

PREDICTING RISKY SEX FROM GENDER, SELF-  
EFFICACY, AND ATTACHMENT

By

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**ABSTRACT:** This study examines college students' participation in risky sexual behaviors, a common aspect of contemporary college life referred to as "hookups". The study utilizes the Theory of Planned Behavior in constructing a predictive model that incorporated both individuals' stable characteristics and interpersonal skills. Specifically, this study examines gender, romantic attachment models of security and insecurity, and degree of self-efficacy regarding safe sex communication as predictors of college students' reported number of casual sexual partners, number of casual sexual encounters, and frequency of safe sex communication with casual sexual partners. Three research questions were asked to examine each of the indicators of sexual behavior. The research hypothesized that for each behavior the total model would be most predictive. The results supported only hypothesis 3; that is, the model significantly predicted variation in college students' reported frequency of safe sex communication with casual sexual partners. Furthermore, safe sex communication comfort was found to uniquely predict variance, controlling for romantic attachment and gender. Results from this study may help inform college-level sexual risk-reduction programming in terms of content of programs and ways to successfully engage students in proactive skill development that will lead to less involvement in risky sexual practices.

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## CHAPTER I

### INTRODUCTION

#### **Background**

Hookup culture is a major aspect of college life which puts college students at risk. A “hookup” is typically a brief sexual interaction, which could include anything from kissing to intercourse, between two people who do not know each other well; and comes with no expectations of future relations or emotional attachment (Stinson, 2010, p. 99). Recent estimates are that between 54%-70% of college students participate in these casual sexual “hookup” encounters at least once during their time at college (M. L. Fisher, Worth, Garcia, & Meredith, 2012; Holman & Sillars, 2012; Olson, 2009). Several reviews note that in addition to hooking up, more college students are having sex while under the influence of alcohol, not using protection consistently during sex, and are not communicating with a casual partner about sexual histories or about safe sex practices prior to sex (Garcia, Reiber, Massey, & Merriwether, 2012; Hendershott & Dunn, 2011; Kalish & Kimmel, 2011; Lewis, Miguez-Burbano, & Malow, 2009; Stinson, 2010).

**Risk of STIs.** The near ubiquity of risky sex among college students is alarming given the prevalence of sexually transmitted infections (STIs) in the student population. The rates of STIs in college-aged young adults continue to increase: Although individuals aged 15-24 only account for approximately 25% of the sexually experienced population, they account for nearly half of all new STI transmissions (Centers for Disease Control and Prevention, 2009). Sexually active college-aged adults (aged 18-24) are at an increased risk for contracting viral STI’s such as the

human immunodeficiency virus (HIV), human papillomavirus (HPV), acquired immune deficiency syndrome (AIDS), and herpes simplex virus (HSV); all of which are infections for which there is no cure (Sadovszky, Vahey, McKinney, & Keller, 2006). Despite this clear need of sexual health programming for college students, typical prevention programs, which seek to scare students healthy by educating them on the adverse effects of risky sex, can be described as marginally successful at best (Becker, Rankin, & Rickel, 1998; C. Davis, Sloan, MacMaster, & Kilbourne, 2007; Hardeman, Pierro, & Mannetti, 1997; Lewis et al., 2009; Roudebush, 2008; van Empelen, Schaalma, Kok, & Jansen, 2001).

Moving beyond a solely education-based approach, sexual health programs that also incorporate sexual self-efficacy skill building have shown promising results for decreasing risky sexual practices; particularly programs which seek to improve communication abilities and confidence (Milstein, 2006; Scholly, Katz, Gascoigne, & Holck, 2005). However, the literature examining this aspect of sexual self-efficacy, safe sex communication comfort, and other predictors of risky sex do not often address the population of college students or the most high-risk context of risky behaviors—a casual hookup encounter. A complete understanding of the factors which contribute to college students' risky sexual practices, specifically safe sex communication comfort, romantic attachment, and gender, is needed to appropriately inform effective college-level sexual risk-reduction programs.

**Safe sex communication comfort.** Self-efficacy is a person's assessment of their ability to successfully achieve a desired effect through their actions (Bandura, 1977, 2001). Increased self-efficacy is recognized as a major component of successful behavior change (Bandura, 1997). A major component of sexual self-efficacy is an individual's comfort with discussing safe sex behaviors and information. Sexual health programs which improve communication comfort within intimate situations (i.e. programs which build sexual self-efficacy) show promise for decreasing a variety of risky sexual practices (C. Davis et al., 2007; Kanekar & Sharma, 2010;

Lonczak & Abbott, 2002; Milstein, 2006; Pearson, 2006; Pérez-Jiménez, Santiago-Rivas, & Serrano-García, 2009; Rostosky, Dekhtyar, Cupp, & Anderman, 2008; van Empelen et al., 2001). Improved safe sex communication comfort may thus be an important part of predicting safer sexual practices.

**Romantic attachment style.** Limited research has also examined how an individual's romantic attachment style, or internal beliefs and expectations about the self and others in romantic situations, relates to participation in risky sexual practices such as casual sex (Londono-McConnell, 1997; Owen, Rhoades, Stanley, & Fincham, 2010; Schmitt, 2005). Although there is limited theory suggesting the malleability of internal models in romantic relationships (for example, see Dewitte, 2012), research largely indicates that a relatively stable and unchanging factor underlies the temporary variations in attachment reported by many studies (for example, see Fraley, Vicary, Brumbaugh, & Roisman, 2011). Internal models such as romantic attachment are often unconscious (Zimmermann, 1999). If romantic attachment is an important predictor of sexual behavior, then risk-reduction programs directed at changing conscious decisions/behaviors may be particularly unsuccessful and in need of revision to focus on more changeable outcomes.

**Gender.** Differences between men and women are consistently studied in nearly all domains of sexuality research. Significant gender differences have been found in reported frequency of sexual activity (Petersen & Hyde, 2010), frequency of risky sexual behaviors (Hope, 2012; Lewis et al., 2009; Londono-McConnell, 1997), amount of sexual self-efficacy (Pearson, 2006; Rostosky et al., 2008), and romantic attachment styles (Del Giudice, 2011). Additionally, research on sexual risk-reduction programs in some instances shows differential program effects based on gender (M. Allen, Emmers-Sommer, & Crowell, 2002; Brecklin & Forde, 2001; Kanekar & Sharma, 2010). Given these potential gender differences in romantic attachment and sexual self-efficacy, gender must be considered when examining risky sexual practices.

## **Purpose of Study**

The primary goal of the current study was to examine the relationship between safe sex communication comfort, romantic attachment, and gender on college students' sexual practices as measured by number of casual sex partners, number of casual sex encounters, and frequency of safe sex communication with a casual partner. The current study will assist health educators, counselors, and student affairs professionals working to decrease risky behaviors on college campuses by identifying not only who engages in risky sexual practices, but also what deficit aspects of sexual health relate to those practices.

## **Research Questions & Hypotheses**

The primary relationships examined were between the independent variables of safe sex communication comfort, romantic attachment style, gender, and the dependent variables of (1) number of casual sexual partners, (2) number of casual sexual encounters, and (3) frequency of safe sex communication with a casual partner.

**Research question 1.** To what extent do the independent variables (IVs) of safe sex communication comfort, romantic attachment, and gender predict the number of casual sexual partners reported by college students?

**Hypothesis 1.** Safe sex communication comfort, romantic attachment, and gender together significantly predict differences in the number of casual sexual partners reported by college students.

**Research question 2.** To what extent do the IVs safe sex communication comfort, romantic attachment, and gender predict the number of casual sexual encounters reported by college students?

***Hypothesis 2.*** Safe sex communication comfort, romantic attachment, and gender together significantly predict the number of casual sexual encounters reported by college students.

**Research question 3.** To what extent do the IVs safe sex communication comfort, romantic attachment, and gender predict the frequency of safe sex communication with casual partners reported by college students?

***Hypothesis 3.*** Safe sex communication comfort, romantic attachment, and gender together significantly predict the frequency of safe sex communication with casual partners reported by college students.

### **Significance of Study**

There has been a great deal of research examining attachment and risky sexual practices in adult communities and adolescent high school populations; surprisingly less research has focused on college students. The general topic of risky casual sex on college campuses has received more attention from scholars and the popular media alike in recent years (Bogle, 2008; Chia & Gunther, 2006; Garcia et al., 2012; Stepp, 2008). However, much of this research does not examine college students' sexual behaviors in sufficient depth. Comfort with discussing safe sex topics with a casual partner is particularly understudied (Albarracín, Durantini, & Earl, 2006; Pearson, 2006). Additionally, the possible mediating role of communication comfort in the relationships that may exist between romantic attachment, gender, and sexual behaviors has not been examined.

The current study proposes to extend the literature regarding college students' sexual behaviors and communication, in the context of college students' potentially high-risk casual sexual encounters.

## **Limitations**

There are a number of limitations to this study. Most notably, no causality can be inferred from the results, because of the correlative nature of the statistical design. Although the intention of the current study is to inform sexual health interventions, only potential associations are indicated; no cause and effect relationship should be inferred.

There are two limitations to the validity of the current study. First, the veracity of participants' responses to sensitive questions about their sexual behaviors cannot be objectively confirmed. Data was collected using Internet self-report methods that ensured anonymity, however it is impossible to guarantee that participants were not still wary of disclosing such intimate information despite assurances of identity protections. Second, although risky sexual practices were assessed specifically in non-relationship contexts only, participants' recall of past events may not have been limited to solely that context.

There are also several limitations to the generalizability of this study. Participation in the current study was voluntary; use of such data cautions the generalizability of the results to the general populations. Also, data was collected at one Midwestern university and may not represent college students at other institutions. Finally, romantic attachment style was assessed using only the Experiences in Close Relationships—Revised scale; results may not be directly generalizable to measures of romantic attachment which utilize an interview or prototype endorsement methodology.

## **Definition of Terms**

**Anxious attachment.** This can be 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, Mallinckrodt, & Vogel, 2007, p. 188). Anxious

individuals typically hold more negative internal models of the self in romantic or sexual situations (Mikulincer & Shaver, 2007).

**Adult attachment theory.** Adult attachment can be defined as the 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 potential for safety and security (Berman & Sperling, 1994, p. 8). This tendency is regulated by an individual's internal models of attachment, which concern both the self and the other in romantic or sexual situations (Fraley et al., 2011).

**Avoidant attachment.** This can be defined as having a need for excessive self-reliance and a fear of dependence and interpersonal intimacy (Wei et al., 2007, p. 188). Avoidant individuals typically hold more negative internal models of others in romantic or sexual situations (Mikulincer & Shaver, 2007).

**Casual sex.** In this paper, the term “casual” refers to a specific relationship between two partners engaged in vaginal intercourse and/or oral sex. That is, the two involved in the sexual acts had no expectation of something further to happen after that sexual encounter, even if they had had sex previously. This is similar to the definition that Young, Penhollow, and Bailey use for “hooking-up” (2010). The importance of this definition is that no expectations of exclusivity or monogamy are associated with the sexual encounter. Given that, taking such steps as using a condom or asking about sexual history become necessary steps to mitigate risk.

**Committed sex.** The term “committed” refers to a different relationship between two partners engaged in vaginal intercourse and/or oral sex. Committed partners either were in a romantic relationship or were seeking a romantic relationship with the partner at the time of the activity (for instance, having sex after a first date with someone you wanted to continue dating). In other words, there were future expectations or hopes associated with the sexual encounter.

**Hookup (or hooking up).** This refers to a sexual encounter about which neither the exact sexual activity that took place nor the relationship between the individuals involved have been disambiguated; typically this occurred in older studies of casual sex (for example, see Paul, McManus, & Hayes, 2000).

**Insecure attachment style.** This is an individual who has generally negative internal models of the self or others, or negative models of both, in the context of romantic or sexual situations (Mikulincer & Shaver, 2007). Insecure attachment can be further subdivided into insecure-anxious (see Anxious attachment) and insecure-avoidant (see Avoidant attachment).

**Internal models.** These can be conceptualized as consisting of accumulated knowledge about the self, others, and interpersonal relationships (Zimmermann, 1999). These function largely outside of awareness and provide a person with heuristics (mental shortcuts) for anticipating and interpreting behavior and the intentions of others within attachment situations—in the context of the current study, sexually intimate situations.

**Oral sex.** This refers to when either a woman stimulated a man's penis using her mouth or a man stimulated the genitals of a woman using his mouth (Chandra, Mosher, Copen, & Sionean, 2012).

**Romantic attachment.** This is an individual's style of interacting with others and the expectations of others within romantic relationships; the three primary styles of romantic attachment are secure, anxious, and avoidant attachment (Hazan & Shaver, 1987). These styles are consistent with earlier life experiences with the individual's caregiver, and are measured in the current study using the ECR-R (Fraley, Waller, & Brennan, 2000).

**Safe sex communication.** This refers to when individuals discuss specific topics relating to safer sexual activity prior to engaging in sex. Obviously some amount of basic social communication will occur for the encounter to be orchestrated in the first place, however in the

current study communication before sex refers to discussing sexual histories, IV drug use, STI serostatus or STI test results, and negotiating the use of a condom or dental dam (Lewis et al., 2009). Communication before sex was measured in the current study using the Partner Communication Scale (PCS) (Milhausen et al., 2007).

**Safe sex communication comfort.** This refers to an individual's comfort level in performing safe sex communication. In the current study safe sex communication comfort was measured using the Sexual Health Survey (SHS) (Eastman-Mueller, Carr, & Osterlind, 2011).

**Secure attachment style.** This is an individual who has generally positive internal models of the self and others in the context of romantic or sexual situations (Gentzler & Kerns, 2004; Mikulincer & Shaver, 2007).

**Serostatus.** This refers to either the presence (positive serostatus) or absence (negative serostatus) of specific substances in an individual's blood serum. Most commonly this is heard in references to HIV, although it can be used to refer to any viral infection or disease.

**Sexually transmitted infections (STIs).** This includes viral infections such as the human immunodeficiency virus (HIV), human papillomavirus (HPV), acquired immune deficiency disorder (AIDS), and herpes simplex virus; all of which are infections for which there is no cure (Sadovszky et al., 2006).

**Transmission.** This refers to the spread of an STI from one individual to another.

**Risky sexual practices.** This refers collectively to behaviors that increase an individual's chances of an unplanned pregnancy or contracting an STI from a casual sexual encounter (Becker et al., 1998, p. 15; Emmers-Sommer & Allen, 2004).

**Vaginal intercourse.** This refers to a heterosexual encounter where a man puts his penis in a female's vagina (Chandra et al., 2012).

## **Summary**

In this chapter, the study was introduced as well as the primary and secondary purposes which guided the research questions of the present study. Due to the complex nature of sexual behavior it is important to discuss in greater detail the occurrence of these behaviors in the proposed population, as well as the variables which may influence sexual practices.

## CHAPTER II

### REVIEW OF LITERATURE

In recent years risky sexual practices, often referred to as hookups, have been discussed with increasing frequency by scholarly, news media, and popular culture outlets alike (Garcia et al., 2012). In this chapter I first review the recent past and current casual sexual climate on college campuses. I then focus particularly on an element of casual encounters which greatly contributes to the level of risk: the lack of prior communication with a casual partner about STI history and safe sex practices (hereafter referred to as “safe sex communication”).

There are several factors which may influence an individual’s decision to communicate, or not communicate, with a casual partner. First I examine the topic of comfort and confidence with communicating about intimate sexual issues (hereafter referred to as “safe sex communication comfort”), which is an element of an individual’s more general sexual self-efficacy. Then I will follow that discussion with an examination of how an individual’s romantic attachment styles and gender also relate to safe sex communication. I conclude this chapter with a summary of the current findings in the literature.

#### **Casual Sex**

**Risky behavior.** Risky behaviors are actions people engage in that may: (a) have a negative outcome or impact on their well-being and future, or (b) have one or more uncertain outcomes

(Adams, 1995). In the sexual domain, a risky practice would be an action or decision that increases the chances of an unplanned pregnancy or contracting an STI (Becker et al., 1998; DiIorio, Parsons, Lehr, & Adame, 1992; Emmers-Sommer & Allen, 2004). Following that definition, it is important to realize that technically any sexual activity whatsoever is a risky sexual practice; the only true “safe sex” is total abstinence or solitary masturbation (Emmers-Sommer & Allen, 2004, p. 4; Thomas, 2000). Moving beyond the general level of risk associated with all sexual activity, different types of sex can be more or less risky.

Evidence has shown that casual sexual activity, often called a “hookup” in college populations, is more risky than committed sexual activity (sex in the context of a committed relationship) (Bogle, 2008; Garcia & Reiber, 2008; Paul & Hayes, 2002). In reviewing interviews of dozens of college students and alumni, Bogle found that alcohol and unwanted sexual pressure was often present for men and women alike during casual sexual encounters (2008). Bogle also found that students experience strong pressure to hookup while at college, which may cause them to engage in a behavior even if it is a behavior in which they normally would not engage. More than a third of 507 surveyed college students report unintentionally hooking up; meaning they did not plan to engage in a hookup on a given night but ended up doing so because of lowered inhibitions which they attributed to alcohol and other drug use (Garcia & Reiber, 2008). Paul and Hayes found that most hookups involve little communication about using protection or even what sexual activities will take place during the hookup (2002).

As mentioned above and found in studies of college student hookup scripts, a casual encounter is risky because often alcohol is present, there is little preparation or planning (i.e. no forethought to bring a condom), and there is little communication between partners concerning what sexual behaviors will take place (Bogle, 2008; Garcia & Reiber, 2008; Holman & Sillars, 2012; Paul & Hayes, 2002; Wentland & Reissing, 2011). These risky trends have not gone

unnoticed in scholarly research, however following the research is difficult because “casual sex” has been studied under a variety of monikers.

**Ambiguous definitions.** Casual sex has been studied under a variety of labels: “casual sex” (Maticka-Tyndale, Herold, & Mewhinney, 1998), “hookups” (Paul et al., 2000), “no-strings-attached sex” (E. S. Allen & Baucom, 2004), “non-romantic sex” (Manning, Longmore, & Giordano, 2005), “short-term mating” (Schmitt, 2005), “friends with benefits” (Bisson & Levine, 2007), “sex outside of a committed relationship” (Hatfield, Luckhurst, & Rapson, 2010), “one-night stands” (Townsend & Wasserman, 2011), “non-monogamous sex” (van Gelder, Reefhuis, Herron, Williams, & Roeleveld, 2011), and “uncommitted sexual encounters” (M. L. Fisher et al., 2012); to name the most common. The aforementioned studies span the fields of psychology, sociology, evolutionary biology, and education. Further complicating any conclusions which could be drawn, some studies allow respondents to supply a personal definition for “hooking up,” some studies explicitly state what behaviors and relationships are considered “casual,” and some studies explicitly state that hooking up can mean any number of behaviors. Several authors have even identified this lack of a concise definition as endemic and in fact integral to the hookup culture (Bogle, 2008; Glenn & Marquardt, 2001).

**Casual sex participation.** Despite ambiguous collection criteria in the literature, a rough estimate of the prevalence of casual sexual activity can be obtained from studies of hookups. Garcia, Reiber, Massey and Merriwether reviewed the literature and found that between 60% and 80% of North American college students have engaged in a “hookup” experience, which could include sexual behaviors ranging from kissing to having penile-vaginal intercourse and could also include relationships such as having “friends with benefits” or “fuck buddies”, relationships that do not necessarily fit into the definition of casual sex used in this study (2012, p. 163). A closer look at survey definitions and criteria indicates that between 50% and 70% of American college students have engaged in at least one casual sexual encounter, as defined in this study (M. L.

Fisher et al., 2012; Holman & Sillars, 2012; Olson, 2009). Now that we have found casual sex to be a relatively common occurrence on college campuses, I will examine the presence and absence of safe sex communication in casual sexual encounters.

### **Safe Sex Communication**

Beyond the mere decision to engage in casual sex, the risks of any sexual encounter are increased by certain risky sex practices, or decreased by the omission of those practices. In fact, the reason that casual sex is labeled as risky is because such risky sex practices are assumed to be present in casual sexual encounters (Ven & Beck, 2009; Wentland & Reissing, 2011). Despite this assumption, individuals can choose to engage in safer practices during casual sex encounters, and thus mitigate the risks. One behavior which can be accomplished relatively simply is the initiation of a discussion of safer sex topics, such as a partner's sexual history, STI serostatus, and use of protection during the sexual activities to follow.

**Discussing STIs and concurrent partners.** Given the rapid timeline of a casual sexual encounter, communication immediately prior to sexual activity may in some cases be the only opportunity to ascertain important safer sex information. Unfortunately, research indicates that communication about sexual history and other sexual partners is rare (Lewis et al., 2009). An individual's risk of STIs is increased by having a sexual partner (committed or casual) who has other concurrent sexual partners (Drumright, Gorbach, & Holmes, 2004). Adults who have casual sex are more likely to have multiple concurrent partners than adults who have committed sex (2010). College students who have more sexual partners are less likely to use condoms every time (Certain, Harahan, Saewyc, & Fleming, 2009). Even in romantic relationships, one-third of respondents had extra-dyadic sexual partners (partners outside of the committed relationship) (Drumright et al., 2004). Also, the authors found that having a significant other with an extra-dyadic partner was associated with a higher likelihood of having an STI. Taken together, these

studies indicate both the importance of communicating about partners and serostatus and the lack of communication between partners about those intimate issues. Additionally, communication before sex is important to negotiate safer sex practices with a partner.

**Discussing safe sex practices.** Many college students feel they do not have the communication skills to initiate discussions on these important safe sex topics in intimate situations (Cleary, Barhman, MacCormack, & Herold, 2002; Epstein, Calzo, Smiler, & Ward, 2009; Smith, 2003; Wentland & Reissing, 2011). A study of Canadian college females found that sexual communication about sexual health was very rare during first sexual intercourse with a new partner. In addition, few women felt they had the communication skills necessary to initiate such a discussion with a partner (Cleary et al., 2002). Smith found that around half of college students she surveyed had engaged in unwanted sex without a condom because they had not tried to convince their partner otherwise (2003). A qualitative study of American college men found similar results, with the primary casual script indicating it was inappropriate to communicate or become intimate with a casual partner (Epstein et al., 2009). Another qualitative study of communication in casual encounters found that most non-friend casual scripts explicitly forbade talking too much about intimate issues with casual partners (Wentland & Reissing, 2011).

**Summary of safe sex communication.** Although operational terms in the literature vary substantially, casual sex which allows the possibility of STI transmission is a significant aspect of the college sexual landscape. A majority of college students have engaged in at least one casual sexual encounter during their time at college. College students typically do not communicate about safe sex or STIs prior to engaging in casual sex. This trend may be partially explained by a lack of communication skills reported by some students. Alternately, a lack of confidence and comfort in a sexually intimate situation may also play a role.

### **Safe Sex Communication Comfort**

**Origin of self-efficacy.** The concept of self-efficacy did not originate in the field of sexuality. It was proposed over three decades ago, by Bandura, as a person's assessment of their ability to successfully achieve a desired effect through their actions (1977, 2001). A large body of research has studied a similar phenomenon called perceived personal control—generalized expectations about one's causal agency in given situations (Pearson, 2006). These two and other variations on the same themes provide insight into individual's confidence to perform actions and individual's comfort with performing those actions in the real situation. In general models of behavioral intervention, self-efficacy is widely recognized as one of the most important prerequisite components of an intervention program aiming to create behavioral change (Bandura, 1997). In a sexuality context, self-efficacy would include both behavioral confidence (for example, confidence to physically put on a condom correctly) and communication comfort (for example, comfort negotiating the use of a condom with a partner). It is this latter element of self-efficacy that most impacts the dependent variable, safe sex communication, of the current study.

**Predicting behavior from self-efficacy.** Conventional approaches to predicting risky behaviors utilizing theories such as the theory of reasoned action (TRA) (Ajzen & Fishbein, 1980). Reasoned action theory suggests that a person has complete control over their behavior and that behavior results from a rational pro/con analysis. However, after a decade of research Ajzen revised TRA into the theory of planned behavior (TBP) to also account for an individual's perceived control, or self-efficacy, of a behavior (Ajzen, 1991). This addition accounts for times when people have the knowledge of a behavior and the intention to carry out a behavior, but the actual performance of the behavior is thwarted due to a lack of confidence or comfort enacting the behavior in a situation (Miller, 2004, p. 127). A lack of sexual self-efficacy would thus inhibit practicing safer sex behaviors. In fact, Turchik and Gidycz found that the TBP model was significantly predictive of participation in casual sex (2012).

**Sexual self-efficacy.** A number of studies suggest that increased safer sex communication is linked with increased sexual self-efficacy (Albarracín et al., 2006; C. Davis et al., 2007; Lewis et al., 2009; Pérez-Jiménez et al., 2009; Roudebush, 2008; van Empelen et al., 2001). Among Dutch intra-venous drug users (a very high risk population), sexual self-efficacy was the only strong predictor of safe sex intentions in casual sexual encounters (van Empelen et al., 2001). In a study of Brazilian adults, high sexual self-efficacy was related to more consistent safe sex practices in casual relationships (Pérez-Jiménez et al., 2009). In a sample of American community college students, sexual self-efficacy was positively correlated with actual safe sex behaviors in the preceding month and intentions to practice safer sex (Milstein, 2006). In another study of American college students, researchers found that sexual self-efficacy was related to stronger intentions to use a condom in the future (C. Davis et al., 2007). Finally, a meta-analysis of over 300 sexual health intervention-based studies, collected from many different countries, populations, and demographic groups, indicates that programs which are consistent with theories of planned behavior's self-efficacy model are more successful (Albarracín et al., 2006).

**Communication comfort.** Developing research indicates that comfort with safe sex communication predicts actual safe sex communication (Albarracín et al., 2006; Pearson, 2006). Among a national sample of adolescents, Pearson found that comfort in negotiating safe sex behaviors was significantly associated with safe sex behaviors (2006). In their meta-analysis, Albarracín, Durantini, and Earl found that sexual risk-reduction programs with opportunities for role-playing and building interpersonal (communication) skills were more effective than programs that merely presented information to passive audiences (2006).

**Improving sexual self-efficacy.** It is unclear how an individual can improve their sexual self-efficacy, particularly their confidence and comfort communicating about safe sex. As with many domains of self-efficacy, it may develop parallel to an individual's practice and mastery in that domain. For instance, Hardeman and colleagues found that sexually active college students

were higher on some aspects of sexual self-efficacy than sexually inactive college students (1997). Conversely, being sexually active is not necessarily the only way to increase sexual self-efficacy. Some research shows that students who have never had sex have higher sexual self-efficacy than their sexually active peers (C. Davis et al., 2007).

Intervention programs also can affect aspects of sexual self-efficacy (Lonczak & Abbott, 2002; Milstein, 2006). Milstein found that following a semester-long program incorporating confidence building activities and sexual knowledge, college students were more likely to use a condom and more confident in using a condom, as well as more confident generally in their sexual abilities, compared to college students in a program only covering sexual knowledge (2006). Individuals who had previously participated in a sexual education program during high school which included social competency training were more confident communicating in sexual situations and more likely to use a condom when surveyed during college (Lonczak & Abbott, 2002).

**Summary of safe sex communication comfort.** Sexual self-efficacy concerns an individual's comfort with and confidence in his/her ability to perform sexual various behaviors. Although only sparsely studied, research indicates that general sexual self-efficacy is connected to practicing safer sex, in both correlational and longitudinal studies. Moreover, only a few studies examine the communication element of sexual self-efficacy. Given the importance of communicating about intimate topics prior to casual sex, and the role that confidence and comfort are theorized to play in predicting future behaviors (according to the theory of planned behavior), examining these links in greater detail within the high-risk population of college students is needed. Additionally, safe sex communication could also be influenced by an individual's expectations and desires for sexual relationships, which are both aspects of romantic attachment.

### **Attachment Theory**

**Background.** Attachment theory was originally conceived to describe the ways that young children explore their environments and rely on their mothers for support and safety (Mikulincer & Shaver, 2007). Attachment theory was first applied to the realm of adult romantic relationships by Hazan and Shaver (1987). They extended the three major styles of attachment which were identified in infants—secure, avoidant, and anxious attachment—but adapted them to explain relationships between two independent adults rather than a child and its mother. Using questionnaires, Hazan and Shaver found that adults in each major style differed predictably in the ways in which they experienced emotional connections in relationships (1987). They found that the three major attachment styles related to internal models of the self and others within interpersonal relationships.

**Styles of romantic attachment.** Attachment styles are divided into either secure attachment or insecure attachment. Secure individuals find it relatively easy to get close to others, are comfortable depending on others and having others depend on them, do not worry about being abandoned, and do not worry about someone becoming too emotionally close (Mikulincer & Shaver, 2007, p. 27). Secure adults in the United States report fewer breakups and fewer periods of being single in their lifetime (Kirkpatrick & Hazan, 1994). Secure adults in Canada are more likely to be in a committed relationship than insecure individuals (Bogaert & Sadava, 2002); although Cooper, Shaver, and Collins found no relationship between secure attachment and relationship experience among adolescents (1998). When in relationships, secure individuals have more stable and longer lasting relationships which are satisfying, loving, and high in trust and support, compared to insecure individuals (J. A. Feeney, Peterson, Gallois, & Terry, 2000; Hazan & Shaver, 1987; Tracy, Shaver, Albino, & Cooper, 2003). In contrast to secure attachment, a recent review of fifteen articles examining sexual functioning and adult attachment found that insecure attachment is consistently related to less satisfying sexual relationships, higher levels of sexual dysfunction, and maladaptive motivations for having sex (Stefanou & McCabe, 2012).

An insecure attachment style is further divided into two types: anxious attachment and avoidant attachment. Likely due to a stronger desire for emotional connection, anxious attachment is associated with more experience in romantic relationships, compared to avoidant attachment (Cooper et al., 1998; Tracy et al., 2003). Similarly, the need for approval and fear of abandonment may push anxious individuals to always want to be in a relationship of any sort, even a casual relationship that does not truly give them the connection they want. An anxious individual's fear of rejection could also potentially lead to maladaptive behaviors within relationships, such as acquiescing to unwanted sexual behaviors for fear of losing a partner (Gentzler & Kerns, 2004). Anxious individuals are more likely to have sex to decrease feelings of insecurity and to create extreme closeness with a partner (Schachner & Shaver, 2004). Anxious individuals are also more likely to disclose personal issues to a partner, possibly in order to rapidly become emotionally connected to that partner (J. A. Feeney, Noller, & Patty, 1993).

In contrast to anxious individuals, avoidant individuals typically disclose much less, if at all, to sexual partners; they do not feel that emotional intimacy is a necessary precursor to physical intimacy (Gentzler & Kerns, 2004). Likely as a result of a need for independence, studies have found avoidant individuals to have less experience in relationships than secure or avoidant individuals (Cooper et al., 1998; Jones & Furman, 2011; Tracy et al., 2003). Avoidant individuals are also more likely to be single than in a relationship (Kirkpatrick & Hazan, 1994). However, both avoidant attachment and anxious attachment are related to more permissive attitudes regarding casual sex, compared to secure attachment (Stinson, 2010, pp. 107–108).

**Predicting behavior from romantic attachment.** As mentioned previously, the theory of planned behavior is a robust model for predicting behavior by accounting for a person's intentions to commit a behavior and self-efficacy in performing a behavior. Upon examination of the TBP model, romantic attachment is very similar to Ajzen's "intention to perform a given behavior...[intentions are] the motivational factors that influence behavior" (1991, p. 181). As

has been shown, romantic attachment reliably predicts significant variations in individual's motivations to engage in committed relationships and perform certain actions in a committed relationship. Furthermore, attachment predicts behaviors not within committed relationships.

*Non-romantic behaviors.* Romantic attachment concerns the ways in which adults experience love and how they behave in romantic relationships. It can also include the set of expectations an individual has regarding people who may be potential romantic partners; or regarding behavior in situations which are potentially romantic (B. C. Feeney, Cassidy, & Ramos-Marcuse, 2008). Although romantic attachment is based on experiences with past partners and individuals, attachment styles are also predictive of behavior in familiar situations with novel individuals (B. C. Feeney et al., 2008). In this way, although an individual may not feel any romantic attraction to a partner, one may act according to romantic attachment expectations while in a sexual situation because for many, sexuality is a common part of romantic relationships (Dewitte, 2012). Further corroborating this idea, scholars have found that romantic attachment styles significantly predict patterns of explicitly nonromantic sexual behaviors, such as solitary masturbation or participation in casual uncommitted sexual encounters (Bogaert & Sadava, 2002; Schachner & Shaver, 2004).

*Casual sex.* Although research has been conducted for more than a decade on the link between casual sex and attachment, findings are inconclusive (Brennan & Shaver, 1995; Paul et al., 2000; Schmitt, 2005). Among American college students, Brennan and Shaver found that insecure students were more likely to endorse permissive attitudes about casual sex (1995). Examining attachment and actual student behavior, Paul and colleagues surveyed a sample of 555 American colleges students and found that avoidant students were most likely to participate in casual sex, whereas secure students were least likely to participate in casual sex (2000). Five years later, in a large-scale international survey of short-term mating interests, Schmitt found that insecure students were slightly more likely to endorse an interest in casual sex than secure

students (2005). However, not all studies find this association (Gentzler & Kerns, 2004; Owen et al., 2010). Gentzler and Kerns found that avoidant college students were more permissive of casual sex; however avoidant college students did not have significantly more casual sexual partners (2004). Most recently, in a sample of over 800 American college students Owen, Rhoades, Stanley and Fincham found no significant relationship between attachment style and hooking up or permissive attitudes regarding casual sex (2010).

Other recent research, although not collected within a college population, offers similarly equivocal findings. Data concerning adolescents' casual sexuality and romantic attachment is limited and contradictory (Cooper et al., 1998; Jones & Furman, 2011). Anxious and avoidant adolescents report more instances in the past of having casual sex with a stranger (Cooper et al., 1998). However, more recently Jones and Furman found that adolescents' attachment style was unrelated to number of casual sexual partners (2011). In select adult populations, insecure attachment is related to more lifetime sexual partners, although the casual versus committed status of those partners was not examined in those studies (Bogaert & Sadava, 2002; Ciesla, Roberts, & Hewitt, 2004). Among a sample of HIV positive patients, Ciesla, Roberts, and Hewitt found that insecure individuals reported more sexual partners (2004). Similarly, in a community sample of Canadian adults, Bogaert and Sadava found that greater insecure attachment was related to more lifetime sexual partners (2002).

Making predictions for a college population's attachment and casual sex participation is difficult from the current literature. The contradictory findings from previous studies may reflect different methods of measuring risky sexual practices; i.e. measuring casual sex as dichotomous (participation in casual sex or not) vs. measuring casual sex as a scale (number of casual partners). Additionally, romantic attachment measurements have evolved significantly over the last ten years and earlier measures may have misclassified individuals or masked/weakened the observable relationship between romantic attachment and sexual behavior. Although research

examining attachment style and specific risky sexual practices is relatively sparse, the link between romantic attachment and communication has received considerable attention from scholars (Dewitte, 2012).

*Safe sex communication.* Secure college students are more likely to communicate before a sexual encounter than are insecure college students (J. A. Feeney, Kelly, Gallois, Peterson, & Terry, 1999; Londono-McConnell, 1997; Mikulincer & Nachshon, 1991). In a study of Israeli college students, secure college students were the most likely to disclose to a romantic partner about a variety of intimate topics—whereas avoidant individuals were the least likely to self-disclose (Mikulincer & Nachshon, 1991). Londono-McConnell found that the more insecure college students were, the less comfortable they were discussing condom use and other sexual matters with a sexual partner (1997, p. 59). Another study found anxious attachment to be associated with negative attitudes toward discussing HIV/AIDS with a partner (J. A. Feeney et al., 1999). The authors suggest that anxiously attached students, who fear rejection and abandonment, might be more concerned than others that discussing condom use and safe sex would negatively affect their sexual encounters.

Among other populations as well, insecure attachment is linked to less communication with a sexual partner (Briggs, 2001; Ciesla et al., 2004; D. Davis et al., 2006; D. Davis, Shaver, & Vernon, 2004; J. A. Feeney et al., 2000). Anxious adolescents are less likely to discuss safe sex topics with their sexual partners, however the topic they were less likely to discuss appeared to vary by gender; anxious males were less likely to discuss contraception, while anxious females were less likely to discuss HIV/AIDS (J. A. Feeney et al., 2000). Studies of adult populations find similar associations. Avoidant adults are less likely to self-disclose having genital herpes to sexual partners (Briggs, 2001). Among HIV-positive adult patients, avoidant patients reported more concurrent sexual partners and were more likely to have a current partner to whom they had not yet disclosed their HIV serostatus, compared to secure patients (Ciesla et al., 2004). Among a

community sample of adults, endorsement of an avoidant attachment style has been negatively related to a desire for emotional closeness (i.e. emotional sharing and communication) with a sexual partner (D. Davis et al., 2004). In the context of romantic relationships, anxious and avoidant attachment both have been linked to inhibited communication of sexual needs and preferences (D. Davis et al., 2006). In light of the research reviewed insecure college students would be less likely to communicate with a casual sexual partner than secure students, and avoidant students even less likely than anxious students. Looking beyond the desire to communicate and the actual act of communicating, insecure attachment may also be linked to an individual's comfort with discussing intimate issues in a sexual situation.

**Attachment and safe sex communication comfort.** Mikulincer and Shaver note that social communication is a particularly likely place for romantic attachment to influence sexual behavior (2007). They suggest that secure individuals would be more comfortable voicing concerns about sexual behaviors and risks during intimate situations. Avoidant individuals, on the other hand, would have more problems with communicating their desire, expressing discomfort with a particular sexual activity, or sharing intimate details with a casual partner. Similarly, anxious individuals would feel uncomfortable discussing concerns or personal preferences out of fear that their partner may disagree and reject them. Although there is only limited empirical research on this connection, indirect evidence further corroborates the notion that romantic attachment is related to safe sex communication comfort.

**Secure attachment.** In reviewing research conducted on attachment and sexual systems theory, Dewitte notes that attachment security in the general population is linked to greater sexual self-confidence; which may extend to sexual communication (2012). Among Israeli college students, secure attachment is correlated with greater intrapersonal emotional intelligence (ease of self-expression and assertiveness) (Hamarta, Deniz, & Saltali, 2009). This suggests that secure students are comfortable communicating in general, which may extend to the domain of

communicating about safe sex as well. Secure adolescents report higher levels of confidence and control in sexual situations than do insecure adolescents (Tracy et al., 2003). This suggests that secure individuals may have greater confidence and comfort with an array of sexual behaviors, including communicating about safer sex.

***Insecure attachment.*** Feeney and colleagues found that anxious adolescents reported the least amount of confidence in discussing safe sex with a partner or communicating a desire to not have unprotected sex (2000). In another study, avoidant adolescents reported the least amount of safe sex communication comfort, compared to other adolescents (Tracy et al., 2003). Considering adults, more anxious individuals are likely to go along with a sexual partner's demands or desires likely in order to avoid disapproval or rejection (Brassard, Shaver, & Lussier, 2007). There are currently no studies examining romantic attachment and safe sex communication comfort in the context of casual sexual encounters. However, given the indirect relationship sketched in the literature, it is likely that insecure college students do not feel comfortable discussing safer sex topics in an intimate situation.

**Summary of attachment.** Adult romantic attachment is divided into secure, insecure anxious, and insecure avoidant styles. Secure individuals tend to have healthy and positive committed relationships, and engage in casual sex infrequently. Anxious individuals are more likely to engage in sexual behaviors in order to decrease interpersonal anxieties they feel. Avoidant individuals typically disclose less and avoid emotional elements of relationships. Both types of insecure individuals generally engage in more casual sex and have more casual sex partners.

Overall, secure attachment is associated with more safe sex communication, whereas insecure attachment is related to less safe sex communication. Furthermore, secure attachment is associated with more safe sex communication comfort, whereas insecure attachment is associated

with less safe sex communication comfort. Romantic attachment is a clear factor which contributes to sexual decision making. As noted in several studies discussed above, a final factor that may also influence safe sex communication is an individual's gender.

## **Gender**

Gender differences are consistently studied, and often found, in nearly all domains of sexuality research. However, the gender difference found depends upon the variable studied, ranging from wide variation such as in frequencies of sexual behaviors (Petersen & Hyde, 2010) and safe sex behaviors (Hope, 2012), small variations such as in romantic attachment styles (Del Giudice, 2011) and safe sex communication comfort (Pearson, 2006; Rostosky et al., 2008), and finally no variations between genders such as in safe sex communication (Lewis et al., 2009).

**Gender and safe sex communication comfort.** The confidence to set clear sexual limits with casual partners may be more necessary for women in sexual situations; studies of adolescent populations show that females report more safe sex communication comfort than do males (Pearson, 2006; Rostosky et al., 2008). Rostosky, Dekhtyar, Cupp, and Anderman found that communication comfort varied significantly among adolescents according to gender—females adolescents reported more skill in being able to communicate an unwillingness to engage in sexual activity than did male adolescents—and the authors suggest that building interpersonal skills may be a more effective approach to increase safer sexual practices among males, whereas females perhaps practice these skills more often already in sexual situations (2008). Pearson found that, only among female adolescents, safe sex communication comfort was significantly associated with safer sex behaviors, such as the use of a condom during sex (2006). Gender interacts with an individual's communication comfort to predict safe sex communication.

**Gender and romantic attachment.** Across the many studies examining attachment style, small differences in romantic attachment style have been found. A meta-analysis found the

differences to be small but significant: males are typically higher in avoidant attachment, whereas females are typically higher in anxious attachment (Del Giudice, 2011). Del Giudice further noted that these gender differences were even smaller in North American college student populations, although the differences were statistically significant.

***Gender, romantic attachment, and safe sex communication.*** Insecure women more often report maladaptive motives for having sex, such as having sex when not wanting to because a partner wanted to, than do insecure men (Stefanou & McCabe, 2012). This may also affect specific risky sexual behaviors. Additionally, anxious female college-aged adults were less likely to discuss HIV/AIDS with a partner than were anxious male college-aged adults (J. A. Feeney et al., 2000). Insecure females may engage in less safe sex communication than insecure males.

Gender may also eclipse the effect of romantic attachment on safe sex communication entirely. Recently, Hope found gender to be a better predictor of safe sex behaviors than romantic attachment style, such that women practice safer sex more frequently than men regardless of attachment styles (2012). Hope notes that this result was unexpected and further research examining the interaction of gender and attachment style should be done.

**Gender and sexual risk-reduction programs.** In light of differences in safe sex communication and comfort noted above, gender may also mitigate the effect of sexual risk-reduction programs that aim to improve those outcomes. Some skills training education programs are more effective for female attendees than male attendees, and, females attendees are subsequently more likely to introduce the discussion of safer sex practices with a committed sexual partner (M. Allen et al., 2002). Additionally, other risk-reduction programs on similarly sensitive topics of sexuality, such as sexual assault education, benefit from using gender-cognizant designs (Brecklin & Forde, 2001; Foubert, 2011). More recently, Kanekar and Sharma reported that, out of 11 intervention programs reviewed, only 1 reported significant gender

differences in the effects of the program (2010). However, the authors acknowledged that the programs reported upon were not uniform in content or presentation method, allowing few reliable conclusions to be drawn on the programs. More research must be done on the possible moderating effect of gender on sexual risk-reduction programs' outcomes.

**Summary of gender.** Gender differences can be found in many of the variables examined in the current study. Men are more likely to engage in casual sex and approve of casual sex. Men typically report higher avoidant attachment, whereas women typically report higher anxious attachment. Women tend to report higher levels of safe sex communication comfort. Men and women do not differ significantly in the amount of actual safe sex communication in which they engage. Furthermore, some research indicates the relationship between attachment insecurity and less safe sex communication may be stronger among women than men; while a recent study suggests that gender is a powerful predictor regardless of romantic attachment. Finally, research tentatively suggests that gender moderates the effects of sexual risk-reduction programs on attendees' safe sex communication and comfort levels.

## **Summary**

The studies examined above provide preliminary support for the link between safe sex communication comfort, romantic attachment, gender, and safe sex communication. A number of tenuous relationships have been revealed in the literature surrounding these variables, as well as the possible impact these variables can have on the effects of sexual risk-reduction programs. The literature reviewed suggests that the combined effect of these variables within a college student population is particularly understudied, despite the increased sexual risk faced by contemporary college students. It is therefore aim of the current study to strengthen and, where appropriate, extend the literature on risky sexual practices among college students.

## CHAPTER III

### METHODOLOGY

This chapter discusses the research methodology used to examine the relationship between the independent variables (safe sex communication comfort, romantic attachment, and gender) and the dependent variables (number of casual sex partners, number of casual sexual encounters, and frequency of safe sex communication with casual partners). The sections in this chapter describe the study's participants, recruitment procedures, theoretical design, instrumentation, and data collection and analysis protocol.

#### **Participants**

**Recruitment.** Participants were recruited in two pools. In either case participation in the study was voluntary and informed consent was obtained.

First, the survey was posted to the School of Education's SONA research subject pool. Students enrolled in various classes can receive research credit for completing a specified number of research hours. Students who participated in this survey received 1 hour of research participation credit. A total of 9 surveys were completed in this manner. After preliminary analysis, one survey was discarded due to incomplete responses, inconsistent responses, or failure to complete the attention check items correctly. The remaining sample of viable responses consisted of 8 surveys.

Second, a convenience subject pool of individuals in several campus organizations was obtained. Utilizing email listserv of campus organizations, announcements to organization meetings, and posted flyers, individuals were invited to participate in the survey. Students who participated received a \$5 Amazon.com gift card for their participation. A total of 214 surveys were completed in this manner. After preliminary analysis, 44 surveys were discarded because the participants were not college students, 37 surveys were discarded because the participants were college students attending a different institution than where this study was conducted, 23 surveys were discarded because the participant did not answer a single question (i.e. the participant exited after reading the informed consent sheet), 3 surveys were discarded because the participants failed to correctly answer the attention check items, and 30 surveys were discarded because the participants exited before completing the survey (this occurred in all five sections of the survey with no discernible pattern). Therefore, the remaining sample of viable responses consisted of 77 surveys.

**Demographics.** A combined total of 85 surveys (from both the SONA and convenience samples) were used in the following analysis. See Appendix B for the demographic questionnaire items. This sample consisted of 47% male and 53% female participants. All participants were either undergraduate or graduate students; 8.24% in their undergraduate first year, 10.59% in their sophomore year, 17.65% in their junior year, 18.82% in their senior year, 9.41% in either their fifth or sixth year of study, and 35.29% graduate students. Participants' mean age was 21.99 years old ( $SD = 2.31$ ), and ages ranged from 18 to 29. This is slightly elevated compared to typical college student populations, likely because recruitment flyers and announcements were well circulated around the College of Education buildings at the institution, and programs offered by that college attract mainly non-traditional (older) students; and also the mean age is likely elevated because graduate students participated in the current study.

Racially, 78.82% of participants self-identified as White, 4.71% self-identified as African American/Black, 1.18% self-identified as Asian American/Pacific Islander, 1.18% self-identified as Hispanic/Latino/Latina/Mexican-American, 1.18% self-identified as Native-American, and 12.94% self-identified as multiracial; all participants specified at least one racial category. Compared to the racial profile of students attending the institution where the study was conducted, the current study included 2.98% more White students, 3.33% less Hispanic/Latino/Latina/Mexican-American students, 4.91% less Native-American students, and 6.21% more multiracial students. While the differences are small, the difference in Native-American and multiracial students is particularly noticeable. This is likely an artifact of different data collection methods. Institutional diversity measures use a forced single-selection question to measure racial groups, resulting in a profile that sums to 100%. In the current study, participants were allowed to select any racial category that they self-identified with; if participants selected more than one category they were coded as multiracial and subtracted from any specific racial category percentages so that percentages summed to 100% and could be compared to institutional diversity measures. Therefore, it is possible that the more expansive item in the current study prompted participants to select multiple categories even if they might not personally identify as “multiracial,” whereas on the institution’s diversity measure only those participants consciously identifying as multiracial would select that category.

### **Design of Study**

The goal of the current study was to examine the relationships between college students’ safe sex communication comfort, romantic attachment, gender, and sexual practices as measured by number of casual sex partners, number of casual sex encounters, and frequency of safe sex communication with casual partners. To examine those relationships I used a multivariate correlational, within-group research design.

A theoretical framework based on the theory of planned behavior was applied to the above variables, because TBP allows for both a person's general characteristics (i.e. gender and romantic attachment) and situation-specific skills (i.e. safe sex communication comfort) to be included in the predictive model.

Multiple regression equation modeling is used in the current study because it allows for the entire model to be examined as well as the individual contributions made by each subcomponent of the model. Furthermore, this method allows for the inclusion of both interval/ratio and dichotomous variables in the predictive model. This methodology has been used before to examine the application of TBP to sexual behavior prediction, and to assess relationships between attachment and various sexual behaviors (Hope, 2012; Turchik & Gidycz, 2012; Walker-Bauer, 2005). A limitation of the design of this study, which affects much research on casual sexual behavior, is that data is mainly self-reported recall—and therefore may suffer from recall bias (Garcia et al., 2012).

## **Materials**

**Sexual behaviors.** Participants were asked various questions about their sexual history and sexual behaviors, using items and definitions from the National Family Growth Survey (Chandra, Mosher, Copen, & Sionean, 2012). Before answering any questions relating to sexuality, participants were given definitions for vaginal intercourse, oral sex, casual partner, and casual encounter. The items and definitions used can be found in Appendix C.

***Number of casual partners.*** Participants were first asked whether they had ever had vaginal intercourse and oral sex. If yes, participants were further asked about the number of casual partners (during the past 12 months) with whom they: (a) had vaginal intercourse, (b) either gave or received oral sex, and (c) both had vaginal intercourse and either gave or received oral sex. All three responses were summed to create an overall number of casual partners. If

participants had never had vaginal intercourse or oral sex, they did not answer the items relating to that behavior.

***Number of casual sexual encounters.*** Participants who had indicated at least one partner to the previous questions were further asked to recall the number of casual encounters in total they had had during the past 12 months. Participants were asked to report separately the number of casual encounters in which they had (a) had vaginal intercourse, (b) either gave or received oral sex, and (c) both had vaginal intercourse and either gave or received oral sex. All three responses were summed to create an overall number of casual sexual encounters.

***Frequency of safe sex communication.*** Communication was assessed using the Partner Communication Scale (PCS) (Milhausen et al., 2007). The PCS can be found in Appendix D. The stem was modified to refer to all of a participant's past casual sexual encounters. A single stem was used for all items, "Considering all of your casual sexual encounters, how often before any sexual activity have you discussed..." The items were (1) how to prevent pregnancy, (2) how to use condoms, (3) how to prevent the AIDS virus, (4) how to prevent STDs, and (5) your partner's sex history. Additionally, the author added two items (which used the same stem as above) assessing communication about (6) the last time your partner was tested for an STI and (7) if your partner had had sex recently with another person. All items were answered on a 4-point Likert-type scale (0 = *Never*, 1 = *Sometimes*, 2 = *Often*, 3 = *A Lot*). Completion time is typically less than 5 minutes (Milhausen, Sales, & DiClemente, 2011). The PCS had an alpha of .80, consistent with previous research that has found alphas to be at or above .80 (Milhausen et al., 2011). A composite safe sex communication score was created using just the items from the PCS. The PCS responses were averaged to create the frequency of safe sex communication (PCS), with higher scores indicating more safe sex communication before casual sex and lower scores indicating less safe sex communication before casual sex.

**Romantic attachment.** Romantic attachment style was measured using the ECR-R, a 36-item self-report questionnaire (ECR-R) (Fraley et al., 2000). The questionnaire consists of two attachment style dimensions including anxiety and avoidance. The questionnaire includes 18 items that measure anxiety and 18 items that measure avoidance, these items can be found in Appendix E. Participants answered the questions on a 7-point Likert-type with responses ranging from 1 (*disagree strongly*) to 7 (*agree strongly*). Anxiety items and avoidance items were averaged separately; with higher scores indicating higher levels of attachment within that category. Additionally, all 36-items can be averaged to create a single attachment score; with higher levels indicating more secure attachment and lower levels indicating more insecure attachment. In the current sample, alphas were high (.93 for anxiety, .92 for avoidance, and .94 for overall attachment), consistent with previous research (Sibley, Fischer, & Liu, 2005). In all analyses, overall romantic attachment was first entered as a variable. If the relationship proved significant, follow-up separate analyses for anxiety and avoidance were conducted.

**Safe sex communication comfort.** Participants completed six questions from the Sexual Health Survey (SHS) (Eastman-Mueller et al., 2011). The items represented Factor 2: Comfort with Sexual Communication and Factor 3: Comfort with Barrier Methods of the SHS, and can be found in Appendix F. Participants were prompted, “To what extent do you feel comfortable or uncomfortable when engaging in the following behaviors?” The six behaviors were: (1) asking a casual partner about their past sexual history, (2) asking a casual partner if she/he has had an HIV test, (3) asking a casual partner if he/she has been tested for an STD (other than HIV), (4) buying a condom or a dental dam, (5) providing a condom or dental dam if a casual partner did not have one available, and (6) asking a casual partner to use a condom or dental dam. All items were measured on a 6-point Likert-type scale (0 = *Very Uncomfortable*, 1 = *Moderately Uncomfortable*, 2 = *Slightly Uncomfortable*, 3 = *Slightly Comfortable*, 4 = *Moderately Comfortable*, 5 = *Very Comfortable*). All six responses were summed to create a safe sex

communication comfort score, which ranged from 0 to 30; with larger scores representing more comfort with safe sex communication. In the current sample, alphas for each factor independently were high (.91 for Factor 2 and .85 for Factor 3), consistent with previous research (.91 for Factor 2 and .79 for Factor 3) (Eastman-Mueller et al., 2011). Additionally, Cronbach's alpha for all six items together was .82, which was acceptable.

**Attention check.** Inserted randomly throughout the survey items, various attention checks were included. Given the unmonitored nature of anonymous online survey distribution, ensuring that survey participants answered all questions with at least the same degree of attention is important. Examples of these items can be found in Appendix G. Participants failing more than one attention check question were discarded prior to any analysis. To ensure the recruitment pools did not overlap, at the beginning of the survey all participants were asked, "Have you taken this survey before?" Participants who answered "Yes" were discarded. Additionally, all participants were asked at the beginning of the survey "Are you alone at your computer?" Participants who indicated "No" were dropped from analysis.

## **Procedure**

**Data collection.** In order to determine the minimum number of survey participants required for a significant multiple regression analysis, Green's (1991) suggestions of Cohen's guidelines were utilized. This approach takes into account anticipated effect size, power, alpha level, and number of predictor variables. As suggested by Green for use in the behavioral sciences, a medium effect size of  $R^2 = .15$ , a statistical power level of  $\beta = .80$ , and an alpha level of  $\alpha = .05$  were used in the current study. A total of three independent variables will be used in the model (safe sex communication comfort, romantic attachment, and gender) to predict the dependent variables. Therefore, a minimum of 76 participants were needed to test the current study.

**Data analysis.** Responses were first checked for missing or outlying data, as well as incorrect attention check answers. After discarding those surveys, several preliminary analyses were performed on all variables. First, variables were examined for violations of the assumptions of normality using scores of kurtosis and skewness, as well as visual examination of histograms with normal distribution curves superimposed. Next the internal consistency of instruments used was assessed using Cronbach's alphas. Lastly, an analysis of covariance (to identify the presence of collinearity) among all variables was performed using Pearson's  $r$  (see Table 3). Following preliminary analyses, each hypothesis was tested separately.

The research questions and subsequent hypotheses which guided the current study are presented next, followed by the statistical method utilized to test each specific hypothesis. A multiple regression analysis examines the relationship between a number of predictor variables and one criterion variable. In order to test each hypothesis, three separate simultaneous multiple regression analyses were used. It is important to note that all three simultaneous multiple regression analyses utilized the same three predictor variables.

Research question 1 was: To what extent do the IVs of safe sex communication comfort, romantic attachment, and gender predict the number of casual sexual partners reported by college students? My subsequent hypothesis 1 was: Safe sex communication comfort, romantic attachment, and gender together significantly predict differences in the number of casual sexual partners reported by college students. A simultaneous multiple regression analysis was used to examine whether or not safe sex communication comfort, romantic attachment, and gender taken together explain differences in the number of casual sexual partners reported by college students. Safe sex communication comfort, romantic attachment, and gender were the predictor variables and number of casual sexual partners was the criterion variable. The hypothesis was tested at the  $p = .05$  level of significance.

Research question 2 was: To what extent do the IVs of safe sex communication comfort, romantic attachment, and gender predict the number of casual sexual encounters reported by college students? My subsequent hypothesis 2 was: Safe sex communication comfort, romantic attachment, and gender together significantly predict the number of casual sexual encounters reported by college students. A simultaneous multiple regression analysis was used to examine whether or not safe sex communication comfort, romantic attachment, and gender taken together predict the number of casual sexual encounters reported by college students. Safe sex communication comfort, romantic attachment, and gender were the predictor variables and number of casual sexual encounters was the criterion variable. The hypothesis was tested at the  $p = .05$  level of significance.

Research question 3 was: To what extent do the IVs of safe sex communication comfort, romantic attachment, and gender predict the frequency of safe sex communication with casual partners reported by college students? My subsequent hypothesis 3 was: Safe sex communication comfort, romantic attachment, and gender together significantly predict the frequency of safe sex communication with casual partners reported by college students. A simultaneous multiple regression analysis was used to examine whether or not safe sex communication comfort, romantic attachment, and gender taken together predict the frequency of safe sex communication with casual partners reported by college students. Safe sex communication comfort, romantic attachment, and gender were the predictor variables and frequency of safe sex communication was the criterion variable. The hypothesis was tested at the  $p = .05$  level of significance.

## CHAPTER IV

### FINDINGS

The purpose of the current study was to examine the relationships between college students' safe sex communication comfort, romantic attachment, gender, and sexual practices as measured by number of casual sexual partners, number of casual sexual encounters, and frequency of safe sex communication with casual partners. This chapter includes data from each of the measures utilized, and the results of the statistical analyses used to test the three hypotheses outlined in Chapter III are presented.

#### **Measure Analysis**

**Safe sex communication comfort.** Two sections of the Sexual Health Survey (SHS), identified as factor 2 and factor 3 (Eastman-Mueller et al., 2011), were combined into a single questionnaire and utilized to measure safe sex communication comfort among participants. Total scores on the SHS can range from 0 to 30; scores from the current study ranged from 0 to 30 ( $M = 17.65$ ,  $SD = 7.32$ ). A visual examination of a histogram of SHS scores with a normal curve super-imposed on the graph suggested that SHS scores were slightly negatively skewed; indicating that fewer individuals reported lower average levels of safe sex communication comfort.

**Romantic attachment.** The Experience in Close Relationships Scale – Revised (ECR-R) was utilized to assess romantic attachment. Mean scores on the overall ECR-R can range from 1 to 7;

scores from the current study ranged from 1.17 to 5.14 ( $M = 3.13$ ,  $SD = 0.98$ ). A visual examination of a histogram of overall ECR-R scores with a normal curve super-imposed on the graph suggested that overall ECR-R scores were normally distributed. The ECR-R can also be used to measure anxious attachment and avoidant attachment separately. In the current study, averaged scores on the anxious attachment subscale ranged from 1 to 6 ( $M = 3.32$ ,  $SD = 1.20$ ), and averaged scores on the avoidant attachment subscale ranged from 1 to 5.22 ( $M = 2.94$ ,  $SD = 1.04$ ). A visual examination of histograms of attachment subscale scores with a normal curve super-imposed on the graphs suggested that both attachment subscales were also normally distributed.

**Sexual behaviors.** A questionnaire containing a number of questions regarding sexual behavior in the past twelve months was used to measure sexual behavior of participants (see Table 3). A total of 71 (84%) participants indicated that they had had a sexual encounter (either oral sex or vaginal intercourse), the remaining 14 (16%) had never had a sexual encounter.

**Number of casual sexual partners.** The number of casual sexual partners in the last twelve months ranged from 0 to 41 ( $M = 2.56$ ,  $SD = 5.47$ ). A total of 49 (58%) participants indicated that they had had no casual sexual partners in the past twelve months. A visual examination of a histogram of number of casual sexual partners with a normal curve super-imposed on the graph suggested that number of casual sexual partners was positively skewed, indicating that fewer participants reported large numbers of casual sexual partners.

**Number of casual sexual encounters.** The number of casual sexual encounters in the last twelve months ranged from 0 to 65 ( $M = 4.87$ ,  $SD = 12.24$ ). A total of 54 (64%) participants indicated that they had had no casual sexual encounters in the past twelve months. A visual examination of a histogram of number of casual sexual encounters with a normal curve super-

imposed on the graph suggested that number of casual sexual encounters was positively skewed, indicating that fewer participants reported large numbers of casual sexual encounters.

***Frequency of safe sex communication.*** The Partner Communication Scale (PCS) was used to measure the frequency of safe sex communication. The PCS ranges from 0 to 3; in the current study responses ranged from 0 to 2.6 ( $M = 0.69$ ,  $SD = 0.67$ ). A visual examination of a histogram of PCS scores with a normal curve super-imposed on the graph suggested that PCS scores were slightly positively skewed; indicating that fewer participants reported a high average frequency of safe sex communication.

Table 1

*Correlation Matrix for Predictor Variables, Criterion Variables, and Demographic Variables*

Variables	1	2	3	4	5	6	7
1 Overall Attachment	1.0						
2 Safe Sex Communication Comfort	-.11	1.0					
3 # of Casual Sexual Partners	-.02	.06	1.0				
4 # of Casual Sexual Encounters	.14	.13	.28*	1.0			
5 Freq. of Safe Sex Communication	.11	.33*	-.05	.12	1.0		
6 Year in School	-.09	.22*	-.02	-.02	-.06	1.0	
7 Age	-.08	.24*	-.04	-.03	-.12	.82*	1.0

\* $p < .05$

**Analysis of collinearity.** A correlation matrix was constructed to test for significant collinearity among the predictor variables and categorical demographic variables. The results can be seen in Table 1. Given that there were no strong significant bivariate correlations between independent variables or between independent variables and demographic variables, there were no issues related to collinearity.

### Primary Analyses

**Hypothesis 1.** Results of the simultaneous multiple regression for hypothesis 1 (displayed in Table 2) indicated that the model did not explain a significant proportion of the variance in the number of casual sexual partners reported by college students in this sample,  $F(3, 81) = 1.68, p = .1787$ . Given the non-significant  $p$  value ( $p = .1787$ ), the results did not support Hypothesis 1.

Table 2

*Summary of Simultaneous Multiple Regression Analysis for Variables Predicting Number of Casual Sexual Partners in the Past Twelve Months (n = 85)*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>p</i> -value
Safe Sex Communication Comfort	.01	.08	.01	0.13	.894
Overall Attachment	-.04	.61	-.01	-0.07	.946
Gender	-2.60*	1.19	-.24	-2.17	.033
<i>R</i>	.2417				
<i>R</i> <sup>2</sup>	.0584				
<i>F</i>	1.68				.179

\* $p < .05$

**Hypothesis 2.** Results of the simultaneous multiple regression for hypothesis 2

(displayed in Table 3) indicated that the model did not explain a significant proportion of the variance in the number of casual sexual encounters reported by college students in this sample,  $F(3, 81) = 1.23, p = .304$ . Given the non-significant  $p$  value ( $p = .304$ ), the results did not support Hypothesis 2.

Table 3

*Summary of Simultaneous Multiple Regression Analysis for Variables Predicting Number of Casual Sexual Encounters in the Past Twelve Months ( $n = 85$ )*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>p</i> -value
Safe Sex Communication Comfort	.28	.19	.15	1.38	.170
Overall Attachment	2.00	1.37	.16	1.46	.148
Gender	.83	2.69	.03	.31	.758
<i>R</i>	.2088				
<i>R</i> <sup>2</sup>	.0436				
<i>F</i>	1.23				.304

**Hypothesis 3.** Results of the simultaneous multiple regression for hypothesis 3

(displayed in Table 4) indicated that the model explained a significant proportion of the variance in the frequency of safe sex communication reported by college students in this sample,  $R = .3552, F(3, 67) = 3.23, p = .0279$ . The model yielded a coefficient of determination,  $R$ -squared, of 0.1262, indicating that the complete model accounted for about 13% of the variance in the criterion variable. Thus, about 13% of the variance in the frequency of safe sex communication reported by college students is explained by the predictor variables safe sex communication comfort, romantic attachment, and gender. Given the significant  $p$  value ( $p = .0279$ ), the results

support Hypothesis 3. Although a medium effect size was expected, this modest association is acceptable given that a number of participants had never engaged in a sexual encounter at all and thus could have potentially created a floor effect on the data.

The regression analyses also revealed that, controlling for gender and overall attachment, safe sex communication comfort explains a significant proportion of the variance in the frequency of safe sex communication reported by college students ( $\beta = .33, t = 2.91, p = .005$ ). Safe sex communication comfort was positively related to frequency of safe sex communication. More specifically, participants more comfortable with safe sex communication reported more frequent safe sex communication with past casual sexual partners.

Table 4

*Summary of Simultaneous Multiple Regression Analysis for Variables Predicting the Frequency of Safe Sex Communication with Casual Sexual Partners (n = 71)*

Variable	<i>B</i>	<i>SE B</i>	$\beta$	<i>t</i>	<i>p</i> -value
Safe Sex Communication Comfort	.04**	.01	.33	2.91	.005
Overall Attachment	.09	.08	.13	1.14	.258
Gender	-.04	.15	-.03	-0.24	.812
<i>R</i>	.3552				
<i>R</i> <sup>2</sup>	.1262				
<i>F</i>	3.23*				.028

\* $p < .05$ , \*\* $p < .01$

## **Summary**

The current study provided the opportunity to examine the relationships between safe sex communication comfort, romantic attachment, gender, and various indicators of risky sexual behaviors reported by college students, including number of casual sexual partners in the past twelve months, number of casual sexual encounters in the past twelve months, and frequency of safe sex communication with past casual sexual partners. Three separate simultaneous multiple regression analyses were used to test the three hypotheses of the current study. Data from the current study did not support Hypothesis 1 and Hypothesis 2. Hypothesis 3 was supported, indicating that safe sex communication comfort, overall attachment, and gender together explain differences in the frequency of safe sex communication with a casual sexual partner reported by college students. Additionally, the regression analysis indicated that level of safe sex communication comfort explained a significant proportion of the variation in frequency of safe sex communication after controlling for overall attachment and gender. Specifically, participants more comfortable with safe sex communication reported more frequent safe sex communication.

## CHAPTER V

### DISCUSSION

The goal of the current study was to investigate the relationships between safe sex communication comfort, romantic attachment, gender, and various indicators of risky sexual behaviors reported by college students, including number of casual sexual partners in the past twelve months, number of casual sexual encounters in the past twelve months, and frequency of safe sex communication with past casual sexual partners. This chapter begins with an overview of the goal of and reasons for conducting the current study, followed by an integrated discussion of scholarly literature and the current study's results that culminates with some suggested implications and applications of these findings to practice. Specifically, implications for risk-reduction programs are addressed. Finally, the limitations of the current study are discussed, and recommendations for future research and assessment are outlined.

#### **The Current Study**

College students often engage in risky sexual practices. Recent reviews of the emerging sexual trends on college campuses (for example, see Garcia et al., 2012; Kalish & Kimmel, 2011; or Stinson, 2010) indicate that a majority of college students are engaging in casual sexual encounters called "hookups". Those encounters include sexual activities under the influence of alcohol and sex with inconsistent use of STI protection. Further, few college students discuss important safe sex topics such as STIs or sexual histories with potential sexual partners

before they engage in sexual activities. These and other factors combine to make college students at particular risk for contracting STIs (Centers for Disease Control and Prevention, 2009).

Typical institutional responses to these trends including sexual health programming and sexual-risk focused education, usually result in little or no reduction in the occurrence of risky sexual practices (C. Davis et al., 2007; Roudebush, 2008). Those conventional approaches, based in theoretical models which treat engaging in risky sex as a rational decision between positive outcomes and negative outcomes (TRA: Ajzen & Fishbein, 1980), are gradually being influenced by more promising programs. A vein of particularly effective programming, based on a theoretical approach that accounts for both rational risk analysis and situational aspects that affect intimate sexual situations (TPB: Ajzen, 1991), incorporates education with skills training—such as building up students' confidence to make safer choices and comfort with enacting safer behaviors. Programs which increase sexual self-efficacy have so far been studied in adolescent populations (Pearson, 2006) and college student samples (Milstein, 2006), with encouraging results.

The motivation for conducting the current study was to investigate the role that romantic attachment style, gender, and safe sex communication comfort play in predicting college students' risky sexual behaviors. More specifically, this study hoped to replicate findings with other populations regarding gender and attachment, and offer insights into the emerging study of sexual communication self-efficacy in casual context specifically. The current study sought to do this by testing a predictive model for three different indicators of risky sexual practices: the number of casual sexual partners reported by participants, the number of casual sexual encounters reported by participants, and the frequency of safe sex communication with casual sexual partners reported by participants. The meaning of the results will be discussed individually for each indicator, and then collectively in connection with potential implications for practice.

**Casual sexual partners.** College students on average indicate having only one or zero casual sexual partners during a single semester of college (Fielder & Carey, 2010). In the current study, participants indicated having an average of two casual sexual partners during the past 12 months. Given that the current study's timeframe is approximately twice as long as a semester, the number of casual sexual partners reported by college students in this study is roughly consistent with previous research on numbers of casual partners.

Research question 1 asked: To what extent do the independent variables of safe sex communication comfort, romantic attachment, and gender predict the number of casual sexual partners reported by college students? In light of the literature reviewed, hypothesis 1 stated that the independent variables would significantly predict the reported number of casual sexual partners in a college student sample. Contrary to hypothesis 1, the results did not show any statistically significant differences in the number of casual sexual partners explained by the combination of the independent variables. This finding is counter to past research, such as Petersen and Hyde's (2010) meta-analysis of over 500 studies done across the globe, which found that gender explained significant differences in the number of casual sexual partners reported by college-aged North Americans. Further, this finding conflicts with some research on attachment and sexual behaviors (Paul et al., 2000; Schmitt, 2005), these findings confirm other, more recent research, such as the work of Jones and Furman (2011), which identified no relationship between attachment style and number of sexual partners outside of a committed relationship among high school adolescents. Instead, the author found that any preliminary association between attachment and casual sexual behaviors was fully accounted for by adding previous romantic experience to the predictive model. The absence of this variable, previous romantic experience, could explain why the model used in the current study failed to explain significant differences. Although romantic attachment style may still play an indirect role in casual sexual behavior, since there is ample evidence that having different types of romantic experiences is associated with different

attachment styles (for example, see Bogaert & Sadava, 2002; or Tracy et al., 2003), the results of this study indicate that it does not directly affect a students' reported number of casual sexual partners.

**Casual sexual encounters.** A recent study found that 54% of college students surveyed had participated in at least one casual sexual encounter during their time at college (Holman & Sillars, 2012). Another study found that about half of college students surveyed reported having at least one casual sexual encounter during the past two years (Bradshaw, Kahn, & Saville, 2010). In the current study, 36% of participants indicated having at least one sexual partner in the past twelve months. Understandably, the current study's results are below Holman & Sillar's findings, as the timeframe was constant for all participants in this study and not so for that study. Additionally, considering that Bradshaw and colleagues' timeframe was twice that of the current study, the prevalence of participation in casual sexual encounters found in the current study is fairly consistent with previous findings.

Research question 2 asked: To what extent do the independent variables of safe sex communication comfort, romantic attachment, and gender predict the number of casual sexual encounters reported by college students? In light of the literature reviewed, hypothesis 2 stated that the independent variables would significantly predict the reported number of casual sexual partners in a college student sample. Contrary to hypothesis 2, the results did not show any statistically significant differences in number of casual sexual encounters explained by the combination of the above independent variables. This finding is contradictory to previous research on gender, such as Holman and Sillar's (2012) previously discussed study, which found that gender was a significant predictor of the average number of casual sexual encounters reported by college students. A possible explanation for difference in findings may relate to the timeframe of the questionnaires. Although a single year was utilized so that incorrect recall would be minimized and survey completion time would not be excessive, limiting the timeframe may

have excluded participants' behaviors that would have made the reported number of casual sexual encounters noticeably different along gender lines.

These results do confirm previous study's findings regarding casual sex and attachment style. Owen, Stanley, Rhoades, and Fincham (2010) found that situational factors, such as alcohol use, more significantly predicted number of casual sexual encounters than did attachment or gender. The most commonly identified themes in accounts of hookups given by college students are alcohol use/intoxication and the presence of a social network/friends (Olson, 2009); all of which are situational factors rather than stable characteristics. Given that the three predictor variables used in the current study's model were not situational factors but more stable (relatively) individual characteristics, the lack of an association in the current study conceptually supports the findings of Owen and colleagues'.

**Safe sex communication.** Although no previous studies have examined safe sex communication in the context of a casual sexual encounter before, several qualitative studies have found that college students rarely, if at all, engage in communication with a casual partner about sexual histories, STI testing, or the use of protection, prior to commencing sexual activities (Cleary et al., 2002; Epstein et al., 2009; Wentland & Reissing, 2011). In the current study, on average participants reported discussing sexual health and the use of protection with a casual partner at most "sometimes", and 16 participants reported never discussing a single topic on the PCS with a casual sexual partner. Therefore, the results of the current study confirm quantitatively what previous qualitative investigations have suggested.

Research question 3 asked: To what extent do the independent variables of safe sex communication comfort, romantic attachment, and gender predict the frequency of safe sex communication with a casual sexual partner reported by college students? In light of the literature reviewed, hypothesis 3 stated that the independent variables would significantly predict the

frequency of safe sex communication with a casual sexual partner in a college student sample. The data did support hypothesis 3, suggesting that the three predictor variables in the current model have a combined impact on safe sex communication with casual partners.

Few studies have examined casual sexual activity using a model similar to the current study. A recent study by Hope (2012) examined gender, attachment, and self-esteem as predictors of safe sex behaviors, and found that the combination of those variables significantly predicted engaging in safer sexual behaviors. Although self-esteem is a separate construct, there is some research (see Guindon, 2010, for an overview) to suggest that having a high level of self-esteem is also associated with one's confidence or (in the case of the current study) comfort in interpersonal domains, such as sexual encounters. Hope's study found that securely attached female college students with higher self-esteem were most likely to have engaged in safe sex behaviors. However, the current study found that securely attached male college students with a higher level of comfort with discussing safe sex were most likely to have engaged in safe sex communication with a casual partner. A likely explanation for the difference in gender between these findings is that self-esteem and safe sex communication comfort may interact differentially with gender, which would greatly affect the significance of a combined model. Additionally, Hope's dependent variable, "safe sex behaviors" is an amalgam of risky sexual practices whereas the current study examined risky sexual practices separately. A future study might separately examine various risky sexual practices utilizing a model incorporating both self-esteem and safe sex communication comfort (or even a global measure of self-efficacy), which would allow for these differences to be further illuminated.

The results of the current study also confirm individual findings regarding the relationship of gender and attachment to sexual communication. Given that, in general, it is more acceptable and more likely for men to discuss engaging in sex and other sexual topics (Alexander & Fisher, 2003), perhaps this level of comfort in discussing sexual matters generally translates to

a slightly higher comfort discussing safe sex in a casual sexual situation. Likewise, since securely attached individuals are more likely to be comfortable discussing intimate topics in general with sexual partners (for example, see Briggs, 2001; D. Davis et al., 2006; or Londono-McConnell, 1997), it makes sense that this general comfort with communicating with a partner could translate to a specific increased comfort with safe sex communication in a casual encounter. Caution should be used when interpreting these conclusions however, particularly because the most significant predictive variable in the model was neither gender nor attachment style, but level of safe sex communication comfort.

The data indicated that safe sex communication comfort contributed uniquely to frequency of safe sex communication, controlling for gender and attachment style. Stated plainly, college students who felt more comfortable discussing safe sex topics with casual partners also reported having discussed safe sex topics more frequently with past casual partners, regardless of their gender or attachment style. Although this may appear intuitive, the lack of a significant affect from gender or attachment (individually), conflicts with previous findings of previous studies. For instance, one study found that securely attached adolescents reported higher levels of confidence in sexual situations than did insecurely attached adolescents (Tracy et al., 2003). Rostosky and colleagues (2008) found that adolescent females reported more comfort with communicating about desired safer sex than did adolescent males. Given that those two studies focused on adolescents, the results of the current study suggest that by college the effects of attachment style and gender on sexual self-efficacy and comfort may have become negligible.

The large impact of safe sex communication comfort is consistent with previous research on both college student populations and non-college populations. In two previous studies, one on adult drug-users in the Netherlands (van Empelen et al., 2001) and one on adults in Brazil (Pérez-Jiménez et al., 2009), levels of general sexual self-efficacy were the strongest examined predictor of general safe sex behaviors. Among adolescents, Pearson (2006) conducted a study which

found a strong association between comfort with negotiating safe sex and engaging in discussions of safe sex with potential sexual partners. Most relevantly, in an unpublished study conducted among American community college students (Milstein, 2006), sexual self-efficacy was highly correlated with a history of safe sex behaviors. Therefore, at a basic level the current study at least extends the associations found above to include college students at a four-year institution. It is also important to note that the aforementioned studies did not specifically examine casual sexual encounters. Therefore, the current study's findings are also an important addition to the literature on casual sex, specifically safer sex communication prior to casual sexual activity. This link, between comfort with a behavior and actually performing a behavior, might seem obvious, but it is an important relationship that has not typically been incorporated into sexual health programming.

### **Implications**

Taken as a whole, the results of all three regression analyses indicate that the model utilized in the current study is a poor predictor of risky sexual behaviors. Two commonly used indicators of risky sexual behavior, number of casual partners and number of casual encounters (or "hookups" as much of the literature refers to them), were non-significantly predicted by the model. Only the third indicator, safe sex communication, a much more specific and particular measure of risky sexual behavior, was significantly predicted by the model. These results offer insight into new tactics that should be further explored in sexual health programming, commentary on the current theories being used to examine casual sex, and numerous ideas for follow-up research.

**Practical insight.** The consequences of risky sexual behaviors, such as contracting a potentially incurable STI, make identifying the most vulnerable populations an important aspect of providing efficient and effective sexual risk-reduction programming. In the literature review,

the possibilities of gender-specific programming and programming which targets different attachment styles was discussed as showing promise in other areas of sexual programming. However, the results of the current study suggest that utilizing stable individual characteristics of students to identify them as high or low risk in casual sex contexts may not be particularly effective. The non-significance of both romantic attachment and gender (both relatively stable traits of individuals) for predicting safe sex communication indicates that rather than designing programs for static groups of students, perhaps we should instead design programming targeted at different communication skill levels. This is because safe sex communication comfort, a skill which has been shown to be malleable and, notably, improvable with the right kind of programming (M. Allen et al., 2002), was a significant predictor compared to the two stable traits.

Risk-reduction programs that adopt a skills-focused approach might appeal more to students than traditional health terrorism approaches which were discussed in Chapter II. Rather than telling students about all the behaviors they should avoid, a skill-building program would focus on enumerating what students can actually do—such as non-confrontational ways to ask about using a condom, or to ask about a partner’s sexual history, etc. Educating students on such proactive behaviors risk mitigation treat them as sexual beings capable of assessing risky situations and making the right choice, compared to treating them as reckless sexual risk-takers who need to be told over and over again what they should not do. Approaching students as competent (whether or not they are competent), makes the information more personally relevant to students, since most of them do not identify themselves as reckless or careless. Making information personally relevant is a critical aspect of persuasive programming (Petty & Cacioppo, 1986).

Another possible way to incorporate safe sex communication practice into risk-reduction programming could be to put students into pairs and have them simulate a discussion of safe sex topics as though they were in an intimate situation; or have students doing a guided imagery

exercise on discussing the use of protection in a casual sexual encounter. Research from social psychology suggests that imagined interactions and role-playing can lead to increased comfort in real-life equivalents of the imagined scenarios. For example, positively imagined interactions (walking individuals through an imagined scenario that is positive, non-threatening, and not-anxiety-producing) with out-group individuals has been shown to reduce stereotyping and fearful attitudes toward having interactions with outsiders (Crisp & Turner, 2009). Though of course prejudices are not at play in casual sexual encounters, anxiety-producing social expectations of casual sexual encounters are certainly present. Confronting those expectations and discussing positive ways to navigate such anxiety-producing situations could be a promising new direction to be explored in risk-reduction programming for college students.

**Theoretical commentary.** This study utilized a model constructed with the Theory of Planned Behavior in mind. Although only a modest relationship was found between the model and frequency of safe sex communication, it is important to note that only a medium effect size was expected in light of the statistical design and review of the literature. Given that the target sample size was reached, the relationship found regarding research question three should not be ignored. However, it does allude to important theoretical implications considering the nature of the variables included in the current model. The current model contained only stable characteristics of individuals, and did not include any situational variables. There is some research indicating that the actual, in-the-moment decision to engage in a casual sexual encounter (and thus to engage in a risky sexual practice) is best predicted by situational variables, rather than distinguishing characteristics such as gender or attachment security. For example, Garcia and Reiber found that a third of students they surveyed about their last hookup experience had not started the night with the intention to engage in casual sex; but after drinking at a party or a bar did end up having consensual casual sex with someone (2008). When considered with the findings of the current study, there is a clear need for further theoretical exploration.

The interaction of situational variables with individuals' stable characteristics, or even personality traits, is a potential route for future exploration. The rapid developmental changes that occur in college make speculation of theoretical relationships difficult, in addition to consideration of institution type and demographic make-up of student populations that have been studied. The fact that the data did support hypothesis 3, which pertained to a much more specific indicator of risky sexual practices, suggests that general participation in casual sex may be too ubiquitous on college campuses to successfully parse out with a limited number of variables. However, generating theories that address specific behaviors that most often accompany casual sex (alcohol use, lack of communication, peer pressure, etc.) may lead to more accurate modeling of college students' risky sexual behaviors.

**Research ideas.** The main finding of this study may appear to be unsurprising and so self-evident that it requires no further examination: High comfort performing a behavior is associated with a high frequency of actually performing that behavior. However, much is still unknown about safe sex communication and the nature of how comfort in this particular domain is built up. The current study is unable to indicate whether individuals became more comfortable with safe sex communication as a result of engaging in it more frequently or if individuals engaged in it more frequently after becoming comfortable with safe sex communication from some other, non-sexual experience. This study found a small positive correlation between participant age and level of safe sex communication comfort. A longitudinal study designed to frequently monitor individuals' feelings of safe sex communication comfort would be better able to decipher this relationship. Such research would be able to extend knowledge of both safe sex communication and sexual self-efficacy in a larger sense. Is it just the passage of time and maturation (age-wise) that leads to higher comfort levels? Or do college students all encounter similar experiences which lead to that increased comfort? These questions and more are

suggested by the results found here. Further research should be done both to elucidate a direction to this causal mystery, and also to address other limitations of this particular study.

### **Study Limitations**

This study has several limitations which impact the interpretation of these results. Although participants were repeatedly reminded that survey results were anonymous, individuals still may have felt uncomfortable or wary disclosing information regarding intimate sexual behaviors and numbers of casual sexual partners/encounters. Although a gender difference was found in this sample, caution should be used when interpreting these results. Several previous studies have found that beliefs of survey privacy and beliefs in social norms (Alexander & Fisher, 2003; T. D. Fisher, 2009; Jonason & Fisher, 2008), i.e. whether or not participants believe that others will view their answers and whether or not they are informed of social norms directly prior to the study, can impact the degree to which individuals conform to gendered norms. Although the online survey medium makes it less likely individuals will be concerned with this, in current study it is still possible that the norm making it acceptable for men to have many sexual partners and unacceptable for women to have many sexual partners may have had an impact on the number of casual sexual partners and number of casual sexual encounters reported by participants.

The second general limitation to the current study concerns the generalizability of these results. As stated previously, the current sample was a convenience sample. Also, more than a third of participants were graduate students, which is not an accurate representation of most college campuses, or indeed even an accurate representation of the college campus where this study was conducted. Another limitation is that participants were offered a small incentive to participate in the current study. Although several attention checks were implemented to exclude survey results that were completed by participants not reading instructions, the online and

anonymous nature of the survey makes complete assurance of honest and thoughtful completion of the survey impossible. Another limitation to the generalizability of these results is that one of the variables, romantic attachment, was only measured using the ECR-R. Although the ECR-R is a widely used measure of romantic attachment, there are other methods of assess romantic attachment and the results of this study may be difficult to compare to studies which utilize a different measure of attachment. A final limitation concerns the culture and social desirability associated with the topic of promiscuity and casual sex. This study's sample was collected at a single institution in a region of the country typically known as "The Bible Belt". Previous researchers (for example, see Foubert, Watson, Brosi, & Fuqua, 2012) have noted that this particular region, owing perhaps to the prevalence of religious individuals, may influence study results and that if a study were conducted in a region outside of the Bible Belt the results may be noticeably different. Therefore, generalizing the findings here to college student populations outside of this region should be done sparingly.

A final limitation, mentioned previously, is that no causality can be inferred from these results. The current investigation was a cross-sectional, within-group study design and utilized a correlative statistical design. Implications for practice and suggestions for future study (discussed in the following section) are mainly addressed to this limitation; the goal of the current study was to identify potential associations between individual traits and risky sexual practices which should be further examined using pre/post-test treatment groups and between-group experimental designs to test the effectiveness of different sexual health programs.

### **Future Directions**

The results of the current study indicate several promising avenues for future research. Although the associations between gender and attachment style were non-significant in the sample analyzed here, additional research needs to be done in a college student population that is

more representative of a typical university's student body. Much of the research discussed in the literature review here is pulled from populations that may or may not be completely comparable to a college population, and risk-reduction programs should be informed by research on the target population whenever possible.

Future research on reported numbers of casual sexual partners and encounters should look at how safe sex communication comfort might interact with situational variables that have been found to be important predictors of the decision to engage in a casual encounter in the first place. A particularly important variable to examine is alcohol use immediately prior to and during a casual encounter. The study of these indicators would also be greatly improved by the use of a longitudinal survey design. Such a design could examine causal relationship more effectively and increase the timeframe of sexual behavior studied while keeping the hazards of long-term memory recall bias at an acceptable level.

Finally, although the current study offers some tentative suggestions for the content and structure of sexual risk-reduction programs, rigorous evaluation and assessment of such programs is greatly needed. There are few established sexual health and risk-reduction programs that are widely used or even widely known across college campuses. A systematic examination of the effects of risk-reduction programs that intentionally incorporates different elements of traditional information, skill-focused content, proactive-communication workshops, and other promising factors in the literature into a between-group, pre- and posttest experimental design would answer many questions which are currently only partially answered at best.

## **Summary**

Chapter V provided an overview of the study, including a summary of the purpose and brief synopsis of the importance and need for this research. In conclusion, the current study does extend the existing literature on college students' risky sexual practices. The purpose of the study

was to investigate risky sexual practices by predicting three indicators, casual sexual partners, casual sexual encounters, and safe sex communication, using a model consisting of a participant's gender, romantic attachment style, and safe sex communication comfort. Results indicated that safe sex communication was predicted significantly by the combined model, and also uniquely by safe sex communication comfort. These results suggest that comfort and confidence in communication skills may be an important avenue of education to be considered for future sexual risk-reduction programs. Although the current study is not without limitations, the link between comfort and actual communication indicates that further research into this specific aspect of safer behaviors may yield new insights into previously examined and discarded avenues of sexual risk-reduction programming.

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## APPENDICES

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APPENDIX A

Approval Letter from OSU Institutional Review Board

Oklahoma State University Institutional Review Board

Date: Monday, March 04, 2013  
IRB Application No ED1325  
Proposal Title: Predicting Risky Sex from Gender, Self-Efficacy, and Attachment

Reviewed and Exempt  
Processed as:

Status Recommended by Reviewer(s): Approved Protocol Expires: 3/3/2014

Principal Investigator(s):

Andrew Rizzo	John Foubert
220 Willard	314 Willard
Stillwater, OK 74078	Stillwater, OK 74078

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The IRB application referenced above has been approved. It is the judgment of the reviewers that the rights and welfare of individuals who may be asked to participate in this study will be respected, and that the research will be conducted in a manner consistent with the IRB requirements as outlined in section 45 CFR 46.

The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

As Principal Investigator, it is your responsibility to do the following:

1. Conduct this study exactly as it has been approved. Any modifications to the research protocol must be submitted with the appropriate signatures for IRB approval. Protocol modifications requiring approval may include changes to the title, PI, advisor, funding status or sponsor, subject population composition or size, recruitment, inclusion/exclusion criteria, research site, research procedures and consent/assent process or forms.
2. Submit a request for continuation if the study extends beyond the approval period of one calendar year. This continuation must receive IRB review and approval before the research can continue.
3. Report any adverse events to the IRB Chair promptly. Adverse events are those which are unanticipated and impact the subjects during the course of this research; and
4. Notify the IRB office in writing when your research project is complete.

Please note that approved protocols are subject to monitoring by the IRB and that the IRB office has the authority to inspect research records associated with this protocol at any time. If you have questions about the IRB procedures or need any assistance from the Board, please contact Dawnett Watkins 219 Cordell North (phone: 405-744-5700, dawnett.watkins@okstate.edu).

Sincerely,



Sheila Kennison, Chair  
Institutional Review Board

## APPENDIX B

### **Informed Consent Form – SONA Participant Pool**

**Title:** Predicting Intimate Relationship Behavior From Gender, Self-Efficacy, And Attachment

**Investigators:**

Primary Investigator: Andrew Rizzo, B.A., Psychology, Candidate for M.S., Educational Leadership, Oklahoma State University

Advisor: John D. Foubert, Ph.D., Associate Professor, Educational Leadership, Oklahoma State University

**Purpose:** The purpose of this study is to explore how people behave and feel about themselves. The questions in this study will ask you to think about your past sexual behaviors and your feelings regarding those behaviors.

**What to expect:** Participation in this research will require to you to complete 1 demographic questionnaire and 4 surveys which focus on your intimate relationship behavior, comfort with intimate communication, and romantic attachment. Please complete each set of questions before moving on to the next set of questions, you will not be able to return to a previous page of the survey once you have progressed beyond it. The survey should take no more than 1 hour to complete.

**Risks:** The principal risks associated with this study are those associated with a breach in confidentiality. To minimize these risks no identifiers are associated with your data and no signed record of your consent will be collected.

**Benefits:** You may gain an appreciation and understanding of how research is conducted, as well as time to reflect on your behaviors over the past 12 months.

**Compensation:** Your compensation for completing this survey will be 1 credit of research participation, which you can apply to any course for which you are enrolled within the SONA system.

**Your rights:** Your participation in this research is voluntary. There is no penalty for refusal to participate, and you are free to withdraw your consent and participation in this project at any time without penalty.

**Confidentiality:** These surveys are completely anonymously online and have no identifiers included. Your credit for participation via SONA is handled using participant ID numbers that are not personally identifying. Your IP address (for the computer which you fill out the survey from) will not be collected. Surveys will be kept in the password-protected Qualtrics account of the PI, and data to be used in subsequent analyses will be downloaded only to the password-protected computer of the PI. Only the PI will have access to the completed survey data.

**Contacts:** You may contact the researcher using the following methods should you desire to discuss your participation in the study and/or request information about the results of the study. Primary Investigator: Andrew Rizzo, Willard 314, School of Education, Stillwater, OK 74075, (302) 229-3190, [ajrizzo@okstate.edu](mailto:ajrizzo@okstate.edu).

Advisor: Dr. John Foubert, Willard 314, (405) 744-1480, [john.foubert@okstate.edu](mailto:john.foubert@okstate.edu)  
If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, (405) 744-1676, [irb@okstate.edu](mailto:irb@okstate.edu)

**If you choose to participate:** by clicking the “Next” button on this screen, you are giving your consent.

## APPENDIX C

### **Informed Consent Form – Convenience Sample Pool**

**Title:** Predicting Intimate Relationship Behavior From Gender, Self-Efficacy, And Attachment

**Investigators:**

Primary Investigator: Andrew Rizzo, B.A., Psychology, Candidate for M.S., Educational Leadership, Oklahoma State University

Advisor: John D. Foubert, Ph.D., Associate Professor, Educational Leadership, Oklahoma State University

**Purpose:** The purpose of this study is to explore how people behave and feel about themselves. The questions in this study will ask you to think about your past sexual behaviors and your feelings regarding those behaviors.

**What to expect:** Participation in this research will require to you to complete 1 demographic questionnaire and 4 surveys which focus on your intimate relationship behavior, comfort with intimate communication, and romantic attachment. Please complete each set of questions before moving on to the next set of questions, you will not be able to return to a previous page of the survey once you have progressed beyond it. The survey should take no more than 1 hour to complete.

**Risks:** The principal risks associated with this study are those associated with a breach in confidentiality. To minimize these risks no identifiers are associated with your data and no signed record of your consent will be collected.

**Benefits:** You may gain an appreciation and understanding of how research is conducted, as well as time to reflect on your behaviors over the past 12 months.

**Compensation:** Your compensation for completing this survey will be a \$5 Amazon.com giftcard. After completion of the survey, you will have the opportunity to enter your email address in order to receive the gift card code via email. Your email will not be used for any other purpose beyond delivering compensation. Please allow up to two business weeks for processing and compensation delivery.

**Your rights:** Your participation in this research is voluntary. There is no penalty for refusal to participate, and you are free to withdraw your consent and participation in this project at any time without penalty.

**Confidentiality:** These surveys are completely anonymously online and have no identifiers included. Your IP address (for the computer which you fill out the survey from) will not be collected. Your contact email, which you must provide if you would like to receive compensation, *is not linked to your survey answers*. We will not share your contact email with anyone. Surveys will be kept in the password-protected Qualtrics account of the PI, and data to be used in subsequent analyses will be downloaded only to the password-protected computer of the PI. Only the PI will have access to the completed survey data.

**Contacts:** You may contact the researcher using the following methods should you desire to discuss your participation in the study and/or request information about the results of the study. Primary Investigator: Andrew Rizzo, Willard 314, School of Education, Stillwater, OK 74075, (302) 229-3190, [ajrizzo@okstate.edu](mailto:ajrizzo@okstate.edu).

Advisor: Dr. John Foubert, Willard 314, (405) 744-1480, [john.foubert@okstate.edu](mailto:john.foubert@okstate.edu)

If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, (405) 744-1676, [irb@okstate.edu](mailto:irb@okstate.edu)

**If you choose to participate:** by clicking the “Next” button on this screen, you are giving your consent.

APPENDIX D

Convenience Sample Recruitment Materials

Flyer posted on bulletin boards around campus and in classroom buildings:

## Predictors of Sexual Behaviors Study

Be part of an important study on the predictors of risky sexual behavior.

All students enrolled in OSU are eligible to participate.

The purpose of this research is to examine the relationship between gender, romantic attachment style, communication, and risky sexual behaviors.

- Participants who complete the online survey will receive a **\$5 Amazon.com voucher as compensation** for their time.
- The survey is **completely anonymous**; no personal identifying information will be connected to your survey answers.
- **The survey takes approximately 30 minutes** and can be completed on any computer with an internet connection.

Okla. State Univ.  
IRB  
Approved: 2-4-13  
Expires: 3-3-14  
IRB # ED-13-26



### If you are interested in participating:

Take an attached slip and follow the directions at the URL.

Please call Andrew Rizzo at 410 - 357 – 1353 or [ajrizzo@okstate.edu](mailto:ajrizzo@okstate.edu) if you have any questions or would like more information before participating in the survey.

This survey takes ~30 minutes.  
To participate, go to this link:  
**goo.gl/mkVBT**  
Questions? Call 410-357-1353

This survey takes ~30 minutes.  
To participate, go to this link:  
**goo.gl/mkVBT**  
Questions? Call 410-357-1353

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To participate, go to this link:  
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Questions? Call 410-357-1353

This survey takes ~30 minutes.  
To participate, go to this link:  
**goo.gl/mkVBT**  
Questions? Call 410-357-1353

Formal Script of announcements made at campus organizations' general business meetings:

Hi,  
My name is Andrew Rizzo and I am a Masters student in the School of Educational Studies College Student Development program here at OSU. I am here today requesting your assistance in my research by filling out a completely anonymous online survey. The purpose of my research is to examine the relationship between gender, attachment, communication, and risky sexual behaviors.

Your participation in this survey is completely voluntary. However, if you do choose to participate, you will receive a \$5 Amazon.com gift code as compensation for your time. The survey takes approximately 30 minutes to complete, and you may complete it on any computer with an internet connection.

I am inviting your organization's membership to complete this survey in order to collect a large and diverse sample which is representative of the student body at Oklahoma State.

Again, the surveys are completely anonymous, and no personal identifiers will be linked to your survey answers. All data is kept in a password protected computer account.

I am passing around some more information, please take one if you are interested. The short URL for the survey is listed there as well as my contact information should you have any further questions regarding the survey. I hope you will consider taking just half an hour of your time to assist with this research and broaden our understanding of human behavior.

Thank you for your time.

Handbill given out after announcements to campus organizations:

**Predictors of Sexual Behavior Study**

The purpose of this research is to examine the relationship between gender, romantic attachment style, communication, and risky sexual behaviors.

All OSU students are eligible to participate.

- > The survey is completely anonymous
- > The survey takes approximately 30 minutes
- > **Compensation is a \$5 Amazon.com gift card**
- > Can be completed on any computer with an internet connection.

**If you are interested in participating:**  
Go to this link and follow the instructions there:  
**Link = [goo.gl/mkVBT](http://goo.gl/mkVBT)**

Please contact Andrew Rizzo at 410.357.1353 or [ajrizzo@okstate.edu](mailto:ajrizzo@okstate.edu) if you have any questions.

Okla. State Univ.
IRB
Approved 3-4-13
Expires 2-3-14
IRB # ED-13-25

Formal text of email sent to listserv of various campus organizations:

Hi,

My name is Andrew Rizzo and I am a Masters student in the School of Educational Studies College Student Development program here at OSU. I would like to ask for your participation in an anonymous online survey, for which you will receive a \$5 compensation.

The purpose of my research is to examine the relationship between gender, attachment, communication, and risky sexual behaviors.

Your participation in this survey is completely voluntary. If you do choose to participate, you will receive a \$5 Amazon.com gift code as compensation for your time. The survey takes ~30 minutes to complete, and you may complete it on any computer with an internet connection.

Again, the surveys are completely anonymous, and no personal info will be linked to your survey answers. All survey answers are kept in a password protected computer account.

If you are interested in participating in this study, please click the link below and follow the instructions there.

Survey Link = <http://goo.gl/mkVBT>

If you have any questions or would like more information, please contact the primary investigator at 410-357-1353 or via email at [ajrizzo@okstate.edu](mailto:ajrizzo@okstate.edu).

Thank you for your time and help with this project,  
Andrew Rizzo | Graduate Student  
Candidate for M.S. in Educational Leadership Studies  
College of Education | Oklahoma State University | 2011 Cohort

APPENDIX E

**Demographics Questionnaire**

Please answer the following questions before proceeding to the next page:

1. Age: \_\_\_\_
2. Gender (please circle): *Male* *Female*
3. Please specify your year in school (please circle one):  
*First-year*  
*Sophomore*  
*Junior*  
*Senior*  
*5<sup>th</sup>-year Senior*  
*6<sup>th</sup>-year Senior*  
*Masters Grad Student*  
*Doctoral Grad Student*
4. Please specify your race/ethnicity (please circle all that apply):  
*Caucasian/White*  
*African American/Black*  
*Hispanic/Latino/Mexican-American*  
*Native-American*  
*Asian American/Pacific Islander*  
*Other (please specify)\_\_\_\_\_*
5. Are you or have you ever been a member of a social fraternity or sorority?  
*Yes* *No*
6. People are different in their sexual attraction to other people. Which best describes your feelings?  
*Only attracted to males*  
*Mostly attracted to males*

*Equally attracted to males and females*

*Mostly attracted to females*

*Only attracted to females*

*Not sure*

7. Do you think of yourself as...

*Heterosexual or straight*

*Homosexual, gay, or lesbian*

*Bisexual*

*Something else*

*Not sure*

## APPENDIX F

### Sexual Behaviors Questionnaire

This section includes questions about sexual activities that you may or may not have participated in within the last 12 months. Please take your time and provide accurate information for each question.

The next few questions are about **oral sex** (receiving or performing stimulation of the genitals with the mouth) and **vaginal intercourse** (a male putting his penis in a female's vagina).

1. Have you ever engaged in oral sex (choose one)? Yes No
2. Have you ever engaged in vaginal intercourse (choose one)? Yes No

For the following questions, keep in mind this definition of a “**casual partner**”:

A casual partner is someone with whom you engaged in a sexual act AND **had no expectation of something further to happen with that partner after that encounter, even if you had had sex previously with that partner.**

3. In the past 12 months, with how many casual partners have you ONLY engaged in oral sex? \_\_\_\_\_
4. In the past 12 months, with how many casual partners have you ONLY engaged in vaginal intercourse? \_\_\_\_\_
5. In the past 12 months, with how many casual partners have you engaged in BOTH oral sex and vaginal intercourse? \_\_\_\_\_

For the following questions, think of a **casual sexual encounter** as:

Engaging in a sexual act/acts (see below) with a casual partner for any number of times during a continuous period (e.g. going home with an individual and having sex that night and then waking up and having intercourse again the following morning would only count as 1 encounter in total).

6. In the past 12 months, how many casual encounters have you had that included oral sex but NOT vaginal intercourse? \_\_\_\_\_
7. In the past 12 months, how many casual encounters have you had that included vaginal intercourse sex but NOT oral sex? \_\_\_\_\_
8. In the past 12 months, how many casual encounters have you had that included BOTH oral sex and vaginal intercourse? \_\_\_\_\_



## APPENDIX G

### Modified Partner Communication Scale (PCS)

For the purposes of the following questions, please keep in mind the following definition of a “casual sexual encounter”:

Having vaginal intercourse and/or oral sex with a casual partner for any number of times during a continuous period (e.g. going home with an individual and having sex that night and then waking up and having intercourse again the following morning would only count as 1 encounter in total).

Considering **all** of your casual sexual encounters, how often *before any sexual activity* with the casual partner have you discussed...

Statement	<i>Never</i>	<i>Sometimes</i>	<i>Often</i>	<i>A Lot</i>
1. How to prevent pregnancy?	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
2. How to use condoms?	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
3. How to prevent the AIDS virus?	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
4. How to prevent STDs (other than AIDS)?	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
5. Your partner's sex history?	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
6. The last time your partner was tested for an STI?	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>
7. If your partner recently had sex with another person?	<i>1</i>	<i>2</i>	<i>3</i>	<i>4</i>

APPENDIX H

**Experiences in Close Relationships Scale – Revised (ECR-R)**

The statements below concern how you feel in emotionally intimate relationships. We are interested in how you *generally* experience relationships, *not* just in what is happening in a current relationship. Respond to each statement by clicking 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*
31. I talk things over with my partner.  
*Strongly disagree*    1    2    3    4    5    6    7    *Strongly agree*
32. I am nervous when partners get too close to me.  
*Strongly disagree*    1    2    3    4    5    6    7    *Strongly agree*
33. I feel comfortable depending on romantic partners.  
*Strongly disagree*    1    2    3    4    5    6    7    *Strongly agree*
34. I find it easy to depend on romantic partners.  
*Strongly disagree*    1    2    3    4    5    6    7    *Strongly agree*
35. It's easy for me to be affectionate with my partner.  
*Strongly disagree*    1    2    3    4    5    6    7    *Strongly agree*

36. My partner really understands me and my needs.

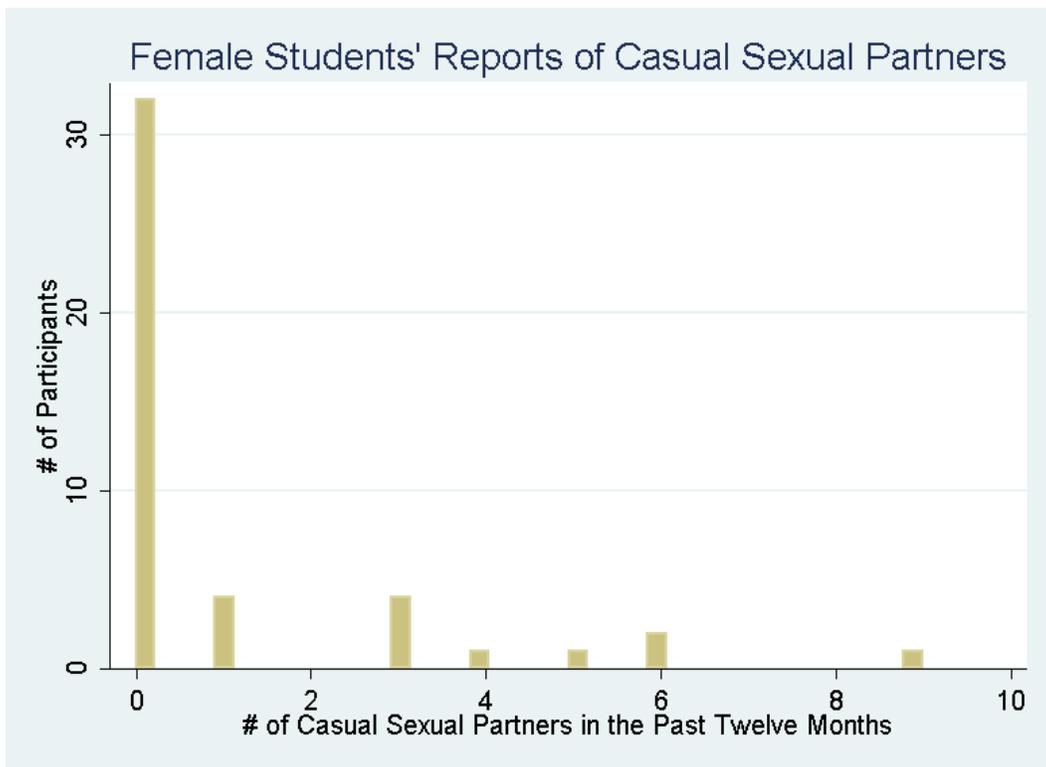
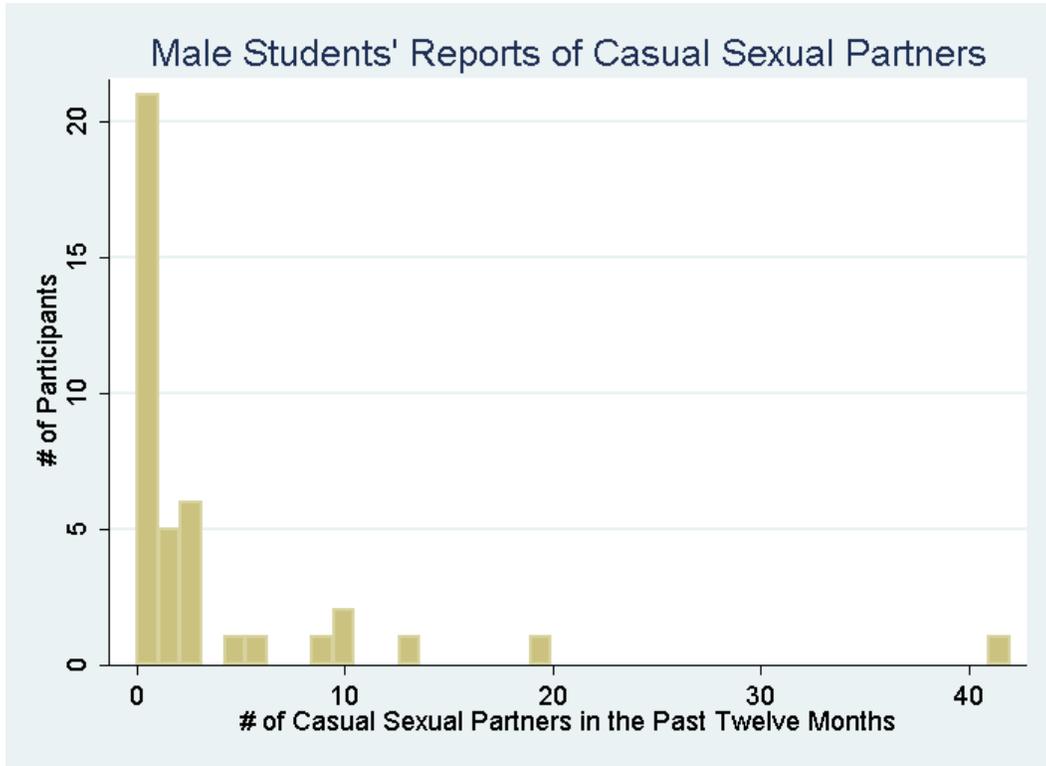
*Strongly disagree*    1    2    3    4    5    6    7    *Strongly agree*

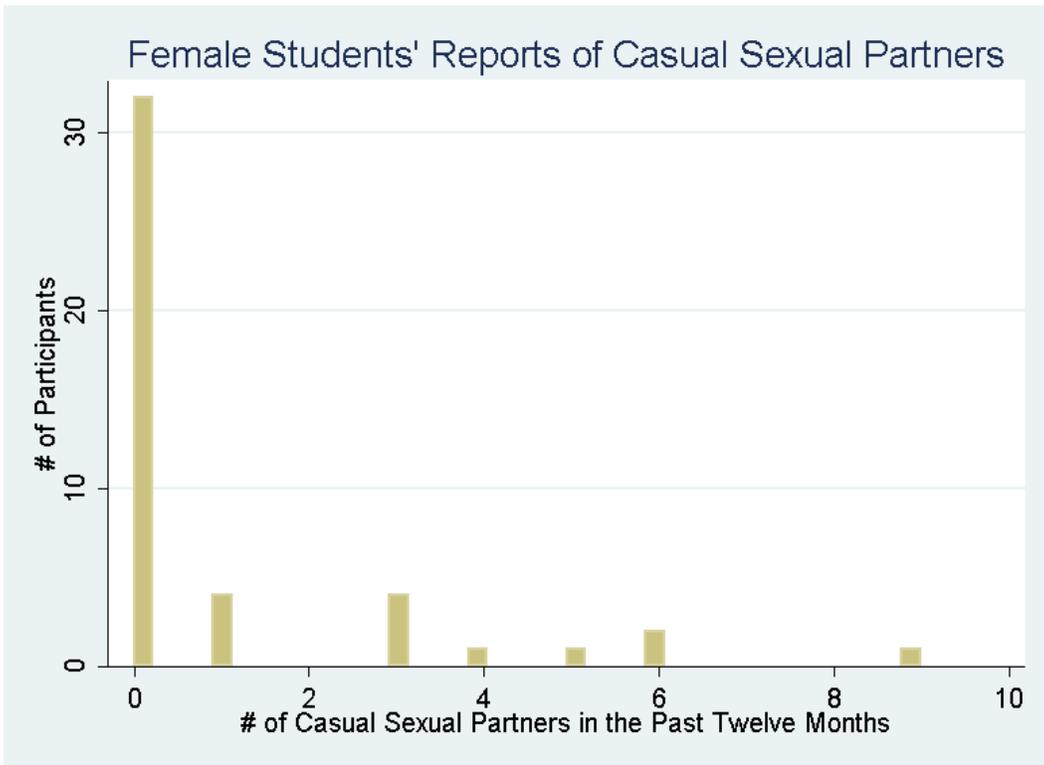
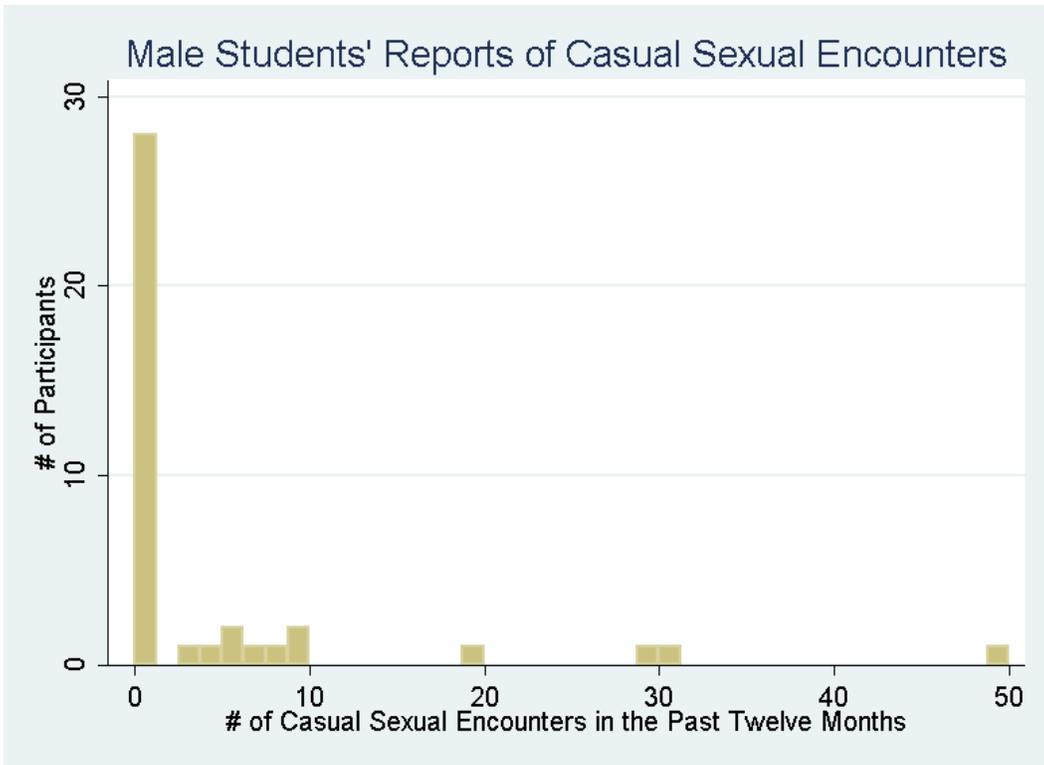




APPENDIX K

Charts of Casual Sexual Partners & Encounters, by Gender





# VITA

Andrew Rizzo

Candidate for the Degree of

Master of Science

Thesis: PREDICTING RISKY SEX FROM GENDER, SELF-EFFICACY, AND ATTACHMENT

Major Field: Educational Leadership

Biographical:

Education:

Completed the requirements for the Master of Science in Educational Leadership at Oklahoma State University, Stillwater, Oklahoma in May, 2013.

Completed the requirements for the Bachelor of Arts in Psychology at the University of Pennsylvania, Philadelphia, Pennsylvania in May, 2011.

Experience:

Religiosity and pornography use as predictors of bystander effectiveness (2013)

Stealing the spotlight: Focusing on your friend can help with stress (2011)

Gender and social support perspectives: Females receive more support than friends provide (2010)

Professional Memberships:

Society for the Scientific Study of Sexuality

American College Personnel Association

Association of College & University Housing Officers - International