SEXUAL RISK BEHAVIORS IN COLLEGE WOMEN: PERCEIVED NORMS, ATTITUDES, AND SEXUAL MOTIVES

By

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One important developmental task of young adulthood is the formation of romantic partnerships and initiation of sexual relationships. Unfortunately, in navigating these key developmental tasks, college students may engage in sexual risk behaviors which could lead to negative physical, psychological, and social consequences. Prior research has shown that a substantial number of college women are participating in sexual risk behaviors, such as having one time sexual encounters, inconsistently using condoms, having multiple sequential and simultaneous sexual partners, and drinking heavily before sex. Despite this, only limited research has examined factors that predict and contribute to these sexual risk behaviors. Such work is necessary to develop programs to promote healthy sexual development and expression among college women. Prior research has supported the utility of the contingent consistency peer influence model (CCPIM) in predicting risky drinking among college women. This model posits that that perceived peer norms, actual peer norms, and personal attitudes are independent and key influences on adolescents and young adults' risky behavior. Additionally, prior work has supported the role of certain drinking motives in promoting risky drinking among college students. Similarly, a link between some sexual motives and sexual risk

behavior has been established as well. Prior research has supported that certain sexual motives, such as coping and affirmation, predict engagement in sexual risk behaviors. The applicability of the CCPIM with the addition of sexual motives in predicting sexual risk behaviors has not previously been studied together, however. This thesis sought to evaluate the utility of the CCPIM in predicting sexual risk behaviors among college women. Further, the influence of two sexual motives: coping and affirmation, on risky sexual behavior were also examined. To accomplish these aims, 400 sexually active undergraduate women (mean age 18.5 years), were recruited through the ECU Psychology department participant management system to complete an online survey that assessed sexual risk behaviors, drinking behaviors, sexual attitudes, sexual motives, and perceived peer norms for sexual behaviors. Results supported that college women's perceived peer norms as well as coping and affirmation sexual motives significantly predicted sexual risk behaviors, while positive personal attitudes toward sex predicted less engagement in these behaviors. Implications of the findings include the importance both of college women's perception of peer norms for sexual risk behavior and their personal sexual motives as well as the potential protective role of holding positive attitudes toward sex. This highlights that for college women, the strongest component of the CCPIM is perception of peer norms, regardless of actual peer norms, and also highlights the role of sexual motives in sexual risk behaviors. This research suggests that norm corrective interventions could possibly be part of an effective intervention program to reduce college women's engagement in sexual risk behaviors. Further, for some women, sexual risk behaviors may be a result of maladaptive coping strategies and/or used as a means to boost self-esteem or desirability, supporting the potential importance

of interventions addressing psychological distress and low self-esteem in also potentially addressing sexual risk. Additionally, future research should focus on expanding these findings to more diverse populations as well as the likely bidirectional relationships between perceived peer norms and risk behavior over time.

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CHAPTER I: LITERATURE REVIEW

One important developmental task of adolescence and young adulthood is the formation of romantic partnerships and initiation of sexual relationships (Collins, 2003; Collins, Welsh, & Furman, 2009). Unfortunately, in navigating these key developmental tasks, many college students may engage in sexual behaviors which could lead to negative physical, psychological, and social consequences. Examples of such potentially risky behaviors include having multiple casual partners, engaging in sexual activity after heavy alcohol or other substance use, and having sex with potentially risky partners (e.g., sex with partner who has had a number of previous sexual partners, failure to discuss risk topics prior to sexual behavior).

Engaging in sexual risk behaviors can result in a number of physical health consequences including contracting sexually transmitted infections (STIs), such as chlamydia, herpes, gonorrhea, hepatitis B and C, and human immunodeficiency virus (HIV) infections. Other potential consequences include unplanned pregnancy, sexual victimization, stigma, and negative emotional consequences. Past research has primarily focused on the impact of sexual risk behavior on college students' risk for STIs, HIV, and unplanned pregnancy (e.g., American College Health Association, 2007; Joffe et al., 1992; Nguyen, Akiyoshi, & Neinstein, 2003; Reinisch, Hill, Sanders, & Ziemba-Davis, 1995). However, in addition to these physical health consequences, sexual risk behaviors, particularly among women, can result in negative emotional consequences, such as shame, depressive symptoms, confusion, regret, guilt, disappointment, loneliness, hurt, and anger (Eshbaugh & Gute, 2008; Labrie, Hummer, Ghaidarov, Lac, & Kenney, 2014; Lovejoy, 2015; Owen & Fincham, 2009). Several risk behaviors are also associated with

an increased likelihood of experiencing sexual victimization (Franklin, 2010; Greene & Navarro, 1998; Messman-Moore, Coates, Gaffey, & Johnson, 2008). Given the consequences of these behaviors, research is needed to fully understand factors that predict and contribute to college women's risky sexual behaviors in order to implement successful prevention and intervention efforts.

Prevalence of sexual risk behaviors among college women

Past research has supported that college students in general engage in high levels of certain forms of sexual risk behavior (Cooper, 2002; Owen & Fincham, 2009; Paul McManus, & Hayes, 2000). Some sexual risk behaviors are particularly common among college women today (Cooper, 2002; Flannery & Ellingson, 2003; Kotloff et al., 1991; Owen & Fincham, 2009; Paul et al., 2000; Reinisch et al., 1995). These behaviors include having casual/multiple sexual partners, having multiple sequential sexual partners including one time sexual encounters, engaging in serial monogamy (having multiple, consecutive exclusive sexual relationships in a short timeframe), and having multiple casual simultaneous partners. Other sexual risk behaviors that college women often engage in are alcohol related sexual behaviors and having sex with risky partners (Caldeira et al., 2009; Fielder & Carey, 2010; Flannery & Ellingson, 2003). Alcohol related sexual behaviors are defined as engaging in sexual activity under the influence of alcohol, or drinking alcohol before having sex (Cooper, 2002). Sex with risky partners includes having sex with a partner one does not trust, one who is not exclusive, or one who has had a number of previous sexual partners, as well as failing to discuss risk topics prior to sex (Calderia et al., 2009; Cooper, 2002; Paul et al., 2000). These behaviors not

only increase the risk of physical health consequences, but also increase the risk for emotional consequences as well (Owen, & Fincham, 2009).

Supporting the frequency of these risk behaviors among college students, studies of hook up behavior (defined as sexual encounters with no commitment or relationship expected with the partner, who is usually a stranger or acquaintance) and friends with benefits relationships (defined as a physically intimate relationship in the absence of a romantic relationship) has supported that college students frequently engage in such behaviors (Owen, & Fincham, 2009; Paul et al., 2000). For example, in a study of 548 female college students, 42.9% reported they had participated in a friends with benefits relationship within the past year (Owen & Fincham, 2009), and in a sample of 555 undergraduates, 62.5% of whom were women, 33.3% of the women reported they had a "hook up" involving sexual intercourse while in college (Paul et al, 2000). Similarly, Reinisch and colleagues (1995) found on average that one in three college women had engaged in a one night stand (a one time sexual encounter that includes some form of intercourse). Finally, in a study of nearly 2,000 undergraduate women, Littleton and colleagues found that sexually active women had between one and 22 sexual partners in the past year, with 15.6% reporting three or more past year partners, and 17.1% reporting they had engaged in one time sexual encounters within the past year (Littleton, Grills-Taquechel, & Drum, 2014).

In addition to engaging in casual sexual behavior, it is also common for college women to engage in alcohol-related sexual behaviors. For example, in a study of 778 college freshmen, Flannery and Ellingson (2003) found that 31% reported they used alcohol or drugs the last time they had sex. In another sample of 118 freshman women,

64% reported drinking alcohol prior to their last hook up (Fielder & Carey, 2010). Caldeira and colleagues (2009) similarly found that 60.2% of 386 college women sampled used drugs or alcohol before sex in the past year. Finally, in Littleton and colleagues' (2014) study of nearly 2,000 college women, 48% of sexually active women had intercourse while intoxicated at least once within the last year.

College women may also choose risky sexual partners. However, research on risky partner sex among college women is much more limited. Potentially relevant risky partner choices among college women include having sex with a partner one does not trust, having sex with a partner who is not exclusive, having sex with a partner who has had a number of previous sexual partners, and not discussing risk topics (such as STIs, condom use, contraception, and sexual history) with one's partner prior to sexual behavior (Calderia et al., 2009; Cooper, 2002). Supporting that these behaviors are likely common, in a study of 611 undergraduate women, 52.2% stated they only rarely or sometimes asked their sex partner about sexual history (Moore & Davidson, 2000). Additionally, in a qualitative review, Garcia and colleagues found that college students who engaged in casual sexual encounters (i.e., hook-ups) frequently also reported concurrent sexual partners (Garcia, Reiber, Massey, & Merriwether, 2012). Thus, it is clear that a substantial number of college women are likely engaging in these sexual risk behaviors.

Consequences of Sexual Risk Behavior

There are a number of known potential negative physical health consequences of sexual risk behavior. For one, engaging in sexual risk behavior increases the likelihood of contracting STIs and HIV. According to the Centers for Disease Control (CDC), there are

close to 20 million new cases of STIs per year in the United States (U.S.), half of which are in people ages 15 to 24, and the CDC also estimates that there are 50,000 new cases of U.S. HIV infections each year, with 14% of these individuals unaware that they are infected (CDC, 2014). When looking at college student populations specifically, these consequences are also widespread. For example, in a sample of 467 sexually active college women, 11.7% reported having a STI within the last three years. There also was a strong association between number of sexual partners and STI diagnoses, with women who reported five or more sexual partners being eight times more likely to have a STI than those who reported fewer partners (Joffe et al., 1992). In a more recent investigation, The American College Health Association (ACHA) reported that 3.5% of almost 24,000 college students surveyed had been diagnosed with chlamydia, genital herpes, genital warts/HPV, gonorrhea, Hepatitis B or C, or HIV (ACHA, 2007). This rate is likely an underestimate of the actual number of undergraduate students with STIs due to the fact that many students do not regularly get tested for STIs. Indeed, according to ACHA, only 43.9% of women reported getting a routine gynecological exam within the last year (ACHA, 2013).

Unfortunately, there are many long-term health consequences associated with STI diagnoses in women, particularly those that go undetected and untreated. For example, some STIs can cause pelvic inflammatory disease and cervical or other types of cancer (Skapinyecz, Smid, Horvath, Jeney, Kardos, & Kovacs, 2003). Pelvic inflammatory disease can also result in infertility, pelvic pain, and ectopic pregnancies, as well as greatly increase the risk of HIV infection from vaginal intercourse (Malhotra, 2008). Human papilloma virus (HPV) is the most common STI diagnosed and treated at student

health centers nationwide (American University Wellness Center, 2015). HPV is especially dangerous for women, because if left untreated, can cause cervical cancer (Skapinyecz et al., 2003).

In addition to STIs, engaging in sexual risk behavior can result in unplanned pregnancy. For example, one survey of almost 72,000 college students (64.1% women) found that about 2.3% of college women had experienced an unplanned pregnancy (ACHA, 2008). Additionally, the American College Health Association reported that approximately 1.7% of undergraduate women had an unplanned pregnancy within the last 12 months (ACHA, 2013).

Sexual victimization is another possible consequence for women who engage in sexual risk behaviors. Indeed, Greene and Navarro (1998) examined risk factors for sexual victimization among undergraduate women assessed at three time points during an academic year and found that having multiple sex partners predicted subsequent victimization (Greene & Navarro, 1998). Messman-Moore and colleagues reported similar results in a study of 339 college women assessed during two semesters. Specifically, women who experienced rape or sexual coercion during the study reported more sex partners than non-victimized women (Messman-Moore et al., 2008). Research has also supported that hook ups are a potentially highly risky situation for sexual victimization. For example, in a study of 178 undergraduate students,, 77.8% of reported unwanted sexual experiences occurred in the context of a hook up (Flack et al., 2007). In addition, in an examination of in depth interviews of 30 college women, it was found that one in six hook ups described involved sexual assault (Lovejoy, 2015).

In addition to increasing the likelihood of sexual victimization and physical health consequences, engaging in sexual risk behavior can result in negative emotional consequences. There has been less research in this area, but extant work supports that there are potentially a number of negative emotional consequences associated with casual sex and hooking up. Research has suggested that following unplanned, casual, and one time sexual encounters, women are at risk for experiencing feelings of guilt, disappointment, regret, shame, confusion, and depressive symptoms (Eshbaugh & Gute, 2008; Labrie et al., 2014). For example, in a study of 578 undergraduates, of those who reported hooking up, 48.7% reported a negative reaction to the experience, such as feeling empty and confused (Owen & Fincham, 2009). It is possible that this may occur in part because there may be incongruent expectations from a hookup, where one partner expects a relationship and the other does not desire commitment. Lovejoy (2015) also evaluated the many consequences of engaging in casual sexual relationships among college students and found that women who had casual sexual encounters frequently experienced disrupted social and romantic relationships or emotional distress as a result. Additionally, these women stated that engaging in sexual risk behaviors could lead to romantic hurt, disappointment, jealousy, anxiety, rejection, self-blame, regret, and sometimes even feelings of anger, betrayal, and damaged friendships (Lovejoy, 2015). Additionally, sexual dissatisfaction is common in hook up contexts, particularly among women. Indeed, in a sample of 13,484 undergraduate women from 21 colleges and universities, of the women who reported engaging in hookups, only 50% reported that they enjoyed the sexual activity very much, as compared to 81% of women in committed relationships (Armstrong, England, & Fogarty, 2012). In the same study, qualitative

interviews supported that both men and women agreed that casual hook ups did not focus on the woman's sexual pleasure, but primarily focused on the man's pleasure and orgasm (Armstrong et al., 2012).

In addition to negative emotional consequences, women may feel stigmatized for engaging in sexual risk behaviors. In a review of research from 1980 to 2003, Crawford and Popp (2003) concluded that a double standard still exists among young adults where women are judged more negatively than men for having more than one sexual partner, having sex outside of a committed relationship, or having a sexual experience at an early age. Specifically in college women, England and Bearak (2014) found that women tended to underreport their involvement in casual sex, suggesting that women expect to be stigmatized for reporting these behaviors. Additionally, women were more likely than men to state that they felt disrespected as a result of a hook up (England & Bearack, 2014). Past research has also indicated that among college students, social stigma was strongly endorsed by men and women as a reason why women advise other women to reject casual sex (Rudman, Fetterolf, & Sanchez, 2012).

Thus, there are a number of negative emotional consequences that college women may experience as a result of sexual risk behavior in addition to the many physical health risks involved. These consequences include social rejection and stigma, shame, depressive symptoms, confusion, regret, guilt, disappointment, loneliness, hurt, and anger (Eshbaugh & Gute, 2008; Labrie et al., 2014; Lovejoy, 2015; Owen & Fincham, 2009). Due to these negative physical and emotional consequences, it is important to understand what factors may predict risky behaviors in this population.

Predictors of Sexual Risk Behaviors

There are a number of factors that may predict college women's engagement in sexual risk taking behaviors. Distal factors such as personality characteristics and behavioral influences have been considerably researched. Specifically, aspects of the Big Five personality factors and alcohol related behaviors (such as binge drinking) have been shown to be associated with sexual risk behavior in college students (Brown & Vanable, 2007; Labrie et al., 2014; Raynor and Levine, 2009; Schmitt, 2004). Additionally, other factors such as sexual motives, sexual attitudes and perceived peer norms have been evaluated as potential independent influences that contribute to sexual risk behavior (Cooper, Wood, Orcutt, & Albino, 2003; Ingledew & Ferguson, 2007; Levinson, Jaccard, & Beamer, 1995; Littleton et al., 2014; Luquis, Brelsford & Rojas-Guyler, 2012; Winslow, Franzini, & Hwang, 1992). A large portion of literature in this area has also focused on the role of risk perception and health consequences of sexual risk behaviors in predicting condom use and STI risk specifically. However, to examine influences on sexual risk behaviors beyond those most directly associated with reducing STI risk, it is necessary to also examine the role of factors such as risky drinking behaviors, sexual motives, sexual attitudes and perceived peer norms that likely serve to more directly contribute to risk behaviors such as having multiple casual partners and engaging in one-time sexual encounters.

As previously noted, there has been extensive research examining the associations between personality characteristics and sexual risk behaviors. This area of research has mainly focused on the association between aspects of the "Big Five" personality factors and sexual risk behavior (Hoyle, Fejfar, & Miller, 2000; Ingledew & Ferguson, 2007;

Raynor & Levine, 2009). Research in this area has found that some personality factors are associated with an increased likelihood of engaging in sexual risk behaviors, while others are associated with a lower likelihood of engaging in these behaviors. Within this framework, it has been theorized that individuals who are high on extraversion, particularly sensation seeking, may be at greater risk for engaging in risk behaviors, due to these individuals' greater need for intense stimulation to experience optimum levels of arousal (Ingledew & Ferguson, 2007). On the other hand, those high on conscientiousness are more likely to focus on the potential negative consequences involved with risk behaviors, and thus be less likely to engage in such behaviors (Ingledew & Ferguson, 2007).

Research has established that personality factors do in fact increase or decrease the likelihood of engaging in sexual risk behaviors. For example, a study involving individuals from 10 world regions (North America, South America, Western Europe, Eastern Europe, Southern Europe, the Middle East, Africa, Oceana, South/Southeast Asia, and East Asia) examined the Big Five dimensions of personality as predictors of having multiple sex partners (Schmitt, 2004). This research included 16,362 men and women from 52 different countries and highlighted that having multiple partners was associated with high levels of extraversion, low agreeableness, and low conscientiousness across many world regions, and that neuroticism and openness were unrelated to sexual behavior (Schmitt, 2004). Looking at these personality factors among college students specifically, Raynor and Levine (2009) found in a sample of 583 college students that women who were high on extraversion were more likely to have multiple sexual partners (Raynor & Levine, 2009). Similarly, in another study of 200 sexually active college

students, it was found that sexual risk behavior correlated negatively with conscientiousness and positively with sensation seeking (Ingledew & Ferguson, 2007).

Other studies have also confirmed these associations. In a qualitative review, Hoyle and colleagues (2000) found that sensation seeking predicted all forms of sexual risk behaviors assessed, including having more sexual partners, engaging in unprotected sex, and engaging in high risk sexual encounters (e.g. sex with a stranger). Hoyle and colleagues (2000) also noted that there was a positive association between impulsivity and sexual risk behavior, and there were negative associations between conscientiousness and agreeableness (independently) and sexual risk behavior. This review also highlighted that individuals who were high on sensation seeking viewed sexual risk behaviors as less risky than individuals low on sensation seeking (Hoyle et al., 2000). Thus, it is clear that there are several personality factors that are associated with engaging in sexual risk behaviors.

In addition, risky drinking is also a broad and well-studied correlate of sexual risk behavior among college students in particular. Binge drinking (for women, defined as drinking four or more drinks containing alcohol in one sitting, bringing the blood alcohol concentration to 0.08g/dL) is common on college campuses, with estimates of approximately 34% of college women participating in binge drinking within the last 30 days (National Institute of Alcohol Use and Alcoholism, 2015; Substance Use and Mental Health Services Administration, 2013). There is support that risky drinking is associated with engaging in sexual risk behaviors as well. There are a number of mechanisms through which alcohol use could lead to sexual risk behavior. For one, alcohol intoxication can inhibit judgment, increase feelings of euphoria, affect decision

making abilities, and decrease social inhibition (Steele & Josephs, 1990). Indeed, according to alcohol myopia theory, alcohol disinhibits complex processing ability (such as the ability to consider long term consequences of engaging in risky sex), which allows behaviors to be influenced more by immediate goals (such as sexual arousal; Cooper, 2002; Steele & Josephs, 1990).

Additionally, alcohol expectancies can influence sexual risk behavior. Even though alcohol does not increase physiological sexual arousal, many individuals hold expectancies that alcohol use will lead to an increase in arousal or desire (Peugh & Belenko, 2001; Wilson & Lawson, 1978). Individuals who hold such expectancies have repeatedly been demonstrated to report more subjective arousal after drinking and therefore are also more likely to engage in risk behaviors while under the influence of alcohol (Dermen & Cooper, 1994; George & Stoner, 2000). The context of where drinking is taking place can influence risky behavior as well. Especially in the college environment, certain contexts (such as parties or bars) are associated with both engaging in heavy alcohol consumption and casual sex (Bersamin, Paschall, Saltz, & Zamboanga, 2012). Thus, individuals who drink more heavily are more likely to frequent settings where both heavy drinking and casual sex occur, increasing their risk to engage in such behaviors.

Past research has indeed indicated that there is a clear link between risky drinking and sexual risk behaviors. For instance, Cooper (2002) conducted an examination of the literature examining the associations between alcohol use and risky sexual behaviors. She found empirical support for an association between heavy episodic drinking and casual sex partners within the last month. Additionally, this review highlighted that those who

consumed alcohol prior to sexual intercourse were less likely to discuss STI related risk topics with their partner (Cooper, 2002). More recent research has also confirmed the link between drinking alcohol and sexual risk behaviors. For example, in a study of 828 college students, it was found that students who reported hooking up within the last year were more likely to have been drinking. Further, nearly one third of women who consumed alcohol before hooking up said they likely would not have done so if alcohol were not involved (Labrie et al., 2014). Another study of 330 college students concluded that risky drinking prior to sex was strongly associated with unprotected sex with a non-steady partner (Brown & Vanable, 2007). Thus, research has shown a clear association between risky drinking and sexual risk behavior among college students.

Moving from broader setting variables, some extant research has focused on more proximal variables related to risk behaviors, including sexual motives. Sexual motives can be defined as reasons individuals engage in sex and are generally conceptualized as being either avoidance or approach focused (Cooper, Shapiro, & Powers, 1998). Avoidance motives involve attempts to avoid or escape from aversive or negative experiences, while approach motives involve the pursuit of positive or pleasurable experiences (Cooper et al., 1998). Certain sexual motives may be related to engaging in sexual risk behaviors, whereas others may be protective factors that decrease the likelihood of engaging in risk behaviors. For example, individuals who have intimacy motives (defined as engaging in sex to feel emotionally closer to one's partner) may be more likely to seek out a single, exclusive partner (Cooper et al. 1998). Conversely, an individual who is distressed and using sex as a method of coping with this distress may seek out a one-time sexual partner to reduce negative affect (Littleton et al., 2014).

Additionally, an individual who uses sex as a way to feel good about herself or to regulate affect, may also seek out a casual partner to fulfill this need (Cooper et al., 1998). Generally, some sexual motives (such as intimacy) are often better met with a committed partner, whereas other motives (such as coping and affirmation) may be efficiently met by seeking out a casual or one-time sexual partner, including by those not in committed relationships.

Of the many potential motives for engaging in sexual behavior, research has shown that coping and affirmation motives are most strongly associated with sexual risk behavior and casual sex attitudes (Cooper et al., 1998; Ingledew & Ferguson, 2007; Levinson et al., 1995). Coping is a term that refers to a person's patterns of responses to stresses with regards to efforts to overcome or work through them. Affirmation refers to engaging in behaviors or seeking out experiences that increase self-confidence or feelings of self worth (Cooper et al., 1998). Engaging in sexual risk behavior may be a coping strategy for some individuals, as these individuals use sex as a way to relieve feelings of depression, loneliness, and sadness. Individuals with affirmation motives may also participate in sexual risk behaviors by engaging in sex to increase self-esteem, or to feel more desirable or attractive. Prior research has shown that these motives are particularly related to sexual risk behavior among college students. For example, in a longitudinal study of 299 college students (64% women), Cooper and collogues (1998) found that at the 1.5 year follow up, affirmation motives predicted sexual risk behavior. Coping sexual motives have also been shown to predict risky sexual behaviors in college women. For example, in a sample of 1,616 sexually active college women, Littleton and colleagues (2014) found that experiencing depressive symptoms predicted having sex for coping

motives (i.e., to reduce negative affect), and in turn this sexual motive mediated the relationship between depression and sexual risk behaviors, including having more sexual partners within the past year, having one-time sexual encounters, and having sexual intercourse while impaired from alcohol or other substances.

There has not been extensive research regarding sexual attitudes and sexual risk behavior, yet it may be an important factor to be considered when predicting sexual risk behaviors. Though other factors such as personality, alcohol-related risk behaviors and sexual motives may increase vulnerability to engage in sexual risk behaviors, sexual attitudes may determine if an individual chooses to engage in risky sex or not. Specifically, individuals with conservative or negative attitudes towards sex would be expected to be unlikely to engage in sexual risk behavior, even in the presence of other risk factors. Conversely, individuals who have permissive or positive attitudes are more likely to engage in risky sex, particularly in the presence of other risk factors. While fairly limited, some studies have indeed shown that sexual attitudes predict involvement in sexual risk behaviors, especially in college age women. For example, in a sample of 960 college students, it was found that women with sexually permissive sexual attitudes and positive attitudes toward birth control were more likely to have participated in sexual intercourse and those with permissive attitudes tended to have more lifetime sexual partners (Luquis et al., 2012). Additionally, there has been some research supporting that sexual attitudes are more strongly related to sexual behavior among women than men. In a sample of 426 college students (237 women), it was found that positive attitudes toward casual sex were more likely to be associated with engaging in casual sex among women than men (Levinson, et al., 1995).

During late adolescence, peer influences may also be key in leading to risky behaviors (Maxwell, 2002). During the developmental period of adolescence, peer influence becomes especially prominent (Gardner & Steinberg, 2005). During this transition into adulthood, college students are becoming sexually active, experimenting with different aspects of identity, and shaping attitudes separate from parents/caregivers and thus may look to peers in making behavioral decisions in regard to sexual behavior (Brandhorst, Ferguson, Sebby, & Weeks, 2012). Social norms theory posits that misperceptions of peer norms may encourage risky behaviors in order to conform to these perceived and often inaccurate norms (Scholly, Katz, Gascoigne, & Holck, 2005). Research has shown that there is usually a large gap between perceived peer norms (what an individual thinks peers are doing) and actual peer norms (what behaviors peers are actually engaging in). For instance, according to the American College Health Association, college women estimated that peers had an average of 3.4 sexual partners within the last 12 months, while the actual number of average sexual partners reported within the last 12 months was 1.8 (ACHA, 2007). Many studies have highlighted that college students tend to overestimate the amount and frequency of sexual risk behaviors that their peers are involved in. For example, in a study of students from four different colleges, students perceived that their peers were engaging in more risk behaviors than they actually were (Scholly et al., 2005). Specifically, Scholly and colleagues (2005) found that students tended to overestimate peers' frequency of sexual activity and number of sexual partners. Lynch, Mowrey, Nesbitt, and O'Neil (2004) also found consistent results in a sample of 662 college students, with most students overestimating how much

their peers engaged in sexual activity as well as their frequency of unsafe or potentially risky behavior, such as number of sexual partners and frequency of sexual intercourse.

Despite evidence of a gap between perceived peer norms and actual peer norms, less research has looked directly at how perceived peer norms affect behavior. One study of 1,035 college students did find that perceived peer norms was a predictor of risky behaviors such as participation in casual sex, failure to use condoms, and resistance to changing one's casual sexual activity (Winslow et al., 1992). Winslow and colleagues (1992) attribute this association to peer pressure or peer socialization, and highlight that individual behaviors may be significantly influenced by the behaviors of peers. It is also possible that individuals believe that their peers are engaging in more sexual risk behaviors, and may participate in these behaviors as a way to conform or fit in with their peers. On the other hand, there could be a self-serving bias at play, in that individuals who participate in sexual risk behaviors believe that peers participate in these same risk behaviors to a similar or greater extent. Finally, it is likely that individuals who engage in risk behaviors are more likely to associate with peers who engage in similar behaviors, serving to reinforce their perception that their level of risk behavior is similar to, or less than, other students in general.

It is evident that there are many possible factors that contribute to engaging in sexual risk behaviors. However, there is limited research specifically in the areas of sexual motives, sexual attitudes, and peer norms in relation to sexual risk behaviors. Past research has primarily focused on sexual motives and attitudes related to condom use and STI prevention. While there is value in this research, it is important to view sexual motives and attitudes related to casual sexual behaviors as well (such as having multiple

sex partners, alcohol related sexual behavior, and sex with risky partners). Additionally, research has consistently demonstrated that there is a gap between perceived peer norms and actual peer norms. Research that has focused on this gap has failed to theorize and test why this gap exists or how exactly this gap relates to sexual risk behaviors. These limitations are important to consider and should be examined more closely.

Theories of Health Behavior

There are several theories that attempt to explain why individuals engage in health risk behaviors including sexual risk behaviors. In general, these theories have focused on predicting condom use and engaging in other HIV specific sexual risk behaviors. Some of these theories include: the health belief model, the theory of reasoned action, the theory of planned behavior, and social cognitive learning theory. All of these theories focus on the role of choosing whether or not to engage in risk behaviors based on a logical thought process. For instance, the health belief model posits that individuals actively process a risk/benefit analysis regarding risk behaviors, and based on this analysis, choose to engage in health behaviors or to not do so (Rosenstock, 1974). Additionally, the theory of reasoned action takes into account attitudes, social norms, and behavioral intention, defined as immediate antecedents to behavior (Fishbein & Ajzen, 1975). Lastly, the theory of planned behavior was developed from the previous model and also includes perception of control over performance of behavior (e.g., whether an individual believes they have control over their partner's use of a condom; Ajzen 1985). All of these theories presume that choosing to engage in risk behaviors is the result of rational thought processes, which are often time consuming. While these theories have been useful in predicting condom use and other HIV risk behaviors (failure to get tested for HIV,

engaging in oral, anal or vaginal intercourse with a number of sexual partners, etc.), it seems probable that such rational and conscious decision making may not always occur among college students who engage in sexual risk behaviors. This may be particularly true within the context of heavy drinking and the presence of strong cues to engage in these behaviors (e.g., perceptions that such behaviors are normative, verbal pressure from a partner or peers to engage in sex, the presence of strong reinforcers for engaging in sex such as reduced negative affect or increased positive affect), that are often present in contexts where college students engage in such behaviors.

One theory that takes into account the role of social influences in predicting sexual risk behavior is social learning theory. This theory purports that there are five contributors to engaging in health behaviors, which include: knowledge of health risks and benefits, self-efficacy to engage in self-protective behaviors, outcome expectations of the protective behaviors, behavioral goals, and perceptions of barriers and aids to behavior change (Friedman, 2011). Again, research has supported that this theory is useful when explaining condom use and HIV risk behaviors. For example, a study assessing college students' protective sexual behaviors (condom use) and self-efficacy supported the proposition that belief in one's ability or capability to use condoms had a significant influence on condom use (DiIorio, Dudley, Soet, Watkins, & Maibach, 2000). However, this theory also has important missing factors that are not considered when explaining engagement in sexual risk behaviors, particularly behaviors other than condom use and HIV risk behaviors. Social cognitive theory also holds a static view of behavior change, meaning that the theory posits that an individual will change his or her behavior when that person is aware of the benefit of change and has self-efficacy to do

so. Additionally, this theory inadequately proposes that individuals take time to weigh the costs and benefits of change. Again, the choice to engage in risky behaviors does not always encompass a rational decision making process that entails weighing pros and cons of decisions. Another criticism of social cognitive theory is that the model is unidirectional and does not take into account the possibility of influences occurring in a reciprocal manner (Gebhardt & Maes, 2001).

Contingent Consistency Peer Influence Model

As previously stated, there are a number of health behavior models that have been applied to sexual risk behaviors among college students in terms of condom use, but these models are not well-suited to explaining other types of risk behaviors and are likely inadequate at capturing the many influences on these behaviors. The contingent consistency peer influence model (CCPIM) may be an appropriate and more comprehensive model to explain sexual risk behaviors among college students. Originally developed to explain alcohol use among adolescents and young adults, the CCPIM has three components presumed to independently predict risk behavior: actual peer norms, perceived peer norms, and personal attitudes (Piane & Safer, 2008). Actual peer norms are the behaviors peers are actually engaging in, perceived peer norms are the perception of what behaviors peers are engaging in (regardless of actual peer norms) and personal attitude is an individual's attitudes, beliefs, and values regarding sex. The CCPIM is likely especially applicable to college students. During this transition into adulthood, college students are becoming sexually active, experimenting with different aspects of identity, and shaping attitudes separate from parents (Brandhorst et al., 2012). Thus,

college students may look to peers in making behavioral decisions in regard to sexual behavior at this time of development.

The CCPIM has been previously applied to substance use in adults and adolescents, but can also be accurately applied to sexual risk behaviors (e.g., Grube & Morgan, 1990; Rabow, Neuman, & Hernandez, 1987). This model proposes that individuals' perceived peer norms may influence behavior directly or indirectly by influencing one's personal attitude, or perceived peer norms may reinforce an existing permissive attitude towards engagement in casual sex (Higher Education Center for Alcohol and Other Drug Prevention, 1997; Piane & Safer, 2008). Prior research in the field of substance use has indicated that perceived peer norms predicted risky drinking even after controlling for personal attitudes, emphasizing the importance of the perception of peer norms (Perkins & Wechsler, 1996). It is also important to highlight that there is often a gap between perceived peer norms and actual peer norms. As previously stated, college students tend to overestimate peers' engagement in risky sexual behaviors (Scholly et al., 2005). Though these perceptions are often inaccurate, the perception of peer norms has found to be the strongest component of the model (Piane & Safer, 2008). This highlights the importance of an individual's perception of peer's behavior. Though the reasons for this misperception and its translation into individual behavior are uncertain, there has been consistent evidence that college students tend to overestimate their peers involvement in sexual risk behaviors (Lewis, Lee, Patrick, & Fossos, 2007; Martens et al., 2006; Scholly et al., 2005).

The CCPIM also highlights the role of personal attitudes when predicting engagement in risky behaviors. It is possible that individuals may overestimate peers'

involvement in sexual risk behaviors, but if they hold negative attitudes toward casual sex, they are unlikely to engage in such behaviors. Conversely, individuals who hold permissive or positive attitudes towards casual sex may have these views reinforced if they feel that peers are also engaging in sexual risk behaviors. This perception may put these individuals at greater risk of engaging in sexual risk behaviors. Having a permissive or positive attitude towards casual sex alone can be a risk factor for involvement in sexual risk behaviors, but paired with the perception that peers are also engaging in these behaviors could greatly increase the likelihood of individuals participating in such behaviors (Levinson et al., 1995; Winslow et al., 1992). However, this possibility has not been empirically evaluated.

Thus, this model serves as a general framework that can help explain the multiple factors that can lead to sexual risk behaviors among college students. Although this model includes several important components, there is still a motivational piece missing. It is therefore necessary to take into account the reasons why students engage in sex.

Sexual Motive Model

Sexual attitudes and peer norms likely serve to elevate general risk for engaging in sexual risk behaviors, but may not result in risky behavior unless combined with certain sexual motives. Indeed, research supports that individuals engage in a variety of behaviors in order to meet psychological needs, some adaptive and some maladaptive. This model of motivation was first applied to drinking behavior. Cooper and colleagues (1995) constructed this motivational model to explain how individuals engage in drinking behaviors in attempt to regulate positive and negative affective experiences.

Though this model was initially used to explain drinking behavior, it can also be appropriately applied to sexual behavior as well. Cooper and colleagues (1998) demonstrated support for this model regarding sexual behavior, finding that some motivations for having sex were more strongly related to risky behavior. Particularly, research has supported that coping and affirmation sexual motives are most strongly associated with sexual risk behavior (Cooper et al., 1998; Ingledew & Ferguson, 2007; Littleton et al., 2014). Coping motives have been shown to be related to a pattern of risky behavior (e.g., having a greater number of sex partners, and having more casual and risky partners, having more one time sexual encounters, and having sex following substance use; Cooper et al., 1998; Littleton et al., 2014). Additionally, Cooper and colleagues (1998) noted that individuals who reported affirmation motives for their sexual behaviors tended to engage in riskier sexual behaviors over time. Indeed, it is important to consider individuals' goals and motives that underlie risky behavior, as research supports that individuals have sex to satisfy different needs, which can influence behavior. Thus, the addition of this motivational piece to the CCPIM could more accurately predict sexual risk behavior.

As previously stated, past research has indicated that perceived peer norms and personal attitudes about sex (independently) can predict whether or not college students will engage in sexual risk behaviors. Additionally, adding the factor of sexual motives to this model may result in a more comprehensive model to predict engagement in sexual risk behaviors. By taking into account social influences such as perceived peer norms in addition to individual factors such as personal attitudes and sexual motives, this model

can explain the reasons why some college women may or may not be engaging in sexual risk behaviors.

Goals and Aims

It is clear that many college women are participating in a number of sexual risk behaviors which can have various negative physical, emotional, and social consequences. Although there are many factors that predict participation in these behaviors, the CCPIM, with the addition of a sexual motives component, may be an appropriate model to predict those who are more likely to engage in sexual risk behaviors. However, overall, there is a lack of empirical research examining the role of these factors in predicting sexual risk behavior, and no research has simultaneously evaluated the role of all of these factors in predicting sexual risk among college students. Therefore, the goal of this thesis is to test this model in a sample of undergraduate women. Pinpointing the factors that may identify those who are at risk of engaging in these risk behaviors could be helpful in the development of preventive efforts. The specific aims and hypotheses are as follows:

Aim one: Examine the applicability of the CCPIM in predicting college women's sexual risk behaviors (including casual/multiple partners and impulsive sexual behavior).

Hypothesis one: Positive personal attitudes toward casual sexual behaviors will predict engaging in more sexual risk behavior.

Hypothesis two: Positive perceived sexual peer norms (the perception that one's female friends are engaging in risky sexual behaviors) will predict engaging in more sexual risk behavior.

Hypothesis three: Positive personal attitudes toward casual sexual behaviors and positive perceived sexual peer norms will independently predict engaging in more sexual risk behavior.

Aim two: Examine the contribution of sexual motives (coping and affirmation) in predicting college women's sexual risk behaviors

Hypothesis four: Coping sexual motives will predict engaging in more sexual risk behavior.

Hypothesis five: Affirmation sexual motives will predict engaging in more sexual risk behavior.

Hypothesis six: Coping and affirmation sexual motives will predict engaging in sexual risk behaviors after accounting for positive personal attitudes toward sex and positive perceived sexual peer norms.

CHAPTER II: METHODS

Participants

Participants were 400 sexually active female students enrolled in Introduction to Psychology classes at East Carolina University, between 18 and 25 years of age. The average age of participants was 18.5 years. The majority of participants were European American/White (77.3%). Additionally, the majority of participants were heterosexual (92.3%) and were born in the U.S. (97.0%).

Procedures

Potential participants were recruited from the ECU Psychology department participant management system, Sona, to complete an anonymous online study of sexual attitudes and behaviors. The Sona system includes opportunities for students enrolled in Introduction to Psychology courses to participate in a number of research studies for course credit, as well as complete equivalent non-research options to earn course credit. Interested participants signed up to participate in the study within the Sona system. They then clicked on a link that took them to the electronic consent for the study. After providing consent, participants were asked to complete the online survey. The survey included self-report measures assessing demographics, sexual risk behaviors within the past six months, drinking behaviors, sexual attitudes, sexual motives, and perceived peer norms. Participation took approximately 45 minutes. Participants received 0.75 hours of research credit for their participation.

Measures

Demographics. Participants completed a nine-item demographic questionnaire regarding their gender, age, ethnicity, academic standing, sexual orientation, relationship status, generation status, country of origin, and language spoken at home.

Sexual Risk Behaviors. Past six month sexual risk behavior was assessed using the Sexual Risk Survey (SRS; Turchik & Garske, 2009). Eighteen open-ended items from the SRS were used. Selected items inquire about sexual risk behavior with uncommitted partners, risky acts, and impulsive sexual behaviors within the past 6 months. This scale has been validated with undergraduate samples. In past research, the SRS displayed good convergent validity, with sexual risk behavior over the past six months positively correlated with lifetime number of vaginal sex partners (r = .65) and lifetime number of oral sex partners (r = .64). The SRS also displayed good concurrent validity with scores associated with reports of STIs and pregnancy. The SRS also showed good internal consistency and test retest reliability, with Cronbach's alpha for the subscales ranging from .78 to .89. Additionally, two week test-retest reliability of subscales ranged from .70 to .90. To score the SRS, Turchik and Garske (2009) suggest recoding data using ordinal categories to reduce variability and skewness. Specifically, scores on each item should be coded into ordinal categories using the following guidelines: 1 = bottom 40% of non-zero responses, 2 = next 30% of non-zero responses, 3 = next 20% of non-zero responses, and 4 = top 10% of non-zero responses.

Perceived sexual peer norms. To assess perceived sexual peer norms, nine items were administered regarding participants' perceptions of the sexual behavior of their female friends at ECU. The first eight items are open ended and ask participants to

estimate their friends' number of sex partners, frequency of engaging in casual sexual relationships, and frequency of communication with sexual partner(s) regarding testing or presence of STIs. Similar to the method used by Turchik and Garske (2009) for scoring the SRS, data were recoded using ordinal categories to reduce variability and skewness. Scores on each item were coded into ordinal categories using the following guidelines: 1 = bottom 40% of non-zero responses, 2 = next 30% of non-zero responses, 3 = next 20% of non-zero responses, and 4 = top 10% of non-zero responses.

Sexual Attitudes. Sexual attitudes were assessed with subscales from the Sexual Anxiety Scale (SAS; Fallis, Gordon, & Purdon, 2011). The SAS was developed to examine individuals' affective response to sexual cues and evaluate erotophobia/erotophilia. Specifically, in the current study, the solitary and interpersonal sexual expression and sexual communication subscales were administered. The solitary and interpersonal expression subscale assesses an individual's level of pleasure or discomfort in relation to pornography, erotic material, masturbation, and interpersonal sexual experiences (Fallis et al., 2011). The sexual communication subscale items reflect openness to consensual sexual activity and communicating one's sexual likes and dislikes (Fallis et al., 2011). For each item, respondents are instructed to rate their level of comfort with the described sexual activity on a scale ranging from 0 (*extremely pleasurable*) to 100 (*extremely discomforting*). To score these subscales, items are summed so that higher scores indicate greater erotophobia and lower scores indicate greater erotophilia. The SAS showed good internal consistency with a Cronbach's alpha of .96 in an undergraduate sample. The subscales also have good internal consistency with alphas ranging from .87 to .95. The SAS also has good discriminant and construct

validity. The SAS has shown to be moderately correlated with mood, neuroticism, and other personality traits, and weakly correlated with anxiety. Lower SAS scores have been associated with greater sexual satisfaction, better sexual functioning, and higher scores on measures of knowledge about sexual issues (Fallis et al., 2011).

Sexual Motives. To examine affirmation and coping sexual motives, these two subscales from the Sexual Motives Scale were administered (Cooper et al., 1998). Specifically, the affirmation scale consists of five items assessing endorsement of items pertaining to having sex to increase feelings of self worth and desirability (α = .87; e.g., to feel better about oneself, to feel more self-confident). The coping scale consists of five items assessing endorsement of having sex to cope with negative affect (α = .88; e.g., to feel better when one is lonely, to deal with disappointment). For each item, participants were asked to indicate how often they have engaged in sexual activity for that reason in the past six months on a 5-point scale bounded by 1 (*almost never/never*) and 5 (*almost always/always*). These subscales had good internal consistency in a sample of undergraduate women (α = .87 and .85 respectively; Cooper et al. 1998; Cooper, Agocha, & Sheldon, 2000). Supporting convergent validity, the coping scale has also been shown to be related to self-reported depressive symptoms (*r* = .35; Littleton et al., 2014).

Analysis Plan

Each study hypothesis was individually examined using the following plan. First, skew and kurtosis values of all continuous variables was evaluated to determine if data needed to be transformed to correct any problems. Next, potential collinearity between predictors was evaluated by using the procedure recommended by Belsley, Kuh, and Welsch (1980). This procedure entails first examining the condition index for each

predictor, which is the square root of the ratio of the first eigenvalue of the matrix and the eigenvalue of the predictor under consideration (Pedhazur, 1997). It is suggested that condition numbers of 15 or greater are suggestive of possible problems with collinearity (Belsley et al., 1980). The variance-decomposition proportions of predictors with high condition indexes were then evaluated (these refer to the proportion of variance of the intercept and each of the regression coefficients associated with the predictor). It is suggested that variance proportions over 0.5 for two or more coefficients indicate the presence of collinearity (Belsley et al., 1980). Prior to conducting collinearity analysis procedures, all predictor variables were scaled by dividing each score by the square root of the sum of squares value of the variance to ensure the evaluation of the condition indexes (Pedhazur, 1997).

Aim one of the thesis was to examine the applicability of the CCPIM in predicting college women's sexual risk behaviors. Linear regressions were conducted to evaluate sexual attitudes and perceived peer norms as predictors of the three types of sexual risk behaviors. To evaluate if both sexual attitudes and perceived norms independently predicted sexual risk behaviors, linear regressions with backward elimination were conducted. Specifically, this procedure involves first entering all potential predictors into a regression model. Next, predictors are scrutinized one at a time to determine which predictor, if removed from the model, will result in the smallest reduction in variance explained (Pedhazur, 1997). This procedure is continued as long as predictors whose deletion would result in loss in predictability deemed not meaningful are identified (Pedhazur, 1997). Thus, this procedure results in a final model where only those predictors that meaningfully add to prediction of the outcome are retained.

Aim two was to examine the contribution of sexual motives (coping and affirmation) in predicting college women's sexual risk behaviors. Linear regressions were conducted to examine these two motives as predictors of sexual risk behavior. To evaluate hypothesis 6, which stated that sexual motives will continue to predict sexual risk behavior after accounting for sexual attitudes and perceived peer norms, a linear regression with predictors entered into the models in blocks was conducted. Specifically, perceived peer norms and sexual attitudes were entered in the model in the first block and sexual motives were then entered in the second block to examine if there was a significant increase in variance explained by sexual motives once perceived norms and attitudes are accounted for in the model.

CHAPTER III: RESULTS

Participant Demographics

The participant sample included a total of 476 college women. Analyses were restricted to sexually active women (sexually active was defined as engaging in any sexual activity including kissing and petting; 84%, $n = 400$). According to the 2015 ECU Fact Book regarding the race/ethnicity of enrolled undergraduate students, European American/White participants were over represented (77.3% in the sample vs. 70% overall), and ethnic minority women were underrepresented (22.7% vs. 30%), among sexually active women. Participants ranged in age from 18 to 25 years with a mean age of 18.5 years ($SD = 1.0$ years) and were primarily first year undergraduates (84.5%). The majority described themselves as exclusively heterosexual (92.3%) and almost half were single, with 44.3% of participants stating they were in an exclusive relationship. The vast majority of participants (97.0%) were born in the U.S., came from families who had resided in the U.S. for several generations (92.3%), and came from English speaking homes (92.5%). Participant demographics among sexually active women are summarized in Table 1.

Table 1

Participant Demographics of Sexually Active Women ($n = 400$)

	%	(*n*)
Ethnicity		
White/European American	77.3	309
Black/African American	11.5	46
Asian/Asian American	1.8	7
Latina/Latin American	3.8	15
Native American/Alaskan Native	1.0	4
Caribbean Islander	0.3	1
Multi-ethnic	3.0	12

Other	1.5	6
Academic standing		
Freshman	84.5	338
Sophomore	11.5	46
Junior	2.8	11
Senior	1.3	5
Relationship status		
Single	49.0	196
Exclusive relationship	44.0	176
Married/cohabitating	0.3	1
Non exclusive relationship	6.3	25
Other	0.5	2
Sexual orientation		
Heterosexual/straight	92.3	369
Mostly heterosexual/straight	4.0	16
Bisexual	2.3	9
Homosexual/gay/lesbian	1.3	5
Other	0.3	1
Time lived in U.S.		
Born in U.S.	97.0	388
Moved to U.S. before age 15	2.3	9
Moved to U.S. after age 15	0.8	3
Generation status		
First generation born in US	4.8	19
Second generation born in US	8.0	32
Third generation born in US	6.3	25
Several generations born in US	78.0	312
Unreported	3.0	12
Languages spoken in home		
English only	92.5	370
English and another language	7.5	30

There were several significant demographic differences between sexually active and non-sexually active women. Specifically, non-sexually active women were more likely to be single, ethnic minorities, to not have been born in the U.S., to speak a language other than English in their home, and to be among the first generation in their family to be U.S. born. There were no significant differences in age, t (471) = 0.85, p = .397, or in the proportion of women who were freshmen among non-sexually active and sexually active women. Lastly, there were no significant differences in sexual orientation

between non-sexually active and sexually active women. Participant demographics stratified by sexual activity status are summarized in Table 2.

Table 2

Sociodemographic Differences among Sexually Active and Not Sexually Active Women (n = 475)

Variable	Sexually Active *n* = 400 % (*n*)	Not Sexually Active *n* = 75 % (*n*)	χ^2
In a relationship			
Yes	44.3 (177)	5.3 (4)	40.56**
No	55.8 (223)	94.7 (71)	
Heterosexual			
Yes	96.3 (385)	92.0 (69)	2.70
No	3.8 (15)	8.0 (6)	
Freshman			
Yes	84.5 (338)	82.7 (62)	0.16
No	15.5 (62)	17.3 (13)	
White/European American			
Yes	77.3 (309)	65.3 (49)	4.83*
No	22.8 (91)	34.7 (26)	
Born in U.S.			
Yes	97.0 (388)	89.3 (67)	9.20*
No	3.0 (12)	10.7 (8)	
Only English spoken in the home			
Yes	92.5 (370)	80.0 (60)	11.51**
No	7.5 (30)	20.0 (15)	
First generation U.S.			
Yes	4.9 (19)	11.9 (8)	5.08*
No	95.1 (369)	88.1 (59)	
Unreported	3.0 (12)	12.0 (9)	

Note. *$p < .05$. **$p < .01$.

Descriptives of Study Variables

Sexual risk behaviors

In general, most participants reported engaging in few impulsive sexual behaviors, and reported few uncommitted sexual behaviors. Participants reported having

between 0 and 16 sexual partners (including vaginal, oral, and/or anal sex partners) within the past six months. Additionally, instances of impulsive sexual behaviors (such as having an unexpected and unanticipated sexual experience) ranged from 0 to 50 experiences, and sexual behavior with uncommitted partners (such as having sex with someone who has many sexual partners) ranged from 0 to 90 encounters. Thus, while overall participants reported few risk behaviors, there was substantial variability in the amount of risk behavior reported. Participant responses to select items from the SRS are presented in Table 3.

Table 3
Frequency of Past Six Month Sexual Risk Behaviors

Behavior	%	(*n*)
Number of partners you engaged in sexual behavior with but not had sex with		
0	11.0	44
1	51.0	204
2-3	21.0	84
4 or more	17.0	68
Number of times you had an unexpected and unanticipated sexual experience		
0	63.0	252
1	13.0	52
2-3	16.8	67
4 or more	7.2	29
Number of partners you have had sex with		
0	16.5	66
1	50.2	201
2	12.5	50
3 or more	20.8	83
Number of times you had sex with someone you didn't know well or just met		
0	78.0	312
1	12.5	50
2	4.3	17
3 or more	5.2	21
Number of times you or your partner used alcohol or drugs before or during sex		

0	42.2	169
1-2	25.2	101
3-5	19.0	76
6 or more	9.8	39
Unanswered/Could not code	3.8	15
Number of times you had vaginal intercourse without a condom		
0	40.5	162
1-6	27.0	108
7-15	13.5	54
16 or more	11.0	44
Unanswered/Could not code	8.0	32

Consistent with Turchik and Garske's (2009) scoring guidelines, Sexual Risk Survey (SRS) scores were recoded into ordinal categories to reduce issues with outliers and skewness. Specifically, scores on each item were coded into ordinal categories from 0 to 4. Responses of "0" were coded as 0. The remaining non-zero responses were re-coded using the following guidelines: 1 ≈ bottom 40% of responses, 2 ≈ next 30% of responses, 3 ≈ next 20% of responses, and 4 ≈ top 10% of responses. For example, for item 10 (How many times have you or your partner used alcohol or drugs before or during sex in the past six months?), responses of 0 were coded as 0, responses of 1-2 were coded as 1 (bottom 46.2% of non-zero responses), responses of 3-4 were coded as 2 (next 24% of non-zero responses), responses of 4.5-9 were coded as 3 (next 17.8% of non-zero responses), and responses of 10-83 were coded as 4 (final 12% of non-zero responses). The coding for all items of the SRS are included in Appendix D.

Perceived peer norms

Overall, participants tended to rate their same sex peers as engaging in more sexual risk behaviors than themselves. For example, participants estimated that their peers had 3.02 sex partners within the last 6 months, while respondents reported an

average of 1.68 sex partners. When asked about number of partners participants have had a casual relationship (nonexclusive) with within the last six months, participants reported an average of 0.69 partners, while rating their peers as having 2.67 partners, on average. Participants also estimated that their peers engaged in sexual behavior without discussing risk topics on average 1.13 instances, while respondents actually reported 0.69 instances of sexual behavior without discussing risk topics. Participant responses to select items from the peer norms measure are presented in Table 4.

Table 4
Perceived Sexual Peer Norms for Past Six Month Sexual Behavior Months) Frequencies

Behavior	%	(*n*)
Number of partners (including kissing, petting) your female friends on average have had		
0	4.0	16
1-2.5	29.7	119
3-4	29.5	118
5 or more	35.3	141
Unanswered/Could not code	1.5	6
Number of partners that your female friends on average have had vaginal intercourse with		
0	9.0	36
1-2.5	42.0	168
3-5	28.3	113
6 or more	19.2	77
Unanswered/Could not code	1.5	6
Number of partners on average your female friends have engaged in a one-time sexual encounters with		
0	26.3	105
1-2.5	36.7	147
3-4.5	24.0	96
5 or more	11.7	47
Unanswered/Could not code	1.3	5
Number of partners on average your female friends have had vaginal intercourse or other sex acts with while under the influence of alcohol or other drugs		
0	23.7	95
1-2.5	33.5	134
3-5	32.8	131

6 or more	8.5	34
Unanswered/Could not code	1.5	6

The perceived sexual peer norms measure was also recoded into ordinal categories using a similar procedure as was used for the SRS (See Appendix E for coding for each item). For example, for the item "With how many partners on average would you say that your female friends engaged in a one-time sexual encounter (e.g., hook-up, one night stand) in the past six months?" responses of 1-2 were coded as 1 (bottom 50% of non-zero responses), responses of 2.5-3.5 was were coded as 2 (next 22.8% of non-zero responses), responses of 4-5 were coded as 3 (next 18.6% of non-zero responses), and responses of 6-20 were coded as 4 (final 8.6% of non-zero responses).

Sexual motives

Turning to the measure of sexual motives, most participants reported never or infrequently engaging in sexual behavior to affirm their worth or to cope with negative affect, thus leading to a positive skew. However, participant responses covered almost all of entire possible range of 1 to 5 (from never to always/almost always) on both sexual motive scales (coping scale scores ranged from 1 to 4.6 and the affirmation scale scores ranged from 1 to 4.8). Approximately 1% of women reported always or almost always having sex for affirmation motives, and 2.7% who reported always or almost always having sex for coping motives.

Sexual attitudes

The SAS includes 39 questions examining erotophilia and erotophobia using a scale of 0 (extremely pleasurable) to 100 (extremely discomforting). For each participant, the total score was calculated. Total scores for the SAS ranged from 11 (indicating

erotophilia) to 3900 (indicating erotophobia). Overall, participants tended to score near the midpoint, endorsing neither erotophilia nor erotophobia. Participants' average total sum for the SAS was 1913.28, very close to the midpoint of the scale (1950). A total of 13.3% of participants scored below 500 (indicating high erotophilia), while 2.5% scored 3500 or more (indicating high erotophobia).

Descriptive statistics and correlations among measures

Before analyses were completed, skew and kurtosis of all continuous variables were examined. All skew and kurtosis values were within acceptable limits, and all had acceptable internal consistencies as evaluated by Cronbach's alpha. Descriptive statistics for these variables are summarized in Table 5.

Table 5

Descriptive Statistics of Study Variables

	n	*M*	SD	α	Min	Max	Skew	Kurtosis
SAS Total	359	1913.28	710.09	.97	37	3807	-0.01	0.06
SRS Impulsive	399	3.16	3.14	.77	0	16	1.47	1.81
SRS Risky Acts	356	4.16	3.69	.75	0	16	0.80	-0.07
SRS Uncommitted	392	4.11	4.94	.88	0	24	1.56	1.82
Peer SRS	383	11.91	7.04	.89	0	31	0.39	-0.46
SMS Affirmation	400	1.63	0.87	.94	1	4.8	1.23	0.47
SMS Coping	400	1.60	0.87	.93	1	4.6	1.55	1.62

Note: SAS Total: Sexual Anxiety Scale Total, range 0-3900, SRS Impulsive: Sexual Risk Survey Impulsive Acts, range 0-16, SRS Risky Acts: Sexual Risk Survey Risky Acts, range 0-16, SRS Uncommitted: Sexual Risk Survey Uncommitted Partners, range 0-28, Peer SRS: Perceived Peer Norms, range 0-32, SMS Affirmation: Sexual Motives Scale, Affirmation subscale, range 1-5, SMS Coping: Sexual Motives Scale, Coping subscale, range 1-5.

Examining the correlations among measures supported that most were moderately to strongly correlated in the expected direction with the other measures, with the

exception of the SAS, which was uncorrelated or negatively correlated with the other measures. These values are summarized in Table 6.

Table 6

Correlations among Measures

	1	2	3	4	5	6
1. SAS	__	__	__	__	__	__
2. SRS Impulsive	-0.05	__	__	__	__	__
3. SRS Uncommitted	-0.12*	0.66**	__	__	__	__
4. SRS Risky Acts	-0.16**	0.11*	0.27**	__	__	__
5. Peer SRS	-0.00	0.21**	0.28**	0.23**	__	__
6. SMS Affirmation	-0.10*	0.22**	0.17**	0.11*	0.14**	__
7. SMS Coping	-0.16**	0.31**	0.26**	0.08	0.16**	0.65**

Note. *$p < .05$. **$p < .01$.

Pre-Analysis Procedures

Before planned analyses were completed, potential problems with collinearity between perceived peer norms, sexual motives and sexual risk behaviors were examined using the procedure recommended by Belsley and colleagues (1980). Specifically, all predictor variables were scaled by dividing each score by the square root of the sum of squares value of the variance to enable the evaluation of the condition indexes (Pedhazur, 1997). The condition index for each predictor was then examined, and all were under 15, ranging from 1.0 to 9.4, supporting that there were no problems with collinearity. Therefore, analyses were conducted as planned.

Aim 1: Examine the applicability of the peer contingent consistency influence model

The first study aim was to examine the applicability of the peer contingent consistency influence model in predicting college women's sexual risk behaviors (including casual/multiple partners, risky acts, and impulsive sexual behavior). Linear

regressions were conducted to evaluate sexual attitudes and perceived peer norms as predictors of the three types of sexual risk behaviors. Results regarding the SAS did not support the model. As summarized in Table 7, those who endorsed more positive attitudes toward sexual behavior engaged in *fewer* risky acts, F (1, 355) = 9.38, p = .002, and had *fewer* sexual acts with uncommitted partners, F (1, 391) = 5.43, p = .020. Sexual attitudes did not predict impulsive sexual behaviors, F (1,398) = 1.17, p = .281.

Table 7

Sexual Attitudes as a Predictor of Engaging in Sexual Risk Behaviors

	Risky Acts		Uncommitted Partners		Impulsive Acts	
Variable	*b* (SE)	*β*	*b* (SE)	*β*	*b* (SE)	*β*
Constant	5.27 (.41)		5.20 (.53)		3.48 (.34)	
SAS	-0.01 (.00)	-.16	-0.00 (.00)	-.12	0.00 (.00)	-.05
n	356		392		399	
R^2	0.03		0.01		0.00	
F	9.38*		5.43*		1.17	

Note. * $p < .05$.

In contrast, and consistent with study hypotheses, positive perceived sexual peer norms regarding casual sexual behaviors predicted engaging in more risky acts, F (1, 344) = 18.61, p <.001, engaging in more sexual acts with uncommitted partners, F (1, 377) = 32.08, p < .001, and engaging in more impulsive sexual behaviors, F (1, 382) = 17.50, p < .001. Results are summarized in Table 8.

Table 8

Perceived Sexual Peer Norms as a Predictor of Engaging in Sexual Risk Behaviors

	Risky Acts		Uncommitted Partners		Impulsive Behaviors	
Variable	*b* (SE)	*β*	*b* (SE)	*β*	*b* (SE)	*B*
Constant	2.72 (.39)		1.79 (.48)		2.06 (.30)	
Peer Norms	0.12 (.03)	.23	0.20 (.03)	.28	0.09 (.02)	.21

n	345	378	383
R^2	0.05	0.08	0.04
F	18.61**	32.08**	17.50**

Note. **$p < .01$.

To evaluate if both sexual attitudes and perceived sexual peer norms predicted sexual risk behaviors, linear regressions with backward elimination were conducted. Both sexual attitudes and perceived sexual peer norms were retained in the final models for risky acts and sexual behaviors with uncommitted partners: risky acts, F (2, 344) = 14.35, $p < .001$, sexual behaviors with uncommitted partners, F (2, 377) = 19.74, $p < .001$. In contrast, only perceived sexual peer norms was retained in the final model predicting impulsive sexual behaviors, F (2, 382) = 17.50, $p < .001$. Results are summarized in Table 9.

Table 9

Final Step of Linear Regressions with Backward Elimination Examining Sexual Attitudes and Perceived Sexual Peer Norms as Predictors of Engaging in Sexual Risk Behavior

	Risky Acts		Uncommitted Partners		Impulsive Behaviors	
Variable	*b* (SE)	*β*	*b* (SE)	*β*	*b* (SE)	*β*
Constant	3.86 (.53)		3.00 (.66)		2.05 (.30)	
Peer Norms	0.12 (.03)	.22	0.20 (.03)	.28	0.09 (.02)	.21
SAS	-0.00 (.00)	-.16	-0.00 (.00)	-.13	—	—
n	345		378		383	
R^2	.08		.10		.05	
F	14.35**		19.74**		17.50*	

Note. * $p < .05$. **$p < .01$.

Aim 2: Examine the contribution of sexual motives in predicting sexual risk behaviors

The second aim of this thesis was to examine the contribution of sexual motives (coping and affirmation) in predicting college women's sexual risk behaviors. Linear regressions were conducted to examine these two motives as predictors of the sexual risk behaviors. As summarized in Tables 10 and 11, coping and affirmation sexual motives predicted engaging in more behaviors with uncommitted partners, for coping, F (1, 391) = 29.02, $p < .001$, and for affirmation, F (1, 391) = 12.01, $p = .001$, and engaging in more impulsive sexual behavior, F (1, 398) = 42.92, $p < .001$, for coping, and F (1, 398) = 20.60, $p < .001$, for affirmation. In contrast, affirmation motives predicted engagement in risky acts, F (1, 355) = 4.32, $p = .038$, but coping motives did not significantly predict engagement in risky acts, F (1, 354) = 2.48, $p = .117$.

Table 10

Affirmation Sexual Motives as a Predictor of Engaging in Sexual Risk Behaviors

	Risky Acts		Uncommitted Partners		Impulsive Behaviors	
Variable	*b* (SE)	*β*	*b* (SE)	*β*	*b* (SE)	*B*
Constant	3.39 (.42)		2.49 (.53)		1.85 (.33)	
Affirmation	0.48 (.23)	.11	1.00 (.29)	.19	0.80 (.18)	.22
n	356		392		399	
R^2	.01		.03		.05	
F	4.32*		12.01**		20.60**	

Note. * $p < .05$. ** $p < .01$.

Table 11

Coping Sexual Motives as a Predictor of Engaging in Sexual Risk Behaviors

	Risky Acts		Uncommitted Partners		Impulsive Behaviors	
Variable	*b* (SE)	*β*	*b* (SE)	*β*	*b* (SE)	*β*

Constant	3.58 (.41)		1.68 (.51)		1.35 (.31)	
Coping	.36 (.23)	.08	1.52 (.28)	.26	1.13 (.17)	.31
n	356		392		399	
R^2	.01		.07		.10	
F	2.48		29.02**		42.92**	

Note. $^{**}p < .01$. $^{*}p < .05$.

Next, to examine if sexual motives predicted engagement in sexual risk behaviors after accounting for perceived sexual peer norms and sexual attitudes, linear regressions with predictors entered into the models in blocks were conducted. Specifically, sexual attitudes and perceived peer norms were entered into the first block, and coping and affirmation sexual motives were entered into the second block for the three sexual risk behavior scales. Results from step one of the regression predicting engagement in impulsive sexual behaviors showed that the model including sexual attitudes and perceived sexual peer norms was significant, F (2, 380) = 9.58, $p < .001$, $R^2 = .05$. Addition of coping and affirmation motives to the model at step two (the final step) resulted in a significant regression, F (4, 378) = 12.72, $p < .001$, and a significant increase in variance explained, F (2, 378) = 15.15, $\Delta R^2 = .07$, $p < .001$. Similarly, results from step one of the regression predicting engagement in risk behaviors with uncommitted partners also showed that the model including sexual attitudes and perceived sexual peer norms was significant, F (2, 375) = 19.74, $p < .001$, $R^2 = .10$. Adding coping and affirmation motives to the model also resulted in a significant regression, F (4, 377) = 13.98, $p < .001$, and a significant increase in variance explained, F (2, 373) = 7.53, $p < .001$, $\Delta R^2 = .04$. Lastly, results from step one of the regression predicting engagement in risky acts showed that positive sexual attitudes and perceived sexual peer norms were significant, F (2, 342) = 14.35, $p < .001$, $R^2 = .08$. The addition of coping and affirmation motives to the model at step two resulted in a significant

regression, F (4, 344) = 7.54, $p < .001$, but no significant increase in variance explained, F (2, 340) = .75, $p = .475$, $\Delta R^2 = .00$. Results are summarized in Tables 12-14.

Table 12

Result of Hierarchical Linear Regression Predicting Impulsive Sexual Risk Behaviors (N = 383)

Model		ΔR^2	*b*	SE *b*	*β*
Step 1		.05**			
	Constant		2.43	.42	
	SAS		0.00	.00	-.06
	Peer Norms		0.09	.02	.21
	F		9.58**		
Step 2		.07**			
	Constant		0.79	.52	
	SAS		-0.00	.00	-.02
	Peer Norms		0.07	.02	.17
	Affirmation		0.09	.23	.02
	Coping		0.93	.23	.26
	F		12.72**		

Note. $^{**}p < .01$.

Table 13

Result of Hierarchical Linear Regression Predicting Sexual Risk Behaviors with Uncommitted Partners (N = 378)

Model		ΔR^2	*b*	SE *b*	*β*
Step 1		.10**			
	Constant		2.99	.66	
	SAS		-0.00	.00	-.13
	Peer Norms		0.20	.03	.28
	F		19.74**		
Step 2		.04**			
	Constant		1.27	.82	
	SAS		-0.00	.00	-.10
	Peer Norms		0.17	.03	.25
	Affirmation		-0.12	.36	-.02
	Coping		1.19	.37	.21

	F		13.98**		

Note. **$p < .01$.

Table 14

Result of Hierarchical Linear Regression Predicting Risky Acts (N = 345)

Model		ΔR^2	*b*	SE *b*	*β*
Step 1		.08**			
	Constant		3.86	.53	
	SAS		-0.00	.00	-.16
	Peer Norms		0.12	.03	.22
	F		14.35**		
Step 2		.00			
	Constant		3.58	.53	
	SAS		-0.00	.00	-.16
	Peer Norms		0.12	.03	.22
	Affirmation		0.37	.23	.09
	Coping		0.37	.23	-.04
	F		7.54**		

Note. **$p < .01$.

CHAPTER IV: DISCUSSION

The current research sought to examine predictors of sexual risk behavior in college women, including perceived sexual peer norms, sexual attitudes, and sexual motives. Like prior research (e.g., ACHA, 2016), the majority of women in the current study (84%) had been sexually active in the past six months. Not surprisingly, women in a current romantic relationship were more likely to be sexually active. In contrast, ethnic minority women, those who were recent U.S. immigrants, and those who came from bilingual homes were less likely to be sexually active. Prior literature has also established that ethnic minority college women are less likely to be sexually active than White women (Synovitz, Herbert, Carlson, & Kelley, 2005). Though there has been sparse research on sexual behavior of immigrant and bilingual college women, consistent with these results, past research has shown that immigrant and bilingual adolescent and community women tend to report a later age of first sexual intercourse and less engagement in sexual risk behaviors than European American/White women (Castillo-Mancillia et al., 2012; McDonald, Manlove, & Ikramullah, 2009). Interestingly, age was unrelated to sexually activity status, in contrast to prior studies of college women (e.g., Siegel, Klein, & Roghmann, 1999), perhaps due to limited variability in participant age. Indeed, 88.7% of women were 18 and only 11.3% were 20 years of age or older.

Sexual attitudes, norms, and risk behavior

Participants on average reported fairly neutral sexual attitudes, although there was substantial variability, with approximately 13.4% reporting attitudes characteristic of erotophobia (average item scores greater than 70) and 14.8% reporting attitudes characterized as erotophilic (average item scores less than 30). The majority of

participants denied engaging in impulsive sexual risk behaviors, risky acts, and sexual behavior with uncommitted partners. Though overall there were low rates of sexual risk behaviors, there was a small group of women engaging in a number of sexual risk behaviors, with 6% of participants reporting six or more sexual partners within the last six months, and 2.5% having sex with someone they did not know well or had just met on at least four occasions in the past six months.

One possible explanation for the low levels of risk behaviors reported overall was the large percentage (44.3%) of sexually active participants in a current romantic relationship. Indeed, single participants reported engaging in significantly more impulsive sexual behaviors, t (397) = 8.46, $p < .001$, and sex with uncommitted partners, t (390) = 6.95, $p < .001$. In contrast, women in a relationship engaged in more risky acts than single participants, t (354) = 4.17, $p <.001$. As the majority of the risky acts items tapped condom usage, one possibility is that women in a current relationship perceive themselves at low risk for contracting an STI from sex with their partner leading to low usage of condoms, as has been found in prior studies of college women (Civic, 1999; Hill, Amick, & Sanders, 2012; Reisen & Poppen, 1995).

In contrast to participants' infrequent reports of engaging in risky sexual behaviors, women viewed their same sex friends as engaging in much more frequent sexual risk behaviors. For example, when asked on average how many sexual partners their peers have had within the past six months, the mean number of partners participants estimated was 3.02, while the actual number of self reported sexual partners was 1.68. This is consistent with prior findings regarding college students' tendency to overestimate the frequency with which their peers engage in various risk behaviors

(ACHA, 2007; Lynch et al., 2004; Scholly et al., 2005). Finally, the majority of participants did not report engaging in sex to regulate negative affect or affirm their worth on a regular basis. However, these sexual motives were endorsed by a minority of women. For example 7.3% of participants reported engaging in sexual activity to feel more self-confident "very often" or "always/almost always," and 6.3% reported engaging in sexual activity "very often" or "always/almost always," to cope with emotional upset. Thus, these particular sexual motives were clearly associated with the sexual behavior of a minority of participants.

Applicability of the contingent consistency peer influence model in predicting college women's sexual risk behaviors

I hypothesized that holding an overall positive personal attitude toward sex (i.e., erotophilia) would be associated with having a greater number of causal/multiple sex partners and engaging in more impulsive sexual behavior. This hypothesis was not supported, as participants who endorsed more positive/permissive attitudes towards sex engaged in fewer risky acts, and fewer sexual behaviors with uncommitted partners. In contrast, sexual attitudes were unrelated to impulsive sexual behaviors. One possible explanation of these findings is that women who held more positive attitudes toward sex may also be in committed relationships, presuming that those who view sex more positively may seek out a steady partner to have sexual needs met. However, when examining the data, there were no significant differences in sexual attitudes between those in a relationship and those not in a romantic relationship, t (473) = 0.85, p = .40. Another possibility is that women who hold more positive sexual attitudes may also be more sexually assertive to refuse risky situation. Overall, women who have a positive

orientation toward sex, may also feel more comfortable discussing topics related to sexual health, functioning, and pleasure. Indeed, research in this area has shown that erotophilia is associated with greater sexual assertiveness. For example, Snell, Fisher, and Miller (1991) found that sexual assertiveness was positively correlated with positive sexual attitudes among college students. Subsequent research has confirmed this relationship in diverse samples (Hurlbert, Apt, & Rabehl, 1993; Santos-Iglesias, Sierra, & Vallejo-Medina, 2013; Sierra, Santos, Gutierrez-Quintanilla, Gomez, & Maeso, 2008).

Additionally it is possible that those who have more positive attitudes towards sex may feel more comfortable discussing risk topics, current sexual practices (possible simultaneous sexual partners), and sexual history with current and potential partners, and may also be more likely to obtain and use effective birth control. Most research in this area has focused on college men and condom use. For example, Fisher (1984) found that erotophilia was associated with more consistent condom use among college men. He theorized that sexually protective behaviors (such as buying and using condoms) were more likely to be performed by those who have a positive view of sex (erotophilia), as opposed to those who find sex aversive (erotophobia). The current findings suggest that erotophilia may similarly be associated with safer sexual behavior (e.g., buying and using condoms, discussing risk topics with a partner) among college women.

I also hypothesized that positive perceived sexual peer norms would predict having a greater number of causal sex partners and engaging in more impulsive sexual behaviors. This hypothesis was supported. Positive perceived sexual peer norms predicted engagement in all three sexual risk behaviors. This is consistent with prior research suggesting that those who believe their peers are engaging in sexual risk

behavior are more likely to engage in these behaviors as well. This could represent, in part, a self-serving bias (viewing oneself in a more positive light than peers), or possibly due to pressure or influence from peers. It is also possible that associating with peers who engage in risk behaviors may serve to normalize engaging in such behaviors and reinforce perceptions that one's level of risk behavior is similar to, or less than, other friends in general. Additionally, individuals may participate in similar behaviors as their peers as a way to conform or fit in, and individuals who engage in risky behaviors may also select friends who engage in similar behaviors, again reinforcing risky choices. As highlighted by Piane and Safer (2008), the perception of peer norms (regardless of the accuracy of this perception) is the strongest component in the peer contingent consistency influence model.

Finally, I hypothesized that having positive personal attitudes towards sex and positive perceived sexual peer norms would independently predict greater engagement in sexual risk behaviors. Because sexual attitudes predicted risky behavior in the opposite direction than expected (predicted less risky sexual behavior), this hypothesis could not be tested. Though this finding was unexpected, perceived sexual peer norms did predict risk behaviors above that of sexual attitudes, again highlighting that the strongest component of the model is perceived peer norms.

Overall, the peer contingent consistency influence model was partially supported. Consistent with prior research on risky alcohol use, the perceived peer norms piece of the model was the strongest predictor of engagement in sexual risk behaviors (Piane & Safer, 2008). However, positive personal attitudes towards sex did not predict engagement in more sexual risk behaviors; the opposite was actually true. More positive attitudes

towards sex predicted less engagement in risky behaviors, possibly due to increased sexual assertiveness of women who endorsed positive personal attitudes toward sex, or those with more positive sexual attitudes may be more inclined to discuss risk topics with potential or current partners as well as engage in protective behaviors (e.g., obtain and use condoms).

Sexual motives as predictors of college women's sexual risk behaviors

I hypothesized that engaging in sex to cope with negative affect would predict greater engagement in sexual risk behaviors. This hypothesis was partially supported, as coping motives predicted sexual behaviors with uncommitted partners and impulsive sexual behaviors. Consistent with prior research, those endorsing engaging in sex to cope with negative emotions such as depression and loneliness, engaged in in more sexual risk behaviors. However, coping motives did not predict engagement in risky acts. Because the risky acts subscale addressed several questions concerning condom use, it is possible that individuals instead are more likely to use condoms when engaging in sex with potentially risky and/or casual partners. Indeed, this is consistent with literature highlighting that women in casual or non monogamous relationships are more likely to use condoms than those in a committed, monogamous relationship (Civic, 1999; Hill et al., 2012; Macaluso, Demand, Artz, & Hook, 2000; Reisen & Poppen, 1995). Therefore, the women in this sample were possibly more likely to use condoms when engaging in sex with risky partners, which may account for why coping sexual motives did not predict engagement in risky acts.

I also hypothesized that women who reported having sex as a way to improve their self-esteem or sense of self (affirmation motives) would engage in more sexual risk

behaviors. This hypothesis was supported, as affirmation motives predicted engagement in sexual behaviors with uncommitted partners, impulsive behaviors, and risky acts. These findings are consistent with prior research establishing that those who engage in sex to regulate affect by improving their self-esteem are more likely to engage in sexual risk behaviors (Cooper et al., 1998). While this finding was significant for risky acts, it was a weaker predictor, as less variance was explained than compared to the other risk behaviors (impulsive sex acts, and sex with uncommitted partners). This finding suggests that affect regulation sexual motives may be less important in predicting condom use behaviors.

My final hypothesis was that both affect regulation sexual motives would predict risky sexual behaviors after accounting for personal sexual attitudes and perceived peer norms. Again, this model was partially supported. Coping and affirmation motives predicted engaging in sexual behaviors with uncommitted partners and impulsive sexual behaviors after accounting for perceived peer norms and sexual attitudes. Thus, sexual motives are important factors when it comes to understanding college women's engagement in sexual risk behaviors, and should be included in future research in this area. In contrast, the addition of coping and affirmation sexual motives did not significantly contribute to the model for predicting engagement in risky acts, as the addition of sexual motives to the model did not explain more variance when accounting for peer norms. When examining the risk behavior subscales, it is clear that the risky acts subscale primarily taps into risk behaviors associated with condom use. It is very likely that condom use may be related to ones' perception of peers' behaviors and attitudes, rather than sexual motives. Indeed, the finding that condom use is related to subjective

peer norms has been found in a previous meta-analysis (Albarracin, Johnson, Fishbein, & Muellerleile, 2001). Additionally, it is possible that other factors, such as impulsivity, may be more strongly related to making health behavior decisions than affect regulation sexual motives, as has been supported in prior research (Hoyle et al., 2000). It is also possible that condom use is related to other factors that have already been extensively studied, such as sexual assertiveness, partner type, attitude towards condoms, behavioral intentions to use condoms, condom use self-efficacy, and preparatory behaviors (Farmer & Meston, 2006; Hill et al., 2012; Macaluso et al., 2000; Sheeran, Abraham, & Orbell, 1999; Stoner et al., 2008).

Limitations

Though this research adds valuable information to the sexual health literature, there are also key limitations that should be noted. Because this research is cross sectional, any causal inferences must be made with caution. For example, as previously noted, it is possible that reverse causality exists, such as that women who engage in sexual risk behavior are likely to perceive their peers as engaging in similar behavior. Additionally, due to the nature of this research, sexual behavior, sexual motives, and sexual attitudes were all assessed via retrospective self-report measures, and therefore depended on the accuracy of participants' recall. Also, there was limited variability of sample demographics. Thus, the sample likely does not accurately represent the behaviors, attitudes, motives, and perceived norms of college women in general, as the majority of the sample were freshman, and the sample overrepresented European American/White women.

The responses to the sexual risk behaviors, sexual motives, and sexual attitudes measures also displayed limited variability. For example, there were relatively low levels of sexual risk behaviors reported. In contrast to popular belief, most college women were participating in low to moderate risk behaviors, while a much smaller group of women were engaging in high levels of sexual risk behaviors. In addition, another limitation was the lacking specificity of questions on the SRS. Particularly, "sex" was not explicitly defined in the questions, and participants could have interpreted sex in a number of ways (for instance, assuming that "sex" only refers to vaginal sex, and not oral or anal sex). This also could explain the lower levels of self-reported sexual risk behaviors reported in the sample. Additionally, there was low endorsement of both coping and affirmation motives for sexual behavior. It is likely that there are other sexual motives that were not assessed that could be relevant to this population (such as peer approval motives, partner approval motives, enhancement, intimacy, etc.). Additionally, the majority of participants fell in the middle of erotophilia-erotophobia scale, as most participants did not report strong positive or negative sexual attitudes. Lastly, the SRS investigated sexual practices within the past six months. Due to the large number of women in relationships, this may have reduced the overall sexual risk behaviors in the sample. Finally, due to the structure of the questions used on the SRS (e.g. "In the past six months, how many times have you had vaginal intercourse without a latex or polyurethane condom?"), it cannot be determined if the women are engaging in sexual encounters with one or more partners or the proportion of sexual encounters in which women used a condom. For example, a woman who reported not using a condom during ten encounters could be referring to ten encounters with the same partner within the context of a committed relationship or

encounters with ten unique partners. Similarly, a woman who reported ten instances of sex without a condom could be referring to ten out of 100 sexual encounters or ten out of ten encounters. In the future, it would be essential to specifically ask such questions regarding the frequency of unprotected sex with each recent sexual partner (e.g., total number of sexual encounters and percentage of those encounters that were unprotected), in order to clearly understand level of risk behavior.

Clinical Implications

The knowledge gained from this research adds to the sexual health literature, but could also be useful clinically. For clinicians working with undergraduate women engaging in sexual risk behaviors (such as university counseling centers), these data point to several important factors to consider. First, it may be important to have a more nuanced discussion regarding the many variations of sexual risk behaviors, such as having multiple casual partners, one time encounters, and failing to discuss risk topics with a potential sexual partner. It may also be necessary to provide education about the social, emotional, and physical risks and consequences associated with engaging in these behaviors.

Additionally, results supported that undergraduate women tend to significantly overestimate their peers' engagement in sexual risk behaviors. This perception should be assessed, and norm corrective information should be provided to those with inaccurate perceptions of others' behaviors. Indeed, providing norm corrective information has been helpful in other health behavior interventions among college students, such as interventions targeting risky drinking behaviors (Agostinelli, Brown, & Miller, 1995; Bewick et al., 2008). Therefore, providing similar norm corrective information regarding

peers' actual behaviors could aid in decreasing or preventing sexual risk behaviors. Lastly, in a clinical setting, it is important to acknowledge that risk behaviors may be a result of maladaptive coping strategies and/or used as a means to boost self-esteem or desirability, so it may be important to assess for such motives. Clinicians who address women's low self-esteem and maladaptive coping as treatment targets may reduce sexual risk behaviors as a result.

In addition to individual clinical applications in a therapy setting, it is possible that these data may also contribute to the development of targeted sexual risk reduction interventions. These interventions may need to target implementing adaptive coping strategies and healthy approaches to enhancing self-esteem. Additionally, it may be important to make norm corrective data available and accessible to college populations in order to provide accurate data of what behaviors peers are actually engaging in. Past interventions targeting norm corrective information regarding risky drinking have compared individuals' self reported drinking behaviors and directly compared those behaviors to normative data (Agostinelli, Brown, & Miller, 1995; Bewick et al., 2008). As a result of providing norm corrective information, and comparing this information to individuals' self reported behaviors, risky drinking behaviors decreased. This approach could also be used to target sexual risk behaviors as well. Examining students' current sexual risk behaviors and comparing them to accurate norms could reduce sexual risk behaviors. It would be beneficial to have an online platform available to college students to readily and accurately compare their risky behaviors to their peers.

Future Research Directions

This research can be expanded in the future to address some of the previously stated limitations. Results suggest that there may be at least two distinct high and low risk behavior groups of college women. It may be necessary for future researchers to identify how to differentiate these groups in order to identify higher risk taking individuals that may be targeted for prevention and intervention efforts. Additionally, this research only examined college women's sexual risk behaviors, attitudes, motives, and perceived sexual peer norms. It is likely that these findings may not accurately extend to college men. Future research may also incorporate college men to encompass the college student population as a whole. Previous research has shown that men and women tend to endorse different sexual motives. For example, Regan and Dreyer (1999) found that college women were more likely to report engaging in casual sex as a means of increasing their chances of obtaining a long-term romantic partner, while men's motives were more socially driven, with men reporting engaging in casual sex as a means of enhancing their reputation among their peers. As shown by Regan and Dreyer, men and women may have different motives for engaging in casual sex, and there are many motives that could be examined in addition to coping and affirmation sex motives.

Additionally, future research should address the directionality of the relationship between perceived sexual peer norms and behavior. Extant research highlights that perception of peer norms is related to personal behavior, but the directionality and mechanisms regarding this relationship is not well understood. For instance, individuals already engaging in sexual risk behaviors may self select like-peers. Alternatively, individuals may feel peer pressure, or the need to conform to peers' behaviors, and

engage in sexual risk behaviors as a result of peer influence. Additionally, cognitive biases (e.g., illusory superiority) and social influences (e.g., norms regarding discussing sexual risk behaviors) may affect students' perception of their peers' behaviors. There clearly may be possible bidirectional influences between peer norms and personal behavior that likely unfold over time.

Overall, this research provides evidence that the perception of peer norms, sexual attitudes, and sexual motives may be important factors related to engagement in sexual risk behaviors for college women. It will be important to expand this research in the future by evaluating other factors that may contribute to engagement in sexual risk behaviors, such as intimacy and peer and partner approval sexual motives. There is also a need for further comparative research evaluating influences on sexual risk behavior among college men and women. There is also a clear need for longitudinal research which could shed light on how various factors influences risk behavior over time. Finally, future research should focus on gaining a better understanding of college student's sexual risk behaviors in order to develop effective interventions to reduce the physical and psychological health burden associated with certain types of sexual risk behaviors.

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Appendix A: IRB Approvals

EAST CAROLINA UNIVERSITY
University & Medical Center Institutional Review Board Office
4N-70 Brody Medical Sciences Building· Mail Stop 682
600 Moye Boulevard · Greenville, NC 27834
Office **252-744-2914** · Fax **252-744-2284** · www.ecu.edu/irb

Notification of Initial Approval: Expedited

From: Social/Behavioral IRB
To: Kelly Rudolph
CC: Heather Littleton
Date: 10/7/2015
Re: UMCIRB 15-001435
Sexual risk behaviors in college women

I am pleased to inform you that your Expedited Application was approved. Approval of the study and any consent form(s) is for the period of 10/7/2015 to 10/6/2016. The research study is eligible for review under expedited category # 7. The Chairperson (or designee) deemed this study no more than minimal risk.

Changes to this approved research may not be initiated without UMCIRB review except when necessary to eliminate an apparent immediate hazard to the participant. All unanticipated problems involving risks to participants and others must be promptly reported to the UMCIRB. The investigator must submit a continuing review/closure application to the UMCIRB prior to the date of study expiration. The Investigator must adhere to all reporting requirements for this study.

Approved consent documents with the IRB approval date stamped on the document should be used to consent participants (consent documents with the IRB approval date stamp are found under the Documents tab in the study workspace).

The approval includes the following items:

Name	Description
AUDIT	Surveys and Questionnaires
Demographics	Surveys and Questionnaires
Individual and Peer Norms	Surveys and Questionnaires
Informed Consent Form	Consent Forms
Protocol	Study Protocol or Grant Application
Sexual Anxiety Scale	Surveys and Questionnaires
Sexual Motives Scale	Surveys and Questionnaires
Sona Study Description	Additional Items

The Chairperson (or designee) does not have a potential for conflict of interest on this study.

Appendix B: CONSENT DOCUMENT

East Carolina University

Informed Consent to Participate in Research

Information to consider before taking part in research that has no more than minimal risk.

Title of Research Study: Sexual behaviors in college women: Perceived norms, attitudes and sexual motives

Principal Investigator: Kelly Rudolph
Institution, Department or Division: East Carolina University, Department of Psychology
Address: 1001 East 5th St. Greenville, NC 27858
Telephone #: 407-435-6197
Study Coordinator: Kelly Rudolph
Telephone #: 252-373-4434

Researchers at East Carolina University (ECU) study issues related to society, health problems, environmental problems, behavior problems and the human condition. To do this, we need the help of volunteers who are willing to take part in research.

Why am I being invited to take part in this research?

The purpose of this research is to examine the relationships among college women's sexual behaviors, peer norms, sexual motives, and sexual attitudes. You are being invited to take part in this research because you are a female college student enrolled in an Introduction to Psychology course at ECU. The decision to take part in this research is yours to make. By conducting this research, we hope to understand factors that predict and contribute to college women's sexual behaviors in order to implement successful programs to promote healthy sexual development and expression among young women.

If you volunteer to take part in this research, you will be one of about 350 people to do so.

Are there reasons I should not take part in this research?

I understand that I should not volunteer for this study if I am under 18 years of age.

What other choices do I have if I do not take part in this research?

You can choose not to participate in this study and fulfill your research requirement for Introduction to Psychology by participating in other studies or by completing the alternative to research activity to fulfill this requirement. Go to ecu.sona-systems.com for information about these options.

Where is the research going to take place and how long will it last?

The research will be conducted online. You will need to have Internet access to complete a one time online survey. The total amount of time you will be asked to volunteer for this study is 30 to 45 minutes.

What will I be asked to do?
You will be asked to do the following:

- Fill out a demographic questionnaire.
- Fill out surveys assessing your past and current sexual behavior, personal sexual attitudes, personal sexual motives and your perceptions' of your peers' sexual behaviors and attitudes.

What might I experience if I take part in the research?
There are possible risks (the chance of harm) when taking part in this research. The primary risk is emotional upset or discomfort as a result of answering questions about your personal sexual behaviors/experiences and sexual attitudes and motives. You have the right to not answer any questions or to close your browser and discontinue the study if you experience emotional upset or for any other reason.

As an ECU student, you can get support for emotional upset or any stressors in your life from the ECU Center for Counseling and Student Development:

(252) 328-6661
First floor of Umstead Building, Room 137. Enter through the back entrance facing Slay Building.
Office hours 8-5 M-F

All ECU students can be seen for free; call the center to schedule an appointment. Emergency walk-ins are seen on first come, first serve basis.
Hours for walk-in service: M-F 10-4
After regular business hours, you can reach the On-Call Counselor by contacting the ECU Police Department at 328-6787. The on-call counselor is available 365 days/year.

What are the possible benefits I may experience from taking part in this research?
We do not know if you will get any benefits by taking part in this study. This research might help us learn more about factors that best predict college women's sexual behavior and inform interventions to assist women in healthy sexual development. There may be no personal benefit from your participation, but the information gained by doing this research may help others in the future.

Will I be paid for taking part in this research?
We will not be able to pay you for the time you volunteer while being in this study. You will receive 1.0 hours of research credits for your Introduction to Psychology class for your participation.

Will it cost me to take part in this research?
It will not cost you any money to be part of the research.

Who will know that I took part in this research and learn personal information about me?
Because this research is anonymous, no one should know you took part in this research. However, the following groups/individuals may gain access to your anonymous data:

Any agency of the federal, state, or local government that regulates human research. This includes the Department of Health and Human Services (DHHS), the North Carolina Department of Health, and the Office for Human Research Protections.

The University & Medical Center Institutional Review Board (UMCIRB) and its staff, who have responsibility for overseeing your welfare during this research, and other ECU staff who oversee this research.

How will you keep the information you collect about me secure? How long will you keep it?
The data collected will be de-identified and will not be linked to your Sona id, name, email address, or other identifying information. Your Sona id number will be collected to award you credit for participating in this research. This information will not be downloaded as part of the data file. The data will be collected and stored electronically on a password protected flash drive. The data will be stored in a locked cabinet in a locked room. The data will be kept for a period of seven years.

What if I decide I don't want to continue in this research?
You can stop at any time after it has already started. There will be no consequences if you stop and you will not be criticized. You will not lose any benefits that you normally receive.

Who should I contact if I have questions?
The people conducting this study will be able to answer any questions concerning this research, now or in the future. You may contact the Principal Investigator, Ms. Kelly Rudolph, at 252-373-4434 (Monday through Friday, between 9:00am and 5:00pm). You can also contact the Faculty Sponsor, Dr. Heather Littleton, at 252-328-6488 (Monday through Friday, between 9:00am and 5:00 pm).

If you have questions about your rights as someone taking part in research, you may call the Office of Research Integrity & Compliance (ORIC) at 252-744-2914 (days, 8:00 am-5:00 pm). If you would like to report a complaint or concern about this research study, you may call the Director of the ORIC, at 252-744-1971

Are there any Conflicts of Interest I should know about?
There are no conflicts of interest associated with this research.

I have decided I want to take part in this research. What should I do now?
If you agree with the following statements, you should check the box below indicating your consent to participate in this research:

- I have read all of the above information.
- I have had an opportunity to ask questions about things in this research I did not understand and have received satisfactory answers.
- I know that I can stop taking part in this study at any time.
- By consenting to this research, I am not giving up any of my rights.
- I can print a copy of this consent document, and it is mine to keep.

Appendix C: MEASURES

DEMOGRAPHICS

First, we would like to learn a little bit about you. Please answer these questions to the best of your ability.

1. What is your gender?
___ Male
___ Female
___ Other

2. How old are you? ____ years

3. Tell us what you consider yourself.
___ White (Caucasian/ European or European American)
___ Asian or Asian American
___ Latino/a or Latin American
___ Black or African American
___ Native American/ Alaskan Native/ Native Hawaiian
___ Caribbean Islander
___ Pacific Islander
___ Multi-ethnic
___ Other

4. What is your current academic standing?
___ Freshman
___ Sophomore
___ Junior
___ Senior
___ Masters student
___ Doctoral student
___ Other

5. How long have you lived in the United States?
____ I was born here.
____ I moved here before I was 15.
____ I moved here after I turned 15.

6. If you were born in the United States, how many prior generations in your family were also born in the United States?
___ I and my siblings (if applicable) are the first in the family to be born in the United States
___ At least one of my parents were born in the United States
___ My grandparents were the first individuals in my family to be born in the United States
___ My family has lived in the United States for several generations

7. What language do you speak in your home?
____ English only
____ English and another language (Which one? _____)
____ Another language only (Which one? _____)

8. What is your sexual orientation?
____Heterosexual/straight
____Mostly heterosexual/straight
____Bisexual
____Mostly homosexual/gay/lesbian
____Homosexual/gay/lesbian
____Other

9. What is your relationship status?
____Single
____In an exclusive relationship
____Married/cohabitating
____Divorced/widowed
____In a relationship that is not exclusive
____Other

PEER NORMS

Now, we would like to ask you some questions about your *female* friends here at ECU. Please answer the following questions about your *female* friends at ECU.

1. How many partners (including kissing, petting) would you say that your female friends on average have had in the past six months? _____

2. How many partners would you say that your female friends on average have had vaginal intercourse with in the past six months? _____

3. With how many partners on average would you say that your female friends engaged in a one-time sexual encounter (e.g., hook-up, one night stand) in the past six months? _____

4. With how many partners on average would you say that your female friends engaged in a one-time sexual encounter (e.g., hook-up, one night stand) in the past six months when they were under the influence of alcohol or other drugs? _____

5. With how many partners on average would you say your female friends have had vaginal intercourse or other sex acts (oral sex, anal sex, fondling below the waist) in the past six months when they were under the influence of alcohol or other drugs? _____

6. With how many partners (including vaginal intercourse, oral sex, anal sex, fondling below the waist) on average, would you say your female friends have had within the past six months that they were not exclusive with? _____

7. With how many partners on average would you say that your female friends had a casual sexual relationship (e.g., hook-up, friends with benefits) in the past six months? _____

8. How many of your female friends on average discuss STI topics (presence of STI, if partner has been tested for STIs recently) with, prior to sexual intercourse (vaginal intercourse, oral sex, anal sex)? _____

9. How do most of your female friends here at ECU feel about having casual or one-time sexual relationships (e.g., hook-ups, one night stands, friends with benefits)?
__ Strongly disapprove
__ Somewhat disapprove
__ Neither approve or disapprove
__ Somewhat approve
__ Strongly approve

Appendix D
Coding for Sexual Risk Survey

1. In the past six months, how many partners have you engaged in sexual behavior with but not had sex with?
   n = 356

Coded Value	Response range	%	Cumulative %
1	1	57.0	57.0
2	2	13.3	70.3
3	3-5	22.3	92.6
4	6-20	7.4	100.0

2. In the past six months, how many times have you left a social event with someone you just met?
   n = 66

Coded Value	Response range	%	Cumulative %
1	1	57.6	57.6
2	2	21.2	78.8
3	3	10.6	89.4
4	4-5	10.6	100.0

3. In the past six months, how many times have you "hooked up" but not had sex with someone you didn't know or didn't know well?
   n = 123

Coded Value	Response range	%	Cumulative %
1	1	54.5	54.5
2	2	18.7	73.2
3	3-4	15.5	88.7
4	5-12	11.3	100.0

4. In the past six months, how many times have you gone out to bars/parties/social events with the intent of "hooking up" and engaging in sexual behavior but not having sex with someone?
   n = 78

Coded Value	Response range	%	Cumulative %
1	1-2	50.0	50.0
2	3-4	21.8	71.8
3	5-7.5	15.4	87.2
4	10-40	12.8	100.0

5. In the past six months, how many times have you gone out to bars/parties/social events with the intent of "hooking up" and having sex with someone?
   n = 52

Coded Value	Response range	%	Cumulative %
1	1	30.8	30.8
2	2-3	50.0	80.8
3	4-7	9.6	90.4
4	7.5-60	9.6	100.0

6. In the past six months, how many times have you had unexpected and unanticipated sexual experiences?
   n = 148

Coded Value	Response range	%	Cumulative %
1	1	35.3	35.3
2	2	28.1	63.4
3	3-5	27.5	90.9
4	6-50	9.1	100.0

7. In the past six months, how many partners have you had sex with?
   n = 334

Coded Value	Response range	%	Cumulative %
1	1	59.3	59.3
2	2	14.5	73.8
3	3-4	17.3	91.1
4	5-16	8.9	100.0

8. In the past six months, how many people have you had sex with that you know but are not involved in any sort of relationship with (i.e. "friends with benefits," "fuck buddies")?
   n = 156

Coded Value	Response	%	Cumulative %

	range		
1	1	53.9	53.9
2	2	25.0	78.9
3	3	8.3	87.2
4	4-9	12.8	100.0

9. In the past six months, how many times have you had sex with someone you didn't know well or just met?
   n = 90

Coded Value	Response range	%	Cumulative %
1	1	56.7	56.7
2	2	18.9	75.6
3	3	14.4	90.0
4	4-10	10.0	100.0

10. In the past six months, how many times have you or your partner used alcohol or drugs before or during sex?
    n = 216

Coded Value	Response range	%	Cumulative %
1	1-2	46.2	46.2
2	3-4	24.0	70.2
3	4.5-9	17.8	88.0
4	10-83	12.0	100.0

11. In the past six months, how many times have you had sex with a new partner before discussing sexual history, IV drug use, disease status and other current sexual partners?
    n = 112

Coded Value	Response range	%	Cumulative %
1	1	44.6	44.6
2	2	25.0	69.6
3	3-4.5	17.9	87.5
4	5-20	12.5	100.0

12. In the past six months, how many times (that you know of) have you had sex with someone who has had many sexual partners?
    n = 157

Coded Value	Response range	%	Cumulative %

1	1	55.4	55.4
2	2	19.8	75.2
3	3-5	15.3	90.4
4	6-90	9.6	100.0

13. In the past six months, how many partners have you had sex with that you didn't trust?
n = 77

Coded Value	Response range	%	Cumulative %
1	1	66.2	66.2
2	2	20.8	87.0
3	3	6.5	93.5
4	4-6	6.5	100.0

14. In the past six months, how many times (that you know of) have you had sex with someone who was also engaging in sex with others during the same time period?
n = 74

Coded Value	Response range	%	Cumulative %
1	1	59.5	59.5
2	2	17.6	77.1
3	3-4	14.9	92.0
4	5-6	8.0	100.0

15. In the past six months, how many times have you had vaginal intercourse without a latex or polyurethane condom? Note: Include times when you have used a lambskin or membrane condom.
n = 206

Coded Value	Response range	%	Cumulative %
1	1-4	37.5	37.5
2	5-8	19.4	56.9
3	10-45	30.6	87.5
4	50-500	12.5	100.0

16. In the past six months, how many times have you had vaginal intercourse without protection against pregnancy?
n = 96

Coded Value	Response range	%	Cumulative %

1	1-3	39.6	39.6
2	4-8	27.1	66.7
3	10-20	22.9	89.6
4	25-500	10.4	100.0

17. In the past six months, how many times have you given or received fellatio (oral sex on a man) without a condom?
n = 265

Coded Value	Response range	%	Cumulative %
1	1-4	41.5	41.5
2	5-9	23.8	65.3
3	10-35	24.9	90.2
4	40-200	9.8	100.0

18. In the past six months, how many times have you had anal sex without a condom?
n = 39

Coded Value	Response range	%	Cumulative %
1	1	35.9	35.9
2	2-3	38.5	74.4
3	4-5	15.4	89.8
4	10	10.2	100.0

Appendix E
Coding for Perceived Peer Norms

1. How many partners (including kissing, petting) would you say that your female friends on average have had in the past six months? *n* = 378

Coded Value	Response range	%	Cumulative %
1	1-2.5	31.2	31.2
2	3-5	45.8	77.0
3	5.5-9	11.9	88.9
4	10-40	11.1	100.0

2. How many partners would you say that your female friends on average have had vaginal intercourse with in the past six months? *n* = 359

Coded Value	Response range	%	Cumulative %
1	1-2	46.0	46.0
2	2.5-3.5	24.5	70.5
3	4-6	24.2	94.7
4	7-60	5.3	100.0

3. With how many partners on average would you say that your female friends engaged in a one-time sexual encounter (e.g., hook-up, one night stand) in the past six months? *n* = 290

Coded Value	Response range	%	Cumulative %
1	1-2	50.0	50.0
2	2.5-3.5	22.8	72.8
3	4-5	18.6	91.4
4	6-20	8.6	100.0

4. With how many partners on average would you say that your female friends engaged in a one-time sexual encounter (e.g., hook-up, one night stand) in the past six months when they were under the influence of alcohol or other drugs? *n* = 270

Coded Value	Response range	%	Cumulative %
1	1-2	53.3	53.3
2	3	18.2	71.5
3	4-5	20.0	91.5
4	6-20	8.5	100.0

5. With how many partners on average would you say your female friends have had vaginal intercourse or other sex acts (oral sex, anal sex, fondling below the waist) in the past six months when they were under the influence of alcohol or other drugs? *n* = 299

Coded Value	Response range	%	Cumulative %
1	1-2	44.8	44.8
2	3-4	32.1	76.9
3	5	11.7	88.6
4	6-33	11.4	100.0

6. With how many partners (including vaginal intercourse, oral sex, anal sex, fondling below the waist) on average, would you say your female friends have had within the past six months that they were not exclusive with? *n* = 316

Coded Value	Response range	%	Cumulative %
1	1-2	47.2	47.2
2	3-3.5	16.8	64.0
3	4-5	23.6	87.6
4	6-30	12.4	100.0

7. With how many partners on average would you say that your female friends had a casual sexual relationship (e.g., hook-up, friends with benefits) in the past six months? *n* = 307

Coded Value	Response range	%	Cumulative %
1	1-1.5	31.9	31.9
2	2-3	45.6	77.5
3	4-5	13.4	90.9
4	6-20	9.1	100.0

8. How many of your female friends on average discuss STI topics (presence of STI, if partner has been tested for STIs recently) with, prior to sexual intercourse (vaginal intercourse, oral sex, anal sex)? *n* = 193

Coded Value	Response range	%	Cumulative %
1	0.5-1	36.3	36.3
2	2	32.1	68.4
3	3-4	23.8	92.2
4	5-13	7.8	100.0