ACCEPTED MANUSCRIPT

The Impact of Sexual Arousal and Emotion Regulation on Men's Sexual Aggression Proclivity

Amber N. Craig, BS,[1] Zoë D. Peterson, PhD,[1,2] Erick Janssen, PhD,[1,3] David Goodrich, MBA,[1] and Julia R. Heiman, PhD[1]

[1]Indiana University, Bloomington, USA

[2]University of Missouri, St. Louis, USA

[3]KU Leuven, Belgium

SEXUAL AROUSAL AND SEXUAL COERCION LIKELIHOOD

Abstract

Extant literature supports a relationship between sexual arousal and increased likelihood of sexually coercive behavior in men. The present study investigated the impact of sexual arousal on sexual coercion proclivity and the degree to which emotion regulation moderated this relationship in the context of two separate affect inductions. We predicted that sexual arousal would more strongly predict sexual coercion likelihood for men scoring lower on emotion regulation ability compared to men with above average emotion regulation abilities. Male participants with (n = 38) and without (n = 40) self-reported histories of sexual coercion were recruited from urban sexually transmitted infection testing clinics. Participants completed a measure of emotion regulation, underwent a positive and negative affect induction, viewed an erotic video, and reported on their level of sexual arousal immediately prior to completing a hypothetical sexual coercion likelihood laboratory task. Relationships between emotion regulation, sexual arousal, and sexual coercion likelihood were examined using moderation analyses. Sexual arousal was associated with greater reported sexual coercion likelihood. For men with poorer emotion regulation, sexual arousal significantly and positively predicted sexual coercion likelihood in the positive affect condition. Sexual arousal did not significantly predict sexual coercion for men with above average emotion regulation. Findings may have implications for the assessment of individual risk for coercive sexual behavior as well as primary prevention efforts.

Introduction

Sexual coercion (SC) can be defined as the use of verbal coercion, drugs or alcohol, authority, or physical force to obtain sex from an unwilling partner (Abbey, Jacques-Tiura, & Lebreton, 2011). Despite the significant consequences associated with sexually coercive behavior, gaps still remain in our understanding of the various risk factors for men's SC, including a dearth of information about how situational factors interact with individual risk factors to impact men's SC likelihood. Understanding for whom and under what circumstances sexually coercive behavior is most likely to occur is essential for guiding prevention and treatment interventions.

Sexual arousal is one of many factors likely to be present within a sexually coercive interaction. In laboratory studies, greater sexual arousal has consistently been associated with increased self-reported SC proclivity during analogue tasks (Bouffard & Miller, 2014; Davis, Norris, George, Martell, & Heiman, 2006; Hald & Malamuth, 2015; Spokes, Hine, Marks, Quain, & Lykins, 2014). However, sexual arousal may not exert similar effects on SC likelihood in all individuals. That is, it can be expected that some individuals would never perpetrate SC, some would do so only under particular circumstances, and some would do so more readily across situations. Thus, it is important to examine the impact of sexual arousal on SC likelihood in individuals who vary in their degree of risk for perpetration.

A wide range of laboratory-based methods have documented higher levels of sexual arousal in response to erotic stimuli in sexually coercive men as compared to non-coercive men, including in studies of prosecuted sexual offenders (Harris, Lalumiere, Seto, Rice, & Chaplin, 2012) and in community samples of men self-reporting relatively less severe acts of SC, such as verbal coercion (Craig, Peterson, Janssen, Goodrich, & Heiman, 2017). Sexually coercive men

also exhibit differential patterns of sexual responding compared to noncoercive men. For example, samples of noncoercive men have typically shown inhibited or reduced genital sexual responses when presented with scenarios in which cues of non-consent or force are present, whereas men with histories of sexual assault perpetration have exhibited similar levels of sexual arousal to consensual and coercive sexual scenes (Harris et al., 2012; Malamuth, Check, & Briere, 1986).

In laboratory studies, higher levels of sexual arousal are associated with greater self-reported likelihoods of sexual coercion perpetration during hypothetical decision making tasks (Bouffard & Miller, 2014; Davis, Norris, George, Martell, & Heiman, 2006; Hald & Malamuth, 2015; Spokes, Hine, Marks, Quain, & Lykins, 2014). Of course, not all individuals experience increased sexual coercion likelihood when sexually aroused. One possible explanation for this variation is that emotion regulation moderates the pathway from sexual arousal to sexual coercion proclivity. Emotion regulation has been defined as the ability to recognize and modulate emotional experiences. The ability to adequately modulate one's emotions reduces the urgency and impulsivity with which individuals may otherwise act upon their immediate emotions (Linehan, 1993). Poor emotion regulation is correlated with other aspects of cognitive functioning, such as high impulsivity (Mouilso et al., 2013) and poor working memory (Spokes et al., 2014), traits which have also been associated with increased risk for sexually coercive behavior (Prentky, Knight, Lee, & Cerce, 1995; Spence, Losoff, & Robbins, 1991; Spokes et al., 2014). There is evidence of an association between emotional reappraisal, or the ability to reframe an emotional experience in non-emotional terms with the goal of modulating emotional reactions (Gross, 2002), and the ability to regulate one's sexual response (Moholy et al., 2016; Winters, Christoff, & Gorzalka, 2009), suggesting that one's ability to regulate emotion in

general may correspond with their ability to moderate sexual arousal. For instance, in one laboratory study, individuals with difficulty regulating amusement to humorous material were more likely to experience difficulty when instructed to downregulate or decrease their subjective and physiological sexual arousal in response to erotic films (Moholy et al., 2016).

Compared to noncoercive men, samples of sexually coercive men tend to exhibit greater difficulties in emotion regulation (Mouilso, Calhoun, & Rosenbloom, 2013; Gratz, Paulson, Jakupcak, & Tull, 2009; Shorey, Brasfield, Febres, & Stuart, 2011) and report higher levels of sexual arousal in response to erotic videos (Craig, Peterson, Janssen, Goodrich, & Heiman, 2017). Those with difficulty regulating their emotions may have difficulty regulating their behavioral impulses in response to sexual arousal, making them more likely to engage in sexually coercive behavior in order to obtain sexual gratification. Alternatively, individuals experiencing sexual rejection may be less likely to reappraise the situation or to modulate their emotional response to rejection if they have emotion regulation difficulties, leading to increased likelihood of aggressive responding or sexual coercion. However, the contribution of specific emotion regulation skills deficits to sexual coercion perpetration has been given little attention.

Purpose of the current study

The purpose of this study was to better understand the degree to which sexual coercion histories and emotion regulation abilities moderate the relation between sexual arousal and sexual coercion likelihood as measured in a laboratory context. Three hypotheses were tested: (1) compared to noncoercive men, men with a history of SC would self-report greater likelihoods of using SC on the laboratory analogue task overall, (2) self-reported sexual arousal would be positively associated with SC likelihood on the laboratory analogue task, and (3) emotion

regulation would moderate the relationship between sexual arousal and SC likelihood, such that sexual arousal would more strongly predict SC likelihood for those with greater emotion regulation difficulties.

Methods

The data for this study were drawn from a larger project that examined differences in psychophysiological activity between sexually coercive and noncoercive men (citations removed for anonymity). In addition to the measures described here, participants completed additional tasks including completing related questionnaires about affective reactions, evaluations of visual stimuli, and surveys about sexual attitudes and behaviors. Additionally, physiological data was collected on participants' erectile responses, electrodermal activity, facial electromyography, and salivary cortisol levels.

Participants

Participants were recruited from sexually transmitted infection (STI) clinics in Indianapolis, Indiana, USA and surrounding areas, as well as from Craigslist advertisements and newsletters distributed to faculty, staff, and students on university campuses in and near Indianapolis. Participants in the current study had previously taken part in a larger questionnaire study and indicated interest in participating in future research on sexual risk taking. Individuals met inclusion criteria if they, based on their responses in the questionnaire study, were between 18 and 30 years old (most SC behavior occurs in men under 30 years of age; U.S. Bureau of Justice Statistics, 2002), self-identified as heterosexual, had had at least one vaginal intercourse partner in their lifetime, were not married, and reported being HIV negative. Efforts were made to include approximately equal numbers of Black/African American and White/European American participants, as well as approximately equal numbers of coercive and non-coercive

men based on questionnaire responses. The initial laboratory sample consisted of 90 male participants. However, because of technical issues leading to data loss, the final sample consisted of 78 men (M_{age} = 24.44; SD = 3.27). Of these men, 41 were White/European American, 33 were Black/African American, and four reported another race or ethnicity. Most participants reported making less than $30,000 a year. The average educational attainment of our sample was 14.1 years (SD = 2.29; range = 9-23 years), indicating that most participants had completed some college. Participants were classified as sexually coercive or non-coercive based on their self-reported use of verbal coercion, intoxication, or physical force to obtain oral, anal, or vaginal sex with a female partner after she refused. Overall, 38 men in the current sample endorsed previously engaging in sexually coercive behaviors. Of these, 35 reported using verbal coercion, 13 reported taking advantage of or intentionally inducing a woman's intoxication, and two reported use of physical force to obtain non-consensual sex. The remaining 40 men in the sample reported never using such tactics and were classified as noncoercive. There were no significant differences between sexually coercive and noncoercive men with regards to age, income, or educational attainment.

Procedure

Upon arrival in the laboratory, participants were greeted by a male researcher, who was blind to their sexual coercion status, and were seated in a small, private room to review study procedures and address any concerns with the researcher before providing informed consent. After proper placement of psychophysiological measurement devices, participants were left alone in the room for the remainder of the study, which lasted approximately 60 minutes. Participants were able to communicate with the researcher via an intercom system. All participants received $50 for participation.

A full description of study procedures is provided in (citation removed for anonymity). The following describes the laboratory procedures relevant to the current study: Participants first viewed a neutral video to facilitate acclimatization to the laboratory and to acquire baseline measurements. They then viewed (1) a film clip designed to invoke positive affect followed by an erotic video, (2) a neutral video serving as a return to baseline period, and (3) a film clip designed to evoke negative affect followed by an erotic video. The order of positive and negative affect inductions was randomized, with n = 41 participants receiving the negative video first and n = 37 receiving the positive video first. Previous analyses [reference removed for anonymity] showed no effect of condition order on self-reported likelihood of sexual coercion, sexual arousal, genital arousal, or affective responses. After each video, participants answered self-report questions about their affective state and their subjective level of sexual arousal and completed a photo task (described below) as a measure of sexual coercion (SC) likelihood. An overview of study procedures relevant to the current analyses is represented in Figure 1. Following completion of the study, participants were debriefed and compensated for their time. Procedures for this study were approved by the Institutional Review Board at [removed for anonymity].

Materials

Sexual Coercion History

Participants were classified as sexually coercive or noncoercive using the Sexual Strategies Scale (Strang, Peterson, Hill, & Heiman, 2013). The SSS contains 23 behaviorally-specific items measuring the use of a variety of SC strategies, which include use of enticement, verbal coercion, older age/authority, exploitation of intoxication, and use of threats or force to obtain oral, anal, or vaginal intercourse from an individual who originally said no. The SSS

measures milder forms of sexually coercive behavior and has been shown to result in higher reported rates of reported sexual coercion when compared with other measures of sexual coercion (Testa, Hoffman, Lucke, & Pagnan, 2015). This may also be due to the fact that SSS uses less legalistic language than other measures and thus is less likely to invoke socially desirable responding.

Emotion Regulation

Emotion regulation was measured using the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). The DERS is a 41-item questionnaire that has demonstrated high internal consistency (Cronbach's alpha = .93) and good test-retest reliability (Gratz & Roemer, 2004). Items assess multiple facets of emotion regulation, including emotional awareness (e.g., "When I'm upset, I acknowledge my emotions"), impulse control (e.g., "When I'm upset, I have difficulty controlling my behavior"), and use of emotion regulation strategies (e.g., "When I'm upset, I believe I will remain that way for a very long time"), but can be combined for a total score. Responses correspond to the frequency with which respondents identify with each statement on a 5-point scale from 1 (*almost never*) and 5 (*almost always*). Items are scored such that higher scores reflect greater difficulties in emotion regulation. The distribution of DERS scores for our sample (M = 81, SD = 21) was nearly identical to those found in studies in university undergraduate students (e.g., Gratz & Roemer, 2004). Cronbach's alpha for the current sample was α = .94.

Subjective Sexual Arousal

Subjective sexual arousal was measured following each erotic film using a previously developed 5-item questionnaire frequently used in sexual arousal lab research (e.g., George, Davis, Norris, Heiman, Schacht, Stoner, & Kajumulo, 2006; Rowland & Heiman, 1991:

Rowalnd, Keeney, & Slob, 2004). Participants rated each item (e.g., "To what degree do you feel sexually aroused?") on a scale from 1 (*not at all*) to 5 (*extremely*). Total subjective sexual arousal ratings ranged from 5 to 25, with higher scores indicating greater sexual arousal. Cronbach's alpha for this measure was .84 for the combined samples of sexually coercive and noncoercive men. For the purposes of the current study, subjective sexual arousal ratings were averaged across the two erotic videos.

Affect and Sexual Arousal-Inducing Stimuli

In total, each participant viewed two neutral videos, two affect induction videos, and two erotic videos. The neutral video clips were from a documentary about oceans, with the baseline video lasting 5 minutes and the return-to-baseline clip between the two erotic videos lasting 10 minutes. The affect-inducing films were pretested and used in previous research (Gross and Levenson, 1995; Janssen, Hahn, & Rullo, 2005), and included a scene from *The Natural* for the positive condition and scenes from either *Silence of the Lambs* or *Sophie's Choice* for the negative affect condition. The erotic videos were from two commercially available films previously used in studies of sexual response (Carpenter, Janssen, Erick, & Graham, 2003) and were rated as highly sexually arousing by male participants. Each erotic video lasted approximately 3 minutes and depicted a consensual male-female sexual scenario including petting, oral sex, and vaginal intercourse. Because we were broadly interested in positive and negative emotional states (and not specific emotional experiences, i.e., embarrassment, frustration, etc.), responses from both negative videos were combined for the purposes of the present analyses.

Sexual Coercion (SC) Likelihood Task

The photo task, adapted from Prause, Staley, and Finn (2011), consisted of a series of 24 photographs depicting young women was presented on a computer screen following each of the three films (neutral film, erotic film following the negative affect induction, erotic film following the positive affect induction), for a total of three unique photo sets. Each block of 24 photos was randomly drawn from a larger pool of photos that contained images of racially diverse women that were previously rated as sexually attractive by a group of young, heterosexual men (Janssen et al., 2005), and randomly matched to other information about the woman contained on the slide. Prior to viewing the slides, participants were given a background story about meeting the woman in a public place and inviting her back to their house. If subjects were in a committed relationship, we asked them to rate the photos imagining themselves as being single.

During the presentation of each photograph, participants were asked to rate on a scale from 1 (*very unlikely*) to 7 (*very likely*) how likely they would be to engage in one the following behaviors: (1) "have sexual intercourse with this woman if she indicated that she was entirely willing" (consensual), (2) "if this woman said no to engaging in sexual intercourse… continue to touch and kiss her with the hopes that she would give in to sex" (enticement), (3) "if this woman said no to engaging in sexual intercourse… ask her repeatedly to have sex" (verbal coercion), or (4) "If this woman said no to engaging in sexual intercourse… use physical restraint (hold her down, pin her wrists, etc.) to have sex with her" (physical force). The photo task was designed, in part, to investigate risky sexual behavior; thus, the woman's prior number of partners, the woman's level of intoxication, and the availability of a condom were manipulated on the slides. However, because the current study was focused specifically on overall sexual coercion likelihood rather than other forms of sexual risk-taking or perceived partner risk, partner characteristics were not examined in the present analyses.

Results

All analyses were conducted using IBM SPSS Statistics version 22. Initial analyses indicated floor effects when examining participants' reported likelihoods of using physical force in response to the photo task, which is consistent with participants' self-reported sexual coercion histories; of 38 participants in the coercive group, 36 denied ever utilizing physical force. When averaged across slides presented in the erotic condition, likelihood of using force on the 7-point scale was 1.30 (*SD* = 0.62) for men in the coercive group and 1.43 (*SD* = .79) for the noncoercive group. Due to the lack of variance in likelihood scores, force likelihood as an outcome variable was dropped from further analyses. While we expected to also examine use of physical force as an outcome, use of verbal coercion to obtain nonconsensual sex is significantly more common compared to more severe strategies, with nearly 1 out of 5 college-aged men reporting its use in the past year (Dardis et al., 2016). Additionally, experiencing any unwanted sexual activity is associated with increased risk for later psychopathology (Dworkin et al., 2017) and adverse sexual health outcomes (Gilmore et al., 2014). Due to the frequency of verbally coercive behavior and its detrimental impact on victims, we believed it was imperative to continue our investigation of factors associated with use of verbal coercion and enticement to obtain nonconsensual sex.

Independent t-tests were conducted to examine group differences in self-reported enticement and verbal coercion likelihood in each affect condition. These comparisons yielded support for hypothesis 1. Men with histories of sexual coercion reported significantly greater likelihoods of engaging in SC behavior in both the positive and negative affect conditions. A detailed description of these results can be found in Table 1.

Hypotheses 2 and 3 were tested using the Hayes PROCESS Macro for SPSS for moderation analyses by entering mean self-reported sexual arousal as the predictor variable, DERS score as the moderator, and mean verbal coercion likelihood as the outcome of interest (PROCESS Model 1; Hayes, 2013). Likelihood of enticement and likelihood of verbal coercion were examined as outcomes in separate models.

First, we entered likelihood of enticement as our outcome. The direct effect of sexual arousal (β = .029, *SE* = .02, 95% CI [-.0097, .0676], *p* = .141), as well as the interaction between DERS and sexual arousal (β = -.001, *SE* = .002, 95% CI [-.0043, .0041], *p* = .949), on enticement likelihood was nonsignificant. The direct effect of DERS on likelihood of enticement was just at threshold for significance (β = .008, *SE* = .004, 95% CI [.0000, .0166], *p* = .050).

Next, we entered verbal coercion likelihood as the outcome of interest. Sexual arousal was a significant predictor of verbal coercion likelihood (β = .355, *SE* = .051, 95% CI [.004, .208], *p* = .049). Additionally, there was a statistically significant interaction between DERS and sexual arousal (β = .231, *SE* = .155, 95% CI [1.626, 2.237], *p* = .001). Thus, the effect of sexual arousal on verbal coercion likelihood, but not enticement likelihood, was moderated by DERS score. The direct effect of DERS on verbal coercion likelihood was not statistically significant (β = .145, *SE* = .019, 95% CI [-.023, .054], *p* = .409).

Follow-up analyses examined the effect of sexual arousal on verbal coercion likelihood at varying degrees of emotion regulation. Our relatively small sample size resulted in few participants at +/- 1 SD (n=10 at +1 *SD*; n=12 at -1 *SD*), and thus limited the ability to examine effects at +/- 1 SD of the moderator. Instead, participants were grouped by mean split into “lower than average” (DERS score lower than 81) and “higher than average” (DERS score greater than 81) difficulties in emotion regulation in order to examine the impact of sexual arousal on SC

likelihood between two distinct groups of participants. The effect of sexual arousal on verbal coercion likelihood for individuals with above average DERS scores was significant (B = .128, *p* = .036). In contrast, the effect of sexual arousal on verbal coercion likelihood for individuals with below average DERS scores was nonsignificant (B = .075, *p* = .12). Thus, subjective sexual arousal significantly predicted verbal coercion likelihood for participants with greater emotional dysregulation, but was not a significant predictor of verbal coercion for participants relatively more skilled at regulating their emotions (Figure 2).

Discussion

The present study was designed to investigate the roles of emotion regulation and subjective sexual arousal on men's reported likelihood of engaging in a variety of sexually coercive behaviors on a laboratory analogue task. Hypothesis 1 was supported. Men with self-reported histories of sexual coercion were significantly more likely than men without such histories to endorse the use of sexually coercive strategies on the sexual coercion likelihood task. Hypothesis 3 was partially supported. Self-reported sexual arousal positively predicted likelihood of using verbal coercion to obtain sex after the woman's refusal. Emotion regulation significantly moderated the effect of sexual arousal on likelihood of verbal coercion such that greater difficulties in emotion regulation were associated with stronger relationships between subjective sexual arousal and verbal coercion likelihood. However, emotion regulation did not significantly impact the relationship between sexual arousal and enticement likelihood.

Our findings support other research showing that emotion regulation difficulties may interact with other variables, such as sexual arousal, to increase the likelihood of aggressive responding. Picket, Parkhill, and Kirwin (2016) found that men with histories of sexual coercion responded with more hostility towards a female confederate during a social stress task if they

scored higher on the impulsivity difficulties subscale of the DERS. The authors concluded that sexually coercive men with poor impulse control may be more reactive when faced with social rejection cues. In the current study, our sexual coercion likelihood task explicitly asked participants about likely behavioral responses following sexual rejection and found that emotion regulation ability was important for explaining individual variation in coercion likelihood. Overall, our findings compliment those of Picket, Parkhill, and Kirwin (2016).

Individuals with emotion regulation deficits may have more difficulty managing behavioral impulses when their sexual advances are thwarted. Interactions that are expected to culminate in sexual activity yet end suddenly can lead to abrupt changes in affect, sexual excitation, and require necessary adjustments to sexual expectations. For individuals who have difficulties regulating emotion, situations producing high levels of confusion, frustration, and/or excitation may lead to problematic behavior. For example, they may be prompted to react aggressively or continue to seek sexual rewards at a higher cost than individuals who are better at regulating their emotions. Sexual assault prevention efforts might benefit from including discussions around how to manage sexual arousal following a partner's expression of non-consent and normalizing such circumstances.

We did not find that sexual arousal significantly predicted likelihood of using enticement strategies to obtain sex from a non-consenting partner. Given that enticement strategies were the most common form of sexual coercion reported, one possibility is that these behaviors were culturally normative for our sample. Enticement strategies do not meet legal definitions for rape or sexual assault and may be viewed by many as benign attempts at seduction. Thus, sexual arousal and emotion dysregulation may be related to one's likelihood of engaging in behaviors

normally viewed as risky or taboo (such as verbal coercion) in order to obtain sex, but not impact the likelihood of engaging in more common types of behaviors.

This work adds to an important, yet limited body of literature on the utility of hypothetical behavioral paradigms for the study of sexual coercion and identification of high risk individuals. Experimental paradigms utilizing hypothetical sexual coercion likelihood tasks offer several advantages for the study of risk factors for sexual coercion. Vignettes can be tightly controlled to allow for the study of specific variables and are easily implemented in both laboratory and online study designs. Responses are correlated with participants' reported histories of sexual coercion perpetration, making it possible to distinguish sexually coercive men from non-coercive men based on self-reported sexual coercion likelihood. Previous studies in this area have predominantly utilized participant samples consisting primarily of White male college students. The racially and socioeconomically diverse community sample obtained for the current study contributes to the generalizability of findings and, thus, makes a unique contribution to the literature in this respect.

The present study has several limitations. First, our sample size may have prevented the detection of smaller effects. Smaller sample sizes and small effects are common in laboratory studies of sexually aggressive individuals and in sexual violence research (Harris and Hilton, 2001). Despite efforts to identify erotic videos that had high likelihoods of increasing participants' levels of sexual arousal, some participants did not report a strong sexual response, thus limiting our ability to draw definitive conclusions about the association between sexual arousal and sexual coercion likelihood. While efforts were made to include erotic videos depicting racially diverse actors, greater efforts could have been made to match participant preferences to the videos selected, which may have led to greater sexual excitation. As with any

self-report measure, there may be a variety of factors, including the desire to respond in a socially acceptable manner, influencing participants' responses to questions regarding their previous use of sexually coercive tactics and their likelihood of engaging in hypothetical behaviors. Nevertheless, the fact that the current effects could be observed with a group of men categorized as sexually coercive based only on self-report and who self-reported less extreme—and, importantly, more commonly-used forms of sexual coercion—is important and suggests the appropriateness of including this population in studies of sexual coercion. Lastly, it is important to note that emotion regulation in the present study was measured using a self-report questionnaire consisting primarily of items related to the recognition, reactions to, regulation, and acceptance of strong *negative* emotional states. Therefore, no conclusions can be drawn about the participants' strategies for managing strong positive emotions—which sexual arousal may often be—and how they may be related to sexual coercion likelihood. Previous research has suggested that the tendency to cope with negative emotions by seeking out sexual activity is associated with heightened propensity for sexual excitation (Bancroft et al., 2003). It is possible that sexual activity may be serving as an emotion regulation strategy for those individuals, suggesting that the experience of sexual arousal is perceived as largely positive. It is also possible that sexual arousal exerts the same effects on behavior as other intense emotional states.

The current findings are based on a sample of sexually coercive community men who primarily endorsed the use of verbal coercion, some use of intoxication, and very little or no use of physical force. In the laboratory analogue task, use of enticement strategies was quite common, suggesting that some of the strategies listed may be viewed as normative (e.g., continuing to remove clothing after she indicates she is not interested in sex). Men with histories of more extreme forms of coercive sexual behavior (i.e., use of physical force) may be

differentially affected by states of sexual arousal compared to men with relatively milder histories or no histories of sexual coercion. More extreme histories of sexual coercion might also be associated with greater difficulties in emotion regulation than was found in the current sample.

Our results highlight the importance of considering the interaction between situational factors, such as state levels of sexual arousal and affect, and individual differences, such as the ability to regulate one's emotions, in predicting sexually coercive behavior. The results suggest multiple promising avenues for future research, including examining additional correlates of sexual coercion risk, such as regulation of positive emotional states, and looking closely at how other factors interact with emotion regulation to contribute to the likelihood of sexually coercive behavior, all of which could potentially inform education and prevention efforts.

References

Abbey, A., & Jacques-Tiura, A. J. (2011). Sexual assault perpetrators' tactics: associations with their personal characteristics and aspects of the incident. *Journal of Interpersonal Violence*, *26*(14), 2866–2889. http://doi.org/10.1177/0886260510390955

Abbey, A., Jacques-Tiura, A. J., & Lebreton, J. M. (2011). Risk factors for sexual aggression in young men: An expansion of the confluence model. *Aggressive Behavior*, *37*(5), 450–464. http://doi.org/10.1002/ab.20399

Arieley, D. & Loewenstein, G. (2006). The heat of the moment: The effect of sexual arousal on sexual decision making. *Journal of Behavioral Decision Making, 19*, 87-98.

Bancroft, J., Janssen, E., Strong, D., Carnes, L., Vukadinovic, Z., & Long, J. S. (2003). The relationship between mood and sexuality in heterosexual men, *32*(3), 217–230.

Bernat, J. A., Calhoun, K. S., & Adams, H. E. (1999). Sexually aggressive and nonaggressive men: sexual arousal and judgments in response to acquaintance rape and consensual analogues. *Journal of Abnormal Psychology*, *108*(4), 662–673. http://doi.org/10.1037/0021-843X.108.4.662

Bouffard, J., & Miller, H.. (2014). The Role of Sexual Arousal and Overperception of Sexual Intent Within the Decision to Engage in Sexual Coercion. *Journal of Interpersonal Violence*, 1–20. http://doi.org/10.1177/0886260513515950

Carpenter, D., Janssen, Erick, & Graham, C. (2003). Selecting films for sex research: Gender differences in erotic film preference. *Archives of Sexual Behavior*, *32*(3), 243–251. http://doi.org/10.1023/A:1023413617648

Carvalho, J., & Nobre, P. (2012). Dynamic Factors of Sexual Aggression: The Role of Affect and Impulsiveness. *Criminal Justice and Behavior*, 376–387. http://doi.org/10.1177/0093854812451682

Craig, A. N., Peterson, Z. D., Janssen, E., Goodrich, D., & Heiman, J. R. (2017). Affect and sexual responsivity among men with and without histories of sexual aggression. *Journal of Sex Research.* doi: 10.1080/00224499.2017.1301357

Davis, K., Norris, J., George, W. H., Martell, J. and Heiman, J. R. (2006). Men's Likelihood of Sexual Aggression: The Influence of Alcohol, Sexual Arousal, and Violent Pornography. *Aggressive Behaviour*, *32*(3), 187–194.

George, W. H., Davis, K. C., Norris, J. Heiman, J. R., Schacht, R. L., Stoner, S. A., & Kajumulo, K. F. (2006). Alcohol and erectile response: the effects of high dosage in the context of demands to maximize sexual arousal. *Experimental and Clinical Psychopharmacology, 4*, 461-70.

Gratz, K. L., Paulson, A., Jakupcak, M., & Tull, M. T. (2009). Exploring the relationship between childhood maltreatment and intimate partner abuse: gender differences in the mediating role of emotion dysregulation. *Violence and Victims*, *24*(1), 68–82. http://doi.org/10.1891/0886-6708.24.1.68

Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation: \rDevelopment, factor structure, and initial validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioral Assessment*, *26*(1), 41–54.

Hald, G. M., & Malamuth, N. N. (2015). Experimental Effects of Exposure to Pornography: The

Moderating Effect of Personality and Mediating Effect of Sexual Arousal. *Archives of Sexual Behavior*, *44*(1), 99–109. http://doi.org/10.1007/s10508-014-0291-5

Harris, G. & Hilton, N. (2001). Theoretical note: interpreting moderate effects in interpersonal violence. http://doi.org/0803973233

Harris, G. T., Lalumiere, M. L., Seto, M. C., Rice, M. E., & Chaplin, T. C. (2012). Explaining the erectile responses of rapists to rape stories: The contributions of sexual activity, non-consent, and violence with injury. *Archives of Sexual Behavior*, *41*(1), 221–229. http://doi.org/10.1007/s10508-012-9940-8

LeBreton, J. M., Baysinger, M., Abbey, A., & Jacques-Tiura, A. J. (2013). The relative importance of psychopathy-related traits in predicting impersonal sex and hostile masculinity. *Personality and Individual Differences*, *55*(7), 817–822. http://doi.org/10.1016/j.paid.2013.07.009

Linehan, M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. Guilford Press.

Lohr, B. A., Adams, H. E., & Davis, J. M. (1997). Sexual arousal to erotic and aggressive stimuli in sexually coercive and noncoercive men. *Journal of Abnormal Psychology*, *106*(2), 230–242. http://doi.org/10.1037/0021-843X.106.2.230

Malamuth, N. M., Hald, G. M., & Koss, M. (2012). Pornography, Individual Differences in Risk and Men's Acceptance of Violence Against Women in a Representative Sample. *Sex Roles*, *66*(7–8), 427–439. http://doi.org/10.1007/s11199-011-0082-6

Marx, B. P., Gross, M., & Adams, H. E. (1999). The effect of alcohol on the responses of

sexually coercive and noncoercive men to an experimental rape analogue. *Sexual Abuse : A Journal of Research and Treatment*, *11*(2), 131–145. http://doi.org/10.1007/BF02658843

Moholy, M., Prause, N., Proudfit, G. H., Rahman, A. S., Moholy, M., Prause, N., … Rahman, A. S. (2016). Sexual desire , not hypersexuality , predicts self- regulation of sexual arousal Sexual desire , not hypersexuality , predicts self-regulation of sexual arousal, *9931*(February), 1505–1516. http://doi.org/10.1080/02699931.2014.993595

Mouilso, E. R., Calhoun, K. S., & Rosenbloom, T. G. (2013). Impulsivity and sexual assault in college men. *Violence and Victims*, *28*(3), 429–442. Retrieved from http://ovidsp.ovid.com/ovidweb.cgi?T=JS&PAGE=reference&D=emed15&NEWS=N&AN=369664706

Parkhill, M. R., Abbey, A., & Jacques-Tiura, A. J. (2009). How do sexual assault characteristics vary as a function of perpetrators' level of intoxication? *Addictive Behaviors*, *34*(3), 331–333. http://doi.org/10.1016/j.addbeh.2008.11.003

Peterson, Z. D., Janssen, E., Goodrich, D., & Heiman, J. R. (2014). Physiological reactivity in a community sample of sexually aggressive young men: A test of competing hypotheses. *Aggressive Behavior*, *40*(2), 152–164. http://doi.org/10.1002/ab.21512

Peterson, Z. D., Janssen, E., & Heiman, J. R. (2010). in Heterosexual Men, 538–556.

Prause, N., Staley, C., Finn, P. (2011). Effects of acute ethanol consumption on sexual arousal and sexual risk taking. *Archives of Sexual Behavior*. 373–384.

Rowland, D. L., Keeney, C. & Slob, A. K. (2004) Sexual response in men with inhibited or retarded ejaculation. *International Journal of Impotence Research, 16,* 270–274.

Rowland, D. L. & Heiman, J. R. (1991). Self-reported and genital arousal changes in sexually dysfunctional men following a sex therapy program. *Journal of Psychosomatic Research*, *35*(4), 609–619.

Shorey, R. C., Brasfield, H., Febres, J., & Stuart, G. L. (2011). An Examination of the Association between Difficulties with Emotion Regulation and Dating Violence Perpetration. *Journal of Aggression, Maltreatment & Trauma*, *20*(8), 870–885. http://doi.org/10.1080/10926771.2011.629342

Spence, J. T., Losoff, M., & Robbins, A. S. (1991). Sexually Aggressive Tactics in Dating Relationships: Personality and Attitudinal Correlates. *Journal of Social and Clinical Psychology*, 289.

Spokes, T., Hine, D. W., Marks, A. D. G., Quain, P., & Lykins, A. D. (2014). Arousal, Working Memory Capacity, and Sexual Decision-Making in Men. *Archives of Sexual Behavior*, *43*(6), 1137–1148. http://doi.org/10.1007/s10508-014-0277-3

Strang, E., Peterson, Z. D., Hill, Y. N., & Heiman, J. R. (2013). Discrepant Responding across Self-Report Measures of Men's Coercive and Aggressive Sexual Strategies. *Journal of Sex Research*, *50*(5), 458–469. http://doi.org/10.1080/00224499.2011.646393

Testa, M., Hoffman, J. H., Lucke, J. F., & Pagnan, C. E. (2015). Measuring sexual aggression perpetration in college men: A comparison of two measures. *Psychology of Violence*, *5*(3), 285–293. http://doi.org/10.1037/a0037584

Winters, J., Christoff, K., & Gorzalka, B. B. (2009). Conscious regulation of sexual arousal in men. *Journal of Sex Research*, *46*(4), 330–343. http://doi.org/10.1080/00224490902754103

Author Biographies

Amber N. Craig is a doctoral candidate at Indiana University working under the supervision of Dr. Julia Heiman. Her research primarily focuses on the identification of individual as well as situational factors related to sexual coercion perpetration and sexual risk taking in young men.

Zoë D. Peterson is an associate professor of Counseling and Educational Psychology and Director of the Kinsey Institute Sexual Assault Research Initiative at Indiana University. Her research focuses victims' experiences of sexual assault, sexual coer- cion, and unwanted sex and on the correlates of sexual aggression perpetration.

Erick Janssen is professor at the Institute for Family and Sexuality Studies at KU Leuven/University of Leuven, Belgium, and Senior Research Fellow at The Kinsey Institute, USA. He received his PhD in psychology in 1995, at the University of Amsterdam, the Netherlands. Dr. Janssen's research interests include sexual psychophysiology, hypersexuality, sexual aggression, and sexuality and close relationships.

David Goodrich is the director of Clinical Research for the Community Health Network in Indianapolis, Indiana. His research interests include sexual psychophysi- ology, biological determinants of sexual behavior, and sexual harassment in the work environment.

Julia R. Heiman, PhD, is a professor of Psychological & Brain Sciences and senior research fellow at the Kinsey Institute for Research in Sex, Gender & Reproduction. Her research examines interactions of cognitive, physiological, and interactional pat- terns of sexual behavior.

Block 1:	**Block 2:**	**Block 3:**	**Block 4:**	**Block 5:**	**Block 6:**
(1) 1st Neutral video (2) Self-report measures (3) 1st Photo task	(1) Positive affect induction (2) Self-report measures	(1) 1st Erotic video (2) Self-report measures (3) 2nd Photo task	(1) 2nd Neutral video (return to baseline period)	(1) Negative affect induction (2) Self-report measures	(1) 2nd Erotic video (2) Self-report measures (3) 3rd Photo task

Figure 1. Overview of study procedures. Note that Blocks 2 and 5 were randomly presented to participants.

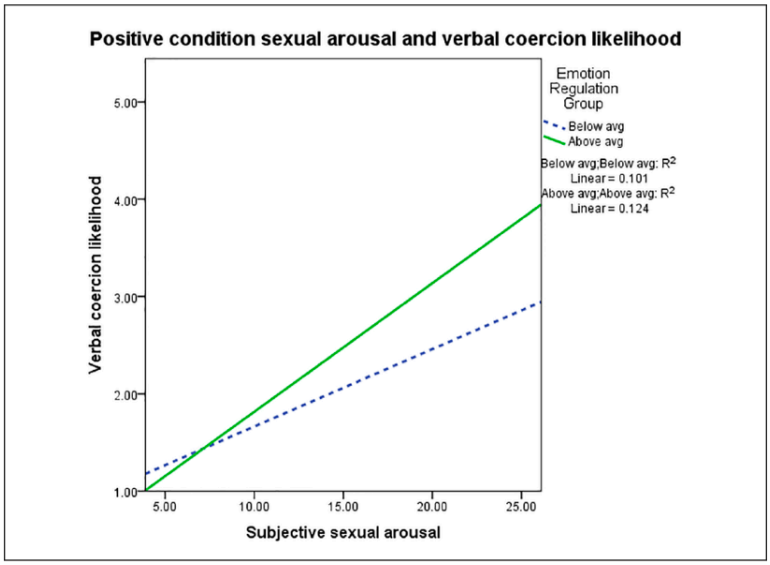

Figure 2. Emotion regulation moderated the relationship between sexual arousal and verbal coercion likelihood. For individuals with above average scores on the DERS, sexual arousal significantly and positively predicted self-reported verbal coercion likelihood in the positive affect condition.
Note. DERS = Difficulties in Emotion Regulation Scale.

Table 1. Men With Histories of Sexual Coercion Perpetration Reported Significantly Greater Likelihoods of Engaging in Enticement and Verbal Coercion During the Sexual Coercion Likelihood Task in Both the Positive and Negative Affect Conditions.

	Enticement	Verbal Coercion
Affect Condition	*M* (*SD*)	*M* (*SD*)
Positive		
SC group	3.24 (1.65)	2.85 (1.54)
Noncoercive group	2.05 (0.98)	1.97 (0.98)
Negative		
SC group	3.28 (1.62)	2.82 (1.54)
Noncoercive group	1.94 (0.88)	1.85 (0.81)

Note. SC = sexual coercion.
Group comparisons were all significant at $p < .05$.