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J Interpers Violence 2005; 20; 1325

DOI: 10.1177/0886260505278528

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A Prospective Analysis of Sexual Assault Perpetration

Risk Factors Related to Perpetrator Characteristics

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This study prospectively evaluated perpetrator risk factors for sexual assault perpetration, including peer influences, beliefs and attitudes about sexuality, alcohol use, and token resistance. Perpetration of sexual assault was evaluated at three time periods: pretest, 3-month follow-up, and 7-month follow-up. Retrospective and prospective analyses yielded differential predictors of sexually aggressive behavior. However, perpetration of sexual assault at any particular assessment period was a predictor of perpetration during the subsequent follow-up period. Furthermore, several variables that have previously been demonstrated in the literature to be related to the perpetration of sexual assault were not significant in regression analyses, indicating that these variables may be rendered insignificant when accounting for past perpetration in prospective analyses. These findings may have significant potential impact on development of sexual assault prevention programming with men.

Keywords: *sexual assault; perpetration; risk factors*

During the past two decades, research has consistently demonstrated the alarming prevalence of acquaintance rape and other coerced sexual activity on college campuses. Studies on the frequency of sexual assault have found that the majority of college women have experienced some form of sexual victimization, most often involving unwanted touching (Fisher, Cullen, & Turner, 2000; Koss, Gidycz, & Wisniewski, 1987; Muehlenhard & Linton, 1987). Almost 18 years ago, Koss and her colleagues (1987) estimated that

Authors' Note: This study is based on the first author's doctoral dissertation, chaired by C. A. Gidycz, Ph.D., and was funded through dissertation grants from the Fahs-Beck Fund for Research and Experimentation, the American Psychological Association, the John Houk Memorial Research Grant and the Ohio University Department of Psychology.

JOURNAL OF INTERPERSONAL VIOLENCE, Vol. 20 No. 10, October 2005 1325-1348

DOI: 10.1177/0886260505278528

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1325

approximately one fourth of college women are victims of attempted rape or rape. The lifetime prevalence of rape was found to be 20% for college women (Brener, McMahon, Warren, & Douglas, 1999). Similarly, it has also been estimated that one fourth of college men have engaged in some form of sexually coercive behavior from unwanted touching to rape, with approximately 8% reporting actions consistent with rape or attempted rape (Abbey, McAuslan, & Ross, 1998; Koss et al., 1987).

Identification of variables that influence likelihood of sexual assault is fundamental for prevention efforts. Research regarding risk factors for sexual assault has largely focused on three general areas: characteristics of the victim, characteristics of the perpetrator, and situational characteristics (for a review, see Gidycz, Loh, & Lobo, in press). Although much of the research in sexual assault has focused on the characteristics of victims that increase the likelihood of an assault, it is likely that the most effective way to reduce sexual assault is to focus on perpetrator characteristics that increase the likelihood of perpetration. Specifically, these characteristics include differences in socialization experiences, beliefs and attitudes about sexuality, personality, and alcohol use that have been empirically determined or hypothesized to differentiate men who are sexually aggressive from their counterparts who are sexually nonaggressive.

Individual perpetrator characteristics and rape supportive attitudes and beliefs are widely considered to be a product of a general cultural context that objectifies women and condones the use of force by men to obtain goals, including sexual conquest (Berkowitz, 1992; Burt, 1980; Kanin, 1985). More attention has been cast on the role of peer relationships and perceived peer norms on sexually aggressive behavior. According to social norms theory, individuals behave in a manner that they deem to be consistent with a norm of behavior (Berkowitz, 2003). Men who believe their friends or relevant peer groups are using coercive behavior to obtain sex are theorized to be more likely to engage in similar behaviors. Therefore, men who belong to groups that advocate male dominance may be more comfortable committing acts of sexual aggression than men without peer support for such behavior (Malamuth, Sockloskie, Koss, & Tanaka, 1991). For example, fraternities have often been accused of fostering rape supportive attitudes by promoting male dominance and brotherhood, and fraternity affiliation has been found to be a significant predictor of sexually aggressive behavior in retrospective analyses (Lackie & de Man, 1997). Furthermore, perceived peer approval of forced sex is also greater for perpetrators of sexual assault than nonperpetrators (Abbey, McAuslan, Zawacki, Clinton, & Buck, 2001).

Rape supportive attitudes and beliefs are believed to define situations in which sexually aggressive behavior is considered justifiable (Berkowitz,

1992). For example, women wearing sexy clothes are seen by men and women as being more vulnerable to victimization and so-called more responsible for sexual crimes committed against them, compared to women who dress more conservatively (Edmonds & Cahoon, 1986). It has been suggested that deeply ingrained rape supportive beliefs manifest through societal norms dictating appropriate behavior for women, providing occasions of so-called justifiable rape (Burt, 1980). Moreover, these rape supportive attitudes and beliefs are correlated with sexual assault perpetration. Overall, the literature reveals that men who hold adversarial views about relationships between men and women, condone violence against women, accept stereotypical rape myths, or hold traditional attitudes about sex roles are more tolerant of rape and more likely to perpetrate sexual aggression than men who do not share these beliefs (Abbey et al., 2001; Burt, 1980; Koss, Leonard, Beezley, & Oros, 1985; Lackie & de Man, 1997; Malamuth et al., 1991; Muehlenhard & Linton, 1987; Rapaport & Burkhart, 1984). Perpetrator personality may play a role in determining which individuals act in accordance with their rape supportive attitudes and beliefs (Berkowitz, 1992). When compared to nonperpetrators, perpetrators of sexual assault have been found to exhibit less understanding of the rules of social order, less acceptance of personal responsibility, less internalization of prosocial beliefs, more immaturity, and more irresponsibility (Kosson, Kelly, & White, 1997; Rapaport & Burkhart, 1984).

Research has consistently determined alcohol to be a major risk factor in sexual assault (Abbey et al., 1998; Koss et al., 1987; Norris, Nurius, & Graham, 1999). In fact, preassault alcohol use by victims and perpetrators has been associated with more severe sexual victimization (Ullman, Karabatsos, & Koss, 1999). Abbey and her colleagues (1998) proposed that sexual assault perpetration may be influenced by alcohol expectancies; such that men who believe alcohol enhances sexuality may drink alcohol when they want to feel or be sexual. Alternatively, the effects of alcohol may also be associated with decreased sensitivity to social cues, allowing for misperceptions of sexual intent (Abbey et al., 1998; Muehlenhard & Linton, 1987). These misperceptions may permit perpetrators of sexual assault to disregard refusals for sexual activity, possibly dismissing them as token refusals (Krahe, 1999). *Token resistance* has been defined as an individual refusing sexual contact when she or he has intentions of engaging in sexual contact (i.e., saying no when you mean yes; Muehlenhard & Hollabaugh, 1988). Muehlenhard and Hollabaugh (1988) found that in a sample of college women, 40% reported engaging in token resistance. Women who reported using token resistance were more likely to endorse traditional sex-role stereotyping and accept interpersonal violence to a greater degree than women who did not report

using token resistance. Krahe (1999), in a sample of late adolescents, found that 44% of men indicated that they perceived token resistance from a sexual partner in the past. Furthermore, men who report perceiving token resistance from a sexual partner, compared to men who do not, have also been found to have longer reaction times in response to a rape scenario, indicating that the man in the scenario should stop his sexual advances (Marx & Gross, 1995). In addition, longer reaction times were also significantly related to a greater degree of acceptance of rape myths (Marx & Gross, 1995).

Much of the research involving attributes of men who are sexually aggressive have examined variables in isolation, although some previous investigations have examined some of these risk factors concurrently. For example, investigations of multifactorial models of sexual assault perpetration have found evidence for promiscuity and hostility (Malamuth, Linz, Heavey, Barnes, & Acker, 1995; Malamuth et al., 1991), and adherence to rape myths, alcohol use, and misperception of sexual cues (Abbey et al., 1998; Abbey et al., 2001). However, the majority of studies examining more than one attribute of men who are sexually aggressive have been conducted retrospectively, making it difficult to account for the effects of recall biases in participants. Of note, there have been two longitudinal studies examining sexual assault perpetration in college men. White and Smith (2004) conducted a 5-year longitudinal evaluation of college men and found that childhood victimization was associated with increased likelihood of perpetration of sexual assault in adolescence, which in turn was associated with increased likelihood of perpetrating sexually aggressive acts in college. However, when these variables were considered collectively, only adolescent sexual perpetration was predictive of perpetration during college. Although early victimization and perpetration over time were assessed, other variables, such as rape supportive beliefs, were not. Malamuth and his colleagues (1995) conducted a 10-year longitudinal study to examine the confluence model of sexual aggression, including early risk factors, rape supportive beliefs, and promiscuity. The results indicated that sexually aggressive behavior at baseline predicted conflict with women at follow-up, which included sexual and nonsexual aggression, and relationship distress.

The primary purpose of the current study was to assess the relative predictive value of perpetrator characteristics that contribute to the perpetration of sexual assault, including the impact of perceived peer attitudes and beliefs. The current study utilized a prospective and longitudinal design to assess the relationships between these factors and sexual assault. At baseline assessment, participants responded to questions regarding their attitudes and beliefs about sexuality, alcohol use, personality characteristics, token resis-

tance, and history of sexually aggressive behavior. Sexual perpetration was then assessed at two follow-up periods, 3 months and 7 months after pretest, which allowed for prospective analysis of risk factors for sexual perpetration. The current study was exploratory and intended to identify the most salient and robust predictors of sexual aggression. Secondary analyses were also conducted to examine the relationships between perceived peer normative rape supportive attitudes and beliefs and personal attitudes and beliefs. It was hypothesized that perpetrators of sexual assault would perceive more support for inappropriate attitudes and behaviors from their peers than nonperpetrators of sexual assault.

METHOD

Participants

Participants were 325 undergraduate men in the control group of a sexual assault prevention program study at a large midwestern university (Lobo et al., 2002). The vast majority of participants were heterosexual (96.6%), White (91.7%), more than one half were enrolled in their first year of college (64.3%), and between age 18 and 19 years (71.1%).

Attrition. Attrition rates were acceptable during the course of the study. Seventy-eight percent ($n = 253$) of men who participated in the pretest returned for the 3-month follow-up, and 72% ($n = 234$) returned for the 7-month follow-up. Overall, 66% ($n = 215$) attended all three assessment periods. Men who withdrew from the current study during the 3-month follow-up period were not significantly different from those who participated during that interim period in terms of history of perpetration, $\chi^2(2, N = 324) = 1.41$, $p > .05$; however, men who reported engaging in sexually aggressive behaviors that met the legal definition of rape prior to entering the study were more likely to withdraw from the study during the 7-month follow-up period than men without a history of perpetration or those with a moderate history of perpetration, $\chi^2(2, N = 324) = 6.91$, $p < .05$. Specifically, more than one half (58.3%) of men with a history of perpetrating rape did not return for the 7-month follow-up period compared to 28.3% of men who did not have a history of perpetrating rape. Finally, men who withdrew from the current study during the 7-month follow-up period were not significantly different from those who participated during that interim period in terms of perpetration during the 3-month follow-up period, $\chi^2(2, N = 253) = 2.00$, $p > .05$. There

were no significant differences in attrition rates for any of the dependent variables.

Measures

Attitudes and beliefs. The 19-item short form of the Hypergender Ideology Scale (HGIS; Hamburger, Hogben, McGowan, & Dawson, 1996) assesses extreme, stereotypical gender roles. Higher scores indicate a greater degree of adherence to traditional gender-role ideology. The HGIS demonstrates good reliability, and good concurrent validity when compared to the Hypermasculinity Inventory, and Hyperfemininity Inventory (Hamburger et al., 1996) Cronbach's alpha for the current sample was .91.

The Adversarial Heterosexual Beliefs Scale (AHBS; Lonsway & Fitzgerald, 1995) measures the degree to which respondents feel that the fundamental relationships between the sexes are adversarial in nature. Higher scores indicate a greater degree of belief in the idea that relationships between the sexes are adversarial. The AHBS has adequate reliability (Cronbach's alpha = .78) and demonstrates good concurrent validity with other measures of adversarial sexual beliefs, such as the Adversarial Sexual Beliefs Scale and Acceptance of Interpersonal Violence Scale (Lonsway & Fitzgerald, 1995) Cronbach's alpha for the current sample was .99.

The Illinois Rape Myth Acceptance Scale (IRMA; Payne, Lonsway, & Fitzgerald, 1999) is a 20-item questionnaire developed to assess general rape-myth acceptance. Higher scores indicate greater rape-myth acceptance. Reliability and concurrent validity coefficients with the Sex Role Stereotyping Scale (Burt, 1980), Hostility Towards Women Scale (Burt, 1980), and Acceptance of Interpersonal Violence Scale (Burt, 1980) are good (Payne et al., 1999). Cronbach's alpha for the current sample was .62.

Social norms and/or peer influences. The Reactions to Offensive Language and Behavior Scale (ROLB) is a 26-item self-report scale, adapted from questions used by Kilmartin and his colleagues (1999), which measured men's degree of discomfort with and willingness to confront the inappropriate behavior of other men, and their perceptions of other men's discomfort with and willingness to confront these behaviors (Kilmartin, Conway, Friedberg, McQuoid, & Tschan, 1999) This questionnaire was developed by the investigators to measure men's perceptions of social norms. Participants indicated their behavioral response and their comfort level to situations depicting degrading attitudes and comments toward women, as themselves and how they feel the so-called average college man would respond. The measure produces two domains (behavior and comfort) for two

targets (self and other) yielding four subscales: self-behavior, self-comfort, other-behavior, and other-comfort. Responses range from 1 (*always*) to 7 (*never*) for the behavioral subscale (e.g., When I hear a sexist comment I indicate my displeasure), and 1 (*very comfortable*) to 7 (*very uncomfortable*) for the comfort subscale (e.g., You walk into your room and your roommates are watching porn). Lower scores on the behavioral subscale *N* indicated a greater propensity to engage in behavior to intervene in situations where women are being objectified, assaulted, or verbally degraded. Higher scores on the comfort subscale indicated a greater degree of comfort in situations where women are being objectified, assaulted, or verbally degraded. Reliability coefficients were good for the ROLB. Internal consistency reliability, assessed using the data from the current analysis, was high on all scales as measured by Cronbach's alphas: self-behavior (.79 to .99), self-comfort (.90 to .99), other-behavior (.90 to .99), and other-comfort (.98 to .99).

Participants also responded to the IRMA (Payne et al., 1999) as they believed the average college man would respond, yielding a measure of perceptions of rape-myth acceptance in peers.

Fraternity affiliation was assessed at baseline. Participants responded either yes or no to the following question, "Are you a member of a social fraternity?" Approximately one fourth (24%) identified themselves as belonging to a fraternity at baseline.

Personality. The Socialization Scale of the California Personality Inventory (CPI; Gough, 1987) assesses the degree of internalization of prosocial values and beliefs. Higher scores indicate less sociability. The scale was constructed empirically and demonstrates good reliability and validity (Gough, 1987). Cronbach's alpha for the current sample was .81.

Alcohol use. The Drinking Habits Questionnaire (Cahalan, Cisin, & Crossley, 1969) is a 13-item measure that assesses the type, amount, and frequency of alcohol consumption. Participants were asked to estimate their consumption of beer, liquor, and wine during a specified time period and the amount they drank during a typical episode. From this information, a cross-classification dimension of quantity and frequency of alcohol consumption, or volume-variability index (VV; Cahalan et al., 1969) was calculated for each participant. Participants were classified as being non (VV = 1 to 2), light (VV = 3 to 5), moderate (VV = 6 to 8), or heavy drinkers (VV = 9 to 11). For example, heavy drinkers imbibe a minimum of 45 alcoholic drinks (beer, wine, or hard liquor) per month, while light drinkers drink a maximum of 17.5 drinks, and moderate drinkers drink between 17.6 and 44.9 drinks per month. In the current sample, almost two thirds (63.9%) were heavy drink-

ers, 16.9% were moderate drinkers, 6.5% were light drinkers, and the remaining 12.7% were nondrinkers. Cronbach's alpha for the current sample was .73.

Token resistance. Use of token resistance by participants and perceived token resistance from partners was assessed. The token resistance question was adapted from Marx and Gross (1995), "Have you ever been in a situation where the person you were with wanted to have sexual contact with you, but you said 'no' even though you had every intention to and were willing to engage in sex with them?" The perceived token resistance question was adapted from Muehlenhard and Hollabaugh (1988), "Have you ever had a single sexual encounter in which the person you were with, at first, told or demonstrated to you that they did not want to go any further, but then did proceed to engage in further sexual activity?" In the current sample, 40% of respondents acknowledged their own use of token resistance, and one third (33.1%) had perceived token resistance from a partner in the past.

Sexual aggression. The Sexual Experiences Survey (SES; Koss & Oros, 1982) was designed to identify the perpetrators of sexual assault through a series of 10 sexually explicit questions, in which the respondent assesses his past sexual behavior along a variety of behavioral dimensions since age 14 years. The SES was found to have good internal consistency reliability as measured by a Cronbach alpha of .89 for men, and validity for SES has been established by comparing men's responses to the SES with those given to an interviewer, yielding a reliability coefficient of .61. (Koss & Gidycz, 1985) Cronbach's alpha for the current sample was .63. The SES was administered at baseline and both follow-up periods. At each follow-up, only sexually aggressive experiences during the interim period between assessments was measured. The SES was used to classify individuals into categories reflecting the level of their use of coercion or force. Participants were classified into one of three levels of perpetration, according to the most severe type of assault behavior they endorsed. The three levels of sexual assault, in order from least to most severe, were defined as follows: individuals who reported that they did not engage in sexually aggressive acts were labeled *none*; those who engaged in unwanted sexual contact, sexual coercion, or attempted rape were grouped into a category labeled *moderate*; and those who engaged in behaviors that met the legal definition of rape were labeled *severe*.

Procedure

All assessment sessions were conducted with groups no larger than 20, and given that participants may have been disclosing behavior that is potentially criminal, measures were taken to protect their identities. Participants were enrolled in psychology courses and had the choice of volunteering to participate in psychology experiments or writing a brief summary of a journal article in exchange for credit applied toward course grades. Students volunteered for participation through sign-up sheets posted on a sign-up board in the Department of Psychology building. Initial recruitment was conducted from fall 2000 through spring 2001. Each participant derived a unique number based on his social security number, birthdates, and mother's first name. Therefore, there were no means of connecting participants with individual responses. All measures were self-report assessments. At baseline, participants responded to all assessment instruments. At each follow-up session, participants completed the Sexual Experiences Scale, with respect to their sexually aggressive activity during the interim period between assessments. Telephone calls and e-mail messages were used to remind participants of their follow-up assessment appointments. Participants received experimental credit or US \$20 for their participation at each assessment session.

RESULTS

Prevalence of Sexual Aggression

Approximately one third (31.2%) of participants reported engaging in sexually aggressive acts after age 14 years and prior to entering the study, with 27.5% of the total sample reporting perpetrating a moderate act of sexual aggression and 3.7% reporting a severe sexual perpetration after age 14 years and prior to entering the study. During the 3-month follow-up, 17.4% of participants engaged in sexually aggressive behavior, with 13.8% of the sample reporting moderate sexual aggression and 3.6% reporting severe sexual aggression during the interim period. During the 7-month follow-up, 12.4% of participants engaged in sexually aggressive behavior, with 10.7% of participants reporting moderate sexually aggressive experiences and 1.7% reporting severe sexually aggressive experiences during the interim period.

Retrospective Analyses

Significant relationships between predictors. Correlational analyses indicated that the HGIS, AHBS, and IRMA-self were all significantly positively correlated (see Table 1), indicating that men who adhere to traditional gender-role ideology are also more likely to believe that the nature of relationships between the sexes is adversarial and more likely to be accepting of rape myths. The HGIS was also significantly related to fraternity membership, alcohol use at baseline, use of token resistance, and the ROLB (self-comfort), implying that men who adhere to traditional gender-role ideology were more likely to be in fraternities, use alcohol to a greater degree, use token resistance with sexual partners, and feel more comfortable in situations where women are being mistreated. Greater ease and comfort in situations where women are being mistreated was also positively correlated with alcohol use and fraternity affiliation.

Perceived token resistance was significantly related to use of token resistance, suggesting that men who use token resistance have also perceived more token resistance from past sexual partners. It is interesting to note, higher scores on the Socialization Scale of the CPI were related to less perceived token resistance, and fewer adversarial heterosexual beliefs, indicating that less socialized men were less likely to perceive token resistance from a partner in the past and had fewer adversarial beliefs regarding relationships.

Assessment of personal versus perceived normative beliefs. Paired sample *t* tests were used to assess differences between perceived norms and personal responses on the IRMA, ROLB-behavior and ROLB-comfort scales. Compared to themselves, participants believed that the average college man demonstrated more rape-myth acceptance, $t(277) = -12.84, p < .001$, was less likely to intervene in situations where a woman was being mistreated, $t(288) = -9.52, p < .001$, and was more comfortable in situations where women are being mistreated, $t(288) = -6.45, p < .001$. Moreover, perpetration history was not related to differences between perceived norms and personal responses on the IRMA, $F(276) = .58, p > .05$, ROLB-behavior, $F(276) = -.02, p > .05$, or ROLB-comfort, $F(276) = .59, p > .05$.

Prediction of perpetration history. Logistic regression, using a forward stepwise likelihood ratio model, was performed to investigate the retrospective relationship between history of perpetration and the predictor variables. For the purposes of these analyses, perpetration was treated as a binary dependent variable. All participants who reported committing an act of sex-

(text continued on page 1338)

TABLE 1: Correlations Between Sexual Assault Perpetration and Predictor Variables

	Perpetration ^a						Token Resistance							
	3 Month		6 Month		Self		Perceived		Self		Perceived		HGIS	
	n	r	n	r	n	r	n	r	n	r	n	r	n	r
Perpetration														
Baseline	220	-.04	184	-.08	278	-.06	278	-.24****	278	-.24****	278	-.13*	278	-.13*
3 Month	220		184	-.24****	220	-.01	220	-.01	220	-.01	220	-.08	220	-.08
6 Month	184		184		184	-.01	184	-.01	184	-.01	184	-.08	184	-.08
Token resistance														
Self									278	-.22****	278	-.14*	278	-.14*
Perceived									278		278	-.01	278	-.01
IRMA														
	AHBS		Self		Other		CPI		Fraternity					
	n	r	n	r	n	r	n	r	n	r				
Perpetration	278	-.08	278	-.09	278	-.01	278	-.11	278	-.05				
Baseline	220	-.03	220	-.06	220	-.11	220	-.09	220	-.21****				
3 Month	184	-.18*	184	-.16*	184	-.02	184	-.07	184	-.02				
6 Month	278	-.00	278	-.08	278	-.07	278	.09	278	-.06				
Token resistance	278	-.08	278	-.01	278	-.03	278	.20****	278	-.04				
Self	278	-.40****	278	-.57****	278	-.19****	278	-.04	278	-.20****				
Perceived	278		278	-.28****	278	-.08	278	-.16**	278	-.08				
HGIS														
AHBS														

(continued)

TABLE 1 (continued)

	IRMA											
	AHBS		Self		Other		CPI		Fraternity			
	n	r	n	r	n	r	n	r	n	r		
IRMA												
Self			278	-.37****			278	-.06	278	-.15*		
Other							278	-.01	278	-.01		
CPI: Socialization									278	-.14*		
	ROLB: Comfort						ROLB: Behavior					
	Alcohol Use		Self		Other		Self		Other			
	n	r	n	r	n	r	n	r	n	r		
Perpetration												
Baseline	278	-.08	278	-.05	278	-.01	278	-.02	278	-.02		
3 Month	220	-.01	220	-.07	220	-.06	220	-.05	220	-.08		
6 Month	184	-.05	184	-.07	184	-.13	184	-.01	184	-.08		
Token resistance												
Self	278	-.02	278	-.06	278	-.01	278	-.17***	278	-.01		
Perceived	278	-.06	278	-.06	278	-.01	278	-.12*	278	-.16**		
HGIS	278	-.19***	278	-.37****	278	-.05	278	-.07	278	-.07		
AHBS	278	-.09	278	-.14*	278	-.06	278	-.06	278	-.01		
IRMA												
Self	278	-.04	278	-.09	278	-.10	278	-.06	278	-.09		
Other	278	-.02	278	-.07	278	-.17**	278	-.06	278	-.32****		

CPI: Socialization	278	-.09	278	-.06	278	-.08	278	-.09	278	-.06
Fraternity	278	-.07	278	-.18***	278	-.06	278	-.00	278	-.07
Alcohol Use	278		278	-.30***	278	-.11	278	-.04	278	-.02
ROLB: Comfort										
Self			278		278	-.44***	278	-.21***	278	-.10
Other							278	-.12*	278	-.31***
ROLB: Behavior										
Self										
Other									278	-.33***

NOTE: HGIS: Hypergender Ideology Scale; AHS: Adversarial Heterosexual Beliefs Scale; IRMA: Illinois Rape Myth Acceptance Scale; CPI: California Personality Inventory; ROLB: Reactions to Offensive Language and Behavior Scale.

a. Perpetration is categorized into three levels: none, moderate (contact, attempted rape, coercion), and severe (rape).

* $p < .05$. ** $p < .01$. *** $p < .001$. All tests of significance are two-tailed.

TABLE 2: Logistic Regression Analysis Predicting History of Perpetration

	β	SE	Wald	df	p	Exp(β)
Step 1. Perceived token resistance	1.05	.27	14.87	1	.00	2.86
Step 2. Perceived token resistance	1.07	.28	15.03	1	.00	2.90
HGIS	.02	.01	3.12	1	.08	1.02

NOTE: HGIS: Hypergender Ideology Scale. Forward likelihood ratio logistic regression model. Inclusion criteria set to .20.

ual aggression were grouped into one category (assault) and those who did not report any act of sexual aggression during each period were grouped into another category (no assault)

The following variables were included in the analysis as follows: fraternity membership status, IRMA (other), ROLB (other-behavior), and ROLB (other-comfort) were entered to assess for peer influences, the HGIS, AHBS, IRMA (self), ROLB (self-behavior), and ROLB (self-comfort) were entered to assess for attitudes and beliefs, and the Socialization Scale of the CPI was entered to assess for personality factors, the Drinking Habits Questionnaire was used to assess for level of alcohol use, and the use of token resistance and perceived token resistance.

Of the original 325 cases, 47 were deleted because of missing data yielding a sample size of 278. A test of the full model with 13 variables against a constant-only model was statistically reliable, $\chi^2(2, N = 278) = 18.12, p < .001$. The final model consists of two variables, perceived token resistance and hypergender ideology, which accounts for 8.9% of the variance (see Table 2). Men who reported perceiving token resistance from a partner in the past were almost 3 times more likely to have also perpetrated an act of sexual aggression prior to entering the study (odds ratio [OR] = 2.90). Chi-square analyses indicated that 48.3% of men with a history of sexual aggression reported perceiving token resistance from a partner in the past, compared with 24.6% of men without a history of sexual aggression, $\chi^2(1, N = 278) = 15.39, p < .001$. Although the HGIS entered the regression model, it was not significant. Post hoc analysis indicated that the bivariate relationship between history of perpetration and hypergender ideology was also not significant, $F(277) = 2.96, p > .05$, suggesting that adherence to hypergender ideology may not be a significant predictor of history of perpetration outside the presence of perceived token resistance.

TABLE 3: Logistic Regression Analysis Predicting Perpetration During 3-Month Follow-Up

	β	SE	Wald	df	p	Exp(β)
Step 1. History of perpetration						
None (reference)			10.47	2	.01	
Moderate	-.55	.48	1.29	1	.26	.58
Severe	-2.18	.76	8.13	1	.00	8.82
Step 2. Fraternity status						
History of perpetration						
None (reference)			9.93	2	.01	
Moderate	-.64	.49	1.68	1	.20	.53
Severe	-2.11	.79	7.18	1	.01	8.27
Step 3. IRMA: Other						
Fraternity status	-1.15	.41	8.07	1	.01	3.17
History of perpetration						
None (reference)			10.66	2	.01	
Moderate	-.64	.50	1.65	1	.20	.53
Severe	-2.26	.81	7.91	1	.01	9.63

NOTE: IRMA: Illinois Rape Myth Acceptance Scale. Forward likelihood ratio logistic regression model. Inclusion criteria set to .20.

Prospective Analyses

Perpetration during the 3-month follow-up. All the predictor variables included in the first logistic regression were used, with the addition of history of perpetration (none, moderate, or severe). Perpetration during the 3-month follow-up was treated as a binary dependent variable (no assault vs. assault). Data from participants who completed pretest and 3-month follow-up was included. Of the 253 cases available, 33 were deleted because of missing data yielding a sample size of 220. A test of the full model with 14 predictors against a constant-only model was statistically reliable, $\chi^2(4, N = 220) = 21.66, p < .001$. The final model consists of three variables, history of perpetration, fraternity membership status, and IRMA-other which account for 16.1% of the variance (see Table 3).

Men with a history of perpetrating acts who met the legal definition of rape were more than 9 times more likely to perpetrate an act of sexual aggression during the 3-month follow-up period (OR = 9.63) than men without a history of sexual aggression. Moreover, fraternity men were more than 3 times more likely to engage in sexually aggressive acts during the 3-month

TABLE 4: Logistic Regression Analysis Predicting Perpetration During 7-Month Follow-Up

	β	SE	Wald	df	p	Exp(β)
Step 1. Perpetration during 3-month follow-up						
None (reference)			10.94	2	.00	
Moderate	-0.93	.63	2.23	1	.14	2.54
Severe	-2.54	.81	9.84	1	.00	12.71
Step 2. AHBS						
Perpetration during 3-month follow-up						
None (reference)			10.43	2	.01	
Moderate	-1.13	.65	2.96	1	.09	3.08
Severe	-2.44	.83	8.71	1	.00	11.44
Step 2. ROLB: Self-behavior						
AHBS	-.83	.35	5.63	1	.02	2.29
Perpetration during 3-month follow-up						
None (reference)			11.31	2	.00	
Moderate	-1.06	.66	2.54	1	.11	2.88
Severe	-2.73	.87	9.84	1	.00	15.30

NOTE: AHBS: Adversarial Heterosexual Beliefs Scale; ROLB: Reactions to Offensive Language and Behavior Scale. Forward likelihood ratio logistic regression model. Inclusion criteria set to .20.

follow-up period than non-fraternity men (OR = 3.27). Perceived rape-myth acceptance of peers entered the regression model but was not a stable predictor. Post hoc analyses indicate that the bivariate relationship was also not significant, $F(219) = 2.15, p > .05$.

Perpetration during the 7-month follow-up. All the variables included in the previous logistic regression were used, with the addition of perpetration during the 3-month follow-up (none, moderate, severe). Perpetration during the 7-month follow-up was treated as a binary dependent variable (no assault vs. assault). Data from participants who completed pretest, 3-month follow-up, and 7-month follow-up was included. Of the 215 cases available for analysis, 31 were deleted because of missing data yielding a sample size of 184. A test of the full model with 15 predictors against a constant-only model was statistically reliable, $\chi^2(4, N = 184) = 19.27, p < .005$. The final model consists of three variables, adversarial heterosexual beliefs, perpetration during the 4-month follow-up, and ROLB-self-comfort which accounted for 18.8% of the variance (see Table 4).

Men who reported perpetrating rape during the 3-month follow-up period were approximately 15 times more likely to perpetrate an act of sexual aggression during the 7-month follow-up (OR = 15.30) than men who did not perpetrate during the 3-month follow-up period. Post hoc analyses indicated that the bivariate relationship between perpetration of sexually aggressive acts during the 7-month follow-up period and adversarial heterosexual beliefs was significant $F(183) = 6.40, p < .05$, indicating that men perpetrated acts of sexual aggression during the 7-month follow-up period were more likely to endorse feelings that relationships between men and women are adversarial in nature at baseline. However, greater ease or comfort in situations where women are being demeaned or mistreated was not an independent predictor, despite entering the regression model. Post hoc analyses indicate that the bivariate relationship between ROLB-self-comfort and perpetration during the 7-month follow-up period was not significant, $F(183) = .76, p > .05$.

DISCUSSION

The majority of previous research on risk factors for sexual perpetration has been conducted retrospectively and examined variables in isolation. The current study was an exploratory investigation of the collective ability of variables that have been demonstrated to be related to perpetration in retrospective analyses to prospectively predict sexually aggressive behavior.

Sexually aggressive behavior was assessed at baseline and during two follow-up periods, at 3 months and 7 months. The proportion of participants with a history of sexually aggressive behavior (31.2%) is comparable to other studies, which have found that approximately 25% to 33% of college men have engaged in some form of sexually coercive behavior since age 14 years (Abbey et al., 1998; Abbey et al., 2001; Koss et al., 1987; Rapaport & Burkhart, 1984). Compared to previous prospective studies, the number of participants who perpetrated during the course of the 3-month follow-up (17.4%) was substantially higher. Gidycz and her colleagues (1997) found that approximately 8% of men in their sample re-perpetrated during a period of 9 weeks. The difference in rates is likely because of two methodological differences between these studies. First, the extended follow-up time may have allowed participants more opportunity to engage in sexually aggressive acts. Second, participants for the current study were recruited throughout the academic quarter, while the prior study recruited participants at the beginning of the academic quarter (Gidycz et al., 1997). However, undergraduates may participate at any time during the quarter to receive course credit. For this reason, the men recruited for the prior study may have been more consci-

entious than the average male undergraduate because they sought to complete course requirements in the beginning of the academic quarter. Finally, the percentage of participants who perpetrated acts of sexual aggression during the 7-month follow-up period (12.4%) was somewhat lower than the perpetration rates reported during the 3-month follow-up period. There was a differential attrition rate during this follow-up period for men with a history of perpetrating acts that are consistent with the legal definition of rape, such that men with a rape history were less likely to return for the 7-month assessment. Because more than one half (60%) of men with a history of rape perpetrated acts of sexual aggression during the subsequent time period, it is possible that this contributed to the decrease in perpetration rates during the 7-month follow-up period.

In retrospective analyses, history of perpetration was related to two variables, perceived token resistance and hypergender ideology. Almost one half (48.3%) of men with a history of sexually aggressive behavior reported that they perceived use of token resistance from a partner in the past, which is comparable to previous research findings, where approximately 44% of men perceived token resistance from a partner in the past (Krahe, 1999). Men who perceived token resistance from a partner in the past were almost 3 times more likely to have a history of sexually aggressive behavior, compared to men who did not perceive token resistance from a partner in the past. Consistent with past findings (Krahe, 1999), use of token resistance was positively correlated with perceived token resistance from a partner. There are several possible explanations for these findings. First, men who are sexually aggressive may discount refusals for sexual activity. It may be that men who are sexually aggressive expect women to refuse sexual activity for reasons related to social norms, such as not wanting to appear "easy." In addition, this may also be related how they view their own role in heterosexual relationships. Perpetrators may believe that their role consists of persuading women to engage in sexual activity. Alternatively, it may be that men who are sexually aggressive perceive the use of token resistance more than men who are sexually non-aggressive, because of the fact that they continue to make sexual advances after women have refused further sexual activity. Their past sexual partners may have submitted following repeated advances, and as a result, men who are sexually aggressive have had a greater number of experiences where they perceived token resistance. Similarly, it is also possible that the partners of men who are sexually aggressive do not concede but rather are forced into further sexual activity. Consequently, men who are sexually aggressive are able to justify their sexually aggressive behavior by labeling those experiences as token resistance when, in fact, they are perpetrating sexually aggressive acts. Finally, given the relationship between perceived token resistance

and use of token resistance, men who use token resistance may perceive token resistance more often because they use the tactic themselves and have an expectation that others act similarly. However, although these findings are promising, more research is necessary to elucidate the impact of use of and perceived token resistance on sexually aggressive behavior, as these variables were measured using a single question in the current study.

Although hypergender ideology was significant in the regression model, it was not significantly related to history of perpetration in subsequent post hoc analyses. Hypergender ideology was correlated with history of perpetration, such that men with a greater degree of adherence to traditional gender roles were also more likely to have a history of sexually aggressive behavior. However, the variables used to denote history of perpetration in the logistic regression and correlational analyses were different with regards to the level of detail. Specifically, in the logistic regression, a dichotomous variable was used (assault vs. no assault), and in the correlational analysis, participants were categorized into three groups, none, moderate, and severe. It is possible that in collapsing these groups further, the relationship between hypergender ideology and history of perpetration was rendered insignificant.

Prospectively, fraternity membership at baseline was a significant predictor of perpetration during the 3-month follow-up period. Indeed, the current findings are consistent with previous retrospective research that links fraternity affiliation and sexually aggressive behavior (Lackie & de Man, 1997). Perceived rape-myth acceptance of peers also entered the predictive model for perpetration during the 3-month follow-up period. Although it was not a stable predictor, its presence in the model indicates that the level of perceived acceptance of rape myths has some influence on perpetration within the context of history of perpetration and fraternity membership. Berkowitz (2003) proposed that men who believe their friends and relevant peer groups are using coercive behavior to obtain sex are more likely to engage in similar behaviors. Thus, fraternity men, within an environment that promotes stereotypical notions of masculinity, may be more likely to perpetrate acts of sexual aggression (Kanin, 1985; Martin & Hummer, 1989). Indeed, fraternity affiliation was associated with a greater degree of adherence to traditional ideas about gender roles. However, all participants believed that the average college man demonstrated more rape-myth acceptance and are less likely to intervene and more comfortable in situations where women are being demeaned or mistreated than themselves, regardless of perpetration history. It is possible that this is a manifestation of self-enhancement bias, or the tendency to describe oneself in more positive terms when compared to others (Krueger, 1998; Kwan, John, Kenny, Bond, & Robins, 2004). However, an alternative explanation is that there may be a universal understanding among

college men that supports stereotypical ideas about their behavior and beliefs regarding sexual relationships and women. In point of fact, Burt (1980) contended that culturally transmitted assumptions about men, women, violence, and sexuality establish rape supportive belief systems. Men who are non-sexually aggressive who subscribe to the same norms as men who are sexually aggressive may be participating in the maintenance of a general social environment that supports sexually aggressive behavior (Berkowitz, 2003). These findings support the concept of a collective awareness regarding rape supportive beliefs, including acceptable beliefs and attitudes of men with regards to women.

With respect to attitudes about relationships, adherence to adversarial beliefs about the nature of relationships between the sexes, measured at baseline, was predictive of sexual aggression during the 7-month follow-up period. Men who perpetrated acts of sexual aggression during the 7-month follow-up period endorsed, at baseline, feeling that their relationships with women are adversarial to a greater degree. Although retrospective studies have demonstrated a relationship between adversarial sexual beliefs and perpetration of sexual assault (Burt, 1980; Koss et al., 1985), the current findings represent one of the few prospective studies that have established a link between attitudes and subsequent sexual aggression.

Without doubt, rape perpetration emerged as the best predictor of sexual aggression in subsequent time periods. Consistent with previous findings from prospective studies (Gidycz et al., 1997; Loh, Gidycz, Marioni, Marx, & Miranda, 1999; Malamuth et al., 1995; White & Smith, 2004), men with a history of perpetrating rape were more likely to be sexually aggressive during the 3-month follow-up period. Likewise, perpetration of rape during the 3-month follow-up period was predictive of sexual aggression during the 7-month follow-up period. However, as changes in the dependent variables were not assessed over time, it is difficult to extrapolate whether perpetrating sexual assault exerts influence on variables such as rape supportive beliefs and fraternity membership.

It is interesting to note that several variables that have been demonstrated in previous retrospective research to be related to sexual assault perpetration were not prospectively or retrospectively related to a history of sexual assault in the current sample. It is possible that the relationship between some factors that have been found to be related to sexual assault in the literature in retrospective studies is nonexistent when examined prospectively, such that the significance of the relationships between these variables and sexual assault perpetration is an artifact related to retrospective methodology. In addition, there may have been ceiling effects with some variables. For example, alcohol use was not found to be a significant predictor of sexual assault perpetra-

tion at any time period; however, the preponderance of previous research indicates that alcohol use is a major contributing factor to sexual assault, in college and community samples (Abbey et al., 1998; Koss et al., 1987; Muehlenhard & Linton, 1987; Norris et al., 1999; Seifert, 1999). The majority of participants in the current study were classified as heavy drinkers, and differences in perpetration status may have been rendered insignificant because of a lack of variability in alcohol use. However, with almost two thirds of the sample reporting heavy drinking, these findings do illustrate the considerable extent of alcohol use in college men.

As with other studies on sexual assault conducted with college populations, the generalizability of the current study is limited. The differential attrition rates during the 7-month follow-up, and the time-limited nature also present difficulties when discussing the generalizability of results. However, the majority of the research on acquaintance rape is conducted with college populations, as individuals in this age group are at considerably greater risk for victimization and perpetration (Koss et al., 1987). The current study also represents one of the few prospective analyses of sexual perpetration with a large sample size and employs a longer follow-up period than previous prospective studies. Moreover, it assessed a number of variables defined stringently and employed the use of measures that demonstrate good reliability and validity.

These findings may have significant potential impact on sexual assault prevention programming with men. First, fraternities may be one of the most salient campus organizations to target for sexual assault prevention programs. Although it is important to target the general college populations for sexual assault programming, fraternities may be the most cost-effective means of reducing the incidence of sexual assault on college campuses. Moreover, men with a history of perpetrating acts that are consistent with the legal definition of rape are more likely to perpetrate another act of sexual aggression than men who do not have similar histories. It may be that these groups require specialized prevention programming. Furthermore, inclusion of material about token resistance in sexual assault prevention programming with men is important. Ideas about token resistance may be integral in some instances of sexual assault. Inclusion of what constitutes refusal for sexual activity may be essential in preventing sexual assault perpetration in men. An evaluation study involving a sexual assault prevention program for men that assesses the influence of these variables in prevention programming has recently been completed (Lobo et al., 2002). Given the preponderance of research that demonstrates the associations between sexual assault perpetration and rape supportive attitudes and beliefs, it is important to include discussions about these topics in sexual assault programming. Few prospective

studies have demonstrated a relationship between measures of rape supportive attitudes and beliefs and sexual assault perpetration. The current findings support the notion that these beliefs and attitudes may predict sexual assault prospectively, particularly for men who have a history of rape perpetration.

Future research should consider the role of cultural factors in sexual assault perpetration. This may be accomplished through collaboration in multisite investigations, which would also allow for greater sample sizes. Moreover, follow-up periods that span greater lengths of time would allow for better measurement of proportion of men that repeatedly commit acts of sexual aggression. Finally, more attention should be directed at examining the role of perceived social norms in prediction of sexual aggression. The results presented here indicate that further study and replication is warranted.

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