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Sexual Narcissism and the Perpetration of Sexual Aggression

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Abstract

Despite indirect evidence linking narcissism to sexual aggression, studies directly examining this relationship have yielded inconsistent results. Likely contributing to such inconsistencies, prior research has used global measures of narcissism not sensitive to whether the components of narcissism are activated in sexual versus non-sexual domains. The current research avoided such problems by using a measure of sexual narcissism to predict sexual aggression. In a sample of 299 men and women, Study 1 validated the Sexual Narcissism Scale, a new sexuality research instrument with four subscales—Sexual Exploitation, Sexual Entitlement, Low Sexual Empathy, and Sexual Skill. Then, in a sample of 378 men, Study 2 demonstrated that sexual narcissism was associated with reports of the frequency of sexual aggression, three specific types of sexual aggression (unwanted sexual contact, sexual coercion, and attempted/completed rape), and the likelihood of future sexual aggression. Notably, global narcissism was unrelated to all indices of sexual aggression when sexual narcissism was controlled. That sexual narcissism outperformed global assessments of narcissism to account for variance in sexual aggression suggests that future research may benefit by examining whether sexual narcissism and other sexual-situation-specific measurements of personality can similarly provide a more valid test of the association between personality and other sexual behaviors and outcomes (e.g., contraceptive use, infidelity, sexual satisfaction).

Keywords

Sexual narcissism; Narcissistic personality; Rape; Sexual assault

Introduction

The regularity with which men perpetrate rape and other forms of sexual aggression against women is alarming. Nearly 15% of men admit to having engaged in behavior that meets the legal definition of rape or attempted rape, and approximately one third of men admit to physically or verbally coercing a woman into unwanted sexual acts, such as forced sexual touching and coerced intercourse (e.g., Abbey, McAuslan, & Ross, 1998; Koss, Gidycz, & Wisniewski, 1987; Loh, Gidycz, Lobo, & Luthra, 2005; White & Smith, 2004). Further, if

assured they would not be caught, between 20 and 30% of men indicate some likelihood of forcing sexual activity on a woman in the future (e.g., Briere & Malamuth, 1983; Greendlinger & Byrne, 1987; Osland, Fitch, & Willis, 1996; Smith, Martin, & Kerwin, 2001).

Narcissism and Sexual Aggression

Although numerous attitudinal, situational, and personality factors likely converge to predict sexual aggression (for reviews, see Chesire, 2004; Koss et al., 1994; Lalumière, Harris, Quinsey, & Rice, 2005; Lonsway & Fitzgerald, 1994; Marx, Van Wie, & Gross, 1996; Murnen, Wright, & Kaluzny, 2002), several theories of sexual aggression convincingly implicate narcissism as one particularly important dispositional risk factor (e.g., Baumeister, Catanese, & Wallace, 2002; Malamuth, 2003; Malamuth, Heavey, & Linz, 1993). Narcissism is a personality style characterized by tendencies toward exploiting others, a general lack of empathy for others, a pervasive pattern of grandiosity, and an excessive need for admiration (American Psychiatric Association, 2000). Indeed, a connection between narcissism and sexual aggression makes sense for several reasons. First, narcissists respond more aggressively than non-narcissists to interpersonal rejections across a variety of domains (e.g., Baumeister, Bushman, & Campbell, 2000; Baumeister, Smart, & Boden, 1996; Bushman & Baumeister, 1998; Bushman, Bonacci, van Dijk, & Baumeister, 2003; Konrath, Bushman, & Campbell, 2006; Rhodewalt & Morf, 1998; Twenge & Campbell, 2003), a response that may generalize to any rejections they experience in the sexual domain. Second, possibly due to their especially high need for positive regard and admiration (Morf & Rhodewalt, 2001; Raskin, Novacek, & Hogan, 1991), narcissists appear particularly oriented toward sexual relationships (Hurlbert, Apt, Gasar, Wilson, & Murphy, 1994; Wryobeck & Wiederman, 1999), an orientation that provides greater opportunities to experience the types of rejections that could lead to sexual aggression. Third, narcissists demonstrate inflated, but often distorted, views of their abilities (Campbell, Bosson, Goheen, Lakey, & Kernis, 2007; Morf & Rhodewalt, 2001), views that may lead them to believe victims desire or even benefit from their sexual advances, despite those victim's rejections or protests against such advances (cf. Baumeister et al., 2002). Finally, narcissists are characterized by low levels of empathy (e.g., Watson, Grisham, Trotter, & Biderman, 1984) and high levels of hostility and exploitativeness (e.g., Raskin et al., 1991), a combination of traits that may prompt them to forcefully take the sexual relations they desire even if they realize sexual aggression may harm their victims.

Despite such strong theoretical links, only a handful of empirical studies have directly examined whether men high in narcissism are more likely than men low in narcissism to perpetrate sexual aggression, and the results of such studies have been inconsistent. Providing support for the link between narcissism and sexual aggression, Bushman et al. (2003) demonstrated that men who were high in narcissism held more rape-supportive attitudes and behaved more aggressively toward a female confederate who refused to read aloud a sexually explicit passage than men who were low in narcissism. Further, Kosson, Kelly, and White (1997) found that men high in narcissism were more likely to use arguments, pressure, or positions of authority to force a woman into unwanted sexual activity than men low in narcissism. However, raising doubts about the link between

narcissism and sexual aggression, Kosson et al. (1997) also reported that men high in narcissism were *not* more likely to commit other forms of sexual aggression, including verbal threats, exploitation of an intoxicated woman, and physical force. Likewise, two other studies (Chantry & Craig, 1994; Pospiszyl, 2002) found that global measures of narcissism did not clearly differentiate men incarcerated for sexual aggression from those incarcerated for non-sexual aggression.

Sexual Narcissism and Sexual Aggression

Though these inconsistencies are surprising given the strong theoretical rationale that narcissism should predict sexual aggression, they are not surprising in light of a robust literature documenting similar cross-situational inconsistencies between personality and behavior (for reviews, see Bem & Allen, 1974; Epstein, 1979; Mischel & Peake, 1982). Explaining such inconsistencies, Mischel and Shoda (1995) argued that personality only influences behavior in situations that activate the cognitive components of that personality system. Accordingly, narcissistic men should only exhibit sexual aggression when sexual situations activate the cognitive components of their narcissism (e.g., entitled sexual desires, a lack of empathy for sexual partners). But because global assessments of narcissism, such as the frequently used Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988), are insensitive to whether the components of narcissism are activated in sexual situations versus non-sexual situations, they conflate sexual and non-sexual narcissists and thus cannot consistently distinguish narcissists likely to sexually aggress from narcissists unlikely to sexually aggress. Indeed, Baumeister et al. (2002) noted that although trait measures of narcissism predict behaviors with some success, "The behaviors seem highly circumstantial, and in many situations narcissists respond the same as anyone else" (p. 94; see also Bushman & Baumeister, 1998; Rhodewalt & Morf, 1998).

How can research overcome these challenges and demonstrate more consistent links between narcissism and sexually aggressive behavior? When similar inconsistencies emerged in research on the relationship between attitudes and behaviors (see Wicker, 1969), researchers were able to overcome them by measuring both constructs with regard to the same specific domains (e.g., Ajzen & Fishbein, 1977; Davidson & Jaccard, 1979). For example, Davidson and Jaccard (1979) demonstrated that attitudes toward using oral contraception were a more consistent predictor of actual use of oral contraception compared to attitudes toward contraception measured more globally. A similar strategy may resolve the inconsistencies observed thus far between narcissism and sexually aggressive behavior. Specifically, a domain-specific measure of *sexual* narcissism that assesses whether the cognitive components of narcissism are activated in sexual situations may predict sexually aggressive behavior with more precision than a global measure of narcissism. Though others have made similar suggestions (Ryan, 2004; Wryobeck & Wiederman, 1999), we are aware of no empirical studies that directly test for such a relationship.

Overview of the Current Research

The overarching goal of the current research was to demonstrate more consistent links between narcissism and sexual aggression by investigating the extent to which a measure of sexual narcissism could account for significant variance in sexual aggression that was not

accounted for by global narcissism. To this end, we conducted two independent studies. In Study 1, we developed and examined the psychometric properties of a new domain-specific measure of sexual narcissism, the Sexual Narcissism Scale (SNS). In Study 2, we used the SNS to account for variance in sexual aggression above and beyond the variance accounted for by a global assessment of narcissism, the NPI. To determine whether the SNS consistently outperformed the NPI, we examined the incremental validity of the SNS in predicting five indices of sexual aggression: total frequency of sexual aggression (Abbey, Parkhill, & Koss, 2005), type of sexual aggression (i.e., unwanted sexual contact, sexual coercion, and attempted/completed rape; Koss et al., 1987), and the likelihood of perpetrating sexual aggression in the future (Malamuth, 1981).

Study 1

The absence of a psychometrically sound measure of sexual narcissism may be one reason researchers have yet to explore the connection between sexual narcissism and sexual aggression. One measure of sexual narcissism does exist, the Index of Sexual Narcissism (ISN; Hurlbert et al., 1994), but that scale was developed for clinical purposes using a sample of abusive military husbands (see also Hurlbert & Apt, 1991) and has been criticized for having conceptual and psychometric limitations (Wryobeck & Wiederman, 1999). Specifically, using a principal components analysis, Wryobeck and Wiederman (1999) reported that as many as 9 of the 25 items on the ISN did not load onto any of the primary factors, and those primary factors did not capture important components of narcissism, such as sexual exploitation and lack of sexual empathy. Further, the ISN conflates participants' own sexual narcissism with their perceptions of others' sexual narcissism, as some items require participants to report their own beliefs (e.g., "I think I am better at sex than most people my age"), whereas other items require participants to report their perceptions of others' beliefs (e.g., "In general, most people take sex too seriously"). Because these limitations could restrict the ability to detect an association between sexual narcissism and sexual aggression, the goal of Study 1 was to establish a new, psychometrically sound measure of sexual narcissism. In this study, we first describe the process of item and subscale development for the new SNS, and then report relevant psychometric properties and descriptive statistics.

Method

Participants—Participants in Study 1 were 363 college students enrolled in psychology courses at a large southeastern university. We excluded two participants prior to analyses because they failed to follow survey instructions. Additionally, because complete data were required to conduct confirmatory factor analyses (Kline, 2005), we excluded 62 participants who skipped one or more SNS items, leaving 299 participants in the final sample (152 men, 147 women). All participants were between 18 and 29 years of age (M = 19.2, SD = 1.5) and were predominantly Caucasian (82%). Further, 96% of the sample reported their sexual orientation was heterosexual, and a total of 69% participants reported having engaged in sexual intercourse on at least one occasion.

Procedure—After approval from the university Institutional Review Board, groups of 30 or fewer students completed a battery of paper-pencil questionnaires (n = 281) or computer-based questionnaires (n = 82) in a classroom setting. The survey instructions remained the same for both administration types and no significant differences in scores on the SNS emerged across the two methods of administration. All data were collected anonymously.

Measures

<u>Demographic Form:</u> A demographic form was included to gather basic information about participant sex, age, and race. Additionally, four items were included to gather information about participants' sexual history, including whether or not they had ever had sexual intercourse, their lifetime number of sexual intercourse partners, their number of sexual intercourse partners in the past year, and their age of first intercourse.

Sexual Narcissism Scale (SNS): Our goal was to develop a conceptually clear, reliable, and brief measure of sexual narcissism that could be used easily in research settings. Based on systematic item pilot testing (N = 137, 62 males, 75 females, M age = 18.9), we began the current study with a pool of 40 sexual narcissism items from which we planned to choose the strongest subset for the final scale. All items were written to represent one of four components of narcissism hypothesized to be active in the sexual domain and shape sexual outcomes: (1) sexual exploitation, (2) sexual entitlement, (3) low sexual empathy, and (4) grandiose sense of sexual skill. Items on the Sexual Exploitation subscale assessed the ability and willingness to manipulate a person to gain sexual access (e.g., "One way to get a person in bed with me is to tell them what they want to hear"). Items on the Sexual Entitlement subscale assessed a sense of sexual entitlement and belief that the fulfillment of one's sexual desires was a personal right (e.g., "I am entitled to sex on a regular basis"). Items on the Low Sexual Empathy subscale assessed a general lack of empathy and devaluation of sexual partners (e.g., "The feelings of my sexual partners don't usually concern me"). Finally, items on the Sexual Skill subscale assessed a tendency to hold a grandiose sense of sexual skill or an exaggerated sense of sexual success (e.g., "I am an exceptional sexual partner"). Participants responded to all items on a 5-point scale (1 = Strongly Disagree to 5 = Strongly Agree). Four reverse-scored items were included to control response sets, and then recoded for inclusion in the total scale score. Accordingly, higher scores indicated greater levels of sexual narcissism.

Results

Psychometric Properties of the 40-Item Sexual Narcissism Scale—Preliminary scale statistics were computed for the 40-Item SNS and each subscale. Initial reliability statistics indicated high internal consistency among the items overall (Cronbach's $\alpha=.91$), and within each subscale (Sexual Exploitation $\alpha=.87$, Sexual Entitlement $\alpha=.81$, Low Sexual Empathy $\alpha=.77$, and Sexual Skill $\alpha=.76$). Nevertheless, item-total correlations ranged from -.14 to .68, indicating some items were more strongly representative of the construct than others.

Confirmatory Factor Analysis—In order to identify and remove poor fitting items, the 40 items were submitted to a confirmatory factor analysis (CFA) using Lisrel version 8.72

(Joreskog & Sorbom, 2005) with the C3 independence model (Joreskog, 2004). Based on Kline's (2005) recommendations, four fit indices were used to determine the best fitting four-factor model: the Minimum Fit Function (MFF) χ^2 , which should demonstrate a ratio to degrees of freedom (df) of approximately 3 or less (Kline, 2005), the Comparative Fit Index (CFI; Bentler, 1990), which should be at least .90, the Standardized Root Mean Square Residual (SRMR), which should be less than .10 (Kline, 2005), and the Root Mean Square Error of Approximation (RMSEA), which should be less than .08 (Browne & Cudeck, 1993). Results demonstrated that the 40-item SNS had an adequate CFI of .92 and an adequate MFF χ^2 (734) of 2092.94, p < .001, that yielded a χ^2 /df ratio of 2.85. However, the SRMR of .12 suggested higher than ideal differences between predicted and observed interitem covariances and the RMSEA of .09 suggested more error in the model than desired.

Psychometric Properties of the Final 20-Item Sexual Narcissism Scale—As

planned, we identified and dropped poor-fitting items according to modification indices and fitted residuals, ensuring that the fit of the model was improved each time we dropped an item. This procedure yielded a final four-factor model consisting of 20 items, with five items per subscale, and much stronger fit, $\chi^2_{\text{difference}}(570) = 1659.47$, p < .001, MFF $\chi^2(164) = 433.47$, p < .01, χ^2/df ratio = 2.64, CFI = .95, SRMR = .077, RMSEA = .077. Additionally, this 20-item, four-factor model provided adequate fit for men [N = 152, MFF $\chi^2(164) = 282.29$, p < .01, χ^2/df ratio = 1.76, CFI = .94, SRMR = .09, RMSEA = .07], women [N = 147, MFF $\chi^2(164) = 323.39$, p < .01, χ^2/df ratio = 1.97, CFI = .93, SRMR = .09, RMSEA = .08], and non-virgins [N = 206, MFF $\chi^2(164) = 377.90$, p < .01, χ^2/df ratio = 2.30, CFI = .93, SRMR = .073, RMSEA = .082], but demonstrated slightly more error than is ideal among virgins [N = 93, MFF $\chi^2(164) = 310.63$, p < .01, χ^2/df ratio = 1.89, CFI = .90, SRMR = .11, RMSEA = .095].

The final 20 items, along with factor loadings, means, SDs, and observed ranges for each item, are presented in Table 1. As the table shows, all items loaded well onto their corresponding factors, with all factor loadings above .50, and demonstrated substantial variability, with all SDs near or above 1 and participants using most or all of the scale on all items. Further, reliabilities for the 20-item scale and each 5-item subscale were acceptable (Full Scale $\alpha=.85$; Sexual Exploitation $\alpha=.76$; Sexual Entitlement $\alpha=.80$; Low Sexual Empathy $\alpha=.79$; Sexual Skill $\alpha=.86$). These psychometric characteristics were similar when computed separately for men (Full Scale $\alpha=.85$; Sexual Exploitation $\alpha=.72$; Sexual Entitlement $\alpha=.82$; Low Sexual Empathy $\alpha=.77$; Sexual Skill $\alpha=.87$), women (Full Scale $\alpha=.81$; Sexual Exploitation $\alpha=.73$; Sexual Entitlement $\alpha=.76$; Low Sexual Empathy $\alpha=.79$; Sexual Skill $\alpha=.86$), non-virgins (Full Scale $\alpha=.86$; Sexual Exploitation $\alpha=.76$; Sexual Entitlement $\alpha=.86$; Sexual Exploitation $\alpha=.76$; Sexual Entitlement $\alpha=.86$; Sexual Exploitation $\alpha=.76$; Sexual Entitlement $\alpha=.80$; Low Sexual Empathy $\alpha=.70$; Sexual Skill $\alpha=.80$), and virgins (Full Scale $\alpha=.86$; Sexual Exploitation $\alpha=.75$; Sexual Entitlement $\alpha=.80$; Low Sexual Empathy $\alpha=.77$; Sexual Skill $\alpha=.87$).

Subscale correlations appear in Table 2. As the table shows, each subscale of the SNS correlated well with the overall scale. The strongest correlation among subscales was between Sexual Exploitation and Sexual Entitlement. Accordingly, the fit of a three-factor model was estimated in which the items from these two subscales were loaded onto the same factor. That model provided significantly poorer fit, $\chi^2_{\text{difference}}(3) = 39.50$, p < .001,

indicating important empirical independence between the Exploitation and Entitlement subscales. Thus, the four factor structure was retained.

Descriptive Statistics by Sex and Virginity Status—Means and SDs for the total scale and each subscale by sex and virginity status are shown in Table 3. To determine whether scores on the SNS differed across men and women and across virgins and non-virgins, we conducted a series of 2 (Sex) × 2 (Virginity Status) ANOVAs for the full scale and each subscale. Three significant interactions emerged. First, sex and virginity status interacted to account for scores on the full scale, F(1, 295) = 7.14, p < .01, d = .32. Specifically, contrasts revealed that male non-virgins reported higher SNS scores than male virgins, F(1, 295) = 5.88, p < .05, d = .31, whereas female non-virgins did not differ significantly from female virgins, F(1, 295) = 1.89, p = .18, d = .17. Also, male non-virgins reported higher SNS than female non-virgins, F(1, 295) = 46.78, p < .001, d = .80, whereas male virgins did not differ significantly from female virgins, F(1, 295) = 1.89, p = .17, d = .16.

Second, sex and virginity status interacted to account for scores on the Sexual Exploitation subscale, F(1, 295) = 8.17, p < .01, d = .34. Specifically, contrasts revealed that male non-virgins did not significantly differ on Exploitation from male virgins, F(1, 295) = 2.47, p = .12, d = .20, whereas female non-virgins reported significantly less Exploitation than female virgins, F(1, 295) = 6.14, p < .05, d = .31. Also, male non-virgins reported higher Exploitation than female non-virgins, F(1, 295) = 78.49, p < .001, d = 1.03, and male virgins reported higher Exploitation than female virgins, F(1, 295) = 6.30, p < .05, d = .29.

Third, sex and virginity status interacted to account for score son the Sexual Skill subscale, F(1,295) = 6.95, p < .01, d = .31. Specifically, contrasts revealed that male non-virgins reported higher Skill than male virgins, F(1, 295) = 77.62, p < .001, d = 1.13, and female non-virgins reported significantly higher Skill than female virgins, F(1, 295) = 27.44, p < .001, d = .65. Also, male non-virgins reported higher Skill than female non-virgins, F(1, 295) = 12.39, p < .001, d = .41, whereasmale virgins did not differ significantly from female virgins, F(1, 295) = .66, p = .42, d = .09.

Although the sex by virginity interactions for Sexual Entitlement and Low Sexual Empathy were not significant, three significant main effects emerged. Specifically, men reported higher levels of Sexual Entitlement than women, F(1, 295) = 20.12, p < .001, d = .52; men reported less Sexual Empathy than women, F(1, 295) = 76.52, p < .001, d = 1.02; and non-virgins reported higher Sexual Empathy than virgins, F(1, 295) = 47.09, p < .001, d = .86.

Sexual Narcissism and Sexual Behavior—Finally, we conducted analyses to determine the extent to which sexual narcissism was related to three sexual behaviors: (1) the lifetime number of sexual intercourse partners, (2) the number of intercourse partners in the prior year, and (3) the age of first intercourse. Results revealed significant positive correlations between sexual narcissism and lifetime number of intercourse partners, r = .25,

¹A Cohen's d statistic was calculated from each F using the formula: $d = t(n_1 + n_2)/[(df)(n_1n_2)]$, where t = F (Dunst, Hamby, & Trivette, 2004). The magnitude of the effect was interpreted using the guidelines by Cohen (1998), where the effect was either small (d = .2), medium (d = .5), or large (d = .8).

 $p < .001; M = 3.35 \ (SD = 5.06)$, and between sexual narcissism and number of intercourse partners in the prior year, r = .18, p < .01; $M = 1.40 \ (SD = 2.06)$, indicating sexual narcissists engage in intercourse with more partners. Further, a significant negative correlation emerged between sexual narcissism and age of first intercourse, r = -.15, p < .05; $M = 16.47 \ (SD = 1.81)$, suggesting participants high in sexual narcissism began having sex at younger ages than participants low in sexual narcissism.

Discussion

Results of Study 1 provided evidence for the sound psychometric properties of the new 20item SNS with four distinct subscales; Sexual Exploitation, Sexual Entitlement, Low Sexual Empathy, and Sexual Skill. Specifically, the total scale and each of the four subscales demonstrated adequate reliability, and a confirmatory factor analysis confirmed the scale's four factor structure. Further, indicating the psychometric properties were quite robust, these properties were strong among men, women, and non-virgins, although the factor structure demonstrated slightly more error among virgins—possible because there were fewer virgins in the sample. Further still, the total scale and each of the subscales differentiated levels of sexual narcissism between men and women and between virgins and non-virgins in predictable ways. Specifically, consistent with a robust body of research showing that women are often socialized to be less sexually assertive than men (see Morokoff, 2000) and differ from men in their motivations for sexual interactions (e.g., Browning, Hatfield, Kessler, & Levine, 2000), and consistent with gender differences obtained in research on global narcissism (e.g., Tschanz, Morf, & Turner, 1998), men reported higher levels of sexual narcissism than women on all four factors. Likewise, consistent with their different levels of sexual experience, non-virgins, particularly male non-virgins, tended to report higher levels of sexual narcissism, with the exception that both male and female non-virgins reported higher levels of sexual empathy. Finally, as found in prior research (Wryobeck & Wiederman, 1999), sexual narcissism was associated with more sexual experiences that began at an earlier age.

Study 2

The purpose of Study 2 was to use the brief and reliable SNS developed in Study 1 to explore the relationships among narcissism, sexual narcissism, and sexual aggression. Though we were interested in the bivariate relationships among narcissism, sexual narcissism, and sexual aggression, we were particularly interested in the ability of sexual narcissism to account for variance in sexual aggression beyond that accounted for by the NPI (i.e., the incremental predicative validity of the SNS). Specifically, in line with our premise that a measure of sexual narcissism should better assess whether the cognitive components of narcissism are activated in sexual situations, we expected the SNS would demonstrate stronger associations with sexual aggression than the NPI, and that the NPI would account for no additional variance in sexual aggression once its association with the SNS was controlled.

Method

Participants—Participants were 415 undergraduate men enrolled in psychology courses at a large southeastern university. We excluded one participant who failed to follow survey instructions. Further, because we planned to calculate a total sexual aggression score and could not artificially compute missing sexual aggression data, we eliminated 29 participants missing data on the dependent sexual aggression measure (see also Malamuth, Sockloskie, Koss, & Tanaka, 1991). Finally, we dropped 7 participants missing more than 10% of data on the SNS. Thus, our final sample included 378 men. Participants were between the ages of 18 and 45 (M = 19.5, SD = 2.6), and primarily Caucasian (86%). Further, 97% of the sample reported their sexual orientation was heterosexual, and a total of 69% participants had engaged in sexual intercourse on at least one occasion.

Procedure—After receiving approval from the university Institutional Review Board, data were gathered through the use of an anonymous computer-based survey. Participants completed the survey in groups of 20 or less. Data were collected over two academic semesters. No significant differences emerged between data collection periods on sexual narcissism, narcissism, or sexual aggression.

Measures

Sexual Narcissism Scale: The 20-item SNS described in Study 1 was used to assess participants' endorsement of narcissistic personality traits in the sexual domain. As in Study 1, we conducted a CFA on men with complete SNS data (n=370). The CFA revealed an adequate fit to the four factor model, MFF $\chi^2(164)=367.89$, p<.01, χ^2/df ratio = 2.24, CFI = .97, SRMR = .06, RMSEA = .06. Further, all items loaded well onto their corresponding factors, with factor loadings ranging from .57 to .97 for Sexual Exploitation, from .66 to .89 for Sexual Entitlement, from .47 to .70 for Low Sexual Empathy, and from .61 to .73 for Sexual Skill. Finally, internal consistency for the full scale and each subscale was acceptable (Full Scale $\alpha=.84$; Sexual Exploitation $\alpha=.78$; Sexual Entitlement $\alpha=.84$; Low Sexual Empathy $\alpha=.79$; Sexual Skill $\alpha=.89$).

<u>Narcissistic Personality Inventory:</u> The 40-item NPI (Raskin & Terry, 1988) was used to assess narcissistic personality styles. Items such as "If I ruled the world, it would be a much better place," and "I find it easy to manipulate people" were rated in a yes-no response format. A total score was calculated for each participant with higher scores indicating a more narcissistic personality style (Cronbach's $\alpha = .81$).

Sexual Aggression Frequency and Type: Sexual aggression perpetrated by men against women was assessed with a recently updated Sexual Experiences Scale (SES; Abbey et al., 2005) that captures behaviorally specific forms of sexual aggression perpetrated since the age of 14 (Koss & Gidycz, 1985; Koss & Oros, 1982; Koss et al., 1987). The updated SES includes 35 items; however, in line with the suggestion by Abbey et al. (2005), we combined the five items that inquire about sexual aggression perpetrated through the use of alcohol with the five items that inquire about sexual aggression perpetrated through use of drugs into alcohol *or* drug items. Thus, the SES scale used for this study contained 30 items. Specifically, participants reported whether or not they used six different tactics: arguments/

pressure, lies/promises, guilt/anger, giving alcohol/drugs, taking advantage of an intoxicated woman, and using physical force to engage in five different types of sexual behavior that was unwanted by the woman: fondling/kissing, attempted sex, oral sex, sexual intercourse, and anal sex/insertion of objects. Three items were not used in forming total scores because they did not clearly involve sexual contact: sex that was attempted, but not completed, through use of arguments/pressure, lies/promises, or guilt/anger. Thus, there were a total of 27 sexual aggression items included in the present analyses from which we created a continuous sexual aggression frequency score by summing the total number of items endorsed (possible range = 0-27).

Additionally, we used the SES items to calculate conceptually distinct but not mutually exclusive indices of three types of sexual aggression: unwanted sexual contact, sexual coercion, and attempted or completed rape (see Koss et al., 1987). Specifically, for sexual contact, 0 = no sexual contact and 1 = any verbally pressured or physically forced kissing or sexual touching, but not sexual penetration. For sexual coercion, 0 = no sexual coercion and 1 = verbally pressured sexual penetration (i.e., oral, anal, or vaginal). For attempted or completed rape, 0 = no attempted or completed rape and 1 = sex that was attempted, but not completed, through means of physical force, giving drugs/alcohol, or taking advantage of a victim who was too incapacitated to consent *or* completed sexual penetration (i.e., oral, anal, or vaginal) through means of physical force, giving alcohol/drugs, or taking advantage of a victim who was too incapacitated to consent.

Future Likelihood of Sexual Aggression—We assessed the propensity toward future sexual aggression with the likelihood of forced sex item developed by Malamuth (1981). Specifically, participants were asked to rate the likelihood that they would engage in "forced sex" in the future if assured they would not be caught or punished using a 5-point scale from 1 (Not at All Likely) to 5 (Extremely Likely).

Results

Descriptive Statistics—A total of 32% of men (n = 121) reported committing at least one act of sexual aggression since the age of 14, with the number of sexually aggressive acts ranging from 0–15. A total of 14% of men (n = 67) reported perpetrating more than one act of sexual aggression, and 4% (n = 19) reported perpetrating five or more acts. A breakdown by the type of sexual aggression indicated that 30% (n = 114) had perpetrated a form of sexual contact against a woman's will, 21% (n = 80) had perpetrated an act of sexual coercion, and 4% (n = 14) had perpetrated an act of attempted or completed rape. Additionally, 20% of men (n = 76) indicated some likelihood of perpetrating forced sexual activity in the future if assured they would not be caught, including 18%(n = 69) who indicated mild to moderate likelihood (score of 2 or 3 on the 5-point scale) and 2%(n = 7) who indicated a strong likelihood (score of 4 or 5 on the 5-point scale).

Finally, acceptable variability was observed on each of the predictor variables. Specifically, the mean SNS score was 2.55 (SD = .51) with an observed range of scores from 1.20 to 4.15 (possible range = 1-5), and the mean NPI score was .55 (SD = .15) with an observed range of scores from .15 to .93 (possible range = 0-1).

Does Sexual Narcissism Predict Sexual Aggression?—We first estimated

bivariate correlations among sexual narcissism, narcissism, and sexual aggression. As can be seen in Table 4, although global narcissism and sexual narcissism were moderately related to one another, they shared less than 20% of variance, which is consistent with our premise that global narcissism is not always activated in the sexual domain. Additionally, significant positive correlations emerged between each index of sexual aggression and both narcissism and sexual narcissism. Further, analyses revealed that every SNS subscale was associated with the frequency of sexual aggression and the likelihood of future sexual aggression, indicating the association between the SNS and sexual aggression was not driven by merely one component of sexual narcissism. However, these bivariate associations did not control for the shared variance between global narcissism and sexual narcissism. Our prediction was that sexual narcissism would account for variance above and beyond the variance accounted for by global narcissism, and that global narcissism would not account for variance in sexual aggression once its association with sexual narcissism was controlled. Addressing that prediction was the goal of our next set of analyses.

Does Sexual Narcissism Predict Sexual Aggression Beyond Global

Narcissism?—To estimate the incremental predictive validity of sexual narcissism, we conducted a series of regression analyses. Because the sexual aggression frequency data and likelihood of sexual aggression data were negatively skewed and thus violated assumptions of normality, we specified negative binomial distributions for analyses involving these variables (for a thorough discussion of non-normal distributions and corrective statistical techniques, see Atkins & Gallop, 2007). Because the sexual contact, sexual coercion, and rape variables were dichotomous, we used binary logistic regression analyses to account for variance in these variables.

First, we examined the unique variance in global and sexual narcissism that was associated with the frequency of sexual aggression by regressing the frequency of sexual aggression onto the NPI in a first analysis and then onto the NPI and the SNS in a second analysis. As shown in Table 5, the NPI was significantly associated with sexual aggression in the first analysis. However, when the SNS was entered in the second analysis, thus controlling for the variance shared between the SNS and the NPI, sexual narcissism accounted for variance in the frequency of sexual aggression beyond that accounted for by global narcissism whereas global narcissism was no longer significantly related to frequency of sexual aggression.

Next, we examined the unique variance in global and sexual narcissism that was associated with whether or not men engaged in unwanted sexual contact, sexual coercion, and attempted/completed rape by separately regressing each type of sexual aggression onto the NPI in a first set of logistic regression analyses and onto the NPI and the SNS in a second set of analyses. As shown in Table 5, global narcissism was associated with each type of sexual aggression. However, when the SNS was entered in the second analysis, thus controlling for the variance shared between the SNS and the NPI, sexual narcissism accounted for variance in all three outcomes beyond that accounted for by global narcissism (although the association between the SNS and attempted/completed rape was only

marginally significant), whereas global narcissism was no longer significantly related to any of the three specific types of sexual aggression.

Finally, we examined the unique variance in global and sexual narcissism that was associated with the extent to which men reported a propensity to perpetrate sexual aggression in the future if assured they would not be caught by regressing perceived likelihood of sexual aggression onto the NPI in a first analysis and then onto the NPI and the SNS in a second analysis. As shown in Table 5, global narcissism was not independently associated with the likelihood of sexual aggression in the first step of the model. However, as was the case with all the other measures of sexual aggression, the association between the SNS and likelihood of sexual aggression was significant, even when the NPI was controlled.

Does the Association Between Sexual Narcissism and Sexual Aggression Interact with Virginity Status?—Although virgins could have engaged in numerous types of sexual aggression (e.g., verbally pressured sexual touching, physically forced oral sex), they could not have engaged in other types of sexual aggression, such as verbally pressured intercourse, alcohol-induced intercourse, and physically forced intercourse. Thus, we examined whether the association between sexual narcissism and sexual aggression varied across virgins and non-virgins by replicating the analyses reported above with a dummy code of virginity status and an interaction term formed from the product of that dummy code and mean-centered SNS scores. Significant interactions emerged for sexual aggression frequency, $B = 1.30 \text{ Wald } \gamma^2(1, 378) = 8.08, p < .01, d = .30, \text{ and sexual}$ coercion, B = 2.04, Wald $\chi^2(1, 378) = 5.45$, p < .05, d = .24. Specifically, sexual narcissism was significantly associated with sexual aggression frequency, B = 1.76, Wald $\chi^2(1, 378) =$ 62.24, p < .001, d = .89, and sexual coercion, B = 2.37, Wald (1, 378) = 34.48, p < .001, d= .63, among non-virgins; however, sexual narcissism was not significantly associated with sexual aggression frequency, B = .46, Wald $\chi^2(1, 378) = 1.28$, p = .26, d = .12, or sexual coercion, B = -.33, Wald (1, 378) = .17, p = .68, d = .04, among virgins. The association between sexual narcissism and forced sexual touching, attempted/completed rape, and likelihood of future sexual aggression did not vary across virgins and non-virgins.

General Discussion

Given that global measures of narcissism have demonstrated inconsistent links with sexual aggression in past research, the goal of the current studies was to extend theories of sexual aggression (e.g., Baumeister et al., 2002) by examining the relationships between narcissism, sexual narcissism, and sexual aggression. In Study 1, we developed the domain specific SNS, documented the psychometric strengths of the SNS, and demonstrated that the psychometric properties of the SNS replicated across men, women, and non-virgins, though they were slightly weaker among virgins—possibly because the number of virgins in the sample was relatively low. Then, in Study 2, we demonstrated that sexual narcissism was a more robust predictor of sexual aggression than global narcissism across several conceptually distinct measures. Specifically, although global narcissism, assessed with the Narcissistic Personality Inventory (NPI; Raskin & Terry, 1988), accounted for a statistically

²A Cohen's d statistic was calculated from each χ^2 using the formula: $d = [(4\chi^2)/(N - \chi^2)]$ (Dunst et al., 2004).

significant portion of variance in the frequency of sexual aggression when it was examined independently, sexual narcissism was positively associated with the frequency of sexual aggression whereas the NPI was unrelated to the frequency of sexual aggression when both the NPI and the SNS were examined simultaneously. Likewise, although global narcissism accounted for a statistically significant portion of variance in three specific types of sexual aggression—unwanted sexual contact, sexual coercion, and attempted/completed rape—when it was examined independently, sexual narcissism was positively associated with all three types of sexual aggression whereas the NPI was unrelated to all three when both the NPI and the SNS were examined simultaneously. Finally, consistent with previous research demonstrating inconsistencies in the link between globally assessed narcissism and sexual aggression, global narcissism was not significantly associated with the propensity to perpetrate sexual aggression in the future, whereas sexual narcissism was significantly related to future sexual aggression propensity. Taken together, these results indicate a robust relationship between sexual narcissism and sexual assault perpetration.

The current findings have important theoretical implications for research on sexual aggression, specifically, and for research on sexuality more generally. With respect to research on sexual aggression, the current findings provide support for several theoretical frameworks that posit a relationship between self-serving, narcissistic personality styles and sexual aggression (e.g., Baumeister et al., 2002; Malamuth, 2003; Malamuth et al., 1993). However, they also refine such frameworks by demonstrating that the components of narcissism are most predictive of sexual aggression when active in the sexual domain. Accordingly, theories may most accurately describe the dispositional qualities of sexual aggressors to the extent that they clarify the domain specific nature of those dispositions. Further, as it is likely that sexual narcissism may be strongly correlated with other measures that consistently predict reports of sexual aggression, such as impersonal sexual behaviors, hostile attitudes toward women, self-perceived mating success, psychopathy, and situational risk factors (for reviews, see Koss et al., 1994; Lalumière et al., 2005; Malamuth, 2003), future research that situates sexual narcissism within comprehensive frameworks of sexual assault and considers the unique contribution of this construct in light of other known risk factors could significantly enhance theory in this area.

With respect to sexuality research more generally, the current findings demonstrate the importance of using measures of personality specific to the sexual domain to predict sexual behavior. It is now rather widely accepted that the extent to which personality predicts behavior varies substantially across situations (for reviews, see Bem & Allen, 1974; Epstein, 1979). This may be particularly true regarding the sexual domain where people engage in behaviors they do not display in other aspects of their lives. In line with the findings reported here, perhaps measuring the extent to which the cognitive components of other personality constructs (e.g., conscientiousness, extraversion) are active in sexual domains would provide stronger tests of the association between those personality constructs and sexual behavior.

By providing insight into the dispositional characteristics of sexual aggressors, the current findings also have important practical implications. Specifically, the finding that men were more likely to perpetrate sexual aggression when the components of narcissism were

activated in sexual situations provides ways to identify and even treat sexual aggressors. Specifically, targeting the cognitive components of sexual narcissism (e.g., a lack of sexual empathy, a sense of sexual entitlement) may help attenuate sexual aggression risk. Consistent with this possibility, recent experimental research (Konrath et al., 2006) demonstrated that narcissists were more likely than non-narcissists to behave aggressively toward an experimental partner except when they were provided with false feedback that they shared a similarity with the partner, a manipulation that may have increased levels of empathy. Future sexual aggression prevention research may benefit by directly examining whether inducing sexual empathy among sexual narcissists can reduce sexual aggression in similar ways. More generally, though, future research may benefit by examining how interventions can successfully induce such empathy, as current sexual aggression interventions targeting empathy have provided mixed results (for review, see Schewe, 2002).

In addition to these theoretical and practical implications, the current research suggests several avenues for future research. Most relevant to the current research question, future research may benefit by examining the association between sexual narcissism and sexual aggression by women. Although women perpetrate sexual aggression much less frequently than men, they do perpetrate (e.g., Anderson & Aymami, 1993; Krahe, Scheinberger-Olwig, & Bieneck, 2003; Struckman-Johnson & Struckman-Johnson, 1994), and sexual narcissism may explain at least part of such perpetration. Recent research by Hines (2007) revealed that females were most likely to engage in sexually aggressive behavior in cultures that provide women greater possibilities of social power. Likewise, across a host of studies, narcissism has been associated with a quest for social power, admiration, and positive regard (for review, see Morf & Rhodewalt, 2001). This quest for power may explain why sexual narcissism is related to sexual offending and, considered in light of Hines' research, suggests an association between sexual narcissism and sexual offending may emerge among women. Future research may benefit by addressing this possibility directly.

More broadly, future research may benefit by examining the extent to which sexual narcissism predicts other sexual behaviors and outcomes. For example, though numerous studies have examined the role of personality in predicting risky sexual behaviors, such as the failure to use contraception (for a review, see Hoyle, Fejfar, & Miller, 2000), Pinkerton and Abramson (1995) argued that, "It appears that most existing measures are too general to accurately reflect the sexual component of risk-taking" (p. 720). Perhaps components of narcissism measured with specific regard to the sexual domain, such as an inflated sense of sexual skill or sexual entitlement, may predict high risk sexual behaviors. Sexual narcissism may also predict infidelity. Although several studies recently reported that measures of global narcissism accounted for variance in infidelity (Atkins, Yi, Baucom, & Christensen, 2005; Buss & Shackelford, 1997; Campbell, Foster, & Finkel, 2002), it remains unclear whether this association would remain once the variance shared between global narcissism and sexual narcissism is controlled. Addressing this issue would provide valuable information about the psychology of infidelity, particularly whether infidelity stems from sexual motivations, non-sexual motivations, or both. Finally, it is possible that aspects of sexual narcissism may predict positive sexual outcomes as well (cf. Campbell, 2001). For

instance, the heightened sexual skill perceived by sexual narcissists may predict higher levels of sexual satisfaction in themselves and/or their partners. Indeed, more positive sexual expectancies, which skilled partners may be more likely to possess, have been shown to predict more positive changes in sexual satisfaction among married women (McNulty & Fisher, 2008). In sum, the newly-validated SNS provides a host of opportunities for future sexuality research.

Our confidence in the results reported here is enhanced by several strengths of the methodology and design of these studies. First, the psychometric properties of the SNS were demonstrated across two large, independent samples and across both men and women, providing confidence that it is a reliable research instrument. Second, the ability of sexual narcissism to outperform global measures of narcissism was replicated across five conceptually distinct measures of sexual aggression (i.e., total frequency, three specific types, and future likelihood). In addition to increasing our confidence that the results were not idiosyncratic to a particular index, this nuanced approach demonstrated that sexual narcissism is consistently associated with numerous forms of sexual aggression, something previous research on global narcissism has been unable to show (Kosson et al., 1997). Finally, the current analyses were appropriate for the skewed data typical for research on sexual aggression. Specifically, rather than log transforming the sexual aggression variables, which typically remain skewed even after such transformation (Atkins & Gallop, 2007), we specified the appropriate negative binomial distribution in our regression analyses of the sexual aggression frequency and propensity toward future sexual aggression variables, eliminating the concern that the results were due to violations of the normality assumptions that must be met to properly interpret the results of OLS regressions. Future research on sexual aggression may benefit by adopting similar strategies (see Atkins & Gallop, 2007).

Despite these strengths, several qualities of this research limit the extent of our conclusions until the current findings can be replicated and expanded. First, all variables were assessed with explicit, self-report instruments. Though these assessment procedures are standard in the field, and though we attempted to increase the veracity of self-reports by making all survey procedures anonymous, it remains possible that the findings were influenced by socially desirable response biases. Future research may benefit by replicating the association between sexual narcissism and sexual aggression using lab-based observational measures (e.g., Mitchell, Angelone, Hirschman, Lilly, & Hall, 2002) or by comparing men convicted of sexually violent crimes to men convicted of non-sexually violent crimes or non-offenders. Second, all data were collected cross-sectionally which limits our ability to determine any potential causal direction of the associations that emerged here. Sexual narcissism may indeed predict sexual aggression, or sexual aggression may lead to sexually narcissistic beliefs through dissonance reduction (cf. Festinger, 1957). An interesting avenue for future research would be to use a prospective design that follows a sample of young men who have not previously been sexually aggressive and examines how specific and general measures of narcissism truly predict future sexual aggression. Likewise, it is unclear whether the associations between sexual narcissism and frequent and early sexual experiences observed in Study 1 emerged because sexual narcissism leads to these types of sexual experiences or because these sexual experiences lead to sexual narcissism. Future longitudinal research may benefit by attempting to tease apart these potential causal directions. Third, the current

studies only examined the role of sexual narcissism in accounting for sexual aggression that was perpetrated by men against women. Although this is the most common type of sexual aggression (Tjaden & Thoennes, 2006), other types of sexual aggression, such as same-sex, woman to man, and child sexual abuse may also be explained, in part, by sexual narcissism. Exploring these possibilities may provide important insights into the role of sexual narcissism in all sexual offending.

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Table 1

Final 20-Item Sexual Narcissism Scale

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Item wording	Subscale	Factor loading	М	as	Range
If I ruled the world for one day, I would have sex with anyone I choose	Exp	0.63	2.48	1.48	1–5
One way to get a person in bed with me is to tell them what they want to hear	Exp	0.73	2.29	1.15	5-1
When I want to have sex, I will do whatever it takes	Exp	0.62	2.27	.94	5-1
I could easily convince an unwilling person to have sex with me	Exp	0.55	2.09	1.01	1-5
I would be willing to trick a person to get them to have sex with me	Exp	0.63	1.55	8.	5-1
I feel I deserve sexual activity when I am in the mood for it	Ent	99.0	2.62	86.	1-5
I am entitled to sex on a regular basis	Ent	0.65	2.50	1.08	1-5
I should be permitted to have sex whenever I want it	Ent	0.70	2.28	1.00	1-5
I would be irritated if a dating partner said no to sex	Ent	0.64	2.05	1.07	1-5
I expect sexual activity if I go out with someone on an expensive date	Ent	99.0	1.73	.85	4
When I sleep with someone, I rarely know what they are thinking or feeling	Emp	0.54	2.23	88.	5-1
It is important for me to know what my sexual partner is feeling when we make $love^a$	Emp	0.63	2.17	.90	5-1
I enjoy sex more when I feel I really know a person a	Emp	0.56	1.92	1.00	5-1
The feelings of my sexual partners don't usually concern me	Emp	0.80	1.75	88.	5-1
I do not usually care how my sexual partner feels after sex	Emp	0.77	1.72	98.	5-1
I am an exceptional sexual partner	Skill	0.82	3.68	.83	1–5
My sexual partners think I am fantastic in bed	Skill	0.81	3.64	.80	5-1
I really know how to please a partner sexually	Skill	0.73	3.54	98.	1-5
I have been very successful in my sexual relationships	Skill	99.0	3.33	.92	1–5
Others have told me I am very sexually skilled	Skill	0.73	3.31	86.	1-5

Note: Items were randomized for survey administration. Exp = Sexual Exploitation, Ent = Sexual Entitlement, Emp = Low Sexual Empathy, Skill = Sexual Skill

^aReverse scored item

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Table 2

ch subscale

	1	2	3	4	w
Total SNS	ı				
	***68.	ı			
	.84**	.72***	I		
	.49***	.42***	.24**	ı	
				30***	I
	Sexual Exploitation Sexual Entitlement Low Sexual Empathy Sexual Skill	itation .89*** lement .84*** Empathy .49*** .45***	Empathy .89*** – 1.	Empathy .49*** - Empathy .49*** .72*** - 45*** .24*** 545*** .23*** .27***	ement .84*** Empathy .49*** .72***45*** .23*** .27***

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Table 3

Descriptive statistics for the Sexual Narcissism Scale and each subscale

	Total SNS	SNS	Exploitation	tation	Entitlement	ement	Low er	Low empathy	Skill	
	М	as	M	as	M	as	M	SD	M	SD
Men										
All men	2.63	.50	2.46	.75	2.38	92.	2.12	.65	3.55	.74
Non-virgins	2.68	.48	2.53	.75	2.46	.74	1.93	.57	3.82	.63
Virgins	2.49	.51	2.27	.74	2.16	<i>TT</i> :	2.61	.57	2.90	.56
Women										
All women	2.28	.43	1.81	89.	2.10	69:	1.78	.65	3.44	.67
Non-virgins	2.25	.42	1.70	.65	2.11	.72	1.52	.43	3.65	.61
Virgins	2.35	.42	2.02	69:	2.06	.64	2.31	69:	3.02	.61

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Table 4

Bivariate correlations: sexual narcissism, narcissism, and sexual aggression

		1	7	8	4	w	9	7	∞	6	10
l	SNS	ı									
	Exploitation	***	I								
	Entitlement	***98.	.70***	I							
	Low Empathy	.40***	.33***	.20***	ı						
	Skill	.43***	.19***	.24**	37***	I					
	NPI	* *	.36***	.36***	00.	.38***	1				
_	SA	.40**	.39***	.32***	**61.	.13*	.23***	I			
∞	Contact	.31***	.33**	.22***	.16**	80.	.17**	.54***	I		
_	Coercion	.36***	.35**	.28**	*01.	***	.18***	.70***	.42***	I	
10	Rape	.14**	.16**	*11.	.07	.00	.13*	***74.	.27***	.21***	I
_	LSA	.36***	.38***	.31***	.12*	*01.	*01.	.38**	.26***	.29***	*11:

Note SNS = Sexual Narcissism Scale

Exploitation = Sexual Exploitation Subscale

Low Empathy = Low Sexual Empathy Subscale Entitlement = Sexual Entitlement Subscale

Skill = Sexual Skill Subscale

NPI = Narcissistic Personality Inventory

SA = Total frequency of sexual aggression Contact = Unwanted sexual contact

Coercion = Sexual coercion, Rape = Attempted/completed rape LSA = Likelihood of sexual aggression

p < .01;

* p .05

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Table 5

Hierarchical regressions: narcissism and sexual narcissism predicting sexual aggression

	NPI		SNS	
	В	Cohen's d	В	Cohen's d
Total frequency o	f sexual agg	gression ^a		
Step 1	0.32***	.71		
Step 2	0.75	.13	1.59***	.94
Sexual contact b				
Step 1	2.56**	.35		
Step 2	0.77	.09	1.36***	.52
Sexual coercion b				
Step 1	2.96**	.36		
Step 2	0.41	.04	1.97**	.62
Attempted or com	pleted rape	b		
Step 1	4.52*	.25		
Step 2	2.77	.14	1.07+	.18
Likelihood of sex	ual aggressi	ion ^a		
Step 1	0.32	.07		
Step 2	-0.23	.05	0.37*	.26

Note: Unstandardized betas are reported. See Footnote 2 for Cohen's d formula

 $^{^{\}it a}$ Hierarchical regression with a negative binomial distribution

 $^{{}^}b_{\rm Hierarchical\ logistic\ regression}$

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

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

p < .05;

p < .10