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UNIVERSITY OF NORTHERN COLORADO

Greeley, Colorado

The Graduate School

THE RELATIONSHIP AMONG SELF-ESTEEM,  
ROMANTIC ATTACHMENT, GENDER,  
AND SAFE SEX BEHAVIORS  
IN EMERGING ADULTS

A Dissertation Submitted in Partial Fulfillment  
of the Requirements for the Degree of  
Doctor of Philosophy

Erica L. Hope

College of Education and Behavioral Sciences  
Department of Counseling Psychology

May 2012

This Dissertation by: Erica L. Hope

Entitled: *The Relationship Among Self-Esteem, Romantic Attachment, Gender, and Safe Sex Behaviors in Emerging Adults*

has been approved as meeting the requirements for the Degree of Doctor of Philosophy  
in College of Education and Behavioral Sciences, Department of Counseling  
Psychology

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## ABSTRACT

Hope, Erica L. *The Relationship Among Self-Esteem, Romantic Attachment, Gender, and Safe Sex Behaviors in Emerging Adults*. Published Doctor of Philosophy dissertation, University of Northern Colorado, 2012.

The purpose of the study was to investigate the relationship among romantic attachment style, self-esteem, gender, and safe sex behaviors among emerging adult undergraduate students from a mid-sized western university. The participants included 155 male and female emerging adults who completed self-report questionnaires regarding romantic attachment style, self-esteem, and safe sex behaviors. A simultaneous multiple regression analysis was utilized to test the hypotheses. The analysis revealed statistical significance indicating that these variables taken together explain differences in levels of safe sex behaviors ( $R = .279$ ,  $F(3, 145) = 4.075$ ,  $p = .008$ ). Specifically, the results of the complete model indicated that the combination of romantic attachment style, self-esteem, and gender accounted for a significant portion of the variance (7.8%) in safe sex behaviors among emerging adults. Gender was found to be a significant predictor of safe sex behaviors after controlling for romantic attachment style and self-esteem. Specifically, the analysis revealed that females engage in safer sex behaviors compared to males. However, romantic attachment style was not a significant predictor of safe sex behaviors after controlling for gender and self-esteem. Lastly, the simultaneous multiple regression analysis revealed that self-esteem did not explain levels of safe sex behaviors after controlling for gender and

romantic attachment style. Results from this study may help in the prevention of sexual risk behaviors, encourage safe sex practices, and protect individuals from the unintended consequences of risky sexual behaviors.

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## CHAPTER I

### INTRODUCTION

#### **Background**

##### **Consequences of Risky Sexual Behaviors**

Risky sexual behaviors are common among college students, and such behaviors carry negative consequences such as unplanned pregnancy and sexually transmitted illnesses (STIs) (Eisenberg, Neumark-Sztainer, & Lust, 2005). According to the Surgeon General (Satcher, 2001), approximately one-half of all pregnancies are unplanned, and about 19 million individuals are infected with STIs per year. The incidence of STIs among adolescents and college age individuals is staggering in the United States. For example, while individuals aged 15 to 24 years make up a quarter of those who are sexually active, it is this age group that contracts almost half of all new STIs at about 9.5 million new contractions per year (Centers for Disease Control and Prevention [CDC], 2007). In addition, STI rates are on the rise in the western United States (CDC, 2006). Young women are especially impacted by STIs because of prevalence rates, biology, and consequences endured by women. Consequences of STIs include ectopic pregnancy, pelvic inflammatory disease (CDC, n.d.c), sexual dysfunction (Satcher, 2001), cancer, infertility, sterility (CDC, n.d.b.), Human

Immunodeficiency Virus (HIV) or Acquired Immune Deficiency Syndrome (AIDS), and even death (Ross, 2002). According to The CDC (n.d.b), approximately 56,300 Americans are newly diagnosed with HIV annually. Additionally, an estimated one million people in the United States have acquired HIV, with one in five of these individuals being unaware of their diagnosis (CDC, n.d.a). More alarming, individuals 20 to 24 years of age are among the top 4 age groups to be afflicted with HIV. In addition to physical repercussions, unhealthy sexual behaviors carry psychological consequences (CDC, 2007), which can impact one's well-being as well as future relationships, families, and communities.

### **Emerging Adulthood**

Many college students are in the developmental stage termed emerging adulthood, which takes place after adolescence and before adulthood, from ages 18 to 25 (Arnett, 2000). For many emerging adults, this time can be exciting; however, it is also a time of significant change and transition. As these individuals are no longer children, most gain more independence and are no longer under parental supervision and control. This period is a time of exploration of the self, including exploration of intimate relationships, career, and personal beliefs (Arnett, 2000). Additionally, a large number of emerging adults are waiting to marry until after they have completed college and established their careers. With emerging adults' increased freedoms, decreased parental supervision, new social experiences, and delayed commitment to marriage, many emerging adults engage in risky behaviors, such as alcohol abuse and

experimentation (Gullette & Lyons, 2006), sex with multiple partners, and unprotected sex (Arnold, Fletcher, & Farrow, 2002).

### **Emerging Adulthood and Sexual Behaviors**

Given the prevalence of risky sexual behaviors among emerging adults and other populations, researchers have sought to understand the factors that lead to such behaviors in order to promote and improve sexual health (Satcher, 2001). Factors that lead college students to participate in risky sexual behaviors are not well understood (Gullette & Lyons, 2006). Researchers have found that although these individuals may be aware of the consequences of such behavior, they continue to be at high risk for suffering from the devastating consequences of this behavior (Becker, Rankin, & Rickel, 1998). Also, the field of preventative research of high risk sexual behavior is fairly new, and interventions that have been put in place have not been consistently successful in increasing safe sex behaviors (Becker et al., 1998).

### **Promoting Safe Sex**

While education on safe sex practices is likely to be an important factor in the prevention of STIs, the literature (Baldwin & Baldwin, 1988; DiIorio, Parsons, Lehr, Adame, & Carlone, 1993; Feeney, Peterson, Gallois, & Terry, 2000) illustrates that safe sex education and knowledge about sexually transmitted diseases (STDs), including AIDS, may not predict safe sex practices, as studies have found differences in the relationship between sex education and safe sex behaviors. Additionally, primary preventative resources for ensuring sexual health include health courses, and media messages are based on the concept that knowledge of potential consequences of

risky sexual behaviors will prevent unsafe sex (Parsons, Halkitis, Bimbi, & Borkowski, 2000). For example, despite the majority of college students (90%) reporting that they are knowledgeable about how AIDS and other STDs are transmitted and how to prevent transmission of these diseases, many of these individuals do not practice safe sex (Baldwin & Baldwin, 1988; DiIorio et al., 1993; Feeney et al., 2000).

A study conducted by Baldwin and Baldwin (1988) showed that while the majority of the college student subjects scored high on knowledge of HIV/AIDS transmission, very few were worried about contracting HIV. In addition, 19% reported having casual sex during the last 3 months, with more than half of the participants (66%) reporting they had not used condoms during sex over the last 3-month period, and only 13% reported consistent condom use. In a more recent study, which investigated safe sex practices among college students, 50% of the participants reported frequent condom use, with 30% indicating they used a condom most of the time, and approximately 10% reported that they had never used a condom (DiIorio, Dudley, Lehr, & Soet, 2000). While in another study, only 19% of the female college student participants reported consistent condom use (Wayment & Aronson, 2002).

### **Variables Associated with Sex Behaviors**

Although sexual risk taking behaviors are not well understood, past researchers have investigated and linked multiple variables to these behaviors that include history of sexual abuse, ethnicity, past sexual risk behavior, peer norms, impulsivity, alcohol and drug use, socioeconomic status, self-esteem, gender, religiosity, attachment style,

and personality characteristics. The literature demonstrates that among the previously specified variables, factors that appear to be strongly correlated with sexual risk taking behaviors include attachment style and self-esteem (Bogaert & Sadava, 2002; Ciesla, Roberts, & Hewitt, 2004; Desiderato & Crawford, 1995; Feeney et al., 2000; Gentzler & Kerns, 2004; Kassel, Wardle, & Roberts, 2007; Paul, McManus, & Hayes, 2000; Walsh, 1991). While there has been a great deal of research conducted in the areas of attachment, self-esteem, and sexual behavior among college students, little research has investigated the collective relationship among these variables taken together.

### **Attachment**

Attachment theory was originally developed by John Bowlby (1969) to explain the emotional bond between an infant and his or her caregiver, which is impacted by the interaction between the two. Bowlby (1979) later stated that attachment extends beyond infancy and continues throughout the lifespan. Attachment theory posits that individuals develop mental models, or beliefs about the self and others, which in turn, impact those persons' thoughts, feelings, and behaviors in relation to the self and interpersonal relationships (Bowlby, 1973, 1980).

Hazan and Shaver (1987) further developed attachment theory to conceptualize and explain the dynamics of adult romantic relationships. They found that the primary caregiver and child relationship shapes one's attachment style. In addition, this attachment style remains relatively stable throughout adulthood and greatly impacts the nature and quality of adult intimate relationships. The researchers utilized three styles of adult romantic attachment, which included avoidant, anxious, and secure



types. Securely attached individuals were described as self-confident individuals who engaged in trusting romantic relationships and experienced positive emotions and friendships. Those with avoidant styles were described as untrusting and distant persons who were fearful of closeness. Lastly, anxious characteristics included preoccupation and vulnerability to and feelings of loneliness and insecurity.

Researchers have found that a relationship exists between attachment style and sexual behavior (Bogaert & Sadava, 2002; Ciesla et al., 2004) and self-esteem and attachment style (Feeney & Noller, 1990). In addition, although results are sometimes contradictory, numerous investigators have identified correlations between self-esteem and sexual risk taking behaviors (Adler & Hendrick, 1991; Ethier et al., 2006; Gullette & Lyons, 2006; Hollar & Snizek, 1996; Walsh, 1991). With regard to attachment style and self-esteem, one study demonstrated that individuals with secure attachment styles reported greater social and familial relationship self-esteem than persons with avoidant and anxious-ambivalent styles (Feeney & Noller, 1990).

### **Attachment and Sexual Behavior**

With respect to attachment style and risky sexual behavior, individuals with secure attachment styles, who report positive mental models of the self, report having fewer sexual partners than those with insecure attachment styles (Ciesla et al., 2004; Gentzler & Kerns, 2004). Moreover, Feeney et al. (2000) found that anxiously attached individuals engage in more unsafe sex compared to securely attached individuals. Similarly, individuals with avoidant attachment styles had more frequent casual sex partners compared to those with secure attachment styles (Paul et al., 2000).

Furthermore, one study found that anxiously attached females were more likely to have sex even when they did not want to, compared to those with secure and avoidant attachment styles (Impett & Peplau, 2002). Lastly, adolescent boys and girls with insecure parent–child attachment patterns were more likely to engage in sexual behavior at an earlier age compared to their securely attached peers.

### **Self-Esteem and Sexual Behaviors**

Past researchers have found a relationship between sexual behavior and self-esteem frequently with inconsistent findings. For example, Walsh (1991) investigated the relationship among men's and women's self-esteem and sexual behaviors. Walsh found that both men and women with high self-esteem levels had significantly more sexual partners than individuals with low self-esteem. Furthermore, Hollar and Snizek (1996) found that male and female college students with high levels of self-esteem were more likely to engage in sexual risk taking behaviors than those with low to medium self-esteem levels. In contrast, in a study conducted by Gullette and Lyons (2006), college students with low self-esteem reportedly engaged in more risky sexual behaviors and had multiple sex partners compared to those with greater self-esteem. Additionally, the Adler and Hendrick (1991) research indicated a relationship between high self-esteem and frequency of contraception use. Lastly, according to Ethier et al. (2006), adolescent females with low self-esteem had sex at an earlier age, with risky partners, and engaged in unprotected sex compared to those with greater levels of self-esteem. Given that a number of gender differences have emerged in past research related to safe sex behavior, self-esteem, and romantic attachment, it appears that

gender is an important variable to assess and, therefore, is included among the variables investigated in the current study (Brodbeck, Vilen, Bachmann, Znoj, & Alsaker, 2010; Feeney et al., 2000; Gentzler & Kerns, 2004; Gullette & Lyons, 2006).

### **Need for the Study**

The current study will enhance the literature by providing a greater understanding of the relationship among self-esteem, gender, and romantic attachment on safe sex behavior among young men and women. Although prior studies have examined many factors that are associated with sexual behaviors, to date no studies have examined the combined role that romantic attachment style and self-esteem have on emerging adult men's and women's safe sex behaviors utilizing validated and reliable sexual behavior instruments. Understanding the roles that these variables play in young men's and women's sexual behavior can help prevent risk behaviors, encourage safe sex practices, and protect these individuals from the unintended consequences of risky sexual behaviors. In addition, this study hopes to provide clinicians with knowledge regarding the traits that may impact an individual's sexual behaviors and, in turn, provide more effective and targeted clinical interventions, as well as aid in the identification of those who are at-risk for engaging in risky sexual behaviors and assist clients in better understanding their behaviors. Lastly, by understanding how these factors impact sexual behavior, parents, health care providers, mental health providers, and teachers can be better educated and prepared to assist in the establishment of safer sexual practices for adolescents and young men and women.

### **Purpose of the Study**

The purpose of the current study was to examine the relationship between romantic attachment style, self-esteem, and gender on safe sex behaviors in emerging adults. It seems important to examine potential factors that might influence sexual behaviors since men and women continue to be afflicted with STIs and unplanned pregnancies (CDC, 2007; Ross, 2002). Therefore, the current study investigated the relationship among romantic attachment style, gender, self-esteem, and safe sex behaviors and, in turn, will assist clinicians, interventionists, and health professionals identify individuals who may engage in unhealthy sexual practices.

### **Research Questions and Hypotheses**

- Q1 To what extent do levels of self-esteem, gender, and romantic attachment style taken together, explain differences in levels of safe sex behaviors in male and female emerging adult undergraduate students?
- H1 Romantic attachment style (as measured by the Experiences in Close Relationships–Revised Scale), self-esteem (as measured by the Rosenberg Self-Esteem Scale), and gender (as identified by the demographic questionnaire) together explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students (as measured by the Safe Sex Questionnaire).
- Q2 Does romantic attachment style explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for levels of self-esteem and gender?
- H2 Secure romantic attachment style (as measured by the Experiences in Close Relationships–Revised) explains higher levels of safe sex behaviors (as measured by the Safe Sex Behavior Questionnaire) among male and female emerging adult undergraduate students after controlling for levels of self-esteem and gender.
- Q3 Does level of self-esteem explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for romantic attachment style and gender?

- H3 Higher levels of self-esteem (as measured by the Rosenberg Self-Esteem Scale) explains greater levels of safe sex behaviors (as measured by the Safe Sex Behavior Questionnaire) among male and female emerging adult undergraduate students after controlling for romantic attachment style and gender.
- Q4 Does gender explain differences in levels of safe sex behaviors in male and female emerging adult undergraduate students after controlling for romantic attachment style and levels of self-esteem?
- H4 Gender (identified utilizing the demographic questionnaire) explains differences in levels of safe sex behaviors (as measured by the Safe Sex Questionnaire) among male and female emerging adult undergraduate students after controlling for levels of self-esteem and romantic attachment style.

### **Limitations**

One limitation of the current study is that no cause and effect relationship can be inferred from the results due to the correlational nature of the study's statistical design. Another limitation includes the self-report method of data collection. Given the sensitive nature of the questions being asked with regard to sexual behaviors, participants may not be completely honest. In addition, participation was voluntary and use of such data may restrict the generalizability of the results to other populations. Furthermore, the data were collected from a narrow sample of western university students and may not be representative of all emerging adults. Such a limitation may impact the generalizability of the results to other emerging adults. Lastly, individuals who have not engaged in sexual intercourse (virgins) were not included in the current study; therefore, information related to virgins' romantic attachment, sexual behaviors, and self-esteem were not investigated. Despite these limitations, the

current study provides much needed information regarding safe sex behaviors among young college men and women.

### **Definition of Terms**

**Adult attachment.** Berman and Sperling (1994) define this as,

The stable tendency of an individual to make substantial efforts to seek and maintain proximity to and contact with one or a few specific individuals who provide the subjective potential for physical and/or psychological safety and security. This stable tendency is regulated by internal working models of attachment, which are cognitive–affective motivational schemata built from the individual’s experience in his or her interpersonal world. (p. 8)

**Adult romantic attachment style.** This is an individual’s style of interacting with others and expectations of relationships, which are consistent with early experiences with the individual’s caregiver as measured by the Experiences in Close Relationships Scale–Revised (ECR–R) (Frayley, Waller, & Brennan, 2000).

**Anxious attachment.** This is “defined as involving a fear of interpersonal rejection or abandonment, an excessive need for approval from others, and distress when one’s partner is unavailable or unresponsive” (Wei, Russell, Mallenckrodt, & Vogel, 2007, p. 188). Individuals with this style of attachment have an insecure attachment style.

**Attachment.** Mercer (2006) defines attachment as “a long-lasting emotional tie between a child and a familiar adult—one that lasts even after the child is an adult” (p. 3).

**Attachment system.** This is the multifaceted constellation of attachment behaviors and emotions (Mikulincer & Shaver, 2007) that serves to protect an

individual from danger by maintaining proximity to his or her primary caregiver (Rothbard & Shaver, 1994).

**Avoidant attachment.** This is “fear of dependence and interpersonal intimacy, an excessive need for self-reliance, and reluctance to self-disclose” (Wei et al., 2007, p. 188). People with this style of attachment have an insecure attachment style.

**Emerging adult.** This is a developmental phase that includes individuals 18 to 25 years of age (Arnett, 2000).

**Insecure attachment.** This is an individual who possess negative mental models of the self and others that is related to the person’s interpersonal relations and expectations in these relationships (Bowlby, 1969, 1973, 1979, 1980).

**Internal working models.** Rothbard and Shaver (1994) define this as,

Internal working models can be conceptualized as by-products of repeated attachment-related experiences. Working models are thought to include affective and defensive as well as descriptive cognitive components. Working models consist of accumulated knowledge about the self, attachment figures, and attachment relationships. Functioning partially (perhaps largely) outside of awareness, they provide a person with heuristics for anticipating and interpreting the behavior and intentions of others, especially attachment figures. (p. 33)

**Risky sexual behavior.** This is any behavior, such as sex with multiple partners or failure to use condoms, that increases one’s likelihood of contracting a STD or unplanned pregnancy as measured by The Safe Sex Behavior Questionnaire (SSBQ) (DiIorio, Parsons, Lehr, Adame, & Carlone, 1992).

**Safe sex behavior.** This is any behavior (such as assertiveness, using condoms, avoiding bodily fluids, etc.) that protects one from contracting a STI, such as HIV, or unplanned pregnancy as measured by the SSBQ (DiIorio et al., 1992).

**Secure attachment.** This is an individual who possess positive mental models of the self and others that is related to the person's interpersonal relations and expectations in these relationships (Bowlby, 1969, 1973, 1979, 1980).

**Self-esteem.** This is an individual's negative or positive attitude about the self as measured by the Rosenberg Self-Esteem Scale (RSES) (Rosenberg, 1965).

**Single.** This is an individual who is not in a relationship.

### **Summary**

In this chapter, the research study was introduced as well as the purpose and research questions guiding the present study. Due to the many consequences of engaging in unhealthy sexual practices, it is important to identify and understand the variables that influence emerging adults' sexual behaviors.



## CHAPTER II

### REVIEW OF THE LITERATURE

This chapter begins with a brief overview of the theoretical framework of attachment including the works of John Bowlby and Mary Ainsworth in order to lay a foundation for the conceptualization of this construct and how it relates to the factors under investigation in the current study. This overview is followed by an outline of the literature concerning the following topics: sexual risk taking behaviors among adolescents and college students; sexual behaviors and self-esteem; sexual behaviors and attachment; and finally, gender and its relation to sexual behaviors, self-esteem, and attachment style.

#### **Theoretical Framework**

John Bowlby was a pioneer in the development of attachment theory and wrote three book volumes (1969, 1973, 1980), which explored the attachment system including how they are developed and compromised. Bowlby developed the concept of the attachment process after several observations of babies' and children's differing behavioral reactions to separation from their primary caregivers over varying lengths of time (Davis, Shaver, & Vernon, 2004). According to Bowlby, infants form emotional connections or attachments to their primary caregivers whom they rely upon for comfort, care, and protection, and when separated from their caregiver or attachment

figure, the child experiences distress. Bowlby asserted that when separated from their primary caregiver, children go through a sequence of emotional responses including protest, detachment, and despair. The first response, protest, includes distress, crying, searching for the caregiver, and opposing comfort provided by others. Second, despair, includes grief and loss behaviors. The final response, detachment, includes the child displaying avoidance upon the caregivers return (Hazan & Shaver, 1987).

Bowlby proposed that one's attachment system, or the multifaceted constellation of attachment behaviors and emotions, develops out of the need for survival and to maintain safety as newborns and young children are unable to protect themselves from danger. Specifically, Bowlby (1980) postulated that an infant's attachment system is stimulated as a reaction to three types of distress. These threats include (a) emotional or physical distress (i.e., hunger or soiled diaper), (b) when survival and safety are threatened, and (c) distress regarding the primary caregiver's availability.

When the attachment system is activated, the child seeks proximity to the caregiver or the attachment figure in order to communicate his or her needs. Ideally, the caregiver responds to the child's needs in a reassuring and comforting manner. One's attachment style develops as a result of the caregiver's response to the child's needs and the child's experience of the caregiver as responsive, reliable, and sensitive (Ainsworth, Blehar, Waters, & Wall, 1978, as cited in Hazan & Shaver, 1987). When a primary caregiver does not respond quickly or consistently to the child's needs, or impedes on the child's activities, the child generally cries more frequently, is less exploratory, expresses anger when the attachment process is activated, and displays

anxiety. However, caregivers who reject or ignore their child when he or she attempts to make contact often have children who are avoidant (Hazan & Shaver, 1987).

Mary Ainsworth, a developmental psychologist, further contributed to the development of attachment theory by enabling researchers to assess attachment styles through the development of the Strange Situation. The Strange Situation entailed infants being observed in varying levels of stressful situations during which the infants were separated from their mothers or primary caregiver for a short period of time and then reunited. During the Strange Situation, researchers observed and assessed attachment patterns between the child and primary caregiver. The child's behaviors, including crying, play, and exploration, were recorded at varying times throughout the experiment, including when the mother was present, when a stranger was present, when the mother was absent, and when the mother returned (Mercer, 2006).

At completion of the Strange Situation, infants were classified into three categories of attachment behaviors that are frequently termed secure, insecure—avoidant, and insecure—anxious (Goldberg, Muir, & Kerr, 1995). Secure infants displayed little distress in the absence of their mother, responded favorably when reunited, and made contact with their mothers during exploration of their environment. Insecure—avoidant infants ignored their mother upon her return from a brief absence and resisted contact by focusing on objects in the room (Grossmann, Grossmann, & Waters, 2005). Finally, when separated from their primary attachment figure, infants identified as insecure—anxious displayed anxiety, distress, little environmental exploration, were not easily consoled by their mothers, and resisted their mothers upon

reunion by pushing them away (Mercer, 2006). The two insecure styles of attachment identified by Ainsworth and colleagues are similar to two emotional processes that Bowlby identified following an infant's separation from his/her mother. For example, avoidant children displayed behaviors similar to the behavior Bowlby identified as detachment, and children categorized with anxious/ambivalent attachment styles exhibited responses comparable to the behavior Bowlby described as protest.

According to Bowlby and Ainsworth and colleagues, infants whose primary caregivers are adequately available, receptive, and quick to respond will likely develop a secure attachment style. Secure individuals are described as having confidence and healthy self-worth also known as positive mental models (or working models) of the self. Further, securely attached individuals generally experience more positive emotions and peer relationships. Lastly, those with secure attachment styles are confident that their romantic partners will be responsive, consistent, and trustworthy, which is termed positive mental models of others (Hazan & Shaver, 1987).

Infants whose primary caregivers are unresponsive or not receptive to the child's needs are likely to develop an insecure attachment style or a negative internal working model, which, in turn, leads to the development of negative mental models of the self, or others, and sometimes both (Weinfield, Sroufe, Egeland, & Carlson, 1999, as cited in Davis et al., 2004). A primary caregiver who is unpredictable, self-focused, and intrusive in his or her caregiving approach is likely to have a child with an anxious attachment style (Davis et al., 2004). Individuals with anxious attachment styles are generally sensitive and preoccupied with concern that their significant other or

caregiver will be unavailable and unreliable. Finally, when a primary attachment figure is inconsistent, negative, distant, or unresponsive to the child's needs or distress, the child is likely to develop an avoidant attachment style. Primary attachment figures of children with avoidant attachment style are likely unresponsive and intolerant to the child's negative emotional expressions (Grossmann, Grossmann, & Schwan, 1986, as cited in Davis et al., 2004)).

Bowlby (1973) stated that the following three propositions are the basis of his attachment theory:

The first [proposition] is that when an individual is confident that an attachment figure will be available to him whenever he desires it, that person will be much less prone to either intense or chronic fear than will an individual who for any reason has no such confidence. The second proposition concerns the sensitive period during which such confidence develops. It postulates that confidence in the availability of attachment figures, or a lack of it, is built up slowly during the years of immaturity—infancy, childhood, and adolescence—and that whatever expectations are developed during those years tend to persist relatively unchanged throughout the rest of life. The third proposition concerns the role of actual experience. It postulates that the varied expectations of the accessibility and responsiveness of attachment figures that different individuals develop during the years of immaturity are tolerably accurate reflections of the experiences those individuals have actually had. (p. 202)

Studies have supported the notion that infant and childhood attachment systems translate into adulthood and are activated in romantic relationships. Klohnen and Bera (1998) conducted a longitudinal study to gain better understanding regarding the stability of attachment over time. Hazan and Shaver (1987) furthered the study of attachment theory by providing a foundation and framework for conceptualizing adult romantic relationships as an attachment process. Building upon the child and primary caregiver attachment process described by Bowlby and Ainsworth, Hazan and Shaver

found these attachment processes and styles to translate into adulthood. They found the strongest predictor of adult attachment style to be one's view of the quality of his or her relationship with one's parents. Moreover, in examining the differences among love relationships of both securely and insecurely attached adults, Hazan and Shaver found the following results: Those with secure attachment styles characterized their romantic relationships as "happy, friendly, and trusting" (p. 515). Further, these individuals indicated that they were supportive and accepting of their partners regardless of their partner's shortcomings. Lastly, securely attached individuals maintained romantic relationships longer than those with insecure attachment styles. Avoidant romantic partners were depicted as fearful of intimacy, envious, and experienced emotional ups and downs. Those with anxious/ambivalent love styles experienced "love as involving obsession, desire for reciprocation and union, emotional highs and lows, and extreme sexual attraction and jealousy" (p. 515).

Among those who participated in the Hazan and Shaver (1987) studies of adult romantic attachments, 56% described themselves as securely attached while 24% and 20% identified themselves as avoidant and anxious/ambivalent, respectively. Similar proportions of adult romantic attachment styles were reported in a study conducted by Feeney and Noller (1990) in which 55% of participants described themselves as securely attached, 30% endorsed an avoidant style, while 15% identified an anxious adult attachment style. These results yielded similar proportions of attachment styles to the Campos, Barrett, Lamb, Goldsmith, and Stenberg, 1983 (as cited in Hazan & Shaver, 1987) approximations of child attachment styles, therefore, supporting

Bowlby's notion that infant attachment style remains relatively consistent throughout one's life, that is, from the cradle to the grave.

Hazan and Shaver (1987) shed light on secure and insecure individuals' mental models of the self. For example, secure participants described themselves as likeable and "easy to get to know" (p. 518). They also described others as benevolent and well-meaning. On the other hand, insecure subjects depicted themselves as misjudged, undervalued, lacking self-confidence, and engaging in relationships where partners were uncommitted. Lastly, the researchers predicted that an individual's mental models of the self and relationships would be related to child-parent attachment style. The results confirmed and supported their prediction, and the findings indicated that "people with different attachment orientations entertain different beliefs about the course of romantic love, the availability and trustworthiness of love partners, and their own love-worthiness" (p. 521). This research provides more support for Bowlby's and Ainsworth's assertion that attachment style impacts one's beliefs about himself or herself and the world, as well as impact an individual's adult relationships (Collins & Read, 1990).

There are a multitude of measures that assess adult attachment style including self-report, narrative, and interview measures. These assessment tools focus on assessing different relationships including romantic, peer, and parenting relationships. For the purposes of this study, only questionnaires that assess adult attachment related to romantic relationships is presented (see Table 1).

Table 1

*Adult Attachment Measures*

Measure	Author(s) and Year	Foci
Adult Attachment Prototypes	Hazan & Shaver (1987, 1990)	Romantic attachment patterns
Adult Attachment Questionnaire (AAQ)	Simpson, Rholes, & Phillips (1990)	Romantic relationships
Adult Attachment Scale (AAS)	Collins & Read (1990)	Romantic partner relationships
Attachment Style Questionnaire (ASQ)	Feeney, Noller, & Hanrahan (1994)	Close relationships
Relationship Questionnaire (RQ)	Bartholomew & Horowitz (1991)	Close relationships
Relationship Style Questionnaire (RSQ)	Griffin & Bartholomew (1994)	Close relationships
Experiences in Close Relationships Scale (ECR)	Brennan, Clark, & Shaver (1998)	Close relationships
Experiences in Close Relationships Scale–Revised (ECR–R)	Fraley, Waller, & Brennan (2000)	Adult romantic relationships
Caregiving Questionnaire	Kunce & Shaver (1994)	Romantic partner relationships



Fraley et al. (2000) developed a new version of the ECR scale or the ECR–R. The ECR-R (utilized in the current study) is a widely used measure for assessing adult romantic relationships among college student samples (Fairchild & Finney, 2006; Sibley, Fischer, & Liu, 2005). Additionally, the ECR–R has demonstrated some of the strongest psychometric properties among adult romantic attachment style measures including high test–retest reliability for both anxious and avoidant attachment styles (Fraley et al., 2000), excellent internal consistency (Fairchild & Finney, 2006), and strong convergent and discriminate validity (Sibley et al., 2005). The psychometrics of this instrument are presented in Chapter III.

### **Sexual Behavior**

The majority of Americans engage in their first sexual experience during adolescence, with first sexual experience starting at younger and younger ages (Feeney et al., 2000). According to statistics of Americans sexual behaviors, the average age that males and females first engage in sexual intercourse is 17 years of age. Among these individuals, approximately 35% of females stated they wanted to have sex, and 55% were conflicted; among men, 62% reported they wanted to have sexual intercourse, while 33% were conflicted. The most commonly used form of birth control during one's first sexual experience is a condom (New Strategist Publications, 2006). According to statistics, the number one reason adolescents remain abstinent from engaging in sexual intercourse is due to religious beliefs or morals and the second is fear of pregnancy (New Strategist Publications, 2006).

Many college students are waiting until they complete their education and have an established career before marrying (Arnett, 2000). Additionally, age of marriage is increasing with the median age of marriage in 2005 being approximately 26 years for women and 27 years for men (New Strategist Publications, 2006). Further, very few men and women are waiting until they are married to have sex. In fact, a mere 15% of women and 9% of men were virgins when they entered marriage. While the majority of people lose their virginity to someone who they are in a committed relationship with, studies suggest that the younger the first sexual experience, the less likely the individual engaged in sexual intercourse with a committed partner (New Strategist Publications, 2006). According to DiIorio et al. (1993), age of first sexual experience or sexual intercourse is occurring at a younger age, and total number of lifetime sexual partners is increasing. In addition, university students are likely to have multiple sex partners and utilize few safe sex precautions (Arnold et al., 2002; Baldwin & Baldwin, 1988).

The majority of teenagers have had sex education, learned how to say no to sex, and have learned about different forms of birth control (New Strategist Publications, 2006). Additionally, the primary method in which young adults and adolescents learn about safe sex practices includes education in health classes and messages relayed through the media. Despite knowledge about STDs and the consequences that can result from unsafe sexual practices, adolescents and young adults continue to take sexual risks (DiIorio et al., 1993; Parsons et al., 2000; Wayment & Aronson, 2002).

## **Adolescents and Sexual Behaviors**

Over the last 20 years researchers have found an increase in total number of lifetime partners among young adults, and many adolescents are having their first sexual experience at earlier and earlier ages. In a study investigating factors that influence age of first engagement in sexual activity among adolescents, Smith (1997) found almost 75% of the boys surveyed and approximately 50% of girls surveyed had engaged in sexual activity at 15 years of age or earlier. In addition, both girls and boys who engaged in sexual intercourse at an earlier age were less likely to consistently use condoms and had more sexual partners compared to their peers who had their first sexual encounter at a later age. Further, poor attachment to parents, not having both biological parents in the child's home, and substance abuse were correlated with earlier age of first sexual activity for both genders. Lastly, for males, abuse and lack of parental supervision were associated with earlier first sexual encounter; for females, depression was linked to having sexual intercourse at an earlier age.

In a study (Cooper, Shaver, & Collins, 1998), which examined the correlation between attachment style, emotion regulation, self-concept, and risky behaviors among a sample of adolescents ages 13 to 19 years old, the following distribution of attachment styles ensued: 56% of respondents identified themselves as securely attached, 23% as anxious, and 21% classified themselves as avoidant. Additionally, secure adolescents reported better psychological adjustment, fewer risky behaviors and substance use, and a higher self-concept compared to their anxious and avoidant peers; while anxious participants reported the lowest self-concepts and greatest levels of

risky behaviors. In contrast, avoidant adolescents were the least likely to have ever engaged in an intimate relationship, were least likely to use substances, but were the most psychologically distressed among the three types of attachment styles. Lastly, with regard to gender differences, a greater percentage of secure and avoidant male adolescents were sexually active, while approximately the same percentage of anxiously attached males and females were sexually active.

### **Consequences of Risky Sexual Behaviors**

There are many positive aspects to sex including bonding, demonstrating affection, pleasure, and procreation, to name a few. However, when individuals do not practice safe sex behaviors, the repercussions of risky sexual behaviors can be astounding and long lasting. Additionally, such consequences not only impact an individual's physical health, but their mental health and relationships as well (Satcher, 2001). As discussed in Chapter I, a number of negative consequences can result from unsafe sexual practices and include unplanned pregnancy, sexual dysfunction, and STIs. There are a number of STIs and they include chlamydia, gonorrhea, syphilis, herpes, genital warts, trichomoniasis, hepatitis, human papillomavirus (HPV), HIV, AIDS, and pelvic inflammatory disease (PID) (Becker et al., 1998; Eisenberg et al., 2005). It is important to note that HPV, HIV, AIDS, and herpes are viral infections for which there is no cure (Sadovszky, Vahey, McKinney, & Keller, 2006). Furthermore, unidentified and untreated STIs can result in infertility, sterility, and cancer, with the most devastating consequence of sexual risk taking being death.

STIs continue to be a significant public health issue. For example, roughly 19 million new STIs are acquired annually, with approximately half of the infections afflicting individuals ages 15 to 24 years (CDC, 2009b). Further, by 24 years of age, 1 in 3 young adults have been infected with a STI (CDC, 2003, as cited in Roberts & Kennedy, 2006). Even more alarming, many individuals who have an STI are unaware of their diagnosis (CDC, 2009a), and a large number of those who are aware of their illness choose not to disclose the illness to their partner or fail to take precautions to protect their partners from transmission (Reilly & Woo, 2001). Consequently, college students are at high risk for acquiring HIV and other STIs.

The Paul et al. (2000) study, which examined the relationship between hook-ups, social, relational and psychological factors, and gender, further illustrate this fact. The researchers' definition of a hook-up is "a sexual encounter, usually only lasting one night, between two people who are strangers or brief acquaintances. Some physical interaction is typical but may or may not include sexual intercourse" (p. 76). Specifically, 555 male and female college students (37.5% were male and 62.5% were female) aged 17 to 26 years completed questionnaires about alcohol use, hooking-up behaviors, impulsivity, self-esteem, attachment style, and fears of intimacy. The following significant results were found. The study revealed that 78% of the population surveyed had engaged in hooking-up behaviors with 30% of the participants engaging in casual sexual intercourse. Further, college students who were engaged in romantic long-term relationships were less likely to have hooked-up compared to those who were not in long-term intimate relationships. While the majority of participants

endorsed a secure attachment style and positive self-esteem, individuals who had engaged in hook-ups were more impulsive, endorsed an avoidant attachment style, and reported low personal safety concern. The study yielded no gender differences with the exception that men reported more sexual intercourse hook-ups than women. A similar study found that college students who had a previous history of casual sex behaviors and those who consumed alcohol were more likely to engage in sexual hooking-up behaviors (Fielder & Carey, 2010).

### **Measures of Safe Sex Behavior**

Few sexual behavior questionnaires exist, and the majority of measures that are available focus on condom use. The majority of studies examined in the current literature review included questions related to risky sexual behaviors that were created by the studies' authors; therefore, few studies utilize validated and reliable measures of sexual behavior. Table 2 presents the few existing measures of sexual behaviors.

A number of studies (DiIorio et al., 2000; DiIorio et al., 1993; Williams & Goebert, 2003) have utilized the SSBQ as an instrument to measure safe sex behaviors. The SSBQ is a comprehensive measure of sexual behavior that includes the following factors: assertiveness, condom use, avoidance of bodily fluids, avoidance of anal sex, and risky behaviors (substance use, casual sex, etc.). The purpose of the SSBQ is to determine frequency of use of protective factors that reduce an individual's risk of contracting HIV. The SSBQ has strong psychometric properties, and it is a valid and reliable measure of safe sex behaviors. As a result of its sound psychometric

properties as well as its comprehensive nature, the SSBQ was utilized in the current study (DiIorio et al., 1992).

Table 2

*Sexual Behavior Measures*

Measure	Author(s) and Year	Foci
Safe Sex Behavior Questionnaire (SSBQ)	DiIorio, Parsons, Lehr, Adame, & Carlone (1992)	Frequency of safe sex behaviors
Condom Use Self-Efficacy Scale (CUSES)	Brafford & Beck (1991)	Condom use self-efficacy
Sexual Risk Cognitions Questionnaire (SRCQ)	Shah, Thornton, & Burgess (1997)	Cognitions associated with condom use
Sociosexual Orientation Inventory (SOI)	Simpson & Gangestad (1991)	Assesses sociosexuality behaviors
Sociosexual Orientation Inventory–Revised (SOI–R)	Penke & Asendorpf (2008)	Sociosexually measure that includes past casual sex behaviors and attitudes and desire to engage in uncommitted sex behavior

## **Sexual Motivations**

In order to change sexual risk taking behaviors, the motivations behind sexual behaviors must first be identified and understood. Various researchers (Cooper, Shapiro, & Powers, 1998; Davis et al., 2004; Meston & Buss, 2007) have examined motivations for sex behavior among young adults. Cooper et al. (1998) identified six motivational factors including enhancement (sex for pleasure or enjoyment), coping (sex to deal with unpleasant feelings), intimacy, self-affirmation, partner approval, and peer approval. Additionally, the study yielded a number of interesting results with regard to gender differences and risky sexual behaviors. For example, enhancement motives were associated with risky sexual behavior, and intimacy motivations were correlated with less sexual risk taking. However, intimacy was also associated with less frequent condom use and more frequent intercourse as a result of these participants being in committed relationships. Further, partner approval and coping was found to be correlated with risky sexual behaviors such as multiple sex partners. Lastly, female respondents were more likely to endorse intimacy motives, while males were more likely to endorse enhancement as their motivation for engaging in sex.

In a similar study, Meston and Buss (2007) examined various motivations for engagement in sexual behavior among men and women. The study identified four main sexual motivating factors including physical, goal attainment, emotional, and insecurity among participants with a mean age of 19 years. Each main factor was comprised of subfactors and are as follows: The subfactors of the physical component included stress reduction, pleasure, physical desirability, and experience seeking; the



goal attainment subfactors included resources, social status, revenge, and utilitarian; the emotional factor included two subfactors, love and commitment and expression; and lastly, the insecurity factor yielded three subfactors including mate guarding, boosting self-esteem, and duty or pressure. Significant gender differences emerged, including men were more likely to endorse physical reasons as motivations for sex. In contrast, women were more likely to endorse emotional factors for sexual engagement.

Comparable to the two aforementioned studies, Davis et al. (2004) looked at motivators for sex and included the variable attachment style. The researchers evaluated emotional closeness, reassurance, self-esteem enhancement, and stress reduction as motivators and identified attachment styles that correlate with such motivators. They found avoidant attachment to be most strongly and negatively associated with emotional closeness, while anxious attachment was most strongly correlated with reassurance and secondly by emotional closeness. Further, anxious attachment style was also correlated with enhancement of self-esteem, with men endorsing self-esteem enhancement as a motivator for sex more frequently than women.

### **Gender and Sexual Attitudes and Behaviors**

A great deal of sexuality research has focused on gender differences and sexual attitudes, beliefs, and behaviors. The following studies demonstrate that little has changed among sexual attitudes, beliefs, and behaviors over the last two decades (Fischtein, Herold, & Desmarais, 2007; Herold & Mewhinney, 1993). Herold and Mewhinney (1993) investigated gender differences in regard to sexual attitudes and

behaviors in a population of bar goers. In the study, males reported a greater number of casual sex encounters and less concern regarding consequences of casual sex such as STIs compared to women. The researchers did not find statistical significance regarding gender differences related to condom use or total number of sexual partners. Similarly, Fischtein et al. (2007) reported that compared to women, men think about sex more often, report greater number of lifetime sexual partners, have sexual intercourse at an earlier age, and report more willingness to engage in casual sex. Given previous researchers' reports and findings that men have more permissive sexual attitudes and behaviors, and others' reports that this gap is narrowing, gender is an important factor to include in the current study and is explored throughout this literature review.

Research that has examined factors contributing to risky sexual behavior has found gender to be a significant variable. For example, Parsons et al. (2000) assessed gender differences in relation to perceived costs and benefits of using condoms and unprotected sex among college students. The study yielded alarming rates of sexual risk taking behavior including approximately 50% of the participants failing to use a condom during their last sexual encounter, 25% not using a condom within the last month, and only about 30% of participants reporting using condoms on a consistent basis. Additionally, among those who reported greater frequency of sexual risk taking behaviors, lower levels of self-efficacy and greater levels of temptation to have unprotected sex were reported. The following gender differences emerged: Females endorsed greater self-efficacy related to safe sex practices, less temptation to engage in

sexual risk taking, greater benefits to using condoms, and greater costs of unprotected sex.

Although college age adults know the risks of unprotected sex, many continue to take sexual risks. In a study conducted by Roberts and Kennedy (2006), college women who perceived themselves to be at low risk for contracting HIV, whose parents were actively involved in their life, and who did not abuse drugs or alcohol, used condoms on a more frequent basis. Additionally, women in long-term relationships engaged in less sexual risk taking behavior. In this particular study, 52% of participants reported they were inebriated during sex. In another study, Randolph, Torres, Gore-Felton, Lloyd, and McGarvey (2009) examined the relationship among gender, risky sexual behavior, and alcohol use among college students. The study assessed sexual risk taking behavior by asking participants to report number of sexual partners over the last year, frequency of condom use, and perceived risk of contracting HIV. The results are as follows: Men and women who perceived themselves at risk for contracting HIV used condoms more consistently, and men and women who reported greater frequency of alcohol consumption and binge drinking behaviors reported a greater number of sexual partners over the last year.

### **Self-Esteem**

Global self-esteem also termed trait self-esteem is a personality trait that refers to the way an individual feels about himself or herself (Brown & Marshall, 2006). The concept of self-esteem can be traced back in the literature, first being identified as a psychological construct in 1890 by William James (Guindon, 2010). In 1965,

Rosenberg pioneered the development of the construct of self-esteem as an empirically grounded personality concept (Guindon, 2010). Rosenberg's (1965) research focused on the development of self-esteem during adolescence and its impact on teenagers and adults. He identified self-esteem or one's self-image as an attitude toward the self.

According to Rosenberg (1965), individuals evaluate their personal characteristics, and the value placed on aspects of the self develops throughout his or her childhood. People place differing values (positive or negative) on personal characteristics. Further, they may place greater weight on some aspects of their self-image compared to others. Specifically, one might have an overall positive self-esteem, yet have a negative attitude about a specific attribute such as their physical appearance and a positive attitude about their life role (Guindon, 2010). In addition to one's personal attitude about various aspects of the self, many individuals place a great deal of value on others' perceptions of them as well (Rosenberg, 1979). Furthermore, one's feelings about himself or herself affects one's daily life experiences as well as one's interactions with others (Kernis, 2003). Finally, with regard to stability of one's self-esteem, one individual's level of self-esteem remains relatively stable while others vary (Suls, 2006).

One's self-esteem impacts a number of aspects of his or her life including well-being, behavior, and life satisfaction. Characteristics associated with low self-esteem include avoidance, lack of interpersonal confidence, emotional distress, psychiatric disorders such as depression and anxiety, pessimism, and low self-confidence. In contrast, traits associated with high self-esteem include assertiveness, independence,

receptiveness to feedback, happiness and positive well-being, and optimism

(Rosenberg & Owens, 2001, as cited in Guindon, 2010).

There are a number of self-report measures that assess multiple facets of self-esteem. However, the majority of the studies that are presented in this literature review utilized the RSES, which is one of the most widely used measures of global self-esteem. Table 3 provides a list of frequently used adult self-esteem measures.

Table 3

*Adult Self-Esteem Measures*

Measure	Author(s) and Year	Foci
Rosenberg Self-Esteem Scale (RSES)	Rosenberg (1965)	Global self-esteem
Coopersmith Self-Esteem Inventory	Coopersmith (1967)	Global self-esteem
Texas Social Behavior Inventory (TSBI)	Helmreich, Stapp, & Ervin (1974)	Social competence
Feelings of Inadequacy Scale (FIS)	Janis & Field (1959)	Measures one's feelings of inadequacy
Tennessee Self-Concept Scale (TSC)	Fitts (1965) Roid & Fitts (1988)	Multidimensional measure of self-concept

The RSES is one of the most commonly used assessments of global self-esteem. It has high face validity, strong psychometric properties, including internal consistency, and is strongly correlated with measures of related theoretical constructs. The RSES was utilized in the current study given the measures' sound psychometric properties.

### **Self-Esteem, Gender, and Risk Behaviors**

Research has identified correlations between low self-esteem and increased teen pregnancy, substance abuse, and psychiatric issues such as depression and anxiety. For example, Parker and Benson (2004) found that adolescents who had parental support had higher self-esteem and engaged in few risk behaviors. Additionally, Wild, Flisher, Bhana, and Lombard (2004) conducted a study in which they were interested in the relationship between self-esteem and risk behaviors in adolescents. Participants included 939 male and female 8<sup>th</sup> and 11<sup>th</sup> grade adolescents. For this study, students completed the Self-Esteem Questionnaire, which assesses six domains of self-esteem including family, athletic ability, global self-worth, body image, school and peer relationships, and a measure to assess risk behaviors including substance use, sexual behaviors, suicidal ideation, and bullying. For the purpose of the current study, only relationships between self-esteem domains and risky sexual behaviors from the study conducted by Wild et al. are reviewed. The results indicated that 8<sup>th</sup> grade and 11<sup>th</sup> grade boys engaged in risky sexual behaviors more so than 8<sup>th</sup> and 11<sup>th</sup> grade girls. Older girls reported greater frequency of risky sexual behaviors than younger girls. Older boys were more likely to engage in risky sexual behaviors compared to their

younger counterparts. Lastly, younger girls reported significantly better self-esteem across all domains compared to older female adolescents. These results indicate that age and gender play a role in self-esteem and risky behaviors in adolescents.

In a study on gender differences in relation to sexual behavior, knowledge of HIV/AIDS and self-esteem levels, conducted by Hollar and Snizek (1996), a sample of 353 undergraduate college students completed the RSES, knowledge of HIV/AIDS measure, and reported on various aspects of their sexual behavior. The purpose of the study was to determine if a relationship exists between knowledge of HIV/AIDS, self-esteem, and sexual risk taking behaviors. Over a 12-month period, approximately 57% of the participants had reportedly engaged in unprotected vaginal/penile sex, while 35% reportedly had unprotected intercourse with a partner who had several sex partners. Lastly, 33% of the participants reported they had more than one sexual partner. The results are as follows: Male and female students with high self-esteem levels (compared to those with low to medium self-esteem) engaged in significantly more risky conventional sexual behaviors, which included unprotected vaginal intercourse, sex with multiple partners, and having sex with someone who had many sexual partners. Additionally, participants with a great deal of knowledge about AIDS and HIV who reported high self-esteem also reported greater sexual risk taking behaviors. In contrast, these individuals reported safer sexual practices related to non-conventional sexual behavior such as having sex with someone who has HIV, sex with a prostitute, unprotected anal sex, and intercourse with a person who is an intravenous (IV) drug user.

Another study conducted by McNair, Carter, and Williams (1998) investigated the relationship between self-esteem, gender, and alcohol use in relation to unhealthy sexual behaviors among 260 male and female undergraduate students (with a mean age of 20 years). Their study revealed a number of trends among these variables. For example, undergraduate students with higher levels of self-esteem who consumed low amounts of alcohol reported that they used condoms more frequently than individuals with low self-esteem who consumed large amounts of alcohol. In addition, individuals who endorsed high self-esteem perceived themselves to be at lower risk for contracting HIV compared to students with low self-esteem. Moreover, students who consumed large amounts of alcohol reported higher numbers of sexual encounters after consumption. Additionally, women were more likely than men to engage in sex after consuming alcohol. Lastly, women reported a higher perceived risk for contracting HIV when compared to men.

Research regarding the association between self-esteem and sexual behaviors continues to produce contradictory findings in numerous populations. Some literature has demonstrated a positive correlation between self-esteem and risky sexual behaviors, while other research has found a negative correlation or no significance between these two variables. In relation to risky sexual behaviors and self-esteem, researchers have found contrasting results in their research among teen girls. For example, Hockaday, Crase, Shelley, and Stockdale (2000) conducted a study in which they investigated factors that impact sexual behavior and pregnancy among adolescent girls. Findings from the study indicated that pregnant teens had lower self-esteem, histories



of delinquent behavior, engaged in more risk taking behaviors, and had sexual relations at an earlier age compared to non-pregnant female adolescents. Similar to this study, Ethier et al. (2006) found a correlation between earlier age of first sexual encounter, history of sex with risky partners, risky sexual behaviors, and low self-esteem levels among adolescent girls.

In contrast to the above mentioned studies, Medora and von der Hellen (1997) studied self-esteem levels between non-pregnant adolescents, teenage mothers, and currently pregnant girls and found the latter two groups to have higher self-esteem than the non-pregnant control group. In addition, Robinson and Frank (1994) researched self-esteem levels among sexually active and abstinent males and female adolescents. Their findings did not yield any gender differences in self-esteem levels; additionally, there were no significant differences in self-worth among sexually active participants and those who had never engaged in sexual activity.

In regard to young adults' self-esteem levels and sexual behaviors, Gullette and Lyons (2006) investigated the relationship between self-esteem, sensation seeking, and sexual risk taking behaviors. They looked at the relationship between these variables among a total of 158 participants, specifically 39 male and 119 female college students. The researchers found that the majority of the participants had engaged in unprotected sex, and a large number had more than two sexual partners over the last six months. Additionally, individuals with low self-esteem abused greater amounts of alcohol, had multiple sex partners, and engaged in more sexual risk taking behaviors such as inconsistent condom use than other participants with high self-esteem.

Walsh (1991) examined the relationship between gender, self-esteem, and sexual behaviors. He found a significant relationship between both men and women with high self-esteem and multiple sex partners. The study also revealed that men had significantly more sex partners than women. In addition, among the variables examined including age, marital status, gender, self-esteem, and sensation seeking, the variable that was the strongest predictor of number of sexual partners for men was self-esteem level.

In a similar study, Desiderato and Crawford (1995) investigated the relationship among gender, alcohol use, condom use, level of concern with contracting AIDS, number of sex partners, and disclosure of prior risky sexual behavior to current partners. The study included 398 unmarried college students between the ages of 18 and 26. Among these 398 participants, 180 were male and 218 were female. While no gender differences emerged in the study, researchers found that only 50% of participants who were sexually active used a condom the last time they had sexual intercourse. In addition, participants who reported multiple sexual partners reported little consistency with condom use, greater likelihood of alcohol use prior to sexual encounters, and less likely to inform current partners about past sexual risk taking behaviors compared to individuals who reported having one sexual partner. An interesting finding of this study was that a relationship did not emerge between participants' disclosure of sexual risk taking behaviors and safer sex practices.

## **Attachment and Risky Behaviors**

Several studies highlight the association between attachment style and risk behaviors among young adults. Kassel et al. (2007) wanted to further this research by examining attachment and risky behaviors in college students. The participants included 212 males and females, ages 17 to 49 ( $M = 20.3$  years). Kassel et al. utilized the AAS), Dysfunctional Attitudes Scale (DAS), and RSES and created a questionnaire in which participants reported frequency of use for alcohol, cigarettes, and marijuana in order to assess substance abuse behavior. The researchers found a relationship between adult attachment styles, self-esteem, substance use, and dysfunctional attitudes. Specifically, they found anxious, dependent, and close attachment styles to be linked to self-esteem and dysfunctional attitudes. With regard to attachment styles and substance use, alcohol, cigarette, and marijuana use were related to anxious attachment (when substance use was a result of stress). Use of marijuana as a response to stress was associated with both close and dependent attachment types. Lastly, anxious attachment style was related to struggles with closeness and greater frequency of dysfunctional attitudes and poorer self-esteem. Given that adult attachment is related to risky behaviors such as substance abuse, it is possible that adult attachment is associated with other risky behaviors such as risky sexual activity.

Emotional intimacy is a key aspect in sexually intimate relationships (Gentzler & Kerns, 2004). Literature on attachment style and sexual experiences has demonstrated that securely attached individuals “value emotional intimacy and maintain romantic relationship” (Gentzler & Kerns, 2004, p. 250). Specifically, securely

attached people believe that sex should occur within an exclusive relationship (Brennan & Shaver, 1995). Additionally, secure individuals report fewer sexual partners and one-night encounters, as well as less negative emotions regarding previous sexual experiences compared to insecurely attached individuals. Individuals with an avoidant attachment style tend to avoid emotional intimacy by either avoiding sex or engaging in casual sex. In contrast, individuals with an anxious attachment do not have the tendency to condone or engage in casual sex. Additionally, while they deeply desire emotional intimacy, they struggle with such relationships. However, these individuals are unlikely to talk with their partners about safe sex practices, engage in sexual risk taking behaviors, and have unwanted sex with partners out of fear of relationship loss (Gentzler & Kerns, 2004). For example, in a study investigating attachment styles and sexual behaviors, Bogaert and Sadava (2002) found that subjects with insecure attachment styles reported greater numbers of lifetime sexual partners, and their first sexual experience occurred at an earlier age than those with secure attachment styles.

Ciesla et al. (2004) were interested in investigating the relationship between adult attachment style and HIV risk taking behavior in order to gain a better understanding for reasons behind sexual risk taking behavior and the ability to identify individuals who engage in risky sexual behavior even after they are made aware of their HIV positive status. Their sample included 48 HIV positive men and women. Researchers found that securely attached individuals reported fewer sexual partners compared to individuals with insecure attachment styles. Further, investigators found

that despite knowledge of their HIV status, individuals with insecure attachment style had the tendency to have multiple sex partners.

Feeney et al. (2000) investigated the relationship between attachment and sexual attitudes and behaviors. They found that individuals with avoidant attachment styles reported a negative attitude towards condom use and infrequency of condom use. The following gender differences emerged: Anxious men reported inconsistent condom use and they were less likely to talk with their partner about contraception, while anxious women were less likely to talk about HIV/AIDS.

### **Attachment, Gender, Self-Esteem, and Risky Sexual Behaviors**

As stated in Chapter I and demonstrated throughout this literature review, a number of studies have examined the relationship between attachment and sexual behavior, self-esteem and sex, and the way in which gender impacts these variables. However, to date only one study has investigated these variables collectively. Gentzler and Kerns (2004) were interested in examining the relationship between attachment style, self-esteem, and sexual behaviors among 328 undergraduate college students, ages 18 to 50 years (202 were females and 126 were males). Participants completed the following measures: ECR questionnaire, an adult attachment measure; RSES, a sexual attitudes questionnaire; Positive and Negative Affect Scale (PANAS), which measures feelings related to sexual experiences and various questions related to sexual history that was created by the authors; and experiences associated with unwanted but consensual sex, which utilized questions from the Sexual Coercion Scale; as well as questions added by the authors, whom included Gentzler and Kerns. The sexual

history questions elicited information regarding number of lifetime partners, number of sexual partners within a committed relationship, and age of first sexual intercourse. A number of gender differences emerged. For example, compared to men, women who had lower self-esteem were more likely to reluctantly engage in sex and had greater negative emotions in relation to past sexual experiences. A surprising finding was that higher self-esteem among women was correlated with greater numbers of sexual partners. To clarify, it appears that those with higher self-esteem who had more sexual partners, also had more unwanted but consensual sex. Lastly, females who had engaged in their first sexual experience at an earlier age (before age 15 years) had greater levels of anxious attachment than those who had their first sexual experience at a later age. In regard to males, more men had engaged in sex compared to women, were more accepting of casual sex, and had more sex partners than women. In addition, anxiously attached males had fewer sex partners and were among the group with the highest percentage of virgins.

The current study built upon this study by focusing on a targeted population of men and women in emerging adulthood. Additionally, the proposed study utilized a sexual behavior scale, SSBQ, which has been validated and found to be a reliable measure of safe sex behaviors. The SSBQ elicited more comprehensive sexual behavior information including condom use, assertiveness skills, use of condoms, protecting oneself from body fluids, and substance use associated with sexual intercourse. Lastly, the current study utilized the ECR–R, which is a self-report

questionnaire where participants respond to statements by rating their experiences and feelings in romantic relationships.

### **Summary**

The above studies provided preliminary support for the link between attachment, gender, self-esteem, and sexual behaviors. It is clear that further examination of these variables is needed to better understand the phenomena of sexual risk taking behaviors among emerging adults. Furthermore, this literature review suggests that a study that includes romantic attachment style, self-esteem, gender, and safe sex behaviors utilizing a sample of emerging adult male and female college students may provide valuable information into the understanding of sexual behaviors, which was the aim of the current study.

## CHAPTER III

### METHODOLOGY

The purpose of this study was to examine the relationship among romantic attachment style, self-esteem, and gender on safe sex behaviors in male and female emerging adult undergraduate students. This chapter includes a thorough description of the participant sample, instrumentation, data collection procedures, hypotheses, research design, and data analyses utilized.

Specific research questions and hypotheses include:

- Q1 To what extent do levels of self-esteem, gender, and romantic attachment style taken together, explain differences in levels of safe sex behaviors in male and female emerging adult undergraduate students?
- H1 Romantic attachment style (as measured by the Experiences in Close Relationships–Revised Scale), self-esteem (as measured by the Rosenberg Self-Esteem Scale), and gender (as identified by the demographic questionnaire) together explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students (as measured by the Safe Sex Questionnaire).
- Q2 Does romantic attachment style explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for levels of self-esteem and gender?
- H2 Secure romantic attachment style (as measured by the Experiences in Close Relationships–Revised) explains higher levels of safe sex behaviors (as measured by the Safe Sex Behavior Questionnaire) among male and female emerging adult undergraduate students after controlling for levels of self-esteem and gender.



- Q3 Does level of self-esteem explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for romantic attachment style and gender?
- H3 Higher levels of self-esteem (as measured by the Rosenberg Self-Esteem Scale) explains greater levels of safe sex behaviors (as measured by the Safe Sex Behavior Questionnaire) among male and female emerging adult undergraduate students after controlling for romantic attachment style and gender.
- Q4 Does gender explain differences in levels of safe sex behaviors in male and female emerging adult undergraduate students after controlling for romantic attachment style and levels of self-esteem?
- H4 Gender (identified utilizing the demographic questionnaire) explains differences in levels of safe sex behaviors (as measured by the Safe Sex Questionnaire) among male and female emerging adult undergraduate students after controlling for levels of self-esteem and romantic attachment style.

### **Research Design**

The research design utilized in this study was a multivariate correlational, within-group research design, utilizing convenience sampling. The study included a demographic questionnaire and three self-report survey-based measures to examine how gender, romantic attachment style, and self-esteem impact levels of safe sex behaviors in a target population of emerging adult college men and women. The independent or predictor variables included romantic attachment style, gender, and self-esteem. The dependent or criterion variable was safe sex behaviors. The purpose of utilizing this research design was to determine the nature of the correlations between values of romantic attachment style, gender, and self-esteem with values of safe sex behaviors.

## **Participants**

The sampling frame for the current study included male and female undergraduate college students from a medium sized western university. Participants were volunteers ranging in age from 18 to 25 years of age. In order to determine the minimum number of participants required to utilize a multiple regression analysis, Green's (1991) comprehensive guideline to determining sample sizes for regression analyses was utilized. These guidelines were developed utilizing Cohen's (1992) power analytic approach, which takes into account effect size, power, alpha level, and number of predictor variables (Wilson-VanVoorhis & Morgan, 2007). Utilizing Cohen's power analytic approach, 120 participants were needed to test the hypotheses of the current study. Utilizing Cohen's, 1988 (as cited in Green, 1991), suggestion for behavioral sciences studies, a medium effect size, power level of .80, and a traditional alpha level of .05 were utilized in the current study. Demographic information was elicited including participant's age, gender, year in school, relationship status, and ethnicity. There were two criteria for inclusion in the study: (a) participants must be between the ages of 18 to 25 years, and (b) participants must be non-virgins.

A response rate of approximately 30% was anticipated for the current study. This estimated response rate was obtained by a review of literature regarding paper-and-pencil surveys and response rates among college students. For example, Knapp and Kirk (2003) utilized paper-and-pencil surveys, which included questions of a sensitive nature, similar to questions asked in the current study; their study yielded a response rate of 33%. Additionally, Sax, Gilmartin, and Bryant (2003) assessed

response rates among college students using paper surveys and obtained a 27% response rate from female students. Considering these studies taken together, a response rate of approximately 30% is expected; therefore, this response rate estimate was anticipated for the current study. Therefore, a greater number of surveys were disseminated in order to obtain an adequate sample size for the current study.

In order to recruit volunteers for the study, the researcher contacted various undergraduate professors at the university via e-mail, notified the professors of the study, and requested permission to speak with their students during the last portion of one of their classes to solicit students' participation in the study. In addition, a request was completed to utilize the School of Psychological Sciences' undergraduate participant pool by submitting an application to the participant pool coordinator. Prior to data collection, approval was sought and granted from the Internal Review Board (IRB) at the designated university (see Appendix A).

### **Procedure**

Once IRB approval was obtained, an e-mail soliciting participants was sent to undergraduate professors, and the application to utilize the undergraduate participant pool was submitted (as detailed in the participants section). Participants included male and female undergraduate students, ages 18 to 25 years. Participants were invited to participate in the research at the end of their class. Participants were read the informed consent for participation in research document (see Appendix B).

Once participants gave consent, they were provided with the information for participation in the research letter and the survey. Participants retained the letter,

completed the survey, and placed their survey in the same manila envelope provided by the researcher. The researcher took appropriate measures to protect participants' anonymity, confidentiality, and privacy. These measures included utilizing numerical identifiers for each survey, and survey responses were retained in a locked file cabinet in order to protect participants' confidentiality.

### **Instrumentation**

The survey was paper-and-pencil, self-administered, totaled 6 pages in length, and included 70 questions and 6 demographic related questions (see Appendix C). The survey was comprised of two separate sections, and the sequence of the questionnaires was alternated to account for survey fatigue. The first section of the survey measured the constructs of interest in the study including romantic attachment style, self-esteem, and safe sex behavior. The second section included a demographic questionnaire. Specific measures of each construct are described below.

#### **Safe Sex Behavior**

To measure safe sex behaviors of the participants in the sample, the SSBQ (DiIorio et al., 1992) was used. The original SSBQ was a 27-item questionnaire, which measures frequency of use of "sexually related practices that avoid or reduce the risk of exposure to HIV and the transmission of HIV" (DiIorio et al., 1992, p. 204). The items on the SSBQ are intended to measure frequency of safe sex behaviors. Construct validity and factor analyses determined the original measure to contain three irrelevant and weak items; therefore, these three items were removed from the original measure. Hence, the final instrument contained a total of 24 items.

The SSBQ asks respondents to rate the extent to which they engage in safe sex practices. Sample items include: “If swept away in the passion of the moment, I have sexual intercourse without using a condom” and “If I know an encounter may lead to sexual intercourse, I carry a condom with me.” Nine items on the SSBQ are worded negatively and 15 are positively worded. Participants respond to the 24 items on a 4-point Likert-type scale ranging from 1 (*never*) to 4 (*always*). Scores are summed to provide a total safe sex behavior score. Total scores on the SSBQ can range from 24 to 96, with higher scores indicating higher rates of use of safer sex practices.

The SSBQ was originally normed on three different samples of male and female undergraduate college students, for a total of 794 participants (DiIorio et al., 1992). During the development of the SSBQ instrument, DiIorio et al. (1992) conducted a content validity procedure utilizing experts in the area of safe sex practices. These experts examined each question to determine level of pertinence to safe sex practices and found a content validity index of 98%, meaning that the experts found 98% of the items in the instrument to be relevant to safe sex practices. Researchers (DiIorio et al., 1992) also sought to provide evidence for construct validity by correlating the SSBQ total with other tests related to risk taking behavior and assertiveness. Summed scores on the SSBQ were shown to significantly correlate with both risk-taking behaviors (Risk-Taking Questionnaire) and assertiveness (College Self-Expression Scale) constructs, therefore, supporting construct validity of the SSBQ (DiIorio et al., 1992).

Utilizing a sample of male and female college students, an initial exploratory factor analysis was conducted by DiIorio et al. (1992) and yielded significant differences in sexual practices between male and female participants. As a result, separate analyses were conducted by gender. The factor analysis computed for both men and women revealed a five-factor solution that included use of condoms, avoidance of anal intercourse/homosexual practices, use of assertiveness skills, avoidance of body fluids, and avoidance of risky behaviors. Cronbach's alpha reliabilities for both genders on the SSBQ factors ranged from .52 to .85 for females and .52 to .84 for males. Cronbach's alpha for the sum of the 27 items on the SSBQ was .82 (DiIorio et al., 1992). Lastly, DiIorio et al. (1992) performed correlations between the factors and found moderate correlations between the following factors: avoidance of risky behaviors and use of assertiveness skills, as well as use of assertiveness skills and use of condoms.

Within the original population on which the measure was normed, the SSBQ total score was shown to have high test-retest reliability among females ( $r = .83$ ) and males ( $r = .82$ ) using a two-week interval (DiIorio et al., 1992). This high reliability estimate indicates that scores from the SSBQ have been found to provide stable estimates of sexual behavior practices over time in a population of female undergraduate students. Since its origination, the SSBQ has been utilized in a number of other studies using samples of college students (DiIorio et al., 2000; DiIorio et al., 1993; Williams & Goebert, 2003). DiIorio et al. (1993), which included 352 subjects, 312 of which were male and 40 were female, yielded a Cronbach's alpha of .82.

## Self-Esteem

To measure self-esteem, the RSES (Rosenberg, 1965) was used. The scale is a 10-item self-report questionnaire that measures global feelings of self-worth (Rosenberg, 1965). The scale includes five negatively worded statements and five positively worded statements about the self. Sample items include, “I feel that I have a number of good qualities” and “I take a positive attitude toward myself.” Participants respond to the questions on a 4-point Likert-type scale with responses ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). Items are summed to obtain a total score, which ranges from 10 to 40. Higher scores indicate greater levels of self-esteem.

The RSES was originally normed on 5,024 junior and senior high school students. With this sample, scores from the RSES were shown to have high test-retest reliability ( $r = .85$ ) using a two-week interval (Silber & Tippet, 1965). Fleming and Courtney (1984) also reported a high test-retest reliability ( $r = .82$ ) among college students using a one-week interval. These high reliability estimates indicated that the RSES provides stable estimates of self-worth over time for a population of junior and senior high school students as well as college students. O’Brien (as cited in Wylie, 1989) conducted a factor analysis and found the RSES to be a unidimensional measure. Similarly, Hensley and Roberts (1976) and Hensley (1977) conducted factor analyses using a sample of male and female college students and found the RSES to be unidimensional. In support of the measure’s internal consistency, Broemer and Blumle (2003) reported a Cronbach’s alpha of .87 among a sample of college students, and Hollar and Snizek (1996) reported a Cronbach’s alpha of .86.

Since the original construction of the RSES, a number of researchers have utilized the measure with college students (Gentzler & Kerns, 2004; Mintz & Betz, 1988). Gentzler and Kerns (2004) found a high reliability of .89 within their study, which consisted of a sample of 328 male and female undergraduate college students. Additionally, D’Zurilla, Chang, and Sanna (2003) also obtained a reliability coefficient of .89 in a study utilizing 205 male and female undergraduate college students.

### **Attachment Style**

To measure attachment style to romantic partners, the ECR–R (Fraley et al., 2000) was utilized. The scale is a 36-item self-report questionnaire in which participants respond to statements by rating their experiences and feelings in romantic relationships. This measurement consists of two attachment style dimensions including avoidance and anxiety. The questionnaire includes 18 items that measure avoidant dimensions of attachment and 18 items that measure attachment anxiety (Fraley et al., 2000).

Participants respond to items using a 7-point Likert–type scale with responses ranging from 1 (*disagree strongly*) to 7 (*agree strongly*). Anxiety items and avoidant items are summed separately, with higher scores indicating higher levels of attachment styles within these categories. Higher scores are indicative of insecure attachment styles, and lower scores are indicative of more secure attachments. Examples of avoidant attachment include, “I prefer not to show a partner how I feel deep down” and “I find it difficult to allow myself to depend on romantic partners.” Sample anxiety items include, “When I show my feelings for romantic partners, I’m afraid they



will not feel the same about me” and “I often worry that my partner will not want to stay with me.”

Utilizing a sample of undergraduate students, Fairchild and Finney (2006) conducted a factor analysis on the ECR–R and found support for a two-factor solution: the dimensions identified as avoidance and anxiety. The Cronbach’s coefficient alpha for the avoidance subscale was .93 and .92 for the anxiety subscale. Similarly, Sibley et al. (2005) conducted a factor analysis on the ECR–R using a sample of undergraduate college students and also found support for a two-factor solution. Sibley et al. reported a Cronbach’s coefficient alpha of .93 for the anxiety subscale and .94 for the avoidance subscale. These studies provide evidence for excellent internal consistency for the ECR–R. In addition, Sibley et al. also found support for good convergent and discriminant validity. Lastly, the ECR–R has been shown to have high test–retest reliability in undergraduate college students ( $r = .92 = \text{anxiety}$ ,  $.90 = \text{avoidance}$ ) using a three–week interval. This high reliability estimate indicates that scores from the ECR–R have been found to provide stable estimates of attachment style over time in a population of undergraduate college students.

### **Demographic Questionnaire**

A demographic questionnaire was completed by participants and included age, gender, year in school, marital status, and ethnicity. The questionnaire also included a question eliciting information as to whether or not the participant had ever had sexual intercourse.

### **Data Analysis**

Descriptive statistical analyses were performed in order to describe the demographics of the sample and examine distributional characteristics of the data. Internal consistency reliability analyses were conducted on each instrument used in the study to establish psychometric properties of the romantic attachment style, self-esteem, and safe sex behavior scales. For the current study, the predictor variables included gender, romantic attachment style that was measured utilizing the ECR–R, and self-esteem that was assessed using the RSES). The dependent or criterion variable in the study was safe sex behaviors and was measured using the SSBQ.

A simultaneous multiple regression analysis was utilized to test Hypotheses H1 to H4 in the current study. A multiple regression is a statistical analysis that examines the relationship between a number of predictor variables and one criterion variable (Gall, Gall, & Borg, 2003). Multiple regression operates under a set of assumptions (independence, normality, linearity, and equal variance). More specifically, the first assumption of multiple regression is that there are no essential predictor variables excluded from the analyses, and unrelated predictors are not included in the analysis. The second assumption is that each predictor variable is independent and not a combination of other predictor variables. The third assumption is that the relationship between the criterion and each predictor variable must be linear. The fourth assumption is that the statistical significance of a predictor variable must be independent of any other predictor. The fifth assumption is that of homoscedasticity and normality (Tabachnick & Fidell, 2001).

## Hypotheses

The research questions as well as the hypotheses that guided the current study are presented next, followed by the statistical methods that were used to answer each of the hypotheses. It is important to note that one simultaneous multiple regression analysis was utilized to test all four hypotheses.

- Q1 To what extent do levels of self-esteem, gender, and romantic attachment style taken together, explain differences in levels of safe sex behaviors in male and female emerging adult undergraduate students?
- H1 Romantic attachment style (as measured by the Experiences in Close Relationships–Revised Scale), self-esteem (as measured by the Rosenberg Self-Esteem Scale), and gender (as identified by the demographic questionnaire) together explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students (as measured by the Safe Sex Questionnaire).

A simultaneous multiple regression was used to examine whether or not romantic attachment style, self-esteem, and gender taken together explain differences in levels of safe sex behaviors among male and female emerging adults. Romantic attachment style, self-esteem, and gender were the predictor variables and safe sex behaviors was the criterion variable. An alpha level of .05 was used to determine statistical significance.

- Q2 Does romantic attachment style explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for levels of self-esteem and gender?
- H2 Secure romantic attachment style (as measured by the Experiences in Close Relationships–Revised) explains higher levels of safe sex behaviors (as measured by the Safe Sex Behavior Questionnaire) among male and female emerging adult undergraduate students after controlling for levels of self-esteem and gender.

A simultaneous multiple regression was used to determine whether or not secure romantic attachment style explains higher levels of safe sex behaviors among male and female emerging adults after controlling for levels of self-esteem and gender. Romantic attachment style was the predictor variable and safe sex behaviors was the criterion variable. An alpha level of .05 was used to determine statistical significance.

- Q3 Does level of self-esteem explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for romantic attachment style and gender?
- H3 Higher levels of self-esteem (as measured by the Rosenberg Self-Esteem Scale) explains greater levels of safe sex behaviors (as measured by the Safe Sex Behavior Questionnaire) among male and female emerging adult undergraduate students after controlling for romantic attachment style and gender.

A simultaneous multiple regression was used to determine whether or not higher levels of self-esteem explained greater levels of safe sex behaviors among male and female emerging adults after controlling for romantic attachment style and gender. Self-esteem was the predictor variable and safe sex behaviors was the criterion variable. An alpha level of .05 was utilized to determine statistical significance.

- Q4 Does gender explain differences in levels of safe sex behaviors in male and female emerging adult undergraduate students after controlling for romantic attachment style and levels of self-esteem?
- H4 Gender (identified utilizing the demographic questionnaire) explains differences in levels of safe sex behaviors (as measured by the Safe Sex Questionnaire) among male and female emerging adult undergraduate students after controlling for levels of self-esteem and romantic attachment style.

A simultaneous multiple regression was used to determine whether or not gender explains differences in levels of safe sex behaviors among male and female

emerging adults after controlling for levels of self-esteem and romantic attachment style. Gender was the predictor variable and safe sex behaviors was the criterion variable. An alpha level of .05 was utilized to determine statistical significance. Dummy variables were utilized for data analysis purposes; females were coded as a one and males were coded as a two.

### **Summary**

A within-group, multivariate correlational research design was used to examine the relationship among romantic attachment style, self-esteem, and gender on safe sex behaviors in emerging adults. Four instruments were used to collect information from the participants. Data were analyzed using one simultaneous multiple regression analysis. Results of the analysis are presented in Chapter IV.

## CHAPTER IV

### RESULTS

The purpose of the current study was to examine the relationship among gender, level of self-esteem, romantic attachment style, and levels of safe sex behaviors in emerging adults. This chapter includes an outline of the data collection procedures used in the study, a description of the study's sample, data from each of the measures are outlined, and finally, the results of the statistical analysis used to test the four hypotheses outlined in Chapter III are presented.

#### **Description of the Sample**

For inclusion in the study's analyses, participants were required to be a non-virgin, undergraduate student, between the ages of 18 to 25 years (emerging adults). During the fall 2011 semester, the researcher contacted several undergraduate professors and requested permission to solicit student volunteers and administer the survey at the end of a class meeting. Two professors granted the researcher permission to elicit student participation for the current study in a total of five undergraduate psychology classes. Additionally, the researcher utilized the School of Psychological Sciences undergraduate participant pool.

A total of 191 surveys were completed; however of the 191 surveys administered, only 155 were included in the analyses as 36 of the respondents had never

engaged in sexual intercourse, which was an inclusion requirement of the current study (non-virgin status). Additionally, among the 155, four participants did not complete the demographics portion of the survey; however, their data were retained for the analyses. Lastly, in order for a survey to be deemed as adequately complete to be incorporated into the current study, 90% of each of the three measures were required to be completed by each participant; as a result, one survey was considered incomplete and not included in the data analyses.

Demographic information collected from respondents included age, gender, year in school, ethnicity, and marital status. Additionally, one question inquired as to whether or not the individual had ever engaged in sexual intercourse. Among the 151 participants who completed the demographics portion of the survey, their ages ranged from 18 to 24 years with a mean age of 19.34 ( $SD = 1.326$ ). One hundred seventeen of the respondents were female ( $n = 117, 75.5\%$ ) and 34 were male ( $n = 34, 21.9\%$ ). The majority of the participants self-identified as Caucasian ( $n = 114, 73.5\%$ ) with the remainder of the sample identifying themselves as African American ( $n = 7, 4.5\%$ ), Hispanic ( $n = 17, 11\%$ ), Asian American ( $n = 9, 5.8\%$ ), and Bicultural or Multicultural ( $n = 4, 2.6\%$ ). Seventy-six (49%) participants were single, 72 (46.5%) were in a relationship, 2 (1.3%) were married, 1 (0.6%) was separated from his or her spouse, and none reported being divorced. Lastly, 39.4% ( $n = 61$ ) were freshman, 29% ( $n = 45$ ) were sophomores, 18.1% ( $n = 28$ ) were juniors, and 11% ( $n = 17$ ) were seniors (see Table 4).

Table 4

*Demographic Description of Participants (N = 151)*

Demographic	%
Gender	
Female	75.5
Male	21.9
Ethnicity	
Caucasian	73.5
African American	4.5
Hispanic	11
Asian American	5.8
Bicultural/Multicultural	2.6
Relationship status	
Single	49
In a relationship	46.5
Married	1.3
Separated	0.6
Divorced	0
Year in school	
Freshman	39.4
Sophomore	29
Junior	18.1
Senior	11

### **Data Analysis**

The researcher conducted internal consistency reliability analyses on all measures utilized in the current study (see Table 5). The dependent variable in the



present study was safe sex behavior, which was measured utilizing the SSBQ. The independent variables included gender, self-esteem, and romantic attachment style. The current study utilized the RSES to measure self-esteem levels and the ECR–R to assess attachment styles. The ECR–R contains two subscales, which includes anxious and avoidant attachment styles. All measures demonstrated good internal consistency, with Cronbach’s alpha coefficients ranging from 0.844 to 0.950.

Table 5

*Reliability Coefficients for Instruments*

Instrument	Alpha coefficient	No. of items
Safe Sex Behavior Questionnaire (SSBQ)	0.844	24
Rosenberg Self-Esteem Scale (RSES)	0.896	10
Experiences in Close Relationships–Revised (ECR–R)		
Anxiety subscale	0.932	18
Avoidant subscale	0.946	18
Total ECR–R	0.950	36

### Safe Sex Behavior

The SSBQ was utilized to measure safe sex behavior among participants.

Total scores on the SSBQ can range from 24 to 96, with higher scores being indicative of safer sex behaviors. Scores from the current study ranged from 41 to 95 ( $M = 72.89$ ,  $SD = 10.51$ ). Descriptive statistics for all measures are presented in Table 6. The frequency distribution for the SSBQ scores was negatively skewed (skewness coefficient =  $-0.067$ , standard error of  $0.196$ ); such results are indicative of fewer respondents endorsing risky sexual behaviors and more participants endorsing greater levels of safe sex behaviors.

Table 6

*Means, Standard Deviations, and Ranges of all Scales*

Scale	<i>M</i>	<i>SD</i>	Study range	Scale range
Safe Sex Behavior Questionnaire (SSBQ)	72.89	10.51	41–95	24–96
Rosenberg Self-Esteem Scale (RSES)	31.93	5.48	10–40	10–40
Experiences in Close Relationships –Revised (ECR–R)				
Anxiety subscale	53.13	20.99	18–104	18–126
Avoidant subscale	49.27	21.14	18–113	18–126
Total ECR–R	102.40	36.19	37–215	36–252

## **Self-Esteem**

The RSES was used to measure self-esteem levels in the respondents. Total scores on the RSES can range from 10 to 40, with higher scores being representative of higher levels of self-esteem. Scores from the current study ranged from 10 to 40 ( $M = 31.93$ ,  $SD = 5.48$ ) (see Table 6). The frequency distribution of the RSES scores was negatively skewed, indicating that the majority of the respondents endorsed higher levels of self-esteem and fewer endorsed lower self-esteem levels.

## **Attachment**

The ECR–R was utilized to assess attachment styles. As indicated earlier, the ECR–R measure contains a total of 36 items, with 18 items measuring avoidant dimensions of attachment and the remaining 18 items measuring attachment anxiety (Fraley et al., 2000). Total scores on the ECR–R can range from 36 to 252, with total scores from each of the subscales possibly ranging from 18 to 126. Greater scores on the ECR–R are indicative of more insecure attachment styles (i.e., avoidant or anxious attachment styles), and lower scores suggest more secure attachment styles. Total scores on the ECR–R for the current study, which includes both the anxious and avoidant subscales, ranged from 37 to 215 ( $M = 102.40$ ,  $SD = 36.19$ ), demonstrating variability in endorsement of attachment styles. With regard to the current study, scores on the anxiety subscale ranged from 18 to 104 ( $M = 53.13$ ,  $SD = 20.99$ ), and scores from the avoidant subscale ranging from 18 to 113 ( $M = 49.27$ ,  $SD = 21.14$ ).

### **Hypotheses and Statistical Analyses**

The purpose of the current study was to investigate the relationship among safe sex behavior, gender, self-esteem, and romantic attachment style. The following research questions were analyzed utilizing one simultaneous multiple regression analysis and tested utilizing an alpha level of .05 to determine statistical significance:

- Q1 To what extent do levels of self-esteem, gender, and romantic attachment style taken together, explain differences in levels of safe sex behaviors in male and female emerging adult undergraduate students?
- Q2 Does romantic attachment style explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for levels of self-esteem and gender?
- Q3 Does level of self-esteem explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for romantic attachment style and gender?
- Q4 Does gender explain differences in levels of safe sex behaviors in male and female emerging adult undergraduate students after controlling for romantic attachment style and levels of self-esteem?

Given that the current study included one continuous dependent variable (safe sex behavior), one categorical independent variable (gender), and two continuous independent variables (self-esteem and romantic attachment style) to measure the relationship among gender, self-esteem, romantic attachment style, and safe sex behavior, a simultaneous multiple regression analysis was utilized. All variables were entered into the model simultaneously. Assumptions for simultaneous multiple regression were analyzed and included linearity, independence, normality, and homoscedasticity. It was determined that none of the assumptions were violated; therefore, the analysis is appropriate for testing the study's hypotheses. In addition,

the data were examined for the presence of multicollinearity among the independent variables. Given that there were no bivariate correlations above .7 (indicating that there was not too strong of a relationship among the independent variables under study), there were no significant issues related to multicollinearity (Pallant, 2007). Results of the correlational matrix for the regression analysis of romantic attachment style, self-esteem, and safe sex behavior can be found in Table 7.

Table 7

*Correlation Matrix for Romantic Attachment Style, Self-Esteem, and Safe Sex Behavior*

Variable	Safe sex behavior	Attachment style	Self-esteem
Safe sex behavior	1.0		
Attachment style	.020	1.0	
Self-esteem	-.025	-.574*	1.0

*Note.* Safe sex behavior is the dependent variable.

\*Correlations were statistically significant at  $p < .05$ .

One simultaneous multiple regression analysis was used to test Hypotheses H1, H2, H3, and H4.

### **Hypothesis H1**

- H1 Romantic attachment style (as measured by the Experiences in Close Relationships-Revised Scale), self-esteem (as measured by the Rosenberg Self-Esteem Scale), and gender (as identified by the demographic questionnaire) together explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students (as measured by the Safe Sex Questionnaire).

Results from the simultaneous multiple regression analysis indicated that the combination of romantic attachment style, self-esteem level, and gender explained a significant proportion of the variance in the levels of safe sex behaviors among emerging adults within the sample,  $R = .279$ ,  $F(3, 145) = 4.075$ ,  $p = .008$ . The model yielded a coefficient of determination ( $R$  square) of 0.078, indicating that the complete model accounted for 7.8% of the variance, or, 7.8% of the variance in the dependent variable (safe sex behavior) is explained by the three predictor variables (romantic attachment style, self-esteem, and gender). Given the significant  $p$  value ( $p = .008$ ), the results support Hypothesis H1.

### **Hypothesis H2**

- H2 Secure romantic attachment style (as measured by the Experiences in Close Relationships-Revised) explains higher levels of safe sex behaviors (as measured by the Safe Sex Behavior Questionnaire) among male and female emerging adult undergraduate students after controlling for levels of self-esteem and gender.

Results from the simultaneous multiple regression analysis indicated that romantic attachment style did not explain a significant proportion of the variance in levels of safe sex behaviors among the sample utilized in the current study after

controlling for self-esteem level and gender ( $\beta = .054, t = .538, p = .591$ ). Therefore, the data did not support Hypothesis H2 of the current study.

### **Hypothesis H3**

- H3 Higher levels of self-esteem (as measured by the Rosenberg Self-Esteem Scale) explains greater levels of safe sex behaviors (as measured by the Safe Sex Behavior Questionnaire) among male and female emerging adult undergraduate students after controlling for romantic attachment style and gender.

Results from the simultaneous multiple regression analysis indicated that self-esteem level did not explain a significant proportion of the variance in the levels of safe sex behaviors among the sample of the current study after controlling for romantic attachment style and gender ( $\beta = .046, t = .456, p = .649$ ). Thus, the data did not support Hypothesis H3 of the current study.

### **Hypothesis H4**

- H4 Gender (identified utilizing the demographic questionnaire) explains differences in levels of safe sex behaviors (as measured by the Safe Sex Questionnaire) among male and female emerging adult undergraduate students after controlling for levels of self-esteem and romantic attachment style.

Results of the regression analysis indicated that gender explained a significant proportion of the variance in levels of safe sex behaviors among emerging adults ( $\beta = -.284, t = -3.481, p < .05$ ). Gender was negatively related to safe sex behaviors, indicating that gender has an impact on levels of safe sex behaviors when attachment style and self-esteem level are controlled for. More specifically, lower coded participants engaged in safer sex behaviors, indicating that females engaged in higher levels

of safe sex behaviors compared to males. Given the significant  $p$  value ( $p < .05$ ), the results support Hypothesis H4.

### **Summary**

The current study provided the opportunity to examine the relationship among gender, self-esteem level, romantic attachment style, and differences in levels of safe sex behaviors in emerging adults. A simultaneous multiple regression analysis was utilized to test the four hypotheses of the current study (see Table 8). Data from the current study supported Hypothesis H1 indicating that romantic attachment style, self-esteem level, and gender together explain differences in levels of safe sex behaviors among emerging adults. Hypotheses H2 and H3 were not supported. Specifically, romantic attachment style did not uniquely explain a significant proportion of the variation in levels of safe sex behaviors after controlling for self-esteem level and gender. Additionally, self-esteem level did not uniquely explain a significant proportion of the variation in the levels of safe sex behaviors among the sample of male and female emerging adults who participated in the study after controlling for romantic attachment style and gender. Hypothesis H4 was supported, indicating that gender explained a significant proportion of the variation in levels of safe sex behaviors among emerging adults after controlling for romantic attachment style and self-esteem level. Specifically, females engaged in higher levels of safe sex behaviors compared to males.



Table 8

*Summary of Simultaneous Regression Analysis for Variables Predicting Safe Sex Behaviors Among Emerging Adults*

Variable	B	SE	$\beta$	<i>t</i>	<i>p</i> value
Attachment	.015	.029	.054	.538	.591
Self-esteem	.087	.191	.046	.456	.649
Gender	-7.102	2.040	-.284	-3.481	.001

*Note.* Overall regression *R*-square = .078; Adjusted *R*-square = .059;  $F(3, 145) = 4.075, p = .008$ .

## CHAPTER V

### DISCUSSION, IMPLICATIONS, AND RECOMMENDATIONS

The goal of the present study was to investigate the relationship among gender, self-esteem, adult romantic attachment style, and safe sex behaviors in male and female emerging adults. This chapter includes an overview of the study, followed by a discussion of the results and conclusions. In addition, implications are explored. The chapter concludes with an examination of the limitations and possible recommendations for future research.

#### **Discussion**

Risky sexual behaviors carry devastating consequences, including unplanned pregnancy and STIs, some of which are incurable and can even lead to death (Eisenberg et al., 2005). Such unsafe behaviors can also have negative psychological consequences and impact one's overall mental health and well-being (CDC, 2007). While adolescents and college age individuals (ages 15 to 24 years) make up only a quarter of those who are sexually active (CDC, 2007), this age group contracts half of all newly acquired STIs at 9.5 million cases per year (CDC, 2007).

Many college students are in the developmental stage termed emerging adulthood, which occurs between ages 18 to 25 years. Many emerging adults

experience significant transitions during this time; additionally, these individuals often gain more independence and experience less parental guidance and control. With such increased freedoms, emerging adults sometimes engage in risky behaviors including substance abuse (Gullette & Lyons, 2006) and sexual risk taking behaviors including sex with multiple partners, unprotected sex (Arnold et al., 2002), and sexual intercourse with casual sex partners (Fischtein et al., 2007).

The motivation behind the present study was to educate mental and medical health professionals; parents; educators; and school personnel such as counselors, social workers, and nurses; as well as emerging adults on the factors that impact sexual risk taking behaviors. More specifically, it was my hope to provide others with a better understanding of the variables that contribute to sexual risk taking behaviors, encourage safe sex practices, and protect those at risk for engaging in unsafe sex behaviors. The purpose of the study was to examine the relationship among adult romantic attachment style, self-esteem, and gender on safe sex behaviors in emerging adult undergraduate students.

### **Research Question Q1**

- Q1 To what extent do levels of self-esteem, gender, and romantic attachment style taken together, explain differences in levels of safe sex behaviors in male and female emerging adult undergraduate students?

It was hypothesized that romantic attachment, self-esteem, and gender together explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students. This relationship was hypothesized given that a review of the literature identified an association between sexual behavior and attachment,

self-esteem, and gender. For example, investigators have found that securely attached individuals have fewer sexual partners (Ciesla et al., 2004; Gentzler & Kerns, 2004), engage in fewer unsafe sexual behaviors (Feeney et al., 2000; Impett & Peplau, 2002), and have fewer casual sex partners (Paul et al., 2000). Additionally, researchers have found significant correlations between self-esteem and safe sex behavior, often with conflicting results. Specifically, various researchers have determined that individuals with high self-esteem engage in more risky sexual behavior (Hollar & Snizek, 1996; Walsh, 1991), while more recent research has found those with low self-esteem engage in riskier sexual behavior (Ethier et al., 2006; Gullette & Lyons, 2006). Lastly, a number of gender differences have emerged in the literature regarding safe sex behaviors (Fischtein et al., 2007; Gentzler & Kerns, 2004; Parsons et al., 2000; Walsh, 1991). Therefore, due to the previously identified studies demonstrating a relationship among sexual behavior and gender, attachment, and self-esteem, the present researcher hypothesized that romantic attachment style, self-esteem, and gender together would explain differences in safe sex behaviors among male and female emerging adults. The analysis revealed statistical significance, indicating that these variables taken together explain differences in levels of safe sex behaviors ( $R = .279$ ,  $F(3, 145) = 4.075$ ,  $p = .008$ ). Specifically, the results indicated that the complete model, which combined romantic attachment style, self-esteem level, and gender, explained a significant proportion of the variance in safe sex behaviors among emerging adults utilizing the sample in the current study. Specifically, 7.8% of the variance in safe sex behaviors was explained by the three predictor variables (romantic

attachment style, self-esteem, and gender). Given the statistical significance, Hypothesis H1 was supported. The relationship among the individual independent variables and the dependent variable were examined in greater detail in Hypotheses H2, H3, and H4.

## **Research Question 2**

Q2 Does romantic attachment style explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for levels of self-esteem and gender?

Due to previous research in the field of sexual behavior identifying a relationship among these variables (romantic attachment style and safe sex behaviors), it was hypothesized that secure romantic attachment style would explain higher levels of safe sex behaviors among emerging adult undergraduate students after controlling for self-esteem level and gender.

Contrary to the hypothesis, there was no statistically significant difference found between safe sex behaviors and romantic attachment style. Such a finding is contradictory to past research, which has identified a number of correlations between attachment and sexual behaviors. For example, investigators have found that securely attached individuals have fewer sexual partners (Ciesla et al., 2004; Gentzler & Kerns 2004), engage in fewer unsafe sexual behaviors (Feeney et al., 2000), have fewer casual sex partners (Paul et al., 2000), and even have sex when they do not feel like it (Impett & Peplau, 2002). Individuals endorsing insecure attachment styles report they had their first sexual experiences at earlier ages than those with secure attachment styles (Bogaert & Sadava, 2002).

One potential explanation for Hypothesis H2 not being supported is related to participants' lack of clearly identified attachment style in the current study. While the majority of the participants in the study endorsed safe sex practices ( $M = 72.89$ ,  $SD = 10.51$ ), descriptive statistics from the ECR-R (attachment style questionnaire) demonstrated substantial variability in endorsement of attachment style ( $M = 102$ ,  $SD = 36.19$ ). This outcome may be attributed to the survey utilized to identify participants' attachment style. While the ECR-R has demonstrated excellent psychometric properties (as it did in the current study), the survey utilizes a 7-point Likert-type scale. The responses for the scale allow the participant to respond to statements by rating their experiences and feelings in romantic relationships with 1 being *strongly disagree* and 7 being *strongly agree* with the statement. Respondents in the current study may have had the tendency to avoid endorsing extremes on the scale, therefore, not identifying a specific attachment style. A similar concern or possibility for lack of significance is related to the instructions for the attachment survey. The instructions may have been confusing and unclear to students. Participants were to respond with how they "generally experience relationships" not just the relationship they were currently in, which may have led to inaccurate reporting due to potential confusion and lack of clarity.

Another possible explanation for the lack of significant findings between romantic attachment style and safe sex behaviors may be related to the scale used to assess romantic attachment style. Utilization of a different type of measurement may have yielded different results.

**Research Question Q3**

- Q3 Does level of self-esteem explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for romantic attachment style and gender?

It was hypothesized that higher levels of self-esteem would explain greater levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for romantic attachment style and gender. This relationship was hypothesized as a number of past research studies have demonstrated a significant relationship between these variables.

In regard to self-esteem and sexual behaviors, previous researchers have found contradictory results among these variables. For example, Hollar and Snizek (1996) found that male and female undergraduate college students who endorsed high levels of self-esteem engaged in unprotected sex, intercourse with multiple partners, and sex with partners who had multiple sex partners. However, these same individuals reported safer sex practices related to sex with drug abusers, partners with HIV, and unprotected anal sex. In addition, Walsh's (1991) findings indicated that men and women with high self-esteem reported multiple sex partners.

On the contrary, more recent researchers such as Gullette and Lyons (2006) found young adults with low self-esteem had the tendency to engage in risky behaviors compared to those with higher self-esteem. Such risky behaviors included consumption of greater amounts of alcohol, multiple sex partners, and infrequent and inconsistent condom use. Similarly, Ethier et al. (2006) found correlations between

low self-esteem and risky sexual behaviors and earlier age of first sexual encounter and engaging in sex with risky partners.

Given that more recent studies (Ethier et al., 2006; Gullette & Lyons, 2006) have found that individuals with low self-esteem engage in more risky sexual behaviors compared to those with high self-esteem, these findings guided Hypothesis H3 of the current study. The results from the multiple regression analysis indicated that higher levels of self-esteem do not explain greater levels of safe sex behavior among emerging adults. Therefore, self-esteem was not a significant predictor of safe sex behavior, and Hypothesis H3 was not supported. This finding does not come as a surprise given numerous conflicting findings related to sexual behaviors and self-esteem level. One possible explanation for the lack of significance between levels of self-esteem and safe sex behaviors may be related to the type of questionnaire utilized to measure self-esteem level. Utilization of a different questionnaire may yield different results.

Another possible explanation for the lack of significance between self-esteem and safe sex behaviors may be due to the sample utilized in the study. More specifically, the current study included participants who have had sexual intercourse; if the study would have included virgins, such an inclusion may have shed more light on whether a relationship exists between these two variables as it would have allowed the researcher to assess level of self-esteem in individuals who do not engage in sexual risk taking behaviors related to intercourse.



Another possible explanation for the lack of significant findings may be related to the homogenous nature of the sample. Specifically, a convenience sample of voluntary participants, which consisted primarily of Caucasian, female, undergraduate psychology majors, was utilized in the present study. Perhaps if the sample would have consisted of a more heterogeneous sample, including a more ethnically diverse population, a relationship or pattern may have emerged between self-esteem and sexual behavior.

#### **Research Question Q4**

- Q4 Does gender explain differences in levels of safe sex behaviors in male and female emerging adult undergraduate students after controlling for romantic attachment style and levels of self-esteem?

It was hypothesized that gender would explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for self-esteem level and romantic attachment style. This relationship was hypothesized because several past researchers have found a significant relationship among these variables. Fischtein et al. (2007) found that men reported an earlier age of first sexual encounter, more willingness to engage in casual sex, and a greater number of lifetime sexual partners. Similarly, Walsh (1991) indicated that men reported significantly more sex partners than women. Other investigators (Parsons et. al., 2000) found that females experienced less temptation to engage in risky sexual behaviors and reported greater perceived cost to unprotected sex and greater benefits to using condoms.

Results from the multiple regression analysis supported the hypothesis that gender explains differences in levels of safe sex behaviors among emerging adults, therefore, providing support that gender differences exist in sexual behaviors. Results indicated that women engage in safer sexual behaviors compared to men. Such findings are consistent with the research of the above identified literature, which identified men as engaging in more risky sexual behaviors.

### **Limitations**

There were several possible limitations to the present study that should be considered.

1. Utilization of a convenience sample may impact external validity and generalizability to a larger population. The current study utilized a convenience sample that consisted of emerging adult undergraduate students, ages 18 to 25, from a mid-sized university. The researcher contacted various undergraduate professors requesting access to elicit volunteers to participate and also utilized the School of Psychological Sciences' undergraduate participant pool, in which undergraduate students taking psychology classes volunteer to participate in studies conducted by graduate students. Even though the current study's demographics were representative and similar to that of the university from which the respondents were recruited, every individual from the population did not have an opportunity to participate; therefore, true random sampling was not utilized. While it should be noted that use of convenience sampling is frequently utilized in psychological studies, as true random sampling is

generally not conducted in behavioral sciences research, such sampling procedures may affect external validity, and therefore, the results of the current study should be interpreted with this in mind.

2. Similar to the first limitation, this is related to the homogeneous nature of the sample utilized in the current study. The sample primarily consisted of Caucasian, female, undergraduate psychology majors, which limits the generalizability and may impact the external validity of the study.
3. Related to the significant findings in Hypothesis H4 regarding gender and sexual behavior in which a significant relationship was determined to exist between these factors, results should be interpreted with caution due to the disproportion of males to females included in the study. Also the statistical analysis in the study allowed for the researcher to determine if a relationship existed between gender and sexual behaviors. The analysis revealed that male participants endorsed more sexual risk taking behavior and females endorsed safer sex practices; it did not, however, allow the researcher to identify specific behaviors that were endorsed. While it was not a goal of the current study, future researchers may consider utilizing analyses that allow for a closer examination regarding identification of specific sexual behaviors that males and females are endorsing as this would provide more insight into specific behaviors that should be targeted when considering prevention and intervention.

4. This limitation is related to those inherent in self-report measures and studies involving questions sensitive in nature such as sexual behavior. Given the sensitive nature of sexual behavior, one concern is that of inaccurate reporting, specifically socially desirable reporting, underreporting, and inability to accurately recall behaviors. However, measures were taken to minimize socially desirable responses and maintain confidentiality and anonymity with the hope of obtaining accurate and honest responses. These measures included respondents did not write their name on the survey and numerical identifiers were utilized. Additionally, participants placed their survey in a large envelope with all other participants' surveys upon completion. Lastly, participation was voluntary and there were no penalties for non-participation or stopping prematurely.
5. No cause and effect relationship can be inferred from the results due to the study's statistical design, which utilized simultaneous multiple regression analysis. Such an analysis can only determine if a correlational relationship exists among the variables; it does not allow for causation to be identified. Future researchers may choose to utilize statistical analyses that extends beyond identification of correlational relationships and allows for richer, more elaborate conclusions to be drawn.
6. This limitation is related to the exclusion of virgins from the current study. This exclusion did not allow for this group of individuals' attachment style or self-esteem level to be investigated, which could have provided a wealth of

information related to the variables under study, in turn, providing a more comprehensive explanation of the study's results. Such an inclusion may have allowed for insights into virgins' sexual behaviors, self-worth, and experiences of relationships. For example, while virgins may be thought of as uninvolved in or considered to be at low risk for sexual risk taking behaviors and the many consequences, it could be quite the contrary. Virgins may be engaging in risky sexual behaviors such as unprotected oral sex and oral sex with casual partners and with multiple partners, etc. This particular study did not allow for data to be collected from virgins given the nature of the SSBQ, which only allows for information to be gathered from individuals who have engaged in sexual intercourse.

### **Implications**

While sexual risk taking behaviors are a complex area to examine and study, it appears that many variables impact an emerging adult's sexual behaviors. Although the current study did not support all hypotheses being examined, there are still important implications for medical and mental health professionals, school personnel, counselors and administrators, parents, and emerging adults.

Research has demonstrated that sex education and knowledge about STIs does not always predict or prevent sexually risky behaviors (Dilorio et al., 1993). The results of the current study are important as a relationship was found between gender and safe sex behaviors in which males endorsed more sexual risk taking behaviors compared to females. These results should be considered in the development of and

establishment of safe sex practices and utilized to help clients, parents, and educators understand the role that gender plays in safe sex behavior.

Due to the numerous ramifications of risky sexual behaviors, such as unwanted pregnancy and STIs, it is important that professionals have the ability to identify and focus on those who are vulnerable to or more likely to engage in sexual risk taking behaviors. Health care professionals have a unique opportunity to not only provide education on anatomy of the human body, but also educate individuals on how the body functions. Additionally, they can provide information on why people have sex and may engage in risky behaviors, the nature of sex, how one's body can be impacted by risky sexual behaviors, teach safe sex practices, and provide STI testing. Furthermore, they can help individuals understand the negative consequences of sexually risky behaviors and how such consequences can impact one's overall health and well-being.

Mental health therapists can assist clients in exploring, examining, and understanding the risks of sexual risk taking behaviors. They have the opportunity to also educate those at risk and assist these individuals in understanding the reason for their unsafe behaviors and to reduce risk through examining patterns and processes related to these practices and choices. Additionally, practitioners can provide education on STIs and HIV and help clients who have been diagnosed with such diseases learn ways to cope and manage symptoms. Further, counselors can educate clients to learn and set boundaries, help consumers to advocate for themselves and express

themselves with their partners, and learn not only safe sex measures but also self-protective skills to protect their bodies and well-being.

### **Recommendations**

1. Future researchers may consider utilizing categorical data to identify specific adult romantic attachment styles rather than a continuous variable (which was the case for the present study). Use of categorical data, which identifies participants' distinct attachment style, may provide researchers with a better understanding of the role attachment plays in safe sex practices.
2. While the SSBQ has demonstrated strong internal validity as it did in the current study, the questionnaire does not allow for virgins to be included. Such exclusion does not allow for an examination of sexual behaviors or protective factors unique to virgins. Investigators who are interested in better understanding the factors researched in the current study (gender, self-esteem, and attachment style) and how they relate or differ among virgins and non-virgins should utilize a measure of sexual behavior and conduct studies that allow for virgins to be included.
3. Future researchers may consider utilizing a broader sample, including a more ethnically diverse population, in order to examine ethnicity differences among the factors examined in the current study. Similarly, it is recommended that future studies include a larger sample of male participants and include emerging adult undergraduate students from various disciplines. Future investigators may also consider studying these factors utilizing a community sample of

emerging adults. Lastly, researchers may consider utilizing gay and lesbian participants to examine their safe sex behaviors.

4. An important direction for future research in the study and understanding of safe sex behaviors is related to data analysis utilized to examine the relationship among self-esteem, gender, adult romantic attachment style, and safe sex behaviors in the current study. As indicated earlier, the literature on safe sex behaviors may benefit from researchers using a different analysis that would allow for a closer examination regarding identification of specific sexual behaviors that males and females are endorsing and report to be engaging in. For example, researchers may consider utilizing qualitative research to understand emerging adults phenomenological experiences related to the variables examined in the current study. This might provide more insight into specific behaviors that should be targeted when considering methods and programs related to prevention and intervention.

### **Summary**

Chapter V provided an overview of the study including a summary regarding the purpose of the study and brief synopsis of the study's sample and methodology. In summary, the present study extends existing literature related to emerging adults' safe sex behaviors. The purpose of the study was to investigate the association between romantic attachment style, self-esteem, and gender on safe sex behaviors among emerging adult undergraduate students. Results indicated that adult romantic attachment style, self-esteem, and gender together explain differences in levels of safe sex



behaviors among emerging adults. However, neither romantic attachment style nor self-esteem were found to uniquely explain differences in levels of safe sex behaviors. Finally, the current study found that gender explains differences in levels of safe sex behaviors with females reporting greater safe sex practices. The researcher provided suggestions for why no significance was found among some variables under study. Additionally, limitations of the current study were identified. Finally, the chapter concluded with an exploration of implications and suggestions for future research.

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## APPENDIX A

### INSTITUTIONAL REVIEW BOARD

UNIVERSITY OF  
NORTHERN COLORADO  
Institutional Review Board (IRB)

May 16, 2011

TO: Spencer Weiler  
ELPS

FROM: Maria Lahman, Co-Chair *ML*  
UNC Institutional Review Board

RE: Expedited Review of Proposal, *The Effects of Self-Esteem and Romantic Attachment on Safe Sex Behaviors Among Young College Students*, submitted by Erica Hope  
(Research Advisor: Brian Johnson)

First Consultant: The above proposal is being submitted to you for an expedited review. Please review the proposal in light of the Committee's charge and direct requests for changes directly to the researcher or researcher's advisor. If you have any unresolved concerns, please contact Maria Lahman, Applied Statistics and Research Methods, Campus Box 124, (x1603). When you are ready to recommend approval, sign this form and return to me.

I recommend approval as is.

*Spencer Weiler* 6/20/11  
Signature of First Consultant Date  
- with attached email conversations and  
modified document

The above referenced prospectus has been reviewed for compliance with HHS guidelines for ethical principles in human subjects research. The decision of the Institutional Review Board is that the project is approved as proposed for a period of one year: 7-5-11 to 7-5-12.

*M. Lahman* 7-5-11  
Maria Lahman, Co-Chair Date

Comments:

## APPENDIX B

### INFORMED CONSENT



Informed Consent for Participation in Research  
University of Northern Colorado

Project Title:  
The Effects of Self-Esteem and Romantic Attachment on  
Safe Sex Behaviors Among Young College Students

Researcher: Erica L. Hope, MA, CAC II, Ph.D. Candidate in Counseling Psychology  
Email: hope0885@bears.unco.edu  
Phone Number: (XXX) XXX-XXXX  
Research Advisor: Brian D. Johnson, Ph.D., Full Professor, Counseling Psychology  
Phone Number: (XXX) XXX-XXXX

Dear UNC Student,

My name is Erica Hope. I am a doctoral candidate in Counseling Psychology at the University of Northern Colorado and I am requesting your help with my research study.

The purpose of this study is to explore how people behave, feel about themselves, and their relationships. I am looking for male and female non-virgin undergraduate students between the ages of 18-25 years to help me with my research. If you agree to participate, I will provide you with a survey to complete that will take approximately 10-15 minutes. The survey asks a number of questions including information about your sexual behaviors, your feelings about yourself, and your romantic relationships. Examples of survey questions include: "I often worry that my partner will not want to stay with me" and "I feel that I have a number of good qualities," as well as "I insist on condom use when I have sexual intercourse" and "It is difficult for me to discuss sexual issues with my sexual partners." The last portion of the survey will ask you to respond to demographic questions. The survey questions, particularly those that ask about sexual behavior may be sensitive in nature. Your participation in this study will be helpful for professionals in their understanding of college student's health and relationships. Please answer all questions as honestly as possible. There are no right or wrong answers.

Your name will not be on this survey. After completing the survey, please place your survey in the provided manila envelope. All results will be reported in the aggregate to minimize identification of particular respondents. Although I cannot ensure complete confidentiality, this procedure is in an effort to maintain confidentiality between self-reported data and source of respondent. To protect your confidentiality, the surveys will be kept in a locked filing cabinet that only I will have access to. The foreseeable risks to your participation in this study, beyond those normally encountered during class-related activities, may be that you experience discomfort or adverse effects during and /or after completion of this survey. If you do experience any emotional discomfort due to the subject matter of the survey questions, contact information for counseling services available at the University of Northern Colorado is located at the end of this consent form. Additionally, contact information for medical assistance is located at the end of this form should you have any concerns regarding your sexual health practices. Your participation in this study will provide information for the development and bettering of college students' health prevention and intervention programs. Your participation in this survey is entirely voluntary. At any time during the completion of this survey you are free to stop and discontinue your participation. Participation or your refusal to participate in the study will in no way be linked or associated with your course grade or academic performance.

Please feel free to contact me if you have any questions or concerns about this research. Please retain this letter for your records. Thank you for assisting me with my research.

Sincerely,

Erica L. Hope, MA, CAC II  
Ph.D. Candidate in Counseling Psychology

Participation is voluntary. You may decide not to participate in this study. If you begin participation you may still decide to stop and withdraw at any time. Your decision will be respected and will not result in loss of benefits to which you are otherwise entitled. Having read the above and having had an opportunity to ask any questions, completion of the survey and/or return of the questionnaire indicates consent to participate in the study. Please retain this form for future reference. If you have any concerns about your selection or treatment as a research participant, please contact the Office of Sponsored Programs, Kepner Hall, University of Northern Colorado Greeley, CO 80639; 970-351-2161.

Confidential psychological services are provided to University of Northern Colorado students and members of the surrounding community at the Psychological Services Clinic (970-351-2730), located in McKee Hall.

Confidential psychological services are provided to University of Northern Colorado students at the University Counseling Center (970-351-2496), located in Cassidy Hall.

Sexual health services are provided to University of Northern Colorado students at the University Counseling Center (970-351-2412) located in Cassidy Hall.

Sexual health services are provided to Weld County residents at the Weld County Health Center (970-304-6410) located at 1555 N. 17<sup>th</sup> Ave., Greeley, CO.

## APPENDIX C

### INSTRUMENT



## Experiences in Close Relationships Scale–Revised

The statements below concern how you feel in emotionally intimate relationships. I am 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. I'm afraid that I will lose my partner's love.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

2. I often worry that my partner will not want to stay with me.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

3. I often worry that my partner doesn't really love me.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

4. I worry that romantic partners won't care about me as much as I care about them.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

5. I often wish that my partner's feelings for me were as strong as my feelings for him or her.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

6. I worry a lot about my relationships.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

7. When my partner is out of sight, I worry that he or she might become interested in someone else.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

8. When I show my feelings for romantic partners, I'm afraid they will not feel the same about me.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

9. I rarely worry about my partner leaving me.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

10. My romantic partner makes me doubt myself.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

11. I do not often worry about being abandoned.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

12. I find that my partner(s) don't want to get as close as I would like.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

13. Sometimes romantic partners change their feelings about me for no apparent reason.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

14. My desire to be very close sometimes scares people away.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

15. I'm afraid that once a romantic partner gets to know me, he or she won't like who I really am.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

16. It makes me mad that I don't get the affection and support I need from my partner.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

17. I worry that I won't measure up to other people.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

18. My partner only seems to notice me when I'm angry.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

19. I prefer not to show a partner how I feel deep down.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

20. I feel comfortable sharing my private thoughts and feelings with my partner.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

21. I find it difficult to allow myself to depend on romantic partners.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

22. I am very comfortable being close to romantic partners.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

23. I don't feel comfortable opening up to romantic partners.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

24. I prefer not to be too close to romantic partners.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

25. I get uncomfortable when a romantic partner wants to be very close.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

26. I find it relatively easy to get close to my partner.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

27. It's not difficult for me to get close to my partner.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

28. I usually discuss my problems and concerns with my partner.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

29. It helps to turn to my romantic partner in times of need.

Strongly disagree      1    2    3    4    5    6    7      Strongly agree

30. I tell my partner just about everything.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
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31. I talk things over with my partner.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
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32. I am nervous when partners get too close to me.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
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33. I feel comfortable depending on romantic partners.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
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34. I find it easy to depend on romantic partners.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
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35. It's easy for me to be affectionate with my partner.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
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36. My partner really understands me and my needs.

Strongly disagree	1	2	3	4	5	6	7	Strongly agree
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### Rosenberg Self-Esteem Scale

The questions below ask that you indicate how you generally feel about yourself. Please respond to each statement by circling a number to indicate how much you agree or disagree with the following statements:

	Strongly disagree	Disagree	Agree	Strongly agree
1. I feel that I'm a person of worth, at least on an equal basis with others.	1	2	3	4
2. I feel that I have a number of good qualities.	1	2	3	4
3. All in all, I am inclined to feel that I am a failure.	1	2	3	4
4. I am unable to do things as well as most other people.	1	2	3	4
5. I feel I do not have much to be proud of.	1	2	3	4
6. I take a positive attitude toward myself.	1	2	3	4
7. On the whole, I am satisfied with myself.	1	2	3	4
8. I wish I could have more respect for myself.	1	2	3	4
9. I certainly feel useless at times.	1	2	3	4
10. At times I think I am no good at all.	1	2	3	4

## Safe Sex Behavior Questionnaire

Directions: Below is a list of sexual practices. Please read each statement and respond by indicating your degree of use of these practices.

1 = Never

2 = Sometimes

3 = Most of the time

4 = Always

	Never	Sometimes	Most of the time	Always
1. I insist on condom use when I have sexual intercourse.	1	2	3	4
2. I use cocaine or other drugs prior to or during sexual intercourse.	1	2	3	4
4. I ask potential sexual partners about their sexual histories.	1	2	3	4
5. I avoid direct contact with my sexual partner's semen or vaginal secretions.	1	2	3	4
6. I ask my potential sexual partners about a history of bisexual/homosexual practices.	1	2	3	4
7. I engage in sexual intercourse on a first date.	1	2	3	4
8. I abstain from sexual intercourse when I do not know my partner's sexual history.	1	2	3	4
9. I avoid sexual intercourse when I have sores or irritation in my genital area.	1	2	3	4
10. If I know an encounter may lead to sexual intercourse, I carry a condom with me.	1	2	3	4
11. I insist on examining my sexual partner for sores, cuts, or abrasions in the genital area.	1	2	3	4
12. If I disagree with information that my partner presents on safer sex practices, I state my point of view.	1	2	3	4

13. I engage in oral sex without using protective barriers such as a condom or rubber dam.	1	2	3	4
14. If swept away in the passion of the moment, I have sexual intercourse without using a condom.	1	2	3	4
15. I engage in anal intercourse.	1	2	3	4
19. I avoid direct contact with my sexual partner's blood.	1	2	3	4
20. It is difficult for me to discuss sexual issues with my sexual partners.	1	2	3	4
21. I initiate the topic of safer sex with my potential sexual partner.	1	2	3	4
22. I have sexual intercourse with someone who I know is a bisexual or gay person.	1	2	3	4
23. I engage in anal intercourse without using a condom.	1	2	3	4
24. I drink alcoholic beverages prior to or during sexual intercourse.	1	2	3	4

## Demographic Data

Do not put your name on this data sheet. Please circle or fill in the appropriate response.

1. Age: \_\_\_\_\_
2. Gender (please circle):                      Female                      Male
3. Please specify year in school (please circle):  
Freshmen              Sophomore              Junior              Senior
4. Race/Ethnicity (circle all that apply):  
Caucasian/White    African American/Black    Hispanic/Latino/Mexican-American  
Native American    Asian American/Pacific Islander    Other \_\_\_\_\_
5. Have you ever had sexual intercourse (please circle)?  
YES              NO
6. Marital status (Please circle):  
Single              In a relationship              Married              Separated              Divorced



## APPENDIX D

JOURNAL MANUSCRIPT

### **Abstract**

The purpose of the study was to investigate the relationship among romantic attachment style, self-esteem, gender, and safe sex behaviors among emerging adult undergraduate students from a mid-sized western university. The participants included 155 male and female emerging adults who completed self-report questionnaires regarding romantic attachment style, self-esteem, and safe sex behaviors. A simultaneous multiple regression analysis was utilized to test the hypotheses. The analysis revealed statistical significance indicating that these variables taken together explain differences in levels of safe sex behaviors ( $R = .279$ ,  $F(3, 145) = 4.075$ ,  $p = .008$ ). Specifically, the results of the complete model indicated that the combination of romantic attachment style, self-esteem, and gender accounted for a significant portion of the variance (7.8%) in safe sex behaviors among emerging adults. Gender was found to be a significant predictor of safe sex behaviors after controlling for romantic attachment style and self-esteem. Specifically, the analysis revealed that females engage in safer sex behaviors compared to males. However, romantic attachment style was not a significant predictor of safe sex behaviors after controlling for gender and self-esteem. Lastly, the simultaneous multiple regression analysis revealed that self-esteem did not explain levels of safe sex behaviors after controlling for gender and romantic attachment style. Results from this study may help in the prevention of sexual risk behaviors, encourage safe sex practices, and protect individuals from the unintended consequences of risky sexual behaviors.

## **Background**

### **Consequences of Risky Sexual Behaviors**

Risky sexual behaviors are common among college students, and such behaviors carry negative consequences such as unplanned pregnancy and sexually transmitted illnesses (STIs) (Eisenberg, Neumark-Sztainer, & Lust, 2005). According to the Surgeon General (Satcher, 2001), approximately one-half of all pregnancies are unplanned, and about 19 million individuals are infected with STIs per year. The incidence of STIs among adolescents and college age individuals is staggering in the United States. For example, while individuals aged 15 to 24 years make up a quarter of those who are sexually active, it is this age group that contracts almost half of all new STIs at about 9.5 million new contractions per year (Centers for Disease Control [CDC], 2007). In addition, STI rates are on the rise in the western United States (CDC, 2006). Young women are especially impacted by STIs because of prevalence rates, biology, and consequences endured by women. Consequences of STIs include ectopic pregnancy, pelvic inflammatory disease (CDC, n.d.c), sexual dysfunction (Satcher, 2001), cancer, infertility, sterility (CDC, n.d.b), Human Immunodeficiency Virus (HIV) or Acquired Immune Deficiency Syndrome (AIDS), and even death (Ross, 2002). According to CDC (2009), approximately 56,300 Americans are newly diagnosed with HIV annually. Additionally, an estimated one million people in the United States have acquired HIV, with one in five of these individuals being unaware of their diagnosis (CDC, n.d.a). More alarming, individuals 20 to 24 years of age are among the top 4 age groups to be afflicted with HIV. In addition to physical

repercussions, unhealthy sexual behaviors carry psychological consequences (CDC, 2007), which can impact one's well-being as well as future relationships, families, and communities.

### **Emerging Adulthood**

Many college students are in the developmental stage termed emerging adulthood, which takes place after adolescence and before adulthood from ages 18 to 25 (Arnett, 2000). For many emerging adults this time can be exciting; however, it is also a time of significant change and transition. As these individuals are no longer children, most gain more independence and are no longer under parental supervision and control. This period is a time of exploration of the self, including exploration of intimate relationships, career, and personal beliefs (Arnett, 2000). Additionally, a large number of emerging adults are waiting to marry until after they have completed college and established their careers. With emerging adults' increased freedoms, decreased parental supervision, new social experiences, and delayed commitment to marriage, many emerging adults engage in risky behaviors, such as alcohol abuse and experimentation (Gullette & Lyons, 2006), sex with multiple partners, and unprotected sex (Arnold, Fletcher, & Farrow, 2002).

### **Emerging Adulthood and Sexual Behaviors**

Given the prevalence of risky sexual behaviors among emerging adults and other populations, researchers have sought to understand the factors that lead to such behaviors in order to promote and improve sexual health (Satcher, 2001). Factors that lead college students to participate in risky sexual behaviors are not well understood

(Gullette & Lyons, 2006). Researchers have found that although these individuals may be aware of the consequences of such behavior, they continue to be at high risk for suffering from the devastating consequences of this behavior (Becker, Rankin, & Rickel, 1998). Also, the field of preventative research of high risk sexual behavior is fairly new, and interventions that have been put in place have not been consistently successful in increasing safe sex behaviors (Becker et al., 1998).

### **Promoting Safe Sex**

While education on safe sex practices is likely to be an important factor in the prevention of STIs, the literature (Baldwin & Baldwin, 1988; DiIorio, Parsons, Lehr, Adame, & Carlone, 1993; Feeney, Peterson, Gallois, & Terry, 2000) illustrates that safe sex education and knowledge about sexually transmitted diseases (STDs) including AIDS may not predict safe sex practices, as studies have found differences in the relationship between sex education and safe sex behaviors. Additionally, primary preventative resources for ensuring sexual health include health courses and media messages are based on the concept that knowledge of potential consequences of risky sexual behaviors will prevent unsafe sex (Parsons, Halkitis, Bimbi, & Borkowski, 2000). For example, despite the majority of college students (90%) reporting that they are knowledgeable about how AIDS and other STDs are transmitted and how to prevent transmission of these diseases, many of these individuals do not practice safe sex (Baldwin & Baldwin, 1988; DiIorio et al., 1993; Feeney et al., 2000).

A study conducted by Baldwin and Baldwin (1988) showed that while the majority of the college student subjects scored high on knowledge of HIV/AIDS transmission, very few were worried about contracting HIV. In addition, 19% reported having casual sex during the last 3 months, with more than half of the participants (66%) reporting they had not used condoms during sex over the last 3-month period, and only 13% reported consistent condom use. In a more recent study, which investigated safe sex practices among college students, 50% of the participants reported frequent condom use, with 30% indicating they used a condom most of the time, and approximately 10% reported that they had never used a condom (DiIorio, Dudley, Lehr, & Soet, 2000). While in another study, only 19% of the female college student participants reported consistent condom use (Wayment & Aronson, 2002).

### **Attachment**

Attachment theory was originally developed by John Bowlby (1969) to explain the emotional bond between an infant and his or her caregiver, which is impacted by the interaction between the two. Bowlby (1979) later stated that attachment extends beyond infancy and continues throughout the lifespan. Attachment theory posits that individuals develop mental models, or beliefs about the self and others, which in turn, impact those persons' thoughts, feelings, and behaviors in relation to the self and interpersonal relationships (Bowlby, 1973, 1980).

Hazan and Shaver (1987) further developed attachment theory to conceptualize and explain the dynamics of adult romantic relationships. They found that the primary caregiver and child relationship shapes one's attachment style. In addition, this

attachment style remains relatively stable throughout adulthood and greatly impacts the nature and quality of adult intimate relationships. The researchers utilized three styles of adult romantic attachment, which included avoidant, anxious, and secure types. Securely attached individuals were described as self-confident individuals who engaged in trusting romantic relationships and experienced positive emotions and friendships. Those with avoidant styles were described as untrusting and distant persons who were fearful of closeness. Lastly, anxious characteristics included preoccupation and vulnerability to and feelings of loneliness and insecurity.

Researchers have found that a relationship exists between attachment style and sexual behavior (Bogaert & Sadava, 2002; Ciesla, Roberts, & Hewitt, 2004) and self-esteem and attachment style (Feeney & Noller, 1990). In addition, although results are sometimes contradictory, numerous investigators have identified correlations between self-esteem and sexual risk taking behaviors (Adler & Hendrick, 1991; Ethier et al., 2006; Gullette & Lyons, 2006; Hollar & Snizek, 1996; Walsh, 1991). With regard to attachment style and self-esteem, one study demonstrated that individuals with secure attachment styles reported greater social and familial relationship self-esteem than persons with avoidant and anxious–ambivalent styles (Feeney & Noller, 1990).

### **Attachment and Sexual Behavior**

With respect to attachment style and risky sexual behavior, individuals with secure attachment styles who report positive mental models of the self, report having fewer sexual partners than those with insecure attachment styles (Ciesla et al., 2004; Gentzler & Kerns, 2004). Moreover, Feeney et al. (2000) found that anxiously

attached individuals engage in more unsafe sex compared to securely attached individuals. Similarly, individuals with avoidant attachment styles had more frequent casual sex partners compared to those with secure attachment styles (Paul, McManus, & Hayes, 2000). Furthermore, one study found that anxiously attached females were more likely to have sex even when they did not want to, compared to those with secure and avoidant attachment styles (Impett & Peplau, 2002). Lastly, adolescent boys and girls with insecure parent–child attachment patterns were more likely to engage in sexual behavior at an earlier age compared to their securely attached peers.

### **Self-Esteem and Sexual Behaviors**

Past researchers have found a relationship between sexual behavior and self-esteem frequently with inconsistent findings. For example, Walsh (1991) investigated the relationship among men's and women's self-esteem and sexual behaviors. Walsh found that both men and women with high self-esteem levels had significantly more sexual partners than individuals with low self-esteem. Furthermore, Hollar and Snizek (1996) found that male and female college students with high levels of self-esteem were more likely to engage in sexual risk taking behaviors than those with low to medium self-esteem levels. In contrast, in a study conducted by Gullette and Lyons (2006) college students with low self-esteem reportedly engaged in more risky sexual behaviors and had multiple sex partners compared to those with greater self-esteem. Additionally, Adler and Hendrick's (1991) research indicated a relationship between high self-esteem and frequency of contraception use. Lastly, according to Ethier et al. (2006), adolescent females with low self-esteem had sex at an earlier age, with risky



partners, and engaged in unprotected sex compared to those with greater levels of self-esteem. Given that a number of gender differences have emerged in past research related to safe sex behavior, self-esteem, and romantic attachment, it appears that gender is an important variable to assess and, therefore, was included among the variables investigated in the current study (Brodbeck, Vilen, Bachmann, Znoj, & Alsaker, 2010; Feeney et al., 2000; Gentzler & Kerns, 2004; Gullette & Lyons, 2006).

The purpose of the current study was to enhance the literature by providing a greater understanding of the relationship among self-esteem, gender, and romantic attachment on safe sex behavior among young men and women. Understanding the roles that these variables play in young men's and women's sexual behavior can help prevent risk behaviors, encourage safe sex practices, and protect these individuals from the unintended consequences of risky sexual behaviors. In addition, this study hopes to provide clinicians with knowledge regarding the traits that may impact an individual's sexual behaviors and, in turn, provide more effective and targeted clinical interventions, as well as aid in the identification of those who are at-risk for engaging in risky sexual behaviors and assist clients in better understanding their behaviors. Lastly, by understanding how these factors impact sexual behavior, parents, health care providers, mental health providers, and teachers can be better educated and prepared to assist in the establishment of safer sexual practices for adolescents and young men and women.

### **Research Hypotheses**

- H1 Romantic attachment style (as measured by the Experiences in Close Relationships–Revised Scale), levels of self-esteem (as measured by the

Rosenberg Self-Esteem Scale), and gender (as identified by the demographic questionnaire) together explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students (as measured by the Safe Sex Questionnaire).

- H2 Secure romantic attachment style (as measured by the Experiences in Close Relationships–Revised) explains higher levels of safe sex behaviors (as measured by the Safe Sex Behavior Questionnaire) among male and female emerging adult undergraduate students after controlling for levels of self-esteem and gender.
- H3 Higher levels of self-esteem (as measured by the Rosenberg Self-Esteem Scale) explains greater levels of safe sex behaviors (as measured by the Safe Sex Behavior Questionnaire) among male and female emerging adult undergraduate students after controlling for romantic attachment style and gender.
- H4 Gender (identified utilizing the demographic questionnaire) explains differences in levels of safe sex behaviors (as measured by the Safe Sex Questionnaire) among male and female emerging adult undergraduate students after controlling for levels of self-esteem and romantic attachment style.

### **Research Design**

The research design utilized in this study was a multivariate correlational, within-group research design utilizing convenience sampling. The study included a demographic questionnaire and three self-report survey-based measures to examine how gender, romantic attachment style, and self-esteem impact levels of safe sex behaviors in a target population of emerging adult college men and women. The independent or predictor variables included romantic attachment style, gender, and self-esteem. The dependent or criterion variable was safe sex behaviors. The purpose of utilizing this research design was to determine the nature of the correlations between values of romantic attachment style, gender, and self-esteem with values of safe sex behaviors.

## **Method**

In order to recruit volunteers for the study, the researcher contacted various undergraduate professors at the university via e-mail and notified the professors of the study and requested permission to speak with their students during the last portion of one of their classes to solicit students' participation in the study. In addition, a request was completed to utilize the School of Psychological Sciences' undergraduate participant pool by submitting an application to the participant pool coordinator. Prior to data collection, approval was sought and granted from the Internal Review Board (IRB) at the designated university.

For inclusion in the study's analyses, participants were required to be a non-virgin, undergraduate student between the ages of 18 to 25 years. The survey was paper-and-pencil, self-administered, totaled 6 pages in length, and included 70 questions and 6 demographic related questions. The survey was comprised of two separate sections, and the sequence of the questionnaires was alternated to account for survey fatigue. The first section of the survey measured the constructs of interest in the study including romantic attachment style, self-esteem, and safe sex behavior. The second section included a demographic questionnaire.

## **Instruments**

**Safe Sex Behavior Questionnaire (SSBQ).** The SSBQ (DiIorio, Parsons, Lehr, Adame, & Carlone, 1992) was utilized to measure safe sex behavior. The original SSBQ was a 27-item questionnaire, which measures frequency of use of "sexually related practices that avoid or reduce the risk of exposure to HIV and the

transmission of HIV” (DiIorio et al., 1992, p. 204). The items on the SSBQ are intended to measure frequency of safe sex behaviors. Construct validity and factor analyses determined the original measure to contain three irrelevant and weak items; therefore, these three items were removed from the original measure. Hence, the final instrument contains a total of 24 items.

The SSBQ asks respondents to rate the extent to which they engage in safe sex practices. Sample items include, “If swept away in the passion of the moment, I have sexual intercourse without using a condom” and “If I know an encounter may lead to sexual intercourse, I carry a condom with me.” Nine items on the SSBQ are worded negatively and 15 are positively worded. Participants respond to the 24 items on a 4-point Likert-type scale ranging from 1 (*never*) to 4 (*always*). Scores are summed to provide a total safe sex behavior score. Total scores on the SSBQ can range from 24 to 96, with higher scores indicating higher rates of use of safer sex practices.

The SSBQ was originally normed on three different samples of male and female undergraduate college students for a total of 794 participants (DiIorio et al., 1992). During the development of the SSBQ instrument, DiIorio et al. (1992) conducted a content validity procedure utilizing experts in the area of safe sex practices. These experts examined each question to determine level of pertinence to safe sex practices and found a content validity index of 98%, meaning that the experts found 98% of the items in the instrument to be relevant to safe sex practices. Researchers (DiIorio et al., 1992) also sought to provide evidence for construct validity by correlating the SSBQ total with other tests related to risk taking behavior

and assertiveness. Summed scores on the SSBQ were shown to significantly correlate with both risk-taking behaviors (Risk-Taking Questionnaire) and assertiveness (College Self-Expression Scale) constructs, therefore, supporting construct validity of the SSBQ (DiIorio et al., 1992).

Utilizing a sample of male and female college students, an initial exploratory factor analysis was conducted by DiIorio et al. (1992) and yielded significant differences in sexual practices between male and female participants. As a result, separate analyses were conducted by gender. The factor analysis computed for both men and women revealed a five-factor solution that included use of condoms, avoidance of anal intercourse/homosexual practices, use of assertiveness skills, avoidance of body fluids, and avoidance of risky behaviors. Cronbach's alpha reliabilities for both genders on the SSBQ factors ranged from .52 to .85 for females and .52 to .84 for males. Cronbach's alpha for the sum of the 27 items on the SSBQ was .82 (DiIorio et al., 1992). Lastly, DiIorio et al. (1992) performed correlations between the factors and found moderate correlations between the following factors: avoidance of risky behaviors and use of assertiveness skills, as well as use of assertiveness skills and use of condoms. For the current study, the Cronbach's alpha was 0.844.

Within the original population on which the measure was normed, the SSBQ total score was shown to have high test-retest reliability among females ( $r = .83$ ) and males ( $r = .82$ ) using a two-week interval (DiIorio et al., 1992). This high reliability estimate indicates that scores from the SSBQ have been found to provide stable

estimates of sexual behavior practices over time in a population of female undergraduate students. Since its origination, the SSBQ has been utilized in a number of other studies using samples of college students (DiIorio et al., 2000; DiIorio et al., 1993; Williams & Goebert, 2003). DiIorio et al. (1993), which included 352 subjects, 312 of which were male and 40 were female, yielded a Cronbach's alpha of .82 on the SSBQ.

**Rosenberg Self-Esteem Scale (RSES).** The RSES (Rosenberg, 1965) was used to measure self-esteem level. The scale is a 10-item self-report questionnaire that measures global feelings of self-worth (Rosenberg, 1965). The scale includes five negatively worded statements and five positively worded statements about the self. Sample items include, "I feel that I have a number of good qualities" and "I take a positive attitude toward myself." Participants respond to the questions on a 4-point Likert-type scale with responses ranging from 1 (*strongly agree*) to 4 (*strongly disagree*). Items are summed to obtain a total score that ranges from 10 to 40. Higher scores indicate greater levels of self-esteem.

The RSES was originally normed on 5,024 junior and senior high school students. With this sample, scores from the RSES were shown to have high test-retest reliability ( $r = .85$ ) using a two-week interval (Silber & Tippet, 1965). Fleming and Courtney (1984) also reported a high test-retest reliability ( $r = .82$ ) among college students using a one-week interval. These high reliability estimates indicated that the RSES provides stable estimates of self-worth over time for a population of junior and senior high school students as well as college students. O'Brien (as cited in Wylie,

1989) conducted a factor analysis and found the RSES to be a unidimensional measure. Similarly, Hensley and Roberts (1976) and Hensley (1977) conducted factor analyses using a sample of male and female college students and found the RSES to be unidimensional. In support of the measure's internal consistency, Broemer and Blumle (2003) reported a Cronbach's alpha of .87 among a sample of college students, and Hollar and Snizek (1996) reported a Cronbach's alpha of .86. The Cronbach's alpha for the current study was 0.896.

**Experiences in Close Relationship Scale–Revised (ECR–R).** The ECR–R (Fraley, Waller, & Brennan, 2000) was utilized to measure attachment style to romantic partners. The scale is a 36-item self-report questionnaire in which participants respond to statements by rating their experiences and feelings in romantic relationships. This measurement consists of two attachment style dimensions including avoidance and anxiety. The questionnaire includes 18 items that measure avoidant dimensions of attachment and 18 items that measure attachment anxiety (Fraley et al., 2000).

Participants respond to items using a 7-point Likert-type scale with responses ranging from 1 (*disagree strongly*) to 7 (*agree strongly*). Anxiety items and avoidant items are summed separately, with higher scores indicating higher levels of attachment styles within these categories. Higher scores are indicative of insecure attachment styles, and lower scores are indicative of more secure attachments. Examples of avoidant attachment include, “I prefer not to show a partner how I feel deep down” and “I find it difficult to allow myself to depend on romantic partners.” Sample

anxiety items include, “When I show my feelings for romantic partners, I’m afraid they will not feel the same about me” and “I often worry that my partner will not want to stay with me.”

Utilizing a sample of undergraduate students, Fairchild and Finney (2006) conducted a factor analysis on the ECR–R and found support for a two-factor solution, the dimensions identified as avoidance and anxiety. The Cronbach’s coefficient alpha for the avoidance subscale was .93 and .92 for the anxiety subscale. Similarly, Sibley, Fischer, and Liu (2005) conducted a factor analysis on the ECR–R using a sample of undergraduate college students and also found support for a two-factor solution. Sibley et al. reported a Cronbach’s coefficient alpha of .93 for the anxiety subscale and .94 for the avoidance subscale. The Cronbach’s coefficients for the current study were 0.932 for the anxiety subscale, 0.946 for the avoidant subscale, and 0.950 for the total scale. These studies provide evidence for excellent internal consistency for the ECR–R.

In addition, Sibley et al. (2005) also found support for good convergent and discriminant validity. Lastly, the ECR–R has been shown to have high test-retest reliability in undergraduate college students, ( $r = .92 = \text{anxiety}$ ;  $.90 = \text{avoidance}$ ) using a three-week interval. This high reliability estimate indicates that scores from the ECR-R have been found to provide stable estimates of attachment style over time in a population of undergraduate college students.

**Demographic Questionnaire.** A demographic questionnaire was completed by participants and included age, gender, year in school, marital status, and ethnicity.



The questionnaire also included a question eliciting information as to whether or not the participant had ever had sexual intercourse.

### **Participants**

A total of 191 surveys were completed, however of the 191 surveys administered, only 155 were included in the analyses as 36 of the respondents had never engaged in sexual intercourse, which was an inclusion requirement of the current study (non-virgin status). Additionally, among the 155, four participants did not complete the demographics portion of the survey, however, their data were retained for the analyses. Lastly, in order for a survey to be deemed as adequately complete to be incorporated into the current study, 90% of each of the three measures were required to be completed by each participant; as a result, one survey was considered incomplete and not included in the data analyses.

## **Results**

### **Descriptive Statistics**

Demographic information collected from respondents included age, gender, year in school, ethnicity, and marital status. Additionally, one question inquired as to whether or not the individual had ever engaged in sexual intercourse. Among the 151 participants who completed the demographics portion of the survey, their ages ranged from 18 to 24 years with a mean age of 19.34 ( $SD = 1.326$ ). One hundred seventeen of the respondents were female ( $n = 117$ , 75.5%) and 34 were male ( $n = 34$ ; 21.9%). The majority of the participants self-identified as Caucasian ( $n = 114$ , 73.5%) with the remainder of the sample identifying themselves as African American ( $n = 7$ , 4.5%),

Hispanic ( $n = 17$ , 11%), Asian American ( $n = 9$ , 5.8%), and Bicultural/Multicultural ( $n = 4$ , 2.6%). Seventy-six (49%) participants were single (not in a relationship), 72 (46.5%) were in a relationship, 2 (1.3%) were married, 1 (0.6%) was separated from his or her spouse, and none reported being divorced. Lastly, 39.4% ( $n = 61$ ) were freshman, 29% ( $n = 45$ ) were sophomores, 18.1% ( $n = 28$ ) were juniors, and 11% ( $n = 17$ ) were seniors (see Table 1). The means and standard deviations for safe sex behavior scale, the self-esteem scale, and attachment scale are reported in Table 2.

The following research questions guided the study:

- Q1 To what extent do levels of self-esteem, gender, and romantic attachment style taken together, explain differences in levels of safe sex behaviors in male and female emerging adult undergraduate students?
- Q2 Does romantic attachment style explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for levels of self-esteem and gender?
- Q3 Does level of self-esteem explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for romantic attachment style and gender?
- Q4 Does gender explain differences in levels of safe sex behaviors in male and female emerging adult undergraduate students after controlling for romantic attachment style and levels of self-esteem?

Given that the current study included one continuous dependent variable (safe sex behavior), one categorical independent variable (gender), and two continuous independent variables (self-esteem and romantic attachment style) to measure the relationship among gender, self-esteem, romantic attachment style, and safe sex behavior, a simultaneous multiple regression analysis was utilized. All variables were entered into the model simultaneously. Results of the correlational matrix for the

regression analysis of romantic attachment style, self-esteem, and safe sex behavior are shown in Table 3.

One simultaneous multiple regression analysis was used to test the following four hypotheses as shown in Table 4.

### **Hypothesis H1**

- H1 Romantic attachment style (as measured by the Experiences in Close Relationships–Revised Scale), self-esteem (as measured by the Rosenberg Self-Esteem Scale), and gender (as identified by the demographic questionnaire) together explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students (as measured by the Safe Sex Questionnaire).

Results from the simultaneous multiple regression analysis indicated that the combination of romantic attachment style, self-esteem level, and gender explained a significant proportion of the variance in the levels of safe sex behaviors among emerging adults within the sample,  $R = .279$ ,  $F(3, 145) = 4.075$ ,  $p = .008$ . The model yielded a coefficient of determination (R square) of 0.078, indicating that the complete model accounted for 7.8% of the variance, or, 7.8% of the variance in the dependent variable (safe sex behavior) is explained by the three predictor variables (romantic attachment style, self-esteem, and gender). Given the significant  $p$  value ( $p = .008$ ), the results support Hypothesis H1.

### **Hypothesis H2**

- H2 Secure romantic attachment style (as measured by the Experiences in Close Relationships–Revised) explains higher levels of safe sex behaviors (as measured by the Safe Sex Behavior Questionnaire) among male and female emerging adult undergraduate students after controlling for levels of self-esteem and gender.

Results from the simultaneous multiple regression analysis indicated that romantic attachment style did not explain a significant proportion of the variance in levels of safe sex behaviors among the sample utilized in the current study after controlling for self-esteem level and gender ( $\beta = .054, t = .538, p = .591$ ). Therefore, the data did not support Hypothesis H2 of the current study.

### **Hypothesis H3**

- H3 Higher levels of self-esteem (as measured by the Rosenberg Self-Esteem Scale) explains greater levels of safe sex behaviors (as measured by the Safe Sex Behavior Questionnaire) among male and female emerging adult undergraduate students after controlling for romantic attachment style and gender.

Results from the simultaneous multiple regression analysis indicated that self-esteem level did not explain a significant proportion of the variance in the levels of safe sex behaviors among the sample of the current study after controlling for romantic attachment style and gender ( $\beta = .046, t = .456, p = .649$ ). Thus, the data did not support Hypothesis H3 of the current study.

### **Hypothesis H4**

- H4 Gender (identified utilizing the demographic questionnaire) explains differences in levels of safe sex behaviors (as measured by the Safe Sex Questionnaire) among male and female emerging adult undergraduate students after controlling for levels of self-esteem and romantic attachment style.

Results of the regression analysis indicated that gender explained a significant proportion of the variance in levels of safe sex behaviors among emerging adults ( $\beta = -.284, t = -3.481, p < .05$ ). Gender was negatively related to safe sex behaviors, indicating that gender has an impact on levels of safe sex behaviors when attachment

style and self-esteem level are controlled for. More specifically, lower coded participants engaged in safer sex behaviors, indicating that females engaged in higher levels of safe sex behaviors compared to males. Given the significant  $p$  value ( $p < .05$ ), the results support Hypothesis H4.

## **Discussion**

### **Research Question Q1**

Q1 To what extent do level of self-esteem, gender, and romantic attachment style taken together, explain differences in levels of safe sex behaviors in male and female emerging adult undergraduate students?

It was hypothesized that romantic attachment, self-esteem, and gender together explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students. This relationship was hypothesized given that a review of the literature identified an association between sexual behavior and attachment, self-esteem, and gender. For example, investigators have found that securely attached individuals have fewer sexual partners (Ciesla et al., 2004; Gentzler & Kerns, 2004), engage in fewer unsafe sexual behaviors (Feeney et al., 2000; Impett & Peplau, 2002), and have fewer casual sex partners (Paul et al., 2000). Additionally, researchers have found significant correlations between self-esteem and safe sex behavior, often with conflicting results. Specifically, various researchers have determined that individuals with high self-esteem engage in more risky sexual behavior (Hollar & Snizek, 1996; Walsh, 1991), while more recent research has found those with low self-esteem engage in riskier sexual behavior (Ethier et al., 2006; Gullette & Lyons, 2006). Lastly, a number of gender differences have emerged in the literature regarding safe sex

behaviors (Fischtein, Herold, & Desmarais, 2007; Gentzler & Kerns, 2004; Parsons et al., 2000; Walsh, 1991). Therefore, due to the previously identified studies demonstrating a relationship among sexual behavior and gender, attachment, and self-esteem, the present researcher hypothesized that romantic attachment style, self-esteem, and gender together would explain differences in levels of safe sex behaviors among male and female emerging adults.

The analysis revealed statistical significance indicating that these variables taken together explain differences in levels of safe sex behaviors ( $R = .279$ ,  $F(3, 145) = 4.075$ ,  $p = .008$ ). Specifically, the results indicated that the complete model, which combined romantic attachment style, self-esteem level, and gender, explained a significant proportion of the variance in safe sex behaviors among emerging adults utilizing the sample in the current study. Specifically, 7.8% of the variance in safe sex behaviors was explained by the three predictor variables (romantic attachment style, self-esteem, and gender). Given the statistical significance, Hypothesis H1 was supported. The relationship among the individual independent variables and the dependent variable were examined in greater detail in Hypotheses H2, H3, and H4.

## **Research Question Q2**

- Q2 Does romantic attachment style explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for levels of self-esteem and gender?

Due to previous research in the field of sexual behavior identifying a relationship among these variables (romantic attachment style and safe sex behaviors), it was

hypothesized that secure romantic attachment style would explain higher levels of safe sex behaviors among emerging adult undergraduate students after controlling for self-esteem level and gender.

Contrary to the hypothesis, there was no statistically significant difference found between safe sex behaviors and romantic attachment style. Such a finding is contradictory to past research, which has identified a number of correlations between attachment and sexual behaviors. For example, investigators have found that securely attached individuals have fewer sexual partners (Ciesla et al., 2004; Gentzler & Kerns, 2004), engage in fewer unsafe sexual behaviors (Feeney et al., 2000), have fewer casual sex partners (Paul et al., 2000), and even have sex when they do not feel like it (Impett & Peplau, 2002). Individuals endorsing insecure attachment styles report they had their first sexual experiences at earlier ages than those with secure attachment styles (Bogaert & Sadava, 2002).

One potential explanation for this hypothesis not being supported is related to participants' lack of clearly identified attachment style in the current study. While the majority of the participants in the study endorsed safe sex practices ( $M = 72.89$ ,  $SD = 10.51$ ), descriptive statistics from the ECR-R (attachment style questionnaire) demonstrated substantial variability in endorsement of attachment style ( $M = 102$ ,  $SD = 36.19$ ). This outcome may be attributed to the survey utilized to identify participants' attachment style. While the ECR-R has demonstrated excellent psychometric properties (as it did in the current study), the survey utilizes a 7-point Likert-type scale. The responses for the scale allow the participant to respond to

statements by rating their experiences and feelings in romantic relationships with 1 being *strongly disagree* and 7 being *strongly agree* with the statement. Respondents in the current study may have had the tendency to avoid endorsing extremes on the scale, therefore, not identifying a specific attachment style. A similar concern or possibility for lack of significance is related to the instructions for the attachment survey. The instructions may have been confusing and unclear to students. Participants were to respond with how they “generally experience relationships” not just the relationship they are currently in, which may have led to inaccurate reporting due to potential confusion and lack of clarity.

Another possible explanation for the lack of significant findings between romantic attachment style and safe sex behaviors may be related to the scale used to assess romantic attachment style. Utilization of a different type of measurement may have yielded different results.

### **Research Question Q3**

**Q3** Does level of self-esteem explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for romantic attachment style and gender?

It was hypothesized that higher levels of self-esteem would explain greater levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for romantic attachment style and gender. This relationship was hypothesized as a number of past research studies have demonstrated a significant relationship between these variables.



In regard to self-esteem and sexual behaviors, previous researchers have found contradictory results among these variables. For example, Hollar and Snizek (1996) found that male and female undergraduate college students who endorsed high levels of self-esteem engaged in unprotected sex, intercourse with multiple partners, and engaged in sex with partners who had multiple sex partners. However, these same individuals reported safer sex practices related to sex with drug abusers, partners with HIV, and unprotected anal sex. In addition, Walsh's (1991) findings indicated that men and women with high self-esteem reported multiple sex partners.

On the contrary, more recent researchers such as Gullette and Lyons (2006) found young adults with low self-esteem had the tendency to engage in risky behaviors compared to those with higher self-esteem. Such risky behaviors included consumption of greater amounts of alcohol, multiple sex partners, and infrequent and inconsistent condom use. Similarly, Ethier et al. (2006) found correlations between low self-esteem and risky sexual behaviors and earlier age of first sexual encounter and engaging in sex with risky partners.

Given that more recent studies (Either et al., 2006; Gullette & Lyons, 2006) have found that individuals with low self-esteem engage in more risky sexual behaviors compared to those with high self-esteem, these findings guided Hypothesis H3 of the current study. The results from the multiple regression analysis indicated that higher levels of self-esteem do not explain greater levels of safe sex behavior among emerging adults. Therefore, self-esteem was not a significant predictor of safe sex behavior, and Hypothesis H3 was not supported. This finding does not come as a

surprise given numerous conflicting findings related to sexual behaviors and self-esteem level. One possible explanation for the lack of significance between levels of self-esteem and safe sex behaviors may be related to the type of questionnaire utilized to measure self-esteem level. Utilization of a different questionnaire may yield different results.

Another possible explanation for the lack of significance between self-esteem and safe sex behaviors may be due to the sample utilized in the study. More specifically, the current study included participants who have had sexual intercourse; if the study would have included virgins, such an inclusion may have shed more light on whether a relationship exists between these two variables as it would have allowed the researcher to assess level of self-esteem in individuals who do not engage in sexual risk taking behaviors related to intercourse.

Another possible explanation for the lack of significant findings may be related to the homogenous nature of the sample. Specifically, a convenience sample of voluntary participants, which consisted primarily of Caucasian, female, undergraduate psychology majors, was utilized in the present study. Perhaps if the sample would have consisted of a more heterogeneous sample, including a more ethnically diverse population, a relationship or pattern may have emerged between self-esteem and sexual behavior.

#### **Research Question Q4**

- Q4 Does gender explain differences in levels of safe sex behaviors in male and female emerging adult undergraduate students after controlling for romantic attachment style and levels of self-esteem?

It was hypothesized that gender would explain differences in levels of safe sex behaviors among male and female emerging adult undergraduate students after controlling for self-esteem level and romantic attachment style. This relationship was hypothesized because several past researchers have found a significant relationship among these variables. Fischtein et al. (2007) found that men reported earlier age of first sexual encounter, more willingness to engage in casual sex, and greater number of lifetime sexual partners. Similarly, Walsh (1991) indicated that men reported significantly more sex partners than women. Other investigators (Parsons et al., 2000) found that females experienced less temptation to engage in risky sexual behaviors and reported greater perceived cost to unprotected sex and greater benefits to using condoms.

Results from the multiple regression analysis supported Hypothesis H4 that gender explains differences in levels of safe sex behaviors among emerging adults, therefore, providing support that gender differences exist in sexual behaviors. Results indicated that women engage in safer sexual behaviors compared to men. Such findings are consistent with the research of the above identified literature, which identified men as engaging in more risky sexual behaviors.

### **Limitations**

There were several possible limitations to the present study that should be considered. The first limitation relates to the utilization of a convenience sample, which may impact external validity and generalizability to a larger population. The current study utilized a convenience sample that consisted of emerging adult

undergraduate students ages 18 to 25, from a mid-sized university. The researcher contacted various undergraduate professors requesting access to elicit volunteers to participate and also utilized the School of Psychological Sciences' undergraduate participant pool in which undergraduate students taking psychology classes volunteer to participate in studies conducted by graduate students. Even though the current study's demographics were representative and similar to that of the university from which the respondents were recruited, every individual from the population did not have an opportunity to participate; therefore, true random sampling was not utilized. While it should be noted that use of convenience sampling is frequently utilized in psychological studies, as true random sampling is generally not conducted in behavioral sciences research, such sampling procedures may effect external validity, and therefore, the results of the current study should be interpreted with this in mind.

A second limitation is similar to the first and is related to the homogeneous nature of the sample utilized in the current study. The sample primarily consisted of Caucasian, female, undergraduate psychology majors, which limits the generalizability and may impact the external validity of the study.

Third, related to the significant findings in Hypothesis H4 regarding gender and sexual behavior in which a significant relationship was determined to exist between these factors, results should be interpreted with caution due to the disproportion of males to females included in the study. Also the statistical analysis in the study allowed for the researcher to determine if a relationship existed between gender and sexual behaviors. The analysis revealed that male participants endorsed

more sexual risk taking behavior and females endorsed safer sex practices; it did not, however, allow the researcher to identify specific behaviors that were endorsed. While it was not a goal of the current study, future researchers may consider utilizing analyses that allow for a closer examination regarding identification of specific sexual behaviors that males and females are endorsing as this would provide more insight into specific behaviors that should be targeted when considering prevention and intervention.

The fourth limitation is related to those inherent in self-report measures and studies involving questions sensitive in nature such as sexual behavior. Given the sensitive nature of sexual behavior, one concern is that of inaccurate reporting, specifically, socially desirable reporting, underreporting, and inability to accurately recall behaviors. However, measures were taken to minimize socially desirable responses and maintain confidentiality and anonymity with the hope of obtaining accurate and honest responses. These measures included respondents did not include their name on the survey and numerical identifiers were utilized. Additionally, participants placed their survey in a large envelope with all other participants' surveys upon completion. Lastly, participation was voluntary and there were no penalties for non-participation or stopping prematurely.

Fifth, no cause and effect relationship can be inferred from the results due to the study's statistical design, which utilized simultaneous multiple regression analysis. Such an analysis can only determine if a correlational relationship exists among the variables; it does not allow for causation to be identified. Future researchers may

choose to utilize statistical analyses that extend beyond identification of correlational relationships and allow for richer, more elaborate conclusions to be drawn.

A sixth concern or limitation is related to the exclusion of virgins from the current study. This exclusion did not allow for this group of individuals' attachment style or self-esteem level to be investigated, which could have provided a wealth of information related to the variables under study, in turn, providing a more comprehensive explanation of the study's results. Such an inclusion may have allowed for insights into virgins' sexual behaviors, self-worth, and experiences of relationships. For example, while virgins may be thought of as uninvolved in or considered to be at low risk for sexual risk taking behaviors and the many consequences, it could be quite the contrary. Virgins may be engaging in risky sexual behaviors such as unprotected oral sex or oral sex with casual partners and with multiple partners, etc. This particular study did not allow for data to be collected from virgins given the nature of the SSBQ, which only allows for information to be gathered from individuals who have engaged in sexual intercourse.

### **Implications**

While sexual risk taking behaviors are a complex area to examine and study, it appears that many variables impact an emerging adult's sexual behaviors. Although the current study did not support all hypotheses being examined, there are still important implications for medical and mental health professionals, school personnel, counselors, and administrators, parents, and emerging adults.

Research has demonstrated that sex education and knowledge about STIs does not always predict or prevent sexually risky behaviors (Dilorio et al., 1993). The results of the current study are important as a relationship was found between gender and safe sex behaviors in which males endorsed more sexual risk taking behaviors compared to females. These results should be considered in the development of and establishment of safe sex practices and utilized to help clients, parents, and educators understand the role that gender plays in safe sex behavior.

Due to the numerous ramifications of risky sexual behaviors such as unwanted pregnancy and STIs, it is important that professionals have the ability to identify and focus on those who are vulnerable to or more likely to engage in sexual risk taking behaviors. Health care professionals have a unique opportunity to not only provide education on the anatomy of the human body, but also educate individuals on how the body functions. Additionally, they can provide information on why people have sex and may engage in risky behaviors, the nature of sex, how one's body can be impacted by risky sexual behaviors, teach safe sex practices, and provide STI testing. Furthermore, they can help individuals understand the negative consequences of sexually risky behaviors and how such consequences can impact one's overall health and well-being.

Mental health therapists can assist clients in exploring, examining, and understanding the risks of sexual risk taking behaviors. They have the opportunity to also educate those at risk and assist these individuals in understanding the reason for their unsafe behaviors and to reduce risk through examining patterns and processes

related to these practices and choices. Additionally, practitioners can provide education on STIs and HIV and help clients who have been diagnosed with such diseases, learn ways to cope and manage symptoms. Further counselors can educate clients in learning and setting boundaries, help consumers to advocate for themselves and express themselves with their partners, and learn not only safe sex measures but also self-protective skills to protect their bodies and well-being.

### **Recommendations**

1. Future researchers may consider utilizing categorical data to identify specific adult romantic attachment styles rather than a continuous variable (which was the case for the present study). Use of categorical data, which identifies participant's distinct attachment style, may provide researchers with a better understanding of the role attachment plays in safe sex practices.
2. While the SSBQ has demonstrated strong internal validity as it did in the current study, the questionnaire does not allow for virgins to be included. Such exclusion does not allow for an examination of sexual behaviors or protective factors unique to virgins. Investigators who are interested in better understanding the factors researched in the current study (gender, self-esteem, and attachment style) and how they relate or differ among virgins and non-virgins should utilize a measure of sexual behavior and conduct studies that allow for virgins to be included.
3. Future researchers may consider utilizing a broader sample, including a more ethnically diverse population, in order to examine ethnicity differences among



the factors examined in the current study. Similarly, it is recommended that future studies include a larger sample of male participants and include emerging adult undergraduate students from various disciplines. Future investigators may also consider studying these factors utilizing a community sample of emerging adults. Lastly, researchers may consider utilizing gay and lesbian participants to examine their safe sex behaviors.

4. An important direction for future research in the study and understanding of safe sex behaviors is related to data analysis utilized to examine the relationship among self-esteem, gender, adult romantic attachment style, and safe sex behaviors in the current study. As indicated earlier, the literature on safe sex behaviors may benefit from researchers using a different analysis that would allow for a closer examination regarding identification of specific sexual behaviors that males and females are endorsing and report to be engaging in. For example, researchers may consider utilizing qualitative research to understand emerging adults phenomenological experiences related to the variables examined in the current study. This might provide more insight into specific behaviors that should be targeted when considering methods and programs related to prevention and intervention.

### **Summary**

In summary, the present study extends existing literature related to emerging adults' safe sex behaviors. The purpose of the study was to investigate the association between romantic attachment style, self-esteem, and gender on safe sex behaviors

among emerging adult undergraduate students. Results indicated that adult romantic attachment style, self-esteem, and gender together explain differences in levels of safe sex behaviors among emerging adults. However, neither romantic attachment style nor self-esteem were found to uniquely explain differences in levels of safe sex behaviors. Finally, the current study found that gender explains differences in levels of safe sex behaviors with females reporting greater safe sex practices.

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Table 1

*Demographic Description of Participants (N = 151)*

Demographic	%
Gender	
Female	75.5
Male	21.9
Ethnicity	
Caucasian	73.5
African American	4.5
Hispanic	11
Asian American	5.8
Bicultural/Multicultural	2.6
Relationship status	
Single	49
In a relationship	46.5
Married	1.3
Separated	0.6
Divorced	0
Year in school	
Freshman	39.4
Sophomore	29
Junior	18.1
Senior	11



Table 2

*Means, Standard Deviations, and Ranges of all Scales*

Scale	<i>M</i>	SD	Study range	Scale range
Safe Sex Behavior Questionnaire (SSBQ)	72.89	10.51	41–95	24–96
Rosenberg Self-Esteem Scale (RSES)	31.93	5.48	10–40	10–40
Experiences in Close Relationships –Revised (ECR–R)				
Anxiety subscale	53.13	20.99	18–104	18–126
Avoidant subscale	49.27	21.14	18–113	18–126
Total ECR–R	102.40	36.19	37–215	36–252

Table 3

*Correlation Matrix for Romantic Attachment Style, Self-Esteem, and Safe Sex Behavior*

Variable	Safe sex behavior	Attachment style	Self-esteem
Safe sex behavior	1.0		
Attachment style	.020	1.0	
Self-esteem	-.025	-.574*	1.0

*Note.* Safe sex behavior is the dependent variable

\*Correlations were statistically significant at  $p < .05$ .

Table 4

*Summary of Simultaneous Regression Analysis for Variables Predicting Safe Sex Behaviors Among Emerging Adults*

Variable	B	SE	$\beta$	<i>t</i>	<i>p</i> value
Attachment	.015	.029	.054	.538	.591
Self-esteem	.087	.191	.046	.456	.649
Gender	-7.102	2.040	-.284	-3.481	.001

*Note.* Overall regression *R*-square = .078; Adjusted *R*-square = .059;  $F(3, 145) = 4.075, p = .008$ .