HHS Public Access

Author manuscript

J Soc Clin Psychol. Author manuscript; available in PMC 2015 September 22.

Published in final edited form as:

J Soc Clin Psychol. 2008 ; 27(6): 529–554. doi:10.1521/jscp.2008.27.6.529.

DOES ALCOHOL CONTRIBUTE TO THE CONFLUENCE MODEL OF SEXUAL ASSAULT PERPETRATION?

MICHELE R. PARKHILL

University of Washington

ANTONIA ABBEY

Wayne State University

Abstract

The confluence model of sexual assault provides a useful theoretical integration of factors that influence men's likelihood of committing sexual assault (Malamuth, Sockloskie, Koss, & Tanaka, 1991). This study replicates and extends the confluence model by including alcohol at multiple levels. Participants' usual alcohol consumption and alcohol consumption in sexual situations were included as predictor variables. The number of sexually aggressive acts that participants committed after consuming alcohol and the number of sexually aggressive acts participants committed when sober were separately calculated so that the predictors of each could be distinguished. Participants were 356 men who completed a survey that included measures that assessed the key components of the confluence model. Results of path analyses indicated that the expanded model fit the data well, with both general and situational measures of alcohol use predicting frequency of sexual assault when drinking alcohol. These findings highlight the importance of developing universal and targeted prevention programs for young men.

Sexual assault is a prevalent problem in the United States. Koss, Gidycz, and Wisniewski (1987) found that 25% of men from their nationally representative sample of college students had forced a woman into some type of sexual activity against her wishes. Rates vary considerably across studies depending on the number of questions asked, the types of sex and force included, and the context of the survey (Kolivas & Gross, 2007; Koss, 1993). Several recent studies with male college students have found rates ranging from 14% to 61% (Loh, Orchowski, Gidycz, & Elizaga, 2007; Lyndon, White, & Kadlec, 2007; Warkentin & Gidycz, 2007; Wheeler, George, & Dahl, 2002).

At least half of all sexual assaults involve alcohol use (Testa, 2002). Although many theoretical models have been proposed to explain perpetration (Ellis, 1991; Hall & Hirschman, 1991; Prentky & Knight, 1991), Malamuth's confluence model is one of the most widely used (Malamuth, 1986; Malamuth, Sockloskie, Koss, & Tanaka, 1991). This paper describes a study which added alcohol to the confluence model. Using path analysis, a theoretical model was tested that cross–sectionally predicted past sexual assault perpetration

Correspondence concerning this article should be addressed to Michele Parkhill, Alcohol and Drug Abuse Institute, 1107 NE 45th St., Suite 120, Seattle, WA 98105; mrpark@u.washington.edu..

[2]The three interactions were also examined one at a time in regression; however, none were significant.

by using Malamuth's two main pathways, impersonal sex and hostile masculinity, as well as an additional path that focused on the role of alcohol. The relevant literature is described below and then the study's hypotheses are presented.

CONFLUENCE MODEL OF SEXUAL ASSAULT PERPETRATION

As noted above, the confluence model (Malamuth et al., 1991) focuses on two pathways that contribute to men's likelihood of perpetrating sexual assault. The impersonal sex pathway is characterized by emotional detachment within sexual relationships (Malamuth et al., 1991). Adolescent delinquency and associating with delinquent peers are posited to encourage impersonal sexual behavior because they interfere with the development of critical skills such as delayed gratification and prosocial negotiation tactics. Further, Malamuth et al. hypothesized that engaging in delinquent behavior leads some men to speed up the adoption of adult sexual roles, without the maturity required to negotiate such interactions. Men who have sex at earlier ages and who have numerous sexual partners without emotional commitment are expected to be more likely to sexually assault women for two reasons. First, some men enjoy sex purely for the conquest and are willing to use whatever means necessary to obtain that sexual gratification (Kanin, 1967; Malamuth et al., 1991). These men often have friends who encourage the discussion of sexual conquests, thus reinforcing the need for numerous sexual experiences. Second, impersonal sex increases the likelihood of sexual assault perpetration because it provides men with more opportunities (Abbey, McAuslan, & Ross, 1998). The more frequently men date women and are alone with them in potential sexual situations, the more occasions they have to force sex. Many researchers have found that as compared to men who have not committed sexual assault, sexually aggressive men initiated sex at an earlier age and had more dating and consensual sexual partners (Abbey et al., 1998; Abbey, McAuslan, Zawacki, Clinton, & Buck, 2001; Krahe, 1998; Lim & Howard, 1998).

The second pathway of the confluence model, hostile masculinity, focuses on sexual assault from a power perspective (Malamuth et al., 1991). Witnessing or experiencing abuse as a child and associating with delinquent peers create a social environment which teaches men to treat women as objects rather than equals. These experiences are hypothesized to encourage men to develop cynical, adversarial beliefs regarding male–female intimate relationships (Malamuth, Heavey, & Linz, 1993). Hostile masculinity has been operationalized with a variety of measures of men's attitudes toward women, sexual relationships, and violence against women. In numerous studies, as compared to nonperpetrators, perpetrators of sexual assault endorsed higher levels of hostility toward women, sexual dominance, adversarial sexual beliefs, acceptance of interpersonal violence, and rape myth acceptance (Hersh & Gray–Little, 1998; Lanier, 2001; Lim & Howard, 1998; Malamuth, 1986; Marx, Gross, & Adams, 1999; Muehlenhard & Linton, 1987; Rapaport & Burkhart, 1984; Wheeler et al., 2002).

Although impersonal sex and hostile masculinity are hypothesized to independently predict sexual assault perpetration, a key component of the confluence model is that these pathways interact such that men high on both hostile masculinity and impersonal sex report the highest levels of sexual assault. Thus, hostile masculinity and impersonal sex work together

synergistically to predict sexual aggression. In the original test of the model, hostile masculinity and impersonal sex were both significant predictors of sexual aggression, explaining 26% of the variance in sexual assault perpetration. The interaction between impersonal sex and hostile masculinity explained an additional 4% of the variance (Malamuth et al., 1991).

Malamuth has made modest modifications to the confluence model over the years. For example, the initial model included social isolation; however it was not empirically supported and has not been retained (Malamuth et al., 1991). Acceptance of violence against women and adversarial sexual beliefs have sometimes been included together as a separate construct labeled “Attitudes Supporting Violence Against Women” that is a predictor of hostile masculinity, and sometimes one or both of these variables are included within the hostile masculinity construct (Malamuth et al., 1991; Malamuth, Linz, Heavey, Barnes, & Acker, 1995). Furthermore, although constructs such as witnessing or experiencing violence in childhood and adolescent delinquency are theorized to be causally prior to the development of impersonal sexual behavior and hostile masculinity, most examinations of the model have been cross–sectional (see Malamuth et al., 1995 for an exception).

The confluence model has also been replicated and expanded by several independent research teams (Hall, Teten, DeGarmo, Sue, & Stephens, 2005; Knight & Sims–Knight, 2003; Martin, Vergeles, Acevedo, Sanchez, & Visa, 2005; Wheeler et al., 2002). The precise indicators used to assess each of the primary concepts have varied across studies, suggesting that the constructs of impersonal sex and hostile masculinity are robust. For example, Malamuth et al. (1991) included age at first sexual intercourse and number of sexual partners in the impersonal sex construct (first labeled as sexual promiscuity). In contrast, Malamuth et al. (1995) included questions that determined number of extramarital sexual relationships and frequency of masturbation. Other modifications of the model involve the addition of other variables such as frequency of pornography consumption and empathy (Malamuth, Addison, & Koss, 2000; Wheeler et al., 2002). Empathy has received considerable attention for its buffering effects (Abbey, Parkhill, BeShears, Clinton-Sherrod, & Zawacki, 2006; Dean & Malamuth, 1997; Wheeler et al., 2002). For example, Wheeler et al. (2002) successfully replicated the confluence model in a sample of 209 male college students. These authors found that both hostile masculinity and impersonal sex significantly predicted the number of sexual assaults perpetrated; additionally, the interaction Cbetween impersonal sex and hostile masculinity was significant. In a second model, these authors included empathy as a predictor variable. Although there was no evidence of a main effect of empathy, there was a significant three–way interaction with hostile masculinity and impersonal sex. Empathy had a buffering effect such that for men who scored above the median on hostile masculinity and impersonal sex, higher levels of empathy were associated with lower levels of sexual aggression. With all three indicators included, the model accounted for 29.5% of the variance in sexual assault perpetration.

ALCOHOL USE AND SEXUAL ASSAULT

Alcohol use has been implicated in at least half of all sexual assaults (Abbey, 2002; Seto & Barbaree, 1995; Testa, 2002). The characteristics and consequences of assaults that involve

alcohol are often different from assaults that do not involve alcohol. Although findings are somewhat mixed, typically sexual assaults that involve perpetrators' alcohol consumption involve more force and are more severe than sexual assaults that do not involve perpetrators' alcohol consumption (Abbey, Clinton–Sherrod, McAuslan, Zawacki, & Buck, 2003; Tjaden & Thoennes, 2000; Ullman, Karabatsos, & Koss, 1999).

The effects of alcohol on sexual behavior have been delineated several ways (Cooper, 2002; Testa, 2002). Cooper's distinction between global associational, situational, and event–level effects provides a useful framework for describing the different levels at which alcohol can contribute to sexual assault. The first level at which alcohol potentially influences sexually assaultive behavior is the global, associational level. Many researchers have reported that perpetrators are more likely to drink heavily and to be problem drinkers than nonperpetrators (Abbey et al., 2006; Koss & Gaines, 1993; Ouimette, 1997). For example, Ouimette (1997) found that 53% of a large sample of undergraduate men who reported rape or attempted rape met the necessary criteria for a diagnosis of alcohol abuse or dependence as compared to 25% of men who reported only consensual sexual experiences. Koss and Gaines (1993) found that intensity of alcohol use "when I drink, I get wasted") was significantly, positively associated with severity of sexual aggression in a sample of male college students.

Individuals who drink frequently or heavily do not necessarily drink alcohol in the types of situations in which sexual assault typically occurs. Thus, the second level at which alcohol contributes to sexually assaultive behavior is situational, which is defined as alcohol consumption in the types of situations in which sexual assault frequently occurs. Sexual assault typically occurs in dating and party situations in which alcohol consumption is common (Abbey, 2002; Testa, 2002). College student perpetrators report drinking significantly more alcohol in dating and consensual sexual situations than do nonperpetrators (Abbey & McAuslan, 2004; Abbey et al., 1998).

The knowledge that many perpetrators drink heavily in the types of situations in which sexual assault typically occurs does not demonstrate that these perpetrators were intoxicated when they committed sexual assault. The third level of association is the event level. For example, Muehlenhard and Linton (1987) surveyed 294 male college students who reported on two dates: one that involved some type of forced sex and one that did not. Men were more likely to commit sexual assault on heavy drinking dates. Event–based studies provide the most direct evidence for alcohol's role in sexual assault.

THE PRESENT STUDY AND HYPOTHESES

Alcohol is not a major concept in the confluence model. Malamuth et al. (1995) included alcohol only within the delinquency construct by asking participants to report the number of times they had consumed or bought alcohol when under age or driven while intoxicated. The study described in this paper extends past research on the confluence model by focusing on alcohol's role. As can be seen in Figure 1, men's general alcohol consumption and beliefs about alcohol were hypothesized to predict their situational use of alcohol in dating and sexual situations, which in turn were hypothesized to predict at the event level the number of intoxicated sexually aggressive acts. In order to directly assess alcohol–involved sexual

assaults, sexual aggression was divided into two components: the number of sexually aggressive acts in which the perpetrator consumed alcohol and the number of sexually aggressive acts in which the perpetrator did not consume alcohol.

As described in the Method section, the dataset used in this study was not developed to assess the confluence model. However, most of the concepts that are central to the model were available. The only exception was that there was no measure of childhood exposure to violence. We expected to replicate the basic findings of the confluence model. Thus, it was hypothesized that delinquency would be positively related to impersonal sex and hostile masculinity, which in turn were hypothesized to be positively related to the frequency of perpetrating sexually aggressive acts, both when intoxicated and when sober. As described above, alcohol use was hypothesized to predict only intoxicated sexually aggressive acts. Given the cross–sectional nature of the model, the causal flow which it depicts cannot be fully evaluated. General beliefs about alcohol and drinking habits typically develop in adolescence (Schulenberg & Maggs, 2002), thus the general alcohol concept is placed to the far left with the delinquency concept.

In addition to the pathways described above, numerous significant correlations were hypothesized. We anticipated that delinquency and general drinking behaviors and beliefs would be positively correlated and that impersonal sex would be positively correlated with situational alcohol use and hostile masculinity. Furthermore, it was hypothesized that the two dependent measures, the number of sober sexually aggressive acts and the number of intoxicated sexually aggressive acts would be significantly, negatively correlated. We expected that most men would have a preferred modus operandi and, therefore, perpetrate sexual assault primarily when intoxicated or primarily when sober.

We also tested the confluence model's synergistic hypothesis. After testing the main effects model, a second model was examined that included the interactions between impersonal sex and hostile masculinity, impersonal sex and situational alcohol use, and hostile masculinity and situational alcohol use. In each case, men who were high on both sets of predictors were hypothesized to commit the highest number of sexual assaults. The interaction between hostile masculinity and impersonal sex was expected to significantly predict the number of sober sexually aggressive acts and the interactions between situational alcohol use with impersonal sex and hostile masculinity were expected to significantly predict the number of intoxicated sexually aggressive acts.

METHOD

PARTICIPANTS

Participants were 356 men recruited from a large urban university. Participants' mean age was 25.2 (*SD* = 3.7): 57% of participants were Caucasian (*n* = 203), 30% were African American (*n* = 109), 6% were Arabic or Middle–Eastern (*n* = 21), 3% were Asian or Pacific Islander (*n* = 11), 2% were Hispanic (*n* = 6), and the remaining 2% were of some other ethnic background (*n* = 6).

PROCEDURES

This study's procedures are described in detail in another publication (Zawacki, Abbey, Buck, McAuslan, & Clinton–Sherrod, 2003), thus only a summary is provided here. Participants were recruited through flyers posted around campus and enrollment lists provided by the Registrar's Office and then called to insure that they met the eligibility criteria. Due to the requirements of the original study, participants were required to be 21 years of age or older,[1] to drink alcohol, to be single, and to have had heterosexual dating experiences within the last year. Groups of two to five men reported to large classrooms to fill out the self–administered questionnaire. The experimenter explained the informed consent and answered questions. In order to enhance confidentiality, participants were seated far apart and placed their completed questionnaires in unmarked, sealed envelopes. Participants were paid $20.

MEASURES

Delinquency—Participants answered 13 questions that were adapted from previous research (Jessor, Graves, & Hanson, 1968; Tremblay, Pagani–Kurtz, Masse, Vitaro, & Pihl, 1995). These questions assessed delinquent behaviors that had occurred before the participant was 18 years old. Example questions include "Before the age of 18, how often did you stay out all night without your parents' permission?" and "take a car or motorcycle for a joy ride?" Responses were made on 6–point scales with options ranging from *never* (0) to *five or more times* (5). Tremblay et al.'s (1995) original scale had high internal consistency (α = .91); Cronbach coefficient alpha in this sample was .87.

General Drinking Behaviors and Beliefs—Two concepts were used to assess alcohol's general effects: alcohol expectancies and usual alcohol consumption. Alcohol expectancies were assessed with a measure developed by Abbey, McAuslan, Ross, and Zawacki (1999) to assess alcohol expectancies relevant to sexual assault. Participants were asked 28 questions about how alcohol affects them that were designed to assess the domains of aggression, disinhibition, and sexual drive. A sample aggression item is "When drinking alcohol, I am likely to hit or slap." A sample disinhibition item is "When drinking alcohol, I become uninhibited." A sample sex drive question is "When drinking alcohol, I become sexually excited." Responses were made on 5–point scales with options ranging from not at all (1) to very much (5). Although each of these subdomains are usually evaluated as distinct expectancies (Abbey et al., 1999), they exhibited moderately large intercorrelations (r = .27 – .58; p's < .001) and thus, were combined into a single factor with a Cronbach's coefficient alpha of .94.

Usual alcohol consumption was assessed by asking participants how many days in a typical month they consumed alcohol and on those days how many drinks they usually consumed (Hilton & Clark, 1987). Responses to these two questions were multiplied to form a quantity by frequency measure, which was then winsorized to reduce skew (Wilcox, 2001).

[1]A few students who initially told us they were 21 during the screening process later acknowledged on the survey that they were 19 or 20. These students were not eligible for the follow up study but were retained in the data analyses described here.

Impersonal Sex—Past impersonal sexual behavior and attitudes were assessed with three measures. First, participants were asked how many sexual partners they had in their lifetime (Abbey et al., 1998), which was winsorized to reduce skew (Wilcox, 2001).

Second, participants were also asked the approximate number of dates they expect to go on with a woman before they engage in sexual intercourse. This variable was winsorized to reduce skew (Wilcox, 2001) and then reverse scored so that a higher score indicated more impersonal sexual behavior.

Third, positive attitudes about impersonal sex were assessed with two questions that have been included in other studies of this concept (Hendrick & Hendrick, 1987; Simpson & Gangestad, 1991). Participants were asked whether sex without love is okay and whether or not they enjoy casual sex with different partners. Responses were made on a 7–point Likert scale with options ranging from *strongly disagree* (1) to *strongly agree* (7). Cronbach's coefficient alpha for this 2–item scale was .76.

Hostile Masculinity—Three measures were used to assess the hostile masculinity concept: adversarial sexual beliefs, hostility toward women, and sexual dominance. First, Burt's (1980) 9–item measure of adversarial sexual beliefs assesses distrust of the opposite sex. Example items include "Most women are sly and manipulating when they are out to attract a man." and "Many women are so demanding sexually that a man just can't satisfy them." Questions were answered on 7–point Likert scales with response options ranging from *strongly disagree* (1) to *strongly agree* (7). This measure has demonstrated good internal consistency reliability (Burt, 1980) and numerous researchers have found that it discriminates between perpetrators and nonperpetrators (Malamuth et al., 1991; Malamuth et al., 1995; Muehlenhard & Linton, 1987; Rapaport & Burkhart, 1984; Wheeler et al., 2002). Cronbach's coefficient alpha in this study was .80.

Second, Lonsway and Fitzgerald's (1995) 10–item Hostility toward Women scale was used to assess participants' general level of hostility toward women. Example items include "I feel that many times, women flirt with men just to tease them or hurt them." and "Sometimes, women bother me by just being around." Responses are made using 7–point Likert scales with options ranging from *strongly disagree* (1) to *strongly agree* (7). This measure has demonstrated good internal consistency reliability (Lonsway & Fitzgerald, 1995; Wheeler et al., 2002) and has been found to discriminate between perpetrators and nonperpetrators. In this study, Cronbach's coefficient alpha was .82.

Third, Nelson's (1979) 8–item power subscale was used to assess sexual dominance. Example items include, "I have sexual relations because I like the feeling of having another person submit to me" and "I have sexual relations because I like it when my partner is really open and vulnerable to me." Responses were made on 4–point Likert scales with options that ranged from *not important at all* (1) to *very important* (4). This scale has demonstrated good reliability in past stud ies (Malamuth et al., 1995; Vega & Malamuth, 2007; Wheeler et al 2002). In this study, it had a coefficient alpha of .86

Situational Alcohol Consumption—Alcohol use in sexual and dating situations was assessed to measure situational alcohol use (Abbey et al., 1998, 2001). Participants were asked how often they drank alcohol in sexual situations and how much alcohol they drank in these situations. These two items were multiplied to form an index of alcohol consumption in sexual situations. In a parallel manner, participants were asked how often they drank alcohol in dating situations and how much alcohol they drank in these situations. Similarly, these two items were also multiplied together to form an index of alcohol consumption during dating situations.

Sexual Assault Perpetration—Sexual assault perpetration was measured using a modified 16–item version of the Sexual Experiences Survey (SES; Koss et al., 1987). The SES uses behaviorally–specific questions to assess the perpetration of unwanted sexual experiences since the age of 14. The alpha for the original measure was .89 (Koss & Gidycz, 1985). The alpha for this modified measure of the SES was .85. Added items asked about sexual experiences when the woman was unable to consent because she had passed out and when the man used verbally coercive tactics such as guilt or threats to end the relationship. Directly following each SES question, participants were asked several questions that were not included in the original version of the SES, including if they had consumed alcohol. The instructions asked participants who had committed a specific type of forced sex more than once to answer in terms of the incident they remembered best. Using this information, two dependent variables were created. The first was the sum of the number of sexually aggressive acts perpetrated when drinking alcohol. The second was the sum of the number of sexually aggressive acts perpetrated when they were not drinking alcohol. Thus, each of these outcome measures could have scores that ranged from 0 to 16; the sum of participants' responses to these two questions could not be greater than 16. The distribution for the number of sober sexually aggressive acts (ranging from 0 to 10) was slightly skewed; therefore, it was winsorized. The distribution for the number of intoxicated sexually aggressive acts (ranging from 0 to 14) was more severely skewed; thus, it was transformed using a base 10 log transformation (Tabachnick & Fidell, 2007).

RESULTS

OVERVIEW OF DATA ANALYSIS PLAN

Path analysis in Lisrel 8.30 (Joreskog & Sorbom, 1999) was used to examine the model presented in Figure 1. A full structural equation model that included the measurement model was not evaluated because the majority of the concepts were made up of only one or two indicators (MacCallum, 1995). Therefore, the model that was evaluated was a path analysis conducted within a structural equation modeling framework.

Constructs were formed by transforming each scale score into a z–score so that they could be meaningfully combined to create composite variables. This statistical method has been used by other researchers evaluating the confluence model (Malamuth & Thornhill, 1994; Vega & Malamuth, 2007; Wheeler et al., 2002). The z–score for delinquency was used to indicate the delinquency construct. The z–scores for usual drinking and alcohol expectancies were added and divided by two to create the general drinking behaviors and beliefs

construct. The z–scores for number of sex partners, when participants expected to engage in sexual intercourse, and casual sexual attitudes were added and divided by three to create the impersonal sex construct. The z–scores for adversarial sexual beliefs, hostility to ward women, and sexual dominance were added and divided by three to create the hostile masculinity construct. The z–scores for drinking during sex and drinking during dates were added and divided by two to create the situational alcohol use construct.

Model fit was evaluated using numerous criteria. Although chi–square is the only test of significance within structural equation modeling, it is sensitive to sample size (Bollen & Long, 1993). Consequently, Bollen (1989) argued that multiple fit indices should be used to determine model fit including the Root Mean Square Error of Approximation (RMSEA), Normed Fit Index (NFI), Non–Normed Fit Index (NNFI), and Comparative Fit Index (CFI; Bentler, 1990; Bentler & Bonett, 1980; Browne & Cudeck, 1993).

DESCRIPTIVE STATISTICS AND CORRELATIONS AMONG INDEPENDENT AND DEPENDENT VARIABLES

Perpetration of at least one sexually aggressive act was reported by 58% of participants. Among perpetrators, 47.8% reported that they had only perpetrated when sober, 26.8% reported that they had only perpetrated when intoxicated, and 25.4% reported perpetrating both when sober and when intoxicated. The average number of intoxicated sexually aggressive acts committed by perpetrators in this sample was 1.34 (*SD* = 2.06) and the average number of sober sexually aggressive acts was 1.59 (*SD* = 1.59). Among men who had perpetrated at least one intoxicated sexually aggressive act, 47.2% of men consumed an average of 5 or more drinks during the incident.

As can be seen in Table 1, most of the constructs were correlated. As expected, the two alcohol constructs (general drinking behaviors and beliefs and situational alcohol use) were not significantly correlated with the number of sober sexually aggressive acts. Contrary to our hypothesis, the two dependent variables were not significantly correlated. All of the correlations were low in magnitude.

REPLICATION AND EXTENSION OF THE CONFLUENCE MODEL

Examination of Main Effects Model—The hypothesized model did not fit the data well, $\chi^2(7, 356) = 37.98$, $p < .01$, RMSEA = .110, NFI = .91, NNFI = .78, CFI = .93 (see Figure 1). All of the hypothesized paths were significant except for the correlation between the two dependent variables. The modification indices suggested the addition of a path between general drinking behaviors and beliefs and hostile masculinity. Thus, two modifications were made to the model and it was reevaluated; a path (beta) was included from general drinking behaviors and beliefs to hostile masculinity and the nonsignificant correlation between the two dependent variables was removed. This final model fit the data well and all paths were significant, $\chi^2(7, 356) = 12.13$, $p = ns$, RMSEA = .045, NFI = .97, NNFI = .96, CFI = .99 (see Figure 2). Eight percent of the variance in the number of sober sexually aggressive acts and 15% of the variance in the number of intoxicated sexually aggressive acts was accounted for by this combination of predictor variables.

Most of the hypotheses based on the confluence model were supported. As can be seen in Figure 2, higher levels of delinquency were associated with higher levels of impersonal sex and hostile masculinity. Impersonal sex and hostile masculinity were both significantly related to the number of intoxicated and sober sexually aggressive acts. The higher participants' levels of impersonal sex and hostile masculinity, the more sexually aggressive acts they perpetrated when sober and when intoxicated.

The findings also supported the addition of alcohol to the confluence model. Delinquency was significantly, positively related to situational alcohol use (see Figure 2). The general drinking behaviors and beliefs concept was significantly, positively related to impersonal sex, hostile masculinity, and situational alcohol use such that higher levels of general drinking behaviors and beliefs were related to higher levels of impersonal sex, hostile masculinity, and situational alcohol use. Furthermore, situational alcohol use was significantly associated with the number of intoxicated sexually aggressive acts such that the greater the amount of situational alcohol use, the greater the number of sexually aggressive acts perpetrated when intoxicated.

There were several significant correlations. As expected, delinquency and general drinking behaviors and beliefs were significantly, positively correlated. Finally, impersonal sex was significantly, positively correlated with hostile masculinity and situational alcohol use.

Examination of Synergy Hypothesis—To evaluate the hypothesis that there is a synergistic relationship between impersonal sex and hostile masculinity (Malamuth et al., 1995; Malamuth et al., 1991), interaction terms were formed by multiplying the two relevant construct terms (Kline, 2005). An interaction term improves the model if it has a significant beta and if the model with the interaction fits the data better than the main effects model (similar to model comparison strategies; Kline, 2005). When the interactions between the impersonal sex, hostile masculinity, and situational alcohol use were added into the final model, the fit of the model was substantially reduced, $\chi^2(27, 356) = 255.43$, $p < .05$, RMSEA = .150, NFI = .65, NNFI = .44, CFI = .66. Thus, there was no evidence of multiplicative relationships.[2]

DISCUSSION

Fifty–eight percent of these male college students acknowledged that they had made a woman have sex with them who had made her lack of consent clear or who was unable to consent. Fifty–two percent of the men who had perpetrated a sexual assault, committed at least one act when intoxicated. Although these rates are alarmingly high, other studies have found comparable rates. In Wheeler et al. (2002), 61% of male college student participants reported that they had perpetrated some form of sexual aggression. Abbey et al. (2006) found that 64% of the men in a representative community sample of young adult men in one metropolitan area reported that they had perpetrated sexual assault. Perpetration and victimization rates vary depending on how the questions are asked, what types of questions are asked, and the mode of responding. For example, the use of behaviorally specific questions elicits much higher prevalence rates than the use of words such as sexual assault, sexual coercion, or rape (Fisher & Cullen, 2000). Other researchers have found that

increasing the number of questions produces higher rates of reporting, presumably because the additional questions improve recall and help participants determine what types of behaviors the researcher wants them to include (Fricker, Smith, Davis, & Hanson, 2003; Koss, 1993).

Although the cooccurrence of alcohol consumption and sexual assault perpetration is frequently described, few researchers have tried to determine alcohol's specific role in sexual assault and the extent to which the same predictors explain sober and intoxicated sexually aggressive acts. This study expands our understanding of alcohol's role in sexual assault perpetration both by including it as a predictor in Malamuth et al.'s (1991) confluence model and by separately examining the predictors of sexually aggressive acts perpetrated when intoxicated and sober. As hypothesized, hostile masculinity and impersonal sex were both positively related to frequency of committing sexually aggressive acts when sober and when intoxicated. Also as hypothesized, alcohol use in sexual situations was positively related to frequency of committing sexually aggressive acts when intoxicated. We had expected this relationship because of alcohol's expectancy and cognitive effects. At low doses, alcohol consumption may activate expectancies about how a situation should unfold and provide an excuse for inappropriate behavior (George & Stoner, 2000). At high doses, alcohol affects cognitive functioning by impairing one's ability to plan, judge, and inhibit responses (Curtin & Fairchild, 2003; Giancola, 2000). Therefore, men who consume alcohol in sexual situations may feel justified focusing on their own sexual desires, rather than the woman's signals of distress.

Surprisingly, the number of sexual assaults committed when intoxicated was unrelated to the number of sexual assaults committed when sober. A quarter of the perpetrators had committed sexual assaults both when sober and when drinking alcohol. This finding has important implications for future research. In most studies that consider alcohol's role, researchers ask if alcohol was consumed in a specific incident (Abbey et al., 2003; Tyler, Holt, & Whitbeck, 1998; Ullman et al., 1999), implicitly assuming that this characterizes all of the individual's sexually aggressive actions. These findings indicate that it is inappropriate to assume that perpetrators can be categorized based on information from one incident. Some perpetrators may need to drink alcohol to feel comfortable about using force, but for others their alcohol consumption appears to be more circumstantial. Relatedly, many perpetrators find it convenient to blame alcohol for their behavior and need to acknowledge how their beliefs and values support their use of violence to obtain sex.

Although not hypothesized, the modification indices suggested the addition of a path from general drinking behaviors and beliefs to hostile masculinity. This relationship may be due to a third unmeasured variable such as being part of a peer group that drinks heavily and encourages the expression of hostile attitudes toward women (cf. Capaldi, Dishion, Stoolmiller, & Yoerger, 2001). The relationship between drinking and hostile masculinity may also be explained by the development of alcohol expectancies that simultaneously encourage sexual disinhibition and aggression, thus leading to beliefs about women that justify treating them as commodities. Studies that focus on the psychological processes that underlie these correlations are needed.

In bivariate analyses, delinquency was positively correlated with frequency of perpetrating intoxicated and sober assaults. In the path analyses, delinquency was positively associated with hostile masculinity, impersonal sex, and situational alcohol consumption, thereby having an indirect effect on perpetration. Researchers who examine sexual assault perpetration in college samples need to consider adolescent delinquency as a risk factor for sexual assault perpetration. Although minor acts of delinquency are common among adolescents, for some it is an indicator of antisocial tendencies that may lead to a variety of future problems (Moffitt, Caspi, Dickson, Silva, & Stanton, 1996). In addition to general adolescent delinquency, more attention should be paid to the varying trajectories of delinquency. For example, Moffitt, Caspi, Harrington, and Milne (2002) categorized men into five different groups and found that childhood–onset delinquents were the most likely to have psychopathic personality traits and high levels of violence against women.

Contrary to our hypotheses, hostile masculinity, impersonal sex, and situational alcohol consumption did not significantly interact with each other. Despite the confluence model's emphasis on synergistic relationships between risk factors, few researchers have evaluated this aspect of the model. We found 23 published studies that looked at variables from both paths of the confluence model. Only six of these studies examined the interaction between hostile masculinity and impersonal sex and it was significant in all six (Malamuth et al., 2000; Malamuth et al., 1995; Malamuth et al., 1991; Vega & Malamuth, 2007; Wheeler et al., 2002; Yost & Zurbriggen, 2006). Because so many researchers did not report any interaction analyses, it is unclear how unique this study's nonsignificant effects are. It is important that researchers replicating the confluence model examine the interaction between hostile masculinity and impersonal sex because their synergistic effects are a central aspect of the model. It is possible that their relationship was diluted in this study by the division of sexual assault into two types, which then necessitated the inclusion of multiple interaction terms, rather than just one.

Although the model fit the data well, it explained a relatively small amount of variance in the number of sober and intoxicated sexually aggressive acts. Other studies have explained approximately 30% of the variance in the total number of sexual assaults (Malamuth et al., 1991; Wheeler et al., 2002). Similar to the point made above, this difference may be due to this study's disaggregation of sexual assault into two types, thus dividing the total variance explained into two components. Additionally, it would be valuable in future research to consider other variables that could be added to the confluence model, including personality traits and situational factors. Several researchers have argued that psychopathic traits are important predictors in college samples. For example, Ouimette (1997) found that sexually aggressive college men had higher rates of both childhood behavior problems and adult conduct disorder and perpetrators reported more histrionic, narcissistic, and borderline personality traits than nonperpetrators. Kosson, Kelly, and White (1997) also found that college men who scored higher on psychopathic inventories perpetrated more sexual assaults than men with lower scores. Another important construct to consider for future research is empathy. As described in the introduction, several researchers have found that empathy acts as a protective factor, interacting with impersonal sex and/or hostile masculinity to produce lower levels of sexual assault (Abbey et al., 2006; Dean & Malamuth, 1997; Wheeler et al., 2002). Furthermore, there may be other situational factors in addition to alcohol that are

important to consider. For example, several studies have found that sexual precedence may be viewed by some perpetrators as justification for their behavior (Harrington & Leitenberg, 1994). Settings which encourage disinhibited behavior, such as large parties with many heavy drinkers, may also encourage sexual assault. Perpetrators are always responsible for their behavior; however, research that describes environments in which sexual assaults are most likely to occur can provide important information that can be integrated into prevention programs.

LIMITATIONS

This study had several limitations. Participants were heterosexual male college students who were social drinkers. Although studies with college students are valuable given the high prevalence of sexual assault in that population, more research is needed with community samples. The confluence model was developed with college students (Malamuth et al., 1991, 1995) and most research since then has used college samples (Dean & Malamuth, 1997; Hall, Sue, Narang, & Lilly, 2000; Martin et al., 2005; Wheeler et al., 2002). Only a few researchers have attempted to replicate the confluence model in community samples, and these studies did not include all the relevant variables (Abbey et al., 2006; Knight & Sims–Knight, 2003). Hall et al.'s finding that some aspects of the confluence model did not work well for Asian Americans, also illustrates the importance of examining this model with large samples of individuals from different ethnic groups to determine its generalizability.

As noted above, this study did not include a measure of early childhood experiences with sexual or nonsexual violence. Although the concepts were placed in the same order that Malamuth et al. (1991) proposed, neither temporal nor causal relationships can be established with cross–sectional data. Thus, although delinquency is considered a causal antecedent of hostile masculinity and impersonal sex, it is possible that these behaviors and beliefs are unfolding concurrently. Research that follows youth throughout the school age years and into adulthood would be particularly valuable in establishing the relationships between these risk factors.

IMPLICATIONS FOR PREVENTION AND TREATMENT

There is increasing awareness that sexual assault prevention programs need to focus on changing the behavior of perpetrators. Given the high rates of sexual aggression reported by young adult men, these programs need to start early, be universal, and be nonthreatening so that all men feel comfortable participating. Bystander intervention programs show great promise in addressing these concerns (Banyard, Moynihan, & Plante, 2007; Berkowitz, 2001). Rather than using scare tactics that put men on the defensive by treating them as rapists, these programs assume that most men do not want to hurt women and ask them to participate as allies by intervening when they see potentially dangerous situations.

Traditional sexual assault prevention programs tend to focus on rape myths and negative attitudes toward women and seldom describe the components of the impersonal sex path (Foubert & Newberry, 2006; O'Donohue, Yeater, & Fanetti, 2003). Role plays and interactive exercises are needed that encourage men to evaluate whether their expectations regarding when to have sex with a woman are realistic and to take their partner's wishes and

values into account. Typically only the event–level role of alcohol is considered, rather than its general and situational effects (for an exception see Stephens & George, 2004).

Although the emphasis should be on universal prevention, targeted programs for at-risk youth are also needed (Foubert & Perry, 2007). Programs that target adolescents who are beginning to engage in delinquent behavior would be of great value because these youth are at high risk of committing sexual assault (Lussier, Leclerc, Cale, & Proulx, 2007). These programs should focus on fostering positive attitudes toward women and romantic relationships as well as developing appropriate expectations about when to expect sex within relationships. An important challenge for these programs is to target networks of peers and media images that glamorize violence against women.

Acknowledgments

This research was supported by a grant from the National Institute on Alcohol Abuse and Alcoholism to the second author. Parts of this manuscript were based on the first author's dissertation. Thanks to Boris Baltes, Ira Firestone, and Beverly Black for providing comments on earlier drafts.

REFERENCES

Abbey A. Alcohol–related sexual assault: A common problem among college students. Journal of Studies on Alcohol, Supplement. 2002; 14:118–128. [PubMed: 12022717]

Abbey A, Clinton–Sherrod AM, McAuslan P, Zawacki T, Buck PO. The relationship between quantity of alcohol consumed and the severity of sexual assaults committed by college men. Journal of Interpersonal Violence. 2003; 18:813–833. [PubMed: 14675511]

Abbey A, McAuslan P. A longitudinal examination of male college students' perpetration of sexual assault. Journal of Consulting and Clinical Psychology. 2004; 72:747–756. [PubMed: 15482033]

Abbey A, McAuslan P, Ross LT. Sexual assault perpetration by college men: The role of alcohol, misperception of sexual intent, and beliefs and experiences. Journal of Social and Clinical Psychology. 1998; 17:167–195.

Abbey A, McAuslan P, Ross LT, Zawacki T. Alcohol expectancies regarding sex, aggression, and sexual vulnerability: Reliability and validity assessment. Psychology of Addictive Behaviors. 1999; 13:174–182.

Abbey A, McAuslan P, Zawacki T, Clinton AM, Buck PO. Attitudinal, experiential, and situational predictors of sexual assault perpetration. Journal of Interpersonal Violence. 2001; 16:784–807.

Abbey A, Parkhill MR, BeShears R, Clinton–Sherrod AM, Zawacki T. Cross–sectional predictors of sexual assault perpetration in a community sample of single men. Aggressive Behavior. 2006; 32:54–67.

Banyard VL, Moynihan MM, Plante EG. Sexual violence prevention through bystander education: An experimental evaluation. Journal of Community Psychology. 2007; 35:463–481.

Bentler PM. Comparative fit indices in structural models. Psychological Bulletin. 1990; 107:238–246. [PubMed: 2320703]

Bentler PM, Bonett DG. Significance tests and goodness of fit in the analysis of covariance structures. Psychological Bulletin. 1980; 88:588–606.

Berkowitz, AD. Sexual assault in context. Lawrence Erlbaum; Mahwah, NJ: 2001. Critical elements of sexual–assault prevention and risk–reduction programs for men and women. In C. Kilmartin & A.D. Berkowitz (Eds.); p. 75-96.

Bollen, KA. Structural equations with latent variables. Wiley; New York: 1989.

Bollen, KA.; Long, JS. Testing structural equation models. Sage; Thousand Oaks, CA: 1993.

Browne, MW.; Cudeck, R. Testing structural equation models. Sage; Newbury Park, CA: 1993. Alternative ways of assessing model fit. In K.A. Bollen and J.S. Long (Eds.); p. 136-162.

Burt MR. Cultural myths and supports for rape. Journal of Personality & Social Psychology. 1980; 38:217–230. [PubMed: 7373511]

Capaldi DM, Dishion TM, Stoolmiller M, Yoerger K. Aggression toward female partners by at–risk young men: The contribution of male adolescent friendships. Developmental Psychology. 2001; 37:61–73. [PubMed: 11206434]

Cooper ML. Alcohol use and risky sexual behavior among college students and youth: Evaluating the evidence. Journal of Studies on Alcohol. 2002; (14):101–117. Supplement No.

Curtin JJ, Fairchild BA. Alcohol and cognitive control: Implications for regulation of behavior during response conflict. Journal of Abnormal Psychology. 2003; 112:424–436. [PubMed: 12943021]

Dean KE, Malamuth NM. Characteristics of men who aggress sexually and of men who imagine aggressing: Risk and moderating variables. Journal of Personality and Social Psychology. 1997; 72:449–455. [PubMed: 9107010]

Ellis L. A synthesized (biosocial) theory of rape. Journal of Consulting and Clinical Psychology. 1991; 59:631–642. [PubMed: 1955599]

Fisher BS, Cullen FT. Measuring the sexual victimization of women: Evolution, current controversies, and future research. Criminal Justice. 2000; 4:317–390.

Foubert JD, Newberry JT. Effects of two versions of an empathy–based rape prevention program on fraternity men's survivor empathy, attitudes, and behavioral intent to commit rape or sexual assault. Journal of College Student Development. 2006; 47:133–148.

Foubert JD, Perry BC. Creating lasting attitude and behavior change in fraternity members and male student athletes: The qualitative impact of an empathy–based rape prevention program. Violence Against Women. 2007; 13:70–86. [PubMed: 17179405]

Fricker AE, Smith DW, Davis JL, Hanson RF. Effects of context and question type on endorsement of childhood sexual abuse. Journal of Traumatic Stress. 2003; 16:265–268. [PubMed: 12816339]

Giancola PR. Executive functioning: A conceptual framework for alcohol–related aggression. Experimental and Clinical Psychopharmacology. 2000; 8:576–597. [PubMed: 11127429]

George WH, Stoner SA. Understanding acute alcohol effects on sexual behavior. Annual Review of Sex Research. 2000; 11:92–124.

Hall GCN, Hirschman R. Toward a theory of sexual aggression: A quadripartite model. Journal of Consulting and Clinical Psychology. 1991; 59:662–669. [PubMed: 1955601]

Hall GCN, Sue S, Narang DS, Lilly RS. Culture–specific models of men's sexual aggression: Intra– and interpersonal determinants. Cultural Diversity and Ethnic Minority Psychology. 2000; 6:252–267. [PubMed: 10938634]

Hall GCN, Teten AL, DeGarmo DS, Sue S, Stephens KA. Ethnicity, culture, and sexual aggression: Risk and protective factors. Journal of Consulting and Clinical Psychology. 2005; 73:830–840. [PubMed: 16287383]

Harrington NT, Leitenberg H. Relationship between alcohol consumption and victim behaviors immediately preceding sexual aggression by an acquaintance. Violence and Victims. 1994; 9:315–324. [PubMed: 7577759]

Hendrick S, Hendrick C. Multidimensionality of sexual attitudes. The Journal of Sex Research. 1987; 23:502–526.

Hersh K, Gray–Little B. Psychopathic traits and attitudes associated with self–reported sexual aggression in college women. Journal of Interpersonal Violence. 1998; 13:456–471.

Hilton ME, Clark WB. Changes in American drinking patterns and problems, 1967–1984. Journal of Studies on Alcohol. 1987; 48:515–522. [PubMed: 3500367]

Jessor, R.; Graves, TD.; Hanson, RC. Society, personality, and deviant behavior: A study of a tri–ethnic community. Holt, Rinehart, and Winston; Oxford, England: 1968.

Joreskog, KG.; Sorbom, D. LISREL 8.30. Scientific Software International; Chicago, IL: 1999.

Kanin EJ. An examination of sexual aggression in response to sexual frustration. Journal of Marriage & the Family. 1967; 29:428–433.

Kline, RB. Principles and practice of structural equation modeling. 2nd. The Guilford Press; New York: 2005.

Knight RA, Sims–Knight JE. The developmental antecedents of sexual coercion against women: Testing alternative hypotheses with structural equation modeling. Annals of the New York Academy of Sciences. 2003; 989:72–85. [PubMed: 12839887]

Kolivas ED, Gross AM. Assessing sexual aggression: Addressing the gap between rape victimization and perpetration prevalence rates. Aggression and Violent Behavior. 2007; 12:315–328.

Koss MP. Detecting the scope of rape: A review of prevalence research methods. Journal of Interpersonal Violence. 1993; 8:198–222.

Koss MP, Gaines JA. The prediction of sexual aggression by alcohol use, athletic participation, and fraternity affiliation. Journal of Interpersonal Violence. 1993; 8:94–108.

Koss MP, Gidycz CA. Sexual experiences survey: Reliability and validity. Journal of Consulting and Clinical Psychology. 1985; 53:422–423. [PubMed: 3874219]

Koss MP, Gidycz CA, Wisniewski N. The scope of rape: Incidence and prevalence of sexual aggression and victimization in a national sample of higher education students. Journal of Consulting and Clinical Psychology. 1987; 55:162–170. [PubMed: 3494755]

Kosson DS, Kelly JC, White JW. Psychopathy–related traits predict self–reported sexual aggression among college men. Journal of Interpersonal Violence. 1997; 12:241–254.

Krahe B. Sexual aggression among adolescents: Prevalence and predictors in a German sample. Psychology of Women Quarterly. 1998; 22:537–554.

Lanier CA. Rape–accepting attitudes: Precursors to or consequences of forced sex? Violence Against Women. 2001; 7:876–885.

Lim S, Howard R. Antecedents of sexual and non–sexual aggression in young Singaporean men. Personality and Individual Differences. 1998; 25:1163–1182.

Loh C, Orchowski LM, Gidycz CA, Elizaga RA. Socialization and sexual aggression in college men: The role of observational influence in detecting risk cues. Psychology of Men & Masculinity. 2007; 8:129–144.

Lonsway KA, Fitzgerald LF. Attitudinal antecedents of rape myth acceptance. Journal of Personality and Social Psychology. 1995; 68:704–711.

Lussier P, Leclerc B, Cale J, Proulx J. Developmental pathways of deviance in sexual aggressors. Criminal Justice and Behavior. 2007; 34:1441–1462.

Lyndon AE, White JW, Kadlec KM. Manipulation and force as sexual coercion tactics: Conceptual and empirical differences. Aggressive Behavior. 2007; 33:291–303. [PubMed: 17593561]

MacCallum, RC. Model specification: Procedures, strategies, and related issues. In: Hoyle, RH., editor. Structural equation modeling: Concepts, issues, and applications. Sage Publications; Thousand Oaks, CA: 1995. p. 16-36.

Malamuth NM. Predictors of naturalistic sexual aggression. Journal of Personality & Social Psychology. 1986; 50:953–962. [PubMed: 3712232]

Malamuth NM, Addison T, Koss M. Pornography and sexual aggression: Are there reliable effects and can we understand them? Annual Review of Sex Research. 2000; 11:26–91.

Malamuth, NM.; Heavey, CL.; Linz, D. Predicting men's antisocial behavior against women: The interaction model of sexual aggression. In: Hall, GCN.; Hirschman, R.; Graham, JR.; Zaragoza, MS., editors. Sexual aggression: Issues in etiology and assessment, treatment and policy. Taylor & Francis; Philadelphia: 1993. p. 63-97.

Malamuth NM, Linz D, Heavey CL, Barnes G, Acker M. Using the confluence model of sexual aggression to predict men's conflict with women: A 10–year follow–up study. Journal of Personality & Social Psychology. 1995; 69:353–369. [PubMed: 7643309]

Malamuth NM, Sockloskie RJ, Koss MP, Tanaka JS. Characteristics of aggressors against women: Testing a model using a national sample of college students. Journal of Consulting and Clinical Psychology. 1991; 59:670–681. [PubMed: 1955602]

Malamuth NM, Thornhill NW. Hostile masculinity, sexual aggression, and gender–biased domineeringness in conversations. Aggressive Behavior. 1994; 20:185–193.

Martin AF, Vergeles MR, Acevedo VO, Sanchez AC, Visa SL. The involvement in sexual coercive behaviors of Spanish college men: Prevalence and risk factors. Journal of Interpersonal Violence. 2005; 20:872–891. [PubMed: 15914707]

Marx BP, Gross AM, Adams HE. The effect of alcohol on the responses of sexually coercive and noncoercive men to an experimental rape analogue. Sexual Abuse: A Journal of Research and Treatment. 1999; 11:131–145. [PubMed: 10335565]

Moffitt TE, Caspi A, Dickson N, Silva P, Stanton W. Childhood–onset versus adolescent–onset antisocial conduct problems in males: Natural history from ages 3 to 18 years. Development and Psychopathology. 1996; 8:399–424.

Moffitt TE, Caspi A, Harrington H, Milne BJ. Males on the life–course–persistent and adolescence–limited antisocial pathways: Follow–up at age 26 years. Development and Psychopathology. 2002; 14:179–207. [PubMed: 11893092]

Muehlenhard CL, Linton MA. Date rape and sexual aggression in dating situations: Incidence and risk factors. Journal of Consulting Psychology. 1987; 34:186–196.

Nelson PA. Personality, sexual function, and sexual behavior: An experiment in methodology. (Doctoral Dissertation, University of Florida, 1979). Dissertation Abstracts International. 1979; 39:6134.

O'Donohue W, Yeater EA, Fanetti M. Rape prevention with college males: The roles of rape myth acceptance, victim empathy, and outcome expectancies. Journal of Interpersonal Violence. 2003; 18:513–531.

Ouimette PC. Psychopathology and sexual aggression in nonincarcerated men. Violence and Victims. 1997; 12:389–395.

Prentky RA, Knight RA. Identifying critical dimensions for discriminating among rapists. Journal of Consulting and Clinical Psychology. 1991; 59:643–661. [PubMed: 1955600]

Rapaport K, Burkhart BR. Personality and attitudinal characteristics of sexually coercive college males. Journal of Abnormal Psychology. 1984; 93:216–221. [PubMed: 6725755]

Schulenberg JE, Maggs JL. A developmental perspective on alcohol use and heavy drinking during adolescence and the transition to young adulthood. Journal of Studies on Alcohol. 2002; (14):54–70. Supplement No.

Seto MC, Barbaree HE. The role of alcohol in sexual aggression. Clinical Psychology Review. 1995; 15:545–566.

Simpson JA, Gangestad SW. Individual differences in sociosexuality: Evidence for convergent and divergent validity. Journal of Personality and Social Psychology. 1991; 60:870–883. [PubMed: 1865325]

Stephens KA, George WH. Effects of anti–rape video content on sexually coercive and noncoercive college men's attitudes and alcohol expectancies. Journal of Applied Social Psychology. 2004; 34:402–416.

Tabachnick, BG.; Fidell, LS. Using multivariate statistics. 5th. Harper Collins; New York: 2007.

Testa M. The impact of men's alcohol consumption on perpetration of sexual aggression. Clinical Psychology Review. 2002; 22:1239–1263. [PubMed: 12436812]

Testa M, Livingston JA, VanZile–Tamsen C. The impact of questionnaire administration mode on response rate and reporting of consensual and nonconsensual sexual behavior. Psychology of Women Quarterly. 2005; 29:345–352.

Tjaden P, Thoennes N. Prevalence and consequences of male–to–female and female–to–male intimate partner violence as measured by the National Violence against Women Survey. Violence Against Women. 2000; 6:142–161.

Tremblay R, Pagani–Kurtz L, Masse L, Vitaro F, Pihl RO. A bimodal prevention intervention for disruptive kindergarten boys: It's impact through mid–adolescence. Journal of Consulting and Clinical Psychology. 1995; 634:560–568. [PubMed: 7673533]

Tyler KA, Hoyt DR, Whitbeck LG. Coercive sexual strategies. Violence and Victims. 1998; 13:47–61. [PubMed: 9650245]

Ullman SE, Karabatsos G, Koss MP. Alcohol and sexual assault in a national sample of college women. Journal of Interpersonal Violence. 1999; 14:603–625.

Vega V, Malamuth NM. Predicting sexual aggression: The role of pornography in the context of general and specific risk factors. Aggressive Behavior. 2007; 33:104–117. [PubMed: 17441011]

Warkentin JB, Gidycz CA. The use and acceptance of sexually aggressive tactics in college men. Journal of Interpersonal Violence. 2007; 22:829–850. [PubMed: 17575065]

Wheeler JG, George WH, Dahl BJ. Sexually aggressive college males: Empathy as a moderator in the "Confluence Model" of sexual aggression. Personality and Individual Differences. 2002; 33:959–975.

Wilcox, RR. Fundamentals of modern statistical methods: Substantially improving power and accuracy. Springer–Verlag; New York: 2001.

Yost MR, Zurbriggen EL. Gender differences in the enactment of sociosexuality: An examination of implicit social motives, sexual fantasies, coercive sexual attitudes, and aggressive sexual behavior. The Journal of Sex Research. 2006; 43:163–173. [PubMed: 16817063]

Zawacki T, Abbey A, Buck PO, McAuslan P, Clinton–Sherrod AM. Perpetrators of alcohol–involved sexual assaults: How do they differ from other sexual assault perpetrators and nonperpetrators? Aggressive Behavior. 2003; 29:366–380.

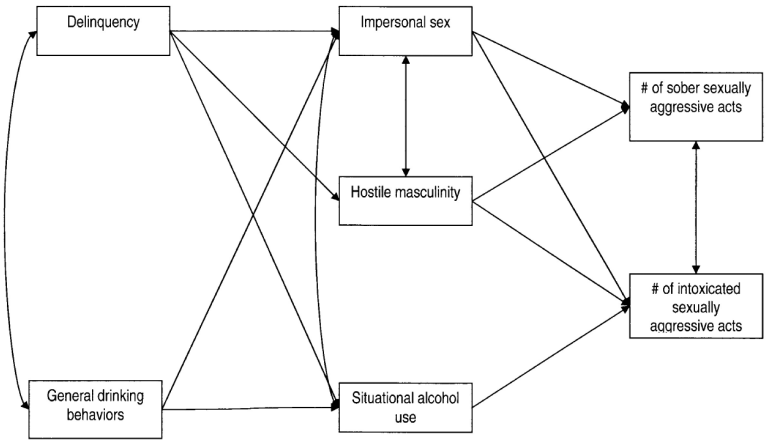

FIGURE 1.

Theoretical Model Extending Malamuth et al.'s (1991) Confluence Model with the Addition of an Alcohol Path.

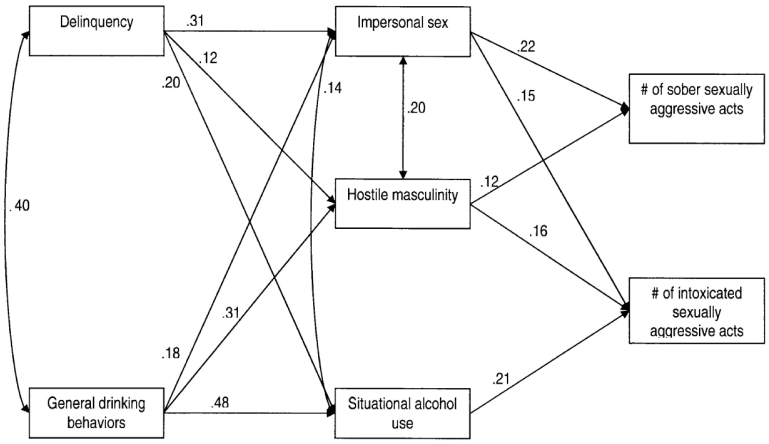

FIGURE 2.

Final Model Adding Alcohol to the Confluence Model. The betas presented are standardized. All paths are significant at $p < .05$.

TABLE 1

Means, Standard Deviations, and Correlations for Constructs (N = 356)

Variable	1	2	3	4	5	6	7
1. Delinquency	—						
2. General Drink	.39	—					
3. Impersonal Sex	.38	.31	—				
4. Hostile Masculinity	.25	.34	.33	—			
5. Situational Drink	.39	.56	.35	.19	—		
6. # Sober Sex Acts	.19	.09	.26	.19	.02	—	
7. # Intoxicated Sex Acts	.23	.29	.28	.25	.29	.05	—

Note. Correlations ≥ .11 are significant at $p < .05$. Because all of the predictor variables were standardized, the means were all equal to 0.00 and the standard deviations were all close to 1.00.