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Factors Associated with Use of Verbally Coercive, Incapacitated, and Forcible Sexual Assault Tactics in a Longitudinal Study of College Men

Heidi M. Zinzow, Ph.D.^{1,3} and Martie Thompson, Ph.D.²

¹Department of Psychology, Clemson University, Clemson, SC

²Department of Public Health Sciences, Clemson University, Clemson, SC

Abstract

Although verbally coerced and incapacitated sexual assaults are common, less is known about perpetrators of these incidents in comparison to perpetrators of forcible assaults. Furthermore, few studies have investigated factors that differentiate perpetrators who employ different forms of sexual assault tactics. The current study included 526 men who completed self-report inventories at the end of each of their four years in college. Measures assessed sexual assault tactics, demographics, incident characteristics, risky behavior, rape supportive beliefs and peer norms, antisocial traits, and childhood adversity. Perpetrators were grouped based on the most severe tactics reported over the course of 7 assessed time periods, with 13% in the verbal coercion group, 16% in the incapacitation group, and 5% in the forcible group. ANOVAs determined that the forcible group scored significantly higher than incapacitation and verbal coercion groups on risky behavior, rape supportive beliefs/norms, antisocial traits, and childhood adversity. The incapacitation group scored higher than the verbal coercion group on risky behavior. In a multinomial logistic regression analysis comparing tactic groups to non-perpetrators, all tactic groups scored significantly higher on risky behavior and rape supportive beliefs/norms, and the forcible group scored higher on antisocial traits and childhood adversity. Perpetrators in the forcible group had engaged in more repeat offenses, and perpetrators of both the incapacitated and forcible assaults were more likely to use alcohol before the incident. Findings highlight the need for interventions that are tailored to offense trajectories, alter rape supportive attitudes and peer norms, and decrease campus substance use.

Sexual assault affects a large portion of women, with an estimated 12% to 18% of women experiencing rape at some point in their lifetimes (Kilpatrick, Edmunds, & Seymour, 1992; Tjaden & Thoennes, 2006). Rape is a form of sexual assault that can be defined as unwanted oral, vaginal, or anal penetration (Kilpatrick, Resnick, Ruggiero, Conoscenti, & McCauley, 2007). College women are particularly at risk, with an estimated 20–25% of women experiencing attempted or completed rape at some point during college (Fisher, Cullen, & Turner, 2000), and an incidence of rape that is five times higher than women in the general population (Kilpatrick et al., 2007). Similarly, male college students' perpetration of sexual

³To whom correspondence should be addressed at 418 Brackett Hall, Clemson University, Clemson, SC 29634, Phone: 864-656-4376, Fax: 864-656-0358, hzinzow@clemson.edu.

assault is high, ranging from 14% to 31% (Abbey & McAuslan, 2004; White & Smith, 2004). Most of the literature has focused on forcible rape, or intercourse that involves force, threat of force, or injury. Even though many legal statutes also define rape as intercourse that takes place when the victim is unable to give consent due to intoxication, less is known about perpetration of these incapacitated assaults. However, approximately one-half to two-thirds of college students' sexual assaults involve alcohol use (Abbey, 2002; Knight et al., 2002; Littleton, Grills-Tauechel, & Axsom, 2009), suggesting that incapacitated rape is prevalent on college campuses. Another sexual assault tactic that is poorly understood is verbal coercion, or the use of verbal pressure, social threats, and criticism to obtain sexual intercourse. Prior studies have found that verbal coercion is the most frequently employed sexual assault tactic, with 67–83% of college male perpetrators acknowledging the use of this tactic (DeGue & DiLillo, 2004; Kosson, Kelly, & White, 1997). This underscores the need to understand the characteristics associated with perpetrators of verbally coerced assaults. Furthermore, all forms of sexual aggression, including incapacitated and verbally coerced assaults, have been associated with negative physical and psychological outcomes among victims (Golding 1999; Resick, 1993; Tjaden & Thoennes, 2006).

Several models have been used to understand sexual assault perpetration. According to the ecological theory of sexual aggression, early childhood experiences interact with peer norms and cultural belief systems to influence aggressive behavior (Malamuth, Sockloskie, Koss, & Tanaka, 1991). Studies supporting this theory have found that childhood adversity and perceived norms, such as peer pressure for sex and peer approval of forced sex, are associated with sexual assault perpetration in college samples (Check & Malamuth, 1983; Hall & Barongan, 1997; Ouimette & Riggs, 1998; Thompson, Koss, Kingree, Goree, & Rice, 2011; Thompson, Swartout, & Koss, 2013). The ecological theory led to the development of the confluence model of sexual aggression, wherein two pathways can either independently or synergistically predict perpetration: one involves early childhood adversity and impersonal sex with multiple partners, and the other involves hostile attitudes towards women and narcissistic personality traits (Malamuth, Linz, Heavey, Barnes, & Acker, 1995). Studies of college men have also found these variables to be associated with sexual assault perpetration (Abbey, McAuslan, & Ross, 1998; Malamuth et al., 1995; Thompson et al., 2011; Thompson et al., 2013). The confluence model has recently been expanded to include antisocial and psychopathic traits (poor empathy, general hostility and anger, and impulsivity), sexual compulsivity, and alcohol use (Abbey, Jacques-Tiura, & LeBreton, 2011; Malamuth, 2003). Similarly, the reactance theory of sexual coercion proposes that individuals with narcissistic personality traits, such as low empathy, are more likely to react to sexual refusal with coercive acts (Baumeister, Catanese, & Vohs, 2001). Consistent with these theories, low empathy and high levels of sexual needs have been linked to sexual perpetration in college samples (Berkowitz, 1992; Mann & Hollin, 2007; Ouimette & Riggs, 1998; Thompson et al., 2011). Alcohol use has been suggested to play an important role in sexual perpetration, with studies of college samples supporting this connection (Abbey, 2002; Abbey, et al., 2011; Malamuth, 2003; Thompson et al., 2013). Alcohol use may contribute to sexual assault through beliefs about alcohol's effects on sexual behavior, stereotypes about drinking women, and alcohol's effects on cognitive and motor skills (Abbey, Zawacki, Buck, Clinton, & McAuslan, 2001).

It is possible that the models predicting sexual assault perpetration differ for men who only engage in verbal coercion versus incapacitation or forcible tactics. However, little research has determined whether perpetrators of different forms of sexual assault can be distinguished from each other in terms of life experiences, beliefs, and behavior. Two studies have focused on community samples of men (Abbey & Jacques-Tiura, 2011; Abbey, Parkhill, Clinton-Sherrod, & Zawacki, 2007). The first compared men who engaged in verbally coerced intercourse with those who perpetrated attempted/completed rape via incapacitation or forcible tactics (Abbey et al., 2007). Perpetrators were classified by the most serious form of assault that they reported. Perpetrators of incapacitated or forcible assaults differed from non-perpetrators on empathy, adult attachment, attitudes about sex, sexual dominance motives, drinking in sexual situations, and peer approval of forced sex. Perpetrators of verbally coerced sex only differed from non-perpetrators on adult attachment and peer approval of forced sex, suggesting that not all components of sexual aggression theories may apply to this group. In contrast, a second study found that perpetrators of verbally coerced sexual assaults scored higher than non-perpetrators and lower than perpetrators of incapacitated assaults on several risk factors, including hostility towards women, stereotypic attitudes about women, antisocial personality traits and behavior, and drinking problems (Abbey et al., 2011).

A few studies have been conducted on college samples and have found differences between tactic groups on substance use and attitudes towards women. One early study of 1846 college men found that men who had used forcible rape tactics had stronger rape supportive beliefs than men who only used verbal coercion to obtain sex (Koss, Leonard, Beezley, & Oros, 1985). A second study of 356 college men found that perpetrators of alcohol-involved sexual assaults differed from perpetrators of non-alcohol-involved assaults on impulsivity, alcohol consumption in sexual situations, and beliefs about alcohol (Zawacki, Abbey, Buck, McAuslan, & Clinton-Sherrod, 2003). However, this study defined alcohol-involved assault as alcohol consumption by either the perpetrator or victim, and did not assess victims' incapacitation or whether incapacitation was used as a rape tactic. Only one study compared perpetrators who had used any of the three sexual assault tactics, grouped by the most coercive method they had used to obtain sex. Men who reported being both skilled in their social interactions with women and accepting of male-dominant beliefs were more likely than unskilled men to have engaged in verbal coercion, but not incapacitated or forcible rape (Muehlenhard & Falcon, 1990). This study was limited in that it did not include variables such as childhood history, substance use, and antisocial traits. In sum, both similarities and differences have been found between perpetrators of different forms of sexual assault, but studies have been limited in scope, have generally not compared perpetrators of incapacitated rape as opposed to those who use forcible rape, and have not examined offense histories or incident characteristics. An understanding of potential commonalities or differences between perpetrators of variant forms of sexual assault could contribute to the development of targeted prevention efforts.

The purpose of the current study was to compare college men based on the most serious tactic they had employed with a woman in an attempted or completed rape incident: a) verbal coercion, b) incapacitation, and c) force or threat of force. We analyzed differences on demographic variables, incident characteristics, risky behavior, rape supportive beliefs and

peer norms, antisocial traits, and childhood adversity. We also compared each group to non-perpetrators in order to determine whether existing models of sexual aggression applied similarly to each tactic group. A secondary aim was to determine whether any factors uniquely distinguished group membership at the multivariate level. Based on prior literature, we predicted that perpetrators who employed forcible tactics would be more likely than perpetrators who only used verbal coercion to report hostile attitudes towards women. We also predicted that men who employed incapacitated tactics would endorse more risky alcohol and drug use than the other groups. Finally, we predicted that men in the verbal coercion group would score lower than the other two perpetrator groups on most risk factors for sexual aggression.

Method

Participants and Procedures

Participants were 795 male undergraduates who were recruited during their first year at large southeastern university, via email, newspaper announcements, and flyers. Students were invited to complete a 20–30 minute survey on men's attitudes and behavior regarding relationships with women. Wave 1 data were collected at the student health center over a one week period in March–April 2008. Men who completed Wave 1 surveys were contacted via email to participate in follow up surveys during March–April 2009, 2010, and 2011. They provided written informed consent prior to completing surveys. No personal identifiers were included on surveys. Participants were paid \$20 for completion of surveys at Waves 1 and 2, and \$25 at Waves 3 and 4. The study was approved by the university IRB, and a Certificate of Confidentiality was obtained from the National Institutes of Health prior to data collection.

Of the original 795 participants at Wave 1, 82% completed Wave 2, 75% completed Wave 3, and 72% completed Wave 4. Aside from sexual assault data, all other variables for this study were collected at Wave 1. Attrition analyses for all four time points indicated that participants with greater drug use and greater alcohol use were less likely to complete the Wave 3 survey: $F(1, 794) = 20.51, p < .001$; $F(1, 794) = 10.23, p < .01$, respectively. Participants with more adverse childhood experiences were less likely to complete the Wave 4 survey, $F(1, 794) = 7.01, p < .01$. Participants with a higher number of sexual partners were less likely to have completed follow-up surveys at each wave, Wave 2: $F(1, 794) = 3.94, p < .05$; Wave 3: $F(1, 794) = 14.96, p < .001$; Wave 4: $F(1, 794) = 10.89, p < .001$.

Of the 795 study participants, 66% ($n = 526$) indicated attempted/completed rape perpetration history or denied perpetration at each of 7 assessed time points during the four waves of data collection (non-perpetrators). These 526 participants constituted the analytic sample for the current study. The average age of participants was 18.58 years at Wave 1 ($SD = 0.51$, range = 18–20) and 89% were white.

Measures

Sexual coercion and assault—The revised Sexual Experiences Survey (SES; Koss et al., 2007) was used to assess for attempted or completed oral, anal, or vaginal intercourse

that was obtained through verbal coercion, incapacitation, or force. The SES is the most widely used measure of perpetration among college students, and studies have demonstrated excellent validity and reliability (Koss & Gidycz, 1985; Koss, Gidycz, & Wisniewski, 1987; Koss & Oros, 1982). Cronbach's alpha for Wave 1 in the current sample was .97. The scale uses behaviorally specific questions to assess whether a participant engaged in verbally coercive, incapacitated, or forcible tactics in one or more instances of non-consensual attempted or completed sexual intercourse. Verbal coercion was assessed with 12 items that asked whether the participant engaged in attempted or completed oral, vaginal, or anal penetration "without her consent" via threats, verbal pressure, or criticism. Threats were described as "telling lies, threatening to end the relationship, threatening to spread rumors about her, making promises about the future I knew were untrue, or continually verbally pressuring her after she said she didn't want to." Criticism included "showing displeasure, criticizing her sexuality or attractiveness, getting angry but not using physical force after she said she didn't want to." Incapacitated attempted/completed rape was assessed by 6 items that asked whether the perpetrator engaged in attempted or completed oral, vaginal, or anal penetration "without her consent" by "taking advantage when she was too drunk or out of it to stop what was happening." Forcible attempted/completed rape was assessed by 12 items that asked whether the perpetrator engaged in attempted or completed oral, vaginal, or anal penetration "without her consent" by "threatening to physically harm her or someone close to her" or "using force, for example holding her down with my body weight, pinning her arms, or having a weapon."

At each wave of data collection, participants responded to the SES for 2 time periods. During Wave 1, participants responded to the SES for the time before entry to college, and for the time since entering college. For the 3 subsequent waves, participants responded for the summer prior to that academic year and for the time period that included that academic year. Similar to prior studies (e.g., Abbey & Jacques-Tiura, 2011), a hierarchical classification scheme was used to group perpetrators by the most coercive tactic that they reported at any of the 7 time points since beginning college (i.e., excluding incidents prior to college). In other words, participants were classified as having used forcible tactics if they had endorsed forcible attempted/completed rape at any of the 7 assessed time points. They were classified as having used incapacitation tactics if they had reported incapacitated attempted/completed rape at any time point, and had never engaged in use of forcible tactics. Participants were classified as having used verbal coercion if they endorsed this tactic at any time point and had never reported use of incapacitated or forcible tactics. Approximately 70% ($n = 126$) of participants classified as perpetrators had complete data for all time points. Participants were classified as non-perpetrators if they had denied attempted/completed rape at all 7 time points ($n = 345$). A variable was created to represent attempted/completed rape before college (coded "1" if participants reported use of any tactic in an attempted/completed rape incident and "0" if they did not report an attempted/completed rape incident). At each wave, participants were also asked about characteristics of their most recent attempted/completed rape, including relationship to the victim and whether they were using alcohol or drugs just prior to the incident. Relationship to the victim was categorized as stranger, acquaintance, dating partner, or relative.

Demographics—Demographic questions assessed age and race. Race was coded “0” for “White” and “1” for “Minority” (Black, Hispanic, or Other).

Risky behavior—We assessed the following risky behavior: number of sexual partners, high-risk drinking, and drug use. For number of sexual partners, participants were asked how many people they had had oral, vaginal or anal sex with since the age of 14 ($M = 6.15$, $SD = 8.07$, range = 0–60). High-risk drinking was assessed with the mean of 5 standardized items from the College Alcohol Survey. These items measured quantity and frequency of alcohol use in the past 30 days, and included: the frequency of drinking alcohol in the past 30 days, the average number of drinks on days during which alcohol was consumed, how often participants drank to get drunk in the past 30 days, the largest number of drinks consumed in a 24-hour period, and whether they had consumed five or more drinks in a row in a two hour period in the past two weeks. The items are recommended by NIAAA to assess drinking amount and patterns (Dawson & Room, 2000; $M = 2.34$, $SD = 2.08$; $\alpha = .93$). Drug use was measured with 2 items assessing past marijuana or other illegal drug use (1 = “yes;” 0 = “no;” 45% endorsed one of these items).

Rape supportive attitudes and beliefs—Hostility toward women was assessed using an 8-item scale adapted by Koss and Gaines (1993) from the Hostility Toward Women Scale (Check, 1984). Items were answered using a 5-point (1–5) response format, with higher scores reflecting higher levels of hostility toward women ($M = 20.93$; $SD = 6.67$; $\alpha = .90$; e.g., “When it comes down to it, a lot of women are deceitful”). Rape supportive beliefs were assessed using the 19-item Rape Supportive Beliefs Scale (Lonsway & Fitzgerald, 1995). Items were answered using a 5-point (1–5) response format, with higher mean scores reflecting higher levels of rape supportive beliefs ($M = 2.28$; $SD = 0.62$; $\alpha = .90$; e.g., “When women talk and act sexy, they are inviting rape”).

Rape supportive peer norms—A mean of 9 items adapted from 2 scales were used to assess perceived peer norms and peer attitudes towards coercive sex. All items were assessed on a 1 to 4 scale, with higher mean scores indicating greater perceived approval of forced sex ($M = 1.47$; $SD = 0.40$; $\alpha = .77$). Lack of perceived negative sanctions toward sexual aggression was measured with three items (e.g., “Bad things happen to people who are sexually aggressive to girls” (Foshee, Linder, MacDougall, & Bangdiwala, 2001). Peer approval of forced sex was measured with 6 items (e.g., “Do your friends approve of getting a woman drunk or high to have sex?” Abbey & McAuslan, 2004).

Personality traits—Personality traits associated with sexual aggression were measured as five separate constructs: conning and superficial charm, empathy, sexual compulsivity, pervasive anger, and impulsivity. Conning and superficial charm was assessed with the mean of 6 items from the Multidimensional Assessment of Sex and Aggression (Knight, Prentky, & Cerce, 1994). Items were answered using a 1 to 5 response format, with higher mean scores reflecting more superficial charm ($M = 3.19$; $SD = 0.91$; $\alpha = .78$; e.g., “I can easily charm someone to do almost anything for me”). Empathy was measured with the mean of 4 items on a 1 to 5 response format from the Perspective Taking Scale of the Interpersonal Reactivity Index, with higher scores reflecting greater empathy ($M = 3.54$, $SD = 0.66$; $\alpha = .$

75; e.g., “When I’m upset at someone, I usually try to ‘put myself in his shoes’ for a while” (Davis, 1980). Sexual compulsivity was assessed with the 10-item Sexual Compulsivity Scale (Kalichman & Rompa, 2001). Items are answered on a 4-point (1–4) response format, with higher mean scores indicating greater endorsement of statements related to sexually compulsive behavior, sexual preoccupations, and sexually intrusive thoughts ($M = 1.45$; $SD = 0.42$; $\alpha = .84$; e.g., “I have to struggle to control my sexual thoughts and behavior”). Pervasive anger was measured with 8 items on a 5-point (1–5) response format from the Pervasive Anger subscale of the Multidimensional Assessment of Sex and Aggression (Knight et al., 1994), with higher mean scores reflecting greater pervasive anger personality characteristics ($M = 2.42$; $SD = 0.68$; $\alpha = .87$; e.g., “I lose my temper easily;”). Impulsivity was assessed with the 19-item Impulsivity Questionnaire (Eysenck, Pearson, Easting, & Allsopp, 1985). Items were answered using a yes/no (scored as 1 and 0 respectively) response format, with higher mean scores reflecting greater impulsivity ($M = 0.34$; $SD = 0.21$; $\alpha = .79$; e.g., “Do you need to use a lot of self-control to keep out of trouble?”).

Childhood adversity—Adverse child experiences were assessed with the sum of 5 yes/no items from the Adverse Child Experiences study (e.g., lived with someone who was a problem drinker or alcoholic: Dube, Williamson, Thompson, Felitti, & Anda, 2004; $M = 0.46$; $SD = 0.90$; $\alpha = .61$). Child sexual abuse was measured by two behaviorally specific questions assessing whether the participant had engaged in sexual activities with someone 5 years older before the age of 18, or whether someone less than 5 years older physically forced the participant to engage in sexual activities before age 18 (11% responded positively to one of these items). Inter-parental conflict was assessed with the 7-item conflict subscale of the Children’s Perception of Interparental Conflict Scale (Grych, Seid, & Fincham, 1992). A 4-point response format was used, with higher mean scores reflecting higher levels of inter-parental conflict in the family of origin ($M = 1.74$; $SD = 0.57$; $\alpha = .86$; e.g., “When my parents had an argument, they said mean things to each other”).

Data Analyses

Descriptive analyses, univariate ANOVAs, and chi-square analyses were conducted to explore demographic and incident characteristics of non-perpetrators and the three tactic groups (verbal coercion, incapacitated, forcible). We also examined overlap between tactic groups and patterns of offending over time. Principal components analysis was conducted with the variables assessing theoretical constructs of interest, and factor scores were used to represent four latent constructs: a) risky behavior (alcohol use, drug use, multiple sexual partners); b) rape supportive beliefs and attitudes (rape supportive beliefs, hostility towards women, rape supportive peer norms, conning/superficial charm, sexual compulsivity); c) antisocial personality traits (conning/superficial charm, pervasive anger, impulsivity, low empathy); d) childhood adversity (adverse childhood experiences, inter-parental conflict, child sexual abuse). See Zinzow & Thompson (2013) for details on factor loadings for this sample. Comparisons of excluded participants (non-perpetrators with missing data) to retained participants indicated that excluded participants scored higher on the antisocial traits factor ($F(1, 753) = 8.53, p < .01$), but otherwise did not differ from retained participants. ANOVA analyses controlling for perpetration history prior to college were used to compare tactic groups and non-perpetrators on the four factors. Pairwise comparisons

were used to explore significant omnibus differences. In order to examine unique associations between risk factors and group membership, variables that significantly differentiated non-perpetrators from perpetrator groups at the univariate level were entered into a multinomial logistic regression model predicting group membership. Analyses controlled for perpetration history prior to college, and non-perpetrators served as the reference group.

Results

Characteristics of Rape Tactic Groups

A total of 181 participants reported attempted/completed rape perpetration during college, representing 23% of the full sample ($N = 795$) and 33% of the analytic sample ($n = 526$), which excluded non-perpetrators with missing data. Approximately 66% ($n = 345$) of the analytic sample was classified as non-perpetrators, 13% ($n = 69$) were classified in the verbal coercion group, 16% ($n = 86$) were classified in the incapacitation group, and 5% ($n = 26$) were classified in the forcible group. There were no significant differences between tactic groups in relation to age ($F(2, 180) = 0.99, p = .46$) or race ($\chi^2(df = 2, n = 181) = 0.16, p = .92$).

Approximately 88% of perpetrators who employed forcible tactics had also reported use of incapacitation tactics at one of the 7 study time points, and 88% had also employed verbally coercive tactics at any of the study time points. Approximately one-third (35%) had employed incapacitated or verbally coercive tactics during a separate assault that took place *prior* to the first incidence of forcible assault. At each wave, perpetrators in the forcible group were more likely to engage in verbal coercion or incapacitation tactics than in forcible tactics. Approximately 53% of perpetrators who employed incapacitation tactics also had employed verbally coercive tactics at one of the time points, and 13% had employed verbally coercive tactics during a separate assault *prior* to the first incidence of incapacitated assault. A significant minority of perpetrators from each tactic group reported employing at least one tactic prior to college, and rates of offending remained fairly stable over time (Table 1).

Perpetrators of forcible and incapacitated assaults were more likely than perpetrators of verbally coerced incidents to report using alcohol or drugs immediately prior to an incident of sexual assault, $\chi^2(df = 2, n = 181) = 28.57, p < .001$; forcible: 81%, incapacitation: 95%, verbal coercion: 61%. The three tactic groups did not differ in relation to whether they had victimized acquaintances, strangers, dating partners, or relatives. Finally, the three tactic groups differed in relation to the number of time points at which the perpetrators reported offenses, $F(2, 180) = 7.99, p < .001$. Perpetrators of forcible assaults reported offenses at an average of 3.19 time points ($SD = 1.79$), followed by perpetrators of incapacitated assaults ($M = 2.42, SD = 1.60$) and perpetrators of verbally coerced assaults ($M = 1.85, SD = 1.19$).

Correlates of Rape Tactic Group Membership

All three rape tactic groups differed from non-perpetrators on risky behavior, rape supportive beliefs/norms, antisocial traits, and childhood adversity. The forcible group scored

significantly higher than non-perpetrators, the incapacitation group, and the verbal coercion group on both rape supportive beliefs/norms and childhood adversity. Both the forcible group and the incapacitation group scored higher than the verbal coercion group on risky behavior (Table 2).

Multivariate Comparisons between Non-perpetrator and Perpetrator Groups

Within the multivariate model, all three perpetrator groups were significantly higher than non-perpetrators on risky behavior and rape supportive beliefs/norms. The incapacitation and forcible groups scored significantly higher than non-perpetrators on antisocial traits. Only the forcible group scored higher than non-perpetrators on childhood adversity (Table 3).

Discussion

Our study found that approximately 23% of all participants reported attempted or completed rape during college. The rate of perpetration is similar to estimates in other college samples, even though prior studies used a broader definition of sexual assault (i.e., non-penetrative unwanted sexual contact; 14%–31%: Abbey & McAuslan, 2004; White & Smith, 2004). It is likely that our study identified more cases of perpetration due to repeated assessment over the course of four years. Perpetrators had primarily engaged in verbal coercion and incapacitation tactics at each assessed time point, and approximately half (47%) of perpetrators had employed incapacitation via drugs or alcohol in an attempted or completed rape. Of note, there was a large degree of overlap between forcible and incapacitation tactics, indicating that substance use is involved in the majority of forcible sexual assaults.

The high prevalence of substance use during sexual assault incidents is consistent with previous literature (Abbey, 2002; Knight et al., 2002; Littleton et al., 2009), and underscores the negative consequences associated with frequent alcohol and drug use on college campuses (e.g., Johnston, O'Malley, Bachman, & Schulenberg, 2007). These findings are consistent with alcohol expectancy theories suggesting that when men drink, alcohol's expected effects on disinhibition, aggression, and/or sexuality put them at risk for sexual assault perpetration (Abbey & McAuslan, 2004). In this study, men's risky behavior, including alcohol and drug use, was associated with sexual assault perpetration via all three tactics, even after controlling for other risk factors. Similarly, men who engaged in incapacitated and forcible assaults were more likely than perpetrators of verbal coercion to report risky behavior. It is likely that perpetrators of incapacitated and forcible assaults have more frequent opportunities to perpetrate substance-involved assaults. Future research should also investigate whether these perpetrators hold stronger alcohol expectancies than perpetrators who employ verbally coercive tactics.

The patterns of assaults also suggest that the forcible group is more likely to consist of repeat offenders. Although a substantial percent reported a verbally coerced or incapacitated incident prior to escalating to forcible assault, the majority of perpetrators in the forcible group had committed a forcible assault at the first reported offense. Similarly, the majority of perpetrators in the incapacitation group reported an incapacitated assault as the first offense. Even though perpetrators in each of these groups reported engaging in other tactics,

it appears that using a hierarchical classification system based on the highest severity of tactic employed may have utility in differentiating patterns of offending between perpetrator groups.

The utility in differentiating groups was also supported by differences on constructs representing beliefs, experiences, and behavior. For the most part, the groups appeared to align on a continuum in relation to risk factors for sexual aggression, with the verbal coercion group scoring lowest and the forcible group scoring highest on these factors. In other words, as risk factors for sexual aggression increased, perpetrators were more likely to commit a forcible attempted/completed rape. This is consistent with prior studies that have found perpetrators of incapacitated and forcible sexual assaults to score higher than perpetrators of verbally coerced assaults on rape supportive beliefs, substance use, and antisocial traits (Abbey et al., 2011; Koss et al., 1985). The verbal coercion and incapacitation groups scored similarly on all factors except for risky behavior, which highlights perpetrator substance use as a defining characteristic of the incapacitation group. This finding adds to prior research that noted higher alcohol use and alcohol expectancies among perpetrators of alcohol-involved assaults (Zawacki et al., 2003).

In contrast to prior studies, significant differences were found between perpetrators of incapacitated and forcible attempted/completed rape. The forcible group significantly differed from the other tactic groups on rape supportive beliefs and norms, as well as on childhood adversity. This suggests that different pathways from the confluence model may apply to different perpetrator groups (Malamuth et al., 1995). For the forcible group, both pathways may operate synergistically (the first pathway including childhood adversity and the second pathway including hostility towards women and antisocial traits). For the other two tactic groups, the rape supportive beliefs/norms factor uniquely differentiated perpetrators from non-perpetrators in the multivariate model, while childhood adversity was not significant. This pattern of findings suggests that only the second pathway of the confluence model may be operating strongly for perpetrators of incapacitated or verbally coerced assaults.

Despite the strengths of this study, including its longitudinal design, behaviorally specific definitions of rape tactics, and inclusion of multiple risk factors for sexual aggression, several limitations should be noted. First, generalizability is limited by our reliance on a college sample that was racially and ethnically homogenous. Second, we employed self-report methodology, which could lead to recall bias or underreporting of sexual assault. Third, there was a large degree of overlap between tactic groups, suggesting that a mutually exclusive categorization scheme is not the only way to examine differences between tactics. The fact that many perpetrators in the forcible group also used incapacitated tactics likely made it difficult to differentiate this group from the incapacitated group on several of the included risk factors. Results suggest that perpetrators of forcible assaults employ a wide range of tactics across different incidents. Fourth, the forcible group was small, which could have limited our ability to detect relationships between study variables and forcible tactics. Fifth, 30% of perpetrators were missing data from one of the time points and 34% of non-perpetrators were excluded due to missing data. Therefore, it is likely that we underestimated the prevalence of perpetration, the number of perpetrators who committed

incapacitated or forcible assaults, and the prevalence of tactics employed at each time point. Finally, risk factors were assessed at Time 1 and may have changed over the course of the study.

The results of this study have several implications for public health interventions. First, given the importance of substance use as a risk factor for sexual assault, programs are needed to reduce risky substance use on college campuses. Although incapacitated assaults constituted a frequent tactic employed by perpetrators in our sample, substance-involved assaults are less likely to be acknowledged as a rape (Cohn, Zinzow, Resnick, & Kilpatrick, 2013; Kahn, Khoury, Nichols, & Lanphear, 2003; Ryan, 2011). Lack of rape acknowledgement in turn serves as a barrier to reporting the assault to police, and therefore hinders prevention of reoffending among identified perpetrators (Cohn et al., 2013). Women who experience incapacitated rape and who do not acknowledge assaults as a rape are also less likely to seek medical attention and needed services (e.g., Zinzow, Resnick, Barr, Danielson, & Kilpatrick, 2012). Furthermore, if potential perpetrators do not acknowledge an incapacitated assault as rape, then they may be more likely to engage in these tactics and/or reoffend. Verbally coerced assaults also do not fit with stereotypic rape myths that focus on force, injury, and victim resistance (Ryan, 2011); as a result, these assaults are also likely to be unacknowledged by many victims and perpetrators.

Our findings suggest that perpetrators of verbally coerced or incapacitated assaults often go on to commit forcible assaults, underscoring the need to intervene earlier in offense trajectories. Further research is needed to determine what factors lead to escalating severity over time, as well as interventions that could impede this progression. At the same time, forcible assault perpetrators appear to represent a different group that scores high on risk factors such as antisocial traits and childhood adversity, often commits a forcible assault on the first offense, and engages in repeated offenses. These perpetrators may require more intensive interventions than men who report verbal or incapacitated tactics, as the latter groups are more likely to engage in single offenses and to report malleable risk factors (e.g., peer norms).

In sum, interventions are needed to reduce substance use on campuses, increase acknowledgment of verbally coerced and incapacitated sexual assaults, improve students' understanding of consent, and challenge rape myths. Furthermore, our study suggests that one way for prevention programs to reduce risk for sexual violence is to change rape supportive peer norms and individual attitudes, such as approval of forced sex, hostility towards women, male sexual dominance, and traditional views of masculinity. For example, bystander education programs have been shown to improve student attitudes, knowledge, and behavior in relation to sexual assault prevention (Banyard, Plante, & Moynihan, 2004; Foubert, 2000).

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Table 1
Frequency of Reported Verbal Coercion, Incapacitation, and Forcible Sexual Assault Tactics Employed at Each Study Time Point

Tactic Groups	Before AY1			AY1			S1			AY2			S2			AY3			S3			AY4		
	V	I	F	V	I	F	V	I	F	V	I	F	V	I	F	V	I	F	V	I	F	V	I	F
Verbal Coercion Group	30 (21)			26 (18)			27 (19)			30 (21)			30 (21)			30 (21)			19 (13)			22 (15)		
Incapacitation Group	26 (22)	28 (24)		28 (24)	35 (30)		19 (16)	26 (22)		20 (17)	38 (33)		19 (16)	24 (21)		21 (18)	24 (21)		13 (11)	7 (6)		21 (18)	20 (17)	
Forcible Group	35 (9)	38 (10)	27 (7)	46 (12)	54 (14)	35 (9)	31 (8)	35 (9)	23 (6)	38 (10)	27 (7)	31 (8)	23 (6)	31 (8)	15 (4)	19 (5)	31 (8)	15 (4)	42 (11)	42 (11)	35 (9)	38 (10)	46 (12)	31 (8)

Note. V=verbal coercion (*n* =69); I = incapacitation (*n* = 86); F= forcible (*n* =26); AY= Academic Year; S = Summer

Table 2
Results of ANOVAs Comparing Rape Tactic Groups on Risk Factors for Sexual Aggression

	Non-perpetrator (<i>n</i> = 335)	Verbal coercion (<i>n</i> = 66)	Incapacitation (<i>n</i> = 81)	Forcible (<i>n</i> = 25)	<i>F</i> (3, 502)
Factor 1: Risky Behavior	-.34 ^a	.43 ^b	.78 ^c	.91 ^c	27.03 ^{***}
Factor 2: Rape supportive beliefs/norms	-.22 ^a	.49 ^b	.64 ^b	1.11 ^c	16.32 ^{***}
Factor 3: Antisocial traits	-.17 ^a	.18 ^b	.40 ^b	.61 ^b	9.88 ^{***}
Factor 4: Childhood adversity	-.19 ^a	.24 ^b	.22 ^b	.86 ^c	8.10 ^{***}

Note. Mean factor scores with differing superscripts are significantly different at $p < .05$. All analyses controlled for perpetration history before college.

^{**}
 $p < .01$.

^{***}
 $p < .001$.

Table 3
Results of Multinomial Logistic Regression Analysis Comparing Attempted/Completed Rape Tactic Groups to Non-Perpetrators

Predictors	Verbal Coercion (<i>n</i> = 66)			Incapacitation (<i>n</i> = 81)			Forcible (<i>n</i> = 25)		
	AOR	95% CI		AOR	95% CI		AOR	95% CI	
Assault history	12.08 ***	4.79–30.43		11.51 ***	4.60–28.78		10.51 ***	3.14–35.16	
Factor 1: Risky Behavior	1.83 ***	1.32–2.52		2.64 ***	1.91–3.65		2.42 ***	1.49–3.92	
Factor 2: Rape supportive beliefs/norms	1.69 **	1.24–2.31		1.90 ***	1.39–2.58		2.62 ***	1.64–4.17	
Factor 3: Antisocial traits	1.33	0.98–1.81		1.61 **	1.19–2.17		1.96 **	1.22–3.13	
Factor 4: Childhood adversity	1.33	0.98–1.81		1.15	0.84–1.58		1.58 *	1.06–2.36	

Note. The reference group is non-perpetrators (*n* = 583). AOR= Adjusted Odds Ratio; CI = Confidence Interval.

* $p < .05$

** $p < .01$.

*** $p < .001$.