The Roles of Acute Alcohol Intoxication, Emotional Arousal, and Emotion Regulation on Men's Sexual Aggression Intentions

Elizabeth Courtney Neilson

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Reading Committee:

William H. George, Chair

Kelly Cue Davis

Kevin M. King

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University of Washington

University of Washington

Abstract

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Elizabeth Courtney Neilson

Chair of Supervisory Committee:

William H. George

Department of Psychology

As many as 33 to 52% of men report committing a sexually aggressive act since the age of 14 (Abbey, Jacques-Tiura, & LeBreton, 2011). Alcohol is a significant factor: Up to 66% of sexual assaults occur when the perpetrator has been drinking (Abbey et al., 2011; Davis et al., 2014a), yet research is needed to understand what individual-level characteristics contribute to this association. Emotional arousal – the strength and duration of emotions – and emotion regulation – the capacity to detect and modulate emotions – are associated with sexual aggression. Alcohol intoxication may act both independently and synergistically with emotional arousal and emotion regulation to increase the likelihood of sexual aggression. Utilizing an alcohol administration experiment with sexual assault analog, two studies were conducted to investigate emotional arousal and emotion regulation, measured through both psychophysiological and self-report metrics, as predictors of sexual assault perpetration. Study 1 (N = 94) utilized latent growth curve modeling to examine how trajectories of six measures of emotional arousal are associated with in-the-moment intentions to perpetrate sexual assault. This study also examined the effects

of acute intoxication and response inhibition on emotional arousal and sexual assault perpetration intentions. It is theorized that sexually aggressive men fail to inhibit emotional arousal; however, a direct measure of the construct has not yet been examined. Results suggest that the rate of change and acceleration of happiness and subjective sexual arousal are associated with intentions to perpetrate sexual assault. Study 2 utilized the same sample (N = 94) to examine a trait-state model of emotional arousal and emotion regulation. Structural equation modeling was used to assess alcohol intoxication as a moderator of the associations between trait and state emotional arousal, emotion regulation, and sexual assault perpetration intentions. Results suggest that trait and state emotional arousal are associated with intentions to perpetrate sexual assault. In neither study did intoxicated men differ from sober men in their intentions to perpetrate sexual assault. The examination and methodology used to study these constructs is novel and has the potential to elucidate the understanding of the etiology of sexual aggression perpetration and inform prevention/intervention.

The Roles of Acute Alcohol Intoxication, Emotional Arousal, and Emotion Regulation on Men's Sexual Aggression Intentions

As many as 52.5% of college and community-sampled men report committing an act of sexual aggression since the age of 14 (Abbey, Jacques-Tiura, & LeBreton, 2011). Generally speaking, sexual aggression refers to a continuum of unwanted sexual experiences in which one person engages in a sexual behavior without the other's freely given consent [Black, Basile, Breiding, & Ryan, 2014; Centers for Disease Control and Prevention (CDC), 2010]. While women perpetrate sexual aggression against men (Buday & Peterson, 2015; for review, see Fisher & Pina, 2013; French, Tilghman, & Malebranche, 2015), the majority of sexually aggressive acts are perpetrated by men against women (Black et al., 2014). It is consistently reported that at least 45% of women experience some form of sexual aggression during their lifetime, and at least 20% experience a completed rape during their lifetime (Kilpatrick, Resnick, Ruggiero, Conoscenti, & McCauley, 2007; Muehlenhard, Peterson, Humpheys, & Jazkowski, 2017). Women with a sexual assault victimization history are more likely to develop posttraumatic stress disorder and major depression (Nickerson et al., 2013), are at increased risk to misuse alcohol and drugs (Kilpatrick, 2000), and are more vulnerable to experience problems in academic, occupational, and interpersonal functioning (Testa, Hoffman, & Livingston, 2011; Filipas & Ullman, 2006). It is further estimated that the annual economic burden associated with rape and attempted rape is $921.72 billion (Waechter & Ma, 2015).

In more specific terms, sexual aggression subsumes a spectrum of unwanted sexual acts from unwanted sexual contact to rape (Black et al., 2014). Sexual aggression also includes a spectrum of tactics through which the sexual act was obtained from sexual coercion to physical force (Abbey et al., 2011; Breiding, Smith, Basile, Walters, Chen, & Merrick, 2014). Sexual

coercion involves the use of verbal pressure, false promises (e.g., promising a relationship), lies, emotional manipulation, and any other persistent attempts to have sexual contact with someone who has not provided consent (Breiding et al., 2014; CDC, 2010). Alcohol and/or drugs are another tactic to obtain sexual contact with someone who has not provided consent (Black et al., 2014; Kilpatrick et al., 2007). This tactic may involve deliberately providing alcohol or drugs to the identified victim to facilitate obtaining sexual contact; for example, providing alcohol to decrease the victim's ability to resist unwanted sexual advances. This tactic also involves having sexual contact with someone who consumed alcohol voluntarily but is too intoxicated (e.g., incapacitated) to consent. The latter is more common (Kilpatrick et al., 2007); over a one-year period, 300,000 women reported being sexually assaulted when they were too intoxicated to consent after consuming alcohol voluntarily (Kilpatrick et al., 2007), while approximately 200,000 women reported experiencing a rape in which they were deliberately given alcohol or drugs as a tactic of sexual aggression. Alcohol consumption by either or both the victim and perpetrator is widespread; in approximately 50% of reported cases of sexual assaults, the victim, perpetrator, or both have been drinking (for review, Abbey, 2002). When examining non-adjudicated community samples, the majority of sexually aggressive acts involve tactics of sexual coercion or intoxication with far fewer men utilizing physical force or threats of force as a tactic to obtain unwanted sex (Abbey et al., 2011).

Theories of sexual aggression perpetration indicate that the degree of emotional arousal and emotion dysregulation are potential predictors of sexual aggression (Hall & Hirschman, 1991; Malamuth, 2003; Malamuth, Heavey, & Linz, 1996). Empirical investigations examining intimate partner violence, which is highly correlated with sexual aggression perpetration (Wilson, Mouilso, Gentile, Calhoun, & Zeichner, 2015), have found support that emotional

arousal and emotion regulation are important predictors of IPV perpetration (Maldonado, DiLillo, & Hoffman, 2015; Shorey, Brasfield, Febres, & Stuart, 2011), including in the context of acute intoxication (Stappenbeck & Fromme, 2014). As such, emotional arousal and emotion regulation are important constructs in understanding the etiology and potential intervention targets of sexual aggression perpetration. However, little to no empirical research has examined these constructs in tandem; and the existing research has primarily relied upon survey-based research methods that assess emotional arousal and emotion regulation as general traits, rather than dynamic, state-based behaviors. Moreover, survey-based methods do not enable examination of the proximal or "in the moment" contributors to sexual assault perpetration. An experimental methodology was utilized in the present work to more effectively understand these event-level factors contributing to sexual assault perpetration. The overarching aim of these two studies was to clarify the unique contributions of in the moment emotional arousal and emotion regulation processes on men's intentions to perpetrate sexual assault. Specifically, the first study examined six metrics of emotional arousal as predictors of sexual assault perpetration intentions. To capture how the rate of change in emotional arousal may contribute to sexual assault intentions, metrics were modeled as latent growth curves. The second study utilized structural equation modeling to test a model of emotional arousal and emotion regulation effects on sexual assault perpetration intentions. Because prior research suggests that emotional processes are context specific, emotional arousal and emotion regulation are modeled as trait- and state-level processes.

Study One: Physiological and Self-Reported Emotional Arousal in the Context of a Sexual Aggression Scenario: The Roles of Acute Alcohol Intoxication and Response inhibition

Abstract

Experimental findings suggest alcohol intoxication is associated with sexual assault perpetration likelihood. Under the influence of the myopic effects of acute intoxication, emotional arousal is hypothesized to serve as an impelling cue. In contrast, response inhibition is posited to decrease one's likelihood of perpetration, and so it is hypothesized that sexually aggressive men fail to inhibit emotional arousal in sexual contexts. The following study (N = 94) employed an alcohol administration experiment with two alcohol groups [control and alcohol (BrAC: .10%gm)] to examine the roles of acute intoxication, response inhibition, and emotional arousal on sexual assault perpetration intentions. Six metrics of emotional arousal were gathered: happiness, subjective sexual arousal, anger, anxiety, physiological sexual arousal, and sympathetic arousal reactivity. Latent growth curve modeling was utilized to examine whether changes in emotional arousal over time were associated with intentions to perpetrate sexual assault. Results indicate non-linear trajectories of growth in emotional arousal over time. With the exception of the effect on the rate of change of happiness across time, alcohol was not associated with emotional arousal trajectory. Across models, response inhibition was not associated with the growth in emotional arousal, nor was it associated with intentions to perpetrate sexual assault. Of the six metrics of emotional arousal, only two models suggested changes in emotional arousal growth were associated with intentions to perpetrate sexual assault. Specifically, the rate of change and rate of acceleration of happiness and subjective sexual arousal were associated with intentions to perpetrate sexual assault. Results suggest that examinations of the role of emotions on sexual assault perpetration should consider growth trajectories over time.

Study One: Physiological and Self-Reported Emotional Arousal in the Context of a Sexual Aggression Scenario: The Roles of Acute Alcohol Intoxication and Response Inhibition

Although ongoing research has sought to identify distal and proximal contributors to sexual assault perpetration, the high rates with which sexual assault perpetration occurs suggests a limited understanding of the contributing processes. Acute intoxication is associated with increased intentions to perpetrate sexual assault (Davis et al., 2014b). Alcohol is consistently associated with sexual aggression; between 50 and 66% of assaults occur when the perpetrator has been drinking (Abbey et al., 2011; Davis et al., 2014a). However, investigations of the mechanisms of alcohol-involved sexual assault perpetration have focused more on attitudinal (e.g., hostility toward women), personality (e.g., antisocial), and interpersonal dynamics (e.g., relationship to the victim). Far less research has examined emotional arousal as a mechanism of alcohol-involved sexual assault perpetration, despite ongoing research and theory suggesting emotional arousal is a predictor of sexual assault (Davis, 2010; Davis, Danube, Stappenbeck, Norris, & George, 2015; Davis, Norris, George, Martell, & Heiman, 2006; Spokes, Hine, Marks, Quain, & Lykins, 2014; Thomas & Gorzalka, 2012).

Existing theories hypothesize that emotional arousal is associated with sexual assault perpetration in that sexually aggressive men fail to inhibit their emotional arousal in the context of non-consent cues. This inhibition failure may indicate a general indifference or insensitivity to displays of non-consent (Lalumière, Fairweather, Harris, Suschinsky, & Seto, 2017) or may facilitate sexual aggression by impairing the attention to displays of non-consent (Bouffard & Miller, 2014; Norris, Davis, George, Martell, & Heiman, 2002). However, there is a dearth of research examining this process with a measured construct of inhibition. Further, the existing research has also not taken into account the trajectories of emotional arousal throughout the

event, which enable an examination of how growth and acceleration of emotions may contribute to perpetration. Thus, the goal of our study was to examine the association of emotional arousal trajectories and response inhibition with men's intentions to perpetrate sexual assault in the context of acute intoxication.

Alcohol administration experiments indicate that alcohol consistently exerts a causal impact on men's sexual aggression intentions (Davis et al., 2014b; Norris, George, Davis, Martell, & Leonesio, 1999). Alcohol myopia theory (AMT) is one prevailing theory to explain this association. AMT posits that alcohol impairs information processing and, as a consequence, focuses attention on salient impelling cues ("go cues") and draws attention away from peripheral inhibiting cues ("no go cues"; Abbey, Zawacki, & McAuslan, 2000; Steele & Josephs, 1990). The efforts to understand the problem of alcohol-involved sexual assault have prompted researchers to identify what intra-personal factors may serve as impelling cues for intoxicated men. Emotional arousal repeatedly emerges as a potential important factor in this regard.

Definitions of Emotional Arousal

There is an ongoing debate as to the definition, etiology, and differentiation of emotion (for review, Frijda, 2008; Scherer, 2005). Emotional phenomena may be understood as comprised of three components: the structure, that is the capacities and propensities of the individual, including physiological response; analysis of incoming and stored information from the environment, including information appraisal; and the dynamic interaction between the individual and the environment, including a behavioral response and subsequent response from the environment (Frijda, 2008). Emotions are anchored to stimulus events (either external or internal) that trigger a response (Scherer, 2005). It is also understood that emotion includes physiological arousal (Frijda, 2008). For example, the experience of fear is associated with an

increase in the sympathetic nervous system prompting increase in sweat gland activity. Emotions also possess a valence with some theorizing that emotional experiences may be placed upon a bipolar scale from pleasurable engagement with the environment (positively valenced) to subjective distress and unpleasurable engagement with the environment (negatively valence; Watson & Clark, 1984). There is also debate as to whether emotions may be divided into distinct categories (e.g., happiness, anger; for a review, see Frijda, 2008) in which enthusiasm, happiness, and alertness would be examples of positively-valenced emotions and sadness, anger, and fear would be examples of negatively-valenced emotions (Watson & Clark, 1984; Frijda, 2008). Emotions also contain a motivational component, or "states of action readiness," that allow the individual to change or maintain their relationship with the world or oneself (Frijda, 2008). It is also generally understood that emotions are short-lived, flexible, serve an adaptive function, vary in their intensity, and are capable of being modulated (Gross, 1998a). Related to emotion, affect may be defined as the non-conscious experience of intensity and is often characterized as having either a positive or negative valence (Zajonc, 1980). However, there is debate as to whether affect occurs prior to the cognitive processes that occur when an emotion forms and is non-conscious or if affect may be experienced after the emotion generation process (Lazarus, 1982; Zajonc, 1980).

One supported model of emotions conceptualizes emotions as adaptive behavioral and physiological response tendencies in response to an environmental cue (Gross, 1998b). Drawing from this framework, Gross' model of emotion generation theorizes that emotions are generated through a process of perceiving environmental stimuli (or event), an evaluation of those stimuli as salient, a change in the behavioral, experiential, and physiological systems, and a modulation of this response tendency (Gross, 1998b). The physiological systems include neurological,

endocrine, and autonomic systems. While individuals may experience this process, they may not necessarily express the response tendency outright (Gross, 1998). For example, an individual may regulate their expression of fear prior to a presentation. It is this modulation of response tendencies that determines the expression of the emotional response.

Changes in physiological systems are intrinsic to emotional arousal. Research has identified the functioning of subsystems within the autonomic nervous system (ANS) as possessing a correlate of emotional arousal. The ANS maintains homeostasis by allowing the body to adapt to internal and environmental demands (Mendes, 2009). The two branches of the ANS, the sympathetic nervous system (SNS) and parasympathetic nervous system (PNS) are complementary and intertwined systems of arousal and regulation (El-Sheikh & Erath, 2011; Mendes, 2009; Porges, 2007). The SNS is activated during times of mobilization, typically equipping the body for fight-or-flight responses by increasing heart rate and oxygen flow throughout the body (Mendes, 2009). With this activation, the sweat glands of the body are innervated; thus, the SNS is commonly measured through electrodermal activity, such as skin conductance levels. Measurement of the SNS is often utilized to measure general, in-the-moment physiological arousal to make conclusions about the individual's physiological reactivity to emotional stimuli (Peterson, Janssen, Goodrich, & Heiman, 2014; Spokes et al., 2014).

Sexual arousal as emotional arousal. It is generally accepted that sexual response includes an emotional component. However, because very few of the foundational theories of emotion have discussed sexual response, it has been unclear whether emotions are evoked by sexual arousal or whether sexual arousal may be considered a sex-specific emotion (Stevenson et al., 2010). Stoleru (1999) argued that sexual response includes a perceptual component in which the individual categorizes and evaluates a stimulus as sexually arousing and a physiological

component wherein the autonomic and endocrine systems respond to the arousal stimuli and prepare the individual for sexual behavior. Sexual arousal includes emotional, perceptual, and physiological (e.g., genital response, endocrine) responses to the environment, and has been characterized as an adaptive behavioral and physiological response tendency. It has thus been conceptualized by several researchers as an emotional state (Both, Laan, & Everaerd, 2010; Everaerd, 1988). Moreover, a study investigated participants' ratings of non-sexual and sexual words according to two theories of emotion and found neither the dimensions of valence, arousal, or dominance nor the basic emotions of happiness, fear, anger, disgust, and sadness could be used to accurately describe responses to sexual stimuli (Stevenson et al., 2010). The authors concluded that these findings support sexual arousal as a sex-specific, basic emotion (Stevenson et al., 2010).

Alcohol and emotional arousal. It is well established that alcohol intoxication is associated with changes in affective states. Yet, investigations into the proximal effects of alcohol on different emotions are challenging, given that the effects of alcohol on emotions are moderated by pharmacological, situational, and individual-level factors (Sayette, 2017). Motivational models of alcohol use and empirical investigations of drinking motives explicitly include drinking to heighten (e.g., upregulate) positive affect and drinking to decrease (e.g., downregulate) negative affect as chief contributors to alcohol use (Armeli, O'Hara, Ehrenberg, Sullivan, & Tennen, 2014; for a review, see Sayette, 2017). Alcohol's effects also differ with the limb of the biphasic curve with the ascending limb associated with stimulant effects and the descending limb associated with sedative effects (Martin, Earleywine, Musty, Perrine, & Swift, 1993; Sayette, 2017). Pharmacologic explanations for the effects of alcohol on emotions suggest that consumption of alcohol suppresses subcortical emotional centers (Mihic, 1999; Roberto,

Madamba, Stouffer, Parsons, & Siggins, 2004). Psychological theories of the effects of alcohol on emotions theorize that alcohol impairs higher cognitive processes. Through its impairment of higher cognitive functions, including attention, memory, and appraisal, alcohol impacts the ability to process affective cues in complex environmental contexts thus changing affective states (Curtin, Patrick, Lang, Cacioppo, & Birbaumer, 2001).

Empirical investigations have primarily investigated negative affect relief and emotional enhancement effects of acute intoxication. Multiple theories have been applied to explain the anxiolytic effects of alcohol through longitudinal and laboratory-based studies (Sayette, 2017). A synthesis of two prominent theories, stress response dampening and the attention-allocation allocation model (which is a component of Alcohol Myopia Theory), posits that when consuming alcohol, individuals switch attention from thoughts of stressors to enjoyable distraction, thus resulting in a lessening of the stress response (for review, Sayette, 2017). Further research has also found that reductions in fear response assessed via startle potential were associated with reduced attentional processing of threat cues (Curtin, Lang, Patrick, & Stritzke, 1998). Pertaining to the emotionally enhancing effects of alcohol, survey-based research finds robust evidence for drinking to enhance mood as a motive for alcohol use (Sayette, 2017). However, laboratory-based studies have found only limited evidence that acute intoxication is associated with enhanced mood (Sayette, 2017). This is likely attributable to the context of laboratory sessions where participants are likely to be drinking in isolation and absent the social context and cues that may moderate the association between alcohol and positive affect. Indeed, a more recent daily diary study found participants reported greater happiness scores at the time of drinking in comparison to non-drinking entries although the authors could not discern a direct association of alcohol on happiness (Geiger & MacKerron, 2016). Thus, there is robust evidence

to suggest that alcohol has an association on negative affect, such as anxiety, due to alcohol's effect on cognitive processes, with less robust evidence for the effects of alcohol on positive affect.

With this evidence, there is a need to broaden the range of emotional outcomes of acute intoxication and how emotional outcomes are measured (Sayete, 2017). For example, few to no studies have examined the effects of alcohol on anger or sympathetic arousal, despite the role of sympathetic arousal in emotional processes. While some studies utilize behavioral paradigms (e.g., shock threat paradigms) to operationalize emotional arousal or reactivity, other studies continue to rely upon self-report and do not measure emotional changes over time. There is a need to examine the effects of alcohol through both its arousal and valence dimensions. Laboratory studies have found evidence of a small but discernible attenuating effect of alcohol on men's physiological sexual arousal while acute intoxication is associated with increased subjective sexual arousal in comparison to when sober (George et al., 2006). Given the evidence that alcohol contributes to changes in emotions and the quest to identify mechanisms of alcohol-involved sexual assault, far more research is needed to investigate the effects of alcohol on emotions and how they contribute to sexual assault perpetration.

Emotional Arousal and Sexual assault Perpetration

There is ample evidence to suggest that sexually aggressive men demonstrate a pattern of physiological and subjective sexual arousal in which they become more aroused to sexually aggressive stimuli in comparison to nonaggressive men. Studies utilizing measures of subjective sexual arousal have consistently found increased sexual arousal is associated with self-reported intentions (or likelihood) of behaving in a sexually aggressive way (Bouffard, 2002; Bouffard & Miller, 2014; Loewenstein, Nagin, & Paternoster, 1997). Multiple meta-analyses and a more

recent literature review (Clegg & Fremouw, 2009; Hall, Shondrick, & Hirschman, 1993; Lalumière & Quinsey, 1994) have found phallometrically assessed sexual arousal is associated with sexual assault perpetration in both adjudicated and non-adjudicated samples. While phallometry has been utilized in numerous studies to examine the role of physiological sexual arousal, emerging research has examined other metrics of emotional arousal. Two studies have found conflicting evidence of the association between emotional arousal and sexual assault perpetration with one study finding that greater sympathetic arousal reactivity was positively associated with greater rape latency response (indicating one would stop sexual activity at a later time point in a date-rape analogue task) in comparison to lower reactivity (Spokes et al., 2014). In contrast, another found that underreactivity as measured via skin conductance level was associated with past perpetration of sexual assault (Peterson et al., 2014).

While there is variability in operationalization of emotional arousal and samples (e.g., adjudicated versus community versus student), there is robust evidence to suggest that self-reported emotional arousal is associated with perpetration of sexual assault. The empirical literature has consistently found there to be an association between emotional arousal of negatively-valenced emotions and perpetration in both surveys assessing trait anger and experimental methodologies investigating state anger (Davis, 2010; LeBreton, Baysinger, Abbey, & Jacques-Tiura, 2013; Thomas & Gorzalka, 2012). Investigations suggest that anger is associated with perpetration in sexually aggressive men, and experimental paradigms suggest that when anger is a result of perceived insult or rejection, sexually aggressive men may be more likely to perpetrate sexual aggression (Mescher & Rudman, 2014; Thomas & Gorzalka, 2012). While there is less empirical investigation of the association between positive emotions, such as happiness and sexual assault perpetration, positive emotions appear indirectly associated with

perpetration of sexual assault (Lopez, George, & Davis, 2007; Mosher & Anderson, 1986; Norris, Davis, George, Martell, & Heiman, 2002). Finally, a recent study examined the association of symptoms of anxiety and sexual dating violence (Ngo et al., 2018). This study found that sexual dating violence was associated with anxiety; however, the cross sectional nature of the study limited an examination of the temporal association between these variables (Ngo et al., 2018). Collectively, these results suggest that emotional arousal plays a role in sexual assault perpetration.

The Role of Inhibition

The convergence of the empirical literature suggests that emotional arousal is associated with sexual assault; however, the precise nature of this association is unclear. Two theories of the association between sexual arousal and sexual assault perpetration have emerged. The sexual-preference hypothesis posits that sexually aggressive men have a preference for sexually aggressive behavior (versus consensual sexual behavior; Lalumière & Quinsey, 1994). Ongoing research on the sexual-preference hypothesis has attempted to understand whether sexual arousal is stimulated by arousal to nonconsensual or violent sex (Harris, Lalumière, Seto, Rice, & Chaplin, 2012; Seto, Lalumière, Harris, & Chivers, 2012). This sexual-preference hypothesis has been contrasted with the inhibition hypothesis (Marshall & Barbaree, 1984). The inhibition hypothesis states that both sexually aggressive and non-aggressive men have similar levels of sexual arousal to sexual cues (Marshall & Barbaree, 1984). However, when cues of non-consent and violent arise, non-sexually aggressive men demonstrate an inhibition of physiological or subjective sexual arousal, while sexually aggressive men show no inhibition and persist with sexual activity (Lohr et al., 1997; Marshall & Barbaree, 1984). Support for the inhibition hypothesis has been evidenced by the most recent literature investigating sexual arousal

(Lalumière, Fairweather, Harris, Suschinsky, & Seto, 2017; Looman, Dickie, & Maillet, 2008). However, little research has explicitly examined the role of response inhibition and sexual arousal (or general emotional arousal) on sexual assault perpetration.

Inhibition is examined as a feature of executive function and involves overriding a predisposition or external cue through controlling one's attention, behavior, thoughts, or emotions (Diamond, 2013). Response inhibition is one's ability to withhold a prepotent response (e.g., the ability to stop a dominant response) or cancel a response once it has been initiated, which becomes necessary when the prepotent response is inappropriate (Wright, Lipszyc, Dupuis, Thayapararajah, & Schachar, 2014). Compared to those with higher scores on inhibition, individuals with lower scores on inhibition are at greater risk of violence and substance use (for a review, see Day, Kahler, Ahern, & Clark, 2015). While no studies have explicitly examined the role of response inhibition on sexual assault, inhibition is frequently associated with intimate partner violence perpetration, such that those with weaker inhibition report more perpetration of IPV (Finkel et al., 2012). Event-level factors are also associated with inhibition. For example, the disinhibitory effects of acute intoxication are theorized to impair inhibition (for review, Day et al., 2015). Despite the theory asserting inhibition as a key process buffering against sexual assault perpetration and the association with substance use, violence, and intimate partner violence, response inhibition has not been examined as a predictor of sexual assault perpetration.

The Present Study

With respect to intra-personal factors that potentially bear on sexual aggression, both emotional arousal and inhibition rank as important variables. Prior empirical examinations decrease in subjective and physiological sexual arousal in the presence of non-consent cues. Sexual assault researchers have posited that the inhibition of sexual arousal in the context of non-

consent cues is an important factor in differentiating one's sexual assault perpetration history and one's future intentions to perpetrate. However, no studies have examined inhibition as a construct and applied it in a model examining the role of emotional arousal in sexual assault perpetration. An investigation of the relations among these constructs also necessitates an examination of the role of alcohol. The association between alcohol and sexual assault perpetration is consistently found in the literature (for review, Abbey, 2002). While more research is needed on the effects of alcohol intoxication on all facets of emotional arousal, there is support that acute intoxication is associated with changes in emotions. The following study uses an alcohol administration paradigm with a sexual assault analogue to examine the roles of acute intoxication, emotional arousal, and response inhibition on sexual assault perpetration. While research investigating the effect of emotional arousal on sexual aggression perpetration is compelling, it has also been limited by solely focusing on one-time reports of emotions, despite the fact that emotions are dynamic processes that shift as the context changes. This investigation thus seeks to examine the trajectory of emotional arousal processes on sexual assault perpetration intentions. This investigation also examines the role of inhibition, operationalized through a behavioral task, on emotional arousal trajectories.

Study Overview

An alcohol administration study provides an opportunity to examine to compare the trajectories of emotional arousal in intoxicated men versus sober men. Prior to receiving either an alcoholic or a non-alcoholic beverage, participants completed a behavioral task assessing response inhibition. Participants were then randomized to a high dose alcohol group [target Breath Alcohol Content (BrAC) = .10%gm) or a control group (BrAC = .0%gm). To examine the effects of emotional arousal, response inhibition, and alcohol intoxication on sexual assault

perpetration, the study employed a sexual assault analog: an eroticized, sexual assault scenario. Participants were instructed to project themselves into the scenario as if it were occurring to them in the moment. The scenario involved a sexual encounter with a hypothetical woman with whom they had already had penetrative sex. The sexual encounter began with consensual kissing and fondling. However, as the sexual encounter progressed, the woman began to express both indirect and direct (e.g., verbal) non-consent cues. At the conclusion of the scenario, the participants indicated their intention to perpetrate various acts of sexual assault against the woman. Emotional arousal was assessed through self-report and acquisition of psychophysiological measures of arousal. At baseline, participants indicated their level of arousal on four self-report measures of emotion arousal (happiness, anger, anxiety, and subjective sexual arousal). As they read through the scenario, the scenario contained several breaks in which they indicated their emotional arousal. Two metrics of physiological arousal (penile plethysmography and skin conductance levels) were also measured continuously throughout reading the scenario.

Aims and hypotheses. We propose three primary aims to examine the roles of emotional arousal, alcohol intoxication, response inhibition, and sexual assault perpetration. Within these aims, we propose 10 hypotheses and six exploratory research questions: **Aim 1:** To examine the role of alcohol intoxication on the starting level (e.g., intercept), change over time (e.g., linear slope), and rate of acceleration over time (e.g., quadratic factor) of six different emotional arousal metrics (happiness, anger, anxiety, subjective sexual arousal, physiological sexual arousal, and sympathetic arousal reactivity) in the context of an alcohol administration paradigm with sexual assault scenario. Given the prior research suggesting differential effects of alcohol on each emotion, separate hypotheses were generated for each emotion. Hypothesis 1 &

2: Grounded in existing literature suggesting the stimulating and elating effects of the ascending limb of the biphasic curve of alcohol intoxication, it was hypothesized that alcohol would be positively associated with the starting level, rate of change, and rate of acceleration of happiness (H1) and subjective sexual arousal (H2) over time; that is, in comparison to sober men, men who receive alcohol would have higher scores of happiness and subjective sexual arousal at baseline and would report greater increases in happiness and subjective sexual arousal scores over time. Hypothesis 3: Grounded in the empirical literature suggesting men in the context of acute intoxication report higher scores of anger arousal (Davis, 2010), it was hypothesized that alcohol would be positively associated with the starting level, rate of change, and rate of acceleration in anger over time. Hypotheses 4 and 5: Grounded in the stress dampening hypotheses, it was hypothesized that alcohol would attenuate the starting level, rate of change, and rate of acceleration in emotional arousal over time for anxiety (H4) and sympathetic arousal reactivity (H5). Exploratory question #1: Past research suggests that the attenuation effect of alcohol on physiological sexual arousal is small, and there is a lack of empirical data to inform the hypothesized effect of alcohol on physiological sexual arousal over time. We propose to examine the role of alcohol on the starting level, rate of change, and rate of acceleration in physiological sexual arousal; however, this research question is exploratory. **Aim 2:** To investigate the association between a task of response inhibition on six measures of emotional arousal in the context of acute intoxication. Exploratory question #2: Emerging research has not identified a consistent pattern in which response inhibition is associated with emotional arousal. We propose to examine the role of response inhibition on emotional arousal over time; however, this research question is exploratory, thus no hypotheses are made. Exploratory question #3: Emerging research has not identified a consistent pattern in which acute intoxication is associated with

response inhibition. We propose an interaction of alcohol condition and behavior inhibition as predictors of all metrics of emotional arousal; however, this research question is exploratory.

Aim 3: To test a model in which the starting level and rate of change in six measures of emotional arousal, acute intoxication, and response inhibition predict sexual assault perpetration intentions. Hypothesis 6: It was hypothesized that alcohol would be positively associated with sexual assault intentions; that is, intoxicated men would report greater intentions to perpetrate sexual assault than sober men. Exploratory#4: The inhibition hypothesis posits that the failure to inhibit sexual arousal is associated with perpetration of sexual assault. It was hypothesized that scores of response inhibition would be negatively associated with sexual assault perpetration, such that higher scores of inhibition would be associated with lower intentions to perpetrate. Exploratory question #5: Prior research has not examined the role of response inhibition on sexual assault perpetration in the context of acute intoxication. We therefore propose an exploratory research question, examining the interaction of alcohol with response inhibition on sexual assault perpetration. Hypotheses 7: The starting level, rate of change, and rate of acceleration of happiness over time would be negatively associated with intentions to perpetrate sexual assault. Hypotheses: 8: The starting level, rate of change, and rate of acceleration of sexual arousal over time would be positively associated with intentions to perpetrate sexual assault. Hypothesis 9: The starting level, rate of change, and rate of acceleration of anger over time would be positively associated with intentions to perpetrate sexual assault. Hypothesis 10: The starting level, rate of change, and rate of acceleration of physiological sexual arousal over time would be positively associated with intentions to perpetrate sexual assault. Exploratory question #6: Given the relative lack of research examining anxiety (exception, Ngo et al., 2018) and sympathetic arousal reactivity as predictors of sexual assault perpetration, we modeled the

starting level and rate of change of both emotions as a predictor of sexual assault perpetration intentions.

Method

Participants

Participants (N = 101 cisgender men) were recruited for a study on "male-female relationships and physiological measures" by electronic advertisements on social media (e.g., Facebook, Instagram), community forums (e.g., Craigslist, Reddit), and community newspapers (e.g., The Stranger.com). Print advertisements were also posted in bars, coffee shops, and clubs as well as in print newspapers (e.g., The Stranger). The study also emailed advertisements for the study via a list of emails for male students and staff, ages 21 to 30, obtained from the Registrar's Office of a large Pacific Northwest university. Interested individuals were directed to the study's website to take a brief online eligibility screener or were directed to call the study office for phone screening. Eligible individuals were told that procedures included the use of physiological measures of sexual and emotional arousal as well as the possibility of being assigned to drink "the equivalent of 5 to 6 alcohol beverages within 9 minutes on an empty stomach". Inclusion criteria included being between 21 to 30 years of age; interested in dating opposite-sex partners; not currently in a monogamous dating relationship for more than 6 months; and a moderate to heavy drinker (between 5 to 35 weekly drinks per week) who had engaged in at least one instance of heavy episodic drinking (HED; 5 or more drinks in a two hour period; NIAAA, 2005) in the last six months. One episode of heavy drinking was included to ensure a participant did not receive alcohol in the lab that would induce a higher Breath Alcohol Concentration (BrAC) than he had reached with self-administration (NIAAA, 2005). The study sought to oversample men at risk for perpetrating sexual assault, thus, inclusion criteria also required participants to report at

least one instance of condomless vaginal or anal sex in the past six months. This inclusion criterion was based upon empirical evidence indicating condomless sex is correlated with perpetration of sexual assault (for a review, see Davis et al., 2018; Tharp et al., 2013). Exclusion criteria included a history of or current problem drinking assessed by the BMAST (Connor, Grief, Feeney, & Young, 2007), drinking more than 35 drinks per week, and/or currently taking medications or having a health condition that contraindicated alcohol consumption.

Seven hundred and thirty-six people completed either online (82%) or phone (12%) screening. The most common reason for not qualifying was not meeting the alcohol use criteria. On multiple occasions, eligible callers were scheduled for an appointment, however canceled their appointment or did not attend the appointment (e.g., no show). Thus, 135 eligible callers were scheduled with 101 participants enrolling in the study. Of those who canceled in advance or did not attend their initially scheduled appointments without informing the project staff, approximately 10% attended a rescheduled session.

Measures

Sexual assault scenario. Sexual assault scenarios present a hypothetical sexual scenario and request the participant to estimate their behavioral intent of perpetrating the act of sexual assault rather than measuring the actual enactment of a behavior. The sexual assault scenario was based upon previous scenarios employed in Drs. George, Davis, and Norris' laboratories and have been found to be realistic and credible descriptions of sexual scenarios encountered by the participants (for review, see Davis et al., 2014b; Davis, 2010; Davis, Norris, George, Martell, & Heiman, 2006; Norris, Davis, George, Martell, & Heiman, 2002).

To increase the external validity of the scenario, the scenario was highly detailed. To ensure the scenario evoked subjective and physiological arousal, it contained erotic language

when describing the sexual events. These details were gathered through qualitative interviews with a sample of men (N = 10) from the target population conducted by a male graduate student in the Spring and Summer 2017 quarters. These interviews elicited details regarding men's typical sexual experiences with casual female partners, including drinking contexts in which casual partners meet and language for initiating a casual sexual encounter. Regarding perception of consent and non-consent cues, results indicated that men were less likely to attend to non-consent cues from a partner with whom they had previously had sex, were less likely to attend to indirect (e.g., nonverbal) consent cues than verbal consent cues, and had an understanding that an explicit, verbal statement of non-consent (e.g., "I don't want to have sex") was a clear indication a woman did not want to have sex (Neilson et al., in prep).

The final scenario was roughly 1,600 words and written at a 5th grade level. The scenario was presented on the computer in E-Prime software. Because third-person written scenarios are associated with underestimates of behavioral intent (for a review, see Davis et al., 2014b), the scenario was written in the second person (e.g., "you"). Participants were instructed to project themselves into the sexual assault scenario ("Imagine that you are the person being described in the scenario and try to put yourself in that situation").

Prior to beginning the scenario, participants rated their level of emotional arousal on four measures of emotions (Time 1; see Self-Reported Emotional Arousal). The scenario consisted of a sexual encounter between the male participant and a female character ("Michelle") who had already had penetrative sex in a prior encounter. The scenario began with the participant meeting Michelle at a party in which Michelle was intoxicated. Michelle's intoxication was conveyed through the protagonist's interpretations (e.g., "she looks pretty drunk"), descriptions of her behavior ("she sways a little"), and her verbal reports of how much she has drunk ("a couple of

beers and a couple of shots"). The participant consumed a beverage matched to the participant's experimental beverage condition. The participant and Michelle went back to Michelle's house and engaged in some consensual sexual activity. The description of sexual activity was detailed and eroticized. The scenario had a break and the participant completed measures of self-reported emotional arousal for the second time (Time 2). The scenario then continued with progressing sexual activity between the participant and Michelle, including removal of clothing. During this portion of the scenario, Michelle made the first cue of non-consent, which was to remove her hand from the participant's penis after he placed it there. The scenario then had a break and the third assessment of emotional arousal occurred (Time 3). The scenario then continued with kissing and fondling; however, at this point in the scenario Michelle gave a verbal cue of non-consent and stated, "This is really hot, but I don't want to have sex tonight. Let's just keep fooling around." The scenario then had a break for the fourth assessment of emotional arousal (Time 4). The scenario continued with kissing and fondling between the participant and Michelle. Michelle reiterated the statement that she would like to continue engaging in kissing and fondling, but did not want to have sex. The man in the scenario then continued sexual contact with her and restrained her. Michelle gave another statement of non-consent and stated, "This is going too far, I really don't want to have sex tonight!" At this point the scenario ended, and no actual rape was portrayed. Participants then rated their emotional arousal (Time 5) and their sexual assault perpetration intentions. Each break in the scenario was connected to the psychophysiological data acquisition software, and digital markers were in the physiological output at each break point in the scenario.

Participants also answered questions to assess the degree to which they found the scenario credible and realistic (1 = *Not at all,* 4 = *Moderately,* 7 = *Extremely;* Neilson, Eakins,

Davis, Norris, & George, 2016). Scores indicated that men generally found the scenario depicted a realistic scenario (M = 5.79; SD = 1.4), and they found it moderately easy to project themselves into the scenario (M = 4.80; SD = 1.8). Men reported they found the scenario less than moderately arousing (M = 3.82, SD = 2.0).

Measures of sexual assault perpetration: History of perpetration. Participants indicated whether they had previously perpetrated sexual violence against an adolescent or adult woman (ASA) since the age of 14 via the Revised Sexual Experiences Survey (SES). The SES assesses a range of sexually aggressive acts (unwanted sexual contact, attempted rape, rape) and tactics (coercion, threats, intoxication, and force). Participants indicated the number of times that a tactic or multiple tactics were used up to 3 times. ASA severity was determined using a 63-point scale (Davis et al., 2014a) for each time point with high scores indicating more severe sexual assault experiences and scores of 0 indicating no ASA. Rather than only examining the frequency and severity of nonconsensual sexual acts, this scoring procedure also takes into account the type of tactic utilized to obtain unwanted sexual contact (1 = sexual contact by verbal coercion; 2 = sexual contact by incapacitation; 3 = sexual contact by force; 4 = attempted or completed rape by verbal coercion; 5 = attempted or completed rape by incapacitation; 6 = attempted or completed rape by force). A severity score was calculated by multiplying each experience type by the frequency and then summing all of the experiences for a total of up to 63 points. This scoring system has been utilized in over 20 studies (e.g., Bosson, Parrott, Swan, Kuchynka, & Schramm, 2015; McDermott, Kilmartin, McKelvey, & Kridel, 2015; Nunes, Hermann, White, Pettersen, & Bumby, 2016) and has the advantage of taking into account the full range of severity of sexual assault victimization experiences and frequency. Sexual assault perpetration severity ranged from 0 to 50.

Intentions to perpetrate sexual assault. To assess participants' current intentions to perpetrate sexual assault against the hypothetical woman in the scenario, a modified version of the revised Sexual Experiences Survey (16-items; α = .96) assessed sexual aggression intentions. The sexually aggressive acts and tactics remained the same but the wording was modified to assess participants' intentions (1 = *Not at all likely* to 7 = *Extremely likely)* to perpetrate sexual aggression against the hypothetical woman in the scenario (Abbey, Parkhill, & Koss, 2005; Davis et al., 2014b). A sum score of intentions to perpetrate was computed and utilized as the main outcome variable.

Self-report metrics of arousal: Self-reported emotional arousal. Emotional arousal was assessed through an adaptation of the Positive and Negative Affect Schedule (PANAS; 25-items; Thompson, 2007) that participants completed prior to beginning the story (Time 1) and at each break in the story (T1-T5). Participants indicated the degree (1 = *Not at all* to 7 = *Extremely)* to which they felt five categories of emotions: anger, happiness, and anxiety. Subscale means for anger (5-items, α's = .87-.94), happiness (5-items, α's = .90-.96), and anxiety (5-items, α's =.90-.94) were computed.

Subjective sexual arousal. Subjective sexual arousal was assessed through a four-item scale inquiring about the degree (1 = *Not at all* to 7 = *Extremely*; α = .94*)* to which participants felt sexual arousal prior to beginning the scenario and at each break in the scenario (e.g., "How sexually aroused are you right now?"; "How much sensation do you feel in your genitals right now?"; "How much sexual warmth do you feel in your body right now?"; "How erect is your penis?"). A mean score of these items at each time point was calculated. Cronbach's alphas for T1 (pre-scenario) was .75, while T2 through T5 ranged from .93 to .95. The difference between the Cronbach's alpha at T1 and T2-T4 is notable, although Cronbach's alpha falls within an

acceptable reliability range. Examination of the data revealed that Cronbach's alpha for intoxicated participants was .73 while Cronbach's alpha for intoxicated participations was .80. It is possible that in the absence of a sexually arousing stimulus, intoxicated participants had difficulty differentiating physiological changes associated with sexual arousal and physiological changes associated with intoxication (e.g., warmth).

Physiological metrics of arousal: Physiological sexual arousal. Physiological sexual arousal was measured with penile plethysmography (model MP150; BioPac Systems, Galeta, CA) and a mercury-in-rubber strain gauge (Limestone Technologies Inc.; Kingston, Ontario), positioned midshaft of the penis. Strain gauges were calibrated prior to each use by placing the gauge on a calibration cone and adjusting size values via the software to equal the known size of each gauge (George et al., 2006). Gauges were disinfected following each use with Cidex OPA solution (Vitality Medical; Salt Lake City, UT). To ensure proper disinfection, we checked the Cidex OPA solution PH prior to beginning the Cidex OPA disinfection protocol for each device. Using AcqKnoweldge software (Version 5.0; Biopac Systems, year), we collected data at a rate of 2000 samples/second, which were then reduced to a rate of 62.5 samples per second. The raw data were visually inspected for movement artifacts, defined as clear spikes of more than 5mm in an otherwise smooth curve. Data were then digitally transformed through a high pass filter (1 Hz). Data were then exported to a data analytic program for analysis (Hoffman, Janssen, & Turner, 2004). Participants whose data indicated a percentage change from baseline of less than 5% were considered non-responders and were not included in the data analysis (Janssen, personal communication, 2018). Peak percentage circumference change from the neutral stimulus baseline was computed by subtracting each participant's lowest achieved millimeter circumference during the neutral stimulus from his highest achieved millimeter circumference

during the erotic stimulus and then dividing that amount by his lowest achieved millimeter during the neutral stimulus multiplied by 100.

Sympathetic arousal reactivity. Sympathetic arousal was assessed through skin conductance levels (SCL) in which the experimenter applied a thin layer of conductance cream on the film of two Ag/AgCl finger sensors and place those sensors on the adjacent fingers of the non-dominant hand (Mendes, 2009). An A/D converter was used to digitize and amplify the signal. Skin conductance levels were measured continuously during a baseline video and then continuously throughout the sexual aggression analogue. During the baseline video, mean resting skin conductance was measured over a two minute epoch for each participant. At each break during the sexual aggression analogue (e.g., T1-T5), a trigger was sent to the physiological output to indicate when the participant had reached that break in the story. Each participants' skin conductance was measured from the point when the trigger was sent for a three minute epoch. A three-minute epoch was chosen because it was the maximum amount of time each participant had between each break in the story. Data were then cleaned by removing deviations from the data greater than 5mm. A reactivity score was computed whereby the SCL level at each break in the scenario was subtracted from the mean SCL.

Response inhibition paradigm

Response inhibition was assessed through an emotional go/no-go task which was compiled and run using E-Prime software (Psychology Software Tools, Inc., Pittsburgh, PA: Schneider et al., 2002). The emotional Go/No-Go task is an adaptation of the classic Go/No-Go paradigm (Fillmore, Rush, & Hays, 2006) that measures general response inhibition. The task required the participant to monitor a series of stimuli presented individually in the center of the computer screen and to respond as quickly as possible by pressing the keyboard space bar when

presented with a target stimuli (go cues) while withholding responses to non-target stimuli (no-go cues). The task consisted of 228 presented trials, eighty percent of which were "Go" trials (total = 168) with the remaining twenty percent (total = 40) being "No-Go trials" in order to create a tendency to respond. The interstimulus interval (ISI) was pseudorandomized from 1250 to 1750 ms (mean per block = 1500ms) to discourage anticipatory responses. A fixation cross was displayed in the center of the screen during the ISI.

The stimuli for the Go and No-Go cues consisted of a series of faces (7.5 x 2.5 cm) happy facial expressions from six women and scared facial expressions from five of these same six women. These stimuli were selected from the NimStim Face Stimulus Set (www.sacklerinstitute.org). The type of facial expression signaled whether participants should respond (i.e., happy faces signal "go") or inhibit a response (i.e., scared faces signal "no-go"). Reaction times were assessed using a keypad with spacebar presses indicating the presence of a "go" target and a suppressed response indicating the presence of a "no-go" target. Instructions were displayed on the computer screen at the beginning of the task, and participants practiced the task prior to administration. A fixation cross was displayed in the center of the screen during the ISI. This computer task took approximately seven minutes. An inhibition score was calculated by subtracting the commission (e.g., "false alarm rate") defined as the percent of "no-go" trials that were incorrectly followed by a spacebar press from the accurate ("hit rate"), defined as the percent of "go" trials that were correctly followed by a spacebar press (Macmillian & Creelman, 2009).

Procedure

All study procedures were approved by the University Human Subjects Division. Study procedures took place in a laboratory at a large Pacific Northwest University. Consistent with

alcohol administration procedures, participants were instructed to bring photo identification, abstain from alcohol for 24 hours prior to participation, fast for 4 hours prior to the lab appointment, not drive to the lab, and be willing to remain in the lab until their BrAC was below .03%gm should they receive alcohol. A male graduate student experimenter greeted all participants, verified that participants followed the pre-session procedures, and then administered a Breathalyzer test to ensure a BrAC at 0.00. Following these procedures, the experimenter reviewed all study procedures and obtained informed consent. The participant was then weighed to determine the appropriate amount of beverage to administer.

Following the initial procedures, a baseline physiological assessment was conducted in which skin conductance level was assessed. The experimenter instructed the participant to place electrodes on his own clavicle and torso. The participant was then instructed to apply a respirator belt around his upper chest. The experimenter then applied a thin layer of conductance cream on the film of two Ag/AgCl finger sensors and placed those sensors on the adjacent fingers of the participants' non-dominant hand (Mendes, 2009). Following acquisition of physiological measures, the participant completed background measures on a computer to which they were oriented by the experimenter.

Following background measures, participants were given a five minute break and then completed the response inhibition task. Following completion of the task, participants were randomly assigned to one of two beverage conditions [(target peak BrAC =.10 gm%) or a control (non-alcoholic)] stratified by sexual aggression perpetration history (defined as history of forced sexual contact, sexual coercion, attempted rape, rape) such that participants with and without a history were evenly distributed across the two beverage conditions. The experimenter remained blind to participants' sexual aggression perpetration history. Following beverage condition

assignment, participants were given verbal instructions to practice placing the penile plethysmography strain gauge to ensure proper placement. The experimenter left the room, and participants partially disrobed from the waist down and placed the strain gauge mid-shaft on the penis. Written instructions were also provided. After a signal was detected, participants were instructed to remove the device and dress.

Beverage administration. Participants were brought three cups of equal-sized liquid consisting of either vodka and cranberry juice or cranberry juice and water. Total volume of liquid consumed was determined by body weight. Participants were given 9 minutes to consume the beverages. The participant was then instructed to rinse his mouth with water several times to ensure accurate BrAC assessment. Participants were Breathalyzed every four minutes until criterion was reached (alcohol group = .07%gm). A yoking procedure was employed in which each control participant was paired with an alcohol dose participant and received the same amount of liquid relative to body weight and an equal number of Breathalyzer checks to control for possible time effects (Davis, 2010).

After reaching criterion BrAC, participants reapplied the psychophysiological equipment. Participants watched a two minute neutral video, and then BrAC was assessed one final time before participants began reading the sexual assault scenario. Emotional arousal was measured continuously throughout the scenario, and digital markers were programmed into the scenario such that markers were placed in the physiological output to indicate participants' progress through the scenario.

Sexual assault scenario. Upon reapplication of the psychophysiological acquisition equipment, the experimenter instructed participants that they would read a scenario and instructed them to project themselves into the scenario. The experimenter oriented participants

that they would be uninterrupted during this portion of the story and reminded participants that their answers would not be connected to them. Participants were then left in the computer room to complete the scenario and alert the experimenter by ringing a bell when they were done. Participants completed the scenario on average in approximately 25 minutes.

Upon completion of the scenario, men in the control condition were then debriefed, paid, and provided a bus voucher. Men in the alcohol condition remained until their BrAC was below .03% at which point they were debriefed, paid, and provided a bus voucher. Participants were compensated $15 per hour for a maximum payment of $100. Due to the large number of late cancellations and no shows, a bonus was instituted in the fourth month of data collection whereby men who attended the first appointment they scheduled were provided with a $10 bonus (for a maximum payment of $110).

Data Analysis Plan. Latent growth curve modeling (LGM) was utilized to test the above hypotheses. LGM is a statistical method that uses structural equation modeling, thus enabling the use of latent factors for an estimation of intra- and inter-individual patterns of change, or growth, over time. The theory of LGM posits that there is a latent factor that is contributing to the growth, which allows for that latent factor to be modeled in larger path models. Structural equation modeling allows for correction of measurement error because one can model multiple measures as multiple indicators of one latent factor. While one of the advantages of LGM is its ability to estimate intra-individual differences, only inter-individual differences (e.g., fixed effects) were examined due to limits of the small sample size. Further, the application of this type of statistical methodology to examine these constructs is novel, and there is a dearth of research examining the roles of alcohol and inhibition in growth processes in arousal between individuals. With this lack of theoretical and empirical rationale, only between person

differences were examined. The first latent factor is the intercept, which indicates the mean arousal (or status) at a certain time point. When examining intra-individual differences, one can interpret the degree to which each individual's arousal at that time point differs from the average arousal when Time is zero (Duncan & Duncan, 2009). The slope is the average linear rate of change over time across the sample (Duncan & Duncan, 2009; Kenny, 2011). Again, intra-individual examination of the slope provides estimates of how each individual changes over time. The quadratic term refers to the rate of acceleration of the slope, or the rate of change in the linear slope per unit of time (Diallo, Morin, & Parker, 2014). Structural equation modeling also allows for the utilization of maximum likelihood estimates, which yield unbiased and asymptotically efficient estimates.

Means, standard deviations, and zero-ordered correlations for the predictors, sexual assault outcome variables, and all time points of the arousal metrics were computed (Tables 3.1-3.6). All variables were centered to address multicollinearity. The observed means and standard deviations of all measures of arousal increased across the five time points in increasingly large increments, suggesting a non-linear growth in Y across time. This indicates that a higher order polynomial may be appropriate to include in all models. For happiness, subjective sexual arousal, and physiological sexual arousal the means increase over time until Time 4 at which point the hypothetical woman in the scenario indicated verbal non-consent cues (see Figures 1-3). For anger and anxiety, an inverse pattern was observed in which anger and anxiety exhibited little growth until Time 4 at which point they increased over time (see Figures 4 & 5). Sympathetic arousal reactivity displayed a U-shaped pattern in which arousal decreased from the first time point and then increased at the end of the scenario (see Figure 6). This indicates that growth may best be modeled with piece-wise slopes. The percentage of missing data varied from 0.0% (Time

1) to .049% (Time 3). Both predictor variables had 100% complete data. The outcome variable was missing on 5.9% of data. The covariance coverage matrix—a matrix of missingness for all pairs of variables—the highest percentage of missing data was 6%, which is within the recommended limits (Muthèn & Muthèn, 2003).

Separate models for each metric of emotional arousal (e.g., anger, anxiety, happiness, subjective sexual arousal, physiological sexual arousal, and skin conductance level) were tested in MPlus 7.2 (Muthén & Muthén, 1998-2012). Unconditional growth models of arousal were tested to examine the mean change in arousal as a function of time. Time was centered at baseline arousal immediately prior to beginning the scenario (Time 1) and graphed. Examples of these graphs are found in Figures 1-3. Given the non-linear trajectories of emotional arousal, we also modeled unconditional growth models with time centered after beginning the story when the participant was reading the erotic details (Time 2), and finally when the first, explicit non-consent cue was presented in the story (Time 4). These times were chosen because they occurred when the participant was confronted with a cue that was likely to prompt a change in emotional arousal (e.g., sexual stimuli, non-consent cues). The latent slope regression parameters were fixed at 0, 1, 2, 3, and 4. Given the substantial increase in means and standard deviations, a quadratic term was included in each model with the latent quadratic slope parameters fixed at 0, 1, 4, 9, and 12. Given the non-linear growth trajectories, piecewise models were also fit to model the changes in slope in the presence of non-consent cues. However, these models did not converge and indicated the variance-covariance matrices were non-positive definite.

Following evaluation of the unconditional growth models, latent growth curve models were analyzed with alcohol, inhibition, and an interaction of alcohol and inhibition as predictors of the levels and changes over time in arousal. The empirical literature suggests that past

perpetration of sexual assault is a strong predictor of future perpetration; thus, past perpetration was added in the final models as a covariate. Within the final models, sexual assault perpetration intentions were regressed on the slope, intercept, quadratic term, and all four predictors. Maximum likelihood estimate with robust standard errors were utilized due to the skewness of the outcome, sexual assault perpetration. Due to the number of hypotheses and model testing, we used a Benjamini-Hochberg false discovery correction (FDR) to address alpha inflation. This approach allows greater power to detect true effects than other family wise error (FWE) methods. The FDR is defined as the expected proportion of the number of erroneous rejections to the total number of rejections and allows for more power than FEW with many comparisons (Benjamini & Hochberg, 2000; for review, Keselman, Cribbie, & Holland, 2002). Statistical significance was also determined based upon 95% confidence intervals that did not contain zero.

Model fit was examined for unconditional growth, conditional, and final models. Fit indices refer to the ability of a model to reproduce the data, typically the variance-covariance matrix (Kenny, 2015). Good fitting models may be considered those models that are consistent with the data and do not require respecification (Kenny, 2015). While a good fitting model is necessary to interpret the causal paths of SEM, parameter estimates and sizes and theory are vital to the selection of a model (Kenny, 2015). The fit of growth models was assessed with the chi-square statistic, the comparative fit index (CFI), the Tucker-Lewis index (TLI), and the root-mean-square-error of approximation (RMSEA). Conventional practice relies on the Hu and Bentler (1999) suggestions that well-fitting models have a CFI or TLI greater than .95 and a RMSEA less than .06. Singer and Willett (2003) suggested that R^2 statistics and the residual variables be used, when possible, to quantify the relation between the model and sample data.

Results

Of the 101 men recruited for the study, two withdrew prior to beverage administration due to concerns regarding the penile plethysmography device. One participant withdrew during the sexual assault scenario due to feelings of nausea. One participant completed all study protocols; however, due to a computer problem during the sexual assault scenario, his data on the sexual assault scenario were not saved. Three participants completed all procedures involved in the study, however were excluded due to unreliable data. The final sample used for analysis was comprised of 94 participants (Alcohol group = 47, Control group = 47). Descriptive statistics are presented in Table 1.0.

Approximately a third of the sample reported having perpetrated sexual assault in their lifetime with 12% having engaged in either incapacitated, forced, or threats of forced oral, vaginal, or anal penetration. Approximately 20% of the sample reported having perpetrated sexual assault within the last year with 6% having engaged in either incapacitated, forced, or threats of forced oral, vaginal, or anal penetration in the last year. The beverage groups in the final sample did not significantly vary by the number of men who reported perpetrating. Forty percent of men reported they were “not at all likely” to perpetrate any of the sexually aggressive behaviors in the story. Eight percent of the current sample indicated that they were at least “moderately” likely to engage in sexually aggressive behavior against the hypothetical woman in the scenario.

Emotional Trajectories Over Time

Bivariate correlations between the predictors (alcohol, response inhibition, past sexual assault perpetration), each arousal variable at all time points, and sexual assault perpetration intentions were computed (Tables 3.1 through 3.6). Unstandardized coefficients for all unconditional growth models are below (see Tables 4.1 through 4.6; for examples of

visualization of growth, see Figures 1-3). The slope and quadratic term were significant in all models, indicating a non-zero growth in arousal metrics across time and non-zero growth in the rate of acceleration.

Alcohol Intoxication and Response inhibition on Emotional Arousal

Conditional growth models are presented below (see Tables 5.1 through 5.6). Summary of the results can also be found in Table 2. The hypotheses of Aim 1 were not supported (H1-H5). In contrast to what was predicted regarding the effect of alcohol on happiness arousal, alcohol was negatively associated with happiness [B = -.27 (95% CI: -.57, -.018), such that those in the alcohol condition showed a .27 decrease in slope over time in comparison to sober men. Alcohol was not associated with the intercept, slope, or quadratic factor in any of the other model of emotion. Regarding the exploratory question regarding the effect of alcohol intoxication on emotional trajectories of physiological sexual arousal, no significant effect was found.

The exploratory research questions within Aim 2 were not supported. Neither response inhibition nor the interaction between alcohol and response inhibition was associated with the intercept, slope, or quadratic factor of any of the emotional arousal metrics.

Alcohol, Response Inhibition, and Emotional Trajectories on Sexual Assault Intentions

Results of the models examining the effect of emotional arousal trajectories on sexual assault perpetration intentions are presented below (Tables 6.1 through 6.6). Hypothesis 7 was not supported; while there was a significant association between the slope and quadratic terms of happiness on sexual aggression intentions, it was in the opposite of the hypothesized direction. The full model contained alcohol group, response inhibition, ASA severity, and the interaction of alcohol group and response inhibition as predictors of the slope, intercept, and quadratic term of happiness. This model also modeled alcohol group, response inhibition, ASA severity,

interaction of alcohol group and response inhibition, and the intercept, slope, and quadratic factor of happiness as predictors of sexual assault perpetration. This model demonstrated acceptable model fit although the BIC score indicated a poorer fitting model in comparison to the model where the slope, intercept, and quadratic factor were not modeled as predictors of sexual assault perpetration. This is expected given that this model contained more measured variables and hypothesized constructs and BIC penalizes less parsimonious models

The full model explained 25.5% of the variance of sexual assault perpetration intentions (R^2 = .255; p < .05). The slope of happiness significantly predicted sexual assault intentions [B = .81, (95% CI: .05, 1.57)] such that a one unit increase in the rate of change of happiness was associated with a .81 increase in intentions to perpetrate sexual assault. The quadratic term was also significantly, positively associated with intentions to perpetrate sexual assault [B = .84, (95% CI: .11, 1.57)]. These results suggest that a greater rate of change over time and a greater rate of acceleration in happiness over time were associated with greater intentions to perpetrate sexual assault in comparison to those whose rate and accelerations of change were lower. There was also a significant correlation between the slope and quadratic term (-.932, p < 0.01), suggesting that those who have higher rates of growth over time have slower rates of acceleration across time. That said, the slope and quadratic terms are almost perfectly correlated, suggesting significant multicollinearity. While these models do not hypothesize individual variability, we would anticipate that individuals show considerable variability from the group trajectory over time, resulting in a classic "fan shape" of change.

Hypothesis 8 was partially supported and a similar pattern of results emerged. The fit indices suggested acceptable model fit. The full model explained 20.5% of the variance of sexual assault perpetration intentions (R^2 = .205; p < .05). The slope of subjective sexual arousal

significantly predicted sexual assault intentions [B = 1.06, (95% CI: .10, 2.04)], and the quadratic term was also significantly, positively associated with intentions to perpetrate sexual assault [B = 1.25, (95% CI: .07, 2.35)]. This suggests a similar process as happiness whereby the rate of change and rate of acceleration of subjective sexual arousal is positively associated with intentions to perpetrate sexual assault.

Hypotheses 9 and 10 were not supported. The intercept, slope, and quadratic factor of anger and physiological sexual arousal did not predict intentions to perpetrate sexual assault. It is noteworthy that the fit indices for these models were not within the generally utilized ranges. The results of the exploratory question #6 also demonstrated that the intercept, slope, and quadratic factor of anxiety and sympathetic arousal were not associated with perpetration of sexual assault. The exploratory questions within Aim 3 revealed both small effect sizes and non-significant associations between alcohol, response inhibition, and the emotional trajectories of anxiety and sympathetic arousal on intentions to perpetrate sexual assault.

Discussion

This study sought to examine acute intoxication, response inhibition, and trajectories of emotional arousal as predictors of sexual assault perpetration. A secondary purpose of the study was to expand the existing literature on the effects of acute intoxication on emotions by examining the role of acute intoxication on trajectories of emotional arousal rather than emotions at a single time point. Within models examining six metrics of emotional arousal, the rate and acceleration of change of happiness and subjective sexual arousal over time were associated with intentions to perpetrate sexual assault. In contrast to the hypotheses, across the six final models including sexual aggression intentions, alcohol intoxication did not predict the intercept or rate of change or acceleration across any metrics of emotional arousal. Notably, alcohol was negatively

associated with the slope of happiness in the conditional growth model without sexual aggression intentions. There was an overall pattern of results to suggest that the trajectory of growth in physiological measures of emotional arousal were not associated with sexual assault perpetration. Consistent with prior research (Abbey & McAuslan, 2004; Thompson, Kingree, Zinzow, & Swartout, 2015), past perpetration of sexual assault was a consistent predictor of intentions to perpetrate in the moment.

Interpretation of the above results suggests that the rates of change and rate of acceleration of happiness and subjective sexual arousal appear to be important contributors to self-reported intentions to perpetration of sexual aggression. Prior research has primarily examined these associations by measuring subjective sexual arousal and happiness at the same time point as sexual assault perpetration. The current results suggest that while subjective sexual arousal and happiness were positively correlated with sexual assault perpetration intentions at Time 5, the rate at which one's arousal changes and the acceleration of that rate over the course of the sexual encounter, including the woman's non-consent cues, contributes to later intentions to perpetrate sexual assault. Extensive research has supported subjective sexual arousal as a contributor to sexual assault perpetration (Bouffard, 2002; Bouffard & Miller, 2014; Davis et al., 2006; Loewenstein et al., 1997; Mosher & Anderson, 1986; Porter & Critelli, 1994), while the effect of happiness on sexual assault perpetration is less studied and found to be indirectly associated with sexual assault perpetration intentions (Lopez et al., 2007; Norris et al., 2002). While future research is needed, these results are consistent with prior findings that subjective sexual arousal and positive emotions are associated with misperception of sexual interest and perceptions that one's sexual partner is enjoying herself (Bouffard & Miller, 2014; Norris et al., 2002). It is possible that even in the presence of clear, verbal non-consent cues, men are more

likely to overestimate their partner's enjoyment in the context of high subjective sexual arousal and happiness in comparison to when those emotions are less intense. It is also possible in the context of elevated happiness and subjective sexual arousal, sexually aggressive men are more focused on responding to their own desires rather than to the well-being of their partner (Ariely & Loewenstein, 2006). These results are novel; thus, interpretation of these findings is speculative and requires replication.

Response inhibition was not associated with trajectories of emotional arousal, nor was it associated with sexual assault perpetration. One of the prevailing theories explaining the role of emotional arousal on sexual assault posits that sexually non-aggressive men inhibit their emotional arousal when confronted with non-consent cues while sexually aggressive men display no such inhibition. The results of this study suggest that response inhibition as measured by this behavioral task in the context of a sexual assault analogue may not demonstrate considerable influence on sexual assault perpetration. Executive functioning is implicated in impulsive and violent behaviors (for review, Carbia, Corral, Doallo, Caamano-Isorna, 2018; Day et al., 2015), and acute intoxication influences executive functioning (Guillot, Fanning, Bullock, McCloskey, & Berman, 2010; Stock, Schulz, Lenhardt, Blaszkewicz, & Beste, 2016). Response inhibition measured when intoxicated may have yielded a different pattern of results, and future study in the role of executive functioning on sexual assault perpetration in the context of acute intoxication is needed.

Given the consistent findings that anger arousal is associated with sexual assault perpetration, it is surprising that the trajectory of anger was not associated with sexual assault perpetration. The mean scores of anger on all time points were relatively low, particularly prior to the introduction of the non-consent cues. A piecewise model was fit for the data to examine

how changes in trajectory may affect sexual assault perpetration; however, this model did not converge. Future research should continue to examine changes in trajectories of anger in future research. It is also possible that growth in anger across a sexual assault scenario is not an impelling cue to sexual assault, but rather that immediate, reactive anger prompts sexually aggressive behavior in contrast to a gradual build-up of anger arousal (Dillard & Shen, 2005).

Strengths, Limitations, and Future Directions

The present study had both strengths and limitations. Given the dynamic nature of emotions in complex contexts, the application of a LGM framework to examine trajectories of emotions is novel and enables a more nuanced and theoretically-consistent method to observe emotional processes. It is noteworthy that several of our models did not meet all model fit index guidelines. However, rather than rigid rules, model fit indices are guidelines, and experts caution against rejecting or guiding model specification purely based on fit indices (Barrett, 2007). Given the novel application of the methodology in this investigation and the pattern of results suggesting some degree of poor model fit, replication is vital. Future studies should also consider the examination of emotional arousal trajectories within a single model. Despite an alpha correction, it is possible that the significant results are a spurious finding due to the number of models tested. Further, arousal of a single emotion does not occur in the absence of another emotion's trajectory. A recent investigation by Lalumière and colleagues found that watching videos containing sexual violence was associated with a decrease in genital response; however, this response was not as prominent for men experiencing a happy or sad mood, which was induced in the lab (Lalumière et al., 2017). Future research should consider how to examine these emotional processes in tandem, rather than orthogonally.

The utilization of an alcohol administration paradigm with a sexual assault scenario also offers a unique opportunity to examine in the moment emotional processes as prompted by a sexual assault scenario rather than through a mood induction. That said, the use of psychophysiological measures, drinking in a laboratory context, and use of a sexual assault scenario limit the external validity and generalization of the study. To test the inhibition hypothesis, a behavioral measure of inhibition was included in the study; however, there are ongoing debates regarding whether performance on such tasks corresponds to inhibition (Rey-Mermet et al., 2018)[i]. Further, the effects of acute intoxication on response inhibition as measured through behavioral tasks remains unclear. In a recent study examining the effects of acute intoxication on three tasks of inhibitory control, alcohol varied in its association with task-performance based on the task examined (Bartholow et al., 2018). The authors suggest that the effects of alcohol on inhibition may not be uniform, and those examining the construct validity of inhibition recommend caution in interpretation of the behavioral tasks. Future research should consider measurement of executive function in future studies and carefully attend to the ongoing research regarding measures of inhibition.

In addition to the above methodological limitations, the study sample was comprised of primarily white, educated men who reported moderate to heavy non-problem drinking. Future studies should consider how these associations generalize to abstainers or men with problem drinking. It is a strength of this study that it recruited a community-based sample, and future research should examine these associations in adjudicated samples.

Clinical Implications

The results of the current study provide preliminary evidence that the unfolding of emotional trajectories is associated with perpetration of sexual assault. Interventions may

consider incorporating psychoeducation that focuses specifically on the dynamic aspects of emotions and the degree to which they change based upon the environment. Clinicians and intervention developers may also be more aware of the research investigating anger as a precipitant to sexual assault. They may wish to expand any existing curriculum to include psychoeducation regarding the effect of happiness and subjective sexual arousal on perception of consent cues. Such education might emphasize that one's own happiness and subjective sexual arousal do not imply one's partner is also enjoying the sexual encounter. Preliminary analyses from a related study suggest that emotion regulation skills may regulate subjective sexual arousal (Davis et al., 2018). Future research should continue to examine whether emotion regulation can effectively regulate sexual assault-related emotions and mitigate the likelihood of perpetrating.

Study Two: The Roles of Acute Intoxication, Emotional Arousal, and Emotion Regulation on Men's Sexual Aggression Perpetration Intentions

Abstract

Prior studies have found emotional arousal in the context of acute intoxication is associated with sexual assault perpetration intentions. In the moment, state-level emotions, such as anger and subjective sexual arousal, have been associated with intentions to perpetrate sexual assault (Davis, 2010, Thomas & Gorzalka, 2012). Perpetrators of sexual assault also demonstrate higher levels of trait-level anger than non-perpetrators (Vass & Gold, 1995). Far less research has examined the role of emotion regulation on sexual assault, despite research that emotional arousal and emotion regulation are complementary processes. This study used an alcohol administration paradigm and examined the trait- and state- effects of emotional arousal and emotion regulation on the association between alcohol and self-reported likelihood to perpetrate sexual assault against a casual, female, sexual partner. Single, moderate- to heavy-drinking men (N = 101) were randomly assigned to a drink condition [control or alcohol (BAC .10 gm%)] and then projected themselves into a sexual assault scenario. Men's emotional arousal and emotion regulation during the sexual assault scenario were assessed via self-report and three biomarkers: respiratory sinus arrhythmia, skin conductance level, and penile plethysmography. Men then reported their intentions to perpetrate various sexual assault behaviors against the hypothetical female partner. Structural Equation Modeling with moderated mediation analyses with maximum likelihood estimation was conducted. Results suggest an emotion regulation pathway of sexual assault perpetration whereby trait emotion regulation was indirectly associated with sexual assault perpetration via state emotion regulation. Contrasting prior research, intoxicated men did not differ in their intentions to perpetrate sexual assault. These results provide preliminary

evidence of the role of emotion regulation on men's sexual assault perpetration intentions, and additional research and replication is recommended.

Study Two: The Roles of Acute Intoxication, Emotional Arousal, and Emotion Regulation on Men's Sexual Aggression Perpetration Intentions

Despite ongoing research and increased attention, alcohol-involved sexual assault has remained widespread. The apparent failure to effectively mitigate the problem of sexual assault indicates an insufficient scientific understanding of why men perpetrate alcohol-related sexual aggression. Sexual aggression includes sexual coercion, unwanted sexual contact, attempted rape, and forced and incapacitated rape (Abbey et al., 2011). Despite an increase in sexual aggression research in the last fifteen years (DeGue, 2014), interventions targeting perpetrators of alcohol-related sexual aggression are lacking (DeGue, 2014). Because there can be no victimization without perpetration, elucidating potential mechanisms and moderators of alcohol-related sexual aggression to inform intervention is vital.

Sexual aggression refers to a continuum of nonconsensual sexual experiences in which one person engages in a behavior against another's will (Abbey et al., 2011). It ranges from sexual coercion to completed rape (Abbey et al., 2011; Stoner & George, 2000). While women perpetrate sexual aggression against men (Buday & Peterson, 2015; for a review, see Fisher & Pina, 2013), the majority of sexual aggression is perpetrated by men against women (Black et al., 2014). As many as 26% of female college students experience drug- or alcohol-facilitated rape by their second year of college (Carey, Durney, Shepardson, & Carey, 2015). As many as 52.5% of college and community-sampled men report committing an act of sexual aggression since the age of 14 (Davis, Schraufnagel, George, & Norris, 2008).

The consequences of sexual aggression attest to its societal significance. Sexual assault predicts health outcomes (Pegram & Abbey, 2016), such as autoimmune and gastrointestinal disorders in victims (CDC, 2010). At least 30% of sexual assault survivors develop posttraumatic

stress disorder (PTSD) and major depression (Kilpatrick, 2000) with the severity of sexual assault positively predicting PTSD and depressive symptoms (Pegram & Abbey, 2016). Women with sexual assault histories are at increased risk for suicidal ideation (Bryan, McNaughton-Cassill, Osman, & Hernandez, 2013; Chang et al., 2015), and rape victims are 13 times more likely to attempt suicide than non-crime victims (Kilpatrick, 2000). Women with sexual assault histories are 13 times more likely to have two or more alcohol problems than non-crime victims (Kilpatrick, 2000). Sexual assault predicts problems in academic and occupational functioning, interpersonal relationships, and parenting (Testa et al., 2011). It is estimated that the annual economic burden associated with rape and attempted rape is over $900 billion (Waechter & Ma, 2015).

Alcohol intoxication as a Sexual Assault Predictor

Alcohol is consistently associated with increased intent to engage in sexual assault perpetration (for a review, see Abbey et al., 2002). Alcohol administration paradigms demonstrate that intoxicated participants report greater sexual assault perpetration intentions than sober participants (e.g., Davis et al., 2014b; Norris et al., 1999). Alcohol myopia theory (AMT) posits that in the context of acute alcohol intoxication, an individual's attention narrows and attends to impelling or "go" cues that are more salient and immediate rather than distant inhibitory "no go" cues (Steele & Josephs, 1990). Studies utilizing an experimental design have identified the attentional focus on impelling cues (e.g., women's clothing) rather than inhibitory cues (e.g., expressed disinterest) are associated with intentions to perpetrate when intoxicated (Farris, Treat, & Viken, 2010). Ongoing research has found emotional arousal to be associated with sexual assault and studies examining emotional arousal in the context of acute intoxication find support for emotional arousal as an impelling cue for sexual assault (Davis, 2010).

Emotional Arousal

Emotional arousal is the magnitude and duration of emotions in response to the environment. An important distinction is between trait and state emotional processes. State emotional arousal refers to in-the-moment emotional arousal in response to environmental demand (e.g., threat; Spielberger, 1999). Trait emotional arousal refers to a chronic or stable arousal level (e.g., high reactivity; Spielberger, 1999). Some research has found emotional arousal is associated with maladaptive functioning and aggression when it manifests as one of two opposing profiles (Mendes, 2009; Porges, 2007): Individuals with extremely low emotional arousal are considered to have a hypo-aroused profile. Such profiles are characterized by fearlessness, callous-unemotional responsivity, and aggression (El-Sheikh et al., 2009; Demaree & Everhart, 2004). Individuals with extremely high emotional arousal are considered to have a hyper-aroused profile. Such profiles are characterized by dysregulated, strong responses of negative affect to a stressor or conflict (El-Sheikh et al., 2009).

Physiological Metrics of Emotional Arousal. State and trait emotional arousal may be measured through self-report or through psychophysiological measures. Non-invasive psychophysiological measures of the autonomic nervous system capture biological metrics of both state and trait emotional arousal (Stevenson et al., 2010; Demaree & Everhart, 2004). Emotional arousal is measured through the sympathetic nervous system (SNS), typically through electrodermal activity (e.g., skin conductance levels; Stevenson et al., 2010). Trait emotional arousal is measured when the individual is at rest. State emotional arousal is measured when responding to an environmental demand (El-Sheikh & Erath, 2011). Sexual arousal—both subjective and objective (i.e., genital)—has been characterized as a physiological and behavioral

response to the environment and can be considered a component of state emotional arousal (Demaree, Robinson, Everhart, & Schmeichel, 2004).

Emotional Arousal and Sexual Aggression. The mere presence of certain emotions (e.g. anger) is associated with perpetration of sexual aggression in non-adjudicated samples (Bouffard, 2002; Davis, 2010; Carvalho & Nobre, 2012; LeBreton et al., 2013). Anger is one emotion consistently associated with sexual assault perpetration. Trait anger is indirectly associated with sexual assault perpetration through its influence on hostility toward women (LeBreton et al., 2013). Men with histories of perpetrating rape and sexual coercion also report higher trait anger than men without such histories (Vass & Gold, 1995). Far more research has examined state anger as a proximal contributor to sexual assault perpetration. Men who perceive themselves to be rejected or provoked and response with anger-related emotions are more likely to report sexually aggressive intentions than men who do not respond with anger (Mescher & Rudman, 2014; Thomas & Gorzalka, 2012). A second emotion associated with sexual aggression is subjective sexual arousal. Capturing one's internal assessment of their sexual arousal, sexually aggressive men demonstrate greater subjective sexual arousal to stimuli depicting both consensual and non-consensual sexual activity, and in-the-moment subjective sexual arousal is associated with intentions to behave in a sexually aggressive way (Bernat et al., 1999; Bouffard, 2002; Bouffard & Miller, 2014; Loewenstein et al., 1997; Seto et al., 2012).

Far less is known about physiological metrics of emotional arousal and sexually aggressive behavior. Preliminary data indicates hypo- and hyper-aroused profiles of maladaptive physiological emotional arousal have been linked with sexual aggression. Men with high emotional arousal – suggestive of the hyperarousal profile – displayed more sexually aggressive behavior in a laboratory analogue than men without high emotional arousal (Spokes et al., 2014).

Men with low emotional arousal –suggestive of the hypoarousal profile – were more likely to have perpetrated sexual aggression compared to men with typical emotional arousal (Peterson et al., 2014). These two studies suggest that both profiles of maladaptive emotional arousal may be associated with sexual aggression. Yet these studies only examined the profiles of maladaptive emotional arousal. It is unclear whether and in which contexts men with typical emotional arousal perpetrate sexual aggression. Also, no study has examined both emotional arousal and emotion regulation, despite evidence that they operate concurrently.

Emotion Regulation

The capacity to tolerate and regulate emotional arousal may be a vital contributor to sexual aggression intentions (Shorey et al., 2011). Emotion regulation is the process through which individuals influence which emotions they have, when they have them, and how they experience and express them in response to environmental demands (Gross, 1998a). This project focuses on the use of emotion regulation strategies to modify the type of emotions and the magnitude of emotional arousal (Gross, 1998a). Some emotion regulation strategies are considered generally maladaptive and place individuals at risk for negative behavioral outcomes (Aldao, Nolen-Hoeksema, & Schweizer, 2010; Gratz & Roemer, 2004; Gross & John, 2003; Hilt, Aldao, & Fischer, 2015; Nolen-Hoeksema, Wisco, & Lyubomirsky, 2008; Spielberger, 1999). State emotion regulation refers to the in-the-moment and specific strategies used to modulate the emotional arousal (Lavender, Tull, DiLillo, Messman-Moore, & Gratz, 2015; Spielberger, 1999). Trait emotion regulation refers to global tendencies to use certain emotion regulation strategies (Gratz & Roemer, 2004; Spielberger, 1999). Some state and trait emotion regulation strategies are considered generally maladaptive and place individuals at risk for short- and long-term maladaptive behavioral outcomes. Individuals with maladaptive trait emotion regulation

experience long-term deficits in functioning. When these individuals use maladaptive state emotion regulation strategies in-the-moment, they experience negative behavioral and physiological outcomes (Aldao et al., 2010; Hertz, McLaughlin, & Hatzenbuehler, 2012). Individuals with adaptive trait emotion regulation experience long-term adaptive functioning. When these individuals use positive state emotion regulation strategies in-the-moment, they experience positive outcomes (Germain & Kangas, 2014; Gratz, Bornovalova, Delany-Brumsey, Bettina, & Lejuez, 2007).

Physiological Metrics of Emotion Regulation. Similar to emotional arousal, emotion regulation may be measured through self-report or through psychophysiological measures (Stevenson et al., 2010). Emotion regulation is measured through the parasympathetic nervous system (PNS), a division of the ANS, which regulates the activation of the SNS. Within the PNS, the vagus nerve modulates and inhibits activation of the SNS (Porges, 2007). Emotion regulation is component of multiple regulatory functions that the vagus nerve influences (Grossman & Taylor, 2007). Respiratory sinus arrhythmia (RSA) is an index of activation of the vagus nerve, or what is referred to as vagal tone. RSA, or high-frequency heart-rate variability, reflects an interplay of the respiratory and cardiovascular systems and is measured through heart rate in synchrony with respiration (Demaree et al., 2004; Grossman & Taylor, 2007; McLaughlin, Alves, & Sheridan, 2014). Trait emotion regulation may be assessed through RSA measured under conditions during which metabolic activity and autonomic tone are constant (Grossman & Taylor, 2007). Between-person differences in RSA measured at rest indicate that deficits in vagal tone are associated with psychopathology marked by emotion regulation difficulties (Beauchaine et al., 2007); for example, deficits in vagal tone are associated with emotional liability among aggressive children with oppositional defiant disorder or conduct disorder (Beauchaine et al.,

2007). State emotion regulation may be captured through RSA that is measured in response to an environmental demand (e.g., RSA reactivity; Beauchaine, 2001; Demaree et al., 2004). Preliminary investigations of RSA reactivity as a measure of state ER indicate excessive withdrawal in vagal tone when meeting an environmental demand is associated with emotional lability (Beauchaine, 2001).

Emotion Regulation and Sexual Aggression. Survey research has found that trait measures of emotion regulation are associated with sexual assault perpetration against an intimate partner (Shorey et al., 2011). Individuals who reported difficulty accessing ER strategies, difficulties with goal-directed behavior, and impulse-control problems were more likely to perpetrate sexual violence than those without ER difficulties (Shorey et al., 2011). Recent work has found attachment styles marked by emotion dysregulation are also associated with a history of sexual aggression perpetration (Barbaro, Parkhill, & Nguyen, 2016). Men with a history of sexual aggression perpetration also report difficulties regulating emotions in response to negative feedback in a lab context (Pickett, Parkhill, & Kirwan, 2016) and act more aggressively in the lab when stressed than men without emotion regulation difficulties (Pickett et al., 2016). Physical aggression research also provides a foundation for sexual aggression research because physical aggression often covaries with sexual aggression (Wilson, Mouilso, Gentile, Calhoun, & Zeichner, 2015). Physically aggressive individuals use maladaptive emotion regulation strategies when they are angry, sad, or depressed (Stappenbeck & Fromme, 2014). A longitudinal study of intimate partner violence also found negative affect was only associated with intimate violence perpetration when the individuals had emotion regulation deficits (Borders & Giancola, 2011). Overall, more research is needed to test novel hypotheses of

emotional arousal and emotion regulation as predictors of sexual aggression but should also include a powerful predictor of sexual aggression: alcohol intoxication.

Alcohol Intoxication, Emotional Arousal and Emotion Regulation

Limited research has investigated the relations among alcohol intoxication, emotional arousal, and emotion regulation. Compared to sober participants, intoxicated participants are more likely to report feelings of emotional arousal (Stappenbeck & Fromme, 2014) and subjective sexual arousal (e.g., see reviews by Stoner & George, 2000). It is likely that alcohol myopia theory plays an important role; the myopic effects may focus an individual on cues of emotional arousal, leading them to display externalizing behaviors (Giancola, Josephs, Parrott, & Duke, 2010; Moss & Albery, 2009). Indeed, a study by Davis (2010) found acute intoxication, alcohol expectancies, and anger-related emotions (comprised of a composite variable consisting of subjective sexual arousal, anger, and impulsivity) to be associated with intentions to perpetrate sexually aggressive behaviors. Intoxicated men with higher expectations that they are sexually aggressive when intoxicated reported greater intentions to behave sexually aggressively than sober men (Davis, 2010). This association was mediated by men's anger-related emotional arousal (Davis, 2010). While these studies provide evidence that emotional arousal is an impelling cue for sexual assault perpetration, none of the studies described above examined how trait emotional arousal is associated with in the moment emotional arousal (e.g., state arousal) in the context of alcohol intoxication. Men with higher levels of emotional arousal may experience their arousal as more salient in general, compared to men with lower emotional arousal. Thus, in the context of acute intoxication, these men may experience a greater increase in emotional arousal, in comparison to men with lower emotional arousal, because they myopically attend to

their emotional arousal cues. None of these studies examined how emotional arousal may interact with emotion regulatory processes in the context of acute intoxication.

Emotion regulation strategies rely on higher order cognitive processes that are theoretically impeded by alcohol although limited research has examined this (Curtin, & Fairchild, 2003). Empirical research has found that when intoxicated, individuals with extremely low emotional arousal are more likely to utilize maladaptive emotion regulation strategies than when sober (Borders & Giancola, 2011). Again drawing from physical aggression, intoxicated individuals who frequently utilize maladaptive emotion regulation strategies were more likely to display aggression toward a partner when provoked than those who were sober (Maldonado, DiLillo, & Hoffman, 2015; Shorey, McNulty, Moore, & Stuart, 2015). The Maldonado study found that when intoxicated individuals were told to use an adaptive emotion regulation strategy, they were less likely to be aggressive against a partner when angry that individuals who did not use a strategy (Maldonado et al., 2015). It is possible that men's use of emotion regulation strategies in the context of acute intoxication and emotional arousal may be protective against engaging in sexually coercive behavior.

The Present Study

The present study utilized an alcohol administration paradigm with a sexual assault scenario in 101 moderate-to-heavy drinking, heterosexual men from the community to test the proximal and distal contributions of state emotional arousal, state emotion regulation, trait emotional arousal, trait emotion regulation to post-drinking sexual assault perpetration (see Figure 4). We sought a comprehensive examination of emotional arousal as a predictor of sexual aggression intentions; thus, emotional arousal was examined through physiological and self-report measures. The empirical literature has demonstrated anger and subjective sexual arousal to

be two consistent predictors of sexual aggression intentions; thus, self-report emotional arousal was operationalized as anger and subjective sexual arousal. We proposed the following study aims and hypotheses:

Aim 1: (see Figure 4) To examine the role of alcohol intoxication on sexual aggression intentions. Hypothesis 1: Replicating prior findings, it was hypothesized that intoxicated men would report more sexual aggression intentions than men in the control condition. **Aim 2:** To investigate the role of alcohol intoxication on emotional arousal and emotion regulation. Hypothesis 2a: Trait emotional arousal would positively predict state emotional arousal. Hypothesis 2b: With the myopic effects of alcohol focusing attention on salient cues, it was hypothesized that this relationship would be moderated by alcohol condition, such that for men who receive alcohol, trait emotional arousal would be more associated with state emotional arousal than for men in the control condition. Hypothesis 2c (exploratory): For men in the alcohol condition, emotional arousal consistent with a hypo- or hyper- trait profile would report greater state emotional arousal than men in the control condition. Hypothesis 3a: Trait emotion regulation would positively predict state emotion regulation. Hypothesis 3b: This relationship would be moderated by alcohol condition, such that for men who receive alcohol, greater difficulties with trait emotion regulation would be associated with greater difficulties with state emotion regulation relative to men in the control condition. **Aim 3:** To test a moderated mediation model in which trait emotional arousal and emotion regulation were indirectly associated with sexual assault perpetration intentions via state emotional arousal and state emotion regulation, which would mediate the effects of alcohol on sexual aggression; Hypothesis 4a: State emotional arousal would mediate the trait emotional arousal – sexual aggression association; trait emotional arousal would be positively associated state emotional arousal which

would in turn be positively associated with sexual assault perpetration intentions. Hypothesis 4b: State emotion regulation would mediate the trait emotion regulation – sexual aggression association; difficulties with trait emotion regulation would be positively associated with difficulties in state emotion regulation which would be positively associated with intentions to perpetrate sexual assault. Hypothesis 4c (exploratory): State emotional arousal would mediate the association between emotional arousal consistent with a hypo- and hyper- trait profile and sexual aggression perpetration intentions. Hypothesis 5a: Alcohol condition would moderate the trait-state emotional arousal to sexual aggression association; for intoxicated men, the indirect association of trait emotional arousal on sexual aggression perpetration intentions via state emotional arousal would be stronger relative to men in the control group. Hypothesis 5b: Alcohol condition would moderate the trait-state emotion regulation to sexual aggression relationship; for intoxicated men, the indirect association between trait emotion regulation deficits and sexual aggression intentions via state emotion regulation would be stronger than for men in the control condition. Hypothesis 5c (exploratory): For intoxicated men with either hypo- or hyper-trait emotional arousal profiles, the association between state emotional arousal and sexual aggression intentions would be stronger relative to men in the control condition.

Method

Participants & Recruitment

One hundred and one cisgender men were recruited from the community through print and electronic advertisements placed in bars, nightclubs, local publications (e.g., The Stranger), and online forums (e.g., Craigslist, Reddit) and social media (e.g., Instagram, Facebook). The study also emailed advertisements for the study via a list of emails for male students and staff, ages 21 to 30, obtained from the Registrar's Office of a large Pacific Northwest university. All

study advertisements included a telephone number to contact for screening as well as a link to a website with more detailed information about the study. Interested men were also able to complete the screening through an online survey. Sexual aggression is highly prevalent on college campuses, so we advertised on college campuses through online forums specific to college students. Participant requirements included: 1) being between the ages of 21 and 30 at the time of participation; 2) being interested in sexual activity with women; 3) typically consuming between five and 30 drinks per week; 4) having no history of alcohol problems based on the Brief Michigan Alcohol Screening Test (bMAST; Connor et al., 2007) and 5) not having a medical condition or taking medications which contraindicated alcohol consumption. One episode of heavy drinking was included to ensure a participant did not receive alcohol in the lab that would induce a higher BrAC than he had reached with self-administration (National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2005). So participants must also have previously consumed at least five alcoholic drinks in two hours in the past three months. The focus of this research was heterosexual sexual aggression. Only men who were interested in having sex with women were eligible. Men who reported sex with men were eligible for participation if they were also interested in having sex with women. Telephone and online screeners also confirmed gender identity was consistent with natal sex. Similar criteria used in a previous study by Drs. George and Davis yielded a sample in which 50% of men reported a sexual aggression perpetration history (Davis, Danube, Stappenbeck, & George, 2015).

Procedure

The University of Washington's Institutional Review Board Human Subjects Division and the NIAAA approved all procedures. Participants were compensated $15 per hour for a maximum payment of $100. Due to the large number of late cancellations and no shows, a bonus

was instituted in the fourth month of data collection whereby men who attended the first appointment they scheduled were provided with a $10 bonus (for a maximum payment of $110).

Study participation began with either an online web screening survey or a 15-30 minute telephone screening in which eligibility criteria were confirmed. If eligible, participants were invited to the laboratory session. Consistent with alcohol administration procedures, participants were instructed to abstain from any alcohol for 24 hours prior to the study, fast for 4 hours prior to the appointment time, and not drive to the lab. When a participant arrived, he was greeted by a male undergraduate experiment who confirmed the participant's photo identification, verified that participants followed the pre-session procedures, and obtained the participant's confirmation that he would remain in the laboratory until BrAC returned to below .03%gm should he receive alcohol. The experiment then reviewed the study procedures and obtained informed consent. Following informed consent, the participant was weighed to determine the appropriate amount of beverage to administer.

Following the initial procedures, a baseline physiological assessment was conducted in which respiratory sinus arrhythmia (results presented below) and skin conductance level were assessed. The male experimenter instructed the participant to place electrodes on his own clavicle and torso. The participant was then instructed to apply a respirator belt around their upper chest. The experimenter then applied a thin layer of conductance cream on the film of two Ag/AgCl finger sensors and placed those sensors on the adjacent fingers of the participants' non-dominant hand (Mendes, 2009). Following acquisition of physiological measures, the participant completed background measures on a computer to which they were oriented by the experimenter.

Following background measures, participants were given a five minute break and then completed the response inhibition task. Following completion of the task, participants were

randomly assigned to either an alcohol condition [(target peak BrAC =.10 gm%) or to a control (non-alcoholic)] condition based on sexual aggression perpetration history (defined as history of forced sexual contact, sexual coercion, attempted rape, rape) such that participants with and without a history were evenly distributed across the two beverage conditions. The experimenter remained blind to participants' sexual aggression perpetration history. Following beverage condition assignment, participants were given verbal instructions to practice placing the penile plethysmography strain gauge to ensure proper placement. The experimenter left the room, and participants partially disrobed from the waist down and placed the strain gauge mid-shaft on the penis. Written instructions were also provided. After a signal was detected, participants were instructed to remove the device and dress.

Beverage administration. Participants were brought three cups of equal liquid consisting of either vodka and cranberry juice or cranberry juice and water. Total volume of liquid consumed was determined by body weight. Participants were given 9 minutes to consume the beverages. The participant was then instructed to rinse his mouth with water several times to ensure accurate BrAC assessment. Participants were Breathalyzed every four minutes until criterion was reached (alcohol group = .07%gm). A yoking procedure was employed in which each control participant was paired with an alcohol dose participant and received the same amount of liquid relative to body weight and an equal number of Breathalyzer checks to control for possible time effects (Davis, 2010).

After reaching criterion BrAC, participants reapplied the psychophysiological equipment. Participants watched a two minute neutral video, and then BrAC was assessed one final time before participants began the sexual assault scenario. Emotional arousal was measured continuously throughout the scenario, and digital markers were programmed into the scenario

such that markers were placed in the physiological output to indicate participants' progress through the story.

Sexual assault scenario. Sexual assault perpetration was assessed via self-reported behavioral intention in which participants read a detailed, eroticized scenario describing a sexual assault and reported their intentions to perpetrate sexual assault. Such sexual assault analogs possess internal and external validity (for review, Davis et al., 2014b). To create the scenario, past sexual assault scenarios utilized by Drs. Davis, Norris, and George's labs were reviewed and a similar scenario was created. To increase realism and credibility of the scenario, a male graduate student conducted qualitative interviews with men sampled from the target population in Spring and Summer 2017. The interviews consisted of questions regarding their casual sexual relationships and perceptions of consent in alcohol-involved, casual sexual encounters with women (Neilson et al., in prep). Data from these interviews was reviewed and details were added to the scenario. To increase the realism of the scenario and increase the likelihood that it would elicit sexual arousal from the participants, the story contained erotic details regarding the sexual encounter. The story was also written in the second person to facilitate the participant projecting himself into the story (Davis et al., 2014b).

The final scenario was roughly 1,600 words and written at a 5th grade level. The scenario depicted a sexual encounter between the participant and a hypothetical woman ("Michelle") with whom the participant was told he had already had intercourse with at a prior date. The man in the story met up with Michelle at a party, and the two returned to Michelle's house. They began to engage in consensual kissing and fondling and progressed to nudity. Approximately midway through the story, Michelle gave an indirect cue of non-consent to further sexual activity in which she removed her hand from the man's genitals. The scenario progressed, and Michelle

indicated that she did not want to have sex, but would like to continue kissing and fondling. The scenario progresses with two additional verbal statements of increasing intensity from Michelle that she did not want to have sex. The man in the scenario then restrained her. At this point the scenario ended, and no actual rape was portrayed. Participants indicated their emotional arousal and their intentions to perpetrate different acts of sexual violence and state emotion regulation. Participants also answered questions to assess the degree to which they found the story credible and realistic (1 = *Not at all* to 7 = *Extremely;* Neilson, Eakins, Davis, Norris, & George, 2016). Men indicated that they found the story depicted a realistic scenario (M = 5.79; SD = 1.4), and they found it moderately easy to project themselves into the scenario (M = 4.80; SD = 1.8). Men reported a slightly lower score for the degree to which they found the story arousing (M = 3.82, SD = 2.0). Men in the control condition were then debriefed, paid, and provided a bus voucher. Men in the alcohol condition remained until their BrAC was below .03% at which point they were debriefed, paid, and provided a bus voucher.

Measures

Demographics. To describe the sample, we gathered demographic information on age, race/ethnicity, employment, and education status. Because eligibility criteria did not stipulate sexual orientation (e.g., participants had to be interested in sex with women), we collected demographic information on sexual orientation.

Predictors (Self-Report): *Trait emotional arousal (Trait Anger):* Drawing on the existing literature indicating anger is associated with sexual aggression perpetration (Davis, 2010), trait anger was assessed through the Trait Anger Temperament (α = .88; 4-items) and Trait Anger Reactivity to Negative Situations [α = .71; 4-items; (Spielberger, 1999)]. Participants rated the extent to which they believed different statements about how they

"generally feel" apply to them ((1 = *Almost never* to 4 = *Almost always; e.g., "I generally fly off the handle."*). The State-Trait Anger Expression is a self-reported measure of the experience and expression of anger with demonstrated validity and reliability.

Trait emotion regulation: The [Trait] Difficulties in Emotion Regulation Scale (DERS; 36-items; Gratz & Roemer, 2004) asks participants to indicate the extent to which (1 = *Almost never* to 5 = *Almost always*) statements regarding six facets of emotion regulation were true for them: non-acceptance of emotional responses ("When I'm upset, I become irritated with myself for feeling that way"; 6-items), difficulties engaging in goal-directed behaviors when distressed ("When I'm upset, I can still get things done"; 5-items), difficulties controlling impulsive behaviors when distressed ("When I'm upset, I become out of control"; 6-items), lack of emotional awareness ("When I am upset, I acknowledge my emotions"; 6-items) , limited access to emotion regulation strategies ("When I'm upset, I believe there is nothing I can do to make myself feel better"; 8-items), and lack of emotional clarity ("I have no idea how I am feeling"; 5-items). A total DERS score was not computed, but rather the individual subscales for both the DERS were modeled as factors of a latent variable (see **Data Analysis Plan**).

Predictors (Physiological): *Trait emotion regulation:* Trait emotion regulation was also indexed by PNS and assessed via resting RSA with ECG upon arrival in the lab. RSA is assessed by rhythmic fluctuations in heart period with concurrent phases of the respiratory cycle (Grossman, Karemaker, & Wieling, 1991). Electrocardiogram (ECG) recordings were obtained with a Biopac ECG amplifier (Goleta, CA), using a modified LEAD II configuration (right clavicle, left lower torso, and right leg ground). Respiration (chest expansion and compression during breathing) was captured via Biopac respiration belt transducer. Heart rate signals were cleaned by removing artifacts in Mindware software (Mindware Technologies LTD, Gahanna,

OH). ECG signals was averaged into one-minute epochs, and RSA was calculated from the inter-beat interval time series using AcqKnowledge software.

Mediators (Self-Report)*:* *State emotional arousal (Anger Arousal and Subjective Sexual Arousal):* Given the existing research suggesting anger is a consistent predictor of sexual assault perpetration, anger emotional arousal at Time 5 was chosen. Time 5 was chosen because it was the emotional arousal most proximal to intentions to perpetrate. Participants rated the degree (1 = *Not at all* to 7 = *Extremely)* to which they felt five emotions during the scenario associated with anger (Davis, 2010). Subjective sexual arousal was assessed through a four-item scale (Davis, 2010; George et al., 2011). Participants indicated the degree (1 = *Not at all* to 7 = *Extremely*; $\alpha = .94$*)* to which they felt sexual arousal prior to beginning the scenario and at each break in the scenario (e.g., "How sexually aroused are you right now?"; "How much sensation do you feel in your genitals right now?"; "How much sexual warmth do you feel in your body right now?"; "How erect is your penis?").

State emotion regulation: Participants completed the State-Difficulties in Emotion Regulation Scale (S-DERS; 21-items, $\alpha = .86$; Lavender et al., 2015) to assess emotion regulation during the scenario. The S-DERS assessed four facets of Emotion Regulation: non-acceptance of current emotions ("I feel like I'm a weak person for feeling this way"; 7-items), awareness of current emotions ("I am taking time to figure out what I am really feeling"; 5-items), limited ability to modulate current emotional and behavioral responses ("My emotions feel out of control"; 7-items), and lack of clarity about current emotions ("I am confused about how I feel"; 2-items) and asked participants to rate the extent to which the statements apply to their emotions in the present moment (1 = *Not at all* to 5 = *Completely*; Gratz & Roemer, 2004).

Cronbach's alpha for the subscales ranged from good to excellent internal consistent (.79 to .92). Mean scores were computed for each subscale.

Mediator (Physiological): *State emotional arousal:* State emotional arousal was captured via continuous SCL (Mendes, 2009) and penile plethysmography during the scenario. Two Ag-AgCl skin conductance electrodes filled with an isotonic NaCl electrolyte gel were attached with small Velcro bands to the distal phalanges of the first and second fingers of the participant's non-dominant hand. An A/D converter was used to digitize and amplify the signal. Skin conductance levels were measured continuously during a baseline video and then continuously throughout the sexual aggression analogue. Data were then cleaned by removing deviations from the data greater than 5mm. A reactivity score was computed whereby the SCL level at each break in the story was subtracted from the mean SCL during two minutes of the baseline video.

Physiological sexual arousal was utilized as a second measure of emotional arousal. Physiological sexual arousal was assessed via penile plethysmography (model MP150; BioPac Systems, Galeta, CA) and a mercury-in-rubber strain gauge (Limestone Technologies Inc.; Kingston, Ontario), positioned midshaft of the penis. Strain gauges were calibrated prior to each use by placing the gauge on a calibration cone and adjusting size values via the AcqKnowledge software to equal the known size of each gauge (George et al., 2006). Gauges were disinfected following each use with Cidex OPA solution (Vitality Medical; Salt Lake City, UT). To ensure proper disinfection, we checked the Cidex OPA solution PH prior to beginning the Cidex OPA disinfection protocol for each device. Using AcqKnoweldge software (Version 5.0; Biopac Systems, year), we collected data at a rate of 2000 samples/second, which were then reduced to a rate of 62.5 samples per second. The raw data were visually inspected for movement artifacts,

defined as clear spikes of more than 5mm in an otherwise smooth curve. Data were then digitally transformed through a high pass filter (1 Hz). Data were then exported to a data analytic program for analysis (Hoffman, Janssen, & Turner, 2004). Participants whose data indicated a percentage change from baseline of less than 5% were considered non-responders and were not included in the data analysis (Janssen, personal communication, 2018). Peak percentage circumference change from the neutral stimulus baseline was computed by subtracting each participant's lowest achieved millimeter circumference during the neutral stimulus from his highest achieved millimeter circumference during the erotic stimulus and then dividing that amount by his lowest achieved millimeter during the neutral stimulus multiplied by 100.

State emotion regulation: State emotion regulation was assessed via continuous reactive RSA during the hypothetical scenario (Allen et al., 2007; Demaree et al., 2004). RSA acquisition procedures followed through described above [see **Predictors (Physiological)**].

Outcome Variables: *Sexual aggression intentions*: A modified version of the revised Sexual Experiences Survey (SES) assessed sexual aggression intentions. The sexually aggressive acts and tactics remained the same but the wording was modified to assess participants' intentions (1 = *Not at all likely* to 7 = *Extremely likely)* to perpetrate sexual aggression against the hypothetical woman in the story (Abbey et al., 2005; Davis et al., 2014b). The SES assesses a range of sexually aggressive acts (unwanted sexual contact, attempted rape, rape) and tactics (coercion, threats, intoxication, and force). The SES is a validated measure of sexual aggression perpetration (for review, Davis et al., 2014b). The SES was chosen to mitigate underreporting of sexual aggression. It asks behaviorally specific questions without words such as "rape." Such assessments result in reporting 4 to 11 times higher than those without it (Abbey et al., 2005; Fisher, 2009). Four subscales encompassing the different sexual assault tactics (enticement,

coercion, incapacitation, and force) were computed. Alpha loadings were good, ranging from .88 through .97.

Covariates (see **Data Analytic Plan**)**.** *Antisocial personality traits*: Antisocial personality traits and sexual aggression are associated (Lalumière, & Quinsey, 1996). Antisocial traits was measured via the antisocial subscale of the Self Report Psychopathy Scale-III (Williams, Paulhus, & Hare, 2007). The Self-Report Psychopathy Scale shows good validity and internal consistency (α = .88) and is an effective measure of psychopathy in subclinical populations. Empathy was assessed via the Empathy subscale of the Eysenck Personality Questionnaire [18-items, α = .70; (Eysenck, Pearson, Easting, Allsopp, 1985)].

Impulsivity: Impulsivity is associated with sexual aggression perpetration (Carvalho & Nobre, 2012), and empirical investigations have understood facets of impulsivity, such as urgency, as distinct from emotional arousal and emotion regulation (Cyders & Coskunpinar, 2010). To ascertain the unique role of emotional arousal and emotion regulation, impulsivity was entered as a covariate using the UPPS-P Impulsive Behavior Scale (Whiteside, Lynam, Miller, & Reynolds, 2005). The UPPS-P is a validated measure of impulsivity across dimensions of the Five Factor Model of personality (59-items, α = .86). Specifically, the UPPS-P measures premeditation, positive and negative urgency, sensation seeking, and perseverance wherein participants rate the extent to which they agree with statements about themselves (1 = *Strongly Agree* to 4 = *Strongly disagree)*. We were primarily interested in aspects of impulsivity that have been previously associated with sexual assault perpetration and/or correspond to regulation of negative and positive affect. The final model utilized sensation seeking, negative urgency, and positive urgency facets of impulsivity.

Social Desirability was assessed via the Marlow-Crowne Social Desirability Inventory-Short Form (13-items; α = .66; Reynolds, 1982). The short form of the MCSD has comparable validity and reliability to the longer version and is a reasonable substitute for the longer version (Reynolds, 1982).

Random Responding: Base rates of careless or random responding vary from three to 15 percent of responders, and such data can result in lower reliability of data and potentially create Type II errors (Meade & Craig, 2012). Despite the utilization of validated questionnaires utilizing behaviorally specific, non-judgmental wording, the sensitivity of many of the questions may also prompt individuals to respond in an overly defensive manner (Meyer, Faust, Faust, Baker, & Book, 2013). To identify any random responders, we scattered bogus items throughout the survey measures (Meade & Craig, 2012). Participants who scored less than 80% correct on their bogus items were removed from the data.

Data Analysis Plan. All data were entered on the web via data collection software (Qualtrics, Inc.) and downloaded into SPSS, MPlus (Muthén & Muthén, 1998-2012), and RStudio (RStudio Team, 2015) for analyses.

Data reduction: To assess the feasibility of combining the physiological and multiple self-report measures of emotional arousal and emotion regulation, we ran bivariate analyses to examine the associations between self-report and psychophysiological measures. The associations were not correlated (all r's< .14, all p's > .2). Because a reasonable composite in a latent variable was not possible, RSA at baseline, RSA during the scenario, and SCL reactivity were included as individual mediators.

***Preliminary analyses*:** All demographic variables were examined to ascertain group differences in sexual aggression perpetration. The MCSD and SES were correlated to ascertain

any underreporting of perpetration out of social desirability bias and included in subsequent analyses. Data were screened for outliers, skewness, and missingness. Only sexual assault perpetration intentions and the TAXI Trait Anger Temperament subscale were skewed. Preliminary regression analyses of the variables of interest on the outcome variable were conducted. The P-P plot (probability-probability plot) and scatterplot of the residuals were examined. The P-P plot followed a diagonal line with some deviation and the scatterplot of the residuals did not have a clear pattern. While the skewness statistic indicates a non-normal distribution, with these tests of normal distribution and homoscedasticity, a linear model was utilized as opposed to a non-linear model (e.g., ordered probit model, negative binomial model). To address Hypothesis 1, ANOVA was utilized to examine the associations between the two beverage conditions and sexual aggression intentions.

A structural equation modeling (SEM) framework was utilized to test Hypotheses 2-5 using Mplus statistical modeling software (Muthén & Muthén, 1998-2012). Maximum likelihood with robust standard errors was utilized. A model-generating framework (Byrne, 2011; Jöreskog, 1993) was utilized with analyses beginning with the most parsimonious models consisting of main effects of trait emotional arousal and emotion regulation on state emotional arousal and emotion regulation (Hypotheses 2a and 3a). Behavioral intent to perpetrate sexual assault was modeled as a latent variable with the four subscales (enticement, coercion, incapacitation, and force) serving as indicators. The TAXI Trait Temperament and Trait Anger Reactivity to Negative Situations were modeled as indicators of trait emotional arousal. State anger arousal was only modeled as a latent variable of anger arousal and subjective sexual arousal. Skin conductance level reactivity and physiological sexual arousal were modeled as measured variables because they did not correlate with self-reported state anger arousal. To create profiles

of hypo- and hyper-arousal (Hypothesis 2c), trait anger arousal and SCL reactivity were also modeled as quadratic terms. However, the model fit worsened in the model with the quadratic of SCL reactivity. The quadratic term of SCL was thus dropped from the model. The individual subscales of Difficulties with Emotion Regulation and the State-Difficulties in Emotion Regulation were modeled as indicators of trait emotion regulation and state emotion regulation, respectively. The loading of Awareness of Emotions subscale of the State-Difficulties in Emotion Regulation onto the latent state emotion regulation construct was weak ($< .2$) and was dropped from the model. Because neither measure of RSA was correlated with self-reported emotion regulation, a separate physiological pathway of state-trait emotion regulation was analyzed. To test Hypotheses 2b and 3b, moderation analysis was used to predict the conditional effect of alcohol condition on the associations between trait emotional arousal and emotion regulation and state emotional arousal and emotion regulation. Continuous predictors were mean-centered, and simple slopes analyses were conducted using the pick-a-point method to ascertain whether the slopes were statistically significantly different from zero (Hayes, 2013).

To address Hypotheses 4a through 5b, the main effects and moderation models were incorporated into a larger SEM. The hypothesized SEM is presented in Figure 4, which represents all the hypothesized relationships among variables. To analyze Hypotheses 4a and 4b, mediation analysis using bootstrapping with bias corrected confidence intervals was used to determine significant indirect effects of alcohol intoxication on sexual aggression intentions through state emotional arousal (Hypothesis 4a) and emotion regulation (Hypothesis 4b). Analysis of indirect effects utilized 10,000 bootstrapping resamples (Hayes, 2013). To test Hypotheses 5a and 5b, a moderated mediation framework was utilized to determine? if the trait emotional arousal – state emotional arousal – sexual aggression intention indirect effect was

dependent on alcohol condition (Hypothesis 5a). Similarly, moderated mediation was utilized to see if the trait emotion regulation – state emotion regulation– sexual aggression intention indirect effect was dependent on alcohol condition (Hypothesis 5b). Because physiological measures did not correlate with the self-report measures, both RSA variables, SCL reactivity, and physiological sexual arousal were included as individual mediators and moderators. The covariates were regressed on the outcome variable. Impulsivity was first modeled as a latent variable with each subscale comprising a separate indicator. However, this latent factor demonstrated poor model fit. Each subscale was thus included as separate measured variables within the model. The antisocial subscale of the Self-Report Psychopathy Scale and empathy subscale of the Eysenck Personality Questionnaire were modeled as separate measured variables. To better convey our model, the two covariates are not included in Figure 4; however, the coefficients for all paths in the model are included in Table 8.

Significance was determined by 95% bias-corrected, bootstrapped confidence intervals that did not contain zero (Hayes, 2013). Non-significant interactions were removed from the model, and analyses were rerun to ascertain any change in model fit. Goodness of model fit was indicated by a nonsignificant chi square test, RMSEA values less than .05, CFI values greater than .95, and SRMR values less than .06 (Kline, 2005). Model comparison was determined based upon Bayesian Information Criterion (BIC) and theoretical rationale. BIC introduces penalty terms for the number of parameters in the model to prevent overfitting (Kass & Raftery, 1995), and smaller scores indicate an improved model fit (Kass & Raftery, 1995).

Results

Of the 101 men recruited for the study, two withdrew prior to beverage administration due to concerns regarding the penile plethysmography device. One participant withdrew during

the sexual assault scenario due to feelings of nausea. One participant completed all study protocols; however, due to a computer problem during the sexual assault scenario, his data on the sexual assault scenario were not saved. Three participants completed all procedures involved in the study, however were excluded due to unreliable data. The final sample used for analysis was comprised of 94 participants (Alcohol group = 47, Control group = 47).

Descriptive statistics for the sample are presented below (see Table 1). Means, standard deviations, skewness statistic, and bivariate correlations of the predictor, mediator, moderator, and outcome variables are presented in Table 7. Approximately a third of the sample reported having perpetrated sexual assault in their lifetime with 12% having engaged in either incapacitated, forced, or threats of forced oral, vaginal, or anal penetration. Approximately 20% of the sample reported having perpetrated sexual assault within the last year with 6% having engaged in either incapacitated, forced, or threats of forced oral, vaginal, or anal penetration in the last year. The beverage groups in the final sample did not significantly vary by the number of men who reported perpetrating. Forty percent of men reported they were "not at all likely" to perpetrate any of the sexually aggressive behaviors in the story. Eight percent of the current sample indicated that they were at least "moderately" likely to engage in sexually aggressive behavior against the hypothetical woman in the scenario.

Direct and Indirect Effects

Figure 5 depicts the final model and displays standardized coefficients for the significant paths; standardized estimates for all paths modeled appear in Table 8. The final model was an acceptable fit for the data, X^2 (356) = 398.2, p = .061, RMSEA = 0.06, 95% CI: 0.0, .10, CFI= .95, TLI = .91, SRMR = 0.004. The final model possessed strong evidence of superior fit over models containing non-significant interactions. However, the BIC was higher than models

without interactions. This is unsurprising because BIC penalizes models with additional parameters. Given the theoretical rationale for the model and the hypothesized model fit the data well, this was the identified final model.

The final model accounted for 37.7% of the variance of sexual assault perpetration intentions. Hypothesis 1 was not supported. Alcohol condition did not differentially predict sexual assault perpetration intentions ($t(93) = .97$, $p > .3$). Hypothesis 2a was not supported; trait emotional arousal was not significantly associated with state emotional arousal. Hypothesis 2b was not supported; the association between trait and state emotional arousal was not moderated by alcohol condition. Examination of the exploratory hypothesis (H2c) indicated that for men in the alcohol condition, emotional arousal consistent with a hypo- or hyper- trait profile was not associated with greater state emotional arousal in comparison to men in the control condition. While the interaction between trait emotional arousal and alcohol did not predict skin conductance level reactivity, alcohol was negatively associated with skin conductance level reactivity [-.412, -.019]. Hypothesis 3a was supported; trait emotion regulation was positively associated with state emotion regulation [.32, .81]. Further, this association was also supported when examining the physiological metrics of emotion regulation. Baseline RSA was positively associated with RSA reactivity [.34, .62]. Hypothesis 3b was not supported; the association between trait and state emotion regulation was not moderated by alcohol condition. Hypothesis 4a was not supported; there was no indirect effect of trait emotional arousal on sexual assault perpetration intentions via state emotional arousal. Hypothesis 4b was supported; trait emotion regulation was indirectly associated with sexual assault intentions via state emotion regulation [.031, .418]. Examination of the exploratory hypothesis (H4c) indicated that emotional arousal consistent with a hypo- or hyper- trait profiles was not indirectly associated with sexual

aggression perpetration intentions. Hypothesis 5a was not supported; the indirect association of trait emotional arousal to sexual assault perpetration intentions via state emotional arousal was not moderated by alcohol condition. Hypothesis 5b was not supported; the indirect association of trait emotion regulation with sexual assault perpetration intentions via state emotion regulation was not moderated by alcohol condition. Finally, for men in the alcohol condition, the indirect association of trait emotional arousal consistent with a hypo- or hyper- trait profile to sexual assault perpetration via state emotional arousal was not moderated by alcohol (H5c).

Moderation Effects

Given the preponderance of results associated with emotion regulation, exploratory analyses were conducted to ascertain whether trait emotion regulation and the interaction of trait emotion regulation and were associated with sexual assault perpetration. Trait emotion regulation was negatively associated with intentions to perpetrate sexual assault; however, this main effect was subsumed within the interaction between trait emotion regulation and alcohol [.08, .54]. Simple slope analyses of this interaction [b = -2.70 (95% CI: -4.45, -.92)] indicated that for men in the control condition, difficulties in trait emotion regulation were associated with lower intentions to perpetrate sexual assault [see Figure 6].

Discussion

This study examined the roles of emotional arousal and emotion regulation in sexual assault perpetration intentions in the context of acute intoxication. This study expands upon previous investigations to demonstrate trait and state emotion regulation mechanisms uniquely contribute to sexual assault perpetration intentions. Overall, we found support for the hypothesis that state emotion regulation was positively associated with intentions to perpetrate sexual assault, such that greater difficulties regulating emotions in the moment were associated with

higher intentions to perpetrate sexual assault. A contrasting pattern was observed for the role of trait emotion regulation in sexual assault perpetration intentions. The association between alcohol and sexual assault perpetration was moderated by trait emotion regulation, such that for men in the control group, self-reported emotion regulation difficulties were negatively associated with intentions to perpetrate sexual assault (see Figure 6). This finding was surprising and contrary to hypotheses. Future research is needed to clarify and differentiate the role of state and trait emotion regulatory processes in sexual assault perpetration. Interestingly and in contrast to what was hypothesized, there was no direct or indirect effect of alcohol on sexual assault perpetration intentions via emotional arousal. Further, there was no significant moderating effect of state emotion regulation on the association between state emotional arousal and sexual assault perpetration intentions. This study involved a novel application of physiological and self-report measures in the context of an alcohol administration paradigm with a small sample size. The literature base exploring the roles of both physiological and self-report measures of emotional arousal and emotion regulation would benefit from replication of these results.

To the best of our knowledge, only one other paper has explicitly examined the association between trait emotion regulation and sexual assault perpetration (Shorey et al., 2011), finding that different facets of emotion regulation contribute to perpetration. Within this study, emotion regulation appears to function as a proximal predictor of sexual assault as in the moment difficulties with regulating emotions (e.g., state ER) were associated with intentions to perpetrate sexual assault. This suggests that regardless of acute intoxication, when confronted with a female partner who is unequivocally indicating she does not want to engage in sexual intercourse, men's difficulty to identify and utilize adaptive strategies to modulate those emotions may be directly associated with their intentions to perpetrate sexual aggression against this female partner. In

contrast, for men in the control group, more difficulties with trait emotion regulation were associated with lower intentions to perpetrate sexual assault in comparison to men in the alcohol group. Measures of emotion regulation have previously utilized a trait or dispositional framework for assessing emotion regulation, assuming that emotion regulation is generally stable across contexts. However, emotion regulation is a dynamic construct, and individual- and event-level factors may influence emotion regulation behaviors even within a short time-frame (Lavender et al., 2015). Reminiscent of the "behavioral consistency debate", the outgrowth of which was a model of personality that accounts for the greater within-person variability than between-person variability on personality characteristics (Mischel & Shoda, 1995), the affective and behavioral responses generated in a situation depend upon the psychological features of that situation, e.g., the perceptions and appraisals of the situation (Shoda et al., 2013). Thus, difficulties with emotion regulation may be more likely to arise in the context of a certain emotional experience or emotional intensity or in the context of attributions about the self or situation that are particularly salient. Thus, while trait emotion regulation and state emotion regulation were positively associated with one another in the model, this association is far from a perfect correlation and illustrates that trait and state measures may inform one another but do not behave consistently across all contexts.

This investigation sought to identify mechanisms of alcohol-involved sexual assault. In contrast to prior investigations and the hypothesized model, alcohol intoxication was not directly associated with sexual assault perpetration intentions, and the only moderating or indirect effect of alcohol was the moderation effect of alcohol and emotion regulation. A plot of this interaction indicated that for men in the control condition, difficulties in trait ER was negatively associated with intentions to perpetrate ($\beta = .30$). It is possible that in the context of acute intoxication,

participants were attending to cues unrelated to emotion. Future research examining myopic processes may seek to identify the extent to which participants were attending to emotion-related cues. While no physiological measures were associated with the outcome of interest, there was a significant, negative association between alcohol intoxication and sympathetic arousal reactivity ($\beta = -.22$). However, this finding is consistent with existing theories regarding alcohol's effect on arousal, such as the stress response dampening (for review, Sayette, 2017). Sympathetic reactivity is a measure of the flight or fight response. It is possible that the myopic focus of alcohol shifted participants' focus to more pleasant and enjoyable cues, thus lessening any potential stressors in the environment. To the best of our knowledge, no prior study has examined the role of acute intoxication on sympathetic arousal reactivity, and this finding requires replication.

Strengths, Limitations, and Future Directions

The present study had both strengths and limitations. First, this study utilized an experimental framework to examine "in the moment" arousal and regulatory processes. Given the small sample size, future studies should consider the utilization of similar measures of emotional arousal and regulation in larger sample sizes. Future research should also investigate in the moment cognitive variables that were not included in this investigation to build a more comprehensive cognitive-affective model of sexual assault perpetration. For example, men with emotion regulation difficulties may be more likely to become emotionally dysregulated in response to their perception that their sexual partner is giving them "mixed signals" regarding her interest in continuing sexual activity. While the use of psychophysiological metrics of emotion arousal and regulation enabled a more comprehensive examination of these constructs, the use of physiological measures may have inhibited some participants' ability to project

themselves into the story, thus reducing the external validity of the results. Further, the final model is cumbersome and likely does not represent the most parsimonious examination of the hypothesized variables. Future research should examine whether more parsimonious models can be utilized to test the hypothesized relationships. While a power analysis was conducted to ascertain differences in emotion regulation between the two alcohol groups, the small sample size is below what is typically recommended for a SEM analysis (Kenny, 2015).

This study was also limited to male, heterosexual, non-problem drinkers who reported at least one instance of unprotected, penetrative sex in the past year. Men with other drinking behaviors, including abstainers and men with problematic drinking histories, should be included in future investigations. A strength of this study was the use of a higher alcohol dose (e.g., target peak of BrAC of .10%). While the perpetrator has been drinking in the vast majority of sexual assaults, longitudinal research suggests considerable variability in men's level of intoxication at the time of a sexual assault (Davis et al., 2015). Future research may seek to examine the consistency of these associations across different BrACs. Far less research has investigated polysubstance use and sexual risk-taking; thus, future investigations should also examine whether the relations between drug use and multiple substance use (e.g., alcohol and drugs), emotional arousal, and sexual assault perpetration.

The findings may not apply to men who consistently engage in protected intercourse or are in monogamous relationships. Finally, the study utilizing an experimental analog of men's sexual assault perpetration behaviors may not translate to or predict real-world sexual assault behaviors. However, participants indicated the analog was realistic and credible. Prior investigations using a similar analog for sexual risk-taking found that men's estimations corresponded to their real-world sexual risk-taking (Kajumulo, Davis, & George, 2009; Norris,

Kiekel, Purdie, & Abdallah, 2010). Future research should investigate whether sexual assault analogues have a similar predictive validity.

Clinical Implications and Conclusions

The results of this study provide the first examination of the role of emotion regulation processes in men's in-the-moment sexual assault perpetration intentions. The exact nature of the role of emotion regulation in sexual assault perpetration requires additional research and investigation prior to widespread intervention adoption. Ongoing research also suggests that individuals who engage in sexual assault perpetration also engage in other risk behaviors, particularly substance use and sexual risk-taking (for review, Davis, Neilson, Wegner, & Danube, 2018). It is noteworthy that ongoing research demonstrates an association between emotional arousal, substance use, and sexual risk-taking (Aldao et al., 2010; Cooper, Agocha, & Sheldon, 2000). Should the empirical literature suggest emotion regulation as an underlying contributor to engagement in such risk behaviors, interventions that draw upon emotion regulation skills could be incorporated into interventions that address substance use, sexual risk-taking, and sexual assault as integrated programs.

General Discussion

These results support the public health agenda to shift the priority of victimization risk reduction interventions to focus on perpetrators (Daigle, Fisher, & Cullen, 2008). Prior sexual assault perpetration interventions have primarily focused on shifting attitudes conducive to rape (e.g., rape myth acceptance, hostility toward women) and empathy building (for a review, see Malamuth, Huppin, & Linz, 2018; Tharp et al., 2013). However, there are few of these interventions that have demonstrated empirical support and sustainability (Tharp et al. 2013). A central challenge of sexual assault interventions is reaching men at high-risk for perpetration

(Malamuth, Huppin, & Linz, 2018). The results of the above studies utilized a sample of higher risk men, because they were recruited for regular, moderate to heavy drinking and sexual risk-taking. Moreover, a third of the sample reported prior perpetration, which is a risk factor for future perpetration (Abbey & McAuslan, 2004; Thompson et al., 2015). Such men are likely to respond to anti-sexual assault prevention interventions and campaigns with psychological reactance and entrench themselves further into their beliefs and behavioral patterns. It is thus vital that intervention developers think creatively and thoughtfully about what interventions targeting which contributors of sexual assault perpetration can be applied to general audience versus applied to a sample of high-risk men.

The results of the above studies indicate that emotional arousal and emotion regulation may be important proximal predictors of sexual assault perpetration. Specifically, there is preliminary evidence to suggest the rate of change in happiness and subjective sexual arousal are predictors of intentions to perpetrate sexual assault. In contrast, the rate of change in anger did not predict intentions to perpetrate sexual assault nor did anger arousal predict sexual assault intentions in the larger theorized model. Future research should continue to examine the role of multiple emotions to better understand their relation to sexual assault perpetration, including their role as impelling cues to perpetrate. In addition, state and trait emotion regulation appear to differentially influence intentions to perpetrate sexual assault. An integration of the two studies suggests that men who struggle to modulate happiness and sexual arousal in the context of non-consent by a female partner may be more likely to perpetrate sexual aggression. Future researchers should continue to consider dynamic state-trait models that include multiple emotions as they examine sexual assault perpetration.

Prevention efforts may target emotional arousal and emotion regulation by incorporating psychoeducation about emotion regulation skills into existing prevention interventions. This strategy has some demonstrated efficacy in empirical investigations targeting intimate partner violence (Maldonado et al., 2015) and large-scale interventions targeting adolescent aggression and victimization (Espelage, Low, Polanin, & Brown, 2015). Such efforts could utilize a randomized control trial and rigorous evaluation to identify whether such additions to pre-existing programs improve efficacy. The ongoing high prevalence of sexual aggression perpetration necessitates a rigorous examination of emotional arousal and emotion regulation as predictors and potential points of intervention and prevention.

With the policy and public shift to prioritize sexual assault is a push to develop prevention and intervention programming. Given the frequency and global impact of sexual assault, it is true that intervention development in perpetration be expedient. However, it is vital that the interventions that are developed, tested, and disseminated are grounded in a high-quality understanding of the distal and proximal contributors. It is thus vital that future research continue to utilized mixed-methods approaches to better understand these phenomena. The current study applied a well-established alcohol administration paradigm with a sexual assault scenario while applying psychophysiological measures to expand the operationalization of emotional arousal and emotion regulation. These results require replication, and future research should continue to utilize novel methods to better understand how these constructs relate to one another. For example, examinations that focus on the construct validity and methodological challenges to studying emotional arousal, emotion regulation, and related constructs, such as response inhibition, are needed to ensure our interventions are targeting the identified mechanisms. Daily diary studies examining emotional arousal and emotion regulation as they relate to substance use

and sexual and non-sexual situations may also be helpful in elucidating these processes. It is thus vital that intervention and experimental studies go forward to replicate and expand these results that they inform one another to ensure a high quality approach to intervening in sexual violence.

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Table 1.1. *Demographic Characteristics*

	N = 94
Age	24.8 (2.90)
Race and ethnicity	
White/Caucasian	55.7%
Multiracial or Mixed Race	15.5%
Hispanic or Latino	15%
Asian or Pacific Islander	12.4%
Black or AA	10.3%
Other	5.2%
Hawaiian/Pacific Islander	1%
Education Level	
Less than high school diploma	3.0%
High school diploma	16.8%
Vocational degree	3.0%
Some college	39.6%
Bachelor's degree	29.7%
Graduate degree	7.9%
Student status	
Non-student	65%
Part- or full-time student	45%
Income per year	
Less than $10,999	9.5%
$11,000-20,999	21.1%
$21,000-30,999	17.9%
$31,000-40,999	14.7%

$41,000-50,999	3.2%
$51,000-60,999	5.3%
More than $61,000	28.4%
Sexual desire	
Entirely heterosexual	76%
Largely heterosexual, some homosexual desires	18%
Largely heterosexual, but considerable homosexual desires	4.0%
Equally heterosexual and homosexual	1%
Largely homosexual, but some heterosexual desires	1%

Table 2: Study 1 Hypotheses Summary Table

Aims 1: To examine the role of alcohol intoxication on the starting level (e.g., intercept), change over time (e.g., linear slope), and rate of acceleration over time (e.g., quadratic factor) on emotional arousal		
H1	Alcohol would be positively associated with the starting level, rate of change, and rate of acceleration of happiness over time	NS
H2	Alcohol would be positively associated the starting level, rate of change, and rate of acceleration of subjective sexual arousal over time	NS
H3	Alcohol would be positively associated with the starting level, rate of change, and rate of acceleration anger over time	NS
H4	Alcohol would be negatively associated with the starting level, rate of change, and rate of acceleration in anxiety over time	NS
H5	Alcohol would be negatively associated with the starting level, rate of change, and rate of acceleration in sympathetic arousal over time	NS
Exploratory	This research question examines the association between alcohol and starting level, rate of change, and rate of acceleration in physiological sexual arousal	
Aim 2: To investigate the association between a task of response inhibition on six measures of emotional arousal in the context of acute intoxication.		
Exploratory	This research question examines the association between response inhibition on emotional arousal.	
Exploratory	This research question examines the interaction of alcohol and response inhibition on emotional arousal	
Aim 3: Investigate how the starting level, rate of change, and rate of acceleration in six measures of emotional arousal, acute intoxication, and response inhibition predict sexual assault perpetration intentions		
6	Intoxicated men would report greater intentions to perpetrate sexual assault than sober men across all models	NS
Exploratory	This research question examines the interaction of response inhibition on sexual assault perpetration	NS
Exploratory	This research question examines the interaction of alcohol and response inhibition on sexual assault perpetration	NS
7	The starting level, rate of change of happiness, and rate of acceleration over time would be negatively associated with intentions to perpetrate sexual assault.	S
8	The starting level, rate of change of subjective sexual arousal, and rate of acceleration over time would be positively associated with intentions to perpetrate sexual assault.	S
9	The starting level, rate of change of anger, and rate of acceleration over time would be positively associated with intentions to perpetrate sexual assault.	NS

10	The starting level, rate of change of physiological sexual arousal, and rate of acceleration over time would be positively associated with intentions to perpetrate sexual assault.	NS
Exploratory	This question examines the association between trajectories of anxiety and sympathetic arousal on sexual assault perpetration intentions	

Table 3.1
Means, Standard Deviations, Univariate Skewness, and Zero-Order Correlations for Happiness

Variable	1	2	3	4	5	6	7	8	9
1. Time 1	--								
2. Time 2	.43**	--							
3. Time 3	.40**	.70**	--						
4. Time 4	.40**	.53**	.62**	--					
5. Time 5	.22**	.27**	.38**	.56**	--				
6. Alcohol	.06	-.07	-.10	-.02	-.02	--			
7. DPrime	.05	.09	.05	-.03	-.19	.13	--		
8. ASA	.01	-.01	.04	-.12	.11	-.02	-.01		
9. Sexual Assault	-.02	.01	.20	-.01	.26*	-.07	-.24	.23*	--
M	3.98	4.70	5.08	4.23	2.94	--	.92	5.03	1.83
SD	1.27	1.40	1.52	1.67	1.67	--	.08	10.65	1.29

ASA = Past adult sexual assault perpetration
** . Correlation is significant at the 0.01 level (2-tailed)
* . Correlation is significant at the 0.05 level (2-tailed)

Table 3.2
Means, Standard Deviations, Univariate Skewness, and Zero-Order Correlations for Subjective Sexual Arousal

Variable	1	2	3	4	5	6	7	8	9
1. Time 1	--								
2. Time 2	.45**	--							
3. Time 3	.41**	.81**	--						
4. Time 4	.34**	.73**	.80**	--					
5. Time 5	.24**	.42**	.55**	.65**	--				
6. Alcohol	-.07	-.04	-.11	-.15	-.01	--			
7. DPrime	-.09	.01	.05	-.07	-.06	.13	--		
8. ASA	.06	.01	.08	-.01	.11	-.02	-.01		
9. Sexual Assault	.09	.09	.10	.09	.29*	-.07	-.24	.23*	--
M	1.57	2.88	3.45	3.68	2.42	--	.92	5.03	1.83
SD	.72	1.45	1.64	1.70	1.56	--	.08	10.65	1.29

ASA = Past adult sexual assault perpetration
** . Correlation is significant at the 0.01 level (2-tailed)
* . Correlation is significant at the 0.05 level (2-tailed)

Table 3.3
Means, Standard Deviations, Univariate Skewness, and Zero-Order Correlations for Anger

Variable	1	2	3	4	5	6	7	8	9
1. Time 1	--								
2. Time 2	.28**	--							
3. Time 3	.40**	.84**	--						
4. Time 4	.26**	.49**	.57**	--					
5. Time 5	.05	.39**	.33**	.57**	--				
6. Alcohol	-.09	-.01	.01	.10	-.04	--			
7. DPrime	-.02	.01	.01	-.13	-.10	.13	--		
8. ASA	.17	-.03	.19	.11	.04	-.02	-.01		
9. Sexual Assault	.14	.09	.12	.27**	.26*	-.07	-.24	.23*	--
M	1.57	1.33	1.40	2.04	2.5	--	.92	5.03	1.83
SD	.94	.82	.95	1.41	1.55	--	.08	10.65	1.29

ASA = Past adult sexual assault perpetration
** . Correlation is significant at the 0.01 level (2-tailed)
* . Correlation is significant at the 0.05 level (2-tailed)

Table 3.4
Means, Standard Deviations, Univariate Skewness, and Zero-Order Correlations for Anxiety

Variable	1	2	3	4	5	6	7	8	9
1. Time 1	--								
2. Time 2	.29**	--							
3. Time 3	.32**	.71**	--						
4. Time 4	.40**	.60**	.65**	--					
5. Time 5	.22*	.48**	.42**	.61**	--				
6. Alcohol	-.01	-.08	-.09	-.07	-.14	--			
7. DPrime	.01	-.04	-.06	.04	.01	.13	--		
8. ASA	.07	.03	.03	.04	-.01	-.02	-.01		
9. Sexual Assault	.06	.07	.02	.19	.06	-.07	-.24	.23*	--
M	1.80	1.88	1.76	2.35	3.5	--	.92	5.03	1.83
SD	1.08	1.16	1.08	1.53	1.80	--	.08	10.65	1.29

ASA = Past adult sexual assault perpetration
** . Correlation is significant at the 0.01 level (2-tailed)
* . Correlation is significant at the 0.05 level (2-tailed)

Table 3.5

Means, Standard Deviations, Univariate Skewness, and Zero-Order Correlations for Sympathetic Arousal

Variable	1	2	3	4	5	6	7	8
1. Time 1	--							
2. Time 2	.92**	--						
3. Time 3	.94**	.97**	--					
4. Time 4	.92**	.91**	.96**	--				
5. Alcohol	-.08	-.10	-.10	-.05	--			
6. DPrime	-.19	-.20	-.04	.03	.13	--		
7. ASA	-.03	-.01	.01	-.05	-.02	-.01		
8. Sexual Assault	.01	.01	-.01	-.02	-.07	-.24	.23*	--
M	1.01	.37	.43	.51	--	.92	5.03	1.83
SD	4.13	4.14	4.25	.05	--	.08	10.65	1.29

ASA = Past adult sexual assault perpetration

** . Correlation is significant at the 0.01 level (2-tailed)

* . Correlation is significant at the 0.05 level (2-tailed)

Table 3.6

Means, Standard Deviations, Univariate Skewness, and Zero-Order Correlations for Penile Plethymography

Variable	1	2	3	4	5	6	7	8	9
1. Time 1	--								
2. Time 2	.54**	--							
3. Time 3	.47**	.87**	--						
4. Time 4	.45**	.86**	.92**	--					
5. Time 5	.34**	.75**	.81**	.84**	--				
6. Alcohol	-.01	-.08	-.17	-.12	-.06	--			
7. DPrime	-.10	-.15	-.08	-.14	-.15	.13	--		
8. ASA	.26*	.29**	.25*	.15	.05	-.02	-.01		
9. Sexual Assault	.09	.17	.12	.12	.16	-.07	-.24	.23*	--
M	3.2	14.19	15.72	17.20	15.09	--	.92	5.03	1.83
SD	6.39	14.87	15.40	14.78	14.66	--	.08	10.65	1.29

ASA = Past adult sexual assault perpetration

** . Correlation is significant at the 0.01 level (2-tailed)

* Correlation is significant at the 0.05 level (2-tailed)

Figure 1: Unconditional Growth Model of Happiness at Time = 1

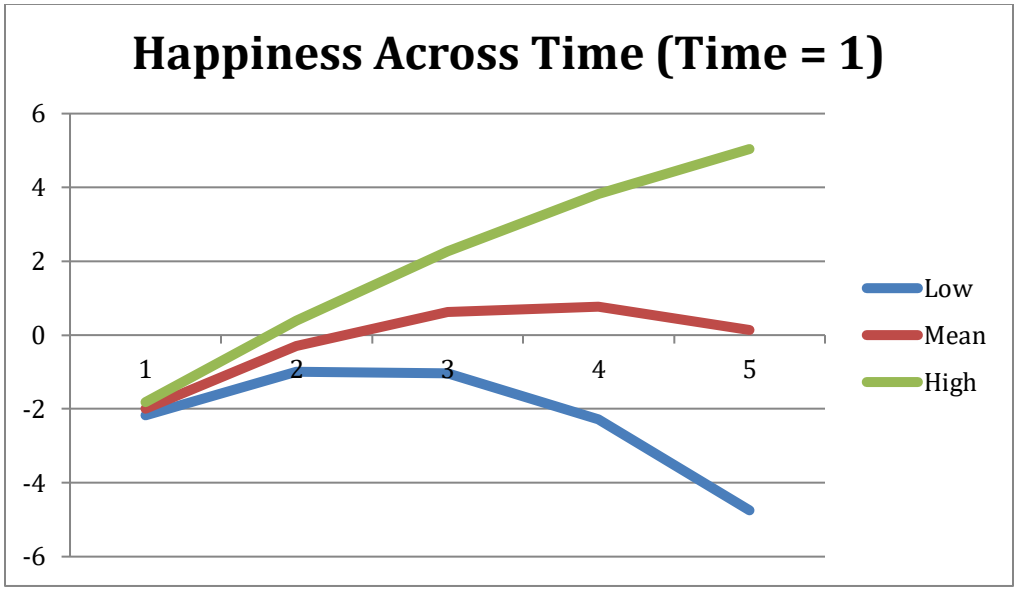


Figure 2: Unconditional Growth Model of Subjective Sexual Arousal at Time = 1

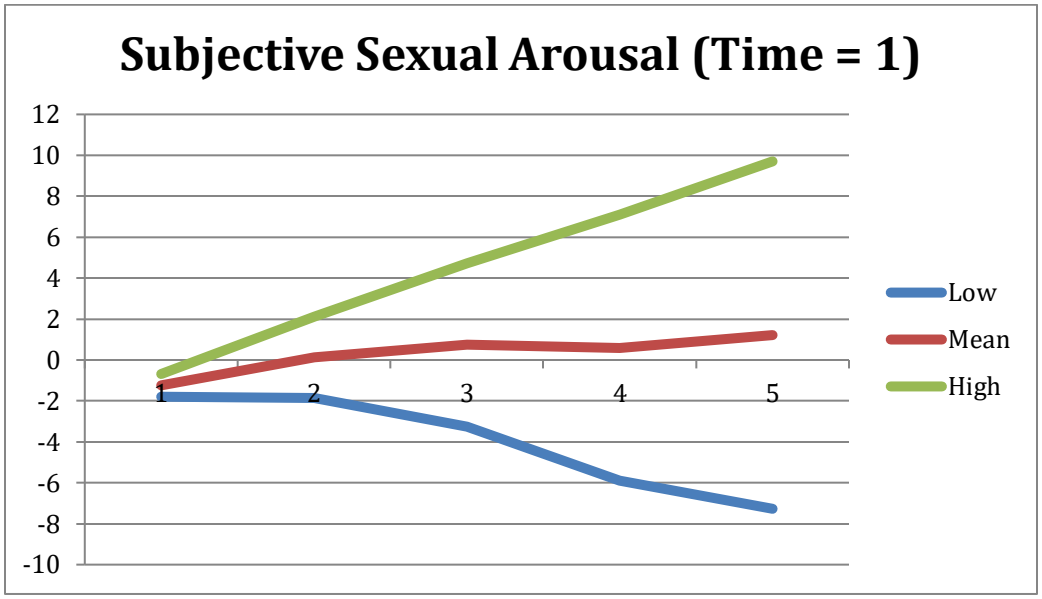


Figure 3: Unconditional Growth Model of Anger at Time = 1

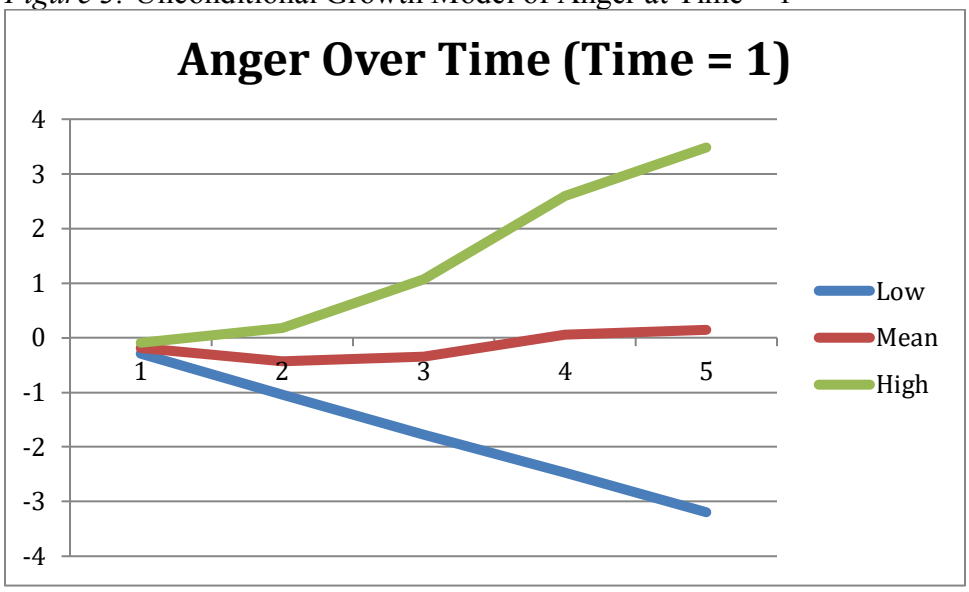


Table 4.1
Fit Statistics and Unstandardized Coefficients of Happiness Unconditional Growth Models

	Time = 1			Time = 2			Time = 4		
Variable	Estimate	SE	95% CI	Estimate	SE	95% CI	Estimate	SE	95% CI
Intercept Mean	-.30**	.12	-.54, -.06	.62**	.13	.36, .88	.15	.12	-.13, .43
Intercept Variance	.48	.29	-.08, 1.04	1.30*	.23	.85, 1.75	.77*	.33	1.02, 2.30
Slope Mean	1.307**	.13	1.05, 1.56	.52**	.07	.40, .67	-1.01**	.09	-1.18, -.84
Slope Variance	.54	.35	-.15, 1.23	.13	.11	-.08, .34	.27*	.13	.21, .73
Quadratic Mean	-.39**	.03	-.45, -.32	-.39**	.05	-.45, -.32	-.39**	.049	-.45, -.32
Quadratic Variance	.05	.02	.00, .09	.05	.020	.00, .09	.049	.02	.00, .09
BIC	1618.275			1618.275			1618.275		
χ^2 (*df*)	5.442(6)			5.442(6)			5.442(6)		
CFI	1.0			1.0			1.0		
TLI	1.0			1.0			1.0		
RMSEA	.00[.00, .13]			.00[.00, .13]			.00[.00, .13]		
SRMR	.033			.033			.033		

** Correlation is significant at the 0.01 level (2-tailed) * Correlation is significant at the 0.05 level (2-tailed)

Table 4.2
Fit Statistics and Unstandardized Coefficients of Subjective Sexual Arousal Unconditional Growth Models

	Time = 1			Time = 2			Time = 4		
Variable	*B*	*SE*	95% CI	*B*	*SE*	95% CI	*B*	*SE*	95% CI
Intercept Mean	-1.24**	.07	-1.38, -1.12	.13	.13	-.13, .38	.61**	.17	.28, .93
Intercept Variance	.31	.18	-.05, .61	1.46	.17	1.13, 1.79	2.27	.25	1.79, 2.75
Slope Mean	1.75**	.14	1.47, 1.98	.99**	.08	.84, 1.15	-.52**	.08	-.66, -.37
Slope Variance	1.39	.37	.87, 1.83	.45	.09	.26, .63	.29	.11	.08, .50
Quadratic Mean	-.38**	.03	-.44, -.31	-.38**	.03	-.44, -.31	-.38**	.03	-.44, -.31
Quadratic Variance	.07	.02	.04, .10	.07	.02	.04, .10	.07	.02	.04, .10
BIC	1412.01			1412.01			1412.01		
χ^2 (*df*)	14.69(6)*			14.69(6)*			14.69(6)*		
CFI	.95			.95			.95		
TLI	.92			.92			.92		
RMSEA	.12[.04, .20]			.12[.04, .20]			.12[.04, .20]		
SRMR	.05			.05			.05		

** . Correlation is significant at the 0.01 level (2-tailed) * . Correlation is significant at the 0.05 level (2-tailed)

Table 4.3
Fit Statistics and Unstandardized Coefficients of Anger Unconditional Growth Models

	Time = 1			Time = 2			Time = 4		
Variable	Estimate	SE	95% CI	Estimate	SE	95% CI	Estimate	SE	95% CI
Intercept Mean	-.19**	.08	-.35, -.03	-.43**	.07	-.57, -.29	.06	.10	-.12, .25
Intercept Variance	-.010	.14	-.28, .26	.47	.17	.15, .80	.77	.27	.25, 1.29
Slope Mean	-.40**	.09	-.58, -.23	-.08	.05	-.16, .01	.57	.07	-.17, .02
Slope Variance	.13	.20	-.25, .52	-.01	.04	-.08, .08	.27	.01	-.06, .52
Quadratic Mean	.16**	.03	.10, .21	.16**	.03	.10, .21	.16**	.03	.10, .21
Quadratic Variance	.02	.02	-.01, .06	.02	.02	-.01, .06	.02	.02	-.10, .06
BIC	1273.01			1273.01			1273.01		
χ^2 (*df*)	15.22(6)*			15.22(6)*			15.22(6)*		
CFI	.93			.93			.93		
TLI	.89			.89			.89		
RMSEA	.13[.04, .21]			.13[.04, .21]			.13[.04, .21]		
SRMR	.07			.07			.07		

** . Correlation is significant at the 0.01 level (2-tailed) * . Correlation is significant at the 0.05 level (2-tailed)

Table 4.4
Fit Statistics and Unstandardized Coefficients of Anxiety Unconditional Growth Models

	Time = 1			Time = 2			Time = 4		
Variable	*B*	*SE*	95% CI	*B*	*SE*	95% CI	*B*	*SE*	95% CI
Intercept Mean	-.27**	.12	-.51, -.07	-.57**	.10	-.77, -.41	.17	.13	-.08, .43
Intercept Variance	.016	.26	-.53, .42	.63	.17	.30, .90	.12	.13	.66, 1.89
Slope Mean	-.53*	.12	-.76, -.34	-.08	.07	-.21, .03	.82**	.08	.66, .99
Slope Variance	.15	.29	-.42, .63	.01	.09	-.17, .15	.31	.15	-.07, .59
Quadratic Mean	.23**	.03	.17, .28	.23**	.03	.17, .28	.23**	.03	.17, .28
Quadratic Variance	.03	.02	-.01, .06	.03	.02	-.01, .06	.03	.019	-.01, .06
BIC	1492.79								
χ^2 (*df*)	22.66(6)**								
CFI	.86								
TLI	.77								
RMSEA	.17[.10, .248]								
SRMR	.09								

** . Correlation is significant at the 0.01 level (2-tailed) * . Correlation is significant at the 0.05 level (2-tailed)

Table 4.5
Fit Statistics and Unstandardized Coefficients of Sympathetic Arousal Unconditional Growth Models

	Time = 2			Time = 4		
Variable	*B*	*SE*	95% CI	*B*	*SE*	95% CI
Intercept Mean	.19	.46	-.71, 1.10	-.19	.48	-1.13, .74
Intercept Variance	1.36	.62	1.31, 2.57	1.73	.64	.48, 2.98
Slope Mean	.13**	.17	.67, .01	-.04	.08	-.19, .11
Slope Variance	.13	.18	-3.34, 3.05	1.04	.80	-.41, 2.58
Quadratic Mean	.08*	.05	.03, .18	.08*	.05	.03, .18
Quadratic Variance	.21	.17	-.12, .54	.21	.17	-.12, .54
BIC	1412.01			1412.01		
χ^2 (*df*)	14.69(6)*			14.69(6)*		
CFI	.95			.95		
TLI	.92			.92		
RMSEA	.12[.04, .20]			.12[.04, .20]		
SRMR	.05			.05		

** . Correlation is significant at the 0.01 level (2-tailed) *Correlation is significant at the 0.05 level (2-tailed)

Note: Because SCL is computed by subtracting the pre-story score from the value of SCL (T1), SCL Reactivity was computed for Time 2 through Time 4

Table 4.6
Fit Statistics and Unstandardized Coefficients of Penile Plethysmography Unconditional Growth Models

	Time = 1			Time = 2			Time = 4		
Variable	*B*	*SE*	95% CI	*B*	*SE*	95% CI	*B*	*SE*	95% CI
Intercept Mean	-9.63	.98	-11.57, -7.69	-1.18	1.26	-3.72, 1.34	4.40	1.64	1.18, 7.60
Intercept Variance	28.88**	13.7	2.04, 55.72	120.74	26.24	69.31, 160.99	220.20	39.98	142.04, 290.79
Slope Mean	10.34**	1.29	7.79, 12.88	6.56**	.76	5.08, 8.05	-.990	.59	-2.14, .16
Slope Variance	86.17	25.24	36.69, 135.65	33.96	9.92	14.52, 53.40	.08	.71	-13.89, 14.06
Quadratic Mean	-1.89**	.29	-2.4, -1.32	-1.89**	.29	-2.4, -1.32	-1.89**	.29	-2.4, -1.32
Quadratic Variance	2.94	1.04	.91, 4.97	2.94	1.04	.91, 4.97	2.94	1.04	.91, 4.97
BIC	2904.19			2904.19			2904.19		
χ^2 (*df*)	24.73(6)**			24.73(6)**			24.73(6)**		
CFI	.89			.89			.89		
TLI	.82			.82			.82		
RMSEA	.19[.12, .27]			.19[.12, .27]			.19[.12, .27]		
SRMR	.08			.08			.08		

** . Correlation is significant at the 0.01 level (2-tailed) *Correlation is significant at the 0.05 level (2-tailed)

Table 5.1
Fit Statistics and Standardized Coefficients of Happiness Condition Growth Model

	Intercept			Slope			Quadratic		
Variable	*B*	*SE*	95% CI	*B*	*SE*	95% CI	*B*	*SE*	95% CI
Alcohol	.073	.174	-.27, .36	-.27*	.15	-.57, -.02	.23	.13	-.03, .48
DPrime	.24	.18	-.12, .54	-.011	.19	-.39, .30	-.08	17	-.42, .26
ASA Severity	.08	.16	-.25, .35	-.125	.15	-.41, .18	.125	.13	-.12, .33
Alc x DPrime	-.21	.20	-.60, .18	.17	.19	-.0, .49	-.14	.17	-.47, .13
	B	*SE*	95% CI						
Intercept Mean	-.56	.29	-1.12, .01						
Intercept Variance	.95 *	.06	.83, 1.08						
Slope Mean	1.97*	.61	.77, 3.15						
Slope Variance	.90*	.09	.73, 1.08						
Quadratic Mean	-1.90*	.38	-2.64, -1.15						
Quadratic Variance	.91*	.07	.77, 1.05						
Intercept and Slope *r*	.64	.66	-.64, 1.93						
Quadratic and Slope *r*	-.93**	.03	-.99, -.87						
Quadratic and Intercept *r*	-.53		-1.41, .20						
BIC	1630.92								
χ^2 (*df*)	15.14(14)								
CFI	.99								
TLI	.98								
RMSEA	.03 [0.0, 0.107]								
SRDM	.037								

ASA = Past adult sexual assault perpetration
** . Correlation is significant at the 0.01 level (2-tailed) * . Correlation is significant at the 0.05 level (2-tailed)

Table 5.2

Fit Statistics and Standardized Coefficients of Subjective Sexual Arousal Condition Growth Model

ASA = Past sexual assault perpetration

	Intercept			Slope			Quadratic		
Variable	*B*	*SE*	95% CI	*B*	*SE*	95% CI	*B*	*SE*	95% CI
Alcohol	-.07	.13	-.33, .20	-.14	.12	-.37, .09	.13	.13	-.12, .38
DPrime	-.23	.19	-.60, .09	.03	.17	-.30, .36	.01	.21	-.41, .42
ASA Severity	.05	.15	-.24, .34	.02	.13	-.24, .27	.01	.11	-.22, .23
Alc x DPrime	.12	.17	-.21, .44	.13	.14	-.16, .39	-.14	.16	-.45, .18
	B	*SE*	95% CI						
Intercept Mean	-2.27**	.78	-3.79, -.74						
Intercept Variance	.96*	.06	.84, 1.08						
Slope Mean	1.58**	.23	1.14, 2.02						
Slope Variance	.97*	.04	.90, 1.04						
Quadratic Mean	-1.50**	.24	-1.97, -1.02						
Quadratic Variance	.97*	.04	.90, 1.04						
Intercept and Slope *r*	.38	.43	-.47, 1.23						
Quadratic and Slope *r*	-.97**	.01	-1.0, -.95						
Quadratic and Intercept *r*	-.43	.40	-1.22, .36						
BIC	1436.60								
χ^2 (*df*)	20.316(14)								
CFI	.94								
TLI	.88								
RMSEA	.09[.03, .15]								
SRDM	.04								

** . Correlation is significant at the 0.01 level (2-tailed) * . Correlation is significant at the 0.05 level (2-tailed)

Table 5.3
Fit Statistics and Standardized Coefficients of Anger Condition Growth Model

	Intercept			Slope			Quadratic		
Variable	*B*	*SE*	95% CI	*B*	*SE*	95% CI	*B*	*SE*	95% CI
Alcohol	-.69	.76	-.16, 1.4	.15	.25	-.331, .63	-.08	.168	-.41, .25
DPrime	.97	.11	-2.10, 2.26	-.01	.23	-.46, .455	-.093	.194	-.47, .14
ASA Severity	-.47	.55	-1.14, 1.04	.34	.31	-.26, .85	-.160	.154	-.46, .14
Alc x DPrime	-.25	.27	-5.6, 5.13	.38	.31	-.23, .99	-.27	.22	-.70, .15
	B	*SE*	95% CI						
Intercept Mean	-1.23	.14	-2.86, 2.62						
Intercept Variance	-.42	.32	-2.3, 1.43						
Slope Mean	-1.38	.91	-3.16, .401						
Slope Variance	.70	.38	-.78, 2.01						
Quadratic Mean	1.29**	.52	.28, 2.31						
Quadratic Variance	.85	.14	.57, 1.13						
Intercept and Slope *r*	.28	.14	.03, 1.42						
Quadratic and Slope *r*	-1.049**	.17	-1.39, -.71						
Quadratic and Intercept *r*	-.05	.03	-1.23, .89						
BIC	1899.468								
χ^2 (*df*)	19.79(18)								
CFI	.94								
TLI	.87								
RMSEA	.078[.00, .134]								
SRDM	.05								

ASA = Past sexual assault perpetration
** . Correlation is significant at the 0.01 level (2-tailed) * . Correlation is significant at the 0.05 level (2-tailed)

Table 5.4
Fit Statistics and Standardized Coefficients of Anxiety Condition Growth Model

	Intercept			Slope			Quadratic		
Variable	*B*	*SE*	95% CI	*B*	*SE*	95% CI	*B*	*SE*	95% CI
Alcohol	-.17	.89	-1.91, 2.11	.01	.21	-.41., .43	-.10	.16	-.41, .21
DPrime	-.01	.71	-1.40, 1.82	-.04	.32	-.67, .58	-.012	.21	-.43, .41
ASA Severity	.01	.47	-.92, 1.23	.36	.23	-.09, .81	-.28	.122	-.51, .04
Alc x DPrime	-.46	.16	-3.67, 3.76	.02	.24	-.44, .49	.056	.18	-.29, .40
	B	*SE*	95% CI						
Intercept Mean	-1.14	.44	-9.75, 7.36						
Intercept Variance	.73	.20	-3.20, 4.65						
Slope Mean	-1.189	.66	-2.48, .104						
Slope Variance	.87*	.17	.537, 1.20						
Quadratic Mean	1.46**	.41	.661, 2.25						
Quadratic Variance	.91*	.07	.77, 1.06						
Intercept and Slope *r*	.32	.19	-3.44, 4.09						
Quadratic and Slope *r*	-.98	.09	-1.26, 1.07						
Quadratic and Intercept *r*	-.92**	.60	-1.16, -.81						
BIC	1508.22								
χ^2 (*df*)	28.54(14)*								
CFI	.90								
TLI	.78								
RMSEA	.11[.05, .16]								
SRDM	.06								

ASA = Past sexual assault perpetration
** . Correlation is significant at the 0.01 level (2-tailed) * . Correlation is significant at the 0.05 level (2-tailed)

Table 5.5
Fit Statistics and Standardized Coefficients of Sympathetic Arousal Condition Growth Model

	Intercept			Slope			Quadratic		
Variable	*B*	*SE*	95% CI	*B*	*SE*	95% CI	*B*	*SE*	95% CI
Alcohol	-.03	.12	-.26, .21	-.38	.34	-1.06, .18	.12	.14	-.17, .37
DPrime	-.26	.23	-.70, .18	.42	.28	-1.41, 8.86	-.03	.14	-.31, .24
ASA Severity	-.06	.13	-.31, .19	.03	.13	.01, .05	-.23	.09	-.41, -.06
Alc x DPrime	.18	.16	-.13, .48	-.49	.55	-.16, 4.17	.09	.14	-.19, .37
	B	*SE*	95% CI						
Intercept Mean	.12	.25	-.37, .62						
Intercept Variance	.95	.07	.81, 1.09						
Slope Mean	-.26	.21	-.40, 1.03						
Slope Variance	.49	.21	-.53, .42						
Quadratic Mean	.14	.14	-.14, .42						
Quadratic Variance	.92	.06	.80, 1.05						
Intercept and Slope *r*	.26	.18	-1.09, 6.30						
Quadratic and Slope *r*	-.20	.45	-1.09, 6.25						
Quadratic and Intercept *r*	-.50	.41	-1.09, .70						
BIC	1449.69								
χ^2 (*df*)	14.629(5)*								
CFI	.99								
TLI	.94								
RMSEA	.14[.06, .24]								
SRDM	.02								

ASA = Past sexual assault perpetration
** . Correlation is significant at the 0.01 level (2-tailed) * . Correlation is significant at the 0.05 level (2-tailed)

Table 5.6

Fit Statistics and Standardized Coefficients of Penile Plethymography Condition Growth Model

	Intercept			Slope			Quadratic		
Variable	*B*	*SE*	95% CI	*B*	*SE*	95% CI	*B*	*SE*	95% CI
Alcohol	.07	.16	-.24, .33	-.192	.12	-.43, .05	.25	.15	-.03, .49
DPrime	-.04	.15	-.34, .21	-.04	.14	-.31, .20	-.01	.20	-.41, .33
ASA Severity	.37	.24	-.12, .84	.17	.12	-.09, .39	-.27	.15	-.57, -.02
Alc x DPrime	-.17	.13	-.42, .08	-.04	.12	-.28, .16	.03	.16	-.28, .29
	B	*SE*	95% CI						
Intercept Mean	-2.05	.71	-3.45, -.66						
Intercept Variance	.82	.20	.42, 1.22						
Slope Mean	1.24**	.22	.823, 1.67						
Slope Variance	.91	.07	.78, 1.05						
Quadratic Mean	-1.22	.11	-1.85, -.58						
Quadratic Variance	.78	.13	.63, 1.06						
Intercept and Slope *r*	.59	.50	-.30, 1.57						
Quadratic and Slope *r*	-1.0*	.03	-1.07, -.95						
Quadratic and Intercept *r*	-.72	.58	-1.87, .42						
BIC	2872.24								
χ^2 (*df*)	35.41(14)**								
CFI	.92								
TLI	.83								
RMSEA	.13[.08, .19]								
SRDM	.06								

ASA = Past sexual assault perpetration

** . Correlation is significant at the 0.01 level (2-tailed) * . Correlation is significant at the 0.05 level (2-tailed)

Table 6.1
Statistics and Variance of Slope and Intercept for Final Happiness Model

Variable	Intercept			Slope			Quadratic			Sexual Assault Intentions		
	B	*SE*	95% CI	*B*	*SE*	95% CI	*B*	SE	95% CI	*B*	*SE*	95% CI
Alcohol	.06	.15	-.22, .35	-.22	.12	-.45, .01	.19	.11	-.03, .41	-.11	.11	-.32, .10
DPrime	.19	.14	-.08, .47	-.01	.15	-.31, .29	-.07	.15	-.35, .22	-.34	.20	-.74, .06
ASA Severity	.06	.13	-.20, .32	-.09	.11	-.31, .12	.11	.11	-.01, .28	.21	.11	.01, .42
Alcohol x DPrime	-0.17	.16	-.47, .14	.14	.15	-.16, .44	-.13	.15	-.41, .158	.16	.16	-.15, .48
Intercept	--	--		--	--		--			.03	.12	-.21, .27
Slope	--	--		--	--		--			.81**	.39	.05, 1.57
Quadratic	--	--		--	--		--			.84**	.37	.11, .16
Correlations												
Intercept and Slope *r*										.59	.59	-.57, 1.57
Intercept and Quadratic *r*										-.47	.39	-1.24, .17
Slope and Quadratic *r*										-.94**	.02	-.98, .-91
Means												
Intercept Mean										-.46***	.20	-.86, -.07
Slope Mean										1.58**	.03	.95, 2.11
Quadratic Mean										-1.62**	.25	-2.11, -1.14
BIC	1899.468											
χ^2 (*df*)	19.79(18)											
CFI	.94											
TLI	.87											
RMSEA	.078[.00, .134]											
SRMR	.05											

Table 6.2

Statistics and Variance of Slope and Intercept for Final Subjective Sexual Arousal Model

Variable	Intercept			Slope			Quadratic			Sexual Assault Intentions		
	B	*SE*	95% CI	*B*	*SE*	95% CI	*B*	SE	95% CI	*B*	*SE*	95% CI
Alcohol	-.07	.14	-.33, .16	-.14	.12	-.38, .05	.14	.13	-.11, .34	-.12	.09	-.30, .023
DPrime	-.23	.19	-.61, .09	.03	.17	-.31, .30	.01	.21	-.40, .35	-.36	.16	-.68, -.09
ASA Severity	.05	.15	-.24, .31	.02	.13	-.24, .23	.01	.11	-.21, .19	.19*	.09	.01, .34
Alcohol x DPrime	.12	.17	-.22, .40	.12	.14	-.16, .35	-.14	.16	-.45, .12	.16	.13	-.09, .37
Intercept										.25	.18	-.10, .55
Slope										.86**	.60	.10, 2.04
Quadratic										.83**	.67	.07, 2.35
Correlations												
Intercept and Slope *r*										.41	.43	-.44, 1.12
Intercept and Quadratic *r*										-.44	.30	-1.21, .20
Slope and Quadratic *r*										-.97**	.01	-.99, -.94
Means												
Intercept Mean										-2.33**	.80	-3.91, -.76
Slope Mean										1.59**	.23	1.15, 2.03
Quadratic Mean										-1.49**	.24	-1.95, -1.03
BIC	1802.14											
χ^2 (*df*)	22.79(16)											
CFI	.94											
TLI	.872											
RMSEA	.089[.032, .140]											
SRMR	.060											

Table 6.3
Statistics and Variance of Slope and Intercept for Final Anger Model

Variable	Intercept			Slope			Quadratic			Sexual Assault Intentions		
	B	*SE*	95% CI	*B*	*SE*	95% CI	*B*	SE	95% CI	*B*	*SE*	95% CI
Alcohol	-.43	.19	-.42, .33	.153	.26	-.35, .66	-.08	.18	-.43, .27	-.14	.105	-.34, .07
DPrime	.62	.28	-.49, .62	.002	.24	-.46, .47	-.10	.20	-.50, .30	-.32	.18	-.68, .031
ASA Severity	-.29	.15	-.48, .16	.347	.33	-.30, .99	-.16	.164	-.47, .16	.16	.14	-.10, .43
Alcohol x DPrime	-.16	.68	-1.49, 1.18	.41	.34	-.25, 1.07	-.29	.23	-.75, .16	.25	.16	-.06, .56
Intercept										.02	.10	-.18, .22
Slope										.68	.51	-.32, 1.67
Quadratic										1.08	.60	-.01, 2.26
Correlations												
Intercept and Slope *r*										.28	.14	-.81, .21
Intercept and Quadratic *r*										-.05	.03	-2.31, .23
Slope and Quadratic *r*										-.04*	.052	-1.42, -.67
Means												
Intercept Mean										-.79	.32	-.78, .63
Slope Mean										-1.45	.10	-3.43, .52
Quadratic Mean										1.37	.57	2.64, 2.48
BIC	1607.23											
χ^2 (*df*)	33.55(16)**											
CFI	.91											
TLI	.79											
RMSEA	.11[.056, .160]											
SRMR	.065											

Table 6.4
Statistics and Variance of Slope and Intercept for Final Anxiety Model

Variable	Intercept			Slope			Quadratic			Sexual Assault Intentions		
	B	*SE*	95% CI	*B*	*SE*	95% CI	*B*	SE	95% CI	*B*	*SE*	95% CI
Alcohol	-.14	.61	-1.32, .85	.01	.21	-.40, .41	-.10	.16	-4.0, .16	-.10	.11	-.32, .11
DPrime	.01	.58	-1.13, .96	-.04	.31	-.64, .46	-.01	.21	-.43, .34	-.39	.24	-.86, .09
ASA Severity	.01	.40	-.75, .65	.35	.22	-.07, .71	-.28	.12	-.51, -.08	.23*	.10	.04, .43
Alcohol x DPrime	-.39	.97	-2.29, 1.20	.025	.23	-.43, .40	.05	.17	-.29, .40	.12	.20	-.26, .50
Intercept										-.04	.15	-.322, .25
Slope										.23	.44	-.64, 1.10
Quadratic										.31	.50	-.67, 1.28
Correlations										.23	.09	-1.55, 2.07
Intercept and Slope *r*										-.62	.29	-6.41, 4.24
Intercept and Quadratic *r*										-.98**	.07	-1.12, -.86
Slope and Quadratic *r*												
Means										-.96	.25	-5.98, 4.07
Intercept Mean										-1.14	.61	-2.34, .05
Slope Mean										1.4*	.40	.65, 2.22
Quadratic Mean										.23	.09	-1.55, 2.07
BIC	1863.12											
χ^2 (*df*)	37.17(16)**											
CFI	.87											
TLI	.68											
RMSEA	.12[.07, .17]											
SRMR	.06											

Table 6.5
Statistics and Variance of Slope and Intercept for Final Sympathetic Arousal Model

Variable	Intercept			Slope			Quadratic			Sexual Assault Intentions		
	B	*SE*	95% CI	*B*	*SE*	95% CI	*B*	SE	95% CI	*B*	*SE*	95% CI
Alcohol	-.05	.23	-.26, .21	-.37	.35	-1.06, .31	.20	.29	-.18, .38	-.17	.20	-.28, .11
DPrime	-.41	.34	-.73, .18	.43	.28	-1.17, 9.73	-.57	.21	-.73, .18	-.47	.30	-.72, .09
ASA Severity	-.01	.01	-.32, .19	.03	.01	.01, .06	-.02	.01	-.41, -.06	.02	.01	.04, .43
Alcohol x DPrime	.46	.37	-.12, .48	-.51	.54	-1.57, 5.73	.23	.35	-.19, .37	2.6	.37	-.19, .40
Intercept										.01	.08	-.14, .16
Slope										.01	.03	-.21, .41
Quadratic										.11	.15	-.19, .41
Correlations												
Intercept and Slope *r*	.52	.56	-1.06, 6.3									
Intercept and Quadratic *r*	-.32	.27	-1.30, .28									
Slope and Quadratic *r*	1.04**	.20	-1.10, .71									
Means												
Intercept Mean	.46	.86	-1.22, 2.14									
Slope Mean	-.27	.22	-.70, .16									
Quadratic Mean	.07	.07	-.07, .22									
BIC	1780.29											
χ^2 (*df*)	18.58(8)*											
CFI	.98											
TLI	.94											
RMSEA	.12[.04, .19]											
SRMR	.02											

Table 6.6
Statistics and Variance of Slope and Intercept for Penile Plethysmography Model

Variable	Intercept			Slope			Quadratic			Sexual Assault Intentions		
	B	*SE*	95% CI	*B*	*SE*	95% CI	*B*	SE	95% CI	*B*	*SE*	95% CI
Alcohol	.07	.16	-.24, .34	-.19	.13	-.44, .05	.26	.15	-.03, .50	.02	.25	-.45, .43
DPrime	-.05	.17	-.38, .24	-.04	.16	-.35, .22	-.01	.23	-.45, .37	-.35	.34	-1.02, .20
ASA Severity	.36	.24	-.12, .76	.16	.13	-.09, .37	-.26	.15	-.55, -.01	.15	.19	-.22, .46
Alcohol x DPrime	-.22	.16	-.54, .04	-.05	.15	-.34, .20	.03	.20	-.36, .35	-.02	.24	-.48, .37
Intercept										-1.17	.23	-5.79, 2.71
Slope										-.124	.25	-6.27, 2.98
Quadratic										-.14	.40	-.92, .53
Correlations												
Intercept and Slope *r*										.60	.53	-.43, 1.46
Intercept and Quadratic *r*										-.73	.60	-1.92, .27
Slope and Quadratic *r*										-1.01*	.03	-1.07, -.95
Means												
Intercept Mean										-2.05*	.73	-3.47, -.63
Slope Mean										1.25	.22	.83, 1.67
Quadratic Mean										-1.22*	.32	-1.86, -.59
BIC	3185.98											
χ^2 (*df*)	38.39(16)**											
CFI	.93											
TLI	.82											
RMSEA	.13[.07, .18]											
SRMR	.05											

Table 7
Correlation Matrix, Means, Standard Deviations, and Skewness Statistical for Final SEM Model

	Alcohol	Coerce	Entice	Incap	Force	T-Ang Temp	T-Ang React	Subj Sex
Alcohol	1							
Coercive	-0.126	1						
Entice	-0.082	.686**	1					
Incap	0.113	.687**	.667**	1				
Force	-0.197	.895**	.453**	.544**	1			
T-Ang Temp	-0.028	0.008	.268**	.218*	-0.029	1		
T-Ang React	0.034	-0.078	.212*	-0.013	-0.157	.538**	1	
Subj Sex	-0.033	0.197	.426**	.288**	0.114	0.096	0.119	1
T-ER: Nonaccept	-0.136	0.030	0.004	-0.002	-0.019	0.140	.210*	0.194
T-ER: Clarity	-0.028	0.149	0.108	-0.066	0.114	0.069	0.113	0.040
T-ER: Goal	-0.096	-0.069	0.018	-0.145	-0.062	0.195	.292**	0.088
T-ER: Impulse	-0.133	0.123	0.151	0.048	0.106	.446**	.335**	0.089
T-ER: Strategies	-0.118	-0.027	0.017	-0.103	-0.043	.355**	.301**	0.039
Anger	0.012	.262*	0.159	.369**	.284**	0.092	0.053	0.211*
S-ER:Nonaccept	0.053	0.063	0.056	0.038	0.127	0.016	0.073	0.178
S-ER: Clarity	-0.006	.295**	.225*	0.107	.277**	-0.085	-0.110	0.168

S-ER: Modulate	-0.020	0.176	0.109	0.095	.230*	0.030	0.044	0.138
Pos Urg	-0.112	.393**	.300**	.292**	.374**	.353**	0.136	0.060
Neg Urg	-0.178	.203*	0.138	0.083	0.190	.381**	.345**	0.075
Sens Seek	-0.164	0.137	.212*	0.163	0.068	0.166	0.120	0.145
Empathy	-0.061	-.254*	-.217*	-.224*	-.273**	0.054	0.057	-0.088
Psychopathy	-0.047	0.194	0.174	.213*	0.155	.264**	0.164	0.060
SCL	-0.190	-0.031	0.056	-0.026	-0.028	0.112	0.142	-0.030
Physio Sex	-0.164	0.117	0.208	0.205	0.022	-0.168	-0.059	.490**
Trait RSA	0.124	0.054	0.117	0.115	-0.055	-0.047	-0.090	0.172
State RSA	-.262*	0.064	0.092	0.048	0.080	-0.151	-.243*	0.137
Social Desire	-0.049	-0.067	-0.066	-0.082	0.019	-.319**	-.372**	-0.046
Mean (SD)	.51 (.5)	1.70 (1.3)	2.4 (1.9)	2.11 (1.66)	1.3 (.95)	1.42 (.62)	2.17 (.70)	2.42 (1.55)
Skewness	-0.040	2.380	1.250	1.270	3.450	2.03	0.33	1.010

Table 7
Correlation Matrix, Means, Standard Deviations, and Skewness Statistical for Final SEM Model

	T-ER: Nonaccept	T-ER: Clarity	T-ER: Goal	T-ER: Impulse	T-ER: Strategies	Anger	S-ER: Nonaccept
T-ER: Nonaccept	1						
T-ER: Clarity	.307**	1					
T-ER: Goal	.567**	.379**	1				
T-ER: Impulse	.532**	.431**	.538**	1			
T-ER: Strategies	.667**	.448**	.667**	.730**	1		
Anger	0.015	-0.032	-0.059	0.004	0.024	1	
S-ER:Nonaccept	.351**	.269**	.221*	.322**	.378**	0.085	1
S-ER: Clarity	0.119	.328**	-0.003	0.155	0.142	0.173	.405**
S-ER: Modulate	.413**	.380**	.298**	.370**	.431**	0.190	.709**
Pos Urg	.227*	.321**	.233*	.507**	.386**	0.183	0.182
Neg Urg	.428**	.418**	.403**	.631**	.565**	0.100	.251*
Sens Seek	0.001	-0.016	-0.028	0.136	0.008	-0.028	0.001
Empathy	.254*	-0.006	0.163	0.062	.226*	-0.141	0.145
Psychpathy	0.036	0.072	-0.067	.321**	0.067	0.041	-0.128

SCL	0.031	0.154	0.014	0.186	0.155	0.142	0.007
Physio Sex	0.187	0.027	-0.017	0.034	-0.110	-0.146	-0.001
Trait RSA	0.009	0.152	-0.039	-0.047	-0.134	-0.014	-0.102
State RSA	-0.098	0.106	-0.195	-0.014	-0.172	0.043	-0.019
Social Desire	-.287**	-.231*	-.357**	-.367**	-.309**	-.236*	-0.086
Mean (SD)	13.15 (5.22)	10.67 (3.29)	13.03 (4.61)	10.23 (4.0)	14.98(5.59)	2.5 (1.55)	11.37 (6.22)
Skewness	0.98	0.57	0.23	1.06	1.16	0.943	1.610

Table 7
Correlation Matrix, Means, Standard Deviations, and Skewness Statistical for Final SEM Model

	S-ER: Clarity	S-ER: Modulate	Pos Urg	Neg Urg	Sens Seek	Empathy	Psychpathy
S-ER: Clarity	1						
S-ER: Modulate	.479**	1					
Pos Urg	0.126	.269**	1				
Neg Urg	0.153	.399**	.443**	1			
Sens Seek	-0.153	-0.009	.265**	0.059	1		
Empathy	-0.040	0.043	-0.156	-0.004	-0.164	1	
Psychpathy	-0.056	-0.036	.204*	.243*	0.178	-0.125	1
SCL	0.018	0.021	0.000	0.093	0.010	0.116	0.118
Physio Sex	0.120	0.106	0.062	-0.036	0.156	-0.150	0.088
Trait RSA	-0.066	-0.120	0.048	-0.094	0.159	0.009	-0.102
State RSA	0.120	-0.052	-0.140	-0.021	0.177	-0.021	0.158
Social Desire	-0.037	-.209*	-.202*	-.449**	-0.060	-0.099	-0.171
Mean (SD)	3.33 (1.73)	10.30 (4.38)	1.86 (.76)	1.94 (.76)	3.34 (.63)	11.59 (3.23)	22.02 (8.84)
Skewness	1.180	1.43	0.81	0.49	-1.510	-0.320	0.690

Table 7
Correlation Matrix, Means, Standard Deviations, and Skewness Statistical for Final SEM Model

	SCL	Physio Sex	Trait RSA	State RSA	Social Desire
SCL	1				
Physio Sex	-0.157	1			
Trait RSA	0.064	0.107	1		
State RSA	0.061	0.200	.476**	1	
Social Desire	-.211*	.227*	0.059	.210*	1
Mean (SD)	.56 (4.37)	16.09 (14.66)	6.22 (1.18)	5.53 (1.20)	6.0 (2.67)
Skewness	-1.76	1.27	-0.640	-0.77	0

Alc = Alcohol; Incap = Incapacitation; T-Ang Temp = Trait Anger: Temperament; T-Ang React = Trait Anger Reactive to Negative Situations; Subj Sex = Subjective Sexual Arousal; T-ER: Nonaccept = Trait ER-Non-acceptance of Emotion; T-ER: Clarity = Trait ER-Difficulty Clarifying Emotions; T-ER: Goal = Trait ER-Difficulties with Goal-Directed Behavior; T-ER: Strategies = Trait ER-Access to ER Strategies; S-ER: Nonaccept = State ER-Non-acceptance of Emotions; S-ER: Clarity = State ER-Difficulty Clarifying Emotions; S-ER: Modulate = State ER- Difficulty Modulating Emotions; Pos Urg = Positive Urgency; Neg Urg = Negative Urgency; Sens Seek = Sensation Seeking; Physio Sex = Physiological Sexual Arousal; SCL = Skin Conductance Level; Trait RSA = Trait Respiratory Sinus Arrhythmia; Social Desire = Social Desirability

Table 8
Final Model

Factor	Standardized Estimate	*SE*	95% Confidence Interval
Sexual assault intentions by			
Enticement	.70**	.08	.54, .86
Coerce	.92**	.12	.77, 1.7
Incapacitation	.69**	.07	.60, .85
Force	.67**	.09	.54, .82
Trait Emotional Arousal by			
TAXI Angry Temperament	.88**	.10	.63, 1.14
TAXI Angry Reactions	.62**	.10	.43, .81
Subjective Sexual Arousal	.54*	.12	.40, .68
Trait Emotion Regulation by			
Non-Acceptance of Emotion	.70**	.08	.53, .86
Difficult Clarifying Emotions	.62**	.09	.49, .79

Difficulty with Goal-Directed Behavior	.72**	.06	.61, .83
Difficulty with Impulse-Control	.79**	.04	.71, .88
Difficulty Accessing Emotion Regulation Strategies	.94**	.03	.97, .99
State Emotion Regulation by			
Non-Acceptance of Emotions	.78**	.08	.62, .94
Difficulty Clarifying Emotions	.69**	.03	.74, .89
Difficulty with Modulating Emotions	.89**	.08	.75, 1.04
State Emotional Arousal on			
Alcohol	.09	.10	-.30, .27
Trait Emotional Arousal	.04	.12	-.19 ,.24
State Emotion Regulation			
Alcohol	.13	.11	-.08, .34
Trait Emotion Regulation	.56	.17	.32, .81
Sympathetic Arousal Reactivity on			

Alcohol	-.22*	.08	-.412, -.019
State RSA on			
Trait RSA	.49	.10	.34, .62
Sexual Assault Perpetration on			
Alcohol	-.15	.12	-.45, .09
Trait Emotional Arousal	.18	.19	-.19, .56
Quadratic Emotional Arousal	.03	.10	-1.49, 2.56
State Emotional Arousal	.01	.11	-.20, .23
Trait Emotion Regulation	-.65**	.16	-.95, -.34
State Emotion Regulation	.24*	.11	.03, .45
Positive Urgency	.28	.14	.01, .54
Negative Urgency	.04	.11	-.17, .25
Sensation Seeking	.06	.08	-.89, .25
Empathy	-.09	.10	-.28, .07
Psychopathy	.19	.11	-.03, .40
Sympathetic Arousal Reactivity	-.08	.08	-.23, .07

Physiological sexual arousal	.04	.10	-.16, .25
Trait RSA	.15	.11	-.07, .38
State RSA	-.07	.13	-.33, .20
Social Desirability	-.11	.08	-.10, .02
Trait Emotional Arousal x Alcohol	-.12	.10	-.32, .08
Trait Emotion Regulation x Alcohol	.30**	.08	.08, .54
Trait Emotional Arousal to Sexual Assault Perpetration Intentions via State Emotional Arousal	.04	.05	-.02, .02
Trait Emotion Regulation to Sexual Assault Perpetration Intentions via State Emotion Regulation	.36	.05	0.31, .42

Figure 4: Hypothesized Model

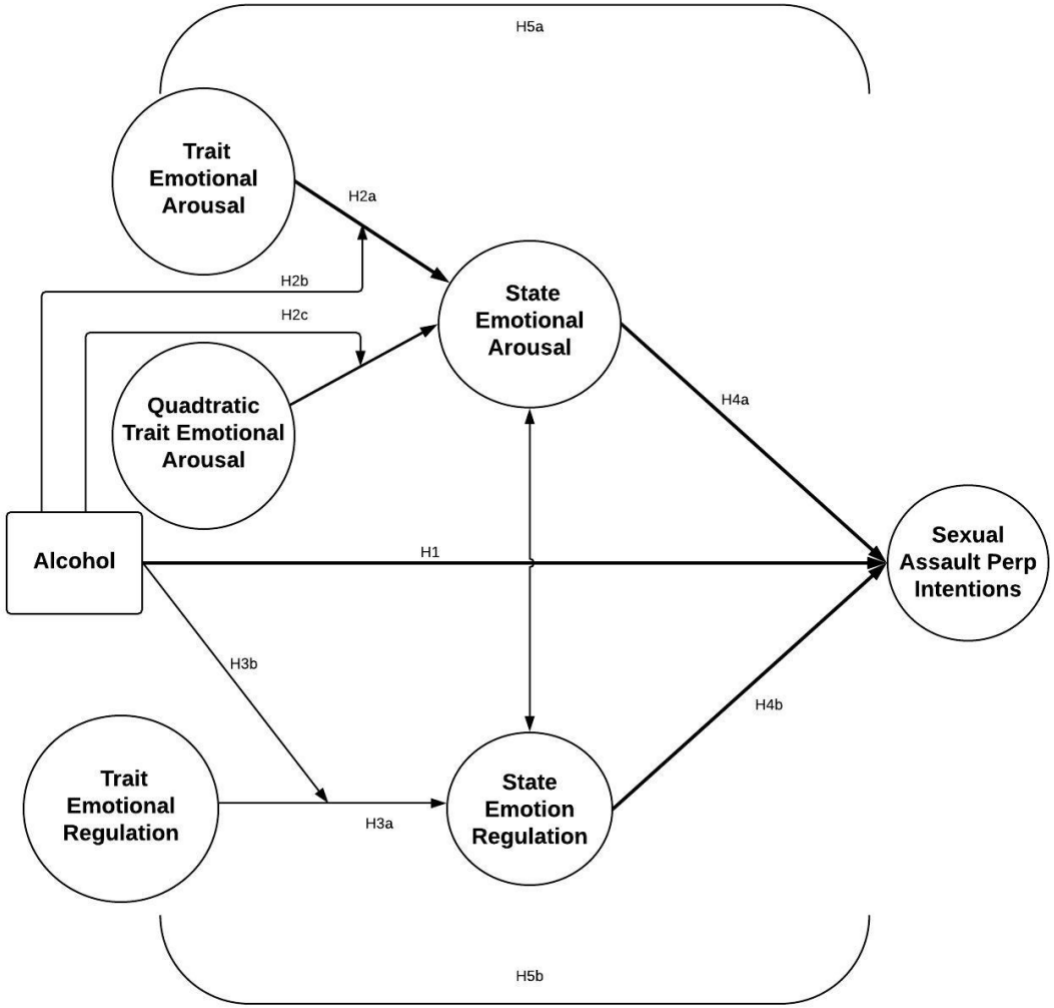


Figure 5: Final Model

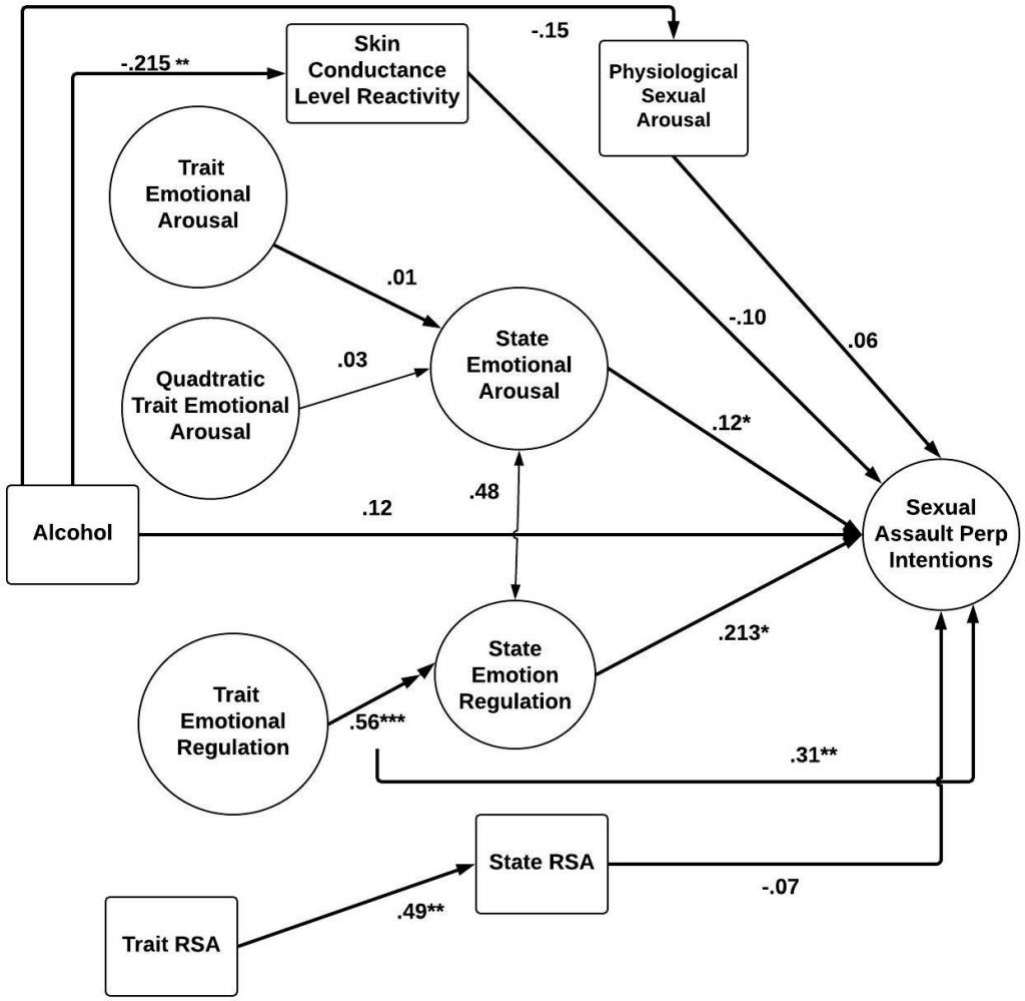
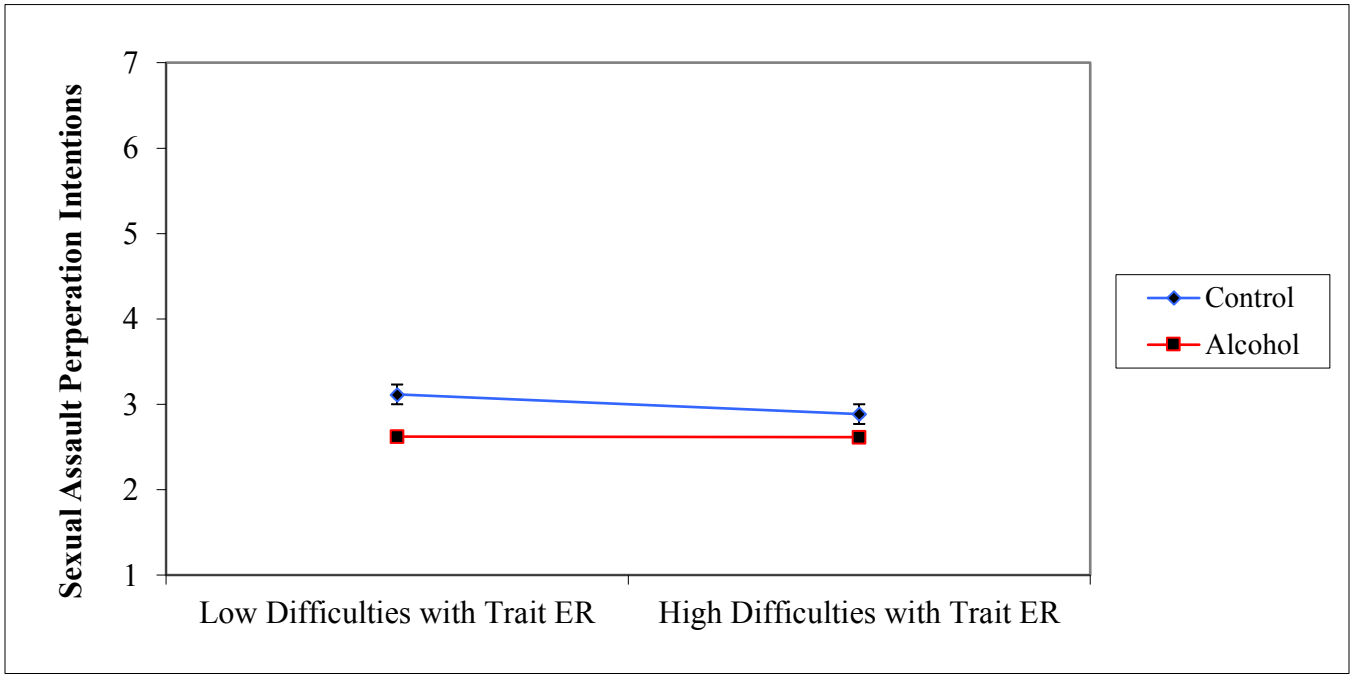


Figure 6: Interaction of Trait Emotion Regulation and Alcohol Group



[i] While inhibition is a commonly studied phenomenon, some research has also called into question whether inhibition should be conceptualized as a general cognitive construct (Rey-Mermet, Gade, & Oberauer, 2018). Such investigations have failed to separate inhibition factorially from a common executive functioning factor, and thus question whether inhibition is a unique construct.