

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

Journal of Interpersonal Violence

1–17

© The Author(s) 2020

Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/0886260520915544

journals.sagepub.com/home/jiv

Amber N. Craig, BS,¹  Zoë D. Peterson, PhD,^{1,2}
Erick Janssen, PhD,^{1,3} David Goodrich, MBA,¹
and Julia R. Heiman, PhD¹

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 with 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

¹Indiana University, Bloomington, USA

²University of Missouri, St. Louis, USA

³University of Leuven, Belgium

Corresponding Author:

Amber N. Craig, Department of Psychological and Brain Sciences, Indiana University, 1101 E. 10th Street, Bloomington, IN 47405-7000, USA.

Email: ambrcraig@indiana.edu

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.

Keywords

sexual arousal, emotion regulation, sexual aggression, coercion, decision-making

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 et al., 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 et al., 2006; Hald & Malamuth, 2015; Spokes et al., 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 with noncoercive men, including in studies of prosecuted sexual offenders (Harris et al., 2012) and in community samples of men self-reporting relatively less severe acts of SC, such as verbal coercion (Craig et al., 2017). Sexually coercive men also exhibit differential patterns of sexual responding compared with 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 nonconsent 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).

In laboratory studies, higher levels of sexual arousal are associated with greater self-reported likelihoods of SC perpetration during hypothetical decision-making tasks (Bouffard & Miller, 2014; Davis et al., 2006; Hald & Malamuth, 2015; Spokes et al., 2014). Of course, not all individuals experience increased SC likelihood when sexually aroused. One possible explanation for this variation is that emotion regulation moderates the pathway from sexual arousal to SC 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 et al., 1995; Spence et al., 1991; Spokes et al., 2014). There is evidence of an association between emotional reappraisal, or the ability to reframe an emotional experience in nonemotional terms with the goal of modulating emotional reactions (Gross, 2002), and the ability to regulate one's sexual response (Moholy et al., 2015; Winters et al., 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., 2015).

Compared with noncoercive men, samples of sexually coercive men tend to exhibit greater difficulties in emotion regulation (Gratz et al., 2009; Mouilso et al., 2013; Shorey et al., 2011) and report higher levels of sexual arousal in response to erotic videos (Craig et al., 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 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 SC. However, the contribution of specific emotion regulation skills deficits to SC perpetration has been given little attention.

Purpose of the Current Study

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

Method

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. In addition, physiological data were 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 below 30 years of age; U.S. Department of Justice, 2012), 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 noncoercive 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 ($M_{\text{age}} = 24.44$;

$SD = 3.27$). 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 US\$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 noncoercive 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 nonconsensual 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 SC 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 min. Participants were able to communicate with the researcher via an intercom system. All participants received US\$50 for participation.

A full description of study procedures is provided in Craig et al. (2017). 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 (a) a film clip designed to invoke positive affect followed by an erotic video, (b) a neutral video serving as a return to baseline period, and (c) 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 (Craig et al., 2017; Peterson et al., 2014) showed no effect of condition order on self-reported likelihood of SC, 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 SC likelihood. An overview of study procedures relevant to the current analyses is represented in Figure 1. Following completion of the

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

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

study, participants were debriefed and compensated for their time. Procedures for this study were approved by the Institutional Review Board at Indiana University Bloomington.

Materials

SC history. Participants were classified as sexually coercive or noncoercive using the Sexual Strategies Scale (SSS; Strang et al., 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 SC when compared with other measures of SC (Testa et al., 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 α for the current sample was $\alpha = .94$.

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 et al., 2006; Rowland & Heiman, 1991). 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 min and the return-to-baseline clip between the two erotic videos lasting 10 min. The affect-inducing films were pretested and used in previous research (Gross and Levenson, 1995), 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 et al., 2003) and were rated as highly sexually arousing by male participants. Each erotic video lasted approximately 3 min 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, that is, embarrassment, frustration, etc.), responses from both negative videos were combined for the purposes of the present analyses.

SC likelihood task. The photo task, adapted from Prause et al. (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 of the following behaviors: (a) “have sexual intercourse with this woman if she indicated that she was entirely willing” (consensual), (b) “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),

(c) “if this woman said no to engaging in sexual intercourse . . . ask her repeatedly to have sex” (verbal coercion), or (d) “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 SC 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 SC 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. Although 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 with more severe strategies, with nearly one of five college-aged men reporting its use in the past year (Dardis et al., 2016). In addition, 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 SC 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

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.

Affect Condition	Enticement	Verbal Coercion
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)
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 $p < .05$.

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 ($\beta = .029$, $SE = .02$, 95% CI $[-.0097, .0676]$, $p = .141$), as well as the interaction between DERS and sexual arousal ($\beta = -.001$, $SE = .002$, 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 ($\beta = .008$, $SE = .004$, 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 ($\beta = .355$, $SE = .051$, 95% CI $[-.004, .208]$, $p = .049$). In addition, there was a statistically significant interaction between DERS and sexual arousal ($\beta = .231$, $SE = .155$, 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 ($\beta = .145$, $SE = .019$, 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 $\pm 1 SD$ ($n = 10$ at $+1 SD$; $n = 12$ at $-1 SD$), and thus limited the ability to examine effects at $\pm 1 SD$ of the moderator. Instead, participants were grouped by mean split into “lower than average” (DERS score lower than 81) and “higher than average” (DERS

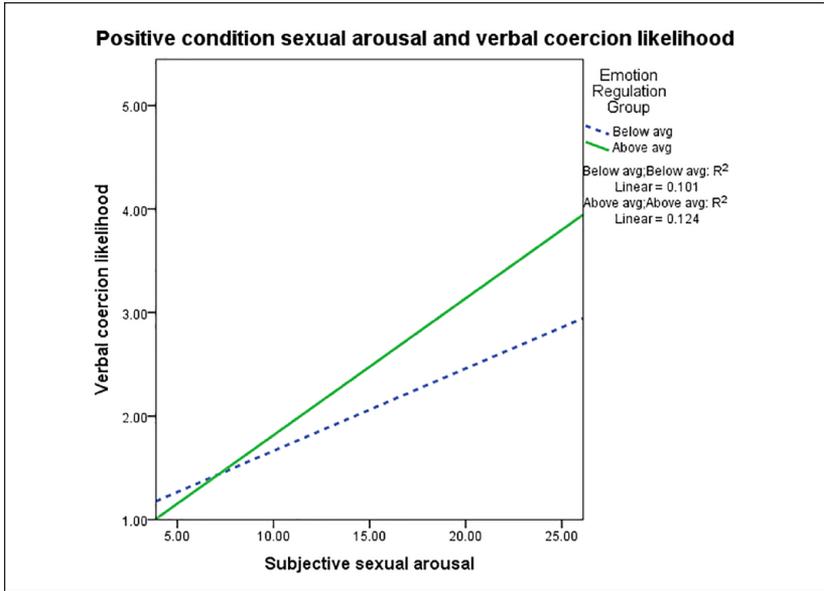


Figure 2. Emotion regulation moderated the relationship between sexual arousal and verbal coercion likelihood. For individuals with above average scores on the DERS, sexual arousal significantly and positively predicted self-reported verbal coercion likelihood in the positive affect condition.
 Note.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

score greater than 81) difficulties in emotion regulation 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 ($\beta = .128, p = .036$). In contrast, the effect of sexual arousal on verbal coercion likelihood for individuals with below average DERS scores was nonsignificant ($\beta = .075, p = .12$). 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

I was supported. Men with self-reported histories of SC were significantly more likely than men without such histories to endorse the use of sexually coercive strategies on the SC 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. Parkhill & Picket (2016) found that men with histories of SC responded with more hostility toward 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 SC 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 Parkhill & Picket (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 nonconsent and normalizing such circumstances.

We did not find that sexual arousal significantly predicted likelihood of using enticement strategies to obtain sex from a nonconsenting partner. Given that enticement strategies were the most common form of SC 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) 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 SC and identification of high-risk individuals. Experimental paradigms utilizing hypothetical SC likelihood tasks offer several advantages for the study of risk factors for SC. 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 SC perpetration, making it possible to distinguish sexually coercive men from noncoercive men based on self-reported SC 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 & 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 SC likelihood. Although 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 SC—is important and suggests the appropriateness of including this population in studies of SC. Finally, 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 SC 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 with men with relatively milder histories or no histories of SC. More extreme histories of SC 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 SC 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.

Acknowledgments

The authors thank George Adair, Cam Brown, Marie Danh, Jodie Fisher, Jessica Kershaw, Neil Maxwell, Ian SerVaas, and Heather Sperry for their assistance with participant recruitment and data collection.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This research was supported by a grant (R21HD055831; Z.P., PI) from the Eunice Kennedy Shriver National Institute of Child Health and Human Development (NICHD) at the National Institutes of Health. This article's contents are solely the responsibility of the authors and do not necessarily represent the official views of NICHD.

ORCID iD

Amber N. Craig  <https://orcid.org/0000-0002-3838-2855>

References

- 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. <https://doi.org/10.1002/ab.20399>
- 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.
- 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, 29*(11), 1967–1986. <https://doi.org/10.1177/0886260513515950>
- Carpenter, D., Janssen, E., & Graham, C. A. (2003). Selecting films for sex research: Gender differences in erotic film preference. *Archives of Sexual Behavior, 32*(3), 243–251. <https://doi.org/10.1023/A:1023413617648>
- Craig, A. N., Peterson, Z. D., Janssen, E., Goodrich, D., & Heiman, J. R. (2017). Affect and sexual responsiveness in men with and without a history of sexual aggression. *Journal of Sex Research, 54*(4), 984–993. <https://doi.org/10.1080/00224499.2017.1301357>
- Davis, K., Norris, J., George, W. H., Martell, J., & Heiman, J. R. (2006). Men's likelihood of sexual aggression: The influence of alcohol, sexual arousal, and violent pornography. *Aggressive Behavior, 32*(3), 187–194.
- Dardis, C. M., Murphy, M. J., Bill, A. C., & Gidycz, C. A. (2016). An investigation of the tenets of social norms theory as they relate to sexually aggressive attitudes and sexual assault perpetration: A comparison of men and their friends. *Psychology of Violence, 6*, 163–171.
- Dworkin, E. R., Menon, S. V., Bystrynski, J., & Allen, N. E. (2017). Sexual assault victimization and psychopathology: A review and meta-analysis. *Clinical Psychology Review, 56*, 65–81.
- 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*(4), 461–470.
- Gilmore, A. K., Schacht, R. L., George, W. H., Davis, K. C., Norris, J., & Heiman, J. R. (2014). Verbal sexual coercion experiences, sexual risk, and substance use in women. *Journal of Aggression, Maltreatment, and Trauma, 23*(7), 725–739.
- 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. <https://doi.org/10.1891/0886-6708.24.1.68>
- Gratz, K. L., & Roemer, L. (2004). Multidimensional assessment of emotion regulation: Development, factor structure, and initial validation of the Difficulties in Emotion Regulation Scale. *Journal of Psychopathology and Behavioral Assessment, 26*(1), 41–54.

- Gross, J. J. (2002). Emotion regulation: Affective, cognitive, and social consequences. *Psychophysiology*, *39*, 281–291.
- Gross, J. J., & Levenson, R. W. (1995). Emotion elicitation using films. *Cognition and Emotion*, *9*(1), 87–108.
- 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. <https://doi.org/10.1007/s10508-014-0291-5>
- Harris, G. T., & Hilton, N. (2001). Theoretical note: Interpreting moderate effects in interpersonal violence. *Journal of Interpersonal Violence*, *16*(10), 1094–1098. <https://doi.org/10.1177/088626001016010008>
- 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. <https://doi.org/10.1007/s10508-012-9940-8>
- Hayes, A. F. (2013). Introduction to mediation, moderation, and conditional process analysis: A regression based approach. New York: The Guilford Press.
- Linehan, M. (1993). *Cognitive-behavioral treatment of borderline personality disorder*. Guilford Press.
- Moholy, M., Prause, N., Proudfit, G. H., Rahman, A. S., Moholy, M., Prause, N., & Rahman, A. S. (2015). Sexual desire, not hypersexuality, predicts self-regulation of sexual arousal. *Cognition and Emotion*, *29*(8), 1505–1516. <https://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.
- Parkhill, M. R., & Pickett, S. M. (2016). Difficulties in emotion regulation as a mediator of the relationship between child sexual abuse victimization and sexual aggression perpetration in male college students. *Journal of Child Sexual Abuse: Research, Treatment, & Program Innovations for Victims, Survivors, & Offenders*, *25*(6), 674–685.
- 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. <https://doi.org/10.1002/ab.21512>
- Prause, N., Staley, C., & Finn, P. (2011). Effects of acute ethanol consumption on sexual arousal and sexual risk taking. *Archives of Sexual Behavior*, *40*, 373–384.
- Prentky, R. A., Knight, R. A., Lee, A. F. S., & Cerce, D. D. (1995). Predictive Validity of Lifestyle Impulsivity for Rapists. *Criminal Justice and Behavior*, *22*(2), 106–128.
- 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. <https://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, 10*(3), 289–304.
- 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. <https://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. <https://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. <https://doi.org/10.1037/a0037584>
- U.S. Department of Justice. (2012). *Criminal victimization, 2011*. Bureau of Justice Statistics.
- Winters, J., Christoff, K., & Gorzalka, B. B. (2009). Conscious regulation of sexual arousal in men. *Journal of Sex Research, 46*(4), 330–343. <https://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 coercion, and unwanted sex and on the correlates of sexual aggression perpetration.

Erick Janssen is professor at the Institute for Family and Sexuality Studies at the 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 psychophysiology, 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 patterns of sexual behavior.