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GENDER DIFFERENCES IN REASONS FOR DRINKING AND NOT DRINKING: ASSOCIATION WITH DRINKING LEVELS AND ALCOHOL-RELATED CONSEQUENCES

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ABSTRACT

Fifty-nine male and 65 female high school students were interviewed in the winter of 1995. These students verbally expressed their reasons for drinking or not drinking and shared their experiences with alcohol-related outcomes. The reasons given for drinking were then evaluated to see whether they were associated with a) usual blood-alcohol concentration achieved per typical sitting, and b) alcohol-related consequences typically experienced by the two gender groups. Results indicate that both gender groups very often named as reasons for their drinking such things as fitting in with peers and having fun. Drinking for fun was associated with high blood-alcohol concentrations among both gender groups, drinking to experiment was related to low blood-alcohol concentration among female respondents. Male heavy drinkers said they drank to alleviate boredom. When usual blood-alcohol concentration was controlled, some reasons cited by the respondents predicted particular kinds of alcohol-related problems.

INTRODUCTION

Even though underage drinking is not permitted in this country, many adolescents drink alcoholic beverages. National surveys of drinking among high school students show that four out of five 10th- to 12thgraders (both genders) can be considered drinkers. For the same population, males are more likely than females to consume alcohol in higher quantities. Among 12thgraders, 34.6 percent of males and 20.7 percent of females reported having five or more drinks in a row at least once in the preceding two weeks (Johnston, O'Malley, Bachman 1995). Many researchers have examined different social, psychological, and biological factors to explain this alcoholusing phenomenon among our young people (Thompson, Wilsnack 1984). However, only a limited number of studies (Barnes 1981; Reeves, Draper 1984) have tried to pinpoint adolescents' own subjective reasons for drinking or not drinking. Among these studies, very few started out with open-ended questions asking respondents to express in their own words what prompts them to drink, to abstain from drinking, or to stop drinking (Mulford, Miller 1960; Riley, Marden, Lifshitz 1948).

The present study intended to fill this gap 1) by asking a group of high school students to give oral accounts of their reasons for drinking, if they had consumed alcohol; reasons for not drinking, if they had never consumed alcohol; and reasons for stopping drinking, if they had stopped in the year prior to the study. In addition to exploring adolescents' own reasons given to explain drinking behavior, the goals of this study included 2) to examine whether certain kinds

of reasons given for drinking were associated with high blood-alcohol concentration attained in a typical sitting, and 3) to examine whether certain reasons were more likely than others to be associated with certain kinds of alcohol-related consequences. Finally, the present study was intended 4) to discover whether gender differences exist in the aforementioned three areas.

Males and females behave differently because they are socialized to hold certain attitudes and to engage in certain behaviors reflective of their gender roles. Some researchers have long suspected and some studies have suggested that gender differences in deviant behavior in general, and in drinking behavior specifically, can be explained by gender-role orientations (Horwitz, White 1987; Huselid, Cooper 1992). Traditionally, females are assumed to be passionate, dependent, and emotional, whereas males are considered to be more aggresindependent, and rational. stereotypical personality traits prompt the different genders to be more responsible for certain kinds of work (household chores versus working in the economic market) and to engage in different kinds of behavior (nurturing versus instrumental). Many "masculine" attributes are considered to be associated with high drinking levels and problems such as risk-taking behavior and physical violence resulting from drinking (Horwitz, White 1987; Huselid, Cooper 1992; Robbins 1989; Robbins, Martin 1993). Although gender norms have become less stringent over the past few decades, females deviating widely from alcohol-related norms frequently experience social sanctioning. Because of norm-based suppression of females'

drinking, males have long been seen as more problematic drinkers, attracting more attention from researchers of alcohol use.

Of course, no problematic behavior exists in a vacuum. Structural and cultural factors strongly affect whether a behavior is considered problematic or not (Becker 1963). Studies have shown that, when teenagers are drinking, males are more likely than females to act out or to cause strain in their relationships, eliciting negative responses from others, while females tend to experience guilt and shame which unvoiced, attract less attention from others (Lo, Globetti 1998; Robbins 1989; Robbins, Martin 1993). Differential behavioral expression thus makes males the core of concern. Since the first alcohol-use studies were conducted, researchers (who have for the most part been males) have focused largely on male-oriented behavior, neglecting female experiences (Gomberg 1986). Females' drinking has also been neglected through the employment of measurement instruments established by male researchers using mainly male samples to measure maleoriented behaviors without questioning the adequacy of these instruments for measuring females' behavior (Sandmaier 1980).

In order to correct the bias that flaws the established instruments for measuring the critical variables, the present study employed a semistructured interview method to obtain from respondents their perceived reasons for drinking and the alcohol-related consequences they had faced. Only openended questions were asked. Answer options were not provided to the respondents because 1) we intended to secure reasons and alcohol-related consequences as they came naturally to respondents' minds; and 2) we wanted both males and females to describe their reasons and alcohol-related consequences in their own, potentially differential (and illuminating) words.

Two additional significant contributions of this study should also be mentioned. First, a modified instrument was employed to estimate respondents' blood-alcohol concentration at typical sittings. This measure takes into account each respondent's, as well as each gender's, differences in physiological and biological dimensions, such as total body water, body weight, and duration of drinking episodes, in addition to quantity of alcohol consumed. We believe this measure is more appropriate for use in a context of searching for gender differences. Second, the present study is one of the very few studies (Klein 1992) to explore whether certain perceived reasons for drinking help predict the consequences of alcohol use among a group of adolescents. The results could indicate ways to control undesirable alcoholrelated consequences. Before discussing the methods of the present study, we review results of relevant studies conducted in the field of alcohol use.

LITERATURE REVIEW

Cultural and normative factors help govern whether certain reasons are offered to explain a particular behavior in a particular situation (Mills 1940). Obviously, individuals will offer alcohol's effects on emotions and behavior as reasons for drinking, but reasons should also reflect situational factors. personal values, and norms leading to alcoholeuse. The perception that alcohol is harmful to health and the expectation of significant others' disapproval have been found to be reasons for an individual's not using alcohol (Reeves, Draper 1984). Asking a group of nondrinkers why they did not drink, Klein (1990) found that the reason most commonly endorsed by his college-student sample was "staying in control," though many respondents also cited not liking the way alcohol makes them feel and disliking the taste of alcohol.

In a nationwide study, Riley and his colleagues (Riley et al 1948) classified verbalized responses regarding reasons for drinking into two basic categories: social and individual reasons. If respondents named certain social situations as their motivation to drink, such as keeping one's spouse company or the need to exhibit sociability, these were considered social reasons. Individual reasons included respondents' anticipation of pleasurable consequences resulting from drinking-for example, "drinking makes me feel good" or "I like it." The results of the study showed that naming individual reasons for drinking was associated with a higher frequency of alcohol consumption. Similar studies conducted decades later show a similar result: heavier drinkers tend to drink for individual consequences, whereas lighter drinkers drink for social purposes (Burns, Carman 1976; Farber, Khavari, Douglass 1980; Mulford, Miller 1960; Schilling, Carman 1978).

A few studies show that individuals are more likely to exhibit a higher drinking level if they perceive more reasons for drinking (Glynn, LoCastro, Hermos, Bosse 1983; Johnson. Schwitters, Wilson, Nagoshi. McClearn 1985; Klein 1992; Ratliff, Burkhart 1984). In addition, the study conducted by Johnson and colleagues (1985) shows that endorsement of pathological reasons (being shy, worried) for drinking is predictive of problematic drinking. On the other hand, endorsement of social reasons is negatively related to problematic alcohol use (Bailly, Carman, Forslund 1991). In the study conducted by Glynn et al (1983), desires to reduce negative affect such as being lonely and bored, and wishes to enhance social life such as enjoying parties, are associated with problem drinking. Heavy drinking is found to be related to reasons for drinking such as engaging the opposite sex and enhancing pleasure (Cutter, O'Farrell 1984; Pang, Wells-Parker, McMillen 1989).

While particular reasons cited have been shown to relate to alcohol-using behavior. the relationships must not be assumed to be identical for the two gender groups. A limited number of studies do show that gender interacts with reasons for drinking (Johnson 1994). Some very recent studies have found that males consistently report more reasons than females (Temple 1986; Bailly et al 1991; Klein 1992). In Newcomb, Fahy, and Skager's (1990) study of adolescents, even though females are in general more likely to endorse five reasons to avoid drugs (addiction, punishment, lose friends, disappoint parents, and disappoint self), stronger relationships between these reasons and alcohol use are found among males. Females are found to be more likely than males to name social reasons for their drinking (Riley et al 1948) and less likely to report escapist reasons for drinking (Ratliff, Burkhart 1984). While drinking for a social reason is associated with light drinking, the relationship is stronger among females than males. A recent study conducted by Bailly et al (1991). however, shows that men chose more social reasons, and that both genders tended to choose individual reasons for drinking.

Sociologists have long been interested in studying motives and how they are related to consequences of behavior (Scully, Marolla 1984). Different reasons are typical and acceptable for different situations and for different behaviors. Motives that individuals

are socialized to accept can function to excuse or justify individuals' past or future behavior (Mills 1940; Scott, Lyman 1968). These motives or reasons, therefore, can also be used to predict future conduct.

In the field of alcohol use, the reasons for drinking stated by respondents should not only reflect experiences they have had in the past, but they should also indicate what is anticipated in the future. Certain oral accounts of reasons can be expected to be related to corresponding accounts about consequences resulting from drinking. For example, if the motive for drinking is to get to know people, this reason should be related to an experience of getting to know people as the result of drinking. In light of differential socialization of the different gender groups in this society, attention should be paid to differential reasons endorsed by males and females. In addition, strongly different reasons affect alcohol-related consequences in different gender groups should also be addressed.

METHODS Sample

This paper reports the results of a study designed to explore how perspectives on alcohol use might vary between male and female high-school students. The study focused on first-person accounts of drinking given to the researchers by the youths in face-to-face interviews. One twenty-two 10th- to 12th-grade students (plus two ninth-grade students who were interested in the study) from a public high school with an enrollment of 1,100 constituted the sample. The school is situated in a rural county in Michigan, with median household income around \$35,000. The school is the only public high school in the city. Most respondents classified themselves as white, with nine reporting they were Native American, Hispanic, or mixed Caucasian/Native American.

The interviews were begun in November and finished in December 1995. Same-sex interviews were conducted by five trained graduate students, based on the observation that students are more relaxed and truthful with people of their own gender and approximate age. Students from the high school were notified about the study by the school counselor through the public address system. The school principal also allowed the first author to discuss the study in a few

Reasons for Drinking	Nondrinkers No Alcohol Past Year		Light Drinkers BAC <= .04%		Moderate Drinkers .04% < BAC < .08%		Heavy Drinkers BAC >= .08%		Total		Chi- Square
						.UO76) Otal	
Females	N=11	% .	N=19	%	N=5	%	N=17	%	N=52	%	Value
Fitting in with peers	4	19	8	38.1	1	4.8	8	38.1	21	40.4	1.27
Getting high	0	0	2	28.6	0	0	5	71.4	7	13.5	6.34
Boredom relief	2	15.4	4	30.8	1	7.7	6	46.2	13	25	1,46
lt is fun	4.	16	4	16	5	20	12	48	25	48,1	15.01**
Psychological effects	0	0	7	70	1	10	2	20	10	19.2	7.03
Removal of inhibition	1	12.5	2	25	1 1	12.5	4	50	8	15.4	1.63
Escapism	2	16.7	5	41.7	. 1	8.3	4	33.3	12	23.1	0.29
Rebellion	0	Ø.	0	0	0	0	0	0	0	0	
Experimentation	8	53.3	4	26.7	2	13.3	1	6.7	15	28.8	15.55***
Other	0	0	2	50	0	0	2	50	4	7.7	1.94
Males	N=8	%	N=8	%	N=9	%	N=24	%	N=49	%	
Fitting in with peers	3	13.6	1	4.5	5	22.7	13	59.1	22	44.9	4.82
Getting high	1	9.1	1	9.1	2	18.2	7	63.6	11	22.4	1.53
Boredom relief	0	0	2	13.3	0	0 .	13	86.7	15	30.6	13.89**
It is fun	0	0	1	4.5	5	22.7	16	72.7	22	44.9	14.92**
Psychological effects	1	11.1	2	22.2	1	11.1	5	55.6	9	18.4	0.83
Removal of inhibition	1	6.3	4	25	4	25	7	43.8	16	32.7	3.27
Escapism	0	0	2	18.2	4	36.4	5	45.5	11	22.4	4.88
Rebellion	0	0	0	0	0	0	1	100	1	2	1.06
Experimentation	1 1	25	1	25	1	25	-1	25	4	8.2	1.02
Other	1	50	0	0	0	0	1	50	2	4.1	2.17

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social study classes. Students who volunteered to participate in the interviews made appointments with the first author and received a parental consent form. Those who received their parent's permission to participate also signed a consent form. The interview was tape-recorded and required about 20 minutes to complete. The respondent's name was not mentioned during the interview to maintain confidentiality.

Measures

Five major measures (reasons for drinking, reasons for not drinking, reasons for stopping drinking, positive consequences of alcohol use, and negative consequences of alcohol use) were constructed on the basis of inductive categorization of students' responses. All respondents who had had a drink at some time in the past were classified as lifetime drinkers. These lifetime drinkers were asked "What are the reasons that you drink alcohol?" in order to measure reasons for drinking. The lifetime drinkers were later asked to describe their alcohol-related consequences, prompted by the following question: "What were the experiences you encountered as a result of drinking?" When asking this question, interviewers were instructed to make sure interviewees covered both positive and negative experiences.

Lifetime drinkers who reported no alcohol consumption in the twelve months prior to the interview were asked the question, "Why did you stop drinking?" in order to measure reasons for stopping drinking. Respondents who reported never consuming alcohol at all were asked the question "What are the reasons you don't drink alcohol?" to measure their reasons for not drinking. No fixed list of responses was provided to the respondents. Instead, interviewers were instructed to retrieve a complete answer directly from the respondents.

Usual blood-alcohol concentration (defined as the typical blood-alcohol concentration achieved by the respondent during an "average" drinking session) was used to measure adolescent drinking levels in this study. The calculation of blood-alcohol concentration is based on the formula BAC= (AA * .08065)/TBW, where AA is grams of absolute alcohol consumed; .08065 is the water content of whole blood multiplied by .1; and TBW is total body water in liters (Alcohol Research Documentation 1983).

Since respondents were not asked what type of alcoholic beverages they usually drank, AA was calculated using the reported number of drinks at a typical drinking sitting multiplied by 13.299, which is the number of grams of absolute alcohol in a can of beer. Individuals' total body water, which takes into account age, height, and body-weight, was based on the different formulas for males and females documented in Watson. Watson, and Batt (1980). Duration of drinking episodes reported by the respondents was used to calculate elimination of alcohol from the body. According to Sutker, Tabakoff, Goist, and Randall (1983) for every hour passed, .015 percent and .018 percent are the rates of men's and women's alcohol metabolism, respectively. Overall, females attained lower blood-alcohol concentrations than males during typical drinking episodes in the year prior to the study (.115% for males and .077% for females).

RESULTS

Of the 124 respondents, 48 percent or 59 respondents were male. Forty-nine of those (83%), and 52 (80%) of the 65 female respondents, had consumed alcohol in the past. Among the 59 males interviewed, 69 percent reported drinking in the year prior to the interview. Females in the group were less likely to have taken a drink than males, with 63 percent reporting at least one drinking episode in the year prior to the interview.

Reasons for Drinking

Ten categories were generated from the oral accounts respondents gave of their drinking. These categories are: fitting in with peers (everyone else does it, to be with friends), getting high (seeking "a buzz"), boredom (something to do), fun (having a good time), psychological effects (want to have different feelings), removal of inhibition (outgoing; joking around with people), escapism (forget about problems), rebellion (people tell me I can't do it), experimentation (curiosity; want to try it), and other (a miscellaneous category). As shown in Table 1, both males and females named certain reasons more often than others. For example, about half of both males and females considered "fitting in with peers" and "it is fun" to be reasons for their drinking. In addition, almost equal percentages of males and females indicated reasons such as drinking in order to get high, relief of boredom, desired psychological effects, and escape. Very few respondents, male or female, considered rebellion to be a reason for drinking. In our high school sample, females were more likely than males to cite experimentation as a reason for drinking (chi-square=7.06, p < .01). Males, however, more often than females named removal of inhibitions as a reason for drinking (chi-square=4.15, p < .05).

Reasons for Stopping Drinking

Respondents who did drink in the past but had stopped drinking at least a year prior to the interview were asked to explain their behavior. Among the eight such males in the sample, five said they had developed negative feelings about alcohol (didn't like it anymore). Two out of the eight mentioned concerns about negative physical consequences (it made me dizzy) and about the irresponsibility of drinking (not a good way to spend my time).

Of the eleven females who had stopped drinking, seven mentioned negative feelings about alcohol (didn't like it); three were concerned with negative physical consequences (I passed out the first time I drank); three considered drinking inappropriate—or maybe "dangerous" (too many things can go wrong); one cited her friendships (have to stay sober for my friends); two mentioned school, work, or family commitments (my parents wouldn't trust me if I drink); and one was concerned about her age (shouldn't drink until you are 22 and out of college).

Reasons for Not Drinking

Only six males and 12 females had never taken a drink in their lifetime. Reasons such as disliking the taste, concerns about police, being too young, and believing drinking wrong have been given by respondents in other studies to explain their abstinence (Barnes 1981; Stumphauzer 1983). More females than males in the present study gave the following reasons for not drinking: alcohol is harmful (58% vs 33%, chi-square= 1.00, p > .05), potentially negative outcomes of drinking (42% vs 33%, chi-square = 12, p > .05), desire not to be a negative model (8% vs 0%, chi-square=.53, p > .05), drinking is wrong (58% vs 17%, chi-square= 2.80, p > .05), and consideration of parents and friends (25% vs 17%, chi-square= .16, p > .05). Males, however, more often than their female counterparts named sports

participation (33% vs 0%, chi-square=4.5, p < .05), drinking's potential to damage one's future (33% vs 25%, chi-square=.14, p > .05), and negative physical effects (17% vs 0%, chi-square=2.12, p > .05) as reasons not to drink.

Relationship Between Reasons For Drinking and Blood-Alcohol Concentration

In this study, blood-alcohol concentrations were obtained for respondents who reported having a drink in the year prior to the interview. High-school students who were lifetime drinkers but had stopped drinking at least a year before were classified as nondrinkers (Table 1). Light drinkers usually drank only enough to attain a blood-alcohol concentration of .04 percent or lower. Moderate drinkers reported drinking amounts sufficient to attain more than .04 percent but lower than .08 percent BAC (.08% is the level at which a driver can be charged with DUI in the state of Michigan). Heavy drinkers drank amounts that would classify them as legally drunk (.08% BAC) during each typical drinking sitting.

The values and percentages of Table 1 indicate numbers and proportions of respondents who belonged to a particular drinking status (column labels) and who reported a particular reason for drinking (row labels). A chi-square value was used to indicate whether the relationship between each reason for drinking and the blood-alcohol concentration was or was not significant. Trying to have fun or a good time was associated with heavier drinking for both males and females. Drinking for another personal reason-to relieve boredomwas also positively associated with bloodalcohol concentration among male respondents. For females, drinking simply to satisfy one's curiosity generally prevented the achievement of intoxication. Females who named experimentation as a reason for drinking either had stopped drinking within the year or were drinkers at very low levels.

While it was not a statistically significant relationship, males' motive to fit in with peers seemed to promote heavier drinking. It is obvious that males in this study were more likely than females to submit to peer pressure and drink to attain high blood-alcohol level. Females, too, maintained good relationships with peers by showing willingness to drink.

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Relationship Between Reasons for Drinking and Alcohol-Related Consequences

Five categories were developed to represent positive consequences resulting from drinking: relaxation and physical enhancement, removal of inhibitions, increased confidence/forgetting problems, enlightenment, and other. Negative consequences of drinking were divided into seven categories: physical discomfort, guilt, strain in relationships, irresponsible or inappropriate behavior, escape and dependency, psychological and emotional effects, and getting involved with law enforcement (see Lo and Globetti's 1998 article for details of gender differences in alcohol-related consequences in this sample). In order to explore whether the perception of certain reasons for drinking predicted a particular alcohol-related consequence for different genders, each of the consequences listed above was treated as a dependent variable that was regressed separately on each of the reasons for drinking in a logistic regression context, controlling for blood-alcohol concentration. Because many studies have shown a positive relationship between drinking level and the presence of alcohol-related problems (Gadaleto, Anderson 1986; Haworth-Hoeppner, Globetti, Stem, Marasco 1989; Hughes. Dodder 1983), control of blood-alcohol concentration was necessary to obtain unbiased results. Only respondents who reported drinking in the year prior to the interview and who obtained a score for blood-alcohol concentration were included in the analysis.

Among the 41 male drinkers in the final sample, the reason "relieve boredom" predicted the non-occurrence of the problem "strain in relationships" (b=-2.38, p<.01), while the reason "to remove inhibition" was associated with getting involved with the law after alcohol use (b=2.7, p<.05). A few of the reasons given for drinking were predictive of the 41 female drinkers' positive and alcohol-related negative consequences. Both relieving boredom (b=1.99, p<.05) and escapism (b=1.99, p<.05) predicted the existence of a positive consequence, removal of inhibitions (more talkative, more social, getting closer to your friends). Females' drinking to obtain psychological effects (b= 1.81, p<.05) was also associated with the positive consequence called "relaxation and physical enhancement" (gives me a buzz). Some of the reasons named by the females were associated with alcohol-related problems. For example, the reason "drinking to escape" indicated a higher likelihood of strain in relationships (b=1.84, p<.05) and of the experience of negative psychological effects (b=1.92, p<.05). In addition, females who drank to remove inhibitions also tended to experience negative psychological effects (b=2.06, p<.05).

Verbalized motives can be seen as rationalizations for experiences consequent to drinking. However, a specific reason for drinking often tended to be associated with quite different consequences for males and females. For example, if males used alcohol to remove inhibitions and promote relaxation, they were more likely to become law violators. Females who drank to remove inhibitions, on the other hand, experienced more negative psychological effects from drinking, such as becoming emotional and Furthermore, feeling depressed. though less than a quarter of the females named escapism as a reason for drinking, the 12 who did tended to be more likely than males who mentioned escapism to have problems such as disruption in relationships (my parents stopped trusting me) and negative psychological effects (getting emotional, kind of depressing). Yet they were also more likely than "escapist" males to enjoy a positive outcome: the removal of inhibitions (have a good time, feel good).

For both males and females, naming relief from boredom as a reason predicted positive rather than negative outcomes. Females who claimed that boredom was a reason to drink tended to have experienced inhibition removal in past drinking episodes. Males who cited the same reason tended to be less likely to experience strain in relationships consequent to drinking. Drinking to produce psychological effects was also associated with a positive consequence, but only for our female respondents. The 10 females who named this reason tended to discuss the relaxing and physical-enhancing effect of alcohol (it makes me sit down, relax) in their past experience.

DISCUSSION

Researchers have been very interested in understanding antecedents and effects of alcohol consumption among youths. In this study, we examined gender differences in subjective reasons given for drinking and not drinking, and the relationships between

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Among the 41 male drinkers in the final sample, the reason "relieve boredom" predicted the non-occurrence of the problem "strain in relationships" (b=-2.38, p<.01), while the reason "to remove inhibition" was associated with getting involved with the law after alcohol use (b=2.7, p<.05). A few of the reasons given for drinking were predictive of the 41 female drinkers' positive and alcohol-related consequences. negative Both relieving boredom (b=1.99, p<.05) and escapism (b=1.99, p<.05) predicted the existence of a positive consequence, removal of inhibitions (more talkative, more social, getting closer to your friends). Females' drinking to obtain psychological effects (b= 1.81, p<.05) was also associated with the positive consequence called "relaxation and physical enhancement" (gives me a buzz). Some of the reasons named by the females were associated with alcohol-related problems. For example, the reason "drinking to escape" indicated a higher likelihood of strain in relationships (b=1.84, p<.05) and of the experience of negative psychological effects (b=1.92, p<.05). In addition, females who drank to remove inhibitions also tended to experience negative psychological effects (b=2.06, p<.05).

Verbalized motives can be seen as rationalizations for experiences consequent to drinking. However, a specific reason for drinking often tended to be associated with quite different consequences for males and females. For example, if males used alcohol to remove inhibitions and promote relaxation, they were more likely to become law violators. Females who drank to remove inhibitions, on the other hand, experienced more negative psychological effects from drinking, such as becoming emotional and depressed. Furthermore. though less than a quarter of the females named escapism as a reason for drinking. the 12 who did tended to be more likely than males who mentioned escapism to have problems such as disruption in relationships (my parents stopped trusting me) and negative psychological effects (getting emotional, kind of depressing). Yet they were also more likely than "escapist" males to enjoy a positive outcome: the removal of inhibitions (have a good time, feel good).

For both males and females, naming relief from boredom as a reason predicted positive rather than negative outcomes. Females who claimed that boredom was a reason to drink tended to have experienced inhibition removal in past drinking episodes. Males who cited the same reason tended to be less likely to experience strain in relationships consequent to drinking. Drinking to produce psychological effects was also associated with a positive consequence, but only for our female respondents. The 10 females who named this reason tended to discuss the relaxing and physical-enhancing effect of alcohol (it makes me sit down, relax) in their past experience.

DISCUSSION

Researchers have been very interested in understanding antecedents and effects of alcohol consumption among youths. In this study, we examined gender differences in subjective reasons given for drinking and not drinking, and the relationships between

these reasons and both blood-alcohol concentration and consequences resulting from drinking among a group of high-school students in a small city in Michigan. It has been documented in the literature that American teenagers seek to fit in with their peer group, with alcohol use seeming to be largely an agent linking young people in a social way (Barnes, Welte 1986; Needle, McCubbin, Wilson, Reineck, Lazar, Mederer 1986). Our study results confirm what we have learned in the literature and show that alcohol is considered by adolescents primarily as a medium to bring fun or personal satisfaction to themselves.

Since our female respondents named experimentation significantly more often than males, it may not be surprising that males started consuming alcohol at a younger age (14.3 years for females and 13.3 years for males). Therefore, females in the present study had relatively little experience using alcohol. The significantly higher number of females than males who mentioned experimentation as the reason for drinking should certainly illuminate prevention policy for adolescents. If drinking is popular among teenagers, even though it is against the law. appropriate advice on how and when to drink, instead of a blind objection, is warranted to guide and safeguard adolescents. Almost one-third of females who mentioned drinking to have fun tended to drink less or to actually stop drinking after trying it; a similar result was not found for males. Future research should evaluate why females stop or drink less after their experimentation, but males apparently do not.

In this study, males more frequently than females said removal of inhibition was one reason for their drinking. While many females drank because they wanted to experiment, males explained their drinking as the result of longing for relaxation and for social interaction. It is also obvious that heavy-drinking males were more likely than light drinkers to cite removal of inhibition as a reason for drinking, even though the statistic did not reach a significant level (Table 1). Males more than females emphasized the importance of relaxation in their leisure time. The desire to "loosen up" sometimes meant a few more drinks for our male respondents.

While drinking is a popular practice in the United States, it is interesting to see that some of our respondents had never picked

up a drink in their lifetime and some stopped drinking in the year prior to the interview. Female abstainers compared with their male counterparts, seemed to be more concerned about their health, image, and morality. Students who stopped drinking were very much concerned with either actual negative consequences associated with alcohol use or with the negative image underage drinking has in this country. Since the average age of the males and females in this study was 16.9 and 16.6 years, respectively, the respondents likely stopped using alcohol just after the experimentation stage. Because of the popularity of alcohol use among teenagers, guite a few of our respondents had tried alcohol, but did not maintain their drinker status.

When the relationship between reasons for drinking and blood-alcohol concentration is a concern, the results show that the reason "drinking is fun" was positively related to blood-alcohol level for both genders. The intention to drink to relieve boredom increased typical blood-alcohol concentration only among male respondents. The two latter reasons (fun and boredom relief) can be considered individual-oriented, representing adolescents' search for adventure and a good time after school. A good time for many of these students means drinking to become intoxicated. This result supports studies conducted several decades ago that found that drinking for personal reasons is related to heavy drinking (Mulford, Miller 1960; Riley et al 1948).

Some of the reasons given for drinking possessed predictive power relative to certain outcomes resulting from alcohol consumption. Drinking to enhance psychological effects and to escape from reality were not related to blood-alcohol concentration among females, but these two reasons were associated with relaxation and feelings of disinhibition after drinking among these women. Psychological vouna prompted ten of the study's female respondents to drink, and these respondents eventually got what they wanted--to gain feelings of physical enhancement from alcohol use.

Drinking to escape was mentioned by about equal proportions of males and females. However, this reason was more likely to be associated with problematic outcomes such as strain in relationships and negative psychological effects—as well as with a positive outcome (removal of

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inhibitions)-only for females. The positive outcome indicated an achievement of these females' aims for their drinking. These results may reflect some females' ambiguity about using alcohol to forget their problems. American culture does not approve of individuals "hiding" from their problems. For females, psychoactive drug use (tranquilizers) rather than alcohol consumption is actually a more acceptable way to forget problems (Ettorre, Riska 1995).

Because of gender role socialization, females tend to be concerned about their social linkage with others (Leigh 1987). In addition, certain behavioral patterns are more likely to be associated with a particular gender group, for instance, "acting-out" behaviors for males and affectionate or passionate behaviors for females. Drinking in order to forget and to avoid reality seems to predict problems for many females, not all of whom are heavy drinkers (Table 1). This is a gender issue that we should look into further. It appears that males may drink to forget their problems, but by forgetting their problems they get into deeper trouble which leads to heavier drinking. On the other hand, females tend to drink to escape their problems but remain at a steady (non-escalating) level of drinking. These patterns are obvious in Table 1, which shows that the percentage of females who give "escapism" as a reason for drinking remains relatively constant across all drinking-level categories while the percentage of males who cite "escapism" as a reason increases in a linear fashion from non-drinkers to heavy drinkers. It is not clear why this gender difference should occur.

Even though drinking to relieve boredom is associated with some positive outcomes, such as decreasing disruption in relationships for males and removal of inhibition for females, this reason seems to be cited most often by heavier drinkers, especially male heavy drinkers. This result provides evidence for the fact that normative and cultural factors are at work, along with the physiological effects of alcohol, in determining behavioral outcomes.

As Mills (1940) believed, verbal motives do not only justify the past, they also predict the future. Drinking to achieve disinhibition is an excuse used by males who had trouble with the law. This reason should alert parents and educators to the possibility of future involvement with law enforcement.

Drinking to relax or to loosen up should not justify these males' violation of societal rules and norms. For females, negative psychological effects were associated with drinking to achieve disinhibition. The social control demanded of females by our society is so great that females who drink actually are much more likely to feel depressed than to engage in behavior which will draw attention from law enforcement. No matter how drunk females get, they try to control their behavior to avoid notice by officials. In this society, females have been socialized to behave differently than males, and while drinking has become more acceptable among teenage females, involvement with law enforcement remains too great a stigma.

Some of these results deserve further research for the benefit of future prevention strategies as well as for theoretical enhancement in the field of alcohol-use studies. However, a few limitations to the study should also be mentioned. Only a limited number of respondents were included in this short interview study. This limited number of respondents may be the key to the general absence of statistically significant results in the study. Future research should be based on the inductive categories generated by this study, to expand the scope of subsequent research endeavors.

Since very few respondents were abstainers or had stopped consuming alcohol in the year prior to the study, only very limited responses were obtained concerning reasons for not drinking and reasons for stopping drinking. Because these two variables should indicate why some adolescents choose nonconforming, they should be thoroughly studied in the future (Greenfield, Guydish, Temple 1989; Moore, Weiss 1995).

REFERENCES

Alcohol Research Documentation 1983 How to Use the Alco-Calculator New Brunswick, NJ: Center of Alcohol Studies

Bailly RC, RS Carman, MA Forslund 1991 Gender

differences in drinking motivations and outcomes J Psychology 125 6 649-656

Barnes GM 1981 Drinking among adolescents: a subcultural phenomenon or a model of adult be-haviors Adolescence 16 61 211-229

Barnes GM, JW Welte 1986 Patterns and predictors of alcohol use among 7-12th grade students in New York State J Studies Alcohol 47 1 53-62

Becker HS 1963 Outsiders: Studies in the Sociology

of Deviance NY: Free Press
Burns CE, RS Carman 1976 Validation of a measure of motivations for alcohol use Psychological Rep 38 825-826

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REFERENCES

Alcohol Research Documentation 1983 How to Use the Alco-Calculator New Brunswick, NJ: Center of Alcohol Studies

of Alcohol Studies
Bailly RC, RS Carman, MA Forslund 1991 Gender
differences in drinking motivations and outcomes
J Psychology 125 6 649-656
Barnes GM 1981 Drinking among adolescents: a
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Barnes GM, JW Welte 1986 Patterns and predictors
of alcohol use among 7-12th grade students in
New York State J Studies Alcohol 47 1 53-62
Becker HS 1963 Outsiders: Studies in the Sociology

Becker HS 1963 Outsiders: Studies in the Sociology of Deviance NY: Free Press

Burns CE, RS Carman 1976 Validation of a measure of motivations for alcohol use Psychological Rep 38 825-826

Cutter HSG, TJ O'Farrell 1984 Relationship between reasons for drinking and customary drinking behavior J Studies Alcohol 45 321-325 Ettorre E, E Riska 1995 Gendered Moods: Psy-chotropics and Society NY: Routeledge Farber PD, KA Khavari, FM Douglass IV 1980 A

factor analytic study of reasons for drinking sem-pirical validation of positive and negative rein-forcement dimensions J Consulting Clinical Psy-chology 48 6 780-781
Gadaleto AF, DS Anderson 1986 Continued prog-ress: the 1979, 1982, and 1985 college alcohol surveys J College Student Personnel 27 499-

509

Glynn RJ, JS LoCastro, JA Hermos, R Bosse 1983 Social contexts and motives for drinking in men J Studies Alcohol 44 6 1011-1025

Gomberg ESL 1986 Women: alcohol and other drugs *Drugs Society* 1 1 75-109 Greenfield TK, J Guydish, MT Temple 1989 Rea-

sons students give for limiting drinking; a factor analysis with implications for research and prac-

analysis with implications for research and practice J Studies Alcohol 50 2 108-115

Haworth-Hoeppner S, G Globetti, J Stem, F Marasco 1989 The quantity and frequency of drinking among undergraduates at a southern university Internat J Addictions 24 9 829-857

Horwitz AV, HR White 1987 Gender role orienta-tions and styles of pathology among addlescents J Health Social Behavior 28 June 158-170

Hughes SP, RA Dodder 1983 Alcohol-related prob-lems and collegiate drinking patterns J Youth Adolescence 12 65-76

Huselid RF, ML Cooper 1992 Gender roles as me-diators of sex differences in adolescent elcohol use and abuse J Health Social Behavior 33 December 348-362

Johnson PB 1994 Alcohol expectancies and reaction expectancies: their impact on student drinking J

Alcohol Drug Education 40 1 57-68

Johnson RC, SY Schwitters, JR Wilson, CT Nagoshi, GE McClearn 1985 A cross-ethnic comparison of reasons given for using alcohol, not using alcohol or ceasing to use alcohol J Studies

Alcohol 46 4 283-288 Johnston LD, PM O'Malley, JG Bachman 1995 National Survey Results on Drug Use from the Monitoring the Future Study, 1975-1994 Rockville, MD: National institute on Drug Abuse

Klein H 1990 The exceptions to the rule: why nondrinking college students do not drink College Student J 24 1 57-71

1992 Self-reported reasons for why college students drink J Alcohol Drug Edu 37 2 14-28 Leigh BC 1987 Beliefs about the effects of alcohol

on self and others J Studies Alcohol 48 467-475
Lo CC, G Globetti 1998 Gender differences in consequences of alcohol use among adolescents
Sociology Crime, Law, Devience 1 263-278
Mills CW 1940 Situated actions and vocabularies of

motive Amer Sociological Rev 5 December 904-913

Moore M, S Weiss 1995 Reasons for non-drinking among Israeli adolescents of four religions Drug Alcohol Dependence 38 45-50

Mulford HA, DE Miller 1960 Drinking in Iowa: III. A scale of definitions of alcohol related to drinking behavior Qrtly J Studies Alcohol 21 June 267Needle R. H McCubbin, M Wilson, R Reineck, A Lazar, H Mederer 1986 Interpersonal influences parents, and peers Internat J Addictions 21 739-766

Newcomb MD, B Fahy, R Skager 1990 Reasons to avoid drug use among teenagers: associations with actual drug use and implications for prevention among different demographic groups *J Alcohol Drug Education* 36 1 53-81

Pang MG, E Wells-Parker, DL McMillen 1989

Drinking reasons, drinking locations, and automobile recident involvement

mobile accident involvement among collegians internet J Addictions 24 3 215-227

Rattiff KG, BR Burkhart 1984 Sex differences in motivations for and effects of drinking among college students J Studies Alcohol 45 26-32

Reeves DW, TW Draper 1984 Abstinence or de-

creasing consumption among adolescents: importance of reasons internet J Addictions 19 7 819-825

Riley JW Jr, CF Marden, M Lifshitz 1948 The motivational pattern of drinking; based on the verbal responses of a cross-section sample of users of alcoholic beverages Qrtty J Studies Alcohol 9 353-362

Robbins C 1989 Sex differences in psychosocial consequences of alcohol and drug abuse J Health Social Behavior 30 March 117-130

Robbins CA, SS Martin 1993 Gender, styles of deviance, and drinking problems J Health Social Behavior 34 December 302-321

Sandmaler M 1980 The Invisible Alcoholics: Women and Alcohol Abuse in America NY: McGraw-Hill

Schilling ME, RS Carman 1978 Internal-external control and motivations for alcohol use among high school students Psychological Report 42 1088-1090

Scott MB, SM Lyman 1968 Accounts Amer Socio-logical Rev 33 1 46-62

Scully D, J Marolla 1984 Convicted rapists' vocabu-

lary of motive: excuses and justifications Social Problems 31 5 530-544 Stumphauzer JS 1983 Learning not to drink: adoles-

cents and abstinence J Drug Edu 13 1 39-48 Sutker PB, B Tabakoff, KC Goist Jr, CL Randall 1983 Acute alcohol intoxication, mood states and alcohol metabolism in women and men Pharmacology, Biochemistry Behavior 18 Suppl 1 349-354

Temple M 1986 Trends in collegiate drinking in California, 1979-1984 J Studies Alcohol 47 274-

Thompson KM, RW Wilsnack 1984 Drinking and drinking problems among female adolescents: patterns and influences, Pp. 37-65 in SC Wilsnack, LJ Beckman eds *Alcohol Problems in* Women: Antecedents, Consequences, and Intervention NY: Guilford Press

Watson PE, ID Watson, RD Batt 1980 Total body water volumes for adult males and females estimated from simple anthropometric measure-ments Amer J Clinical Nutrition 33 27-39