

coerced sexual intercourse [Koss, 1992]. In a watershed study, Koss et al. [1987] surveyed a nationally representative sample of approximately 6,000 college men and women and found that 25% of the men reported perpetrating some level of sexual assault since the age of 14; 54% of the women reported experiencing some level of sexual assault since the age of 14. The perpetrator was almost always someone the victim knew, often a dating partner.

Research from national studies indicates that more than 95% of adult sexual assault victims are women; assailants of both male and female victims are usually men [Bureau of Justice Statistics, 1995; Tjaden and Thoennes, 1998]. Across heterogeneous samples representing convicted rapists, college students, and small community samples of adults and adolescents, studies consistently find that in approximately 50% of all sexual assaults the perpetrator reports that he, his victim, or both have consumed alcohol [Abbey et al., 1996; Coid, 1986; Koss et al., 1987; Vinogradov et al., 1988]. In most cases involving alcohol, both the victim and perpetrator have been drinking.

In etiological studies of sexual assault perpetration, typically no distinction is made between men who perpetrate alcohol-involved sexual assaults compared to other sexual assaults. Therefore, little is known about the extent to which perpetrators of alcohol-involved and non alcohol-involved sexual assaults differ in terms of personality characteristics, attitudes, and past experiences. The study described in this paper compares the characteristics of three groups of college students: 1) men who have committed sexual assault involving alcohol, 2) men who have committed sexual assault without alcohol, and 3) men who have not committed sexual assault. By delineating similarities and differences between men who commit different types of sexual assault, this study provides information about potential mechanisms unique to alcohol-related sexual aggression that have implications for designing effective prevention and treatment programs.

Comparisons of Perpetrators and Nonperpetrators

Perpetrators, regardless of alcohol's involvement, have been found to differ from nonperpetrators in terms of antisocial traits and behaviors, dating and sexual behaviors and beliefs, and alcohol-related behaviors and beliefs. Incarcerated rapists are frequently diagnosed with antisocial personality disorders [Brown and Forth, 1997; Prentky and Knight, 1991]. Studies of nonincarcerated samples have also found that perpetrators have a tendency to disregard social norms. For example, Rapaport and Burkhart [1984] found that measures of socialization and responsibility were negatively correlated with college men's self-reported sexually coercive behavior. Similarly, Kosson et al. [1997] found that among college students, sexual assault perpetrators scored lower on measures of socialization and higher on measures of narcissism than did nonperpetrators. A lack of empathy has also been found to characterize incarcerated and nonincarcerated perpetrators [Geer et al., 2000]. Commonly, sexual assault perpetrators have been found to possess impulsive and aggressive personality traits [Lisak and Roth, 1988; Spence et al., 1991]. Researchers have hypothesized that sexual assault perpetrators are less socially skilled than nonperpetrators; findings from these studies, however, have produced mixed results [see Geer et al., 2000 for a review]. Consistent with the antisocial traits they commonly possess, sexual assault perpetrators often have a history of adolescent delinquent behavior [Calhoun et al., 1997; Malamuth et al., 1991]. The authors of the studies described above have suggested that this combination of aggressiveness, impulsiveness, and lack of empathy for others makes it easy for some men to feel comfortable using force to obtain sex.

Men who began having sex at a young age, date and have consensual sex frequently, and commonly engage in casual sex (by having sex with individuals they do not know well, outside of a dating relationship) are more likely to commit sexual assault than are less sexually active men [Abbey 1998, 2001; Kanin, 1985; Koss and Dinero, 1988; Malamuth et al., 1991; Senn et al., 2000]. Some authors have argued that early and frequent dating and sexual interactions may increase opportunities for committing sexual assault, and thereby increase its likelihood; whereas others suggest that early and frequent sexual experiences reflect a “predatory” motivation to engage in sex at every opportunity and through any means [Abbey et al., 1996; Kanin, 1985; Malamuth et al., 1991].

Another line of research has examined men’s misperceptions of women’s sexual intent, which occurs when men mistakenly assume that a woman is sexually attracted to them or is interested in having sex with them. Surveys have found that perpetrators of sexual assault report misperceiving their victim’s sexual intent before the assault occurred [Abbey et al., 1998, 2001]. In a laboratory experiment, Shea [1993] found that men who had a history of sexually coercive behavior were more likely to misperceive a female study partner’s sexual attraction to them than were noncoercive men. Men who have misperceived their companion’s sexual interest may feel entitled to force sex because they erroneously think that she has “led them on” [Muehlenhard and Linton, 1987].

Perpetrators’ motives for committing sexual assault are also reflected in their beliefs about women and sexual relationships. Compared to nonperpetrators, men who have committed sexual assault more strongly endorse gender role stereotypes (e.g., men are the pursuers of sex and women are the “gatekeepers”), rape myths (e.g., women say “no” to sex when they really mean “yes”), hostile attitudes toward women, the acceptability of using force in relationships, and dominance as a motive for sexual relationships [Abbey et al., 2001; Byers and Eno, 1991; Dean and Malamuth, 1997; Koss and Dinero, 1988; Malamuth et al., 1991; Mosher and Anderson, 1986; Muehlenhard and Linton, 1987; Rapaport and Burkhart, 1984]. These beliefs are thought to contribute to sexual assault because they normalize the use of force in sexual relationships.

Studies of both incarcerated rapists and college men have found that greater usual alcohol consumption is positively related to sexual assault perpetration [Koss and Dinero, 1988; Seto and Barbaree, 1997]. Since the association between usual alcohol consumption and sexual assault perpetration is correlational, the two could be related through several pathways. Seto and Barbaree [1997] suggested that drinkers may use intoxication as an excuse to engage in many socially unacceptable behaviors, including sexual assault. They also suggested that individual differences such as antisocial tendencies may drive both drinking and sexually assaultive behavior.

Abbey and her colleagues [Abbey, et al., 1998, 2001] have hypothesized that one reason usual alcohol consumption contributes to sexual assault is because men who drink more in general also drink more in dating and sexual situations. Abbey et al. [2001] found that perpetrators of sexual assault reported greater alcohol consumption during consensual sexual experiences and during sexual misperceptions of women as compared to nonperpetrators. Using a path model approach, Abbey et al. [1998] found that usual alcohol consumption, as well as alcohol consumption in sexual and misperception situations were indirectly related to the number of sexual assaults college men reported that they had committed. Usual alcohol consumption was positively related to frequency of misperceiving women’s sexual interest, which in turn predicted perpetration.

Beliefs about alcohol may also contribute to sexual assault. Abbey and her colleagues [1996] found that perpetrators who reported drinking during the assault held stronger beliefs

that alcohol increases sexuality than did sober perpetrators. Other researchers have found that sexual assault perpetrators report trying to get women drunk as a strategy for obtaining sex and that they perceive drinking women as being sexually available [Kanin, 1985; Mosher and Anderson, 1986].

Comparisons of Sexual Assaults that Involve Alcohol and Those That Do Not

Several studies have examined situational characteristics of sexual assaults that do and do not involve alcohol. Sexual assaults that involve alcohol are more likely than other assaults to involve time spent together at a party or bar [Abbey et al., 1996; Ullman et al., 1999a, 1999b], and the victim and perpetrator are less likely to have spent their entire time together alone [Abbey et al., 2001; Norris et al., 1998]. Sexual assaults that involve alcohol are also more likely to be committed by someone who knows the victim only casually [Abbey et al., 2001; Norris et al., 1998]. Studies also have found situational similarities between sexual assaults that do and do not involve alcohol. For example, Norris et al. [1998] found no difference between sexual assaults that involved alcohol and those that did not in terms of who paid for the majority of expenses during the interaction. Researchers have also examined the role alcohol plays in the severity of the sexual assault outcome. Findings that alcohol consumption increases aggressive responding in laboratory studies [Bushman and Cooper, 1990; Chermack and Giancola, 1997] fueled the hypothesis that perpetrators' intoxication facilitates higher levels of aggression against victims during sexual assault. Several survey studies of sexual assault have supported this hypothesis [Tjaden and Thoennes, 1998; Ullman et al., 1999a]. Due to alcohol's effects on cognitive and motor functioning, victims' intoxication has been associated with less physical resistance and more completed rapes [Abbey et al., 1996; Ullman and Knight, 1993]. This study expands on past research about alcohol's role in sexual assaults by focusing on perpetrators' characteristics, rather than situational factors.

Overview of Study Design and Hypotheses

In the present study, college men completed a survey assessing their previous perpetration of sexual assault, as well as measures of several personality traits, attitudes, and behaviors. Based on the literature reviewed above, men's antisocial behaviors and traits, dating and sex related behaviors and beliefs, and alcohol consumption and beliefs were hypothesized to discriminate between men who committed alcohol-involved sexual assaults, men who committed sexual assaults that did not involve alcohol, and men who did not commit sexual assault.

Based on previous studies comparing perpetrators in general to nonperpetrators, it was hypothesized that compared to nonperpetrators, both alcohol-involved and non alcohol-involved perpetrators would report greater antisocial behaviors and traits, more frequent dating and sex-related behaviors, and stronger beliefs supporting violence toward women. Compared to nonperpetrators and men who have not committed alcohol-involved sexual assault, alcohol may play a more central role in the social lives of men who have committed sexual assault involving alcohol. Therefore, it was hypothesized alcohol-involved perpetrators would report greater usual alcohol consumption, greater drinking in sexual situations, and stronger beliefs that alcohol enhances sexuality than would both nonperpetrators and non alcohol-involved perpetrators.

METHOD

Participants

Participants were 356 male students at a large, urban, Midwestern university. Participants ranged in age from 19 to 48; the median age was 24 years. Fifty-seven percent ($n = 203$) of the sample were Caucasian, 30% ($n = 109$) were African-American, 6% ($n = 21$) were Arabic or Middle-Eastern, 3% ($n = 11$) were Asian or Pacific Islander, 2% ($n = 6$) were Hispanic, and 2% ($n = 6$) either had another ethnic background or did not answer this question. All of the men were single; 73% ($n = 261$) were employed at least part-time. Men were recruited from an enrollment list provided by the Registrar's office, flyers posted on campus, advertisements in the student newspaper, and announcements made in classrooms. The distribution of majors was representative of the university's enrollment: 16% business, 14% health sciences, 13% liberal arts, 13% science, 12% education, 10% communications, 7% engineering, 6% psychology, and 4% law. The remaining 5% were either undecided, had another major, or did not answer this question.

Procedures

Potential participants were telephoned by a research assistant who told them that the Department of Community Medicine was contacting students to complete a questionnaire on health and well-being. Eligible participants scheduled appointments to complete a self-administered questionnaire. Surveys were administered to small groups in large classrooms. Participants were seated far apart so that they could not see anyone else's questionnaire. An experimenter reviewed the consent form and answered questions on an individual basis. Each participant then completed the survey on his own. Each participant placed his completed questionnaire in a sealed envelope before returning it to the experimenter, and no names or identifying information were included on the surveys. Students received \$20 for participating.

MEASURES

Sexual assault perpetration. Sexual assault perpetration during adolescence and adulthood was measured using a 16-item version of the sexual experiences survey [SES; Koss et al., 1987]. The SES uses behaviorally specific items that describe acts committed since the age of 14 that constitute sexual assault without labeling the behaviors as criminal [Koss, 1992]. Three items assessed forced sexual contact (e.g., kissing and fondling, but no penetration); six items assessed verbally coerced sexual intercourse; and seven items assessed acts that meet the standard legal definitions of attempted or completed rape. This measure has been used extensively and has good internal consistency and test-retest reliability [Koss et al., 1987]. Cronbach coefficient alpha in the present study was .85. For each item, participants reported whether alcohol was consumed by themselves and/or the victim.

Antisocial behavior and traits. To assess *delinquency*, participants indicated the number of times they had engaged in each of 14 delinquent behaviors prior to age 18 ($\alpha = .87$), adapted from Jessor and Jessor [1973] and Tremblay et al., [1995]. Examples of delinquent behaviors included damaging school property, shoplifting, and trespassing. Four subscales of the Personality Research Form [Jackson, 1987] were used to assess personality traits in the domains of *aggressiveness* ($\alpha = .69$), *impulsivity* ($\alpha = .73$), *dominance* ($\alpha = .80$), and *empathy* ($\alpha = .68$). Each domain was assessed with 16 items using true/false response

options. Participants' *social skills* were assessed with a 15 item "emotional cue sensing" subscale of Riggio's [1989] Social Skills Inventory ($\alpha = .86$). This measure used a 5-point response scale for each item, ranging from 1 = not at all like me to 5 = exactly like me.

Dating and sex-related behaviors and beliefs. Using an open response format, participants reported their *misperception of friendliness* by answering the question, "How many times has a woman been friendly to you, only for you to discover that you had misperceived her friendliness as a sexual come-on—she was trying to be nice but you assumed she was sexually attracted to you?" [Abbey et al., 1998]. Participants were asked to indicate their *frequency of dating*, on a 6-point scale ranging from 1 = never to 6 = very frequently. Using an open response format, participants reported their *casual sex behavior* by answering the question, "With how many different consensual female partners have you had sex on one and only one occasion?"

Participants answered two survey items ($\alpha = .76$) adapted from Simpson and Gangstead [1991] that assessed their *endorsement of casual sex* ("Sex without love is OK," and "I enjoy casual sex with different partners"). Three sexual attitude measures developed by Burt [1980] were included: a 9-item *adversarial sexual beliefs* scale (e.g., "In a dating relationship, a woman is largely out to take advantage of a man"), a 13-item *rape myth acceptance* scale (e.g., "Because women sometimes say 'no' when they mean 'yes' just to tease a man or make him beg for sex, the man has a right to be forceful"), and an 11-item *modified acceptance of interpersonal violence* scale (e.g., "It is all right for a man to hit a woman if she is unfaithful"), as well as Lonsway and Fitzgerald's [1995] 10-item measure of *hostility toward women* (e.g., "Sometimes women bother me just by being around"). Responses to all these measures were made on a 7-point scale ranging from 1 = strongly disagree to 7 = strongly agree. These latter four measures were highly correlated (intraclass correlation = .85) and were combined to form a 43-item scale of *attitudes supporting violence toward women* ($\alpha = .91$). Participants' motivation to have sex to feel powerful and dominant was assessed using Nelson's [1979] *sexual dominance* scale ($\alpha = .86$), which consists of 8 items rated on a 4-point scale ranging from 1 = not at all important to 4 = very important. Sample sexual dominance items included "I have sexual relations because like many people I enjoy the conquest" and "I have sexual relations because I like the feeling of having another person submit to me."

Alcohol-related behaviors and beliefs. Using an open response format, participants were asked to report how many days in a typical month they drink alcohol. Participants also indicated how many standard drinks they usually have on the days that they drink alcohol. These two questions were multiplied to create a quantity by frequency measure of *total alcohol consumption per month* [Hilton and Clark, 1987]. On a 12-point scale ranging from one drink to 12 or more drinks, participants also reported their *largest amount of alcohol drunk on one occasion* during the prior year [Dawson and Room, 2000]. Participants were asked to rate how often they typically drink during consensual sexual intercourse on a 6-point scale ranging from 1 = never to 6 = nearly every time or every time. Participants also were asked to rate how much they typically drink during consensual sexual intercourse on an 8-point scale ranging from 1 = zero drinks to 8 = thirteen or more drinks. These two questions were multiplied to create a quantity by frequency measure of *drinking during sex* [Abbey et al., 2001]. Participants answered two parallel questions regarding the frequency and amount of alcohol typically consumed when misperceiving a woman's friendliness as sexual interest, using the same response scales listed above. These two items were multiplied to create a quantity by frequency measure of *drinking during misperception* [Abbey et al.,

2001]. All of the alcohol consumption variables were skewed and were normalized through winsorization [Wilcox, 1996].

A five item measure of alcohol expectancies was included to assess the *belief that alcohol increases sex drive* [alpha = .95; Abbey et al., 1999], using a 5-point response scale ranging from 1 = not at all to 5 = very much. Sample alcohol beliefs regarding sex drive included "When drinking alcohol I feel interested in having sex" and "When drinking alcohol I want to have sex." Tendency to perceive *women's drinking as a sexual cue* (alpha = .87) was measured using five items adapted from Feravich et al., [2000], with 5-point response options ranging from 1 = not at all to 5 = very much. All drinking as a sexual cue items began with the stem: "To what extent is each of the following a sign that a man uses to decide if a woman is sexually attracted to him?" Sample items included "She is drinking alcohol" and "She has a drink with him." The intercorrelations of all of the potential predictor variables are presented in Table I. The largest correlations (about .50) were between misperception and drinking during misperception, the largest amount of alcohol consumed on one occasion and total monthly alcohol consumption, and the largest amount of alcohol consumed on one occasion and alcohol consumption during consensual sexual experiences. None of the correlations were large enough to raise concerns about multicollinearity.

RESULTS

Prevalence of Sexual Assault Perpetration

Forty-two percent (n = 151) of participants indicated that they had never sexually assaulted a woman. Fifty-eight percent (n = 205) of participants indicated that they had committed some form of sexual assault since the age of 14. The highest level of perpetration reported by 9% (n = 32) of the men was forced sexual contact, 31% (n = 109) reported sexual coercion, 4% (n = 13) reported attempted rape, and 14% (n = 51) reported completed rape. Ninety-six percent of the perpetrators were acquainted with their victim. Participants who indicated that they had never committed any of the acts described on the SES were categorized as nonperpetrators (n = 151). Participants who indicated that they had committed any form of sexual assault, and reported no alcohol was consumed, were categorized as non alcohol-involved perpetrators (n = 94). Participants who indicated that they had committed any form of sexual assault, and reported that alcohol was consumed by either themselves or the victim, were categorized as alcohol-involved perpetrators (n = 111). Among alcohol-involved assaults, in 96% of the cases the man had consumed alcohol, and in 84% of the cases both the man and woman had consumed alcohol. In 4% of cases (n = 4), only the woman had consumed alcohol. On average the man and woman had consumed four or five drinks each.

Multivariate Prediction of Perpetration Group

The variables listed in Table I were included in a simultaneous entry discriminant function analysis (DFA) in order to predict perpetration group. A simultaneous entry analysis was used because there was no reason to assign some predictors priority over others and the simultaneous entry procedure minimizes capitalization on chance [Stevens, 1996]. As is recommended procedure [Tabachnick and Fidell, 1996], the DFA took into account the prior probabilities of group membership: 42.4% nonperpetrators, 26.4% non alcohol-involved

TABLE I. Intercorrelations for Predictor Variables Included in Discriminant Function Analysis [N = 356]

Predictor Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. Delinquency	-	.36*	.30*	.10	.17*	.11*	.18*	.10	.32*	.35*	.19*	.14*	.32*	.30*	.34*	.24*	.26*	.08
2. Aggressiveness	-	-	.24*	.22*	.22*	.02	.20*	.01	.21*	.28*	.39*	.17*	.11*	.07	.17*	.14*	.24*	.09
3. Impulsivity	-	-	-	-.11*	.22*	.03	.12	-.02	.08	.15*	.12*	.06	.05	.12*	.19*	.21*	.09	.08
4. Dominance	-	-	-	-	-.10	.23*	.10	.18*	.20*	.20*	.15*	.13*	.11*	.07	.08	.06	.14*	.03
5. Empathy	-	-	-	-	-	-.30*	.08	-.07	.11*	.27*	.26*	.12*	.06	.02	.12*	.01	.14*	.11*
6. Social Skills	-	-	-	-	-	-	.01	.21*	.07	.02	.04	.17*	.06	.15*	.10*	.00	.24*	.03
7. Misperception of friendliness	-	-	-	-	-	-	-	.04	.25*	.18*	.16*	.23*	.12*	.08	.17*	.51*	.13*	.04
8. Frequency of dating	-	-	-	-	-	-	-	-	.26*	.17*	-.01	.01	.13*	.12*	.10	.02	.13*	.07
9. Casual sex behavior	-	-	-	-	-	-	-	-	-	.40*	.16*	.14*	.12*	.03	.19*	.15*	.10	.02
10. Endorsement of casual sex	-	-	-	-	-	-	-	-	-	-	.21*	.24*	.26*	.13*	.37*	.22*	.35*	.15*
11. Attitudes supporting violence against women	-	-	-	-	-	-	-	-	-	-	-	.50*	.10	-.06	.13*	.12*	.38*	.39*
12. Sexual dominance	-	-	-	-	-	-	-	-	-	-	-	-	.04	-.06	.13*	.13*	.38*	.39*
13. Total alcohol consumption per month	-	-	-	-	-	-	-	-	-	-	-	-	-	.53*	.52*	.24*	.22*	.11*
14. Largest amount of alcohol drank on one occasion	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.37*	.22*	.15*	-.02
15. Drinking during sex	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.37*	.30*	.23*
16. Drinking during misperception	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.10	.12*
17. Belief that alcohol increases sex drive	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	.35*
18. Women's drinking as a sexual cue	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

*p < .05

perpetrators, 31.2% alcohol-involved perpetrators. One significant discriminant function emerged, Wilks' Lambda of .71 with $X^2(36, N = 356) = 118.50, p < .001$, accounting for 32% of the variance associated with perpetrator status. The second discriminant function was not significant, indicating that it did not discriminate adequately among the perpetration groups. Therefore, only the first, significant function was interpreted [Klecka, 1980]. All predictor variables that were significantly correlated with the discriminant function are presented in Table II. Four variables are not included because they did not contribute significantly to prediction of perpetrator group: empathy, social skills, frequency of dating, and largest amount of alcohol consumed on one occasion.

In order to examine how well the predictors discriminated among the perpetrator groups, classification rates were examined [Stevens, 1996]. Overall, 56% of the men were correctly classified, which significantly improved upon a chance rate of 35%, $z(356) = 8.41, p < .001$. An examination of classification results indicated that the predictor variables most successfully classified men in the nonperpetrator group (75% correctly classified). Alcohol-involved perpetrators were more likely to be successfully classified (52%) than were non alcohol-involved perpetrators (30%). Few of the nonperpetrators were misclassified as either type of perpetrator, however, a greater proportion of both types of perpetrators were misclassified as nonperpetrators.

TABLE II. Univariate ANOVAs of Perpetrator Groups on Predictor Variables (N = 356)

Potential Predictors	Perpetrator Groups			F	Correlation with Function
	Nonperpetrators (n = 151)	Non Alcohol-Involved Perpetrators (n = 94)	Alcohol-Involved Perpetrators (n = 111)		
<i>Antisocial Behaviors and Traits</i>					
Delinquency	1.57 (1.05)a	1.99 (1.15)b	2.32 (1.15)b	15.21**	.52
Aggressiveness	1.48 (0.19)a	1.55 (0.20)b	1.58 (0.19)b	10.38**	.42
Impulsivity	1.28 (0.19)a	1.31 (0.20)a	1.39 (0.21)b	8.66**	.39
Dominance	1.64 (0.25)a	1.72 (0.18)b	1.70 (0.21)b	5.11*	.23
<i>Dating and Sex Related Behaviors and Beliefs</i>					
Misperception of friendliness	1.42 (2.60)a	2.44 (3.58)b	3.55 (3.48)c	14.62**	.55
Casual sex behavior	3.01 (4.86)a	5.03 (6.49)b	6.92 (7.19)b	13.23**	.48
Endorsement of casual sex	3.12 (1.74)a	3.87 (1.68)b	4.28 (1.70)b	15.53**	.51
Attitudes Supporting Violence Toward Women	2.42 (0.65)a	2.66 (0.81)b	2.81 (0.79)b	9.39**	.40
Sexual dominance	1.68 (0.60)a	1.94 (0.68)b	2.09 (0.65)b	13.54**	.48
<i>Alcohol Related Behaviors and Beliefs</i>					
Total alcohol consumption per month	27.58 (27.71)a	33.90 (33.80)	41.53 (37.43)b	5.86*	.32
Drinking during sex	7.09 (6.59)a	7.21 (6.28)a	10.78 (7.33)b	11.16**	.42
Drinking during misperception	2.52 (5.53)a	3.07 (5.90)a	7.22 (7.98)b	18.53**	.55
Belief that alcohol increases sex drive	3.09 (1.09)a	3.20 (1.18)a	3.78 (0.91)b	14.43**	.49
Women's drinking as a sexual cue	1.79 (0.82)a	1.90 (0.88)a	2.18 (0.88)b	6.71**	.34

* $p < .01$; ** $p < .001$ Note: Means in the same row with different subscripts differ at the $p < .05$ level in Tukey comparisons.

Mean Differences on Predictor Variables by Perpetration Group

Univariate analyses of variance were conducted for each of the significant predictor variables to examine the pattern of mean scores for the three perpetrator groups. Table II presents the means, standard deviations, and *F*-values for each of the significant predictor variables. Each of the variables that contributed to the prediction of perpetrator group using DFA, also showed significant mean differences.

As compared to nonperpetrators, both non alcohol-involved and alcohol-involved perpetrators reported a stronger history of delinquency, more aggressive and dominant personality traits, more frequent misperception of women's friendliness as sexual interest, more casual sexual behavior, greater endorsement of casual sex, stronger attitudes supporting violence against women, and greater sexual dominance.

Alcohol-involved perpetrators reported greater monthly alcohol consumption than nonperpetrators, with the scores of non alcohol-involved perpetrators in between but not significantly different from either group. As compared to both nonperpetrators and non alcohol-involved perpetrators, alcohol-involved perpetrators reported a more impulsive personality, greater alcohol consumption during sexual interactions, greater alcohol consumption during misperceptions of women's sexual intent, stronger beliefs that alcohol enhances sex drive, and stronger beliefs that women's drinking is a cue signifying sexual interest.

DISCUSSION

Eighteen percent of the college men who participated in this study reported that they had committed an act that met the standard legal definitions of rape or attempted rape; 58% reported committing some form of sexual assault. These rates are higher than those that have been found in some, but not all, studies of college students [Abbey et al., 2001; Rapaport and Burkhardt, 1984]. This study utilized a measure that included a wide range of examples of sexually assaultive behaviors that may have captured a larger number of participants' experiences. Fifty-four percent of perpetrators committed a sexual assault that involved alcohol. This rate is consistent with those reported in other studies of college and noncollege perpetrators [Abbey et al., 1996; Coid, 1986].

Characteristics of Both Types of Perpetrators

The predictors included in this study did a good job overall of discriminating nonperpetrators from both types of perpetrators, as well as discriminating alcohol-involved perpetrators from both non alcohol-involved perpetrators and nonperpetrators. Predictors of sexual assault perpetration that have been documented in past research differentiated nonperpetrators from both types of perpetrators, with perpetrators possessing stronger antisocial and sexual traits, beliefs, and behaviors. In confirmation of hypotheses, as compared to nonperpetrators, both types of perpetrators reported stronger histories of delinquency, more aggressive and dominant personalities, and greater engagement in and endorsement of casual sex. Also as predicted, perpetrators were characterized by stronger attitudes supporting violence against women (including rape myth acceptance and hostility toward women), and a stronger motivation to have sex to feel dominant. These findings support theories that perpetrators have antisocial personality traits that are reflected in a general lifestyle of societal transgression, are highly motivated to pursue all sexual encounters, consensual or not, and espouse stereotypes about sex and dating that condone

sexual aggression [Kanin, 1985; Malamuth et al., 1991; Prentky and Knight, 1991; Seto and Barbaree, 1997]. As expected, traditional predictors of sexual assault did not differentiate between men who perpetrated sexual assault with and without alcohol.

Characteristics of Alcohol-Involved Perpetrators

Men who committed sexual assault that involved alcohol stood out primarily in terms of alcohol-related behaviors and beliefs. In support of hypotheses, as compared to both nonperpetrators and non alcohol-involved perpetrators, alcohol-involved perpetrators reported greater alcohol consumption during sexual interactions and during sexual misperceptions of women, held stronger beliefs that alcohol increases their own sex drive, and believed more strongly that a woman's drinking is a signal of sexual interest. Contrary to predictions, alcohol-involved perpetrators did not differ significantly from other perpetrators in total alcohol consumption per month, although the pattern of means was in the expected direction with alcohol-involved perpetrators reporting higher levels in usual consumption than non alcohol-involved perpetrators. These findings suggest that it is important to focus on the specific use of alcohol in dating and sexual situations when explicating alcohol's role in sexual assault, rather than only on general drinking patterns. As hypothesized, both groups of perpetrators had misperceived women's sexual intentions more frequently than had nonperpetrators; although alcohol-involved perpetrators had done so significantly more than non alcohol-involved perpetrators. Unexpectedly, alcohol-involved perpetrators were more impulsive than were the other two groups of men.

This constellation of characteristics suggests several mechanisms through which alcohol may contribute to sexual assault. The belief that alcohol increases sex drive and is a cue women use to indicate sexual interest may increase the likelihood of alcohol-involved sexual assault directly in that these beliefs could be used as excuses to engage in sexually assaultive behavior when drinking with a woman [Abbey et al., 1996; George and Norris, 1991]. Beliefs about alcohol's effects on sexual behavior and drinking women also may facilitate sexual assault indirectly by increasing men's misperception of women's sexual intent. Beliefs about the effects of alcohol can become self-fulfilling prophecies, because people tend to perceive events and react in ways that confirm their beliefs [Snyder and Stukas, 1999]. A man who strongly believes that alcohol increases his own sexual drive and that a woman's drinking communicates her sexual intent may overfocus on his own sexual desires and any potentially sexual cues given by his companion. This biased information search may increase the likelihood that he will misperceive women's friendly behavior as sexual interest when drinking [Abbey et al., 1996, 1998]. Previous research suggests that misperception may lead some men to feel justified forcing unwanted sex [Muehlenhard and Linton, 1987]. Alcohol-involved perpetrators also reported the highest levels of impulsivity. Impulsive men's already low ability to inhibit their behavior may be exacerbated by alcohol consumption [Fillmore and Vogel-Sprott, 1999]. Thus, when drinking, highly impulsive men may also be more likely than other men to take action based on their misperception of women's sexual interest in them, creating a situation that could lead to sexual assault.

Limitations and Future Directions

These differences between men who have perpetrated sexual assault with and without alcohol are promising, but are only the first foray into comparing these types of perpetrators. The present study utilized a cross-sectional design that cannot establish causal relationships

among variables. Third variables not measured in the present study may drive some effects, and the direction of effects may be different than our interpretation. Although it is not possible to examine the relationship between alcohol consumption and sexual assault directly in experimental research, links earlier in the chain of events can be tested experimentally in order to establish causal relationships. For example, the relationships among alcohol consumption, impulsivity, and misperception suggested in this discussion can be examined in laboratory experiments. Men with different degrees of impulsivity could be randomly assigned to drink alcohol or not, and then they could make sexual judgments about a female confederate in a laboratory setting [cf., Abbey et al., 2000]. Also, prospective studies that follow participants for several years can more firmly establish the direction of effects.

The present findings also need to be replicated and extended. Studies using structural equation analysis could examine the mediating relationships between perpetrator characteristics, alcohol consumption, and assault characteristics. Larger sample sizes might allow for comparisons among sexual assaults that involve shared drinking, perpetrator drinking only, and victim drinking only. Although shared or perpetrator-only drinking is by far the norm in alcohol-involved sexual assault, the rare perpetrator ($n = 4$ in the present study) who remains sober while his victim drinks may exhibit important differences from intoxicated perpetrators. Some research has found that sexual assault perpetrators report trying to get women drunk as a strategy for obtaining sex [Kanin, 1985; Mosher and Anderson, 1986]. In-depth qualitative interviews are needed with men who commit alcohol-involved sexual assault in order to understand more fully their perceptions of the role alcohol played in their assaults. Do they report targeting a drinking woman or trying to get a woman drunk in order to make victimization easier? Do they think they would have assaulted the woman if alcohol had not been involved? Did they drink as an excuse to engage in sexual and aggressive behavior? Although retrospective self-reports may be distorted by biases of memory or conscience, perpetrators' perceptions of alcohol's role are an important source of information.

It is likely that different perpetrators are motivated by different factors, even within the domain of alcohol-involved sexual assault. The present study included a wide range of theoretically grounded predictors, but numerous variables remain to be investigated. For example, aggression researchers have theorized about the importance of baseline cognitive functioning in alcohol-involved aggression [Hoaken et al., 1998], and the role of perpetrators' cognitive functioning in alcohol-involved sexual assault warrants research attention.

Men with personality and attitudinal characteristics that facilitate sexual aggression do not commit sexual assault on every possible occasion. It takes a combination of situational, personality, and attitudinal factors to predict specific sexual assault events. Several studies have addressed situational differences between alcohol-involved and non alcohol-involved sexual assaults such as location of the incident and the relationship between the perpetrator and victim. More research is needed, however, that explores additional situational characteristics. For example, some research suggests that women's reports of risk cues differ between alcohol-involved and non alcohol-involved sexual assaults [Norris et al., 1998; Testa and Livingston, 1999]. Further research is needed to investigate the processes through which intoxication affects women's perception and interpretation of risk cues. It is important to note that men who perpetrate a sexual assault are always responsible for their actions. Exploring the pathways through which alcohol contributes to sexual assault does not mitigate any responsibility held by the perpetrator, nor does it shift any blame onto a drinking victim.

Finally, it is difficult to generalize this study's findings because a college student sample was used. College students are not simply a convenient sample for sexual assault research; studies of college students have documented alarmingly high prevalence rates [Abbey et al., 2001; Koss et al., 1987]. Also, the college sample used in this study was drawn from a large, urban, commuter campus with ethnically and socioeconomically diverse students. Nonetheless, further studies are needed using community samples that compare perpetrators who have committed sexual assaults that do and do not involve alcohol.

Prevention Implications

Information about the ways in which men who commit alcohol-involved sexual assault are similar to and different from other perpetrators can be used to develop prevention programs tailored for men with characteristics that put them at greater risk of perpetrating this type of assault. For example, these findings suggest that men's beliefs that alcohol increases sex drive and is a cue that women use to convey sexual interest, and men's misperception of women's sexual interest in drinking situations increase their likelihood of committing alcohol-involved sexual assault. Prevention programs targeting alcohol-involved perpetrators should specifically address the content of men's alcohol beliefs and provide corrective feedback about the inaccuracy and potential destructiveness of those beliefs. Drinking and driving campaigns promote the message that when drinking, people should be wary of their own perceptions of their ability to drive safely. Similarly, men should be warned not to trust their perceptions of women's sexual interest when drinking. Through role-playing, men could practice listening and responding appropriately to women's refusals so that those refusals will be more easily recognized and heeded, even when drinking. Finally, programs should emphasize that drinking should not be used a strategy or an excuse for forcing sex on an unwilling person.

REFERENCES

- Abbey A, Ross LT, McDuffie D, McAuslan P. 1996. Alcohol, misperception, and sexual assault: How and why are they linked? In: Buss DM, Malamuth M, editors. *Sex, power, conflict: Evolutionary and feminist perspectives*. New York: Oxford University Press. p 138–161.
- Abbey A, McAuslan P, Ross LT. 1998. Sexual assault perpetration by college men: The role of alcohol, misperception of sexual intent, and sexual beliefs and experiences. *J Soc Clin Psychol* 17:167–195.
- Abbey A, McAuslan P, Ross LT, Zawacki T. 1999. Alcohol expectancies regarding sex, aggression, and sexual vulnerability: Reliability and validity assessment. *Psychol Addict Behav* 13:174–182.
- Abbey A, McAuslan P, Zawacki T, Clinton AM, Buck PO. 2001. Attitudinal, experiential, and situational predictors of sexual assault perpetration. *J Interpers Violence* 16:784–807.
- Abbey A, Zawacki T, McAuslan P. 2000. Alcohol's effects on sexual perception. *J Stud Alcohol* 61: 688–697.
- Brown SL, Forth AE. 1997. Psychopathy and sexual assault: Static risk factors, emotional precursors, and rapist subtypes. *J Consult Clin Psychol* 65:848–857.
- Bureau of Justice Statistics 1995. *Criminal victimization in the United States*. Washington D.C.: U.S. Department of Justice.
- Burt MR. 1980. Cultural myths and supports for rape. *J Pers Soc Psychol* 48:419–426.
- Bushman BJ, Cooper HM. 1990. Effects of alcohol on human aggression: An integrative research review. *Psychol Bull* 107:341–354.
- Byers ES, Eno RJ. 1991. Predicting men's sexual coercion and aggression from attitudes, dating history, and sexual response. *J Psychol Hum Sex* 4:55–70.
- Calhoun KC, Bernat JA, Clum GA, Frame CL. 1997. Sexual coercion and attraction to sexual aggression in a community sample of young men. *J Interpers Violence* 12:392–406.
- Chermack S, Giancola P. 1997. The relationship between alcohol and aggression: An integrative research review. *Clin Psychol Rev* 6:621–629.

- Coid J. 1986. Alcohol, rape, and sexual assault. *Alcohol and Aggression* London: Croom Helm. p 161–183.
- Davis JL, Petric-Jackson PA. 2000. The impact of child sexual abuse on adult interpersonal functioning: A review and synthesis of the empirical literature. *Aggress Violent Behav* 5:291–328.
- Dawson DA, Room R. 2000. Towards agreement on ways to measure and report drinking patterns and alcohol-related problems in adult general population surveys: The Skarpo Conference overview. *J Subst Abuse* 12:1–21.
- Dean KD, Malamuth NM. 1997. Characteristics of men who aggress sexually and of men who imagine aggressing: Risk and moderating variables. *J Pers Soc Psychol* 72:449–455.
- Fillmore MT, Vogel-Sprott M. 1999. An alcohol model of inhibitory control and its treatment in humans. *Exp Clin Psychopharmacol* 7:49–50.
- Feravich A, Abbey A, McAuslan P. 2000. Are your signals indicating sexual interest? Perception of sexual cues based on gender of perceiver. *J MARC Res* 2:3–14.
- Geer JH, Estupian LA, Manguno-Mire GM. 2000. Empathy, social skills, and other relevant cognitive processes in rapists and child molesters. *Aggress Violent Behav* 5:99–126.
- George WH, Norris J. 1991. Alcohol, disinhibition, sexual arousal, and deviant sexual behavior. *Alcohol Health Res World* 152:133–138.
- Hilton ME, Clark WB. 1987. Changes in American drinking patterns and problems, 1967–1984. *J Stud Alcohol* 48:515–522.
- Hoaken PNS, Giancola PR, Pihl RO. 1998. Executive cognitive functions as mediators of alcohol-related aggression. *Alcohol Alcohol* 33:47–54.
- Jackson DN. 1997. Personality research form. Port Huron, MI: Sigma Assessment Systems.
- Jessor R, Jessor SL. 1973. A social psychology of marijuana use: Longitudinal studies of high school and college youth. *J Pers Soc Psychol* 26:1–15.
- Judd CM, Smith ER, Kidder IH. 1991. Research methods in social relations. Fort Worth, TX: Holt, Rinehart, and Winston.
- Kanin EJ. 1985. Date rapists: Differential sexual socialization and relative deprivation. *Arch Sex Behav* 14:219–231.
- Klecka WR. 1980. Discriminant analysis. Newbury Park, CA: Sage.
- Koss MP. 1992. The underdetection of rape: Methodological choices influence incidence estimates. *J Soc Issues* 48:61–76.
- Koss MP, Dinero TE. 1988. Predictors of sexual aggression among a national sample of male college students. *Ann N Y Acad Sci* 528:133–147.
- Koss MP, Gidycz CA, Wisniewski N. 1987. The scope of rape: Incidence and prevalence of sexual aggression and victimization in a national sample of higher education students. *J Consult Clin Psychol* 55: 162–170.
- Kosson DS, Kelly JC, White JW. 1997. Psychopathy-related traits predict self-reported sexual aggression among college men. *J Interpers Violence* 12:241–254.
- Lisak D, Roth S. 1988. Motivational factors in nonincarcerated sexually aggressive men. *J Pers Soc Psychol* 55:795–802.
- Lonsway KA, Fitzgerald LF. 1995. Attitudinal antecedents of rape myth acceptance. *J Pers Soc Psychol* 68: 704–711.
- Malamuth NM, Sockloskie RJ, Koss MP, Tanaka JS. 1991. Characteristics of aggressors against women: Testing a model using a national sample of college students. *J Consult Clin Psychol* 59:670–681.
- Muehlenhard CL, Linton MA. 1987. Date rape and sexual aggression in dating situations: Incidence and risk factors. *J Couns Psychol* 34:186–196.
- Mosher DL, Anderson RD. 1986. Macho personality, sexual aggression, and reactions to guided imagery of realistic rape. *J Res Pers* 20:77–94.
- Nelson PA. 1979. Personality, sexual function, and sexual behavior: An experiment in methodology. Unpublished doctoral dissertation, University of Florida.
- Norris J, Nurius PS, Gaylord JE. 1998. Alcohol's relationship to recognizing and resisting sexual aggression. Paper presented at the Biannual Meeting of the International Society for Research on Aggression, Mahwah, New Jersey.
- Prentky RA, Knight RA. 1991. Identifying critical dimensions for discriminating among rapists. *J Consult Clin Psychol* 59:643–661.
- Rapaport K, Burkhart BR. 1984. Personality and attitudinal characteristics of sexually coercive college males. *J Abnorm Psychol* 93:216–221.
- Riggio, R. 1989. Social skills inventory. Palo Alto, CA: Consulting Psychologists Press.
- Senn CY, Desmaris S, Verberg N, Wood E. 2000. Predicting coercive sexual behavior across the life-span in a random sample of Canadian men. *J Soc Pers Relat* 17:95–113.
- Seto MC, Barbaree HE. 1997. Sexual aggression and antisocial behavior: A developmental model. In: Stoff DM, Breiling J, Maser JD, editors. *Handbook of antisocial behavior*. New York: Wiley. p 524–533
- Shea MC. 1993. The effects of selective evaluation on the perception of female cues in sexually coercive and noncoercive males. *Arch Sex Behav* 225:415–433.
- Simpson JA, Gangstead SW. 1991. Individual differences in sociosexuality: Evidence for convergent and divergent validity. *J Pers Soc Psychol* 60:870–883.
- Snyder M, Stukas AA, Jr. 1999. Interpersonal processes: The interplay of cognitive, motivational, and

- behavioral activities in social interaction. *Ann Rev Psychol* 50:273–303.
- Spence JT, Losoff M, Robbins AS. 1991. Sexually aggressive tactics in dating relationships: Personality and attitudinal correlates. *J Soc Clin Psychol* 103:289–304.
- Stevens J. 1996. *Applied multivariate statistics for the social sciences*. Hillsdale, N.J.: Lawrence Erlbaum Associates.
- Tabachnick BG, Fidell LS. 1996. *Using multivariate statistics* 3rd ed. New York: HarperCollins.
- Testa M, Livingston JA. 1999. Qualitative analysis of women's experiences of sexual aggression: Focus on the role of alcohol. *Psychol Women Q* 23: 573–589.
- Tjaden P, Thoennes N. 1998. *Extent, nature, and consequences of intimate partner violence: Findings from the national violence against women survey*. U.S. Department of Justice, NCJ 81867.
- Tremblay R, Pagoni-Kurtz L, Masse L, Vitaro F, Pihl RO. 1995. A bimodal prevention intervention for disruptive kindergarten boys: Its impact through mid-adolescence. *J Consult Clin Psychol* 63:560–568.
- Ullman SE, Knight RA. 1993. The efficacy of women's resistance strategies in rape situations. *Psychol Women Q* 17:23–38.
- Ullman SE, Karabatsos G, Koss MP. 1999a. Alcohol and sexual assault in a national sample of college women. *J Interpers Violence* 14:603–625.
- Ullman SE, Karabatsos G, Koss MP. 1999b. Alcohol and sexual assault in a national sample of college men. *Psychol Women Q* 23:673–689.
- Vinogradov S, Dishotsky NI, Doty AK, Tinklenberg JR. 1988. Patterns of behavior in adolescent rape. *Am J Orthopsychiatry* 58:179–187.
- Wilcox RR. 1996. *Statistics for the social sciences*. San Diego, CA: Academic Press.