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The impact of sexual assault on sexual risk-taking

Melanie Alison Reyes

University of Northern Iowa

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THE IMPACT OF SEXUAL ASSAULT ON SEXUAL RISK-TAKING

An Abstract of a Thesis

Submitted

in Partial Fulfillment

of the Requirements for the Degree

Master of Arts

Melanie Alison Reyes

University of Northern Iowa

July 2019
ABSTRACT

Sexual assault survivors experience a variety of adverse psychological and behavioral outcomes after their assault, such as engagement in sexual risk behavior (Testa, Hoffman, & Livingston, 2010). Previous research has reported risk factors among sexual assault survivors, such as survivors’ self-reported insecure attachment (Oshri, Sutton, Clay-Warner, & Miller, 2015), difficulties with emotion regulation (Walsh, DiLillo, & Messman-Moore, 2012), and substance use coping (Ullman, Relyea, Peter-Hagene, & Vasquez, 2013). Given that sexual risk behavior is also associated with these variables (e.g., Hotton, Garofalo, Kuhns, & Johnson, 2013), the current study examined whether these variables may mediate the association between sexual assault and sexual risk behavior. One hundred and ninety-four undergraduate students at a mid-sized Midwestern university completed measures of sexual experiences, insecure attachment, emotion regulation difficulties, coping strategies, and sexual risk behavior. Results demonstrated that there was a significant gender difference in the number of sexual assaults reported. There was also evidence demonstrating that sexual assault was associated with detrimental outcomes such as an insecure attachment style and difficulties with emotion regulation. Further, insecure attachment and difficulties with emotion regulation was associated with one form of sexual risk behavior. Surprisingly, the sexual assault experience was not associated with any sexual risk behaviors. Another unexpected finding was that survivors’ insecure attachment, difficulties with emotion regulation, and substance use coping did not mediate the association between sexual
assault and sexual risk behaviors. Nevertheless, the current study highlights that sexual assault is detrimental and is still prevalent in college campuses today.

*Keywords*: sexual assault, insecure attachment, emotion regulation, substance use, sexual risk behavior, sexual risk-taking
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Melanie Alison Reyes
University of Northern Iowa
July 2019
This Study by: Melanie Alison Reyes

Entitled: The Impact of Sexual Assault on Sexual Risk-Taking

has been approved as meeting the thesis requirement for the

Degree of Master of Arts in Psychology

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CHAPTER 1

INTRODUCTION

Women have had a tough battle with gender oppression in American society. Regrettably, a form of gender oppression is still prevalent today as the sexual objectification of the female body frequently unfolds in the mass media of American culture. Through the process of sexual objectification, women are devalued as human beings; when a woman is sexually objectified, she is no longer a living entity, and is regarded as a mere source for men’s viewing pleasure (Fredrickson & Roberts, 1997). This culture of sexual objectification is extremely prominent and can be incredibly problematic. While some forms of sexual objectification are minor, others can be traumatic. Some women experience a traumatic form of sexual objectification referred to as sexual assault, defined by the U.S. Department of Health and Human Services as “any type of sexual activity or contact that you do not consent to” occurring through physical force, threats of force, and/or drug or alcohol intoxication (“Sexual assault,” 2018). As will be discussed, sexual assault is, unfortunately, likely to occur and especially against women.

From 1995 to 2013, women between the ages of 18 to 24 were at the highest risk of experiencing sexual assault when compared to other age groups; interestingly, the majority of these women identified as university students (Sinozich & Langton, 2014). Though the likelihood of women experiencing sexual assault is still high in as early as the middle and high school years (Young, Grey, & Boyd, 2009), it seems that the female college student is especially vulnerable to the harmful and traumatic experience of sexual
assault. Sexual violence against women is especially prevalent in college campuses (Fedina, Holmes, & Backes, 2016) and college women report higher rates of sexual assault than do college men (Banyard et al., 2007). The college experience involves partying and heavy alcohol consumption (Wechsler, Molnar, Davenport, & Baer, 1999) and this culture of drinking may likely explain the vulnerability of college women at this stage in their lives, as the objectification culture, the party atmosphere, and the impairment and other negative consequences of heavy alcohol usage intersect. Whatever the case may be, women are targets of sexual violence, often living in fear of sexual assault on campus and in their day-to-day lives (Day, 1999). Sexual assault is still a pervasive societal problem that needs further research as it can be significantly harmful to those who experience it.

Before discussing the adverse effects of sexual assault, it is essential to note terminology used throughout this paper, and that is often used interchangeably in the sexual violence literature. Researchers have referred to the nonconsensual perpetration of sexual activities as sexual assault (e.g., Gidycz, Coble, Latham, & Layman, 1993), rape (e.g., Kilpatrick, Resick, & Veronen, 1981), sexual abuse (e.g., Beitchman et al., 1992), sexual maltreatment (e.g., Limke-McLean, Showers, & Zeigler-Hill, 2010), sexual victimization (e.g., Walsh et al., 2012), sexual violence (e.g., A. M. Gross, Winslett, Roberts, & Gohm, 2006), or unwanted sexual contact (e.g., Adams-Curtis & Forbes, 2004). In the literature, this terminology refers to the nonconsensual perpetration of a multitude of sexual activities. For instance, an incidence of rape could be classified as an incapacitated rape, a completed rape, or an attempted forcible rape (e.g., Fedina et al.,
The attempt to rape may not always be completed yet is still classified as an assault incidence. It is also important to note that throughout this paper, I will be referring to the non-consensual perpetration of sexual activities as sexual assault, and I will not be using the term “victim” or “victimization” throughout this paper. I will not refer to sexual assault victims as victims, but rather as survivors of the incident. The term “sexual victimization,” or referring to survivors as “victims” is disempowering to women in a society that is already oppressive and stigmatizing to the lived experiences of women. In addition, the term “victim” contains a rather negative connotation. Thus, sexual assault survivors will not be victims in this paper. Finally, though sexual assault also happens to men (Welch & Mason, 2007), the incidence is most prevalent, and is thus studied most often in samples of female sexual assault survivors. Though I will be examining the effects of sexual assault on both men and women, it should be noted that the literature that will be discussed mostly examines the effects of sexual assault on women.

Effects of Sexual Assault

Survivors experience a variety of adverse outcomes after their assault experience. Sexual assault has detrimental implications for survivors’ emotionality, perceptions, and mental state and is responsible for a variety of behavioral problems as well as issues with survivors’ romantic and sexual relationships. First, sexual assault is responsible for negative feelings and thoughts such as self-blame (Johnson & Lynch, 2013), fear (Beitchman et al., 1992; Kilpatrick et al., 1981), and a negative perception of health (Golding, 1999). Participants who experience sexual assault are likely to cope with the experience by blaming themselves as a reason for their assault (Johnson & Lynch, 2013).
Additionally, sexual assault instigates a life of fear. In a longitudinal study on the long-term effects of sexual assault, Kilpatrick and colleagues (1981) found that among a variety of effects, living life in fear was one of the most prolonged effects of sexual assault at the one-year post-rape mark. Sexual assault survivors tend to severely restrict their lives following their assault due to the negative emotions that arise from the experience (Kilpatrick et al., 1981). For instance, following their assault experience, sexual assault survivors may fear being alone, and as a result of this fear, sexual assault survivors are likely to restrict their lives in a way that would make being alone not be likely to occur (Kilpatrick et al., 1981). Further, sexual assault even has implications for an individual’s perception of their physical health; sexual assault survivors tend to perceive their health as “poor or fair,” rather than “good or excellent” (Golding, Cooper, & George, 1997; as cited in Golding, 1999, p. 191).

Second, sexual assault is associated with a variety of mental illnesses and disorders. Sexual assault survivors report depression (Beitchman et al., 1992; Burnam et al., 1988), anxiety (Beitchman et al., 1992; Burnam et al., 1988; Kilpatrick et al., 1981; Molnar, Buka, & Kessler, 2001), mood disorders (Molnar et al., 2001), suicidal ideation (Beitchman et al., 1992), and post-traumatic stress (Johnson & Lynch, 2013). According to a literature review conducted by Beitchman and colleagues (1992), women who have been sexually abused in childhood have been shown to be depressed, anxious, and have reported exhibiting some suicidal ideas and behaviors occasionally. Childhood sexual abuse has predicted the onset of mood disorders as well, as shown in retrospective reports of child sexual abuse in a nationally representative survey of the United States; these
mood disorders were comorbid with anxiety and substance use disorders as well (Molnar et al., 2001). Sexual assault is a distressing experience which is most likely the reason for the onset of such disorders. As can be logically concluded, because of these mental outcomes, the lives of sexual assault survivors are even more restricted.

Aside from mental implications, sexual assault survivors experience behavioral problems. The research literature has indicated that sexual assault survivors engage in self-harm (Romans, Martin, Anderson, Herbison, & Mullen, 1995), experience difficulty with impulse control (Oshri et al., 2015; Walsh et al., 2012), and use substances in an effort to cope with the experience (Burnam et al., 1988; Molnar et al., 2001; Ullman et al., 2013). In a random community sample of women who were sexually abused in childhood, Romans and colleagues (1995) found that women who experienced intrusive and frequent sexual abuse in childhood were more likely to subsequently harm themselves as adults, possibly as a coping mechanism. Moreover, college students who experienced child sexual maltreatment were more likely to have difficulty with impulse control (Oshri et al., 2015). Another research study suggests that sexual assault may influence delays in risk perception. Walsh et al. (2012) recruited a university sample and presented participants with a hypothetical risk scenario. Participants were instructed to report a time they would choose to leave a threatening situation. It turned out that sexual assault survivors would report wanting to leave the risk scenario later rather than sooner, and that impulse control difficulty and difficulty engaging in goal-directed behavior were also associated with sexual assault (Walsh et al., 2012). What could be another unhealthy coping mechanism among this population is the use of substances such as alcohol or
drugs. Sexual assault survivors have reported substance use disorders in the form of alcohol and drug dependence (Burnam et al., 1988).

Sexual assault also invades survivors’ relationships with other people, as well as with survivors’ sexual and romantic lives. Humans have a fundamental need to belong (Baumeister & Leary, 1995), and thus, it is concerning that the trauma of sexual assault may impair survivors’ ability to feel this belonging among close loved ones. Sexual assault survivors often perceive their relationships as having poor quality and their romantic partners as being uncaring and controlling (Fleming, Mullen, Sibthorpe, & Bammer, 1999), and they are also likely to experience marital disruption (Finkelhor, Hotaling, Lewis, & Smith, 1989), relationship dissatisfaction (Fleming et al., 1999) and sexual problems (Beitchman et al., 1992; Fleming et al., 1999) in their relationships. Fleming and colleagues (1999) found an association between childhood sexual abuse and poor quality of relationships in adulthood; participants were more likely to experience divorce or separation in adulthood, to report their partner as uncaring and controlling, to be generally dissatisfied with their relationships, and to have sexual problems in their relationships. Beitchman and colleagues (1992) found that women with a history of childhood sexual abuse were more likely to experience sexual problems in adulthood in the form of sexual disturbance or sexual dysfunction. Additionally, amongst a multitude of sexual problems, there is extensive evidence demonstrating that female sexual assault survivors exhibit a high probability of engaging in what is termed as sexual risk behavior. Sexual risk behavior will be discussed below.
Sexual Risk Behavior

In the literature, sexual risk behavior is defined as behaviors such as having a high number of lifetime sexual partners (Hotton et al., 2013; Senn & Carey, 2010; Testa et al., 2010), having a high number of hook-ups (i.e., one-time sexual encounters with strangers or acquaintances; Paul, McManus, & Hayes, 2000; Testa et al., 2010), having multiple sexual partners (Hosain, Berenson, Tennen, Bauer, & Wu, 2012; Littleton, Radecki Breitkopf, & Berenson, 2007; Stockman, Campbell, & Celentano, 2010), not using protection from STIs and pregnancy with casual or non-committed partners (George et al., 2014; Hotton et al., 2013; Messman-Moore, Walsh, & DiLillo, 2010; Parks, Hsieh, Collins, Levonyan-Radloff, & King, 2009; Schacht et al., 2010; Senn & Carey, 2010; Senn & Carey, 2011), and engaging in intercourse under the influence of alcohol and/or substances (George et al., 2014; Messman-Moore et al., 2010; Parks et al., 2009; Stockman et al., 2010). Furthermore, consuming large amounts of alcohol has been found to increase the chances of having multiple sexual partners (Seth, Wingood, DiClemente, & Robinson, 2011) and unprotected sex with casual partners (Kiene, Barta, Tennen, & Armeli, 2009; Seth et al., 2011).

Several studies have shown that women who experienced sexual assault are more likely to engage in higher levels of sexual risk behaviors in adulthood (George et al., 2014; Schacht et al., 2010; Senn & Carey, 2010; Stockman et al., 2010; Testa et al., 2010). More specifically, sexual maltreatment in either childhood or adulthood predicts alcohol consumption (Testa et al., 2010), a high number of sexual partners (Senn & Carey, 2010; Testa et al., 2010), a high number of hook-ups (Testa et al., 2010), and a
low likelihood of condom use during sex (George et al., 2014; Schacht et al., 2010; Senn & Carey, 2010). Additionally, women who report having experienced coercion upon first sexual intercourse also experience a higher risk for engaging in sexual risk behavior by having multiple sexual partners and engaging in substance abuse (Stockman et al., 2010).

Sexual risk behavior is psychologically harmful, particularly for women. Women experience a variety of detrimental effects from engaging in sexual risk behavior, such as more sexual regret (Kennair, Bendixen, & Buss, 2016), negative emotional reaction (Owen & Fincham, 2011), psychological distress (Fielder & Carey, 2010), and unwanted sexual intercourse (Flack et al., 2007). In a sample of undergraduate college students at a Norwegian university, women more than men self-reported having regretted instances of casual sex (Kennair et al., 2016). More specifically, female college students are more likely to report psychological distress (Fielder & Carey, 2010) and regret (Kennair et al., 2016) after casual hook-ups than are male college students. In contrast, male college students are more likely to associate positive emotional reactions with hook-up encounters than are female college students (Owen & Fincham, 2011).

A theory that may explain the likelihood and frequency of some sexual risk behaviors is the theory of sociosexuality. Sociosexuality refers to people’s attitudes and behaviors when considering pursuing a sexual relationship (Snyder, Simpson, & Gangestad, 1986). People vary in their requirements when evaluating a potential sexual partner. For example, some people believe that experiencing psychological closeness with a partner prior to engaging in sex is important; others do not consider psychological closeness to be a necessity. People who would feel comfortable engaging in sex with a
lack of closeness and commitment would be said to exhibit an unrestricted sociosexual orientation (Snyder et al., 1986). Other people restrict themselves more when it comes to sex, only engaging in sex with the promise of love and commitment from a sexual partner. These individuals are said to exhibit more restricted sociosexual attitudes and behaviors, or a restricted sociosexual orientation (Snyder et al., 1986). Research on sociosexual attitudes and behaviors is in support of this theory and has found that people who exhibit an unrestricted orientation engage in sex earlier in a relationship, have multiple sexual partners at a time, and are likely to be less invested in their sexual relationships (Simpson & Gangestad, 1991). Thus, perhaps sexual assault survivors are more likely to fall under the unrestricted domain of sociosexuality and are more likely to engage in sexual risk behavior because of the belief that love and commitment are not necessities for a sexual relationship. However, if this were to be the case, there is a lack of research examining the inclination of sexual assault survivors to dissociate sex with the presence of love and commitment as necessities for a sexual relationship.

No research prior to this study has investigated the mechanism by which the sexual assault experience is associated with the likelihood of engaging in sexual risk behavior. Prior research has not extensively examined the underlying reason why female sexual assault survivors are more likely to engage in more sexual risk behaviors than their counterparts. Nevertheless, previous literature has provided clues on the mechanism linking sexual assault and sexual risk behavior. Specifically, sexual assault has been consistently shown to have damaging effects on an individual’s attachment style, emotion regulation, and stress coping strategy. Sexually maltreated individuals report insecure
attachment on both the anxious and avoidant dimensions (Limke-McLean et al., 2010; Oshri et al., 2015), difficulties with emotion regulation strategies (Cloitre, Stovall-McClough, Zorbas, & Charuvastra, 2008; Johnson & Lynch, 2013; Walsh et al., 2012), and an unhealthy coping strategy in the form of substance use coping (Champion et al., 2004; Kaukinen & DeMaris, 2005; Kendler et al., 2000; Kilpatrick, Acierno, Resnick, Saunders, & Best, 1997; Miranda, Meyerson, Long, Marx, & Simpson, 2002; Ullman et al., 2013). Additionally, insecure attachment and difficulties with emotion regulation are associated with sexual risk behavior (Messman-Moore et al., 2010; Sutton & Simons, 2015; Tull, Weiss, Adams, & Gratz, 2012).

Thus, I expect that individuals’ attachment, emotion regulation, and coping strategy may be effective in possibly explaining the link connecting the sexual assault experience and the likelihood of engaging in sexual risk behavior. As noted in previous research, sexual assault survivors choose to engage in risky sexual behavior, but the reason for this association is unknown. Perhaps the sexual risk behavior of sexual assault survivors could be explained by the inability to form meaningful romantic relationships, as can be suggested by an insecure attachment style. Additionally, the poor emotion regulation capabilities of sexual assault survivors could prompt them to engage in sexual risk behavior in an attempt to manage negative affect (Messman-Moore et al., 2010). Moreover, experiencing sexual assault is stressful; sexual assault survivors could turn to drug and alcohol usage to receive relief from the traumatic memories of the event. Prior to further discussion on the current study, theory and research on attachment, emotion regulation, and substance use coping will be discussed.
Mediator Variables

Attachment

According to attachment theory (Bowlby, 2008), relationships in the early stages of life influence human experiences throughout the lifespan (Schore & Schore, 2008). In the adolescent years, children shift their dependence away from their primary attachment figure and form relationships with others, such as romantic relationships (Cassidy & Shaver, 2002). The quality of the relationship formed with the primary caregiver in childhood is important because it determines an attachment style that is likely to follow an individual into adulthood. Throughout their lives and as a function of early childhood relationships, people develop either a secure or an insecure attachment style (Mikulincer, Shaver, & Pereg, 2003). Individuals with a secure attachment style are comfortable with proximity and interdependence and engage in support-seeking and effective means of coping with stressors (Mikulincer et al., 2003). Individuals with an insecure attachment style are either of an anxious or avoidant attachment style. Individuals with attachment anxiety have a greater need for closeness and greater worries and fears about their relationships and individuals with attachment avoidance are emotionally distant (Mikulincer et al., 2003). Another form of insecure attachment that may be relevant to the current study is referred to as a “disorganized” attachment style. In childhood, individuals become susceptible to developing a disorganized attachment style if faced with trauma (Cassidy & Mohr, 2001). The unresolved trauma of the primary caregiver may also trigger the development of a disorganized attachment style in an infant (Cassidy & Mohr, 2001). What may also be relevant to the current study is the “fearful” attachment style,
which is characterized by a negative self-representation and has been found to be associated with depression (B. Murphy & Bates, 1997). Attachment theory posits that the most important task that humans have in the first years of life is to create a secure attachment bond (Schore & Schore, 2008). Nevertheless, whether the attachment bond created with the primary caregiver does or does not end up being secure, that attachment style develops survival functions and influences human relationships throughout the rest of life.

Securely attached individuals experience little to no negative developmental outcomes (Cassidy & Shaver, 2002). A secure attachment style provides many benefits; these positive outcomes are present in as early as the pre-school years. In a sample of 33 pre-school children and their mothers, secure attachment at just four years old was found to be associated with a more positive self-concept at five years old (Goodvin, Meyer, Thompson, & Hayes, 2008). Children with a secure attachment relationship with their mothers at four years old had a more positive self-regard, less negativity, and greater agreeableness by the time they turned five years old. These results suggest that the emotional support that comes from a secure attachment style at the pre-school ages predicts a more positive self-concept and self-perception.

On the other hand, the children of mothers that were experiencing greater negative affect (measured by depressive symptoms and parenting stress) reported the opposite; these children viewed themselves more negatively and had less consistent self-perceptions throughout time. Similar positive effects of a secure attachment were found by Clark and Symons (2000). This study consisted of a sample of 29 children and their
mothers. In this study, a secure attachment relationship with mothers predicted higher self-esteem in children. When reporting self-esteem, the securely attached children were also more comfortable admitting their imperfections, suggesting that a secure attachment style may also lead to greater comfort in developing a realistic perspective of the self.

A secure attachment style has implications for children’s empathy as well. In a study of 71 children and their mothers, a secure attachment at 42 months predicted greater empathic concern at 48 months (T. P. Murphy & Laible, 2013). These results remained the same after controlling for empathic concern at 42 months. The findings of T. P. Murphy and Laible (2013) suggest that secure attachment relationships teach children to respond empathetically to others, as can also be suggested by the findings of Raikes and Thompson (2008). Raikes and Thompson (2008) examined attachment relationships in a sample of children and their mothers. Specifically, they observed the discussions of emotions between the children and their moms. In these discussions, the children who had the most secure relationships with their mothers were more comfortable discussing their emotions throughout conversation. The high levels of attachment security of these children in turn predicted the children’s understanding of emotions. Thus, a secure infant-caregiver attachment relationship not only predicts empathy, but in turn, may also predict a better general understanding of emotions.

In contrast, low levels of attachment security lead to opposite effects in children. For instance, low levels of attachment security may lead to ineffective problem-solving behaviors in children. In a sample of children and their mothers recruited from local day-care centers, Colman and Thompson (2002) assessed the children’s levels of attachment
security; they discovered that the children with lower attachment security scores were more likely to become frustrated, angry, or unhappy during problem-solving interactions with their mothers. Specifically, children of lower security scores made more requests for help and asked for help more quickly during a problem-solving task. It seems that these children, as compared to children with higher attachment security scores, overall exhibit lower levels of self-esteem, which would be consistent with the results of Clark and Symons (2000). The low self-esteem of children with low attachment security may translate to these children’s behaviors, such as these children’s problem-solving behaviors. Berlin, Cassidy, and Belsky (1995) also report insight into the negative effects of low attachment security; in this study, they assess children’s levels of insecure attachment using the “Strange Situation” procedure developed by Ainsworth and Wittig (1969; as cited in Berlin et al., 1995). The children were classified as exhibiting either a secure attachment style, an insecure-avoidant attachment style, or an insecure-ambivalent attachment style. These results indicate that the children that were classified as insecure-ambivalent experienced more loneliness than the insecure-avoidant infants and secure infants, thus highlighting another one of the many negative effects that may stem from an insecure attachment style.

In adulthood, an insecure attachment has repercussions for people’s dating relationships and ability to cope with personal distress. Survivors with an insecure attachment style may experience anxiety and distortion in relationships with others (Alexander, 1992). In a study investigating support-seeking and caregiving in the intimate relationships of 93 dating couples, an avoidant attachment style predicted
ineffective support-seeking and an anxious attachment style predicted poor caregiving (Collins & Feeney, 2000). In other words, individuals exhibiting an insecure attachment style find trouble effectively providing support and care to their dating partners. Further, self-reports of attachment anxiety have been found to be positively associated with personal distress (Mikulincer et al., 2001). In Mikulincer et al.’s (2001) study, participants were primed with attachment security by reading a story of an episode in which a person (of the same sex as the participant) faced a problem, asked his or her family for help in solving the problem, and received assistance from a family member in solving the problem. This story is an example of a “prototypical episode of attachment security” (Mikulincer et al., 2001, p. 1208). Mikulincer and colleagues (2001) found that this procedure of attachment-security priming was able to inhibit participants’ personal distress. This finding suggests that individuals with high levels of attachment security most likely have stronger abilities to cope with events and situations eliciting distress in their everyday lives in comparison to individuals with an insecure attachment.

Before discussing the relation between insecure attachment and sexual assault, it is vital to discuss an important component of attachment theory, a concept referred to as the working model of attachment. Starting from childhood, individuals develop many kinds of relationships with many different people. Depending on how one is treated by others, one develops beliefs and expectations of relationships, the self, and the world. The beliefs and expectations that one forms in regards to relationships depends on the treatment received from the primary attachment figure. For instance, if a mother is unresponsive to her infant’s wants and needs, that infant may develop an internal working
model of the mother as “rejecting,” as well as an internal working model of the self as “not worthy of help and comfort” (Bretherton, 1985, p. 12). Individuals form individuated working models for each important relationship in their lives, and these internal working models also lead to the development of a working model of the world (Bretherton, 1999). Studies have shown that perceptions of supportive parent-child relationships are correlated with views of the world as more “benign than malignant” (Catlin & Epstein, 1992, as cited in Bretherton, 1999, p. 347). Secure working models of attachment relationships have been found to be positively associated with higher quality of couple relationships and better abilities in regulating emotions (Cohn, Silver, Cowan, Cowan, & Pearson, 1992; Zimmermann, 1999).

Thus, individuals with an insecure attachment experience trouble in some domains of their day-to-day lives. Relevant to the proposed study is the fact that sexual assault survivors tend to exhibit an insecure attachment style with little to no levels of attachment security. Limke-McLean et al. (2010) examined the associations between sexual maltreatment, anxious attachment, and psychological adjustment in a sample of undergraduate students who experienced emotional and sexual maltreatment in childhood. According to their findings, emotionally and sexually maltreated students self-reported insecure attachment on both the anxious and avoidant dimensions. The anxious dimension of insecure attachment also predicted poor psychological adjustment. Oshri and colleagues (2015) discovered a similar association in a sample of undergraduate college students as well. In their study, sexual and emotional abuse were each associated with an insecure attachment style along both of the anxious and avoidant dimensions of
insecurity. In this study, sexual abuse was also related to impulse control and insecure attachment was related to risk behavior and alcohol and drug use.

There is evidence that early child-rearing experiences influence attachment styles, and thus it may be essential to examine whether age of onset of assault influences the relationship between sexual assault and the development of an insecure attachment style. Whether an individual does or does not develop an insecure attachment may be influenced by whether the sexual assault experience occurred in the childhood years or in the adulthood years. In the samples recruited by Limke-McLean and colleagues (2010) and Oshri and colleagues (2015), the sexual assault survivors were childhood sexual assault survivors, meaning the survivors’ insecure attachment style was likely developed in childhood and remained stable throughout these individuals’ adult lives. However, negative life events, such as divorce, single parenthood, life threatening familial illnesses, parental drug abuse, or death of a family member, have been found to be associated with attachment style changes from secure to insecure (McConnell & Moss, 2011).

Several research studies in the literature provide evidence that attachment style is not always stable. In a 20 year longitudinal study, adverse life events predicted a change in attachment classification (Waters, Merrick, Treboux, Crowell, & Albersheim, 2000). The infants who had mothers who reported negative life events had different attachment classifications in infancy and adulthood; 44% of these infants changed classifications, whereas only 22% of infants who did not experience any negative life events changed classifications. In this study, negative life events were defined as “(1) loss of a parent, (2) parental divorce, (3) life-threatening illness of parent or child (e.g., diabetes, cancer, heart
attack), (4) parental psychiatric disorder, and (5) physical or sexual abuse by a family member” (Waters et al., 2000, p. 684). Moreover, in a study examining changes in attachment style classifications in a community sample of women who underwent an abortion, 46% of participants changed attachment classifications, and vulnerability factors, such as history of depression or abuse, were related to attachment classification changes (Cozzarelli, Karafa, Collins, & Tagler, 2003). Additionally, poverty status has been found to be associated with a decline in attachment security over time (Allen, McElhaney, Kuperminc, & Jodl, 2004). As can be deduced, the vulnerability factors that have been found to be related to attachment style changes are for the most part negative experiences. Thus, it can be concluded that perhaps attachment style can change from secure to insecure in individuals who experience a sexual assault in adulthood.

Finally, it is important to note that insecure attachment also contributes negatively to women’s sexual lives. Indeed, attachment theory has been applied to the study of sexual abuse (Alexander, 1992). Impett and Peplau (2002) discovered that women with an anxious attachment style are more likely to consent to unwanted sexual relations with a dating partner, out of fear that their partner might leave them if they do not comply. Moreover, Sutton and Simons (2015) have discovered that undergraduate college students who exhibit an avoidant attachment style are more likely to engage in sexual risk behavior by participating in the hook-up culture. As previously discussed, sexual assault survivors are likely to report an insecure attachment style. Knowing that an insecure attachment style has negative implications for people’s sexual lives, it is logical to expect that perhaps sexual assault survivors’ insecure attachment styles may play a mediational
role in the mechanism linking the sexual assault experience with sexual risk behavior. Examining attachment styles is vital to the current study because of all of these negative implications that an insecure attachment style has been found to have on sexual risk-taking behaviors. Further, the emotion regulation capacities of sexual assault survivors may also provide insight into this association, which will be discussed next.

**Emotion Regulation**

Emotion regulation is defined as “attempts individuals make to influence which emotions they have when they have them, and how these emotions are experienced and expressed” (J. J. Gross, Richards, & John, 2006, p. 14). These efforts can be automatic or controlled, conscious, or unconscious, and may have their effects at one or more points throughout the process of emotion generation (J. J. Gross, 1998). There are many ways that humans regulate emotion (John & Gross, 2004). For instance, humans tend to engage in either cognitive reappraisal or cognitive suppression. Cognitive reappraisal is an effective emotion regulation strategy where an individual modifies the emotional impact of a situation by thinking through it (John & Gross, 2004). In contrast, cognitive suppression refers to the aim to reduce negative emotion during the emotional state (John & Gross, 2004). Suppression is not an effective emotion regulation strategy. Indeed, the reappraisal of emotions has more positive implications for one’s health than the suppression of them (John & Gross, 2004). Emotion regulatory processes can change throughout the lifespan. As individuals age, they may learn to utilize healthier emotion regulation strategies over suppression (John & Gross, 2004).
Difficulties with emotion regulation, also known as and used interchangeably with the term emotion dysregulation, can have harmful effects on an individual. In a study conducted by H. K. Kim and colleagues (2009), an individual’s inability to successfully regulate emotions had implications for their relationships, offspring, and their ability to discipline their offspring. Parents’ emotion dysregulation was found to be correlated to their sons’ emotion dysregulation and later relationship conflict (H. K. Kim, Pears, Capaldi, & Owen, 2009). This finding suggests that the lack of effective emotion regulation is a mechanism of romantic relationship conflict. Emotion dysregulation is also negatively impactful to individuals’ mental health. In a study of 53 adolescents recruited from psychiatric hospitals in the United States, emotion dysregulation mediated an association found between childhood physical and emotional treatment and non-suicidal self-injury behaviors (Titelius et al., 2008). Correspondingly, emotion dysregulation has been found to mediate the association between post-traumatic stress disorder (PTSD) and impulsive behaviors in a sample of 206 substance use disorder patients (Weiss, Tull, Viana, Anestis, & Gratz, 2012).

The inability to regulate emotions is detrimental, and the population of sexual assault survivors is especially likely to experience difficulties with emotion regulation. J. Kim and Cicchetti (2010) discovered that children who experience physical or sexual abuse have difficulty when trying to regulate their emotions. Walsh and colleagues (2012) found a similar association in a sample of assaulted college women. Women who were sexually assaulted experienced difficulties with multiple areas of emotion regulation, such as difficulties engaging in goal-directed behavior and impulse control.
problems (Walsh et al., 2012). Correspondingly, Ehring and Quack (2010) examined the ability to self-regulate emotions in a sample of trauma survivors. Their findings suggest that emotion regulation difficulties are highly likely in survivors of interpersonal trauma, specifically the trauma inflicted through childhood sexual or physical abuse from a caregiver. This study also found that PTSD was significantly associated with several areas of emotion regulation difficulties. Perhaps it is the traumatic nature of the sexual assault experience that inhibits individuals from being able to successfully find ways to regulate their emotions and reinterpret experiences with positive affect. Regardless of what the case may be, emotion regulation may significantly contribute to risk behavior in sexual assault survivors.

Emotion dysregulation has consistently been relevant in risk behavior research on individuals’ sex lives. Messman-Moore and colleagues (2010) found an association between emotion dysregulation and sexual risk behavior in a sample of female college students. According to these findings, women with poor emotion regulation skills engage in sexual risk behavior by having many sexual partners and having sex with strangers. Messman-Moore and colleagues (2010) suggest that this phenomenon is possibly explained by a “failure to self-regulate negative affective states” (p. 968). In other words, some people (and especially survivors of traumatic experiences such as sexual assault) may have difficulty in dealing with negative emotions and may thus seek methods such as engaging in sexual risk behavior in order to rid their minds of those negative emotions. Difficulties in emotion regulation are a significant contributor to sexual risk behavior, far more of a contributor than significant detrimental variables such as depression, traumatic
exposure, and substance use severity (Tull et al., 2012). Also relevant is the fact that emotion dysregulation in this study was linked to child sexual and physical abuse (Messman-Moore et al., 2010). Thus, the regulation of emotions, or rather the lack of it, is likely relevant to the mechanism connecting the sexual assault experience and sexual risk behavior, in that emotion dysregulation is likely to also play a mediational role in this relationship. Finally, what may also play a mediational role in the association between sexual assault and sexual risk behavior is the tendency of sexual assault survivors to engage in substance use coping. Using substances such as alcohol or drugs has been found to increase engagement in sexual risk-taking behaviors. Research on the effects of substance use coping will be discussed below.

**Substance Use Coping**

The concept of coping is defined as the process of dealing with stress (Folkman, 1984), in which an individual’s thoughts and behaviors manage the demands of situations perceived as stressful (Folkman & Moskowitz, 2004). The process of coping does not depend on the outcome; whether the efforts to cope are successful does not matter for the theory (Folkman, 1984). There are two approaches to the process of coping: one approach refers to coping as a “style” (i.e., treats coping as a personality characteristic), while the other approach defines coping as a process (i.e., an effort to manage stress). From a process standpoint, coping refers to the cognitive and behavioral efforts used to manage stress (Lazarus, 1993). The process of coping can be adaptive or non-adaptive, successful or unsuccessful, consolidated or unstable (Lazarus, 1993). Two functions of coping are emotion-focused coping and problem-focused coping (Folkman, 1984).
Problem-focused coping aims to change the troubled person’s environment (Lazarus, 1993), through problem-solving or decision-making actions (Folkman, 1984). Emotion-focused coping changes the way the stressful relationship is attended to (Lazarus, 1993). Problem-focused coping and another concept of coping theory known as positive reappraisal are effective coping strategies that produce positive affect (Folkman & Moskowitz, 2000). Positive reappraisal refers to coping strategies that aim to view stressful situations positively rather than negatively (Folkman & Moskowitz, 2000). Thus, positive reappraisal is most advantageous to humans to survive, by allowing them to view the stressful experience as positive rather than negative. In relation to the current study, some research on coping has focused on coping regarding traumatic life events (Roth & Cohen, 1986). In coping with trauma, one takes either an approach or an avoidance strategy; these terms indicate the inclination of an individual to either face or avoid a threatening situation. In relation to the current study, it seems that sexual assault survivors may choose an avoidance strategy, or in other words, an emotion-based coping strategy, in an effort to deal with the stress of their assault, as sexual assault survivors are highly likely to engage in substance use as a means of coping.

As can be logically concluded, coping with traumatic life events through the use of substances has several negative outcomes. In a sample of adolescents from urban school samples, Wills (1986) found that measures of stress were positively related to smoking and alcohol use in adolescence. Moreover, Newcomb and Harlow (1986) discovered that substance use is related to the inability to have control over one’s life, as well as difficulty in finding meaning in life. In this study, perceived loss of control and
meaningless in life also mediated the relationship between traumatic life events and adolescent substance use. In addition, substance use is related to poor behavioral and emotional control in adolescents (Wills, Walker, Mendoza, & Ainette, 2006). These constructs were measured via an inventory used to examine an individual’s self-control in everyday situations. Adolescents engaging in substance use have trouble controlling their behaviors and emotions in their day-to-day lives. Additionally, familial alcohol problems predict adolescent substance abuse. In a sample of participants from the National Survey of Adolescents, Kilpatrick et al. (2000) discovered that familial alcohol use (i.e., use of hard drugs such as heroin by a family member) was independently related to an increased risk of adolescent alcohol and hard drug abuse as well as adolescent substance use dependence.

As previously stated, substance use is also detrimental in that it is related to sexual assault. Plenty of studies have found evidence of this association. In a sample of female adult twins, child sexual abuse was causally related to an increased risk for psychiatric and substance abuse disorders (Kendler et al., 2000). A high degree of trauma exposure and sexual abuse severity in childhood are each associated with substance use coping (Ullman et al., 2013). Further, Miranda et al. (2002) discovered that a history of sexual assault in a sample of undergraduate female students predicted higher levels of psychological distress. These higher levels of psychological distress, in turn, predicted alcohol use via negative reinforcement. Specifically, participants in this study were instructed to respond to items that measured the role of negative reinforcement in participants’ alcohol usage, such as the items “I feel less anxious after I use” and “I deal
with stress better after I use” (Miranda et al., 2002, p. 209). This negative reinforcement mediated the relationship between psychological distress and alcohol consumption, such that participants perceived alcohol usage as a successful means of dealing with distress due to negative reinforcement, which in turn predicted participants’ alcohol consumption. Moreover, among minority women, adult sexual assault is associated with heavy episodic drinking (Kaukinen & DeMaris, 2005). This same research study also found that minority sexual assault female survivors are more likely to engage in illicit drug use than their counterparts. Perhaps substance use coping provides an outlet for sexual assault survivors to alleviate the negative feelings that may arise from the memories of their sexual assault experience (Kaukinen & DeMaris, 2005). It has also been found that substance use increases the likelihood of experiencing a sexual assault, particularly drug use (Kilpatrick et al., 1997). Specifically, active drug use is associated with an increased risk of experiencing sexual assault and this effect is stronger for women who have been previously assaulted. Champion et al. (2004) discovered similar findings; in their study, alcohol use was associated with an increased risk of experiencing attempted or forced sex. Risky drinking behaviors such as binge drinking also increased the likelihood of experiencing a sexual assault.

Substance use is also associated with the inclination to engage in sexual risk behavior. Weinhardt and Carey (2000) used the event-level method to examine the association between substance use and sexual behavior. The event-level method is defined as “an in-depth examination of the characteristics of a specific behavior occurring on a particular occasion” (Weinhardt & Carey, 2000, p. 128). Though the data is not
exactly causal, data from these event-level studies suggest that people who use condoms during sex when they are sober also tend to use them when drinking, and people who fail to use condoms when drinking most likely also fail to use them when sober. These results suggest that the use of substances severely impair the ability to make safe sexual decisions. This was also found in a sample of female adolescents recruited by Bachanas et al. (2002). In this study, older adolescents engaged in riskier sexual behaviors and more substance use than younger teens, though the younger teens who reported high levels of substance use also reported engaging in riskier sexual behaviors. Similarly, in a sample of high school students who completed the 1990 National Youth Risk Behavior Survey, substance use was positively related to sexual risk behavior (Lowry et al., 1994). Specifically, participants who reported no substance use were less likely to report having had sexual intercourse, having had multiple sexual partners, and not having used a condom at last sexual intercourse. The likelihood of engaging in these sexual risk behaviors was highest in students who reported using marijuana, cocaine, or other illicit drugs.

Research is limited on the possible negative outcomes of coping strategies in a more general sense, but maladaptive coping has been found to be associated with attachment and sexual assault. A secure attachment style is related to resilience or the ability to successfully deal with stressful situations (Terzi, 2013). Lower levels of attachment security are likely to be detrimental towards the effort to successfully handle stress. Additionally, unhealthy coping strategies are often utilized by sexual assault survivors. For example, Johnson and Lynch (2013) conducted a study on the predictors of
maladaptive coping in incarcerated women who are survivors of childhood sexual abuse. In this study, Johnson and Lynch (2013) discovered that the variables of self-blame, emotion dysregulation, and distress were associated with maladaptive coping strategies among the sexual assault survivors. The emotion dysregulation of the women predicted their engagement in maladaptive and avoidant coping strategies. Further, in a sample of undergraduate female college students, Fortier et al. (2009) discovered that an increase in child sexual abuse severity is associated with the likelihood of using avoidant coping strategies when dealing with stress. An ineffective effort to manage stress is sure enough to be detrimental in other ways as well. In this study, avoidant coping strategies also predicted higher levels of trauma symptomatology and severe sexual coercion in adulthood (Fortier et al., 2009). Nevertheless, whether examining substance use coping or the ability to cope with stress more generally, coping theory is indeed relevant to sexual abuse. Thus, further study of this construct in relation to sexual assault will be of benefit.

**Current Study**

In the literature, there is evidence demonstrating that experiencing sexual assault is associated with an insecure attachment (Limke-McLean et al., 2010), difficulties with emotion regulation (J. Kim & Cicchetti, 2010), the use of substances as a stress coping method (Ullman et al., 2013), and engagement in sexual risk behaviors (George et al., 2014). There is also extensive evidence demonstrating that engagement in sexual risk behaviors is associated with an insecure attachment style (Sutton & Simons, 2015), difficulties in the regulation of emotions (Messman-Moore et al., 2010), and substance use coping (Lowry et al., 1994). The results demonstrating that sexual assault survivors
tend to engage in higher levels of sexual risk behavior are quite surprising. Given the traumatic nature of sexual assault, one would assume that the opposite effect would occur, such that sexual assault survivors would be less inclined to engage in sexual relations after having to endure such a traumatic event. Thus, I was interested in investigating this association further. Given that engagement in sexual risk behavior is also associated with several dispositions that have been found to be related to the sexual assault experience, it is likely that these variables may be accountable for the risky sexual tendencies of sexual assault survivors. In other words, perhaps the variables of insecure attachment, difficulties with emotion regulation, and substance use coping may mediate the association between sexual assault and sexual risk behavior. Therefore, the goal of the current study was to investigate whether the association between experiencing sexual assault and the inclination to engage in sexual risk behavior is mediated by survivors’ insecure attachment, difficulties with emotion regulation, and substance use coping (Figure 1). The hypotheses of the current study will be discussed below.

**Hypothesis 1**

Given the literature stating that college women report higher rates of sexual assault than college men (Banyard et al., 2007), there would be more female sexual assault survivors than male sexual assault survivors,

**Hypothesis 2**

Sexual assault survivors would report higher scores of sexual risk behavior than non-sexual assault survivors.
Hypothesis 3

The association between sexual assault and sexual risk behavior would be stronger in women than in men.

Hypothesis 4

Sexual assault survivors would report higher scores of insecure attachment, difficulties with emotion regulation, and substance use coping than non-sexual assault survivors.

Hypothesis 5

Participants who report higher scores of insecure attachment, difficulties with emotion regulation, and substance use coping would report higher scores of sexual risk behavior.

Hypothesis 6

Insecure attachment, difficulties with emotion regulation, and substance use coping would mediate the association between sexual assault and sexual risk behavior.

Plan of Analyses

Hypothesis 1

To examine whether there were more women than men who reported having experienced sexual assault, I conducted a chi-square analysis on the Statistical Package for the Social Sciences (SPSS) software. Given that both gender and sexual assault were measured categorically, this plan of analysis was deemed appropriate to examine whether there were more women than men who reported having experienced a sexual assault.
Hypothesis 2

To examine whether sexual assault survivors reported higher scores of sexual risk behavior than non-sexual assault survivors, I conducted a t-test on SPSS. This plan of analysis was deemed appropriate because I was interested in comparing the sexual risk behavior scores of participants that reported a sexual assault experience with the scores of participants that did not report a sexual assault experience. I also thought this plan of analysis was appropriate given the fact that sexual assault was measured categorically and sexual risk behavior was measured as continuous variables in this study.

Hypothesis 3

To examine whether the association between sexual assault and sexual risk behavior would be stronger in women than in men, I conducted moderated regression analyses using the PROCESS macro Version 3 (Model 1; Hayes, 2017) on SPSS. I chose this method of analyses because I was interested in examining whether the variable of gender would moderate the association between sexual assault and sexual risk behavior. I conducted a total of two moderation tests. Gender and sexual assault were entered into the models as categorical variables and sexual risk behavior was entered into the models as continuous variables.

Hypothesis 4

To examine whether the sexual assault experience was associated with higher scores of insecure attachment, difficulties with emotion regulation, and substance use coping, I conducted a MANOVA on SPSS. This was deemed an appropriate statistical plan given that I was interested in examining the effect of sexual assault on more than
one continuous dependent variable. Sexual assault was entered into the model as a
categorical independent variable and insecure attachment, difficulties with emotion
regulation, and substance use coping were entered into the model as continuous
dependent variables.

**Hypothesis 5**

To examine whether participants who reported either an insecure attachment,
difficulties with emotion regulation, or substance use coping also reported higher scores
of sexual risk behavior, I conducted multiple regression analyses on SPSS. I chose this
plan of analysis because I was interested in examining the effects of several continuous
independent variables on several continuous dependent variables. I conducted a total of
two multiple regression analyses. All variables were entered into the model as continuous
variables.

**Hypothesis 6**

To examine if an insecure attachment, difficulties with emotion regulation, and
substance use coping mediate the association between the sexual assault experience and
sexual risk behavior, I ran a mediational model using the PROCESS macro Version 3 on
SPSS (Model 4; Hayes, 2017). A mediation effect was assessed by utilizing Baron and
Kenny’s (1986) four-step process. In Step 1 of this process, the regression of sexual
assault on sexual risk behavior should be significant. In Step 2, the regression of sexual
assault on insecure attachment, difficulties with emotion regulation, and substance use
coping should also be significant. Step 3 of the mediation analyses should demonstrate
that the mediator variables, while controlling for sexual assault, should be significant.
predictors of sexual risk behavior. Step 4 should show that sexual assault, while controlling for the mediator variables, should not be a significant predictor of sexual risk behavior. Bootstrapping techniques were utilized to determine whether the indirect coefficient was significant. This should indicate whether the mediator variables do fully mediate the relationship between sexual assault and sexual risk behavior. I conducted a total of two mediation tests to test this hypothesis.
CHAPTER 2

METHOD

Participant Recruitment

I first conducted power analyses to determine an appropriate sample size for this study. An a priori power analysis using the G*Power 3 statistical power analysis program (Faul, Erdfelder, Lang, & Buchner, 2007) indicated that a sample of 48 participants was necessary to detect a medium effect size in a MANOVA ($f = 0.25$; $\alpha$ error probability = 0.05; power $[1 – B$ error probability] = 0.95; 2 groups 5 measurements $n = 44$; 10% increase for a valid sample $n = 48$). An a priori power analysis using the G*Power 3 statistical power analysis program (Faul et al., 2007) indicated that a sample of 142 participants was necessary to detect a medium effect size in a regression analysis ($f^2 = 0.15$; $\alpha$ error probability = 0.05; power $[1 – B$ error probability] = 0.95; 4 predictors $n = 129$; 10% increase for a valid sample $n = 142$). A sample of at least 142 college students was recruited through the psychology department electronic participant pool sign-up system (SONA) at the University of Northern Iowa (UNI), a mid-sized Midwestern university. Participants must have engaged in sexual intercourse to be eligible to participate, and were each compensated 0.5 research credits towards their Introduction to Psychology course research requirement upon completing the study survey.

Additionally, I chose to seek out a sexual assault survivor sample from the Riverview Center, a local non-profit agency providing services to individuals affected by sexual assault (“Riverview Center,” n.d.). I was able to successfully receive assistance in disseminating my study to sexual assault survivor Riverview Center clients; four Riverview Center staff members agreed to disseminate the study survey to their clients.
However, no sexual assault survivors were willing to participate in my study. These participants must have been at least 18 years or older to be eligible to participate. The Riverview Center sample was also promised a compensation in the form of a $5 electronic Amazon gift card for their participation. I received a $125.00 research grant from the Intercollegiate Academics Fund (IAF) at UNI to assist in providing this monetary compensation to Riverview Center participants. However, given that I did not receive any responses from the Riverview Center sample, this research fund was not used.

Procedure

Upon approval from the UNI Institutional Review Board (IRB), participants were recruited through SONA, the UNI psychology department electronic participant pool sign-up system. The study was posted on SONA titled “Human Sexuality and Intimate Relationships.” Upon clicking on the study, participants were given a brief description of the study and were informed of the eligibility requirements (Appendix A). To access the study, participants clicked on a “View Study Website” button. The study consisted of an online survey administered via Qualtrics.com. The first page of the survey entailed a screening question (Appendix C). Participants were instructed to respond to the question “Have you had sexual intercourse?” Participants were informed that in this question, “sexual intercourse” was defined as oral, anal, and/or vaginal sex. If participants answered “yes” to the screening question, the survey then directed them to the second page that included the online informed consent form (Appendix B). If participants agreed to participate after reading the informed consent form, they were instructed to click a
“>>” button. If participants no longer agreed to participate after reading the informed consent form, they were instructed to close the survey browser window. Participants were informed that their responses would remain anonymous and participants were ensured that all IP addresses would be deleted by the researchers prior to analyzing the data. Participants were also informed that the sensitive content of the study may trigger emotional discomfort in some respondents. Participants were also reminded of their right to withdraw from the study at any time and/or to skip any discomforting questions. If participants agreed to participate in the study, they were instructed to click the “>>” button. After clicking the “>>” button, if they agreed to participate, participants were then instructed to complete measures of sexual assault experience, attachment, difficulties with emotion regulation, substance use coping, sexual risk behavior, and demographics. To further address the potential negative impact triggered by the study, participants were provided with resources on campus or hotlines in an end-of-survey message (Appendix L). In the end-of-survey message, participants were instructed to click on a “>>” button at the bottom of the page. After clicking on the “>>” button, participants were automatically granted 0.5 research credits within the SONA system.

A modification to the IRB application was requested after the SONA data collection was complete because of a small sexual assault survivor sample. In the IRB application modification, I requested to recruit a sample of sexual assault survivors from the Riverview Center. Though the attempt to recruit a second sample of sexual assault survivors was unsuccessful, the procedure would have been as follows. The study was advertised through an e-mail message to Riverview Center clients by Riverview Center
staff that agreed to distribute the advertisement to their mailing lists (Appendix A).

Interested participants were instructed to click on a survey link listed at the end of the e-mail message to access the study. The link directed participants to an online survey administered via Qualtrics.com. The first page of the survey entailed an online informed consent form (Appendix B). The rest of the procedure was identical to that of the procedure followed by the SONA sample, with the exception of a few modifications. First, the Riverview Center sample would not have responded to a screening question. Also, given the triggering nature of some of the items in the measure of sexual assault experiences, a trigger warning was added to the beginning of the measure of sexual assault. This trigger warning was intended to inform participants of the triggering nature of the questions on sexual experiences. Additionally, in the end-of-survey message, participants were instructed to click on a link. That link would have directed them to another form, which would have instructed them to enter their e-mail address in order to receive the $5 electronic Amazon gift-card compensation in their e-mail inbox (Appendix L). That form was another survey administered via Qualtrics.com. This separate form was created to ensure participants that their data would not be linked to their e-mail address.

Measures

Screening Question

Participants recruited through the SONA system were instructed to answer a screening question prior to beginning the study (Appendix C). Specifically, participants were asked if they had ever engaged in sexual intercourse. Sexual intercourse was
defined as consisting of oral, anal, and/or vaginal sex. Participants were instructed to answer either “yes” or “no” to this question. If participants answered “yes,” they were then directed to the study measures. If participants answered “no,” they were then directed to an end-of-survey message stating that they were not eligible to participate.

**Sexual Experiences Survey**

To assess sexual assault experiences, participants completed a revised version of the original version of the Sexual Experiences Survey (SES) by Koss, Gidycz, and Wisiniewski (1987), which can be seen in Appendix D. This instrument assessed incidences of a variety of sexual assault experiences. The revised version by Koss and colleagues (1987) contained items tailored for heterosexual women (e.g., “Have you had sexual intercourse when you didn’t want to because a man used his position of authority [boss, teacher, camp counselor, supervisor] to make you?”). For the current study, I modified the items of this measure to include gender-neutral terms (e.g., “somebody” rather than “man” or “woman”). Participants belonging in the LGBT community were not planned to be excluded from the study data, and so referring to the perpetrator as a “somebody” rather than a man or a woman was done to acknowledge the experiences of LGBT participants and the fact that a sexual assault could also be perpetrated by somebody of the same sex. In total, the measure contained 10 items (e.g., “Have you given in to sexual intercourse when you didn’t want to because you were overwhelmed by somebody’s continual arguments and pressure?”). Participants were instructed to respond “yes” or “no” to each item. In this study, participants responded to only nine of
the items in the scale; one item was accidentally not added into the study survey due to researcher error.

The SES classified participants into having experienced one or more of the following sexual assault experiences: “Sexual Contact,” “Sexual Coercion,” “Attempted Rape,” and “Rape.” In this study, participants were classified as having experienced a sexual assault if they answered “yes” to any of the items in the survey. This is also what had been done in prior research that has used the SES (e.g., Gidycz et al., 1993). This decision also ensured that all unwanted sexual contact was considered as an assault incidence.

Additionally, I included three other items in the survey. This was done because I was also interested in examining the effects of survivors’ age at the time of the sexual assault and the frequency of sexual assaults experienced. The first item was a yes/no question that asked participants whether they had been sexually assaulted. If participants answered “yes,” they were asked the second and third item included by me, which was to disclose the age at which they were assaulted, as well as how many times they experienced a sexual assault. Thus, in the current study, the scale contained 12 items rather than 9 items due to the addition of these three items.

**Attachment Style Measures**

Participants completed two measures of attachment. First, they completed a one-item categorical measure created by Hazan and Shaver (1987; Appendix E). Afterwards, participants completed a lengthier measure of insecure attachment named the Experiences in Close Relationships–Revised Instrument (ECR-R; Fraley, Waller, & Brennan, 2000;
Appendix E). The scores of the two sub-scales of the ECR-R were used in analyses. The scores of Hazan and Shaver’s (1987) categorical attachment style measure were not used in analyses. The one-item categorical measure by Hazan and Shaver (1987) was used to better understand the number of individuals in the data set that classify themselves as securely attached versus the number of individuals in the data set that classify themselves as insecurely attached.

The ECR-R was originally designed to address issues regarding the psychometric properties of existing attachment measures such as the Experiences in Close Relationships Questionnaire (ECR; Brennan et al., 1998), Adult Attachment Scale (AAS; Collins & Read, 1990), Relationship Styles Questionnaire (RSQ; Griffin & Bartholomew, 1994), and Simpson’s (1990) attachment questionnaire (as cited in Fraley et al., 2000). Fraley and colleagues (2000) discovered that the previous attachment measures listed above did not exhibit suitable properties for examining the theoretical issues of attachment research. It turned out that the ECR-R had increased measurement precision by 50% to 100% (Fraley et al., 2000).

This measurement consisted of 36 items and two sub-scales of “Attachment-Related Anxiety” (e.g., “I’m afraid that I will lose my partner’s love”) and “Attachment-Related Avoidance” (e.g., “I prefer not to show a partner how I feel deep down”) which will be referred to as “Anxious Attachment” and “Avoidant Attachment” in this paper. There were 18 items in each sub-scale. Participants responded to the items on a seven-point Likert scale ranging from 1 (“Strongly disagree”) to 7 (“Strongly agree”). Scores of each sub-scale were calculated by computing the average of all responses. Higher
scores in each sub-scale meant higher anxious attachment or avoidant attachment, with a possible range of 1 to 7. Two items in the “Attachment-Related Anxiety” sub-scale and eleven items in the “Attachment-Related Avoidance” sub-scale were reverse coded. Due to another researcher error, participants in this study responded to only 35 items.

In previous research, internal consistency reliability often did or exceeded .90 for each of these sub-scales (Fraley, 2012). Participants had two scores of this measurement, one score for each sub-scale of insecure attachment measured. Both of the sub-scales contained adequate reliability in this study (“Attachment-Related Anxiety” $\alpha = .93$; “Attachment-Related Avoidance” $\alpha = .93$). Previous research demonstrates internal and external validity evidence for the insecure attachment scores of the ECR-R (Fairchild & Finney, 2006).

**Difficulties in Emotion Regulation Scale**

To assess difficulties in emotion regulation, participants completed the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004; Appendix F). The DERS was primarily designed to assess difficulties in the regulation of emotions. It contained 36 items and six sub-scales: “Nonacceptance of Emotional Responses” (6 items; e.g., “When I’m upset, I feel guilty for feeling that way;” $\alpha = .85$), “Difficulties Engaging in Goal-Directed Behavior” (5 items; e.g., “When I’m upset, I have difficulty concentrating;” $\alpha = .89$), “Impulse Control Difficulties” (6 items; e.g., “When I’m upset, I lose control over my behaviors;” $\alpha = .86$), “Lack of Emotional Awareness” (6 items; e.g., “When I’m upset, I acknowledge my emotions [reverse-scored item];” $\alpha = .80$), “Limited Access to Emotion Regulation Strategies” (8 items; e.g., “When I’m upset, I believe that I
will remain that way for a long time;” \( \alpha = .88 \), and “Lack of Emotional Clarity” (5 items; e.g., “I have difficulty making sense out of my feelings;” \( \alpha = .84 \)). Participants responded to each item on a five-point Likert scale ranging from 1 (“Almost Never”) to 5 (“Almost Always”). Eleven items in the scale were reverse coded.

The total score for each sub-scale was found by calculating the average of all responses for that sub-scale. Additionally, the measure yielded a total score of all 36 items in the scale. For this study, I used participants’ average score on all items for analyses, consistent with previous related research (e.g., Messman-Moore et al., 2010; Oshri et al., 2015; Tull et al., 2012). The range of responses was 1 to 5. Higher scores indicated greater difficulties with emotion regulation. Gratz and Roemer (2004) reported that the DERS has adequate levels of internal consistency, test-retest reliability, construct validity, and predictive validity. The scores on the DERS from the current sample showed adequate reliability in this study (\( \alpha = .95 \)).

**Brief COPE Scale**

To assess substance use coping, participants completed the Brief COPE Scale (Carver, 1997; Appendix G). This measure is a shortened version of another measure of coping, titled the COPE Inventory (Carver, Scheier, & Weintraub, 1989). The COPE Inventory is a measure of coping intended for health-related research. It has been a helpful measure in that area, but may be problematic for usage in research studies intended to test several hypotheses. The COPE Inventory is 60 items long and is therefore, susceptible to participant response burden. The Brief COPE was designed to alleviate the issues of The COPE Inventory. The Brief COPE consisted of 28 items that
measured 14 coping reactions. There were 14 sub-scales, and each sub-scale consisted of two items. For this study, I only used the items in the substance use coping sub-scale for analyses. The substance use coping sub-scale contained the items “I’ve been using alcohol or other drugs to make myself feel better” and “I’ve been using alcohol or other drugs to help me get through it.” Participants responded to the items on a four-point Likert scale ranging from 1 (“I haven’t been doing this at all”) to 4 (“I usually do this a lot”). Higher scores indicated higher engagement in substance use coping. Carver (1997) reported adequate reliability of the substance use coping sub-scale (α = .90). Likewise, the substance use coping sub-scale contained adequate reliability in this study (α = .93). In a Malaysian study using the Brief COPE on women undergoing treatment of Adjuvant Chemotherapy, the scale demonstrated fairly good reliability and validity (Yusoff, Low, & Yip, 2010).

Measurement of Sexual Risk-Taking

To assess sexual risk behavior, participants completed the Measurement of Sexual Risk-Taking by Turchik and Garske (2009; Appendix H). In this measurement, sexual risk behaviors were defined as behaviors that may lead to unwanted pregnancy or sexually transmitted infections. This measurement consisted of 23 items (e.g., “How many times have you had vaginal intercourse without protection against pregnancy?”) and five sub-scales: “Sexual Risk-Taking with Uncommitted Partners” (8 items; α = .88), “Risky Sex Acts” (5 items; α = .80), “Impulsive Sexual Behaviors” (5 items; α = .78), “Intent to Engage in Risky Sexual Behaviors” (2 items; α = .89) and “Risky Anal Sex Acts” (3 items; α = .61). Each sub-scale covered a broad range of sexual behaviors. All
items were open-response questions; participants were instructed to report a number for each item that they believe adequately described the frequency to which they engaged in the sexual risk behaviors described. Scores were calculated by computing the average of all of the numbers reported for the items for each sub-scale. A total score of sexual risk behavior could be obtained by computing the average of all of the items in the scale. Higher scores indicated greater engagement in the specific behaviors. The range of scores was unlimited, as all of the items in the measurement are open-response.

The internal consistency and two-week test-retest reliability scores for the total scale were .88 and .93, respectively (Turchik & Garske, 2009). There was also adequate evidence for convergent and concurrent validity of the scale. Sexual risk-taking, over six months, was related to lifetime number of sexual behavior partners \( r = .58, p < .001 \), lifetime number of vaginal sex partners \( r = .65, p < .001 \), lifetime number of oral sex partners \( r = .64, p < .001 \), lifetime number of anal sex partners \( r = .31, p < .001 \), and history of sexual infidelity \( r = .40, p < .001; \) Turchik & Garske, 2009). Additionally, sexual risk-taking was related to greater health consequences (i.e., pregnancy, STIs), and all of the sub-scales besides “Intent to Engage in Risky Sexual Behaviors” were related to a greater number of self-reported sexual health consequences (Turchik & Garske, 2009).

The aforementioned reliability scores and statistics were from Turchik and Garske’s (2009) study. In this study, some of the sub-scales lacked adequate reliability (“Impulsive Sexual Behaviors” \( \alpha = .56 \); “Intent to Engage in Risky Sexual Behaviors” \( \alpha = .48 \); “Risky Anal Sex Acts” \( \alpha = -.03 \)); thus, these sub-scales were not used in analyses for this study. The remaining sub-scales contained adequate reliability (“Sexual Risk-
Taking with Uncommitted Partners” $\alpha = .77$; “Risky Sex Acts” $\alpha = .73$), and these sub-scales that contained adequate reliability were used for analyses.

**Demographic Questions**

At the end of the survey, participants answered a series of demographic questions that collected information such as age, race, and socioeconomic status (Appendix I). Participants were also asked if they were currently in a romantic relationship; if they answered “yes,” participants were asked a separate question in which they were asked to indicate whether they were in a(n) casual relationship, serious relationship, engagement, marriage, or other kinds of relationships.

**End-of-Study Questions**

The end-of-study questions were asked after the demographic questions were completed and can be seen in Appendix J. This section contains four items. One item is an honesty check assessed on a four-point Likert scale ranging from 1 ("Not at all honest") to 4 ("Very honest"). Participants were instructed to respond to the question “How honest were you with your responses?” Additionally, in this section, participants were instructed to respond to several open-response questions about the study (i.e., “What did you think this study was about?” “Is there any reason we should not use your data?” and “Do you have any comments for the researchers?”).

**Attention Checks**

Throughout the survey, there were a total of three attention checks (Appendix K). The first attention check was in the DERS; this item instructed participants to select a certain answer choice. The second attention check was an item created by me. It
instructed participants to select a certain answer choice out of four answer choices created by me. Specifically, participants were instructed to select the answer choice “Relationships” out of four answer choices: Emotion, Intimacy, Relationships, and Sex. The third attention check instructed participants to enter the year that they were born. Participants were excluded from the data if they failed one or more of these attention checks.
CHAPTER 3
RESULTS

Preliminary Analyses

Pre-Analysis Data Cleaning

After data collection, the data cleaning procedure was as follows. First, as was indicated in the informed consent form, I removed all participant IP addresses to ensure the anonymity of the participants, and I removed all other irrelevant variables that are collected by default on the survey program. Afterwards, all participants were labeled with a number prior to cleaning the data, and while cleaning the data, I recorded the participants that were removed by noting participant number as well as the rationale for removing the participant. I also added value labels and labeled all variables and did recodes in syntax and described them with value labels. Subsequently, I cleaned the data by checking for participants with a significant amount of missing data, too short participant duration times, as well as participant responses to the screening question, attention checks, and the honesty check. In total, 194 participants participated in the study, and 54 participants were excluded from the data due to failed attention check(s), missing data, “no” responses to the screening question, “slightly honest” or “not at all honest” responses to the honesty check, too short participant duration times, and for being univariate or multivariate outliers. A total of 16 (8.3%) participants were excluded due to failing one of the attention check items, 22 (11.3%) participants were excluded due to significant amount of missing data, 10 (5.2%) participants were excluded for responding “no” to the screening question, 5 (2.6%) participants were excluded for
responding “slightly honest” or “not at all honest” to the honesty check, 3 (1.6%) participants were excluded for too short duration times, and 7 (3.6%) participants were excluded for being univariate or multivariate outliers. Some of the 54 participants that were removed were removed for more than one of these reasons.

It should be noted that due to researcher error, the participants classified as being removed due to missing data were classified as having missing data because they did not complete at least one of the measures in the study. When attempting to randomize the order of the measures on Qualtrics, an option was accidentally selected that would randomize only four out of five measures. Thus, the first 22 participants that completed the study survey were removed from the data set. Further, participants who were classified as having a too short participant duration time had a duration time that was at least one standard deviation below the average duration time of all participants.

**Parametric Assumptions**

After removing participants who met the exclusion criteria, I checked for and removed univariate and multivariate outliers using the Mahalanobis distance statistical procedure recommended by Mertler and Vannatta (2013). Six participants were removed from the data set for being univariate outliers, and one participant was removed from the data set for being a multivariate outlier. Univariate and multivariate outliers were identified by checking for participants that exceeded the critical value for \( X^2 \) at \( p < .001 \) and \( df = 8 \). According to the table of critical values, \( X^2 = 26.125 \) (Mertler & Vannatta, 2013, p. 343). Seven cases exceeded this critical value in either or both the univariate and multivariate outlier tests and were removed from the data set.
After the data were cleaned and modified, I examined the four basic assumptions of parametric statistical tests described by Field (2009). The first assumption of parametric tests states that the data should be normally distributed. As suggested by Mertler and Vannatta (2013), I examined the normality of the data after addressing univariate outliers. I examined normality by doing the Kolmogorov-Smirnov and the Shapiro-Wilk tests on SPSS using the procedure recommended by Mertler and Vannatta (2013). According to Field (2009), both tests can be used to see if a distribution of scores significantly differs from a normal distribution. However, the Shapiro-Wilk test has more power to detect differences from normality, and thus I used the Shapiro-Wilk test results to detect normality of the distributions of the quantitative variables in the data set.

Anxious attachment was not significantly non-normal, $D(141) = .981, p > .05$, meaning that the data were normally distributed. On the other hand, avoidant attachment [$D(141) = .974, p < .05$], difficulties with emotion regulation [$D(141) = .976, p < .05$], substance use coping [$D(141) = .685, p < .001$], sexual risk-taking with uncommitted partners [$D(141) = .740, p < .001$], and risky sex acts [$D(141) = .613, p < .001$] were all significantly non-normal. To correct for non-normality, I attempted to transform the variables; difficulties with emotion regulation and risky sex acts were the only variables that were able to be transformed to normality. A square root transformation was done on the variable for difficulties with emotion regulation and a log transformation was computed on the variable for risky sex acts. After the transformations, difficulties with emotion regulation [$D(141) = .987, p > .05$] and risky sex acts [$D(127) = .987, p > .05$]
were no longer significantly non-normal, meaning that the data were transformed to normality.

The second assumption of parametric tests states that there must be homogeneity of variance, meaning “the variances should be the same throughout the data” (Field, 2009, p. 133). To assess homogeneity of variance, I used a test called Levene’s test, per the recommendation of Field (2009). According to Levene’s test, the variances were equal for sexual assault survivors and non-sexual assault survivors for anxious attachment \[ F(1, 124) = .239, p > .05 \], avoidant attachment \[ F(1, 124) = .144, p > .05 \], difficulties with emotion regulation \[ F(1, 124) = 2.40, p > .05 \], substance use coping \[ F(1, 124) = 1.51, p > .05 \], sexual risk-taking with uncommitted partners \[ F(1, 124) = 2.95, p > .05 \], and risky sex acts \[ F(1, 124) = .029, p > .05 \]. These results suggest that the variances were similar and that the homogeneity of variance assumption was met.

The third assumption states that data should be measured at the interval level. This assumption was met because all of the variables in the data set are interval variables. The last assumption posits that data from different participants must be independent, which was met as well given that participants were not completing the study measures together, and thus each participant’s responses were completely independent of the responses of all other participants.

**Data Modifications**

Some responses to the items of Turchik and Garske’s (2009) Measurement of Sexual Risk-Taking were modified for reasons such as not being a numerical value or
containing invalid characters. In order to analyze the data, all responses needed to consist of a numerical value. Responses that consisted of a range of numbers (e.g., “25-30”) were modified with the middle number in the range of numbers (e.g., “28”). Responses that consisted of a number and a plus sign (e.g., “15+”) were modified by removing the plus sign from the end of the number (e.g., “15”). Responses that included any other invalid characters (e.g., “&lt;50”) were also modified by removing the invalid character from the response (e.g., “50”). Responses that consisted of words rather than actual numerical values (e.g., “a lot”) were modified with a “.” and treated as missing. Given that these kinds of responses are ambiguous and do not provide a numerical answer, these responses were modified to reflect a missing value in the data set. Responses that consisted of words that denoted numerical values such as “a dozen times” or “zero” were modified with the actual number rather than the word (e.g., “12,” “0”). Finally, responses that consisted of just an invalid, ambiguous character, such as a question mark, were also modified with a “.” to denote a missing value in the data set.

**Participant Demographic Characteristics**

As discussed, of a total of 194 participants, 54 participants were excluded, leaving a total of 140 participants to be included in data analyses. Demographic characteristics of participants included in analyses can be seen in Table 1. Of the participants included in analyses, ages ranged from 17 to 25 years old ($M = 18.88, SD = 17.23$). The majority of participants identified as female (54.3%) and Caucasian/White (84.3%). Moreover, the majority of participants identified as heterosexual in sexual orientation (86.4%), as moderate in political orientation (40.0%), as a Democrat in a political party (37.1%), as a
freshman in college (72.9%), and as a little religious (32.9%). As for relationship status, the majority of participants indicated that they were currently in a romantic relationship (52.1%), with the majority of participants (40.0%) indicating that they were currently in a serious relationship. Also, as was discussed previously, participants completed a one-item categorical measure of attachment style, and those results showed that the majority of participants (50.7%) identified as being insecurely attached.

The results of the Sexual Experiences Survey (SES) can be seen in Table 1 and Figure 2. According to these results, 10 participants (7.1%) in the sample experienced rape. However, in this study, participants who responded “yes” to any of the items in the SES were classified as a sexual assault survivor. The number of sexual assault survivors in the sample according to this definition of sexual assault can be seen in Figure 3. As can be seen, 37.1% of the sample classifies as a sexual assault survivor.

Interestingly, the number of participants that responded “yes” to the added item “Have you ever been sexually assaulted?” is substantially different from the number of participants classified as sexual assault survivors. However, the number of participants that responded “yes” to this item is similar to that of the number of participants who have experienced rape, the most severe form of sexual assault measured in the SES. As stated previously, 10 participants in the sample experienced rape. A total of 16 sexual assault survivors responded “yes” to the added item “Have you ever been sexually assaulted?” Four of these participants declared experiencing a sexual assault before the age of 15. Seven of these participants declared experiencing a sexual assault more than one time.
The ages that participants self-reported ranged from 0 to 19 ($M = 14.6$, $SD = 5.4$), and the frequencies self-reported ranged from 1 to 20 ($M = 3.3$, $SD = 5.1$).

**Primary Analyses**

**Descriptive Analyses**

Aside from examining the study hypotheses, I examined the descriptive statistics of participants’ insecure attachment, difficulties with emotion regulation, substance use coping, and engagement in sexual risk behavior. These descriptive statistics are presented in Table 2. I also conducted descriptive analyses of participants’ insecure attachment, difficulties with emotion regulation, substance use coping, and engagement in sexual risk behavior by participant gender, sexual assault experience, and relationship status. The results of these analyses are presented in Tables 3 and 4.

As can be seen in Table 2, participants’ self-reported scores of anxious attachment ($M = 3.20$, $SD = 1.20$) were slightly higher than participants’ self-reported scores of avoidant attachment ($M = 3.02$, $SD = 1.20$). However, as can be seen, participants did not score too high nor too low on both dimensions of insecure attachment. Results of these descriptive statistics also demonstrate that overall, participants do not really engage in substance use as a means of coping with stress ($M = 1.46$, $SD = .720$). It is also worth highlighting that participants self-reported higher engagement in sexual risk-taking with uncommitted partners ($M = 1.23$, $SD = 1.49$) than engagement in risky sex acts ($M = .535$, $SD = .590$).
The results of the descriptive analyses can be seen in Tables 3 and 4. A few of these are worth highlighting. As can be seen, the male non-sexual assault survivors in the sample significantly reported higher levels of avoidant attachment ($M = 3.1002, SE = .163$) than did the female non-sexual assault survivors ($M = 2.5170, SE = .168$), $t(138) = .623, p < .05$. Additionally, single participants scored significantly higher in anxious attachment ($M = 3.4627, SE = .130$) than did participants that indicated they were in a relationship at the time of study participation ($M = 2.8187, SE = .150$), $t(138), = 3.24, p < .01$. The single participants also scored significantly higher in avoidant attachment ($M = 3.4519, SE = .119$) than did participants that indicated they were in a relationship ($M = 2.4155, SE = .144$), $t(138), = 5.55, p < .001$.

In addition, I examined correlations between the variables of insecure attachment, difficulties with emotion regulation, substance use coping, and the sexual risk behavior sub-scales. The correlations between the mediator and dependent variables are presented in Tables 5 to 7. A few of these results are worth noting as well. First, there was a significant positive correlation between participants’ self-reported scores of anxious attachment ($M = 3.20, SD = 1.20$) and participants’ self-reported scores of avoidant attachment ($M = 3.02, SD = 1.20$), $r = .41$, meaning that participants who scored high on one dimension of insecure attachment also scored high on the other dimension of insecure attachment. There was also a significant positive correlation between participants’ self-reported scores of anxious attachment and participants’ self-reported scores of difficulties with emotion regulation ($M = 1.52, SD = .220$), $r = .57$, as well as a significant positive correlation between participants’ self-reported scores of avoidant
attachment and participants’ self-reported scores of difficulties with emotion regulation, \( r = .32 \). This suggests that participants who scored high on any of the insecure attachment dimensions also self-reported more difficulty in regulating their emotions.

Further, men’s avoidant attachment scores \((M = 3.17, SD = 1.11)\) were significantly positively correlated with their scores in sexual risk-taking with uncommitted partners \((M = 1.47, SD = 1.65)\), \( r = .28 \), and the non-sexual assault survivors’ (all non-sexual assault survivors) avoidant attachment scores \((M = 2.85, SD = 1.14)\) were also significantly positively correlated with their scores in sexual risk-taking with uncommitted partners \((M = 1.29, SD = 1.61)\), \( r = .32 \). Interestingly, this significant association was not found for the sample of women or for the sample of sexual assault survivors in the study. These results mean that male participants and non-sexual assault survivors who scored high on avoidant attachment also scored high on sexual risk-taking with uncommitted partners. Another interesting finding demonstrates that there was a significant positive correlation with participants’ scores in difficulties with emotion regulation \((M = 1.52, SD = .220)\) and participants’ scores in substance use coping \((M = 1.46, SD = .720)\), \( r = .37 \), meaning that participants who scored high on difficulties with emotion regulation also scored high on substance use coping.

Finally, results demonstrated that men’s substance use coping scores \((M = 1.53, SD = .776)\) were significantly positively correlated with their scores in risky sex acts \((M = .489, SD = .561)\), \( r = .41 \), and the non-sexual assault survivors’ substance use coping scores \((M = 1.43, SD = .672)\) were also significantly positively correlated with their scores in risky sex acts \((M = .587, SD = .592)\), \( r = .41 \). In other words, male participants
and non-sexual assault survivors who scored high on substance use coping also scored high on risky sex acts, but interestingly, this was again not the case for the female participants and sexual assault survivors in the study sample. Men’s risky sex acts scores ($M = .489, SD = .561$) were also significantly positively correlated with their scores in sexual risk-taking with uncommitted partners ($M = 1.47, SD = 1.65$), $r = .28$. Results also demonstrated that women’s risky sex acts scores ($M = .573, SD = .614$) were significantly negatively correlated with their anxious attachment scores ($M = 3.37, SD = 1.29$), $r = .24$, and the non-sexual assault survivors’ avoidant attachment scores ($M = 2.85, SD = 1.14$) were significantly positively correlated with their substance use coping scores ($M = 1.43, SD = .672$), $r = .43$.

**Hypothesis 1**

To examine whether there are more female sexual assault survivors than male sexual assault survivors in the data set, I conducted a chi-square test of independence using SPSS. First, I tested whether the data met the assumptions of chi-square tests. According to Field (2009), a chi-square test is appropriate when researchers are interested in examining the relation between categorical variables rather than continuous variables. A chi-square analysis was appropriate in this case because both the variables of gender and sexual assault were measured as categorical variables in this study. Furthermore, according to Field (2009), the data must be independent in order for the results of a chi-square test to be accurate. In other words, “you cannot use a chi-square test on a repeated-measures design” (Field, 2009, p. 691). This assumption was met because this research study was not a repeated-measures research design; participant responses were not
influenced by each other. Another assumption of chi-square tests states that the expected frequencies should be greater than five, and “although it is acceptable in larger contingency tables to have up to 20% of expected frequencies below 5, the result is a loss of statistical power” (Field, 2009, p. 692). This assumption was met too because each of the two groups of sexual assault survivors and non-sexual assault survivors consisted of frequencies greater than five.

After examining the assumptions of chi-square tests, I conducted the analysis using the two variables of gender and sexual assault to examine whether there were more female sexual assault survivors than male sexual assault survivors in the data. Further, I was also interested in examining whether there was a significant association between gender and sexual assault. There was a significant association between sexual assault and gender, $X^2(1) = 13.93, p < .001$, and thus, this hypothesis was supported by the data. These results mean that women reported experiencing sexual assault more than men, suggesting that women are at higher vulnerability of experiencing sexual assault than men. The frequencies of participants’ reported sexual experiences can be seen in Table 8.

**Hypothesis 2**

To examine whether sexual assault survivors would report higher scores of sexual risk behavior than non-sexual assault survivors, I conducted an independent samples two-tailed $t$-test on SPSS to compare the scores of sexual risk behavior of sexual assault survivors and non-sexual assault survivors. According to Field (2009), the assumptions of a two-tailed independent samples $t$-test assume that (a) the sampling distribution is normally distributed, (b) data are measured at an interval level, (c) variances in the
samples are equal, and (d) scores are independent. As previously discussed, the data do meet all of these assumptions, which suggested a t-test analysis as an appropriate statistical test to compare the group means of sexual risk behavior sub-scale scores of sexual assault survivors and non-sexual assault survivors.

Contrary to the study predictions, the results of the two-tailed independent samples t-test were not statistically significant, and this hypothesis was not supported by the data. Sexual assault survivors did not significantly report greater engagement in sexual risk-taking with uncommitted partners ($M = 1.125, SE = .178$) than did non-sexual assault survivors ($M = 1.288, SE = .172$), $t(138) = .660, p = .510$. Moreover, sexual assault survivors did not significantly report greater engagement in risky sex acts ($M = .4456, SE = .086$) than did non-sexual assault survivors ($M = .5869, SE = .066$), $t(124) = 1.30, p = .195$. Given that this hypothesis was not supported, sexual assault survivors do not engage in higher levels of sexual risk-taking than non-sexual assault survivors.

Hypothesis 3

To examine whether the association between sexual assault and sexual risk behavior would be more significant in women than in men, I ran moderated regressions using the PROCESS macro Version 3 on SPSS (Model 1; Hayes, 2017). First, I tested whether the data met the assumptions of a multiple regression analysis. According to Mertler and Vannatta (2013), the dependent variable of a regression analysis should be measured on a continuous scale. This assumption was met because the dependent variable of sexual risk behavior was indeed measured on a continuous scale. According to Mertler and Vannatta (2013), there must also be two or more independent variables in the
regression model. Moderated regressions have three predictors, which are the main predictor, moderator, and the interaction effect, and thus this assumption was met. Moreover, Mertler and Vannatta (2013) suggest to screen for missing data, multivariate outliers, linearity, normality, and homoscedasticity before conducting a regression analysis. I checked for missing data and multivariate outliers prior to data analyses, using the pre-analysis data screening procedure suggested by Mertler and Vannatta (2013). I checked for linearity, normality, and homoscedasticity in the data by examining the residuals scatterplots, also per a suggestion of Mertler and Vannatta (2013). Specifically, I ran preliminary regressions to create residual plots that were plots of values on the combination of the predicted values of the dependent variables and the standardized residuals or prediction errors. From visually inspecting the residual plots, the assumptions of linearity, normality, and homoscedasticity seemed tenable given that the majority of the points clustered along the horizontal line of the residual plots. Thus, most of the assumptions that applied in this case were met, and it was assumed that a moderation analysis was appropriate.

I conducted a total of two moderation tests. In all moderation tests, sexual assault was entered in the model as an independent variable, and gender was entered into the model as a moderator variable. In the first moderation test, sexual risk-taking with uncommitted partners was entered into the model as a dependent variable. In the second moderation test, risky sex acts were entered into the model as a dependent variable. According to the results of the analyses, gender did not significantly moderate the relationship between sexual assault and sexual risk-taking with uncommitted partners,
\( F(1, 136) = .053, p = .818, \Delta R^2 = .00 \). Gender also did not significantly moderate the relationship between sexual assault and risky sex acts, \( F(1, 122) = .512, p = .476, \Delta R^2 = .00 \). This hypothesis was not supported, meaning that the association between sexual assault and sexual risk behavior is not stronger in women in comparison to men.

**Hypothesis 4**

To examine whether sexual assault survivors would report higher scores of insecure attachment, difficulties with emotion regulation, and substance use coping than non-sexual assault survivors, I ran a MANOVA on SPSS. Before conducting the analysis, I tested the assumptions of a MANOVA. First, the dependent variables of a MANOVA should be continuous variables (Mertler & Vannatta, 2013). This assumption was met because the dependent variables of insecure attachment, difficulties with emotion regulation, and substance use coping were measured on a continuous scale. Furthermore, the independent variables must consist of two or more categorical, independent groups (Mertler & Vannatta, 2013). The data did meet this assumption as well because as stated previously, the sexual assault variable was a categorical variable. Another assumption of a MANOVA states that the observations within each sample must be independent of each other (Field, 2009). This assumption was met because there were different participants in each of the groups in which the scores of insecure attachment, difficulties with emotion regulation, and substance use coping were being compared.

Additionally, data must have been measured at an interval level, and this assumption is also true of the study data. The last two assumptions of a MANOVA according to Field (2009) state that there must be multivariate normality and
homogeneity of covariance matrices in the data. Field (2009) states that the assumption of multivariate normality cannot be tested on SPSS and that the only solution to this issue is to check the assumption of univariate normality for each dependent variable. This procedure was done prior to data analyses, and thus, the assumption of multivariate normality was met. The assumption of equality of covariance matrices should be checked using Levene’s test (Field, 2009) and this procedure was also done prior to data analyses, meaning that the assumption of homogeneity of covariance matrices was also met.

Given that the sample of sexual assault survivors was small and there are four dependent variables, I checked whether the sample size criteria for a MANOVA was met. As stated previously in this paper, I conducted a power analysis using the G*Power 3 statistical power analysis program (Faul et al., 2007) to examine an appropriate sample size for a MANOVA. That analysis indicated that a sample of 48 participants was necessary to detect a medium effect size in a MANOVA ($f = 0.25$; $\alpha$ error probability = 0.05; power $[1 – B$ error probability] = 0.95; 2 groups 5 measurements $n = 44$; 10% increase for a valid sample $n = 48$). Given that the sample of sexual assault survivors in this study consists of 52 sexual assault survivors, I concluded that this assumption was met by the study data. I also checked whether the dependent variables were moderately correlated but not very highly correlated. This assumption was not fully met given that the substance use coping measurement had a very low association with anxious attachment and no association with avoidant attachment (Table 5). Thus, this assumption was not met, but given that most of the assumptions for a MANOVA test were met, I deemed this plan of analysis as appropriate to test Hypothesis 4.
After checking the assumptions, I ran the MANOVA test. Sexual assault was entered into the model as an independent variable and anxious attachment, avoidant attachment, difficulties with emotion regulation, and substance use coping were entered into the model as dependent variables. Given that homogeneity of variance-covariance is an assumption for a MANOVA test and has implications for how to interpret the multivariate tests (Mertler & Vannatta, 2013), I first evaluated the results of Box’s test of equality of covariance matrices prior to interpreting the results. Box’s test was not significant in this case, \( p = .157 \). Thus, homogeneity of variance-covariance was assumed and I utilized the Wilks’ Lambda statistic when interpreting the multivariate tests. The results of the MANOVA test were as follows. Using Wilks’s statistic, there was a significant effect of sexual assault on anxious attachment, avoidant attachment, and difficulties with emotion regulation, \( \Lambda = .922, F(4, 135) = 2.86, p < .05, \text{partial } \eta^2 = .08 \).

The results of the MANOVA test were significant when utilizing the other test statistics as well. Using Pillai’s trace, there was a significant effect of sexual assault on anxious attachment, avoidant attachment and difficulties with emotion regulation, \( V = .078, F(4, 135) = 2.86, p < .05, \text{partial } \eta^2 = .08 \). Using Hotelling’s trace statistic, there was a significant effect of sexual assault on anxious attachment, avoidant attachment, and difficulties with emotion regulation, \( T = .085, F(4, 135) = 2.86, p < .05, \text{partial } \eta^2 = .08 \). Using Roy’s largest root, there was a significant effect of sexual assault on anxious attachment, avoidant attachment, and difficulties with emotion regulation, \( \phi = .085, F(4, 135) = 2.86, p < .05, \text{partial } \eta^2 = .08 \). The multivariate effects are presented in Table 9.
Experiencing sexual assault had a significant effect on anxious attachment \(F(1, 138) = 10.05, p < .01;\) partial \(\eta^2 = .07\), avoidant attachment \(F(1, 138) = 5.167, p < .05;\) partial \(\eta^2 = .04\), and difficulties with emotion regulation \(F(1, 138) = 5.570, p < .05;\) partial \(\eta^2 = .04\). However, experiencing sexual assault did not have a significant effect on substance use coping \(F(1, 138) = .545, p = .462;\) partial \(\eta^2 = .00\), and thus, Hypothesis 4 was partially supported by the study data. Sexual assault survivors significantly reported higher scores of anxious attachment \((M = 3.6022, SE = .167)\) than did non-sexual assault survivors \((M = 2.9558, SE = 1.14), t(138) = -3.13, p < .01\). Sexual assault survivors significantly reported higher scores of avoidant attachment \((M = 3.3173, SE = .173)\) than did non-sexual assault survivors \((M = 2.8484, SE = .121), t(138) = -2.22, p < .05\). Sexual assault survivors also significantly reported higher scores of difficulties with emotion regulation \((M = 1.5764, SE = .035)\) than did non-sexual assault survivors \((M = 1.4873, SE = .021), t(138) = -2.21, p < .05\). These results suggest that experiencing sexual assault is associated with higher levels of self-reported insecure attachment and difficulties with emotion regulation.

**Hypothesis 5**

To examine whether participants who reported higher scores of insecure attachment, difficulties with emotion regulation, and substance use coping also reported higher scores of sexual risk behavior, I conducted multiple regression analyses on SPSS. I first tested whether the data met the assumptions of a multiple regression analysis. First, the dependent variable of a regression analysis should be measured on a continuous scale, and there must be two or more independent variables in the regression model (Mertler &
Vannatta, 2013). Both of these assumptions were met because there were one or more independent variables in the regression model, and the dependent variables for sexual risk behavior were measured on a continuous scale. Next, as discussed previously, Mertler and Vannatta (2013) suggest screening for missing data, multivariate outliers, linearity, normality, and homoscedasticity. As stated, I screened for missing data and multivariate outliers using the pre-analysis data screening procedure suggested by Mertler and Vannatta (2013). Further, I checked for linearity, normality, and homoscedasticity in the data by examining the residuals scatterplots. I ran preliminary regressions to create residual plots, as suggested by Mertler and Vannatta (2013). From visually inspecting the residual plots, the assumptions of linearity, normality, and homoscedasticity seemed tenable in this case as well.

Given that these assumptions were met, I ran multiple regression analyses to predict the sexual risk behavior sub-scale scores from participants’ scores of insecure attachment, difficulties with emotion regulation, and substance use coping. I ran a total of two multiple regression analyses. For all two multiple regression analyses, anxious attachment, avoidant attachment, difficulties with emotion regulation, and substance use coping were entered into the model as independent variables. For the first multiple regression analysis, sexual risk-taking with uncommitted partners was entered into the model as a dependent variable. For the second multiple regression analysis, risky sex acts was entered into the model as a dependent variable. The coefficients for the independent variables of the above analyses are presented in Table 10.
According to the results, avoidant attachment and difficulties with emotion regulation were significantly associated with sexual risk-taking with uncommitted partners, $R^2 = .103$, $R^2_{adj} = .076$, $F(4, 135) = 3.858$, $p < .01$. Thus, this hypothesis was partially supported as well. There was a significant positive correlation between participants’ self-reported scores of avoidant attachment ($M = 3.02$, $SD = 1.20$) and sexual risk-taking with uncommitted partners ($M = 1.23$, $SD = 1.49$), $r = .22$. Further, there was a negative, though non-significant correlation between participants self-reported scores of difficulties with emotion regulation ($M = 1.52$, $SD = .220$) and sexual risk-taking with uncommitted partners ($M = 1.23$, $SD = 1.49$), $r = -.11$. According to these results, higher self-reported scores of avoidant attachment are associated with higher self-reported scores of engagement in sexual risk-taking with uncommitted partners. These results also suggest that lower self-reported scores of difficulties with emotion regulation are associated with higher self-reported scores of engagement in sexual risk-taking with uncommitted partners, meaning that participants that are better at regulating their emotions engage in higher levels of sexual risk-taking with uncommitted partners.

Hypothesis 6

To examine whether insecure attachment, difficulties with emotion regulation, and substance use coping mediated the association between sexual assault and sexual risk behavior, I ran two mediated regressions using the PROCESS macro Version 3 on SPSS (Model 4; Hayes, 2017). In all mediation tests, sexual assault was entered into the model as an independent variable, and anxious attachment, avoidant attachment, difficulties
with emotion regulation, and substance use coping were entered into the model as mediator variables. In the first mediation test, sexual risk-taking with uncommitted partners was entered into the model as a dependent variable. Step 1 of the mediation model showed that the regression of sexual assault on sexual risk-taking with uncommitted partners, ignoring the mediator, was not significant, $b = -.1631, t(138) = -.6549, p = .5136$. Step 2 showed that the regression of sexual assault on anxious attachment [$b = .6464, t(138) = 3.102, p < .05$], avoidant attachment [$b = .4689, t(138) = 2.200, p < .05$], and difficulties with emotion regulation [$b = .0892, t(138) = 2.191, p < .05$] was significant, though the regression of sexual assault on substance use coping was not significant [$b = .0931, t(138) = .7002, p = .4850$]. Step 3 of the mediation process showed that after controlling for sexual assault, avoidant attachment [$b = .3545, t(134) = 2.915, p < .05$] and difficulties with emotion regulation [$b = -2.049, t(134) = -2.367, p < .05$] were significant, and anxious attachment [$b = .1478, t(134) = .8296, p = .4082$] and substance use coping [$b = .1982, t(134) = 1.241, p = .2169$] were not significant. Step 4 of the analyses revealed that after controlling for the mediators, sexual assault was not significantly associated with sexual risk-taking with uncommitted partners [$b = -.2607, t(134) = -1.074, p = .2847$]. The indirect effect was tested using bootstrapping techniques. These results indicated the indirect coefficient was not significant. Neither anxious attachment [$B = .096, SE = .12, 95\% CI -.0856, .4015$], avoidant attachment [$B = .166, SE = .10, 95\% CI .0249, .4194$], difficulties with emotion regulation [$B = -.1827, SE = .12, 95\% CI -.5.262, -.0298$], nor substance use coping [$B = .019, SE = .04, 95\% CI -
fully mediated the association between sexual assault and sexual risk-taking with uncommitted partners.

In the second mediation test, risky sex acts was entered into the model as a dependent variable. Step 1 of the mediation model showed that the regression of sexual assault on risky sex acts, ignoring the mediators, was not significant, $b = -.1413$, $t(124) = -1.293$, $p = .1981$. Step 2 showed that the regression of sexual assault on anxious attachment was significant [$b = .6090$, $t(124) = 2.687$, $p < .05$], and the regression of sexual assault on avoidant attachment [$b = .3281$, $t(124) = 1.561$, $p = .1210$], substance use coping [$b = .1448$, $t(124) = .9908$, $p = .3237$], and difficulties with emotion regulation [$b = .0752$, $t(124) = 1.857$, $p = .0657$] was not significant. Step 3 of the mediation process showed that after controlling for sexual assault, substance use coping was significant [$b = .1637$, $t(120) = 2.039$, $p < .05$], though anxious attachment [$b = -.0667$, $t(120) = -1.230$, $p = .2211$], avoidant attachment [$b = -.0265$, $t(120) = -.4831$, $p = .6299$], and difficulties with emotion regulation [$b = .1832$, $t(120) = .5425$, $p = .5885$] were not significant. Step 4 of the analyses revealed that after controlling for the mediators, sexual assault was not significantly associated with risky sex acts, $b = -.1295$, $t(120) = -1.113$, $p = .2680$. The indirect effect was tested using bootstrapping techniques. These results also indicated the indirect coefficient was not significant. Neither anxious attachment [$B = -.041$, $SE = .038$, 95% CI -.1499, .0110], avoidant attachment [$B = -.009$, $SE = .02$, 95% CI -.0798, .0195], difficulties with emotion regulation [$B = .014$, $SE = .03$, 95% CI -.0264, .1009], nor substance use coping [$B = .024$, $SE = .03$, 95% CI -.0125, .0990] fully mediated the association between sexual assault and risky sex acts. Thus, the sixth hypothesis was not
supported, meaning the variables of insecure attachment, difficulties with emotion regulation, and substance use coping did not mediate the association between sexual assault and sexual risk behavior.

**Post-Hoc Analyses**

As post-hoc analyses, I conducted hierarchical multiple regressions to examine the effect of relationship status on engagement in sexual risk behavior. I hypothesized that participants’ relationship status might influence their levels of engagement in sexual risk-taking behavior. For these analyses, I created a dummy variable for relationship status. This dummy variable contained two levels. In the demographics questionnaire, participants responded “yes” or “no” to the item “Are you currently in a romantic relationship?” (Appendix I). I created a dummy variable for relationship status and coded “yes” answers to this item with a 1 if participants responded “yes.” I coded “no” answers to this item with a 0 if participants responded “no.” The hierarchical regression analyses were the same as the multiple regression analyses, with relationship status added into the two models as a covariate. The coefficients for the independent variables of these analyses are presented in Table 11.

When relationship status was added into the first multiple regression model, it was found that relationship status was also associated with sexual risk-taking with uncommitted partners, $R^2 = .065$, $R^2_{adj} = .058$, $F(1, 138) = 9.609$, $p < .01$, and avoidant attachment and difficulties with emotion regulation still were significantly associated with sexual risk-taking with uncommitted partners even after controlling for relationship status, $R^2 = .120$, $R^2_{adj} = .087$, $F(5, 134) = 3.643$, $p < .01$. Further, relationship status and
substance use coping were significantly associated with risky sex acts, $R^2 = .105$, $R^2_{adj} = .068$, $F(5, 120) = 2.812, p < .05$, though interestingly none of the independent variables were significantly associated with risky sex acts when relationship status was not controlled for, $R^2 = .062$, $R^2_{adj} = .031$, $F(4, 121) = 1.992, p = .100$.

Relationship status is associated with sexual risk-taking with uncommitted partners; single participants scored significantly higher on sexual risk-taking with uncommitted partners ($M = 1.5470, SE = .184$) than did participants that indicated they were in a relationship at the time of study participation ($M = .7759, SE = .140$), $t(138) = 3.33, p < .01$. Even after accounting for relationship status, avoidant attachment and difficulties with emotion regulation were still associated with sexual risk-taking with uncommitted partners, meaning that even the participants in committed relationships that reported high scores of avoidant attachment also reported high engagement in sexual risk-taking with uncommitted partners. Similarly, participants in committed relationships that reported high scores of difficulties with emotion regulation reported lower engagement in sexual risk-taking with uncommitted partners. The results of the hierarchical regression analyses also demonstrate that substance use coping was significantly associated with higher self-reported scores of engagement in risky sex acts when relationship status was accounted for in the model. Participants currently in relationships at the time of study participation significantly reported higher engagement in risky sex acts ($M = .7011, SE = .080$) than did participants that indicated that they were single at the time of study participation ($M = .4149, SE = .067$), $t(124) = -2.75, p < .01$. Thus, engagement in risky
sex acts was significantly associated with substance use coping, but only when the association between risky sex acts and relationship status was accounted for.
CHAPTER 4
DISCUSSION

The current study examined the association between the sexual assault experience and the risk of engaging in sexual risk behavior. Specifically, I examined gender differences in these variables, and the mediation effect of insecure attachment, difficulties with emotion regulation, and substance use coping.

Descriptive analyses demonstrated that the male non-sexual assault survivors reported higher scores of the avoidant attachment dimension of insecure attachment than the female group of non-sexual assault survivors. This finding is consistent with previous research literature on gender differences in romantic attachment styles. In a meta-analysis based on 100 studies on gender differences in the avoidance and anxiety dimensions of attachment, Del Giudice (2011) found that men display higher avoidant attachment than women do. The findings of Del Giudice (2011) may also explain the significant negative correlation that was found in this study between anxious attachment and risky sex acts in women but not in men. According to the results of Del Giudice’s (2011) meta-analysis, men showed lower anxious attachment than women did. Also, though not significant, women in the current study reported higher levels of anxious attachment than the male participants did, which would also be consistent with the findings of Del Giudice (2011). Thus, perhaps these gender differences in attachment explain why the association between anxious attachment and risky sex acts was only applicable to the sample of women in the current study.
Interestingly, participants that indicated they were single at the time of study participation reported higher levels of anxious attachment and avoidant attachment than participants that indicated they were in a committed relationship at the time of study participation. Simpson (1990) posits that attachment styles have an influence on romantic relationships. In a longitudinal study, he discovered that the secure attachment style was related to variables such as greater relationship interdependence, commitment, trust, and satisfaction. It could be likely that securely-attached individuals thus find it easier to desire to be in and maintain romantic relationships, which could explain why the single participants in the study sample were more insecurely-attached than the committed participants.

It is noteworthy that there was a significant positive correlation found between the two dimensions of insecure attachment, meaning that participants with high scores on the anxious dimension of attachment were also scoring high on the avoidant dimension and vice versa. However, this is an interesting finding given that it seems to be inconsistent with prior literature. To my knowledge, there is either no or very limited empirical evidence in the prior research literature demonstrating a positive association between the two insecure attachment styles, though this may be a fruitful avenue for future research on attachment.

Further, there was a positive association between anxious attachment and difficulties with emotion regulation, a positive association between avoidant attachment and difficulties with emotion regulation, and a positive association between difficulties with emotion regulation and substance use coping. These findings are all consistent with
the literature and therefore not surprising. According to previous literature, insecure attachment has been associated with poor emotion regulation strategies (Cloitre et al., 2008; Moutsiana et al., 2014), and though poor emotion regulation has not been associated with substance use coping specifically, difficulties with emotion regulation has been associated with maladaptive, avoidant coping strategies among child sexual assault survivors (Johnson & Lynch, 2013).

Descriptive analyses also demonstrated a relation between avoidant attachment and sexual risk-taking with uncommitted partners. However, this relation only applied for non-sexual assault survivors but not for the sexual assault survivor sample, and for men but not for women. To my knowledge, there is no empirical evidence in support of possible gender differences regarding engagement in casual sex, though men tend to associate casual sex with more positive emotional reactions than women (Owen & Fincham, 2011). Thus, it can be assumed that perhaps more men than women self-reported engagement in casual sexual relations in this study, which may explain why the significant association between avoidant attachment and sexual risk-taking with uncommitted partners was only found in the sample of men but not in the sample of women. On a related note, because men seem to enjoy casual sex more than women do, perhaps that is also why there was a significant positive correlation between risky sex acts and sexual risk-taking with uncommitted partners in men but not in women.

It is also important to note research demonstrating that avoidant attachment is related to having casual sexual partners and less restrictive beliefs towards casual sex (Gentzler & Kerns, 2004). In this study, there was no significant association between
experiencing sexual assault and the inclination to engage in sexual risk-taking such as casual sex which may additionally explain why the relationship between insecure attachment and sexual risk-taking was only applicable to the sample of non-sexual assault survivors but not to the sample of sexual assault survivors.

Another noteworthy finding via the descriptive analyses is that there was a positive association between substance use coping and engagement in risky sex acts, but again only among the male sample and the sample of non-sexual assault survivors. These findings are surprising but somewhat consistent with prior literature. For instance, the results of a study conducted by Eschenbeck, Kohlmann, and Lohaus (2007) found that there was a significant gender difference in coping strategies among a sample of children and adolescents. In this study, female participants scored higher in seeking social support and problem solving as a means of coping while the male participants scored higher in avoidant coping strategies. Though these findings are not related to substance use specifically, the girls in the sample were reporting more positive, healthier coping strategies than the men were. Using substances in an effort to cope with stressful experiences is not a positive coping strategy, so perhaps these study findings may explain why only men’s substance use coping scores were associated with risky sex acts in the current study sample. Also, though not significant, in the current study, men were reporting higher levels of substance use coping than women were, so perhaps the men in the current study sample are just generally engaging in more problematic coping strategies than the women. Further, it is surprising that this association was found in the sample of non-sexual assault survivors but not in the sample of sexual assault survivors.
On a related note, substance use coping was positively associated with avoidant attachment in just the non-sexual assault survivor sample as well. However, the sample of sexual assault survivors was small, which posed a research limitation that will be discussed later.

As for the primary analyses, some findings remained consistent with prior research literature and were not at all surprising. First, I hypothesized that there would be more female sexual assault survivors than male sexual assault survivors in the study sample. In support of previous literature (Banyard et al., 2007), this hypothesis was supported, suggesting that college women are at higher susceptibility of experiencing sexual assault than are college men. My fourth hypothesis was that the sexual assault survivors in the sample would self-report higher rates of insecure attachment, difficulties with emotion regulation, and substance use coping than participants who did not report a sexual assault experience. This hypothesis was partially supported, as sexual assault survivors self-reported higher rates of insecure attachment and difficulties with emotion regulation than non-sexual assault survivors. Though partially supported, this finding also supports previous research literature that has examined the impact of sexual assault on insecure attachment and emotion regulation difficulties (e.g., Cloitre et al., 2008; Limke-McLean et al., 2010; Messman-Moore et al., 2010; Oshri et al., 2015; Walsh et al., 2012). Sexual assault survivors did not significantly self-report higher levels of substance use coping than non-sexual assault survivors, though there were limitations with the substance use coping measure that may have contributed to that null result, which is a limitation that will be discussed later as well.
My fifth hypothesis in this study was that participants who self-report higher levels of insecure attachment, difficulties with emotion regulation, and substance use coping would also self-report higher levels of engagement in sexual risk behavior. This hypothesis was partially supported, too. As supported by prior research (e.g., Seth et al., 2011; Sutton & Simons, 2015; Tull et al., 2012), participants who self-reported higher levels of avoidant attachment also self-reported higher levels of sexual risk-taking with uncommitted partners. This association was still present even after controlling for participants’ relationship status, suggesting that even participants who were in committed, monogamous relationships reported engaging in riskier sexual behaviors as a function of the avoidant attachment style.

However, it should be noted that difficulties with emotion regulation had a significant negative correlation with sexual risk-taking with uncommitted partners, suggesting that participants who are better at regulating their emotions are more likely to engage in sexual risk behavior than participants who experience more difficulty in regulating their emotions. This finding is in contrast with prior literature on the association between emotion regulation difficulties and sexual risk behavior (Messman-Moore et al., 2010; Tull et al., 2012). This finding is surprising, though may make sense when accounting for possible explanations. For example, according to the results of Messman-Moore et al. (2010), there was an indirect effect of emotion regulation difficulties on sexual revictimization, via the impact of emotion regulation difficulties on risky sexual behavior. This effect was found in a sample of childhood sexual assault survivors. Thus, perhaps the positive association between emotion regulation difficulties
and sexual risk behavior that is documented in the research literature applies only to
sexual assault survivors. As noted, there were few sexual assault survivors in this study,
which may be a possible explanation as to why a positive association between emotion
regulation difficulties and sexual risk behavior was not supported by the study data. Also,
perhaps I would have found the expected significant positive association between
emotion regulation difficulties and risky sexual behavior had I conducted the analysis
while controlling for the sexual assault variable.

There is also a possible explanation as to why anxious attachment was not
significantly positively associated with the sexual risk behavior sub-scales in the multiple
regression analysis. Paul et al. (2000) state that anxiously attached individuals “use sex to
satisfy their needs for security and love” (p. 78). As discussed earlier in this paper, the
concept of sociosexuality posits that some individuals consider love and commitment to
be necessary components of a sexual relationship (Snyder et al., 1986). According to this
theory, these individuals would be said to have a restricted sociosexual orientation. In
contrast, other individuals can still find satisfaction in sexual relationships that lack love
and commitment components, and these individuals have an unrestricted sociosexual
orientation. If anxiously attached individuals are likely to engage in sexual relations to
fulfill security and love needs, anxiously attached individuals would probably fall under
the restricted domain of sociosexuality. This concept could be a possible explanation as
to why the anxious attachment sub-scale of the insecure attachment measure was not
correlated with any of the sexual risk-taking sub-scales.
The concept of sociosexuality may also explain why there was a negative correlation between anxious attachment and risky sex acts in women. Though previous literature has demonstrated that anxiously attached women are likely to consent to unwanted sexual relations from their partner (Impett & Peplau, 2002), this study did not find support towards the notion that anxiously attached individuals are attracted to risky sexual behaviors such as having sex with uncommitted partners or having sex without protection. Paul et al. (2000) also point out that individuals with an avoidant attachment style are more likely to engage in hook-ups. Therefore, it is likely that sexual assault survivors’ anxious attachment serves as a buffer for the inclination to engage in sexual risk behavior.

Given the previous research literature, many other research findings were quite surprising as well. First, as discussed, plenty of research studies show that sexual assault survivors tend to engage in sexual risk behavior (Schacht et al., 2010; Senn & Carey, 2010; Stockman et al., 2010; Testa et al., 2010). According to the current study’s research findings, this is not the case, as there was no significant difference in the levels of sexual risk behavior engagement that was reported by the sexual assault survivors and the non-sexual assault survivors in the study sample. In other words, there was no significant association between sexual assault and sexual risk behavior. Because there was no significant association between sexual assault and sexual risk behavior, gender was not a significant moderator of the association between sexual assault and sexual risk behavior. Finally, it is surprising and inconsistent that the association between sexual assault and
sexual risk behavior was not mediated by survivors’ insecure attachment, difficulties with emotion regulation, and substance use coping.

A possible explanation for the non-significant association between sexual assault and sexual risk behavior is that the sample of sexual assault survivors was too small in accordance to a G*Power 3 power analysis for a t-test. An a priori power analysis using the G*Power 3 statistical power analysis program (Faul et al., 2007) indicated that a sample of 231 participants was necessary to detect a medium effect size in a t-test analysis comparing differences between two independent means ($d = 0.5$; $\alpha$ error probability = 0.05; power $[1 – B$ error probability] = 0.95; Allocation ratio N2/N1 = 1; 10% increase for a valid sample n = 231). Nevertheless, it is also likely that perhaps sexual assault survivors actually do not engage in higher levels of sexual risk-taking, which would also help make sense of the non-significant mediation effect. Future research should continue to examine the association between sexual assault and sexual risk behavior further.

Finally, the results of the hierarchical regression post-hoc analyses are worth noting. Results of the post-hoc analyses demonstrated that when relationship status was accounted for, risky sex acts was positively associated with substance use coping. It is also worth noting that committed participants reported higher levels of engagement in risky sex acts than single participants. Given that the risky sex acts sub-scale measured sexual risk-taking behaviors such as engaging in sex without condoms, this finding is not surprising. To my knowledge, it can be assumed that people in monogamous relationships would probably engage in condom-less sex more than people who are not in
committed, monogamous relationships. Further, perhaps the fact that committed people were significantly reporting higher levels of engagement in risky sex acts than single participants explains why the positive association between risky sex acts and substance use coping was only present when relationship status was accounted for in the analyses.

Despite these possible explanations, there were some methodological limitations in the current study that are worth noting as well, as they may have contributed to the null results. These research limitations will be discussed in the next section.

**Limitations**

No research study is perfect, and thus, some limitations are worth noting. As noted previously, the current study did not have a very large sample of sexual assault survivors. A larger sample of sexual assault survivors is what may be needed to see the desired results. There are also many definitions of what constitutes sexual assault, and perhaps my definition of sexual assault was too broad to find the expected association between sexual assault and sexual risk behavior. It is likely that association only applies to severe instances of sexual assault, or in other words, instances that meet legal definitions of the crime.

Out of the 140 participants that were included in analyses, only 37% of the sample classified as sexual assault survivors. Only 10 sexual assault survivors (7% of the entire sample) reported experiencing rape, the most severe form of sexual assault. I did not conduct the mediational analyses, or any of the other relevant statistical models, using the most stringent form of sexual assault. It is likely that the severity of the sexual assault experience may influence the detrimental outcomes of sexual assault reported. It is also
likely that perhaps the association between sexual assault and sexual risk-taking may have been significant had this sample been larger. When compared to prior research studies, the sample of sexual assault survivors in the current study is quite small. In previous research that examined the association between sexual assault and sexual risk-taking, the majority of the study sample consisted of sexual assault survivors (e.g., George et al., 2014; Schacht et al., 2010; Senn & Carey, 2010). For example, in Schacht et al.’s (2010) study sample, 61% of the sample classified as sexual assault survivors, and Senn and Carey (2010) state that 80% of their study sample classified as sexual assault survivors. Thus, it is likely that the percentage of sexual assault survivors in this study’s sample is too small to detect a significant association between sexual assault and sexual risk behavior.

Another limitation lies in my unsuccessful attempt at recruiting such a high risk sample from the Riverview Center. Sexual assault is already a sensitive topic, and perhaps many sexual assault survivors opted out of participating in the study due to not wanting to disclose details of their sexual assault experience. This is a limitation that is, unfortunately, going to be difficult to eliminate in future research on the topic because sexual assault experiences will always be a sensitive topic to disclose among research participants. Also, sexual assault survivors who experienced the most traumatic assault incident may not be willing to disclose details of their assault. Nevertheless, a recommendation is made to future researchers on attempts to overcome this challenge in the section of implications for future research and practice.
Furthermore, the definition of what constitutes sexual assault, though defined in this paper, was never defined to the research participants. It is likely that when answering the items regarding sexual assault experiences, participants assumed that the definition of sexual assault included only the most stringent form of sexual assault. This may have especially been the case when participants were answering the item “Have you ever been sexually assaulted?” As discussed earlier, the number of sexual assault survivors that responded “yes” to this item was close to the number of sexual assault survivors that reported experiencing rape, the most severe form of sexual assault measured. Ten participants reported experiencing rape, and 16 participants responded “yes” to the item “Have you ever been sexually assaulted?” Perhaps I should have included a definition of sexual assault within the study survey.

It was also stated earlier that additional items were included in the sexual assault measure, and these items measured age of onset of sexual assault, as well as the frequency of sexual assault incidents experienced. I had planned to use these variables for analyses as control variables because I was interested in examining whether these variables had an influence on the detrimental outcomes of sexual assault. Specifically, I hypothesized that perhaps experiencing a sexual assault at a younger age or experiencing a sexual assault more than once may heighten the severity of sexual assault. In other words, the negative outcomes of sexual assault may be strongest in participants who experienced a sexual assault at a younger age or who experienced a sexual assault more than once. However, these variables ended up not being included in analyses due to the
small amount of sexual assault survivors in the sample that provided a response to these items.

In regards to measures, there are some limitations as well. First, given the nature of this research project, it may have been fruitful to examine the disorganized or fearful attachment styles that were discussed earlier in this paper. Infants who face trauma in childhood are at risk for developing a disorganized attachment style (Cassidy & Mohr, 2001), and the fearful attachment style has been linked to depression (B. Murphy & Bates, 1997). Given that sexual assault is a traumatic experience, it is likely that there may be a significant association between the sexual assault experience and the development of these other forms of insecure attachment. It may have also been useful to examine maladaptive coping styles overall rather than just substance use coping, such as other previous research studies that have utilized the Brief COPE as part of their study measures (e.g., Ashton et al., 2005). As for the honesty check that was used in this study, it may have not been enough to include only one item to measure honesty. Perhaps it may have been a much better idea to utilize a social desirability scale to measure participant honesty, such as the Marlow-Crowne Social Desirability Scale (Crowne & Marlowe, 1960).

Regarding measures, it is also important to note that my exclusion criteria of failure to pass at least one attention check may have been too stringent. As stated earlier in the document, 16 participants were excluded due to failing one of the attention check items. These participants only failed one out of three attention checks. It is likely that I may have lost some useful data due to this stringent exclusion criteria.
Further, there are some limitations concerning the measurement of sexual risk-taking that was used in this study. Though the measurement of sexual risk-taking by Turchik and Garske (2009) had its strengths, it also had some limitations that may have contributed to the null results of the study. Participants were instructed to self-report their sexual risk behavior in the past six months rather than their entire lifetime. It could be likely that some participants may have engaged in a lot of sexual risk behavior in their lifetime, but not in the last six months. On the other hand, instructing participants to self-report sexual risk behavior throughout their whole life could also be influenced by memory bias or social desirability bias, and these biases may influence participants to not be fully accurate in their responses. Social desirability bias should especially be of concern when asking participants to disclose engagement in sexual risk behaviors due to the sexual double standard (England & Bearak, 2014). The sexual double standard may influence participants to not answer the items on sexual risk behavior measures truthfully. For instance, women may under-report sexual risk behavior because they may perceive sexual risk-taking such as engaging in hook-ups as shameful according to societal standards. On the other hand, men may over-report sexual risk behavior because they may perceive sexual behaviors such as having multiple sexual partners to be expected and praised amongst the male gender.

Another limitation of the sexual risk behavior measure by Turchik and Garske (2009) is that the items were all open-response. Though the instructions of the measure state to enter a number for each response, some participants were not following directions. Thus, some of the participant responses had to be modified, and that may have
impacted the accuracy of the data. Another issue with the open-response format of the items is that many participants were reporting outrageously high values for some of the items in the measure. Because of this, the data were not normally distributed, and one of the variables had to be transformed to normality in order to be used in analyses. Perhaps I should have converted the count measure to a Likert scale from 0 to 4 based on an arbitrary scale. Moreover, a final limitation of the sexual risk behavior measure is that as previously discussed, some of the sub-scales of the measure were not included in analyses due to poor reliability.

Aside from the sexual risk behavior measure, I would say that perhaps the substance use coping measure that I chose was also a limitation of the study, as the substance use coping measure used in this study only had two items, which may have been too little items to accurately assess the use of a substance use coping strategy.

Finally, there are limitations to this study in that this was a correlational, cross-sectional research design, and thus no causal inferences nor longitudinal claims can be made. Also, like most research conducted on convenience samples of university students, there are some limitations concerning external validity. The majority of the participants were college-aged, female, and White/Caucasian. I expect the results to generalize to similar situations in which participants complete study measures electronically in the comfort of their own homes. The results are also likely to replicate with students from similar subject pools serving as participants. A similar subject pool of that from this study would be a sample of predominantly white college-aged freshmen women. There is no evidence that the findings will reproduce in samples of mostly or all male college
students, given the research showing that college women report higher rates of sexual assault than do college men (Banyard et al., 2007). Likewise, the findings may not reproduce in settings outside of a college environment. The college experience involves partying and heavy alcohol consumption (Wechsler et al., 1999) which may influence the inclination to turn to drug and alcohol usage as a means of coping from a traumatic event that may not occur otherwise. A direct replication would test the study hypotheses at a Midwestern college or university. Also, because the sample of sexual assault survivors was small, the results may not be generalizable to a larger sample of college sexual assault survivors.

**Strengths**

Despite the limitations, however, the current study has some strengths worth noting. First, the current study made a meaningful attempt at examining possible variables that may be associated with the sexual assault experience and sexual risk behavior. Given the notion that sexual assault is distressing to its survivors, this attempt was a noteworthy start.

Second, when recruiting participants using the UNI SONA system, I did not actively recruit a sample of sexual assault survivors. In other words, I did not indicate having to be a sexual assault survivor as a screening requirement to participate in the study. As noted, prior research examining the effects of sexual assault contains larger samples of sexual assault survivors, but it may be important to consider that perhaps those researchers could have made an active attempt to recruit a sample of sexual assault survivors per their informed consent guidelines. Given that I did not specifically recruit a
sample of sexual assault survivors, the percentage of sexual assault survivors in the current study sample may be an accurate representation of the prevalence of sexual assault survivors on college campuses.

Further, prior studies examining the effects of sexual assault were primarily focusing on the effects of sexual assault on women (e.g., Day, 1999; Sinozich & Langton, 2014; Young et al., 2009), which was not surprising, given that women are more vulnerable to experiencing sexual assault. However, it is important not to neglect the detrimental effects that sexual assault may have on men. According to this study’s participant demographics, there were more female sexual assault survivors than male sexual assault survivors, but it is essential to note that there were at least some men that were reporting having experienced a sexual assault. Thus, recruiting a male comparison sample was also a major strength of the current study. It is also important to remember that I included members of the LGBT community by modifying some of the items in the sexual experiences measurement, which may have also been a limitation of prior research studies.

Moreover, I considered all aspects of sexual risk behavior while deciding on a measure of sexual risk-taking to use in this study. As previously discussed, according to the research literature, sexual risk behavior is defined as a high number of lifetime sexual partners, a high number of hook-ups, and/or multiple sexual partners (e.g., George et al., 2014; Hosain et al., 2012). Sexual behavior is also defined as engagement in sexual intercourse without protection from STIs and pregnancy with casual or non-committed partners, as well as engagement in intercourse under the influence of alcohol and/or
substances (Hotton et al., 2013; Messman-Moore et al., 2010). Not all prior research that has explored sexual risk behavior has considered all of these behaviors just described, whereas, in the current study, participants responded to items that measured all of these behaviors.

Lastly, I included multiple attention checks throughout the study survey to ensure that participants were paying attention to items. Unfortunately, not everybody takes psychological research seriously, and the noise created by participants that do not read instructions decreases the reliability of a research study (Oppenheimer, Meyvis, & Davidenko, 2009). The use of attention checks hopefully increased the power of the study.

Implications for Future Research and Practice

The current study has several important implications for future research. First, sexual assault is a sensitive topic, and its survivors may be reluctant to disclose their sexual assault experience(s). Survivors’ reluctance to disclose their sexual experiences may be one reason as to why my study data have a small sample of sexual assault survivors, and given that I was not able to recruit any survivors from the Riverview Center, it is important to consider factors that may make it difficult to study sexual assault. In addition, perhaps the small number of sexual assault survivors in my sample was due to the environment in which data collection took place. I collected data at a mid-sized, Midwestern university—it is likely that I would have had better luck recruiting my sample of interest at a larger, more diverse university. Future research should replicate this study with a larger sample of sexual assault survivors, as well as with minority
populations, as there is research that has demonstrated that minority populations are at a higher risk of experiencing sexual assault than are non-minority populations (e.g., Friedman et al., 2011).

In addition, it may be beneficial to think about and account for a possible explanation as to why my attempt to recruit a sample of sexual assault survivors was difficult and unsuccessful in the end. As has been already concluded, the population of sexual assault survivors is a vulnerable population, and I can imagine that experiences with sexual assault can be quite difficult to disclose. Though some Riverview Center staff agreed to disseminate my study survey to their clients, others declined. In reality, it should not be a surprise that most of the staff at the Riverview Center declined to disseminate my study survey to their clients. The population of sexual assault survivors is vulnerable, and I frankly did not take the time to establish much credibility with the Riverview Center staff. Had I established that credibility beforehand, perhaps I would have had more luck in recruiting a sample of sexual assault survivors given that my survey would have been disseminated to a larger sample of sexual assault survivors. For future researchers interested in exploring the impact of sexual assault on sexual risk-taking, I would recommend taking this factor into consideration.

It is also important to consider factors that may make it difficult to accurately assess sexual risk behavior. As mentioned previously, the sexual double standard still exists, which may make it difficult to assess women’s engagement in sexual risk behavior. Given the limitations of the measurement of sexual risk-taking by Turchik and Garske (2009), future research should replicate this study using other and multiple
measures of sexual risk behavior. A better measure of sexual risk behavior may consist of instructing participants to answer items on a Likert scale rather than instructing participants to enter in their responses using an open-response scale.

It may also be beneficial to replicate this study using another or more extensive measure of substance use, in order to create a more reliable variable of substance use. For exploratory purposes, future research should examine whether the specific sub-scales of the DERS (Gratz & Roemer, 2004) or the Brief COPE (Carver, 1997) mediate the association between sexual assault and sexual risk behavior. Also, to my knowledge, there is currently no research that has examined whether there are any gender differences concerning engagement in sexual-risk taking. Though it has been found that men associate more positive emotional reactions to casual sex, based on what is now known from the results of this study, it would be a worthwhile avenue for future research to explore whether men may be engaging in higher levels of sexual risk behavior than women or vice versa.

Though it would be beneficial to replicate this study with different samples and measures, some modifications to the current study would also prove fruitful. For instance, the association between traumatic sexual experiences and sexual risk behavior should be examined longitudinally. A longitudinal research design would be useful in deducing whether levels of engagement in sexual risk behavior do increase directly after a traumatic instance of sexual aggression. I also think that future research should examine whether sexual assault survivors become risk-takers in general after their assault experience, or whether the risk-taking is specific to the sexual domain. Perhaps this could
be examined by also measuring sexual assault survivors’ non-sexual risk-taking, such as by using the risk-taking scale of the Disinhibition Inventory (DIS–I; Dindo, McDade-Montez, Sharma, Watson, & Clark, 2009) that has been used in prior social psychological research.

Finally, future research should examine other potential mediators of the association between sexual assault and sexual risk-taking, and perhaps by using experimental research designs. For instance, sexual assault survivors may perceive greater risk in assertive behaviors promoting safe sex such as discussing and insisting on condom use with a sexual partner than the risk of contracting an STD or accidental pregnancy from non-condom use. In this case, perhaps the inability to be sexually assertive may mediate the association between sexual assault and sexual risk behavior. The effect that lack of sexual assertiveness may have on sexual assault survivors’ sexual risk-taking could be examined experimentally by, for example, experimentally manipulating sexual assertiveness. Participants could possibly be presented with scenario(s) in which sexual assertiveness is necessary to achieve a desired outcome, and in this manner, researchers may be able to receive insight on differences in sexual assertiveness levels in sexual assault survivors and non-sexual assault survivors.

Despite these implications for future research, the current study also has practical, real-world implications. The study results suggest that there are negative outcomes of sexual assault to individuals’ attachment styles and emotion regulatory processes, suggesting that counselors and mental health professionals should aid sexual assault survivors in forming healthy, secure relationships and better emotion regulation strategies.
following their assault experience. On the other hand, I do mention in this paper that perhaps an explanation for the non-existent association between sexual assault and sexual risk behavior in this study is that perhaps sexual assault survivors do not engage in higher levels of sexual risk-taking than their counterparts. Thus, this research also demonstrates that there is a possibility that sexual assault survivors may be resilient to the harmful effects of the traumatic sexual assault experience, or at least much more resilient than what has previously been thought. On that note, counselors and mental health professionals could also develop counseling and therapeutic techniques that encourage sexual assault survivors to be strong throughout the process, and not engage in destructive behaviors such as sexual risk-taking behaviors.

As this study showed, though, unfortunately women have a higher vulnerability to experiencing sexual assault than men, meaning that perhaps sexual education programs at schools should implement interventions that teach girls how to stay safe and avoid potentially dangerous situations in environments where sexual assault is bound to occur, such as college environments (Wechsler et al., 1999). For instance, interventions should be implemented to teach girls helpful self-defense strategies to use if they ever found themselves in dangerous situations. Moreover, interventions should be implemented to teach boys and girls that sexual assault is not okay and should not be perpetrated under any circumstances.

At the college level, educational interventions should especially be implemented as well, given the high rates of sexual assault on college campuses. Interventions should be implemented to teach college-aged men and women not to perpetrate sexual assault,
how to protect themselves in situations where sexual assault may occur on college campuses (e.g., parties, social events), as well as what actions to potentially take if ever in a situation where they suspect that somebody may be in danger of experiencing sexual assault. According to the study findings, sexual assault is prevalent in college campuses, and therefore, efforts of educational institutions to reduce the rates of sexual assault on college campuses would prove fruitful.

Conclusion

Overall, the present study found that sexual assault significantly predicted insecure attachment and difficulties with emotion regulation, and insecure attachment and difficulties with emotion regulation in turn significantly predicted sexual risk behavior. However, sexual assault was not associated with sexual risk-taking, and survivors’ insecure attachment, emotion regulation difficulties, and substance use coping strategies did not explain the association between sexual assault and sexual risk behavior. Nevertheless, it is noteworthy to say that this study provides support towards the notion that sexual assault is still prevalent today, especially against women, and is significantly detrimental to those who experience it. Researchers should continue to conduct research on this topic, to more comprehensively understand the outcomes of sexual assault, and the ways that counselors and mental health professionals could more effectively help sexual assault survivors in dealing with such a traumatic experience.
Table 1

Participant Demographic Characteristics

<table>
<thead>
<tr>
<th></th>
<th>SA (N = 52)</th>
<th>non-SA (N = 88)</th>
<th>total (N = 140)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men (n)</td>
<td>Women (n)</td>
<td>Total (n)</td>
</tr>
<tr>
<td><strong>Race/Ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>African American</td>
<td>1 (2%)</td>
<td>3 (6%)</td>
<td>4 (8%)</td>
</tr>
<tr>
<td>American Indian</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Asian American</td>
<td>0 (0%)</td>
<td>3 (6%)</td>
<td>3 (6%)</td>
</tr>
<tr>
<td>Biracial/Multiracial</td>
<td>1 (2%)</td>
<td>2 (4%)</td>
<td>3 (6%)</td>
</tr>
<tr>
<td>Hispanic/Latino</td>
<td>3 (6%)</td>
<td>2 (4%)</td>
<td>5 (10%)</td>
</tr>
<tr>
<td>White/Caucasian</td>
<td>10 (19%)</td>
<td>28 (54%)</td>
<td>38 (73%)</td>
</tr>
<tr>
<td>Other</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td><strong>Sexual Orientation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heterosexual</td>
<td>13 (25%)</td>
<td>25 (48%)</td>
<td>38 (73%)</td>
</tr>
<tr>
<td>Bisexual</td>
<td>0 (0%)</td>
<td>9 (17%)</td>
<td>9 (17%)</td>
</tr>
<tr>
<td>Gay/lesbian</td>
<td>1 (2%)</td>
<td>3 (6%)</td>
<td>4 (8%)</td>
</tr>
<tr>
<td>Other</td>
<td>0 (0%)</td>
<td>1 (2%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td><strong>Political Orientation</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very liberal</td>
<td>2 (4%)</td>
<td>5 (10%)</td>
<td>7 (14%)</td>
</tr>
<tr>
<td>Liberal</td>
<td>1 (2%)</td>
<td>13 (25%)</td>
<td>14 (27%)</td>
</tr>
<tr>
<td>Moderate</td>
<td>9 (17%)</td>
<td>14 (27%)</td>
<td>23 (44%)</td>
</tr>
<tr>
<td>Conservative</td>
<td>2 (4%)</td>
<td>5 (10%)</td>
<td>7 (14%)</td>
</tr>
<tr>
<td>Very conservative</td>
<td>0 (0%)</td>
<td>1 (2%)</td>
<td>1 (2%)</td>
</tr>
</tbody>
</table>

(table continues)
<table>
<thead>
<tr>
<th>Political Party</th>
<th>SA (N = 52)</th>
<th>non-SA (N = 88)</th>
<th>total (N = 140)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Men n (%)</td>
<td>Women n (%)</td>
<td>Total n (%)</td>
</tr>
<tr>
<td>Democrat</td>
<td>3 (6%)</td>
<td>20 (38%)</td>
<td>23 (44%)</td>
</tr>
<tr>
<td>Independent</td>
<td>5 (10%)</td>
<td>3 (6%)</td>
<td>8 (16%)</td>
</tr>
<tr>
<td>Republican</td>
<td>3 (6%)</td>
<td>8 (15%)</td>
<td>11 (21%)</td>
</tr>
<tr>
<td>No affiliation</td>
<td>3 (6%)</td>
<td>7 (14%)</td>
<td>10 (20%)</td>
</tr>
<tr>
<td>Other</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Year in School</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Freshman</td>
<td>10 (20%)</td>
<td>27 (52%)</td>
<td>37 (62%)</td>
</tr>
<tr>
<td>Sophomore</td>
<td>1 (2%)</td>
<td>6 (12%)</td>
<td>7 (14%)</td>
</tr>
<tr>
<td>Junior</td>
<td>2 (4%)</td>
<td>4 (8%)</td>
<td>6 (12%)</td>
</tr>
<tr>
<td>Senior</td>
<td>1 (2%)</td>
<td>1 (2%)</td>
<td>2 (4%)</td>
</tr>
<tr>
<td>Other</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Religiosity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Very religious</td>
<td>0 (0%)</td>
<td>1 (2%)</td>
<td>1 (2%)</td>
</tr>
<tr>
<td>Moderately religious</td>
<td>4 (8%)</td>
<td>13 (25%)</td>
<td>17 (33%)</td>
</tr>
<tr>
<td>A little religious</td>
<td>2 (4%)</td>
<td>12 (23%)</td>
<td>14 (27%)</td>
</tr>
<tr>
<td>Spiritual, but not rel.</td>
<td>5 (10%)</td>
<td>6 (12%)</td>
<td>11 (22%)</td>
</tr>
<tr>
<td>Not spiritual nor rel.</td>
<td>3 (5%)</td>
<td>6 (12%)</td>
<td>9 (17%)</td>
</tr>
<tr>
<td>Unwanted Sexual</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Experiences</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Contact</td>
<td>9 (17%)</td>
<td>35 (67%)</td>
<td>44 (84%)</td>
</tr>
<tr>
<td>Sexual Coercion</td>
<td>3 (5%)</td>
<td>13 (25%)</td>
<td>16 (30%)</td>
</tr>
<tr>
<td>Attempted Rape</td>
<td>3 (5%)</td>
<td>12 (23%)</td>
<td>15 (28%)</td>
</tr>
<tr>
<td>Rape</td>
<td>4 (8%)</td>
<td>6 (12%)</td>
<td>10 (20%)</td>
</tr>
</tbody>
</table>

(table continues)
### Table 2

**Descriptive Statistics of the Mediator and Dependent Variables**

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxious Attachment</td>
<td>3.20</td>
<td>1.20</td>
</tr>
<tr>
<td>Avoidant Attachment</td>
<td>3.02</td>
<td>1.20</td>
</tr>
<tr>
<td>Difficulties with Emotion Regulation</td>
<td>1.52</td>
<td>.220</td>
</tr>
<tr>
<td>Substance Use Coping</td>
<td>1.46</td>
<td>.720</td>
</tr>
<tr>
<td>Sexual Risk-Taking with Uncommitted Partners</td>
<td>1.23</td>
<td>1.49</td>
</tr>
<tr>
<td>Risky Sex Acts</td>
<td>.535</td>
<td>.590</td>
</tr>
</tbody>
</table>

*Note.* Numbers displayed consist of frequencies.

SA = Sexual assault survivors. Non-SA = Non-sexual assault survivors.
### Table 3

**Descriptive Statistics of the Mediator and Dependent Variables by Gender and Sexual Assault Experience**

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th>t</th>
<th>Men</th>
<th>Women</th>
<th>t</th>
<th>Men</th>
<th>Women</th>
<th>t</th>
<th>Men</th>
<th>Women</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M (SD)</td>
<td></td>
<td></td>
<td>M (SD)</td>
<td></td>
<td></td>
<td>M (SD)</td>
<td></td>
<td></td>
<td>M (SD)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxious Attachment</td>
<td>3.39</td>
<td>3.68</td>
<td>-.739</td>
<td>2.88</td>
<td>3.06</td>
<td>-.684</td>
<td>3.60</td>
<td>2.96</td>
<td>-3.13**</td>
<td>2.99</td>
<td>3.37</td>
<td>-1.89</td>
</tr>
<tr>
<td>(1.26)</td>
<td>(1.19)</td>
<td></td>
<td></td>
<td>(0.987)</td>
<td>(1.33)</td>
<td></td>
<td>(1.20)</td>
<td>(1.14)</td>
<td></td>
<td>(1.06)</td>
<td>(1.29)</td>
<td></td>
</tr>
<tr>
<td>Avoidant Attachment</td>
<td>3.42</td>
<td>3.28</td>
<td>.427</td>
<td>3.10</td>
<td>2.52</td>
<td>2.49*</td>
<td>3.32</td>
<td>2.85</td>
<td>-2.22*</td>
<td>3.17</td>
<td>2.90</td>
<td>1.36</td>
</tr>
<tr>
<td>(.918)</td>
<td>(1.36)</td>
<td></td>
<td></td>
<td>(1.15)</td>
<td>(1.04)</td>
<td></td>
<td>(1.25)</td>
<td>(1.14)</td>
<td></td>
<td>(1.11)</td>
<td>(1.26)</td>
<td></td>
</tr>
<tr>
<td>Difficulties with Emotion Regulation</td>
<td>1.51</td>
<td>1.60</td>
<td>-1.12</td>
<td>1.48</td>
<td>1.49</td>
<td>-1.59</td>
<td>1.58</td>
<td>1.49</td>
<td>-2.21*</td>
<td>1.49</td>
<td>1.55</td>
<td>-1.50</td>
</tr>
<tr>
<td>(.249)</td>
<td>(,.250)</td>
<td></td>
<td></td>
<td>(.191)</td>
<td>(.199)</td>
<td></td>
<td>(.250)</td>
<td>(.193)</td>
<td></td>
<td>(.203)</td>
<td>(.231)</td>
<td></td>
</tr>
<tr>
<td>Substance Use Coping</td>
<td>1.54</td>
<td>1.51</td>
<td>.085</td>
<td>1.53</td>
<td>1.29</td>
<td>1.77</td>
<td>1.52</td>
<td>1.43</td>
<td>-.706</td>
<td>1.53</td>
<td>1.40</td>
<td>1.05</td>
</tr>
<tr>
<td>(.865)</td>
<td>(.784)</td>
<td></td>
<td></td>
<td>(.759)</td>
<td>(.515)</td>
<td></td>
<td>(.798)</td>
<td>(.672)</td>
<td></td>
<td>(.776)</td>
<td>(.668)</td>
<td></td>
</tr>
<tr>
<td>Sexual Risk-Taking with Uncommitted Partners</td>
<td>1.51</td>
<td>.983</td>
<td>1.16</td>
<td>1.46</td>
<td>1.07</td>
<td>1.15</td>
<td>1.13</td>
<td>1.29</td>
<td>.660</td>
<td>1.47</td>
<td>1.02</td>
<td>1.73</td>
</tr>
<tr>
<td>(1.54)</td>
<td>(1.17)</td>
<td></td>
<td></td>
<td>(1.70)</td>
<td>(1.48)</td>
<td></td>
<td>(1.28)</td>
<td>(1.61)</td>
<td></td>
<td>(1.65)</td>
<td>(1.33)</td>
<td></td>
</tr>
<tr>
<td>Risky Sex Acts</td>
<td>.261</td>
<td>.511</td>
<td>-1.39</td>
<td>.550</td>
<td>.634</td>
<td>-6.17</td>
<td>.446</td>
<td>.587</td>
<td>1.31</td>
<td>.489</td>
<td>.573</td>
<td>-.803</td>
</tr>
<tr>
<td>(.516)</td>
<td>(.595)</td>
<td></td>
<td></td>
<td>(.562)</td>
<td>(.634)</td>
<td></td>
<td>(.581)</td>
<td>(.592)</td>
<td></td>
<td>(.561)</td>
<td>(.614)</td>
<td></td>
</tr>
</tbody>
</table>

*Note. SA = Sexual assault survivors. non-SA = Non-sexual assault survivors.*

*p < .05, **p < .01.
Table 4

**Descriptive Statistics of the Mediator and Dependent Variables by Relationship Status**

<table>
<thead>
<tr>
<th></th>
<th>total N</th>
<th>Single M (SD)</th>
<th>Committed M (SD)</th>
<th>t</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxious Attachment</td>
<td></td>
<td>3.46 (1.18)</td>
<td>2.82 (1.15)</td>
<td>3.24**</td>
</tr>
<tr>
<td>Avoidant Attachment</td>
<td></td>
<td>3.45 (1.08)</td>
<td>2.42 (1.10)</td>
<td>5.55***</td>
</tr>
<tr>
<td>Difficulties with Emotion Regulation</td>
<td></td>
<td>1.52 (.224)</td>
<td>1.52 (.215)</td>
<td>-.059</td>
</tr>
<tr>
<td>Substance Use Coping</td>
<td></td>
<td>1.48 (.741)</td>
<td>1.44 (.695)</td>
<td>.293</td>
</tr>
<tr>
<td>Sexual Risk-Taking with Uncommitted Partners</td>
<td></td>
<td>1.55 (1.67)</td>
<td>.776 (1.07)</td>
<td>3.33**</td>
</tr>
<tr>
<td>Risky Sex Acts</td>
<td></td>
<td>.415 (.571)</td>
<td>.701 (.580)</td>
<td>-2.75**</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01, ***p < .001.

Table 5

**Correlations between the Mediator and Dependent Variables**

<table>
<thead>
<tr>
<th></th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Anxious Attachment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Avoidant Attachment</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>.40**</td>
</tr>
<tr>
<td>3. Difficulties with Emotion Regulation</td>
<td></td>
<td></td>
<td>.58**</td>
<td></td>
<td>.37**</td>
</tr>
<tr>
<td>4. Substance Use Coping</td>
<td></td>
<td>.18**</td>
<td></td>
<td>.14</td>
<td>.37**</td>
</tr>
<tr>
<td>5. Sexual Risk-Taking with Uncommitted Partners</td>
<td></td>
<td>.05</td>
<td>.22**</td>
<td>-.11</td>
<td>.04</td>
</tr>
<tr>
<td>6. Risky Sex Acts</td>
<td>-.11</td>
<td>-.06</td>
<td>.04</td>
<td>.19*</td>
<td>.19*</td>
</tr>
</tbody>
</table>

*p < .05, **p < .01.
Table 6

*Correlations between the Mediator and Dependent Variables by Gender*

<table>
<thead>
<tr>
<th></th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Anxious Attachment</td>
<td>.16</td>
<td>.61**</td>
<td>.23</td>
<td>-.04</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>2. Avoidant Attachment</td>
<td>.59**</td>
<td>.34*</td>
<td>.21</td>
<td>.28*</td>
<td>.15</td>
<td></td>
</tr>
<tr>
<td>3. Difficulties with Emotion Regulation</td>
<td>.55**</td>
<td>.43**</td>
<td>.48**</td>
<td>-.02</td>
<td>.24</td>
<td></td>
</tr>
<tr>
<td>4. Substance Use Coping</td>
<td>.18</td>
<td>.07</td>
<td>.31**</td>
<td>-.01</td>
<td>.41**</td>
<td></td>
</tr>
<tr>
<td>5. Sexual Risk-Taking with Uncommitted Partners</td>
<td>.19</td>
<td>.14</td>
<td>-.16</td>
<td>.08</td>
<td>.28*</td>
<td></td>
</tr>
<tr>
<td>6. Risky Sex Acts</td>
<td>-.24*</td>
<td>-.18</td>
<td>-.10</td>
<td>.01</td>
<td>.14</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* The men’s correlations appear above the diagonal and the women’s correlations appear below the diagonal.

*p < .05, **p < .01.

Table 7

*Correlations between the Mediator and Dependent Variables by Sexual Assault Experience*

<table>
<thead>
<tr>
<th></th>
<th>1.</th>
<th>2.</th>
<th>3.</th>
<th>4.</th>
<th>5.</th>
<th>6.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Anxious Attachment</td>
<td>.41**</td>
<td>.55**</td>
<td>.19</td>
<td>.13</td>
<td>-.23</td>
<td></td>
</tr>
<tr>
<td>2. Avoidant Attachment</td>
<td>.35**</td>
<td>.39**</td>
<td>.00</td>
<td>.06</td>
<td>-.32</td>
<td></td>
</tr>
<tr>
<td>3. Difficulties with Emotion Regulation</td>
<td>.57**</td>
<td>.32**</td>
<td>.28*</td>
<td>-.21</td>
<td>-.10</td>
<td></td>
</tr>
<tr>
<td>4. Substance Use Coping</td>
<td>.16</td>
<td>.43**</td>
<td>.43**</td>
<td>-.10</td>
<td>-.10</td>
<td></td>
</tr>
<tr>
<td>5. Sexual Risk-Taking with Uncommitted Partners</td>
<td>.04</td>
<td>.32**</td>
<td>-.04</td>
<td>.12</td>
<td>.24</td>
<td></td>
</tr>
<tr>
<td>6. Risky Sex Acts</td>
<td>.01</td>
<td>.10</td>
<td>.17</td>
<td>.41**</td>
<td>.16</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* The sexual assault survivors’ correlations appear above the diagonal and the non-sexual assault survivors’ correlations appear below the diagonal.

*p < .05, **p < .01.
Table 8

*Frequencies of Reported Unwanted Sexual Experiences*

<table>
<thead>
<tr>
<th></th>
<th>Men</th>
<th>Women</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n=38</td>
<td>n=14</td>
<td>N=52</td>
</tr>
<tr>
<td>Sexual Experiences</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sexual Contact</td>
<td>9</td>
<td>35</td>
<td>44</td>
</tr>
<tr>
<td>Sexual Coercion</td>
<td>3</td>
<td>13</td>
<td>16</td>
</tr>
<tr>
<td>Attempted Rape</td>
<td>3</td>
<td>12</td>
<td>15</td>
</tr>
<tr>
<td>Rape</td>
<td>4</td>
<td>6</td>
<td>10</td>
</tr>
</tbody>
</table>

*Note.* Twenty-one participants reported experiencing more than one unwanted sexual experience.

SA = Sexual assault survivors.

Table 9

*Multivariate Effects*

<table>
<thead>
<tr>
<th>Variables</th>
<th>F</th>
<th>df</th>
<th>error df</th>
<th>p</th>
<th>partial $\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anxious Attachment</td>
<td>10.053</td>
<td>1</td>
<td>138</td>
<td>.002</td>
<td>.068</td>
</tr>
<tr>
<td>Avoidant Attachment</td>
<td>5.167</td>
<td>1</td>
<td>138</td>
<td>.025</td>
<td>.036</td>
</tr>
<tr>
<td>Difficulties with Emotion Regulation</td>
<td>5.570</td>
<td>1</td>
<td>138</td>
<td>.020</td>
<td>.039</td>
</tr>
<tr>
<td>Substance Use Coping</td>
<td>.545</td>
<td>1</td>
<td>138</td>
<td>.462</td>
<td>.004</td>
</tr>
</tbody>
</table>
Table 10

*Coefficients for the Independent Variables of Multiple Regression Analyses*

<table>
<thead>
<tr>
<th>Variables</th>
<th>$b$</th>
<th>$\beta$</th>
<th>$t$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DV: Sexual Risk-Taking with Uncommitted Partners</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxious Attachment</td>
<td>.127</td>
<td>.103</td>
<td>.993</td>
</tr>
<tr>
<td>Avoidant Attachment</td>
<td>.345</td>
<td>.276</td>
<td>3.044**</td>
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<tr>
<td>Difficulties with Emotion Regulation</td>
<td>-2.08</td>
<td>-.305</td>
<td>-2.845**</td>
</tr>
<tr>
<td>Substance Use Coping</td>
<td>.199</td>
<td>.096</td>
<td>1.093</td>
</tr>
<tr>
<td><strong>DV: Risky Sex Acts</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxious Attachment</td>
<td>-.077</td>
<td>-.159</td>
<td>-1.431</td>
</tr>
<tr>
<td>Avoidant Attachment</td>
<td>-.029</td>
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<td>-.587</td>
</tr>
<tr>
<td>Difficulties with Emotion Regulation</td>
<td>.173</td>
<td>.062</td>
<td>.532</td>
</tr>
<tr>
<td>Substance Use Coping</td>
<td>.161</td>
<td>.203</td>
<td>2.075</td>
</tr>
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</table>

*Note. DV = Dependent variable.*

*p < .05, **p < .01.*
Table 11

*Coefficients for the Independent Variables of Hierarchical Regression Analyses*

<table>
<thead>
<tr>
<th>Variables</th>
<th>$b$</th>
<th>$\beta$</th>
<th>$t$</th>
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</thead>
<tbody>
<tr>
<td>DV: Sexual Risk-Taking with Uncommitted Partners</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Status</td>
<td>-.771</td>
<td>-.255</td>
<td>-3.100**</td>
</tr>
<tr>
<td>Anxious Attachment</td>
<td>.077</td>
<td>.062</td>
<td>.586</td>
</tr>
<tr>
<td>Avoidant Attachment</td>
<td>.266</td>
<td>.213</td>
<td>2.146*</td>
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<td>Difficulties with Emotion Regulation</td>
<td>-1.74</td>
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<td>-2.290*</td>
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<tr>
<td>Substance Use Coping</td>
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<td>.090</td>
<td>1.034</td>
</tr>
<tr>
<td>DV: Risky Sex Acts</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relationship Status</td>
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<td>.240</td>
<td>2.759**</td>
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<td>-.105</td>
<td>-.943</td>
</tr>
<tr>
<td>Avoidant Attachment</td>
<td>.027</td>
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<td>.499</td>
</tr>
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<td>Difficulties with Emotion Regulation</td>
<td>-.038</td>
<td>-.014</td>
<td>-.116</td>
</tr>
<tr>
<td>Substance Use Coping</td>
<td>.162</td>
<td>.205</td>
<td>2.136*</td>
</tr>
</tbody>
</table>

*Note. DV = Dependent variable.*

* $p < .05$, ** $p < .01$. 
Figure 1

Mediation Model
Figure 2

*Frequencies of Reported Unwanted Sexual Experiences by Gender*
Figure 3

*Frequencies of Reported Sexual Assault by Gender*

*Note.* SA = Sexual assault survivors. non-SA = Non-sexual assault survivors.
REFERENCES


SONA Sample Script
We invite you to participate in a study about human sexuality and intimate relationships. The study entails a 30 minute survey. Upon finishing this survey, you will receive 0.5 academic research credits. All responses will remain confidential. Please note that this study contains some sensitive questions regarding violent sexual assault history. Additionally, you must feel comfortable disclosing on your past and current sexual experiences and intimate relationships. You must have engaged in sexual intercourse to be eligible to participate in this study. If you have any questions, please contact Melanie Reyes at mreyes@uni.edu or her faculty supervisor Dr. Seong-In Choi at seongin.choi@uni.edu. Thank you for your participation.

Time was listed as 30 minutes.

Riverview Center Sample Recruitment E-Mail
You are invited to participate in a research study titled “Human Sexuality and Intimate Relationships” conducted at the University of Northern Iowa. The purpose of this study is to understand human sexuality and intimate relationships.

You will be asked to complete an online survey that will consist of questions about your past and current sexual experiences and intimate relationships. Please note that this study contains some sensitive questions regarding sexual assault history.

Your participation is completely voluntary. You are free to withdraw from this study, leave out any questions, or choose not to participate without any penalties. If you choose to participate, you will be offered a $5 Amazon e-gift card at the end of the survey as compensation for your participation.

If you have any questions or wish to have further information about your participation in this study or further information about the study more generally, please contact either Melanie Reyes, B.S., the primary investigator of this study, at mreyes@uni.edu or her faculty supervisor Seong-In Choi, Ph.D., at seongin.choi@uni.edu. For questions about your rights as a research participant, you can contact the UNI IRB at anita.gordon@uni.edu.

Participation in this study should take no more than 30 minutes. If you agree to participate in this project, please click on the link below.

https://uni.co1.qualtrics.com/jfe/form/SV_8qVOH4Xf8ggeENT

Thank you for your time and effort.
APPENDIX B
CONSENT FORMS

SONA Sample Consent Form

UNIVERSITY OF NORTHERN IOWA INFORMED CONSENT
Project Title: Human Sexuality and Intimate Relationships
Investigators: Melanie A. Reyes, B.S., & Seong-In Choi, Ph.D.

Invitation to Participate: You are invited to participate in a research study titled “Human Sexuality and Intimate Relationships” conducted at the University of Northern Iowa. The following information is provided to help you make an informed decision about whether or not to participate.

Nature and Purpose: The purpose of this study is to understand human sexuality and intimate relationships.

Explanation of Procedure: You will be asked to complete an online survey. The survey will contain questions about sex and relationships. Participation in this study should take no more than 30 minutes.

Discomfort and Risks: You may feel uncomfortable answering some of the questions. Please note that this study contains some sensitive questions regarding violent sexual assault history. Additionally, please note that you must feel comfortable disclosing on your past and current sexual experiences and intimate relationships.

Benefits: There are no direct benefits to your participation, but your participation will help contribute to the sexuality and relationships research literature. You will receive 0.5 academic research credits at the end of the survey as a compensation of your participation.

Confidentiality: Your responses will be kept completely confidential. Your name on the SONA system will not be connected to your survey responses. No other identifying information will be collected. IP addresses which are provided by default on the survey program will be deleted prior to analyzing the data. Your confidentiality will be maintained to the degree permitted by the technology used. Specifically, no guarantees can be made regarding the interception of data sent via the Internet by any third parties. The summarized findings with no identifying information may be published in an academic journal or presented at a local or national conference. The data may also be made public in data repository. Worker ID numbers and IP addresses will be deleted before data are analyzed or shared.

Right to Refuse or Withdraw: Your participation is completely voluntary. You are free to withdraw from this study, leave out any questions, or choose not to participate without
any penalties. Once you agree to participate in this study, you will receive 0.5 credit even if you choose to withdraw. If you choose to withdraw, please skip to the last page of the survey to receive research credit.

**Questions:** If you have any questions, or wish to have further information about your participation in this study or further information about the study more generally, please contact either Melanie Reyes, B.S., the primary investigator of this study, at mreyes@uni.edu or her faculty supervisor Seong-In Choi, Ph.D., at seongin.choi@uni.edu. For questions about your rights as a research participant, you can contact the UNI IRB at anita.gordon@uni.edu.

**Agreement:** Clicking on the ">>" button below indicates that I am fully aware of the nature and extent of my participation in this project as stated above and the possible risks arising from it. I hereby agree to participate in this project. I am 17 years of age or older. You can print a copy of this form by clicking the print icon on your browser if you wish. If you agree to participate, simply click the ">>" button. If you do not agree and do not wish to participate, simply close the survey browser window.

**Riverview Center Sample Consent Form**

**Informed Consent**

**UNIVERSITY OF NORTHERN IOWA INFORMED CONSENT**

*Project Title: Human Sexuality and Intimate Relationships*

*Investigators: Melanie A. Reyes, B.S., & Seong-In Choi, Ph.D.*

**Invitation to Participate:** You are invited to participate in a research study titled “Human Sexuality and Intimate Relationships” conducted at the University of Northern Iowa. The following information is provided to help you make an informed decision about whether or not to participate.

**Nature and Purpose:** The purpose of this study is to understand human sexuality and intimate relationships.

**Explanation of Procedure:** You will be asked to complete an online survey. The survey will contain questions about sex and relationships. Participation in this study should take no more than 30 minutes.

**Discomfort and Risks:** You may feel uncomfortable answering some of the questions. Please note that this study contains some sensitive questions regarding sexual assault history.

**Benefits:** There are no direct benefits to your participation, but your participation will help contribute to the sexuality and relationships research literature. You will be offered a $5 Amazon e-gift card at the end of the survey as a compensation of your participation.
**Confidentiality:** Your responses will be kept completely confidential. At the end of the survey, you will be offered the option to click on a link to a new form where you can enter your email address for the compensation. The email will not be connected to your survey responses, and will be used solely to provide compensation. The list of participant email addresses will be destroyed after all participants are provided compensation. No other identifying information will be collected. Your confidentiality will be maintained to the degree permitted by the technology used. Specifically, no guarantees can be made regarding the interception of data sent via the Internet by any third parties. The summarized findings with no identifying information may be published in an academic journal or presented at a local or national conference. Anonymous data may be made public in a data repository.

**Right to Refuse or Withdraw:** Your participation is completely voluntary. You are free to withdraw from this study, leave out any questions, or choose not to participate without any penalties.

**Questions:** If you have any questions or wish to have further information about your participation in this study or further information about the study more generally, please contact either Melanie Reyes, B.S., the primary investigator of this study, at mreyes@uni.edu or her faculty supervisor Seong-In Choi, Ph.D., at seongin.choi@uni.edu. For questions about your rights as a research participant, you can contact the UNI IRB at anita.gordon@uni.edu.

**Agreement:** Clicking on the ">>" button below indicates that I am fully aware of the nature and extent of my participation in this project as stated above and the possible risks arising from it. I hereby agree to participate in this project. I am 18 years of age or older. You can print a copy of this form by clicking the print icon on your browser if you wish. If you agree to participate, simply click the ">>" button. If you do not agree and do not wish to participate, simply close the survey browser window.
SONA Sample Screening Question
Thank you for your interest in our research study titled "Human Sexuality and Intimate Relationships."

To begin with, please answer the following question.

Have you had sexual intercourse? (In this question, "sexual intercourse" includes oral, anal, and vaginal sex.)

a. Yes
b. No
APPENDIX D

SEXUAL EXPERIENCES SURVEY (Koss, Gidycz, & Wisiniewski, 1987)

1. Have you given in to sex play (fondling, kissing, or petting, but not intercourse) when you didn’t want to because you were overwhelmed by somebody’s continual arguments and pressure?
   a. Yes
   b. No

2. Have you had sex play (fondling, kissing, or petting, but not intercourse) when you didn’t want to because somebody used their position of authority (boss, teacher, camp counselor, supervisor) to make you?
   a. Yes
   b. No

3. Have you had sex play (fondling, kissing, or petting, but not intercourse) when you didn’t want to because somebody threatened or used some degree of physical force (twisting your arm, holding you down, etc.) to make you?
   a. Yes
   b. No

4. Have you had somebody attempt sexual intercourse (e.g., get on top of you) when you didn’t want to by threatening or using some degree of force (twisting your arm, holding you down, etc.), but intercourse did not occur?
   a. Yes
   b. No

5. Have you had somebody attempt sexual intercourse (e.g., get on top of you) when you didn’t want to by giving you alcohol or drugs, but intercourse did not occur?
   a. Yes
   b. No

6. Have you given in to sexual intercourse when you didn’t want to because you were overwhelmed by somebody’s continual arguments and pressure?
   a. Yes
   b. No

7. Have you had sexual intercourse when you didn’t want to because somebody used their position of authority (boss, teacher, camp counselor, supervisor) to make you?
   a. Yes
   b. No

8. Have you had sexual intercourse when you didn’t want to because somebody gave you alcohol or drugs?
a. Yes
b. No

9. Have you had sexual intercourse when you didn’t want to because somebody threatened or used some degree of physical force (twisting your arm, holding you down, etc.) to make you?
   a. Yes
   b. No

10. Have you had sex acts (anal or oral intercourse or penetration by objects other than the penis) when you didn’t want to because somebody threatened or used some degree of physical force (twisting your arm, holding you down, etc.) to make you?
    a. Yes
    b. No

Added Items
11. Have you ever been sexually assaulted?
    a. Yes
    b. No
    c. Decline to Answer

12. What was your age at the time of your sexual assault? _____

13. How many times have you experienced a sexual assault? _____
APPENDIX E

ATTACHMENT STYLE MEASURES

Attachment Style Measure (Hazan & Shaver, 1987)
Read each of the three self-descriptions below and select the single alternative that best describes how you feel in romantic relationships or is nearest to the way you feel. (Note: The terms “close” and “intimate” refer to psychological or emotional closeness, not necessarily to sexual intimacy.)

Secure: I find it relatively easy to get close to others and am comfortable depending on them and having them depend on me. I don’t worry about being abandoned or about someone getting too close to me.

Avoidant: I am somewhat uncomfortable being close to others. I find it difficult to trust them completely, difficult to allow myself to depend on them. I am nervous when anyone gets too close, and often, others want me to be more intimate than I feel comfortable being.

Anxious/Ambivalent: I find that others are reluctant to get as close as I would like. I often worry that my partner doesn’t really love me or won’t want to stay with me. I want to get very close to my partner, and this sometimes scares people away.

Experiences in Close Relationships–Revised Instrument (Fraley, Waller, & Brennan, 2000)
The statements below concern how you feel in emotionally intimate relationships. We are interested in how you generally experience relationships, not just in what is happening in a current relationship. Respond to each statement by circling a number to indicate how much you agree or disagree with the statement.

1 2 3 4 5 6 7
Strongly disagree Strongly agree

1. I’m afraid that I will lose my partner’s love.
2. I often worry that my partner will not want to stay with me.
3. I often worry that my partner doesn’t really love me.
4. I worry that romantic partners won’t care about me as much as I care about them.
5. I often wish that my partner’s feelings for me were as strong as my feelings for him or her.
6. I worry a lot about my relationships.
7. When my partner is out of sight, I worry that he or she might become interested in someone else.
8. When I show my feelings for romantic partners, I’m afraid they will not feel the same about me.
9. I rarely worry about my partner leaving me. (reverse-scored item)
10. My romantic partner makes me doubt myself.
11. I do not often worry about being abandoned. (reverse-scored item)
12. I find that my partner(s) don’t want to get as close as I would like.
13. Sometimes romantic partners change their feelings about me for no apparent reason.
14. My desire to be very close sometimes scares people away.
15. I’m afraid that once a romantic partner gets to know me, he or she won’t like who I really am.
16. It makes me mad that I don’t get the affection and support I need from my partner.
17. I worry that I won’t measure up to other people.
18. My partner only seems to notice me when I’m angry.
19. I prefer not to show a partner how I feel deep down.
20. I feel comfortable sharing my private thoughts and feelings. (reverse-scored item)
21. I find it difficult to allow myself to depend on romantic partners.
22. I am very comfortable being close to romantic partners. (reverse-scored item)
23. I don’t feel comfortable opening up to romantic partners.
24. I prefer not to be too close to romantic partners.
25. I get uncomfortable when a romantic partner wants to be very close.
26. I find it relatively easy to get close to my partner. (reverse-scored item)
27. It’s not difficult for me to get close to my partner. (reverse-scored item)
28. I usually discuss my problems and concerns with my partner. (reverse-scored item)
29. It helps to turn to my romantic partner in times of need. (reverse-scored item)
30. I tell my partner just about everything. (reverse-scored item)
31. I talk things over with my partner. (reverse-scored item)
32. I am nervous when partners get too close to me.
33. I feel comfortable depending on romantic partners. (reverse-scored item)
34. I find it easy to depend on romantic partners. (reverse-scored item)
35. It’s easy for me to be affectionate with my partner. (reverse-scored item)
36. My partner really understands me and my needs. (reverse-scored item)
APPENDIX F

DIFFICULTIES IN EMOTION REGULATION SCALE (Gratz & Roemer, 2004)

Please indicate how often the following statements apply to you by writing the appropriate number from the scale below on the line beside each item.

1. Almost never
2. Sometimes
3. About half the time
4. Most of the time
5. Almost always

1) I am clear about my feelings. (reverse-scored item)
2) I pay attention to how I feel. (reverse-scored item)
3) I experience my emotions as overwhelming and out of control.
4) I have no idea how I am feeling.
5) I have difficulty making sense out of my feelings.
6) I am attentive to my feelings. (reverse-scored item)
7) I know exactly how I am feeling. (reverse-scored item)
8) I care about what I am feeling. (reverse-scored item)
9) I am confused about how I feel.
10) When I’m upset, I acknowledge my emotions. (reverse-scored item)
11) When I’m upset, I become angry with myself for feeling that way.
12) When I’m upset, I become embarrassed for feeling that way.
13) When I’m upset, I have difficulty getting work done.
14) When I’m upset, I become out of control.
15) When I’m upset, I believe that I will remain that way for a long time.
16) When I’m upset, I believe that I will end up feeling very depressed.
17) When I’m upset, I believe that my feelings are valid and important. (reverse-scored item)
18) When I’m upset, I have difficulty focusing on other things.
19) When I’m upset, I feel out of control.
20) When I’m upset, I can still get things done. (reverse-scored item)
21) When I’m upset, I feel ashamed at myself for feeling that way.
22) When I’m upset, I know that I can find a way to eventually feel better. (reverse-scored item)
23) When I’m upset, I feel like I am weak.
24) When I’m upset, I feel like I can remain in control of my behaviors. (reverse-scored item)
25) When I’m upset, I feel guilty for feeling that way.
26) When I’m upset, I have difficulty concentrating.
27) When I’m upset, I have difficulty controlling my behaviors.
28) When I’m upset, I believe there is nothing I can do to make myself feel better.
29) When I’m upset, I become irritated at myself for feeling that way.
30) When I’m upset, I start to feel very bad about myself.
31) When I’m upset, I believe that wallowing in it is all I can do.
32) When I’m upset, I lose control over my behavior.
33) When I’m upset, I have difficulty thinking about anything else.
34) When I’m upset I take time to figure out what I’m really feeling. (reverse-scored item)
35) When I’m upset, it takes me a long time to feel better.
36) When I’m upset, my emotions feel overwhelming.
APPENDIX G

BRIEF COPE SCALE (Carver, 1997)

We are interested in how people respond when they confront difficult or stressful events in their lives. There are lots of ways to try to deal with stress. This questionnaire asks you to indicate what you generally do and feel, when you experience stressful events. Obviously, different events bring out somewhat different responses, but think about what you usually do when you are under a lot of stress.

Then respond to each of the following items. Please try to respond to each item separately in your mind from each other item. Choose your answers thoughtfully, and make your answers as true FOR YOU as you can. Please answer every item. There are no “right” or “wrong” answers, so choose the most accurate answer for YOU—not what you think “most people” would say or do. Indicate what YOU usually do when YOU experience a stressful event.

1. I haven’t been doing this at all
2. I’ve been doing this a little bit
3. I’ve been doing this a medium amount
4. I’ve been doing this a lot

1. I’ve been turning to work or other activities to take my mind off things.
2. I’ve been concentrating my efforts on doing something about the situation I’m in.
3. I’ve been saying to myself “this isn’t real.”
4. I’ve been using alcohol or other drugs to make myself feel better.
5. I’ve been getting emotional support from others.
6. I’ve been giving up trying to deal with it.
7. I’ve been taking action to try to make the situation better.
8. I’ve been refusing to believe that it has happened.
9. I’ve been saying things to let my unpleasant feelings escape.
10. I’ve been getting help and advice from other people.
11. I’ve been using alcohol or other drugs to help me get through it.
12. I’ve been trying to see it in a different light, to make it seem more positive.
13. I’ve been criticizing myself.
14. I’ve been trying to come up with a strategy about what to do.
15. I’ve been getting comfort and understanding from someone.
16. I’ve been giving up the attempt to cope.
17. I’ve been looking for something good in what is happening.
18. I’ve been making jokes about it.
19. I’ve been doing something to think about it less, such as going to movies, watching TV, reading, daydreaming, sleeping, or shopping.
20. I’ve been accepting the reality of the fact that it has happened.
21. I’ve been expressing my negative feelings.
22. I’ve been trying to find comfort in my religious or spiritual beliefs.
23. I’ve been trying to get advice or help from other people about what to do.
24. I’ve been learning to live with it.
25. I’ve been thinking hard about what steps to take.
26. I’ve been blaming myself for things that happened.
27. I’ve been praying or meditating.
28. I’ve been making fun of the situation.
APPENDIX H

MEASUREMENT OF SEXUAL RISK-TAKING (Turchik & Garske, 2009)

Please read the following statements and record the number that is true for you over the past 6 months for each question on the blank.

If you do not know for sure how many times a behavior took place, try to estimate the number as close as you can. Thinking about the average number of times the behavior happened per week or per month might make it easier to estimate an accurate number, especially if the behavior happened fairly regularly. If you've had multiple partners, try to think about how long you were with each partner, the number of sexual encounters you had with each, and try to get an accurate estimate of the total number of each behavior.

If the question does not apply to you or you have never engaged in the behavior in the question, put a "0" on the blank. Remember that in the following questions, "sex" includes oral, anal, and vaginal sex and "sexual behavior" includes passionate kissing, making out, fondling, petting, oral-to-anal stimulation, and hand-to-genital stimulation.

1. How many partners have you engaged in sexual behavior with but not had sex with?
2. How many times have you left a social event with someone you just met?
3. How many times have you “hooked up” but not had sex with someone you didn’t know or didn’t know well?
4. How many times have you gone out to bars/parties/social events with the intent of “hooking up” and engaging in sexual behavior but not having sex with someone?
5. How many times have you gone out to bars/parties/social events with the intent of “hooking up” and having sex with someone?
6. How many times have you had an unexpected and unanticipated sexual experience?
7. How many times have you had a sexual encounter you engaged in willingly but later regretted?

For the next set of questions, follow the same direction as before. However, for questions 8-23, if you have never had sex (oral, anal or vaginal), please put a “0” on each blank.

8. How many partners have you had sex with?
9. How many times have you had vaginal intercourse without a latex or polyurethane condom? Note: Include times when you have used a lambskin or membrane condom.
10. How many times have you had vaginal intercourse without protection against pregnancy?
11. How many times have you given or received fellatio (oral sex on a man) without a condom?
12. How many times have you given or received cunnilingus (oral sex on a woman) without a dental dam or “adequate protection” (please see definition of dental dam for what is considered adequate protection)?
13. How many times have you had anal sex without a condom?
14. How many times have you or your partner engaged in anal penetration by a hand (“fisting”) or other object without a latex glove or condom followed by unprotected anal sex?

15. How many times have you given or received analingus (oral stimulation of the anal region, “rimming”) without a dental dam or “adequate protection” (please see definition of dental dam for what is considered adequate protection)?

16. How many people have you had sex with that you know but are not involved in any sort of relationship with (i.e., “friends with benefits”, “fuck buddies”)?

17. How many times have you had sex with someone you don’t know well or just met?

18. How many times have you or your partner used alcohol or drugs before or during sex?

19. How many times have you had sex with a new partner before discussing sexual history, IV drug use, disease status and other current sexual partners?

20. How many times (that you know of) have you had sex with someone who has had many sexual partners?

21. How many partners (that you know of) have you had sex with who had been sexually active before you were with them but had not been tested for STIs/HIV?

22. How many partners have you sex with that you didn’t trust?

23. How many times (that you know of) have you had sex with someone who was also engaging in sex with others during the same time period?
APPENDIX I
DEMOGRAPHIC QUESTIONS

SONA Sample Demographic Questions
1) What is your age?
   (Scale from 17 to 90)

2) What is your gender identity?
   a. Male by birth sex
   b. Female by birth sex
   c. Transgender Male
   d. Transgender Female
   e. Non-Binary/Gender Fluid/Gender Queer
   f. Other (Please specify in the blank space below) ____

3) What is your race/ethnicity? Choose all that apply.
   a. African American or Black
   b. American Indian or Native American
   c. Asian American or Asian
   d. Biracial/Multiracial
   e. Hispanic/Latino
   f. Native Hawaiian/Pacific Islander
   g. White/Caucasian
   h. Other (Please specify in the blank space below) ____

4) What is your year in school?
   a. Freshman
   b. Sophomore
   c. Junior
   d. Senior
   e. Other (Please specify in the blank space below) ____

5) Which of the following, if any, describe you?
   a. Agnostic
   b. Atheist
   c. Buddhist
   d. Christian (Catholic)
   e. Christian (Nondenominational)
   f. Christian (Other -- Jehovah’s Witness, Mormon, etc.)
   g. Christian (Protestant -- Baptist, Lutheran, Methodist, etc.)
   h. Hindu
   i. Jewish
   j. Muslim
   k. Shinto
1. Other (Please specify in the blank space below) ____

6) How religious are you?
   a. Very religious
   b. Moderately religious
   c. A little religious
   d. Spiritual, but not religious
   e. Not spiritual nor religious

7) How would you describe your political orientation?
   a. Very liberal
   b. Liberal
   c. Moderate
   d. Conservative
   e. Very conservative

8) With which political party do you identify, if any?
   a. Democrat
   b. Independent
   c. Republican
   d. No affiliation
   e. Other (Please specify in the blank space below) ____

9) What is your sexual orientation?
   a. Heterosexual
   b. Bisexual
   c. Gay/lesbian
   d. Other (Please specify in the blank space below) ____

10) What are your parents’ occupations? You may choose to disclose occupation of one parent, of both of your parents, or you may choose to skip this question. ____

11) Are you currently in a romantic relationship?
   a. Yes
   b. No

12) What kind of romantic relationship are you in? Choose all that apply.
   a. Casual relationship
   b. Serious relationship
   c. Engagement
   d. Marriage
   e. Other (Please specify in the blank space below) ____

Riverview Center Sample Demographic Questions
1) What is your age?
   (Scale from 18 to 90)

2) What is your gender identity?
   a. Male by birth sex
   b. Female by birth sex
   c. Transgender Male
   d. Transgender Female
   e. Non-Binary/Gender Fluid/Gender Queer
   f. Other (Please specify in the blank space below) ____

3) What is your race/ethnicity? Choose all that apply.
   a. African American or Black
   b. American Indian or Native American
   c. Asian American or Asian
   d. Biracial/Multiracial
   e. Hispanic/Latino
   f. Native Hawaiian/Pacific Islander
   g. White/Caucasian
   h. Other (Please specify in the blank space below) ____

4) Which of the following, if any, describe you?
   a. Agnostic
   b. Atheist
   c. Buddhist
   d. Christian (Catholic)
   e. Christian (Nondenominational)
   f. Christian (Other -- Jehovah’s Witness, Mormon, etc.)
   g. Christian (Protestant -- Baptist, Lutheran, Methodist, etc.)
   h. Hindu
   i. Jewish
   j. Muslim
   k. Shinto
   l. Other (Please specify in the blank space below) ____

5) How religious are you?
   a. Very religious
   b. Moderately religious
   c. A little religious
   d. Spiritual, but not religious
   e. Not spiritual nor religious

6) How would you describe your political orientation?
   a. Very liberal
   b. Liberal
c. Moderate

d. Conservative

e. Very conservative

7) With which political party do you identify, if any?

a. Democrat

b. Independent

c. Republican

d. No affiliation

e. Other (Please specify in the blank space below) _____

8) What is your sexual orientation?

a. Heterosexual

b. Bisexual

c. Gay/lesbian

d. Other (Please specify in the blank space below) _____

9) What are your parents’ occupations? You may choose to disclose occupation of one parent, of both of your parents, or you may choose to skip this question. _____

10) Are you currently in a romantic relationship?

a. Yes

b. No

11) What kind of romantic relationship are you in? Choose all that apply.

a. Casual relationship

b. Serious relationship

c. Engagement

d. Marriage

e. Other (Please specify in the blank space below) _____
APPENDIX J

END OF SURVEY QUESTIONS

1) What did you think this study was about? ____

2) How honest were you with your responses? You will still receive credit for your participation regardless of your response. ____

3) Is there any reason we should not use your data? ____

4) Do you have any comments for the researchers? ____
APPENDIX K
ATTENTION CHECKS

1) Please select “About half the time” to continue. (located in Difficulties in Emotion Regulation Scale)

2) Please select the word “relationships.” (located in Measurement of Sexual Risk-Taking)
   a. Emotion
   b. Intimacy
   c. Relationships
   d. Sex

3) In what year were you born? Please enter 4-digit number (e.g., 1998) (located in Demographic Questions)
SONA Sample End of Survey Message
The survey is now complete. In order to receive your SONA research credit, please proceed to the next page by clicking on the >> button below.

If you have further questions about this study, please contact Melanie Reyes, the primary investigator of the study, at mreyes@uni.edu or her faculty supervisor Dr. Seong-In Choi at seongin.choi@uni.edu.

If contents of this survey made you feel uncomfortable or otherwise upset and if you feel like you need to talk to someone, please reach out by contacting one of the resources listed below.

UNI Counseling Center (24 hours): 319-273-2676
Riverview Center Crisis Line (24 hours): 888-557-0310
UNI Campus Coordinator (Advocate): 563-231-1285
Waypoint Services Crisis Line (24 hours): 800-208-2676
Amani Community Service for African American Community (24 hours): 888-983-2533

For more information or to report a sexual assault, please visit: safety.uni.edu.

Thank you for your time and effort. Please continue on the next page for research credit.

Riverview Center Sample End of Survey Message
The survey is now complete. In order to receive a $5 Amazon e-gift card, please proceed to the next page by clicking on the >> button below.

If you have further questions about this study, please contact Melanie Reyes, the primary investigator of the study, at mreyes@uni.edu or her faculty supervisor Dr. Seong-In Choi at seongin.choi@uni.edu.

If the contents of this survey made you feel uncomfortable or otherwise upset and if you feel like you need to talk to someone, please reach out by contacting your own counselor, or one of these other resources:

UNI Counseling Center (24 hours): 319-273-2676
Riverview Center Crisis Line (24 hours): 888-557-0310
UNI Campus Coordinator (Advocate): 563-231-1285
Waypoint Services Crisis Line (24 hours): 800-208-2676
Amani Community Service for African American Community (24 hours): 888-983-2533

Thank you for your time and effort. Please continue on the next page for compensation.