” drinkers on the night of the interview (5 or more drinks for men, 4 or more for women) decreased from 34.5% to 12.8% ($\chi^2=5.67$, $p<.05$).

Conclusions and Possible Next Steps

The findings provide support for the effectiveness of the “2 out of 3” campaign in reducing drinking-driving among UNC-CH students. There was a marginally significant decrease in the percentage of drivers registering a positive BAC. Furthermore, self-reported number of drinks consumed and measured BACs among drinking-drivers decreased from 1997 to 2002. Finally, fewer drinking-drivers in 2002 could be classified as “binge” drinkers using the standard definition of that measure.

Drinking and driving was not a primary focus of the “2 out of 3” campaign. Rather, the program was designed to reduce the overall alcohol consumption of UNC-CH students. Its success in reducing drinking-driving can most likely be attributed to the comprehensive, long-term nature of the campaign. The “2 out of 3” program employed a multi-faceted approach to reach the entire student body with the message that excessive alcohol use is not the norm on the UNC-CH campus, even on traditional “party” nights. The campaign was sustained for several years and was integrated with other programs and elements of campus life. The responses of students interviewed during 1999, and especially 2002, suggest a high recognition rate for the campaign.

One weakness of the present study was the lack of a control group, making it impossible to conclude with certainty that changes in drinking-driving among UNC-CH students were

directly the result of the “2 out of 3” campaign. However, some of the more obvious alternative explanations can be ruled out. First, the demographic composition of the survey samples remained relatively constant across the three waves of the survey. Thus, the measured changes in drinking cannot be attributed to changes in the composition of the survey samples. Second, both national survey data and data from the southern region of the U.S. indicate little change in student drinking from 1997 to 2001. Consequently, it is unlikely that the declines at UNC-CH simply represent a general decrease in student drinking or drinking-driving independent of the program. Finally, there were no other major university initiatives at UNC-CH focusing on student drinking that might have produced or contributed to changes between 1997 and 2002.

A social norms approach represents a positive alternative to prevention programs that rely on “scare tactics” and which portray alcohol use by university students as pervasive. This approach could be adopted to reduce drinking-driving in a variety of settings, such as military bases and high schools. Creative application of social norms theory also shows promise. For example, “feedback signs” have been successfully employed to increase seat-belt use in some communities.¹¹⁻¹² Posted along major roads and updated regularly, these signs present accurate information about seat belt use to drivers in the community.

References

1. O'Malley PM & Johnston LD (2002). Epidemiology of alcohol and other drug use among American college students. *Journal of Studies on Alcohol, Supplement*; 14:23-39.
2. Wechsler H, Lee JE, Kuo M, Seibring M, Nelson TF & Lee H (2002). Trends in college binge drinking during a period of increased prevention efforts: Findings from 4 Harvard School of Public Health College Alcohol Study surveys: 1993-2001. *Journal of American College Health*; 50(5):203-217.
3. Presley CA, Meilman PW & Lyerla R (1993). *Alcohol and drugs on American college campuses: Use, consequences, and perceptions of the campus environment*. Carbondale, IL: Core Institute.
4. Roizen J (1997). Epidemiological issues in alcohol-violence. In Recent developments in alcoholism, vol. 13: *Alcoholism and violence*. Marc Galanter (Ed.). New York: Plenum Press, pp.7-40.
5. Harrington NT & Leitenberg H (1994). Relationship between alcohol consumption and victim behaviors immediately preceding sexual aggression by an acquaintance. *Violence and Victims*; 9(4):315-324.
6. Hingson R, Heeren T, Zakocs R, Winter M & Wechsler H (2003). Age of first intoxication, heavy drinking, driving after drinking and risk of unintentional injury among U.S. college students. *Journal of Studies on Alcohol*; 64:23-31.
7. Perkins HW & Berkowitz AD (1986). Perceiving the community norms of alcohol use among students: Some research implications for campus alcohol education programming. *International Journal of Addiction*; 21:961-976.
8. Haines M (1996). *Social norms approaches to preventing binge drinking at colleges and universities*. (Pub. No. ED/OPE/96-18). Newton, MA: U.S. Department of Education.
9. Johannessen K, Collins C, Mills-Novoa B & Glider P (1999). *A practical guide to alcohol abuse prevention: A campus case study in implementing social norms and environmental management approaches*. Tuscon, AZ: University of Arizona Campus Health Service.

10. Foss RD, Marchetti LJ & Holladay KA (2000). *Development and evaluation of a comprehensive program to reduce drinking and impaired driving among college students* (Final report). Washington: National Highway Traffic Safety Administration; DOT HS 809 396.
<http://www.nhtsa.dot.gov/people/injury/research/ReduceCollege/> (accessed on April 2, 2004)
11. Malenfant L, Wells JK, Van Houten R & Williams AF (1996). The use of feedback signs to increase observed daytime seat belt use in two cities in North Carolina. *Accident Analysis and Prevention*; 28(6):771-777.
12. Linkenbach J & Perkins WH (2003). MOST of Us Wear Seatbelts: The process and outcomes of a 3 year statewide adult seatbelt campaign in Montana. Presentation at The National Social Norms Conference; July 17, 2003, Boston, MA.