

Impaired Motorcycle Riding:
What Motorcyclists Think About Alcohol and Motorcycling

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ABSTRACT

This paper reports on focus groups conducted in 1994 among motorcycle riders who admitted to riding after drinking alcoholic beverages. At that time, available data indicated that alcohol-related fatalities had declined for passenger car drivers, but similar reductions had not occurred for motorcycle operators. The purpose for conducting the focus groups was to obtain insight on why alcohol-related fatalities had not declined among motorcycle operators, so that the information could be used to design appropriate approaches for reducing this problem.

It is important to keep in mind that the results reported in this paper are based on focus groups of individuals who admitted to riding after drinking. Focus groups are a qualitative research technique used to gain insight and understanding into the nature of a problem, and should not be used for statistical purposes or generalized to larger populations; focus group data are not survey data. Hence, the results reported in this paper cannot be generalized to all motorcyclists. Motorcyclists who did not drink and ride were not included in the research because the focus was to identify the reasons motorcyclists ride after drinking, as well as approaches that might change the behavior of riders who rode after drinking.

Qualitative analyses provided information on the behavioral and attitudinal characteristics of motorcyclists who drink and ride, as well as suggestions for program interventions. The results were used to develop public information materials focused on personal responsibility and the effects of motorcyclists actions on others, e.g., family. The results also suggest a need for more comprehensive prevention, education, and enforcement strategies.

BACKGROUND

There are approximately four million registered motorcycles in the United States today and according to the Motorcycle Industry Council, there are about 6.6 million motorcycles and scooters in use today. More and more people are purchasing and riding motorcycles as evidenced by the continued growth in sales of new motorcycles. According to the Motorcycle Industry Council, motorcycle sales increased by about 28 percent from September 1999, to September 2000. Also, more and more motorcyclists are becoming trained; more than 1.8 million motorcyclists have completed rider training programs since 1973.

Unfortunately, statistics reveal that drinking and riding remains a problem for many motorcyclists. According to the *Fatality Analysis Reporting System*, motorcycle operators involved in fatal crashes consistently have higher intoxication rates, with blood alcohol concentrations (BAC) of .10

If I don't have a drink before I get on my bike, I'm uncomfortable, because it is a lot of power underneath me and you definitely have to know what you're doing to ride this particular motorcycle. So I need a drink to help me go out there and ride. (Miami focus group participant.)

grams per deciliter (g/dl) or greater, than any other type of motor vehicle driver (Traffic Safety Facts: Motorcycles 1999). Table 1 compares the percentage of motorcycle operators with a BAC \geq .10 g/dl involved in fatal crashes with the percentage of passenger car drivers with a BAC \geq .10 g/dl involved in fatal crashes.

Table 1

PERCENT OF DRIVERS INVOLVED IN FATAL CRASHES WITH BAC \geq .10, 1982-1999

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Motorcycle	41	41	40	39	41	38	36	40	39	39	36	33	29	29	30	28	30	28
Passenger Car	31	30	28	26	26	25	25	24	24	23	22	21	19	19	19	18	18	17

Source: Fatality Analysis Reporting System data

Table 1 shows that for each year from 1982 to 1999, the percent of motorcycle operators with a BAC \geq .10 g/dl exceeds the percent of passenger car drivers with a BAC \geq .10 g/dl., averaging a 12 percentage point difference over the 18 year period. From 1982 to 1999, the percent of motorcycle operators with a BAC \geq .10 g/dl involved in fatal crashes fell 13 percentage points from 41 percent to 28 percent (a 32 percent decline). During the same time period, the percent of passenger car drivers with such BACs fell 14 percentage points (a 45 percent decline). A closer look at the data shows that the decline is not parallel. For example, from 1982 to 1991, the percent of motorcycle operators with a BAC \geq .10 g/dl involved in fatal crashes fell 2 percentage points (from 41 percent in 1982 to 39 percent in 1991), while the percent of passenger car drivers with such BACs fell 8 percentage points (from 31 percent in 1982 to 23 percent in 1991).

From 1991 to 1999, the decline in the percentage of motorcycle operators with a BAC \geq .10 g/dl involved in fatal crashes outpaced that of passenger car drivers (by about 8 percent). Over this time period, the percent of motorcycle operators involved in fatal crashes fell 11 percentage points (from 39 percent to 28 percent) whereas the percent of passenger car drivers fell 6 percentage points (from 23 percent in 1991 to 17 percent in 1999).

The data concerning the percentage of motorcycle operators and passenger car drivers fatally injured in alcohol-related crashes show similar trends. Table 2 presents data showing the percent of fatally injured motorcycle operators and passenger car drivers with a BAC \geq .10 g/dl.

Table 2

PERCENT OF FATALLY INJURED DRIVERS WITH BAC \geq .10, 1982-1999

	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Motorcycle	42	42	41	41	42	39	37	41	40	39	37	34	30	30	31	29	32	28
Passenger Car	43	41	39	37	37	36	36	34	35	34	31	30	28	28	27	26	25	25

Source: Fatality Analysis Reporting System data

From 1982 to 1991, the percent of intoxicated motorcyclists with a BAC \geq .10 fell 3 percentage points (from 42 percent to 39 percent), while the percent of passenger car drivers with similar BAC levels fell 9 percentage points (from 43 percent to 34 percent). From 1991 to 1999, there was a slightly greater decline in the percent of fatally injured motorcyclists who were intoxicated compared to the percent of passenger car drivers who were intoxicated (11 percentage points vs. 9 percentage points, respectively).

The differences between alcohol involvement in motorcycle and passenger car drivers led the National Highway Traffic Safety Administration (NHTSA), in 1994, to investigate why alcohol involvement in motorcycle crashes remained high even though the changes in drinking and driving laws apply equally to all motor vehicle operators and public information and education campaigns have increased the public's awareness of the dangers of driving while intoxicated or impaired. The agency had previously conducted similar research with operators of four-wheeled vehicles but had not included motorcyclists in the research. The purpose of the 1994 research was to identify prevailing attitudes among motorcyclists who drink and ride.

METHOD

In April 1994, NHTSA awarded a contract to conduct ten focus groups to assess motorcyclists' attitudes and beliefs with regard to drinking and riding in five locations throughout the United States.¹ Because of the focus was to ascertain why alcohol involvement in motorcycle crashes remained high relative to passenger car crashes, only riders who admitted to drinking and riding were included in the focus groups. These focus groups were conducted in July 1994, in Miami, San Diego, Denver, Chicago, and Boston. These sites were chosen because of their varied geographic locations, the number of registered motorcycles, and the high involvement rates of alcohol in motorcycle fatalities in these locations.

Participants were recruited through flyers, personal visits to motorcycle shops and motorcycle clubs, personal referrals, and phone calls. Participants were motorcycle riders aged 21-35 who admitted to riding at least occasionally after drinking. To the extent possible, each group was to include some people who had been arrested for driving under the influence (DUI) or driving while intoxicated (DWI). An effort was made to ensure a mix of individuals in terms of educational attainment and ethnic minority representation. Women riders were

¹ The authors acknowledged the research conducted by Global Exchange, Inc and Public Communication Resources, Inc., for the National Highway Traffic Safety Administration under contract DTHN22-94-R-05047. The project's draft final report served as the primary resource for this article.

scheduled to participate only in groups for which two or more women were available. Prospective participants were informed of the study topic and were offered a \$50 cash payment as an incentive for participation.

Tables 5 and 6 summarize demographic data for each focus group. The demographic data in Table 5 was obtained during the screening process, while Table 6 reports data obtained from a questionnaire completed by each participant at the end of each focus group session.

Table 5

FOCUS GROUP DEMOGRAPHIC DATA DURING THE SCREENING PROCESS

	Age		Miles/week		Arrested for DUI/DWI on a motorcycle
	Range	Average	Range	Average	
MIAMI					
Group 1	21-35	29	40-250	105	0
Group 2	27-38	32	50-360	227	0
SAN DIEGO					
Group 1	23-35	27	20-200	106	3
Group 2	21-32	28	20-500	131	4
DENVER					
Group 1	26-35	31	5-250	65	2
Group 2	23-32	24	20-400	127	0
BOSTON					
Group 1	22-34	30	50-1000	247	0
Group 2	25-35	30	10-525	166	0
CHICAGO					
Group 1	22-36	30	25-400	183	2
Group 2	21-35	30	20-400	150	3

Table 6

FOCUS GROUP PARTICIPANTS DEMOGRAPHIC DATA

	Miami	San Diego	Denver	Boston	Chicago	Total
SEX						
Male	14	16	16	13	11	70
Female	4	0	3	2	6	15
MARITAL STATUS						
Single	9	12	8	10	10	49
Married	9	4	11	4	7	35
AGE OF CHILDREN						
Under 5	3	1	5	2	3	14
5 to 10	2	1	11	1	2	17
11 up	5	0	1	0	2	8
EDUCATION						
Some H.S.	1	0	0	0	1	2
H.S. grad.	4	3	4	1	4	16
Some college	12	6	12	5	6	41
College grad.	1	7	3	7	6	24
Grad degree	0	0	0	2	0	2
RIDER TRAINING						
Yes	9	5	6	4	8	32
No	9	11	13	11	9	53
MOTORCYCLE OPERATOR LICENSE						
Yes	10	11	14	14	14	63
No	8	5	5	1	3	22
PREFER TO WEAR HELMET						
Yes	12	5	10	7	7	41
No	3	5	9	7	9	33
Sometimes	1	4	0	1	1	7
No Answer	2	2	0	0	0	4

Seventy men and 15 women with an average age of 30 participated in the focus groups. Fewer participants were married than single, but many of the participants had children from either a current or previous marriage. All but two had graduated high school and 79 percent had at least some college. Approximately one-third had taken a motorcycle rider education course at some time; one in four did not have a current license to operate a motorcycle.

On average, the participants in the ten focus groups rode about 150 miles per week. Most participants began riding at a fairly early age. The typical pattern was to start on a dirt bike in the early or mid-teens and graduate to a street bike in the late teens or early 20's. Thus many of the men aged 25 or older had been riding for at least ten years and regarded themselves as highly-experienced, veteran motorcyclists.

There was considerable diversity in the kinds and sizes of motorcycles owned or ridden by the focus group participants. Most people owned a Kawasaki, Honda, or other well-known Japanese make motorcycles; a few owned German made motorcycles such as BMW; several owned Harley-Davidson motorcycles. Motorcycle size ranged from 250cc to 1,200cc.

A trained facilitator engaged the participants in a discussion based upon a protocol developed to guide the discussion. The questions and wording in the protocol were pretested with six motorcycle riders, and where necessary, questions were refined.

The focus groups met at either 6:00 p.m. or 8:00 p.m. and all lasted at least an hour and a half; some lasted a little over 2 hours. The number of people in each group ranged from seven to ten.

FINDINGS

The findings summarized below are based on a qualitative analysis of the discussion that occurred during the ten focus groups. Focus group data are not survey data. Therefore, care must be taken not to generalize these results to all motorcycle riders, especially as these results are based on feedback from riders who admitted to occasionally riding after drinking.

Frequency

All focus group participants had ridden after drinking and almost all said that, at least for their group of friends, drinking was a routine part of the event. Most continue to ride after drinking, but many said that they had cut down on the amount they drank when riding, either as a result of a bad experience (DWI, etc.) or, more commonly, as they got older. These participants stated that as they got older they behaved more maturely and less recklessly.

<i>We used to do a lot of drinking and driving when we were younger, but not anymore. This was in our early twenties, when you feel that you're not going to die-no fear. (Denver focus group participant.)</i>

Participants reported that most of the time, they ride with others who drink. Riding to bars is a social thing and, on a weekend ride, many will stop off at bars or deliberately go barhopping. Some will go to a beach or a cookout and drink all day.

I know that when I ride and I have a beer it feels better riding. It loosens you up— it relieves tension. It feels more exciting riding. You enjoy your ride better if you have one beer. (Denver focus group participant.)

Location

Participants indicated that they most commonly drank at bars or at events with other motorcyclists (e.g. picnics, beach parties, road rallies). Drinking at someone's house or apartment was mentioned only rarely.

One of the major problems is that bikes in general are used for recreational purposes and alcohol automatically coincides with recreation. I've never been to an event where they weren't going to serve beer — they go hand-in-hand. (Miami focus group participant.)

Kinds of Drinks

Everyone in the focus groups seemed quite open about their drinking including many instances when they rode illegally. All focus group participants drank beer, the drink of choice for most, at least some of the time and indicated that beer has a more benign effect than other kinds of alcoholic drinks. Participants said beer produced a more mellow, less intense high and that it took more beer to get drunk than liquor or wine. Some drank shots of whiskey or tequila and some drank liquor and beer together. Very few of the participants drank wine.

In June they have Motorcycle Weekend up in New Hampshire. You're drinking and riding the bike all weekend. That's what it is — that's what everybody's doing up there. It's all beer. I don't think I've ever seen anybody up there with a mixed drink. (Boston focus group participant)

Effects of Beer versus Liquor versus Wine

The consensus was that different alcoholic beverages affect people very differently. Most focus group participants said that beer, liquor, and wine have different effects even though they knew the alcohol content was the same. The difference, according to the participants, was the way the different types of beverages are consumed (e.g., fast or slow) which makes a big difference in the rate of intoxication.

It's common sense that whiskey is a fighting drink, beer is mellow, and wine is fine. (San Diego focus group participant)

Factors Affecting Alcohol Impact

While the focus group participants were aware of the effects of alcohol on a person and how rapidly the effects occur, it was fairly common for them to claim that their own abilities to handle alcohol was far above average. The participants stated that this ability was due to their metabolism, their experiences at drinking, and their emotional state.

I can be in a good mood and go out and pound down 15 beers and have no problem at all. I can go out and pound down 15 beers in a bad mood, and I'm going to be in jail. There's no medium ground. (Chicago focus group participant).

Perceived Importance As A Crash Factor

Most focus group participants believed that alcohol is of minor importance as a cause of crashes. The belief was that if a person can get to the motorcycle, get on it, get it started, and get it moving without falling over, the operator is automatically qualified to ride. Some claimed to ride better, more cautiously or more relaxed after they have had a beer or two. Participants strongly believed that most motorcycle crashes are not the fault of motorcyclists and few crashes could have been caused by motorcyclists, even those crashes involving alcohol.

If you don't fall down within the first few feet, you're going to be okay. I've seen guys do that. There's something about being on a motorcycle — you focus yourself. When you get on your motorcycle and hit the road, the wind and the air just seem to go “Boom, I'm okay now.” (Denver focus group participant)

Defining Excessive Drinking

The focus group participants were asked to define the term “excessive drinking.” Their definition depended largely on circumstances. There was a wide variation in the number of drinks required as “too many” but the number mentioned most frequently was six to eight drinks in an hour.

I've pretty much a limit of a six-pack during two hours when I'm on my bike. (Denver focus group participant)

Signs of Intoxication

When asked what the signs of intoxication are, the focus group participants listed staggering, slurred speech, belligerence, and personality change as common symptoms. For some, if a motorcyclist could get the motorcycle started and moving then the rider was not too intoxicated to ride even though the rider had consumed several drinks.

I have friends who can drink all night long and then get out and ride with no problem. (Chicago focus group participant)

Car versus Motorcycle in Relation to Drinking

Most participants said they would drive a car rather than ride a motorcycle if they were going to drink heavily. The reason most often given was that they felt safer: a car is easier to drive; cars do not fall over; and the driver is protected by a metal car body.

If I know I'm going out drinking, I usually try and take my car. (Boston focus group participant)

If I'm going partying, I'll drive the truck because I can't fall over in the truck. (Miami focus group participant)

Safety versus Enforcement

The participants felt that impairment levels were set too low and, as a result, were not concerned about safety at the stage where a motorcyclist's blood alcohol concentration (BAC) may be over the legal limit. At BAC levels below .10, the participants feared enforcement; safety became a concern at BAC levels over .10 or .15. In part, the participants believed they could handle drinking better than others.

If they're totally wasted, then you worry about their safety. If they're just a little bit wasted then it's “Watch out for the cops.” (Boston focus group participant)

.08 is not even slight buzzed. (San Diego focus group participant)

Ways to Reduce Risk

Many of the focus group participants pointed out that, since alcohol can lower inhibition and affect judgment, a rider who is drunk may not admit to having had too much to drink. Therefore, the rider may not engage in risk-reducing actions even though the rider knows about these actions even when reminded by friends.

However, to reduce the risk of being arrested or having a collision (or both) many riders said they take back roads to avoid law enforcement and to encounter less traffic. Other measures listed include being extra careful about observing traffic laws, waiting an hour or two, eating, taking a nap, and, if at friend's house, staying overnight.

I compensate for my buzz. I turn slower, don't try to run it out, don't redline it, just ride it. (San Diego focus group participant).

Offering and Accepting Rides

While offering a ride to an intoxicated friend is a common intervention among those who drive cars, this practice is difficult to apply to motorcycling for several reasons:

- Motorcyclists generally will not accept a ride home if there is no way to get their motorcycles home or to a secure location. If friends or family members have a truck to haul the motorcycle home this was considered an acceptable way of accepting a ride.
- Offering a ride (on a motorcycle) to an intoxicated friend poses a major safety hazard. Balancing the motorcycle and securing the intoxicated passenger are major issues.
- In a group ride, no one may have ready access to a four-wheeled vehicle.
- Motorcyclists are reluctant to allow others to ride their motorcycles. For example, the friend may be impaired as well. Moreover, the friend may not be trained or licensed to operate a motorcycle.

We tried on so many occasions to tell someone, "Do not drive, something's going to happen," and they still [rode the motorcycle]. Just last weekend a friend of ours wiped his bike all the way out. We told them-you know, him and his wife on the back-and they didn't care. The guy was not going to leave that bike. "I will not leave that bike. I will risk my life, but I'm not leaving it." (Chicago focus group participant).

Other interventions include taking the keys to the motorcycle or disabling the motorcycle so it will not run.

Concern about Possible Consequences

According to the focus group participants, motorcyclists do not worry about the consequences of drinking and riding. There appeared to be a mix of fatalism and bravado suggesting:

You've got a lot of money tied up in that bike. I'm not so much worried about personal injury as much as dropping that thing. It's my life right now, that bike is. I'm not worried so much about getting a DUI or anything; I'm worried about wrecking the bike. That's my biggest fear and that's what stops me at a certain limit. (Denver focus group participant).

- an experienced motorcyclist can handle the bike well enough to avoid trouble;
- most crashes are not the motorcyclist's fault and therefore beyond the motorcyclist's control;

- in most crashes only the rider is injured or killed, so the risk of harming someone else is slight;
- money is just money, one can always get more; and
- the sense of danger and risk-taking is part of the appeal of motorcycling.

While riders discussed a number of possible consequences to riding after drinking (getting killed or seriously injured; killing or injuring someone else; losing a license; or financial costs to name a few) no single consequence emerged as most important to everyone. For most respondents, the threat of injury or death is probably an ineffective motivator to change impaired riding behavior. However, the prospect of damaging a motorcycle (through a crash or towing) or losing it through impoundment elicited more intense and emotional responses. These responses reflected the fact that many riders really do feel “at one” with the motorcycle and see it as an extension of themselves.

DISCUSSION

Alcohol and motorcycling do not mix. In 1994, NHTSA began a dialogue, through focus groups, with motorcyclists to determine the reasons why they operate motorcycles after consuming alcohol and what types of messages would be effective in changing behavior and attitudes toward riding while impaired.

The focus group discussion and results revealed several key points:

- For these respondents, drinking and riding often go together. Drinking was a routine part of motorcycling events.
- Beer is the drink of choice among these motorcyclists, with whiskey as the second choice. Few riders drink wine. Participants believed that beer, liquor, and wine affect them differently. They also believed that beer produced a mellow, less intense high and it takes more beer to get drunk.
- The riders claimed to be aware of the factors, such as time, mood, and body weight, that determine how alcohol affects a person. However, many claimed that their own ability to handle alcohol was well above average (because their metabolism was different and they were experienced at drinking, etc.).
- Many riders said that if they knew they were going to drink heavily, they would drive their car or truck instead of riding their motorcycle. Their rationale was that they would be able to drive a car if they were too impaired to ride a motorcycle and the body of the car or truck would offer protection in the event of a crash.
- The threat of injury or death did not appear to be an effective motivator for avoiding drinking and riding. The threat of damaging (through a crash or towing) or losing a bike through impoundment seemed to arouse more concern.
- Unless impaired driving messages specifically targeted motorcyclists, the messages were not perceived as applying to motorcyclists. Motorcyclists stated the messages target drivers not motorcycle operators.

The National Highway Traffic Safety Administration used the results of this research to develop materials for a public education and information campaign in the spring of 1997. The materials focused on personal responsibility and the effects of the motorcyclist's actions on others, i.e., family members. These materials have been well received in the motorcycling community. However, the results also suggest a need for additional research and more intensive and comprehensive prevention, education, and enforcement strategies. For example, given the reported levels of alcohol associated with motorcycling, research needs to be conducted to determine the BAC levels at which motorcyclists skills are impaired. In addition, existing prevention strategies addressing impaired driving should recognize the impaired riding issue and devote resources to this problem. Motorcyclists must also become more pro-active in stressing the dangers of drinking and riding.

In December 2000, the National Highway Traffic Safety Administration and the Motorcycle Safety Foundation released the *National Agenda for Motorcycle Safety*, a blueprint for advancing motorcycle safety. The Technical Working Group charged with writing the *National Agenda* recognized the role of alcohol in motorcycle crashes and offered several recommendations on research, prevention, and partnership approaches important to future success in reducing alcohol-related motorcycle crashes.

Over the past twenty years, it has become socially unacceptable to drink and drive. While the focus groups suggest that drinking and riding appear to go together among these participants who admitted to drinking and riding, data indicate a slow but steady decline in the proportion of fatally injured motorcyclists who are intoxicated. While the role of alcohol in motorcycle is diminishing, it still remains a major factor. Impaired riding affects all motorcyclists. It is an issue that those concerned with motorcycle safety at the individual, club, state, and national levels agree must be addressed comprehensively. Progress is being made, yet there is more room for improvement. The findings from these focus groups will continue to serve as a basis for effecting change.

LIMITATIONS OF THE STUDY

Once again, the authors stress that care must be taken not to generalize the results of this study to all motorcycle riders. The study's participants admitted to drinking and riding and were recruited because NHTSA was interested in the reasons for drinking and riding and what motivated riders who drink and ride to avoid such behavior. Focus groups are used to provide insight into the nature of a problem and should not be used for statistical generalizations.

REFERENCES

Global Exchange, Inc., and Public Communication Resource, Inc., *Motorcycle Alcohol Focus Groups: July 5 - 27, 1994*. Unpublished report. U.S. Department of Transportation, National Highway Traffic Safety Administration, Washington, DC.

Motorcycle Industry Council. Motorcycle Industry Council data. Irvine, CA. May, 1999.

National Highway Traffic Safety Administration and The Motorcycle Safety Foundation. (November 2000). *National Agenda for Motorcycle Safety*. (DOT HS 809 156). Washington, DC: U.S. Department of Transportation.

National Highway Traffic Safety Administration. (2000). *Traffic Safety Facts 1999 - Motorcycles*. (DOT HS 809 089). Washington, DC: U.S. Department of Transportation.

National Highway Traffic Safety Administration, *Fatality Analysis Reporting System* data, 1999.

Syner, J., and Vegega, M. (November 2000). *Impaired Motorcycle Riding: What Motorcyclists Think About Alcohol and Motorcycling*. Paper presented at the annual meeting of the American Public Health Association, Boston, MA.