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Using a Multisystemic Approach to Examine Youth Risky Sexual Attitudes and Behavior

by

Chamane Melissa Simpson

A dissertation submitted to the Graduate Faculty in Educational Psychology in partial fulfillment of the requirements for the degree of Doctor of Philosophy, The City University of New York

2015

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This manuscript has been read and accepted for the
Graduate Faculty in Educational Psychology in satisfaction of the
dissertation requirement for the degree of Doctor of Philosophy.

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THE CITY UNIVERSITY OF NEW YORK

Abstract

Using a Multisystemic Approach to Examine Youth Risky Sexual Attitudes and Behavior

by

Chamane Melissa Simpson

Advisor: Georgiana Shick Tryon, Ph.D.

The current investigation examined the relationship between the risky sexual attitudes/behavior of 18 to 24 year old college students (*N* = 250) and variables from the self-, family, and peer systems. The variables that were used to predict participants' risky sexual attitudes and behavior included gender, three self-esteem constructs (i.e., global self-esteem level and parental/peer approval contingent self-esteem), and participants' perceptions of their parent/caregiver and peer's attitudes toward risky sex. Lastly, social desirability was used as a control variable.

Taken together, the goals of the study were to: (a) determine whether global self-esteem level or parental/peer approval contingent self-esteem would emerge as the best predictor of participants' risky sexual attitudes/behavior; (b) investigate the relationship amongst participants' sexual attitudes/behavior and perceived parental and peer risky sexual attitudes; (c) examine the extent to which the relationship between participants' sexual attitudes/behavior and perceived parental and peer sex attitudes would vary according to participants' level of parental and peer approval contingent self-esteem; and (d) clarify the relationship between global self-esteem level and risky sexual behavior by examining the extent to which it would vary according to participants' level of parental and peer approval contingent self-esteem and perceived parental and peer sex attitudes. An additional goal of the dissertation was to examine gender differences amongst these targeted relationships while controlling for social desirable responding.

Based on hierarchical multiple regression analyses, few significant findings emerged. Parental approval contingent self-esteem, relative to the remaining two self-esteem constructs, emerged as the best predictor of participants' sexual behavior; (b) gender differences were observed in the relationship between global self-esteem level and participants' sexual behavior; (c) perceived parental and peer sex attitudes significantly predicted participants' sex attitudes; and (d) participants' sex attitudes and perceived peer sex attitudes significantly predicted participants' sexual behavior. Unexpectedly, the extent to which global self-esteem level predicted participants' sexual behavior varied according to participants' perceptions of their parent/caregiver's sex attitudes. Based on the findings from the study, the dissertation discusses implications for prevention/intervention programs that are aimed at improving young peoples' sexual attitudes and decreasing youth risky sexual behavior. It also discusses implications for future research.

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CHAPTER I

Introduction

Risky sexual behavior includes any sexual act (e.g., engaging in sexual intercourse without a condom) that increases individuals' chances of being infected with a sexually transmitted infection (STI), such as the human immunodeficiency virus (HIV) or chlamydia (Centers for Disease Control [CDC], 2014a; Taylor-Seehafer & Rew, 2000). Based on published data, STIs disproportionally affect people who are in their late teens to early twenties (CDC, 2014b). Because of the high rate of sexually transmitted infections amongst this age group, the current study was conducted to examine youth risky sexual behavior with the goal of obtaining findings that could inform prevention/intervention efforts that are aimed at decreasing the occurrence of this behavior. Understanding young peoples' attitudes toward risky sexual practices was also important to the current study because research shows that individuals' approval or disapproval toward certain sexual behaviors is sometimes associated with whether they engage in these behaviors (e.g., Rostosky, Regnerus, & Wright, 2003). Subsequently, another goal of the study was to yield findings that prevention/intervention efforts could use to help young people adapt favorable attitudes toward safer sexual practices.

To examine the risky sexual attitudes and behavior of individuals in their late teens to early twenties, the present study followed the recommendations by Kotchick, Shaffer, Forehand, and Miller (2001) that researchers should investigate youth sexual behavior in relation to the complex multiple systems in which young people interact. Such an approach aligns with Bronfenbrenner's (1986) ecological model, which posits that children develop within multiple environments that influence them and that they, in turn, influence. Similar to the systems that Bronfenbrenner identify as important to human development, Kotchick et al. identify the following systems as being particularly relevant to young peoples' sexuality: the self-system (e.g., gender, personal attitudes, and psychological traits), the familial system (e.g., parental figures), and the extrafamilial system (e.g., peer group).

In their critique of past research, however, Kotchick et al. (2001) assert that studies have mostly focused on young peoples' sexual behavior in relation to the self-system to the exclusion of other systems, such as the familial system. Notably, while they have acknowledged researchers' recent endeavors to investigate the association between youth sexual behavior and other important systems, Kotchick et al. argue that the research field needs more studies that employ a multisystemic approach so that young peoples' sexual behavior will be better understood. Subsequently, the current study utilized a multisystemic approach in which young peoples' sexual behavior as well as their sexual attitudes were examined in relation to the three systems that scholars (e.g., Bronfenbrenner, 1986; Kotchick et al., 2001) indicate play an important role in young peoples' development: the self-system, the familial system, with particular focus on parental related variables, and the extrafamilial system, with particular focus on peer related variables. It must be noted that focusing on the familial system was important to this study because scholars suggest that it represents the initial developmental context within which some young people are embedded and the initial means through which they are socialized (Landor, Simons, Simons, Brody, & Gibbons, 2011; Simons, Burt, & Tambling, 2013). Focusing on the peer system was important because scholars (e.g., Brandhorst, Ferguson, Sebby, & Weeks, 2012; Landor et al., 2011) indicate that peers increasingly take on a greater role in how young people regulate their behavior as these young people age. Thus, it is clear that the familial system and the peer system can play an important role in young peoples' sexual development.

From the self-system, Kotchick et al. (2001) have identified global self-esteem level as having an association with young peoples' sexual behavior. Researchers (e.g., Sterk, Klein, & Elifson, 2004) have also noted a link between global self-esteem level and young peoples' sexual attitudes. Notably, one common assumption that exists with regard to global self-esteem is that individuals with high self-esteem level, relative to those with low self-esteem, are least likely to engage in risky behaviors, such as risky sex (Baumeister, Campbell, Krueger, & Vohs, 2003). Research studies, however, have yielded inconsistent support for this assumption and collectively suggest that some people with high global self-esteem sometimes exhibit less, more, or similar risky sexual behavior as those with low self-esteem (e.g., Boden & Horwood, 2006; Connor, Poyrazli, Ferrer-Wreder, & Grahame, 2004; Hollar & Snizek, 1996). As these findings render the exact nature of the relationship between global self-esteem level and risky sexual variables unclear, further research is needed in order to obtain clarification. To obtain a better understanding of the relationship between global self-esteem level and risky sexual variables, empirical findings suggest that it might be useful for future studies to analyze it statistically along with additional variables and then examine how it is affected by those variables (e.g., Spencer, Zimet, Aalsma, & Orr, 2002). The current study subsequently conducted such analyses.

In addition to investigating global self-esteem in relation to human behavior, researchers (Crocker & Wolfe, 2001) have suggested examining contingent self-esteem because of the belief that it might yield results that are more consistent. Contingent self-esteem, which scholars have also referred to as contingency of self-worth, is defined as self-esteem that depends on individuals' perception of whether they have met a set of standards from a domain that is important to them (Crocker & Wolfe, 2001; Deci & Ryan, 1995). Having perceptions that they have failed to meet those standards might lower their self-esteem level and having perceptions that they have successfully met those standards might increase their self-esteem level. To preserve or enhance their self-esteem level people regulate their behavior to meet the standards of the domain on which their self-worth is based (Crocker & Wolfe, 2001). Thus, the importance of studying contingent self-esteem relates to its potential self-regulatory influence on sexual attitudes and behavior. Research, however, is scarce as it relates to contingent self-esteem as a predictor of youth risky sexual attitudes and behavior. Based on the one study (i.e., Kaplan, 2008) that the investigator was able to find that examined the relationship between contingent self-esteem and youth risky sexual behavior, favorable support was not obtained. Readers should also note that the investigator was unable to find any studies that have examined the relationship between contingent self-esteem and youth risky sexual attitudes. Thus, because of the limited studies that exist in this area, the current study attempted to examine the extent to which contingent self-esteem, relative to global self-esteem level, related to young peoples' risky sexual attitudes and how they regulate their sexual behavior.

To reflect the study's use of a multisystemic approach, the investigator defined contingent self-esteem in the following manner: having positive self-evaluations because of self-perceptions that one has received parental approval for behaving in a way that aligns with parental standards and having positive self-evaluations because of self-perceptions that one has received peer approval for behaving in a way that aligns with peer standards. However, in order to obtain a deeper understanding of the extent to which these two contingent self-esteem variables relate to young peoples' sexual attitudes and behavior, it was also important to assess parental and peer sex standards. For the purpose of the current investigation, parental and peer sex standards were defined as participants' perceptions of parental and peer attitudes toward risky sexual behavior and these constructs were used to represent variables from the parental and peer systems.

Parental sex attitudes were discussed in relation to “family process variables” (Kotchick et al., 2001, p. 505). In the literature, these variables can include parent-youth communication and through this communication, parents can convey their attitudes, beliefs, expectations, and values regarding sexual behavior (Eisenberg, Sieving, Bearinger, Swain, & Resnick, 2006; Manlove, Logan, Moore, & Ikramullah, 2008). It must be noted that studies have yielded evidence showing that parental attitudes toward sexual behavior are sometimes related to young peoples’ sexual attitudes and how they regulate their sexual behavior (e.g., Booth-Butterfield & Sidelinger, 1998; Maguen & Armistead, 2006). Based on a review of the literature, however, it appears that studies have not examined whether young peoples’ sexual attitudes/behavior and parental sex attitudes are especially related to each other amongst young people whose self-esteem is most contingent on parental approval. As such, the current study conducted analyses to test this relationship

Peer sex attitudes were discussed within the theoretical framework of social norms theory. According to social norms theory, individuals sometimes behave in a manner that corresponds to the social norms that their peer group stipulates (Perkins, Craig, & Perkins, 2011). In any given situation, individuals are sometimes likely to behave according to their perceptions of whether their peers would approve of a particular behavior (i.e., injunctive norms; Brandhorst, Ferguson, Sebby, & Weeks, 2012; Carey, Borsari, Carey, & Maisto, 2006). Although previous research suggests that peer sex attitudes are related to young peoples’ sexual attitudes and sexual behavior, research has not examined whether this is especially the case for young people whose self-esteem is based on peer approval (e.g., Holman & Sillars, 2012; Maguen & Armistead, 2006). As such, the current study conducted analyses to test this possibility.

In summary, the current study extended previous research by investigating how self, family, and peer related variables were related to youth risky sexual attitudes and youth risky sexual behavior. For this study, risky sexual attitudes were defined as the extent to which participants endorsed certain risky sexual practices (e.g., engaging in anal/vaginal sexual intercourse without a condom) as being acceptable. Higher scores indicated riskier attitudes. Risky sexual behavior was defined as the number of times the following occurred during the four weeks before participants took part in the study: engaging in anal/vaginal sexual intercourse without a condom, engaging in anal/vaginal sexual intercourse while unaware of the HIV/AIDS and STI status of one's sexual partner, and engaging in anal/vaginal sexual intercourse while under the influence of drugs or alcohol. Risky sexual behavior was also defined based on the number of reported partners with whom participants engaged in anal/vaginal sexual intercourse during the four weeks leading up to the study. Overall, participants' answers to these questions were aggregated into a single index score, with higher scores indicating riskier behavior. The following variables were used to predict participants' risky sexual attitudes and behavior: gender; global self-esteem level, which was measured using the Rosenberg Self-Esteem Scale (Rosenberg, 1965); parental approval contingent self-esteem and peer approval contingent self-esteem, which were measured using modified versions of the Contingencies of Self-Worth Scale (Crocker et al., 2003); and perceived parental and peer attitudes toward risky sexual behavior, which were measured using questionnaires that were developed for the current investigation.

Using these variables, the current investigation sought to answer four questions and test six hypotheses. The study's questions were analyzed to determine: (a) whether global self-esteem level or contingent self-esteem (i.e., parental and peer approval based self-esteem) would emerge as a better predictor of participants' risky sexual attitudes; (b) the extent to which these targeted self-esteem constructs would predict participants' risky sexual behavior; (c) the extent to which perceived parental and peer sex attitudes would predict participants' attitudes toward risky sexual behavior; and (d) the extent to which participants' risky sexual attitudes and perceived parental and peer sex attitudes would predict participants' sexual behavior. The study's hypotheses were tested to ascertain whether the relationship between perceived parental sex attitudes and participants' risky sexual attitudes would vary according to participants' level of parental approval based self-esteem. A similar analysis was conducted using participants' risky sexual behavior as the outcome variable. The hypotheses also addressed whether the relationship between global self-esteem level and participants' risky sexual behavior would vary according to participants' level of parental approval based self-esteem and perceived parental sex attitudes. The readers should note that the analyses that were conducted using the parental related variables were similarly employed with the targeted peer related variables. In addition, all targeted relationships were tested to ascertain gender differences.

To conduct the study, 250 18 to 24 year old college students were recruited online through Amazon Mechanical Turk, with all measures completed online through SurveyMonkey. Eighteen to 24 year olds were recruited because they comprise the age group that is currently most affected by STIs. College students were recruited because researchers (e.g., McCabe, Schulenberg, Johnston, O'Malley, Bachman, & Kloska, 2005; Park, Sher, & Krull, 2009) indicate that risky behaviors sometimes increase when young people leave the parental home, and some college students are likely to leave the parental home after they are accepting into college.

To analyze participants' responses, the current study conducted a series of hierarchical multiple regression analyses. Findings suggest that young peoples' sexual behavior might be more related to how much they base their self-esteem on parental approval rather than to their level of global self-esteem or how much they base their self-esteem on peer approval. Having high global self-esteem level was associated with a higher level of risky sexual behavior amongst male participants. Amongst female participants, in contrast, global self-esteem and risky sexual behavior failed to exhibit a relationship. Furthermore, as with previous research, perceived parental and peer sex attitudes each exhibited a positive relationship with participants' sexual attitudes, with perceived peer attitudes emerging as the best predictor. Interestingly, perceived peer sex attitudes exhibited a negative rather than a positive relationship with participants' risky sexual behavior. Participants' sex attitudes, in contrast, emerged as a positive predictor of their sexual behavior. Lastly, while the analyses failed to yield empirical support for the study's hypotheses, an unanticipated interaction effect emerged for global self-esteem level and perceived parental sex attitudes. According to this finding, having a parent/caregiver who is perceived as having greater disapproval toward risky sexual practices might be more of a protective factor for young people with higher global self-esteem than it is for young people with lower global self-esteem.

CHAPTER II

Literature Review

This chapter reviews literature concerning risky sexual attitudes/behavior amongst individuals in their late teens to early twenties. The chapter then defines risky sexual attitudes/behavior and briefly discusses the relationship between these two variables. It also discusses the consequences that are associated with youth risky sexual behavior while highlighting the need to use a multisystemic approach in order to understand this behavior better as well as to understand young peoples' sexual attitudes better. Next, the chapter reviews studies that have examined the relationship between youth risky sexual attitudes/behavior and variables from three systems: the self-system (e.g., self-esteem), familial system (e.g., parental attitudes toward risky sexual behavior), and extrafamilial system (e.g., peers' attitudes towards risky sexual behavior). Lastly, the chapter ends with the proposed questions/hypotheses for this dissertation.

Youth Risky Sexual Attitudes/Behavior and Associated Outcomes

For some individuals who live within Western society, the period between the late teens to early twenties (e.g., 18 to 24 year olds) may be characterized by an increased level of experimentation, exploration, and social changes (Arnett, 2000; Bailey, Haggerty, White, & Catalano, 2011). During this period of emerging adulthood, individuals may experience a variety of outcomes because of their behavior, some of which may be positive or negative. Examples of these outcomes include vocational exploration or advancement, entry into intimate relationships, and departure from the parental home (Arnett, 2000; Bailey et al., 2011). One behavior of particular importance to this dissertation that may lead to negative outcomes is risky sexual behavior. Young peoples' attitudes toward risky sexual behavior are equally important in this dissertation.

Risky sexual behavior refers to practices that increase the probability of transmitting or acquiring a sexually transmitted infection (STI), such as the human immunodeficiency virus (HIV), gonorrhea, or chlamydia (Centers for Disease Control [CDC], 2014a; Taylor-Seehafer & Rew, 2000). Examples of risky sexual practices include, but are not limited to, engaging in sexual activity with high-risk partners (e.g., drug users and individuals who have had multiple sexual partners), having multiple sex partners, not using some form of protection (e.g., condoms) against STIs, and using protection inconsistently (CDC, 2014a; Taylor et al., 2000). Scholars (e.g., Taylor et al., 2000) have additionally identified the early initiation of sexual activity (i.e., sexual debut) as a risky sexual behavior, with research showing that sexual debut as early as 15 years of age was associated with engagement in high-risk sex (i.e., having casual and unprotected sex with an individual who was HIV positive or who was a drug user) at 18 to 19 years of age (Bailey et al., 2011). Scholars (e.g., Connor, Psutka, Cousins, Gray, & Kypri, 2013; Walsh, Fielder, Carey, & Carey, 2014) have also identified the use of alcohol/drugs prior to sexual activity as a factor that increases the likelihood of individuals engaging in risky sexual behavior.

In the research literature, studies have defined individuals' attitudes toward risky sexual behavior using descriptors such as risky if risky sexual behavior was endorsed as being acceptable, liberal or conservative, and positive or negative (e.g., Belgrave, Van, & Chambers, 2000; Booth-Butterfield & Sidelinger, 1998; Rostosky, Regnerus, & Wright, 2003). It is important to note that studies have shown that young peoples' attitudes toward sexual behavior are sometimes related to their sexual practices (e.g., Rostosky et al., 2003; Sterk, Klein, &

Elifson, 2004). Amongst their predominantly African American sample of 250 females (M_{age} = 35 years old), Sterk et al. found that women who held negative attitudes toward condoms more frequently engaged in risky sexual behavior (e.g., unprotected vaginal intercourse). Using a sample of female and male adolescents (N = 3,691) who identified as African American or White, Rostosky et al. found that adolescents were less likely to initiate sexual activity when they believed that doing so would result in negative emotional outcomes. Notably, they also found that males, relative to females, were more likely to hold positive attitudes toward sexual behavior, as was similarly demonstrated in Santor, Messervey, and Kusumakar's (2000) study.

Currently, the CDC and the American College Health Association – National College Health Association (ACHA – NCHA) represent two sources that provide data regarding the risky sexual behaviors of individuals who are in their late teens to early twenties. Starting in the early 1990s, the CDC (2013a) developed the Youth Risk Behavior Survey System (YRBSS) to collect data regarding the pattern of risky health behaviors (i.e., risky sexual behavior, behaviors that lead to unintentional injuries and violence, tobacco use, alcohol and drug use, unhealthy dietary behaviors, and physical inactivity) amongst ninth through twelfth grade students who are enrolled in U.S. public and private high schools. These data are reported across different states, regions, ethnicities/races, genders, and grade levels and are collected every two years during the fall and spring (CDC, 2013a). In the year 2000, the ACHA – NCHA (2014) developed the *ACHA – National College Health Assessment* (ACHA – NCHA) to collect similar data. They then revised and renamed it the *ACHA – NCHA II* in 2008. Like its predecessor, the ACHA – NCHA II is used to collect data in the fall and spring semesters each year regarding a number of health issues amongst U.S. collegiate youth. Notably, as this survey and the YRBSS are respectively used to assess selected college students and high school students, collected data might not be representative of non-collegiate and non-high school youth who are the same age as those that the ACHA – NCHA and CDC typically target.

The CDC's (2014c) most current data are based on the responses of over 12,000 students from 148 high schools that were provided during September 2012 to December 2013, and the ACHA – NCHA's (2014) most current data are based on the responses of 79,266 students from 140 college campuses that were provided during the Spring semester of 2014. Over 20% of the students in the CDC's sample identified as being a twelfth grader. Their sexual behavior data are presented here because 18 year olds are typically enrolled at this grade level. Across both samples, students were asked to provide information such as: (a) the number of sexual partners they have had, (b) their condom use, and (c) their alcohol/drug related sexual experiences (ACHA – NCHA, 2014; CDC, 2014c). The CDC assessed additional information such as whether youths have ever engaged in sexual intercourse at least once in their lifetime and whether they first initiated sexual activity prior to the age of 13.

Overall, most twelfth grade responders (*n* = 2,189; 64%) reported in the CDC survey that they have engaged in sexual intercourse at some point during their lifetime (CDC, 2014c, 2014d). Amongst the sexually active twelfth grade responders, 5% (*n* = 171) reported that they first engaged in sexual intercourse before they turned 13 years old (CDC, 2014d). When asked to report on the number of sexual partners they have had during their lifetime, approximately 23% (*n* = 782) of high school seniors indicated that they have had four or more sexual partners (CDC, 2014d). The data also show that approximately 22% (*n* = 387) of twelfth grade responders consumed alcohol or used drugs just prior to their last sexual encounter (CDC, 2014d). Without specific reference to whether alcohol or drugs were used, a sizable portion of high school responders (*n* = 815; 47%) reported that they did not use a condom during their last sexual encounter (CDC, 2014d).

During the 12 months before participating in the survey, 10% (*n* = 7,875) of college students reported that they engaged in sexual intercourse with four or more sexual partners (ACHA – NCHA, 2014). Approximately 16% (*n* = 12,399) of college responders indicated that they engaged in unprotected sexual intercourse just after consuming alcohol during the 12 months before completing the ACHA – NCHA II survey. During the 30 days prior to completing the ACHA – NCHA II survey, 26% (*n* = 19,944) of college participants indicated that a condom was never, rarely, or sometimes used while they engaged in vaginal sexual intercourse. During the same period while engaging in anal sexual intercourse, 8% (*n* = 6,312) of college participants reported that a condom was never, rarely, or sometimes used.

For both the high school and college responders, it is unclear as to whether the sexual encounters that occurred without a condom involved casual partners or partners who were in a committed relationship. It could be speculated that because some responders were in a committed relationship, they may have perhaps trusted their partners and thus felt it was safe to engage in sexual intercourse without protection. Taylor-Seehafer and Rew (2000) have argued, however, that some young people are more likely to move from one monogamous relationship to the next quite quickly. For this reason, even while being in a committed relationship, having unprotected sex might still increase their vulnerability to sex-related health risk-outcomes, such as STIs (Bailey et al., 2011). Unfortunately, data collected by the CDC (2014b) indicate that young people in their teens to early twenties who are living in the U.S. currently represent a substantial portion of the population who are affected by STIs.

To date, the CDC (2013b, 2014e, 2014f, 2014g) has reported separate data on the rates/cases of STIs for those who are 13 to 24 years old, for those who are 15 to 19 years old, and/or for those who are 20 to 24 years old (to the investigator's knowledge, data have not been published that are specifically broken down for people who are 18 to 24 years old, which is the group that was targeted for the current study). Data collection on young people in their teens to early twenties is important because they have the highest rate of STIs of all age groups and currently represent 50% of new STI cases each year while comprising approximately one quarter of the sexually active population (CDC, 2013c; Satterwhite, Torrone, Meites, Dunne, Mahajan, Ocfemia, et al., 2013). These statistics are alarming in light of published data indicating that approximately 20 million new infections are reported yearly across all age groups (CDC, 2013c).

In general, STIs, such as chlamydia and gonorrhea, represent some of the most common unintended health outcomes that are associated with risky sexual behavior amongst young people (CDC, 2014e). Figure 1 presents the rates of chlamydia for the three age groups (i.e., 15 to 19 year olds, 20 to 24 year olds, and 25 to 29 year olds) who were the most infected with this STI in 2013. As Figure 1 shows, 15 to 24 year olds combined were approximately two times more likely to be infected with chlamydia compared to 25 to 29 year olds (CDC, 2014e). Gender differences indicate that 15 to 24 year old females obtained the highest rate compared to males within their age group and compared to 25 to 29 year olds regardless of their gender. Racial/ethnic differences indicate that 15 to 24 year old Blacks and American Indian/Alaska Natives were the most likely to be infected with chlamydia compared to other same-age racial/ethnic groups and compared to 25 to 29 year olds across all racial/ethnic groups. Figure 2 presents similar differences in the rates of gonorrhea in 2013 for 15 to 19 year olds, 20 to 24 year olds, and 25 to 29 year olds (CDC, 2014e). Readers should note that the investigator constructed the graphs in the figures using the data from the CDC's (2014e) online surveillance report.

Figure 1

Rates of Chlamydia in 2013 amongst the Most Affected Age Groups according to Age, Gender, and Race/Ethnicity

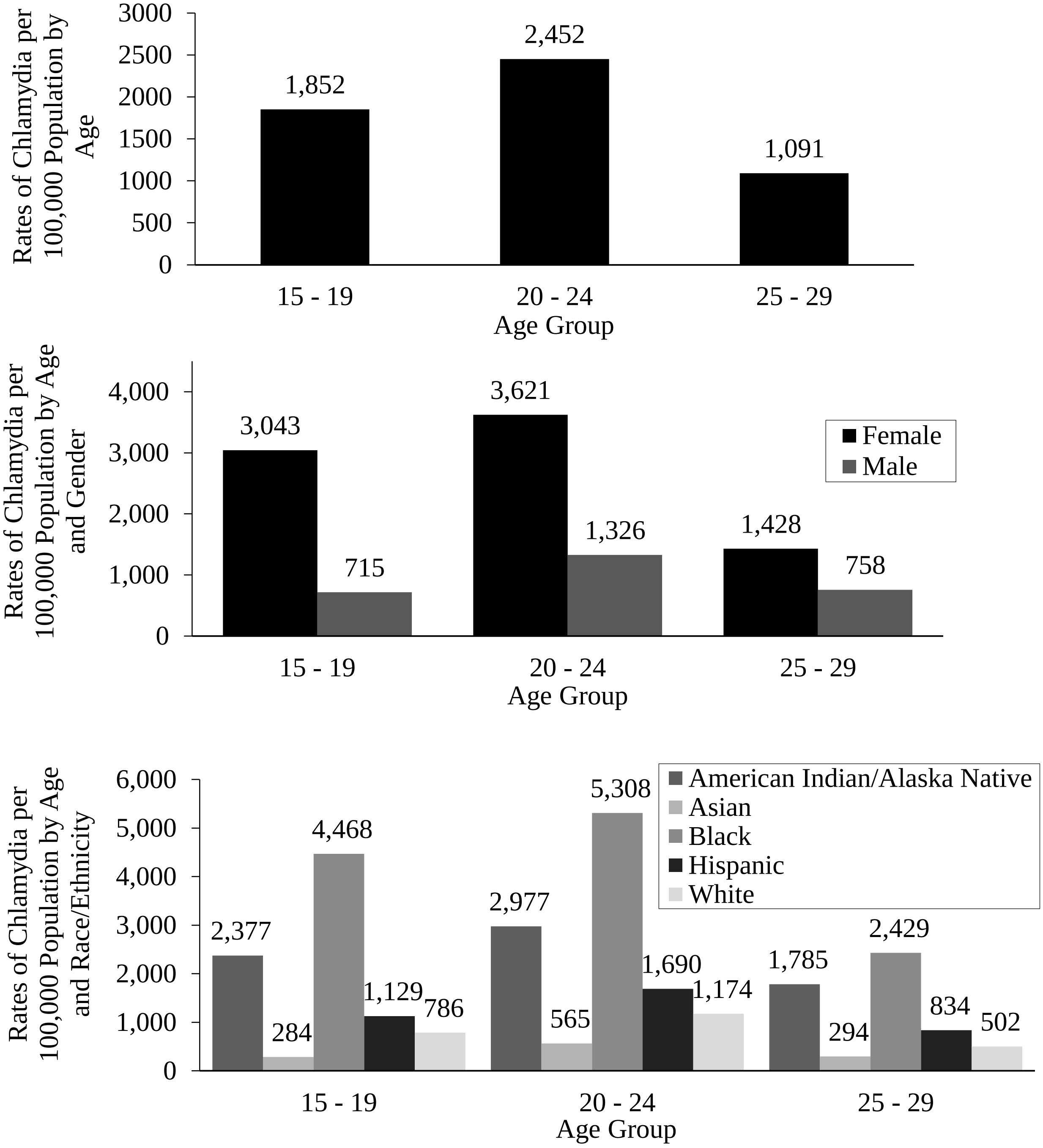
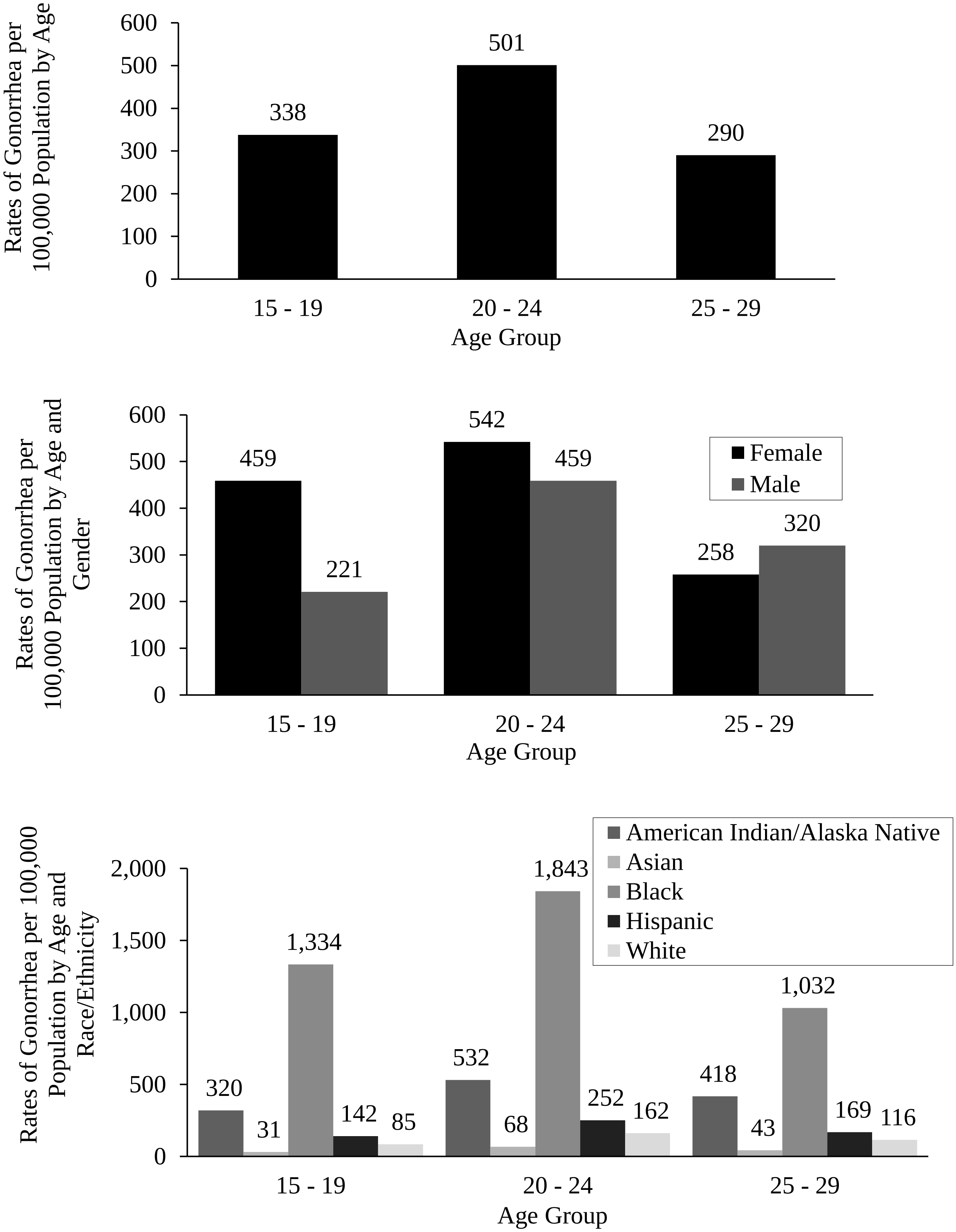


Figure 2

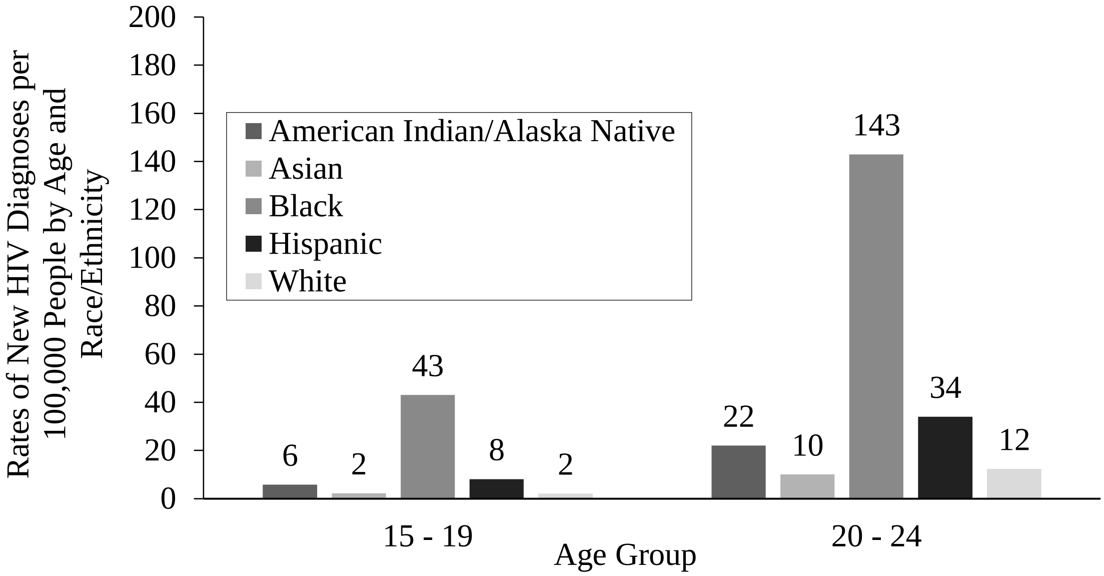
Rates of Gonorrhea in 2013 amongst the Most Affected Age Groups according to Age, Gender, and Race/Ethnicity



According to the CDC (2014h), around 50,000 individuals who live in the U.S. are annually diagnosed with HIV. In 2012, just under ¼ (*n* = 10,240) of all individuals (*n* = 47,988) who received a diagnosis were 15 to 24 year olds (CDC, 2014f). Compared to 15 to 19 year olds (*n* = 2,053) and all other age groups, 20 to 24 year olds (*n* = 8,187) comprised the largest group of individuals who were diagnosed (CDC, 2014f). Based on data that were provided according to the race/ethnicity of those who were diagnosed in 2012, 15 to 24 year olds who identified as Black had the highest rate of new HIV diagnoses per 100,000 individuals while Asians and Whites evidenced the lowest rates (see Figure 3 for the graph that the investigator constructed using data from the CDC's [2013b] online surveillance report). In terms of gender differences, data have been provided for those between the ages of 13 to 24 years old rather than for individuals between the ages of 18 to 24 years old (2014g). Data published for 13 to 24 year olds indicate that the rate of new HIV diagnoses per 100,000 individuals for males (33.2 per 100,000 people) was almost seven times the rate that has been published for females (5.5 per 100,000 people). The CDC (2014g) has also provided data regarding the means by which HIV was transmitted in 2012 across different age groups. Based on the data that were provided for 13 to 24 year olds, male to male sexual contact was identified as the most common means of transmission (*n* = 8,086) in 2012 followed by heterosexual contact (*n* = 1,554) and intravenous drug use (*n* = 300). Thus, sexual behavior appears to have been the most commonly reported means by which HIV was transmitted amongst those who were diagnosed in 2012.

Figure 3

Rates of HIV in 2012 amongst 15 to 24 year olds according to Age and Race/Ethnicity



Understanding Youth Risky Sexual Attitudes/Behavior through a Multisystemic Approach

The alarming rates of STIs amongst those in their late teens to early twenties make it critical for researchers to identify the factors that are associated with their engagement in and attitudes toward risky sexual behavior. Identifying those factors, in effect, can aid the development of programs that can help young people adapt attitudes that are more favorable toward safer sexual practices as well as prevent or reduce their engagement in risky sexual behavior. To identify those factors, Kotchick et al. (2001) argue that a multisystemic approach should be employed because young peoples' sexual behavior is complex and is shaped by the multiple systems in which they are embedded, which is an argument that can also be applied to youth risky sexual attitudes. Notably, this assertion aligns with Bronfenbrenner's (1986) ecological model, which depicts children as developing within multiple environments with which they have reciprocally influencing complex relationships.

Although Bronfenbrenner (1986) identifies several systems as being pertinent to human development, Kotchick et al. (2001) focus on three main systems that they believe are relevant to young peoples' sexuality. The first system that they identify is the self-system, which can encompass psychological traits (e.g. self-esteem) and biological factors (e.g., gender). The second system is the familial system, which scholars indicate is important because, for some young people, it represents the first developmental context within which they are embedded and the initial means through which they are socialized (Landor, Simons, Simons, Brody, & Gibbons, 2011; Simons, Burt, & Tambling, 2013). It thus can represent a critical source of influence on youth sexual development (e.g., Eisenberg, Sieving, Bearinger, Swain, & Resnick, 2006; Kotchick et al., 2001; Manlove, Logan, Moore, & Ikramullah, 2008; Simons et al., 2013). The last system is the extrafamilial system, which can encompass the peer system. Scholars indicate that the peer system is important because, as some young people age, peers take on an increased level of importance in their lives and they are increasingly referred to for guidance, as would be the case with sexual behavior (Brandhorst et al., 2012; Landor et al., 2011).

In their assessment of previous research studies, however, Kotchick and her colleagues (2001) have argued that significant attention has been devoted toward studying the relationship between the self-system and youth sexual variables, with less focus on the contribution of variables from the familial and extrafamilial systems. While acknowledging that researchers have recently made an increased effort to focus on other systems, they still believe that more work needs to be done to understand young peoples' sexual behavior using a multisystemic approach (Kotchick et al., 2001). With this in mind, the following section presents studies that highlight the importance of studying all three systems in relation to young peoples' risky sexual attitudes and behavior. For this dissertation, the familial system is discussed in terms of parental related factors, and the term “parent/caregiver” is sometimes used.

Youth risky sexual attitudes/behavior and self-esteem. One variable that Kotchick et al. (2001) have identified as being relevant to the self-system is global self-esteem. As indicated by Berk (2007), self-esteem refers to the judgments that individuals make about their worth and it refers to the feelings that accompany these judgments. In the literature, global self-esteem has also been referred to as self-worth (Harter, 1999), and this dissertation uses these terms interchangeably. Self-esteem can be described in terms of its level (i.e., whether it is high or low) and whether it is domain specific (i.e., self-evaluations that concern one’s performance in different areas) or global (i.e., evaluations individuals make of themselves in general) in nature (Berk, 2007). According to Harter (1999), self-related concepts, such as self-esteem level in particular, develop as a function of cognitive maturation and the interactions that individuals have within their social world. Across the developmental lifespan, individuals develop abilities such as being able to: (a) engage in social comparisons (i.e., judge and compare themselves against what their peers are doing); (b) make inferences about how their caregivers will respond (e.g., praise and criticism) to their behavior; (c) evaluate whether they are succeeding in meeting the demands of others; (d) internalize the opinions, values, and standards of others; and (e) construct their own standards based on previously internalized standards (Harter, 1999). All of these factors, to a varying degree, influence how individuals evaluate themselves and how they regulate their behavior (Harter, 1999). Furthermore, over the developmental lifespan, individuals’ self-esteem increasingly becomes hierarchical in nature (i.e., domain specific evaluations) rather than simply being global (Berk, 2007; Harter, 1999). They begin to evaluate themselves based on their performance in different domains (e.g., academic competence, social competence, and physical appearance), with each domain having a unique level of value and importance to them (Berk, 2007; Harter, 1999). Whether it is described as being domain specific or global in nature, researchers, as early as the 1970s, have extensively studied the relationship between global self-esteem and a number of outcomes (e.g., risky behaviors, academic performance) and, in the 1980s, policy initiatives were established to enhance self-esteem levels amongst American children (Baumeister, Campbell, Krueger, & Vohs, 2003).

One assumption that has emerged from various studies is that high global self-esteem inoculates individuals against poor outcomes (Baumeister et al., 2003; Kernis, 2003; McGee & Williams, 2000). In contrast, low global self-esteem places them at risk for such outcomes (Baumeister et al., 2003; Kernis, 2003; McGee & Williams, 2000). In the case of sexual behavior, one assumption is that low self-esteem is associated with higher engagement in risky sexual behavior, while high self-esteem is associated with lower engagement in this behavior (Baumeister et al., 2003). Interestingly, however, studies have yielded mixed results concerning the relationship between global self-esteem level and sexual behavior (Baumeister et al., 2003).

Boden and Horwood (2006) conducted a study to investigate the relationship between global self-esteem level and risky sexual behavior and associated unintended outcomes. To determine whether global self-esteem level in adolescence would predict later occurrences of risky sexual behavior and pregnancy in early adulthood, they utilized a sample of 1,000 New Zealand Maori 15-year-old participants, 50% of whom identified as female. They also used the Coopersmith Self-Esteem Inventory (Coopersmith, 1981) to examine global self-esteem level. After longitudinally following the sample across the span of 10 years, Boden and Horwood found that lower self-esteem was associated with higher levels of reported unprotected sex and rates of pregnancy across the ages of 16 to 25. Lower global self-esteem was also associated with a higher number of lifetime sexual partners at 18 to 21 years of age but not at 21 to 25 years of age. It must be noted, however, that after controlling for certain psychosocial risk factors, such as parental related variables (e.g., parental attachment), the association between risky sexual behavior and self-esteem was significantly weakened. This latter finding highlights the importance of studying the relationship between risky sexual behavior and global self-esteem level in combination with other variables.

Others have studied sexual debut in relation to global self-esteem level. Connor et al. (2004) examined this relationship using a cross-sectional design and a sample of 6th to 12th grade students (*N* = 149) whose mean age was approximately 15 years old. Approximately half of the sample identified as female and the remaining half identified as male. This sample also included 52% African American and 30% Latino youth, with African American youth reporting that they first engaged in sexual activity at a later age. The remaining sample identified as multiracial or Caucasian. Spencer, Zimet, Aalsma, and Orr (2002) also examined this relationship but did so longitudinally across two years. They used a sample of 188 female and male students whose ages ranged from 12 to 14 years old at the start of the study and 14 to 16 years old at the end of the study. Of the 188 students in their sample, 16% identified as Black and 84% identified as White. While using different measures to assess sexual debut, both studies used the RSES (1965) to measure global self-esteem level.

As indicated in Connor et al.'s (2004) study, adolescents who obtained higher scores on the self-esteem measure were more likely to debut later. Spencer et al. (2002) obtained a similar finding amongst their female participants. Specifically, females with a higher self-esteem level at the start of the study were three times more likely to debut later relative to females with a lower self-esteem level. Males, in contrast, reported higher levels of self-esteem at the start of the study were 2.4 times more likely to debut earlier than males who reported lower levels of self-esteem.

Spencer et al.'s (2002) findings suggest that the relationship between individuals' self-esteem level and sexual behavior might depend on their gender. In light of this, the authors reasoned that high self-esteem might have served as a protective factor for females but not for males. They further explained that the male participants with high global self-esteem might have debuted earlier than the rest of the sample because of the possible influence of "societally-based double standards," which they state sometimes confer greater sexual liberty to males and endorse greater acceptance of some of their sexual behavior (Spencer et al., 2002, p. 583). Spencer et al. (2002, p. 583) further rationalized that the male participants who scored higher on the self-esteem measure may have debuted earlier because of the perception that doing so would garner them a "badge of honor."

In addition to sexual debut, two studies (i.e., Hollar & Snizek, 1996; Smith, Gerrard, & Gibbons, 1997) have also examined the relationship amongst self-esteem level, risky sexual behavior, and response to risk information. In each study, college participants were used in addition to the RSES (Rosenberg, 1965). There were slight variations in how the researchers conducted both studies, however. Hollar and Snizek looked at the relationship amongst self-esteem level, female and male students' (*N* = 353) knowledge about HIV/AIDS and how it is transmitted, and their sexual behavior (e.g., engaging in unprotected vaginal intercourse; having different sexual partners; and engaging in sexual intercourse with someone who has had several different partners). They proposed that a negative relationship would emerge between self-esteem level and engagement in risky sexual behavior. They also proposed that the relationship between knowledge of HIV/AIDS and risky sexual behavior would vary according to self-esteem level. In contrast, Smith et al. conducted a study that examined the relationship amongst women’s ($N = 125$) self-esteem level, sexual behavior (i.e., frequency of engaging in sexual intercourse and likelihood of utilizing contraceptive methods such as withdrawal, condoms, and birth control pills), and perceived vulnerability to having an unplanned pregnancy. Specifically, they examined whether the relationship between reviewing information about one’s sexual behavior and subsequent feelings of vulnerability to having an unplanned pregnancy would depend on participants’ self-esteem level.

Overall, the studies cited above obtained similar results. Hollar and Snizek’s (1996) study, however, yielded findings that contradicted what they expected would occur. In particular, results indicated that for both genders, those who reported higher levels of global self-esteem were more likely to engage in risky sexual behavior (e.g. unprotected vaginal intercourse; unprotected sex with someone who has had multiple sex partners; and having more than one sexual partner). They also found that participants who possessed more knowledge about HIV/AIDS and who exhibited higher levels of global self-esteem were the most likely to engage in risky sexual behavior. In their study, Smith et al. (1997) found that low self-esteem and high self-esteem participants exhibited statistically similar levels of risky sexual behavior prior to reviewing information about their sexual behavior. After reviewing this information, low self-esteem participants reported a much higher level of vulnerability to having an unplanned pregnancy. In contrast, after reviewing information about their sexual behavior, high self-esteem participants reported a much lower level of vulnerability to having an unplanned pregnancy. To explain their findings, Smith et al. suggested that perhaps participants with higher self-esteem might have minimized their health risk to preserve and protect their positive self-evaluations. This explanation could apply to Hollar and Snizek’s results as well.

Studies have also looked specifically at the relationship between global self-esteem level and attitudes toward risky sexual behavior. Using a predominantly African American sample of female participants (M_{age} = 35 years old) and the RSES (1965), Sterk, Klein, and Elifson (2004) demonstrated that high self-esteem participants, relative to low self-esteem participants, were more likely to endorse greater approval of engaging in sexual intercourse with a condom. Lawal (2010) and Chapin (2000), in contrast, failed to demonstrate a significant relationship between global self-esteem level and participants' attitudes toward sexual behavior. Specifically, using a sample of 500 Nigerian female and male students (age range: 15 – 35 years old), Lawal found that self-esteem level (as measured by the RSES) failed to predict the extent to which participants endorsed liberal to conservative attitudes toward sexual behavior. After exposing their predominantly African American sample (*N* = 221; age range: 8 – 17 years old) of females and males to messages about safe sexual practices, Chapin (2000) found that global self-esteem level (as measured by the Piers-Harris Self-Concept Inventories [Piers, 1996]) did not significantly correlate with whether participants exhibited approval or disapproval toward these messages.

Taken together, these studies have yielded mixed results regarding the relationship that global self-esteem level has with youth risky sexual attitudes and behavior. Some studies (e.g., Connor et al., 2004; Sterk et al. 2004) demonstrated that high global self-esteem related to less engagement in risky sexual behavior and more approval of safer sexual practices. Although shown to be significantly associated with risky sexual behavior in Boden and Horwood's (2006) study, its association was significantly weakened after they controlled for certain sociocontextual variables. Furthermore, prior to reviewing information about their sexual behavior in Hollar and Snizek's (1996) study, high and low self-esteem participants exhibited statistically similar sexual behavior. However, after their exposure to risk related information, participants with high self-esteem not only were more likely to engage in risky sexual behavior (Hollar & Snizek, 1996), but they were also less likely to feel vulnerable to having an unplanned pregnancy (Smith et al., 1997). Findings also suggest that the relationship between global self-esteem level and risky sexual behavior might not always be straightforward, as the nature of how these two variables are related to each other might be dependent on young peoples' gender (Spencer et al., 2002). Lastly, findings suggest that global self-esteem might not always be related to young peoples' attitudes toward certain sexual practices (e.g., Chapin, 2000).

In light of findings such those that were reviewed, researchers (e.g., Baumeister et al., 2006; Boden & Horwood, 2006) have questioned whether high global self-esteem should be identified as a protective factor against the engagement in risky behavior and whether low global self-esteem should be identified as a risk factor leading to the engagement in risky behavior. Other researchers, such as Crocker and Wolfe (2001), suggest that research endeavors should go beyond just focusing on global self-esteem level. They suggest shifting the focus of self-esteem research toward the construct contingent self-esteem, which refers to self-worth that is dependent on perceptions of meeting a set of standards that are associated with a particular domain (e.g., peer group). As such, individuals regulate their behavior to meet those standards to obtain approval or success from that domain, with the goal of preserving or increasing their self-esteem level, and to avoid disapproval or failure, with the goal of preventing drops in their self-esteem level.

The idea that individuals base their self-worth on different domains is not novel. It is largely predicated on the writings of William James (Crocker & Wolfe, 2001). Following James, various researchers have proffered similar definitions to describe contingent self-esteem.

According to Deci and Ryan (1995), self-esteem that is dependent on achieving a set of standards causes individuals to become overly concerned with their accomplishments and with obtaining social approval. To ensure that their positive self-views are continuously affirmed, they constantly strive toward achieving standards that have particular relevance to their self-esteem. Failure to achieve those standards ultimately reduces their feelings of self-worth.

Crocker and Wolfe (2001) do not use the term contingent self-esteem, but instead use the term contingencies of self-worth (CSW), although both terms encompass similar ideas. Similar to Deci and Ryan (1995), Crocker and Wolfe (2001) argue that individuals whose self-esteem is contingent evaluate their entire worth based on their perception of how well they are able to meet the goals and standards of domains that have particular significance to their self-esteem. If, for example, individuals believe they have successfully achieved those goals, they will feel valuable, and their self-esteem will most likely increase (Crocker, Luhtanen, & Sommers, 2004). Conversely, if they perceive that they have failed to meet those standards, they will feel unworthy, and their self-esteem will most likely decrease.

To measure CSW, Crocker, Luhtanen, Cooper, and Bouvrett (2003) developed a scale called the Contingencies of Self-Worth Scale (CSWS). This tool includes 35 items that measure the extent to which individuals invest their self-worth in multiple domains. Although it is not exhaustive of all possible domains, the CSWS incorporates the following seven contingency domains: (a) Competencies (i.e., self-esteem based on one’s abilities), (b) Competition (i.e., self-esteem based on being superior to others), (c) Approval from Generalized Others (i.e., self-esteem based on receiving approval and acceptance from others), (d) Family Support (i.e., self-esteem based on the affection of close relations), (e) Appearance (i.e., self-esteem based on physical appearance), (f) God’s Love (i.e., self-esteem based on faith and the belief that one is loved by God), and (g) Virtue (i.e., self-esteem based one’s morality and virtue).

Furthermore, Crocker et al. (2003) argue that these domains lie on an extrinsic-intrinsic continuum. While one end of the spectrum of domains (i.e., Approval from Generalized Others, Appearance, Family Support, Academics, and Competition) provides higher levels of external validation, the opposite end of the spectrum of domains (i.e., Virtue and God’s Love) provides higher levels of internal validation (Crocker et al., 2003). As such, they concluded that extrinsically based domains result in greater negative outcomes because they involve unstable sources of validation. In the case of the Approval from Generalized Others domain, for example, negative outcomes might result because it is generally difficult for individuals to control how others respond to them and how they evaluate them despite what their behavior may be. In contrast, intrinsically-based domains (i.e., Virtue and God’s Love) might potentially result in outcomes that are more positive because they involve standards that are more internalized and that provide validation that is more stable (Crocker et al., 2003).

Overall, both definitions that Deci and Ryan (1995) and Crocker et al. (2003) propose have one common theme: contingent self-esteem has a self-regulatory influence on individuals’ behavior. Moreover stated, its self-regulatory nature lies in its ability to influence individuals to direct their behavior toward meeting a set of standards in domains on which they base their self-esteem. Regulating their behavior in this way might potentially help them to preserve or enhance their self-esteem level while helping them to avoid feeling bad about themselves (Crocker et al., 2004). It is thus the case that when a domain stipulates prosocial and adaptive standards (e.g., academic achievement), individuals whose self-worth is based on this domain will be more likely to exhibit prosocial and adaptive behavior (Crocker & Wolfe, 2001). On the other hand, when a domain stipulates harmful and maladaptive standards (e.g., risky sexual behavior), individuals who base their self-worth on this domain will ultimately exhibit maladaptive behavior (Crocker & Wolfe, 2001).

Applying this line of reasoning to sexual practices, individuals might regulate their sexual behavior to meet the standards of the domain on which their self-worth is based because doing so will preserve their self-esteem level. Empirically, however, research is limited as it relates to studies that have examined the relationship between contingent self-esteem and youth risky sexual attitudes and behavior. While the investigator was unable to find studies that have examined this construct in relation to youth risky sexual attitudes, a search of the literature yielded one study (i.e., Kaplan, 2008) in which contingent self-esteem was examined in relation to youth risky sexual behavior. To conduct that study, Kaplan (2008) used a sample of 58 female college students, with most participants identifying as Caucasian (58%) and fewer participants identifying as African American (24%), Hispanic (10%), Asian/Pacific Islander (3%), and as “other” (5%). Basing her study on the work of Crocker et al. (2003), Kaplan used the CSWS to determine how internal and external contingencies of self-worth would differentially correlate with the risky sexual behavior (i.e., utilization of condoms, number of sexual partners) of her participants. She questioned whether self-worth that is contingent on domains that provide external sources of validation (e.g., Approval from Generalized Others CSW) would result in higher engagement in risky sexual behavior compared to self-worth that is contingent on domains that are more internally focused (e.g., God’s Love CSW). Overall, the results from her study failed to support her hypotheses. She found that condom use negatively correlated with the God’s Love and Family Support domains and that it did not exhibit significant relationships with the Approval from the Generalized Others and Virtue domains (i.e., external domains). Kaplan also found that the more participants based their self-worth on the Virtue domain, the more sexual partners they reported having. Finally, she obtained a non-significant relationship between participants' reported number of sexual partners and the Approval from Generalized Others domain.

Taken together, the findings from Kaplan's (2008) study have yielded unfavorable support for contingent self-esteem as a factor that might be associated with young peoples' risky sexual behavior. Nevertheless, because research is scarce in this area, additional studies are needed to ascertain whether this self-esteem construct is related to how young people regulate their sexual behavior and to their sexual attitudes. Two types of contingent self-esteem variables that research studies could target and that would reflect the multisystemic approach that Kotchick et al. (2001) believe is needed to understand youth sexual behavior are: (a) self-esteem that is based on young people receiving parental approval because their behavior aligns with parental standards and (b) self-esteem that is based on young people receiving peer approval because their behavior aligns with peer standards. With these two variables, studies could yield evidence showing, for example, whether young people might regulate their sexual behavior to align with parental and peer standards because doing so is important to their self-esteem. However, in order to obtain a deeper understanding of this possibility, it would also be particularly useful for studies to assess the nature of these standards. Such standards can take the form of parental and peer attitudes toward risky sexual behavior, which, interestingly, have been shown in the research literature to be related to young peoples' risky sexual attitudes and behavior.

Youth risky sexual attitudes/behavior and parental sex attitudes. Through parent-youth communication (e.g., frequency with which parents communicate with their youth and the content of what is conveyed in their communication), which scholars (i.e., Kotchick et al., 2001, p. 505) describe as a “family process variable,” parents can convey their attitudes, expectations, and values regarding risky and safe sexual practices (Dittus & Jaccard, 2000; Eisenberg et al., 2006; Khurana & Cooksey, 2012; Schuster, Mermelstein, and Wakschlag, 2013). According to scholars, parents’ actual attitudes toward sex and youths’ perceptions of their parents’ attitudes toward this behavior are sometimes related to youths’ sexual attitudes and sexual behavior (e.g., Bangpan & Operario, 2012; Bersamin, Todd, Fisher, Hill, Grube, & Walker, 2008; Booth-Butterfield & Sidelinger, 1998; Dittus & Jaccard, 2000). Notably, based on researchers’ systematic review of 11 qualitative studies, one theme that emerged was that adolescents and young adults tended to believe that their sexual behavior reflected their parents’ expectations regarding sex as well as their parents’ moral and religious values (Bangpan & Operario, 2012).

Researchers have also conducted quantitative studies to investigate the relationship between parental sex attitudes (e.g., perceived parental attitudes and/or parents’ self-reported attitudes) and youth sexual behavior, with some specifically examining the relationship between these attitudes and preadolescents and adolescents’ initiation of sexual activity. In their study, Dittus and Jaccard (2000) examined the responses of a diverse (e.g., adolescents who identified as Black, Chinese, Cuban, or Puerto Rican) subsample of seventh to eleventh grade adolescents (*N* = 10,000) and their mothers from the National Longitudinal Study of Adolescent Health database (ADD Health). They used both perceived maternal attitudes and mothers’ self-reported attitudes to predict whether teens would initiate sexual activity at a 12-month follow-up. Both types of attitudes were defined in terms of parents’ feelings toward their daughter or son having sex and using contraception. Overall, Dittus and Jaccard found that higher perceived and self-reported maternal disapproval toward sexual activity was associated with teens being less likely to report that they engaged in sexual activity 12 months later.

In addition to using parental attitudes (i.e., mothers' self-reported attitudes toward their daughter or son having sex) to predict participants' onset of sexual activity, Davis and Friel (2001) also used these attitudes to predict the number of partners with whom participants reported having sex. Similar to Dittus and Jaccard (2000), Davis and Friel utilized the responses of a subsample of participants from the ADD Health database. Their sample, however, included 12,367 female and male students between the ages of 11 and 18 years old and their mothers. The sample's race/ethnicity was not reported. Based on these responses, Davis and Friel found that teens with an earlier age of sexual debut were more likely to have mothers who approved of them engaging in sexual activity. Maternal attitudes, in contrast, did not exhibit a significant relationship with the number of sexual partners that participants reported having, which contrasts with Miller, Forehand, and Kotchick's (2000) finding regarding this relationship.

In their study, Miller et al. (2000) investigated the extent to which maternal attitudes (i.e., mothers' self-reported attitudes toward items such as, "What do you think about your son/daughter having lots of different partners?") would predict four sex related behaviors: frequency of sexual activity, number of lifetime sex partners, age of sexual debut, and consistent condom use. To investigate these relationships, Miller et al. asked 907 Black and Hispanic adolescents between the ages of 14 to 17 years old and their mothers to participate in the study. Of the four sexual behaviors, lower maternal approval was only associated with fewer reported lifetime sex partners. Mothers' self-reported attitudes, in contrast, failed to predict the remaining sex related behaviors.

Booth-Butterfield and Sidelinger (1998) also failed to demonstrate a relationship between parental attitudes and youth sexual behavior. Using a sample of female and male college students (*N* = 133) and their mother or father (*N* = 133), Booth-Butterfield and Sidelinger argued that even when college students lived on-campus and away from their parents, some might continue to be influenced by their parents' views and by the communication that they have had with them. Thus, they reasoned that parents' self-reported sex related attitudes (i.e., the extent to which they endorsed liberal or conservative attitudes toward sex related practices and behaviors) would exhibit a positive relationship with the sexual attitudes of their daughter or son and would be significantly related to the sexual activity (e.g., contraceptive use) of their child. Another component of their study examined the relationship between parental communication about sex and youths' engagement in risky sexual behavior. As anticipated, Booth-Butterfield and Sidelinger found that parents and their daughter/son endorsed similar sex related attitudes. Regardless of whether parents endorsed liberal or conservative sex related attitudes, the authors found that children whose parents talked more with them about sex were less likely to report engaging in risky sexual behavior. Unexpectedly, Booth-Butterfield and Sidelinger found that parental attitudes did not predict college students' sexual practices, which they suggested partially related to their sexual attitudes measure consisting of items (e.g., attitudes toward government control over pornography or nudists camps) that were not pertinent to youth sexual behavior.

Taken together, the reviewed studies have yielded contrasting evidence regarding the relationship between parental attitudes and youth sexual behavior. In some instances, parental attitudes failed to predict youth sexual behavior, with researchers from one study partly contributing their nonsignificant finding to how they measured sex related attitudes (e.g., Booth-

Butterfield & Sidelinger, 1998; Miller et al., 2000). In others instances, parental attitudes predicted youth sexual behavior in the expected direction, with lower parental approval toward sex being associated with later sexual debut, non-engagement in sexual activity, or fewer reported sex partners (e.g., Davis & Friel, 2001; Dittus & Jaccard, 2000; Miller et al., 2000). Parental attitudes also positively predicted participants' personal attitudes toward risky sexual behavior (Booth-Butterfield & Sidelinger, 1998).

Interestingly, although these studies examined the direct relationship between the family system and youth sexual behavior, empirical findings show that the family system might also play an indirect role regarding this behavior (Landor, Simons, Simons, Brody, & Gibbons, 2011). For their study, Landor et al. reasoned that religious parents might transmit their religious beliefs and values, which research (e.g., Manlove et al., 2008) suggests sometimes stipulate sanctions against engagement in risky sexual behavior. Landor et al. further asserted that children who adopt the religious beliefs of their parents might subsequently choose to affiliate with peers who are not sexually permissive. In turn, having such peers might be associated with a lessened likelihood of them engaging in risky sexual behavior. Empirical findings yielded by their study support their line of reasoning. Amongst their sample of African American female and male teens (*N* = 612; age range = 18 to 19 years old), Landor et al. found that higher parental religiosity (e.g., religious beliefs) was associated with higher adolescent religiosity. Adolescents with a higher level of religiosity were then less likely to affiliate with sexually permissive peers (e.g., those who engaged in sexual intercourse without a condom) and those who associated with such peers were less likely to engage in risky sexual behavior (e.g., inconsistent condom use and multiple sex partners). While Landor et al.'s study provides support regarding the indirect role that parental factors, such as their religious beliefs, can play in whether youths engage in risky sexual behavior, it also highlights the role peers may play. Moreover, as noted previously, just as parental attitudes toward sexual behavior might sometimes be related to young peoples' sexual attitudes and behavior, the research literature suggests that peer attitudes might also be relevant.

Youth risky sexual attitudes/behavior and peer sex attitudes. Social norms theory, which was first described by Perkins and Berkowitz (Perkins, Craig, & Perkins, 2011), suggests that individuals are likely to regulate their behavior in response to the social norms of their peer group. Moreover, when they have to make a decision about what to do in a situation, they are sometimes guided by their perception or misperception of what they think their peers are doing or would do in that same situation (Kilmartin et al., 2008). Carey, Borsari, Carey, and Maisto (2006) have indicated that two types of social norms exist. Descriptive norms refer to individuals' perceptions or misperceptions of how much others engage in a particular behavior. Injunctive norms, in contrast, refer to individuals' perceptions or misperceptions of the extent to which others approve of engaging in a behavior. Applied to sexual behavior and given a particular social context, if youths perceive that their peers hold favorable views toward certain sexual behaviors and that they engage in these behaviors, they might also endorse similar views and exhibit similar behaviors as well (Brandhorst et al., 2012; Voisin, Hong, & King, 2012). This especially might hold true if it is important to obtain the approval of their peer group. It is also important to note that these norms are typically developed and transmitted through the interactions that individuals have with their peer group (Kapadia, Frye, Bonner, Emmanuel, Samples, & Latka, 2012). It is thus likely that frequent positive communication regarding risky sexual behavior amongst one's peer group might promote perceptions or misperceptions of how frequently peers engage in risky sexual behavior (i.e., descriptive norms; Holman & Sillars, 2012). Furthermore, frequent positive communication can promote perceptions or misperceptions of how much peers approve of risky sexual practices as acceptable (i.e., injunctive norms; Holman & Sillars, 2012). Evidence regarding the relationship between youth risky sexual attitudes and behavior and the types of sex related peer norms that are transmitted through peer sex communication comes from a study by Holman and Sillars (2012).

Holman and Sillars (2012) sampled 274 female and male college students, with most participants identifying as White. They (Holman & Sillars, 2012, p. 208) examined the extent to which peer communication about “sexual hookups” (i.e., anal or vaginal sexual intercourse involving two people who are not dating each other, who are not in a committed relationship, and who “do not expect anything further”) and perceived peer attitudes toward “sexual hookups” would predict participants’ attitudes toward and engagement in this behavior. To test these relationships, Holman and Sillars asked participants to indicate how frequently they have had “sexual hookups” since entering college and how much they approve of this behavior. They also asked participants to identify three peers whom they talk the most to and with whom they spend most of their time. Holman and Sillars then sought to determine participants’ level of closeness to the three identified peers, which they did by averaging participants’ scores across 15 items and obtaining a single index score. Examples of these items included, “This person is influential in my life,” “I care about what this person thinks,” and “This person’s opinion matters to me.” Lastly, the authors asked participants to rate the extent to which their peers approve of “sexual hookups” and to indicate how frequently they talked to their peers about “sexual hookups” during the four months before participating in the study. Although peer communication about “sexual hookups” failed to predict participants’ attitudes toward this behavior, frequent peer conversations were associated with participants’ frequent engagement in “sexual hookups.”

When perceived peer attitudes were used to predict participants' personal attitudes and their sexual behavior, the study yielded significant findings. Participants who believed that their peers were more in favor of "sexual hookups" were also more likely to hold favorable attitudes toward this behavior and they engaged in this behavior more frequently. The authors, however, failed to show that peer closeness moderated the relationship between perceived peer attitudes and participants' sexual attitudes/behavior.

Using a much younger sample of mostly Black and Hispanic seventh to eighth grade students (*N* = 1,270 to 1,637), researchers (Santelli et al., 2004) examined the relationship between sex norms, in addition to other psychosocial variables, and participants' initiation of sexual intercourse (i.e., whether or not participants have initiated sexual intercourse). To define sex norms, Santelli et al. combined participants' responses to items that measured their personal attitudes toward abstaining from sex and their perceptions about their peers' attitudes toward refraining from sex. Based on the results from their analyses, Santelli et al. found that the more participants endorsed disapproving norms toward having sex the less likely they were to report that they have had sex.

Although the above studies suggest that peers, through their sex related attitudes, might influence young peoples' personal attitudes toward sex as well as their sexual activity, researchers have questioned whether peers are much more influential than parents. In their study, Maguen and Armistead (2006) asked 568 African American females between the ages of 12 to 19 years old to respond to items (e.g., "My mother thinks I should not have sex until I am older") that assessed their perceptions of their parents' sexual attitudes on a continuum that ranged from restrictive to permissive. In a slightly different manner, they asked participants to respond to items (e.g., "Does your friend believe premarital sex is wrong?") that assessed their perceptions of their peers' attitudes on a continuum that ranged from permissive to restrictive. For the sample as a whole, perceived parental attitudes and peer attitudes each predicted participants' sexual behavior. Participants were more likely to report that they have never initiated sexual activity if they believed that their parents and peers endorsed restrictive sex attitudes. However, after dividing their sample according to participants' age, perceived parental attitudes emerged as a significant predictor while perceived peer attitudes did not. Specifically, for both younger participants and older participants, the more parents were perceived as holding restrictive attitudes toward sex, the less likely participants were to report that they have had sex. Perceived peer attitudes did not appear to relate significantly to whether younger participants reported that they have initiated sexual activity and whether older participants indicated that they have had sex.

Overall, based on the reviewed studies, perceptions of peers' sex related attitudes appear to be related to youth sexual attitudes and behavior. Empirical evidence demonstrated that participants who believed that their peers approved of sexual behavior, such as "sexual hookups," were more likely to endorse similar attitudes and to engage in this behavior (Holman & Sillars, 2012). In contrast, participants who believed that their peers were in favor of refraining from sexual activity were more likely to refrain from having sex (Santelli et al., 2004). When separate analyses were conducted according to participants' age, perceived peer attitudes failed to predict sexual behavior, although perceived parental attitudes emerged as a significant predictor (Maguen & Armistead, 2006). It is important to note, however, that when the analyses were not conducted separately for younger and older participants, perceived peer attitudes and parental attitudes both emerged as important significant predictors (Maguen & Armistead, 2006).

Purpose and Questions/Hypotheses

Purpose. Because of the high rate of STIs amongst those in their teens to early twenties, it is important to develop interventions to reduce youth risky sexual behavior and to help young people adopt favorable attitudes toward safer sexual practices. Subsequently, the current study was conducted to examine how variables from the self-, family, and peer systems relate to the sexual attitudes and behavior of 18 to 24 year old college students in order to identify factors that may serve as future intervention targets. Eighteen to 24 year olds were recruited because they comprise the age group that is currently most affected by STIs (CDC, 2014b). College students were recruited because researchers indicate that risky behaviors sometimes increase when young people leave the parental home, and some college students are likely to leave the parental home after they are accepting into college (McCabe et al., 2005; Park, Sher, & Krull, 2009). Based on the literature review above, the current study targeted the following variables: gender, global self-esteem level, contingent self-esteem, and parental and peer attitudes toward risky sexual behavior. To the investigator's knowledge, no study has examined each of these variables simultaneously in relation to youth risky sexual attitudes and behavior, as was done in the current study.

Questions. Overall, the study addressed the following four questions:

Q1: Will global self-esteem level (Rosenberg Self-Esteem Scale; RSES), Contingent Self-Esteem – Parent/Caregiver Approval (CSE – P/C), or Contingent Self-Esteem – Peer Approval (CSE – P) be the best predictor of participants' risky sexual attitudes (Risky Sexual Attitudes – Self; RSA - S)? Will the relationship between participants' risky sexual attitudes (RSA – S) and each self-esteem variable (RSES, CSE – P/C, and CSE – P) vary according to participants' gender?

Q2: Will global self-esteem level (Rosenberg Self-Esteem Scale; RSES), Contingent Self-Esteem – Parent/Caregiver Approval (CSE – P/C), or Contingent Self-Esteem – Peer Approval (CSE – P) be the best predictor of participants' risky sexual behavior (Total Risky Sexual Behavior Score; TRSBS)? Will the relationship between participants' risky sexual behavior (TRSBS) and each self-esteem variable (RSES, CSE – P/C, and CSE – P) vary according to participants' gender?

Q3: Will participants' risky sexual attitudes (Risky Sexual Attitudes – Self; RSA – S) be better explained by their perceptions of their parent/caregiver's attitudes toward risky sexual behavior (Risky Sexual Attitudes – Parent/Caregiver; RSA – P/C) or by their perceptions of their peer's attitudes toward risky sexual behavior (Risky Sexual Attitudes – Peer; RSA – P)? Will the relationship between participants' risky sexual attitudes (RSA – S) and perceived parental (RSA – P/C) and peer (RSA – P) attitudes vary according to participants' gender?

Q4: Will participants' risky sexual behavior (Total Risky Sexual Behavior Score; TRSBS) be best explained by their personal attitudes toward risky sexual behavior (Risky Sexual Behavior – Self; RSA – S), their perceptions of their parent/caregiver's attitudes toward risky sexual behavior (Risky Sexual Attitudes – Parent/Caregiver; RSA – P/C), or their perceptions of their peer's attitudes toward risky sexual behavior (Risky Sexual Attitudes – Peer; RSA – P)? Will the relationship between participants' risky sexual behavior (TRSBS) and self-reported attitudes (RSA – S), perceived parental attitudes (RSA – P/C), and peer attitudes (RSA – P) vary according to participants' gender?

Hypotheses. Studies (e.g., Booth-Butterfield & Sidelinger, 1998; Holman & Sillars 2012; Maguen & Armistead, 2006) suggest that young peoples' sexual attitudes and behavior sometimes mirror parental and peer attitudes toward sexual behavior. This may especially be the case if young people highly value the opinions of these individuals. This line of reasoning reflects scholars' assertion that individuals sometimes regulate their behavior to match the standards of a particular domain in order to obtain approval or success if their self-esteem is based on that domain (Crocker et al., 2001). As such, the following hypotheses were proposed:

HO1: It is expected that the relationship between participants' perceptions of their parent/caregiver's risky sexual attitudes (Risky Sexual Attitudes – Parent/Caregiver; RSA – P/C) and participants' personal attitudes (Risky Sexual Attitudes – Self; RSA – S) will vary according to participants' level of Contingent Self-Esteem – Parent/Caregiver Approval (CSE – P/C) and participants' gender.

HO2: It is expected that the relationship between participants' perceptions of their parent/caregiver's risky sexual attitudes (Risky Sexual Attitudes – Parent/Caregiver; RSA – P/C) and participants' risky sexual behavior (Total Risky Sexual Behavior Score; TRSBS) will vary according to participants' level of Contingent Self-Esteem – Parent/Caregiver Approval (CSE – P/C) and participants' gender.

HO3: It is expected that the relationship between participants' perceptions of their peer's risky sexual attitudes (Risky Sexual Attitudes – Peer; RSA – P) and participants' personal attitudes (Risky Sexual Attitudes – Self; RSA – S) will vary according to participants' level of Contingent Self-Esteem – Peer Approval (CSE – P) and participants' gender.

HO4: It is expected that the relationship between participants' perceptions of their peer's risky sexual attitudes (Risky Sexual Attitudes – Peer; RSA – P) and participants' risky sexual behavior (Total Risky Sexual Behavior Score; TRSBS) will vary according to participants' level of Contingent Self-Esteem – Peer Approval (CSE – P) and participants' gender.

Collectively, research shows that high global self-esteem level, like low global self-esteem level, is sometimes associated with risky sexual behaviors (e.g., Hollar & Snizek, 1996; Spencer et al., 2002). It is quite possible that young people with low self-esteem and young people with high self-esteem sometimes exhibit similar risky sexual behavior because their self-esteem is based on a domain (e.g., parental approval contingent self-esteem) that stipulates similar standards (e.g., perceived parental risky sexual attitudes) toward sexual behavior. As such, the study proposed the following hypotheses:

HO5: It is expected that the relationship between global self-esteem level (Rosenberg Self-Esteem Scale; RSES) and risky sexual behavior (Total Risky Sexual Behavior Score; TRSBS) will vary according to participants' level of Contingent Self-Esteem – Parent/Caregiver Approval (CSE – P/C), participants' perceptions of their parent/caregiver's attitudes toward risky sexual behavior (Risky Sexual Attitudes – Parent/Caregiver; RSA - P/C), and participants' gender.

HO6: It is expected that the relationship between global self-esteem level (Rosenberg Self-Esteem Scale; RSES) and risky sexual behavior (Total Risky Sexual Behavior Score; TRSBS) will vary according to participants' level of Contingent Self-Esteem – Peer Approval (CSE – P), participants' perceptions of their peer's attitudes toward risky sexual behavior (RSA – P), and participants' gender.

CHAPTER III

Method

This chapter reviews the methodology that the current study utilized to address the research questions and hypotheses as it relates to the relationship amongst participants' self-reported risky sexual attitudes and behavior and variables from three systems: self-system, family system, and peer system. While describing the participants and recruitment methods, this section also provides an overview of the measures that assessed demographic characteristics, relationship and communication related variables, self-reported risky sexual attitudes/behavior, perceived parental attitudes toward risky sexual behavior, perceived peer attitudes toward risky sexual behavior, self-esteem, and social desirable responding. In addition, the chapter presents the study's design and methods for data analyses.

Readers will note that a power analysis was conducted using Green's (1991) formula to determine the appropriate sample size that was needed for the study to achieve statistical significance. According to Green (1991), studies that involve multiple regression analyses should utilize a sample size of no less than $N > 50 + 8k$, with k representing the number of predictor variables. For the current study, multiple regression analyses were conducted and seven predictor variables (i.e., global self-esteem level, Contingent Self-Esteem – Parent/Caregiver Approval, Contingent Self-Esteem – Peer Approval, Risky Sexual Attitudes – Self, Risky Sexual Attitudes – Parent/Caregiver, Risky Sexual Attitudes – Peer, and participants' gender) were included. Based on the formula, the minimum sample size that was needed for the current study to achieve statistical significance at the $p < .05$ level was 107. However, the investigator included additional participants to increase the likelihood of obtaining a diverse sample (i.e., based on their gender and race/ethnicity) with a wide range of sexual experiences, attitudes, and behaviors. Additional details regarding the recruitment, number, and description of participants are provided below.

Recruitment Procedures

To recruit participants, the investigator used Amazon Mechanical Turk (MTurk), which is an affiliate of Amazon.com. It is comprised of an online human workforce of individuals (i.e., Workers) who complete tasks (e.g., survey studies and online data entry) in exchange for monetary compensation. Individuals who post tasks that they want to have completed through MTurk are referred to as Requesters. In the case of research studies, MTurk can be used to post research surveys, to recruit participants, and to collect survey responses (Amazon, 2014a).

In terms of what is required to begin using MTurk as a Worker or Requester, individuals must first have a preexisting Amazon account or they have to create a new one, which can be done by entering a valid e-mail address as an username and by creating a password (Amazon, 2014b). The investigator thus created a new account to use this service as a Requester and, after logging into MTurk with her username and password, she was instructed to read and agree to their participation agreement (Amazon, 2012). The agreement specified that individuals (i.e., Requester and Workers) must agree to be 18 years old or older, be authorized to consent to the participation agreement, and abide by the terms and conditions of the participation agreement (Amazon, 2012). In terms of Workers, they have to agree to complete all tasks themselves (e.g., not employing a robot or any other automated method to complete tasks) and not to have multiple Worker accounts. In terms of Requesters, they have to agree to compensate Workers for any work that meets their satisfaction and to pay MTurk a commission fee for using their services. Prior to posting their task, Requesters must provide MTurk with the total amount that they intend to spend to cover the cost of paying all of their Workers and MTurk. MTurk then stores this money within Requesters' MTurk account. From this account, MTurk debits the amount that is owed to a particular Worker and credits the amount to the Worker's MTurk account each time a Requester approves her/his work. As such, Requesters do not have to compensate Workers directly.

The participation agreement also forewarns registrants that MTurk is not responsible for any act that Workers and Requesters commit and that it plays a limited role in all transactions between these two groups (Amazon, 2012). As such, MTurk warns registrants that if they agree to use its services, they do so at their own risk. Areas that MTurk states that it does not regulate include Workers' ability to provide acceptable services that meet Requesters' satisfaction and Requesters' ability to compensate Workers for their services. However, MTurk stipulates that it reserves the right to monitor all activity and content as it pertains to its website and that it can provide Workers' identifying information (e.g., name and e-mail address) to Requesters whose task they have worked on or have completed. For Workers, in particular, the agreement warns them that if Requesters are not satisfied with their work, they can prevent ("block") them from receiving compensation. For Requesters, the agreement indicates that once they have approved a Worker to receive compensation, they will subsequently be unable to receive a refund.

After agreeing to the terms and conditions of the participation agreement, individuals then have to wait 48 hours for MTurk to grant them permission to use their services. Upon receiving permission, they are then able to use MTurk as a Requester or Worker. If they are Workers, they receive a worker ID and if they are Requesters, they receive a requester ID (i.e., a string of alphanumerical characters). These IDs can be used in lieu of any personal identifier (e.g., name). It must also be noted that MTurk automatically provides Requesters with the worker ID of any individual who submits work for them through MTurk. Using the ID, a Requester can view her/his Workers' work history (i.e., number of times the Worker has blocked a particular worker from completing her/his task in the future or approved a particular Worker to receive compensation), which does not contain any personal identifying information.

Notably, however, Lease, Hullman, Bigham, Bernstein, Kim, Lasecki et al. (2013) have discovered that worker IDs can not only be linked to Workers' MTurk work history but it can also be linked to their Amazon profile, which contains personal identifying information. For this reason and because MTurk monitors all online activity on their website, one limitation to using MTurk pertains to the limited ability to protect participants' confidentiality and anonymity. In general, by using MTurk to recruit participants and to collect survey responses, it is likely that participants' worker ID could be linked to their survey responses once they have completed research questionnaires on MTurk. To address this limitation and to decrease the likelihood of Workers being traced to their survey responses, the investigator used MTurk solely to recruit participants, but utilized an external website (i.e., SurveyMonkey) to collect all survey responses. This was done by providing prospective participants with a web link through MTurk that redirected them to complete the research questionnaires through SurveyMonkey.

After being approved to use MTurk, the investigator created a brief advertisement to post on the MTurk website (see Appendix A). The advertisement specified that Workers (i.e., prospective participants) would have to complete a demographic survey to determine their eligibility for a paid research study and that the study would take approximately 45 minutes. The decision to utilize a demographic survey as a screener was made in response to MTurk's stipulation that it is not responsible for ensuring that Workers meet eligibility criteria that have been specified for a particular research study. In addition, to increase the effectiveness of the demographic survey as a screener, the investigator withheld disclosing the eligibility criteria (i.e., that she required undergraduate students between the ages of 18 to 24 years old) throughout the study. Although MTurk did not assist in screening prospective participants, they did provide the option for the investigator to restrict the type of Workers who were able to initiate her task based on: (a) whether they lived within the United States, (b) the number of tasks that they have completed in the past, and (c) whether they had a high approval rating due to how often Requesters approved their work. Thus, the advertisement specified that prospective participants needed to reside within the United States, have previously completed at least 500 or more tasks, and have a 95% or greater approval rating. The investigator also requested that MTurk only allow Workers who met these qualifications to be able to click on the advertisement and then to be redirected to the consent letter for the demographic survey.

Lastly, the advertisement indicated that compensation for participating in the study would involve $1.00. This amount was chosen based on the following factors. First, MTurk has indicated that Workers are typically paid five cents to five dollars for completing tasks and that the amount that they are provided with should be commensurate with the nature and length of what they are being asked to complete. Second, SurveyMonkey, a well-known survey website, has indicated that it typically provides compensation to its responders in the form of a $1.00 sweepstake or by donating 50 cents to responders' favorite charity. Thus, the investigator assessed $1.00 to be an appropriate amount to offer participants in exchange for completing her research questionnaires.

After clicking on the advertisement, prospective participants were then redirected to the consent letter for the demographic survey (see Appendix B). The letter included the following information: (a) that a doctoral candidate from the City University of New York Graduate Center was conducting a research study to investigate human sexual attitudes and behavior; (b) that 250 participants were being recruited for the study; (c) that it would take 30 to 45 minutes to complete the study’s measures; (d) that each participant would receive $1.00 as compensation for her/his participation; (e) that prospective participants would first need to complete a 3 to 5 minute non-paid demographic measure so that their eligibility for the research study could be determined; (f) that those who were found to be eligible could then consent to participate in the research study; and (g) that those who agreed to participate would then be able to access and complete the research questionnaires. The consent letter also contained a link that prospective participants used to redirect them to SurveyMonkey where they were able to complete the demographic survey. Thus, all responses that were provided to the demographic survey were collected through SurveyMonkey and not through MTurk. This ensured that MTurk would not be able to monitor participants’ responses and that participants’ MTurk ID could not be linked to their survey answers.

The investigator also included additional instructions within the demographic survey consent letter to inform prospective participants regarding how they would be able to receive compensation. As it relates to these procedures, the investigator created and provided participants with a verification code (i.e., TN29CMS62) that automatically appeared on the screen only after they completed all of the research measures. Prospective participants were thus instructed to keep the screen with the consent letter open so that they could return to it and enter the verification code into a textbox that was located at the bottom of the letter. With the verification code being used in this manner, MTurk subsequently generated a list of worker IDs for the investigator of all those who entered a response into the textbox. With that list, the investigator was able to select all those who entered the correct code and “approve” them to receive compensation. She was also able to select all those who entered an incorrect code and then “block” them from being able to enter a response in the future. She did the same for all those whose worker ID appeared more than once as a result of them entering the code multiple times. It must be noted that additional information within the consent letter informed participants that they would not be able to receive multiple payments despite attempts to enter the verification code more than once. Furthermore, the investigator created an additional code (i.e., CN62VMS29) and alternated between this and the original code throughout the study. This was done in anticipation that some participants would share the verification code with others so that those individuals could use the code to receive payment. By alternating between the verification codes, it increased the likelihood for the investigator to be able to distinguish between individuals who entered a code that they received at the end of the study, for example, and individuals who entered a code that they received from a former participant.

The demographic survey was used to assess critical information (i.e., participants' age and whether they were college students) to determine participants' eligibility (see Appendix C). To prevent responders from knowing the questions that were being used to determine their eligibility, it also assessed other demographic information that was important to this study (i.e., race/ethnicity, gender, sexual orientation, and religious affiliation). It must also be noted that all questions within the demographic survey (as well as all measures that were used for the study) required a response. Any individual who left a question blank on a particular screen was subsequently unable to move to the next screen unless she/he provided a response to the unanswered item. As some of the key questions were located close to the front of the survey, responders who did not provide the targeted answer were not required to complete the entire survey. Responders who provided responses that did not match the eligibility criteria were automatically redirected to a screen that thanked them for responding to the demographic survey and informed them that they were not eligible for the study. Responders who were found to be eligible based on their responses to the key questions were subsequently able to complete all questions within the demographic survey. After completing the demographic measure, they were then redirected to a screen that informed them of their eligibility status and that displayed the consent letter for the study.

The consent letter incorporated the information for the demographic survey, and it included additional details (Appendix D). For example, it provided information about the investigator, the overall topic of her research study without reference to the population that was being targeted, how to receive compensation, the consequence associated with attempting to receive multiple payments (i.e., being "blocked"), and safeguards that were being put into place to protect participants' anonymity as much as was feasible (e.g., collecting survey responses using an external website). Individuals who did not agree to participate in the study were redirected to a screen that thanked them for taking the time to respond to the demographic survey. Those who agreed to participate in the study were then able to complete the research questionnaires, and each participant who completed the study was able to provide an anonymous comment about the research study if she/he opted to do so, and the investigator compensated her/him according to the procedures that were previously outlined.

Participants

Overall, 2,226 individuals responded to the MTurk advertisement that was used for the current study and had agreed to complete the demographic survey, with all individuals residing within the United States. Of those who responded, 1,953 (87%) did not meet the eligibility criteria because they did not fall within the age range of 18 to 24 years old and/or were not currently enrolled as an undergraduate student (see Appendix E for the demographics of the ineligible group). The remaining 12.3% (*n* = 274) of respondents met the eligibility criteria.

Amongst those who were qualified, 6.9% (*n* = 19) did not complete the study measures (see Appendix F for non-completer demographics). There was also one individual who met the eligibility criteria, but declined to participate in the study. This individual identified as a 22-year-old White Christian male who lived with his friends and was currently single.

Of those who completed the study's measures (*N* = 253), three were omitted from the sample because of the low number of individuals who comprised their gender category (e.g., neutrois). All three participants indicated that they were sophomores. They also reported that they were Black, Native American/Alaska Native, or White; that they were heterosexual or pansexual; that they were raised in a single or two-parent household; that they were currently dating or were not in a relationship; that they were Christian or did not have a religion; and that they currently lived with a parent/relative or with a friend.

Overall, the final sample encompassed 250 participants, whose average age was 21.34 (*SD* = 1.77; see Table 1). An approximately equal number of participants identified as female (*n* = 122) or male (*n* = 128). Most participants reported that they were White (*n* = 160) and a fewer number of participants reported that they were Black (*n* = 24), Asian (*n* = 13), or Hispanic/Latino(a) (*n* = 29). Because of the low number of participants who comprised these categories, the data were subsequently not analyzed according to participants' race or ethnicity. Lastly, a majority of participants reported that they did not have a religion (*n* = 141, 56.4%), were heterosexual (*n* = 196, 78.4%), were raised (*n* = 172, 68.8%) in a two-parent household, were dating (*n* = 111, 44.4%), currently lived with their parent(s)/relative(s) (*n* = 108, 43.2%), or were raised in a two parent household with their biological parents (*n* = 171, 68.4%).

Table 1

Participant Demographics (N = 250)

Variable	*n*	%
Gender		
Female	122	48.6
Male	128	49.8
Race/ethnicity		
American Indian/Alaska Native	1	.4
Asian	33	13.2
Black	23	9.2
Hispanic/Latino(a)	29	11.6
International	2	.8
Multiracial	3	1.2
White	159	63.6
Sexual orientation		
Asexual	3	1.2
Bisexual	32	12.8
Gay	6	2.4
Heterosexual	193	77.2
Homosexual	6	2.4
Lesbian	5	2.0
Pansexual	3	1.2
Other	1	.4
Age group (*M* = 21.34, *SD* = 1.77)		
18	13	5.2
19	34	13.6
20	37	14.8
21	43	17.2
22	50	20.0
23	39	15.6
24	34	13.6
College level		
Freshman	16	6.4
Sophomore	73	29.2
Junior	74	29.6
Senior	77	30.8
Other	10	4.0
Religion		

Table 1 *Continued*

Variable	*n*	%
Buddhist	8	3.2
Catholic	27	10.8
Christian	47	18.8
Islam	2	.8
Jewish	6	2.4
No religion	140	56.0
Other	7	3.2
Protestant	11	4.4
Relationship status		
Dating	109	43.6
Engaged	12	4.8
In a domestic partnership or civil union	13	5.2
Married	19	7.6
Not currently in a relationship	96	38.4
Widowed	1	.4
Residence		
Friend(s)	55	22.0
Housemate	1	.4
Lives alone	36	14.4
Parent(s)/relative(s)	108	43.2
Romantic partner	50	20.0
Family type		
Foster care	1	.4
Single parent household (Father-headed)	8	3.2
Single parent household (Mother-headed)	50	19.8
Stepfamily (with biological father)	5	2.0
Stepfamily (with biological mother)	16	6.3
Two parent household (with adoptive parents)	2	.8
Two parent household (with biological parents)	171	67.2
Other (raised by grandparent, aunt, and uncle)	1	.4

Instruments

Demographic measure. A demographic questionnaire (see Appendix C) was used as a screener to ensure only individuals who met the eligibility criteria would be able to participate in the study. The measure collected information regarding a number of characteristics. Individuals were asked to report their gender, age, academic level, race/ethnicity, sexual orientation, religious affiliation, with whom they currently lived, the type of household within which they grew up, and their relationship status.

Relationship measure. For this measure, participants were instructed to identify a particular parent/caregiver who has had the greatest impact on them and a peer with whom they currently spend most of their time. They were then asked four questions that were used to obtain basic information about their level of communication and relationship with these individuals. Specifically, participants were asked to indicate the extent to which they communicate with each of these individuals in general and about sex on a scale of 1 (*Never Communicate*) to 5 (*Very Frequently Communicate*) and to indicate how close they feel in their relationship with these individuals on a scale of 1 (*Not At All Close*) to 4 (*Extremely Close*). They were also asked to use these individuals as references when completing the sexual attitudes and contingent self-esteem measures, which are described below.

Risky sexual attitudes. Participants' risky sexual attitudes, their perception of their parent/caregiver's attitudes toward risky sexual behavior, and their perception of their peer's attitudes were assessed using the Risky Sexual Attitudes Measure that the investigator developed for the current study. First, this measure was based on a review of the literature that identified reasons (e.g., engaging in unprotected sex because using condoms reduces feelings of pleasure during sex) for why young people engage in risky sexual behavior (Robinson, Holmbeck, & Paikoff, 2007).

Second, the measure incorporated the most relevant items from two domains of the Brief Sexual Attitudes Scale: Permissiveness and Birth Control (BSAS; Hendrick, Hendrick, & Reich, 2006). The Permissiveness domain includes 10 items (e.g., "I would like to have sex with many partners") that assess sexual attitudes on a Likert scale of 1 (*Strongly Agree*) to 5 (*Strongly Disagree*). Items were selected from this scale based on Landor et al.'s (2011) suggestion that permissiveness toward sex is sometimes related to risky sexual behavior. The Birth Control scale includes three items (e.g., "Birth control is part of responsible sexuality") that are rated on the same scale as the Permissiveness domain. Overall, based on Hendrick et al.'s sample of 674 female and male participants, Permissiveness obtained an alpha reliability coefficient of α = .95 and it exhibited a significant and positive correlation with Ludus (i.e., game-playing love) from the Love Attitudes Scale: Short Form (Hendrick et al., 2006). In contrast, the Birth Control scale obtained an alpha reliability coefficient of α = .87 and it exhibited a significant and negative relationship with Pragma (i.e., practical love) from the Love Attitudes Scale: Short form (Hendrick et al., 2006). As indicated by additional findings, Hendrick et al. found that female participants exhibited less endorsement of the items from the Permissiveness scale relative to males, while there were no gender differences as it relates to the endorsement of items from the Birth Control scale.

Taken together, the Risky Sexual Attitudes Measure (see Appendix H) that the current study used included six items (e.g., "Not using a condom during sexual intercourse [i.e., anal or vaginal sexual intercourse] is okay when one's partner insists against using one") that were rated on a Likert scale of 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Each item received three ratings: (a) a rating for participants' attitudes toward risky sexual behavior, (b) a rating for participants' perception of their parent/caregiver's attitudes toward risky sexual behavior, and (c) a rating for participants' perception of their peer's attitudes toward risky sexual behavior. Thus, three total scores were obtained: (a) one for participants' attitudes (Risky Sexual Attitudes – Self; RSA – S), (b) one for their perception of their parent/caregiver's attitudes (Risky Sexual

Attitudes – Parent/Caregiver; RSA – P/C), and (c) one for their perceptions of their peer's attitudes (Risky Sexual Attitudes – Peer; RSA – P). Higher scores indicated greater approval of risky sexual behavior (i.e., riskier sexual attitudes), and lower scores indicated lower approval of risky sexual behavior (i.e., lower risky sexual attitudes). The lowest score that a participant could receive for each of the self, parent/caregiver, and peer attitudes ratings was six, and the highest score that she/he could receive was 30.

To determine the suitableness of the items, the investigator conducted beta testing using a sample of four graduate level students from the field of psychology, social work, and finance. After the investigator provided them with the Risky Sexual Attitudes Measure, she instructed them to read the definition of the following construct: risky sexual attitudes. She then instructed them to rate the extent to which they agree that the six items in the measure reflect the construct under investigation. These items were rated on a Likert scale of 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Based on their responses, the items received an average rating of approximately 4, which suggests that the items are suitable to use to assess risky sexual attitudes.

Additional analyses were conducted to ascertain the internal consistency of the items in this measure (see Table 5). Based on the responses of participants from the current study, RSA – S obtained an alpha coefficient of $\alpha = .79$, RSA – P/C obtained an alpha coefficient of $\alpha = .81$, and RSA – P obtained an alpha coefficient of $\alpha = .84$. These values indicate that the items have good reliability.

Sexual behavior. Participants responded to items that were based on the items from the Youth Risk Behavior Survey System (CDC, 2014c) and the National College Health Association – College Health Association II (ACHA – NCHA, 2014). For this study, sexual intercourse was defined as activity that involves anal or vaginal penetration between individuals, and the Sexual

Behavior Measure that was used encompassed two sets of questions (see Appendix I). The first set of questions asked participants to indicate whether they have ever engaged in sexual intercourse at least once in their lifetime, the age at which they first engaged in sexual intercourse, the number of sexual partners they have had during their lifetime, and the number of times they engaged in sexual intercourse during the past four weeks before participating in the study. The second set of questions assessed information that was used to define risky sexual behavior. Specifically, participants reported on the number of times the following occurred during the past four weeks before participating in the study: the number of times that they were under the influence of drugs/alcohol prior to having sexual intercourse; the number of times they were unaware of their partner's HIV/AIDS status or whether their partner currently had a sexually transmitted infection (STI), such as gonorrhea, prior to having sexual intercourse with her/him; and the number of times they engaged in sexual intercourse without a condom. Risky sexual behavior was also defined based on the number of sexual partners participants reported having during the four weeks before the study began. The answers to these four questions were then aggregated into a single index score (i.e., Total Risky Sexual Behavior Score; TRSBS), with higher scores suggesting riskier sexual behavior. Based on the responses from participants who were sexually active during the four weeks before participating in the study, the risky sexual behavior measure obtained an alpha coefficient of $\alpha = .49$. This suggests that the internal consistency of this measure is "unacceptable." However, one factor that might relate to why the Sexual Behavior Measure obtained a low alpha coefficient is that it consists of a small number of items.

Global self-esteem level. The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) was used to assess participants' global self-esteem level because it is a well-known validated measure of global self-esteem (Neumann, Leffingwell, Mignogna, Mignona, & Wagner, 2009; see Appendix J). This scale includes a continuum of items (e.g., “I am able to do things as well as most people” and “I feel that I do not have much to be proud of”) that range from statements that individuals with lower levels of self-esteem would endorse to statements that individuals with higher levels of self-esteem would endorse. For the study, participants rated each of the 10 items using a 4-point Likert scale. Items 3, 4, 5, 9, and 10 were scored in the reverse such that *Strongly Disagree* equaled 4 and *Strongly Agree* equaled 1. The lowest score that a participant could possibly receive after completing this scale was 10 while the highest score that she/he could possibly receive was 40. Higher scores indicated higher global self-esteem level. Based on a sample of 199 college students, Hale, Fieldler, and Cochran (1992) found that the RSES (1965) evidenced a moderate correlation with the Revised Generalized Expectancy of Success Scale (Hale et al., 1992; $r = .46$), which measures optimism. This finding suggests that higher levels of global self-esteem are associated with higher levels of optimism. The RSES also evidenced a negative but nonsignificant relationship with items from the Eysenck Personality Inventory (Eysenck, 1968), which assesses neuroticism ($r = -.23$, $p<.05$). This finding suggests that they are not measuring the same construct. Furthermore, across 892 college freshmen from different racial/ethnic backgrounds, Kurpius, Payakkom, Rayle, Chee, and Arredondo (2008) found that the internal consistency for the RSES ranged from $\alpha =.73$ to $\alpha =.86$. Based on participants’ responses from the current study, the RSES obtained an alpha coefficient of $\alpha = .92$.

Contingent self-esteem. Participants’ contingent self-esteem was assessed using two measures that the investigator developed based on the Contingencies of Self-Worth Scale (CSWS; Crocker et al., 2003). Based on a sample of 1,418 female and male college participants, Crocker et al. found that the items within this measure successfully loaded onto the seven intended domains (i.e., Competencies, Competition, Approval from Generalized Others, Family Support, Appearance, God's Love, and Virtue), as indicated by the results from confirmatory analyses. These findings suggest that the CSWS measures seven disparate contingency domains. Of these seven domains, two were particularly relevant to this study and served as the reason why the CSWS was selected as a template for this investigation. These scales were Family Support and Approval from Generalized Others.

Family Support CSW includes five items that assess the extent to which self-esteem is based on receiving affection and love from the familial system. Based on the results of confirmatory analysis, the extent to which the five items loaded on to the Family Support CSW ranged from .65 to .81 (Crocker et al., 2003). In a second study that included 795 female and male college participants, Family Support CSW was correlated with various measures (e.g., Big Factor Personality Inventory; Crocker et al., 2003). The authors found that Family Support CSW evidenced a nonsignificant relationship with Neuroticism from the Big Factor Personality Inventory, but exhibited a positive relationship with Agreeableness from this inventory. In light of this finding, the authors suggested that Family Support CSW might be a healthier form of contingent self-esteem (Crocker et al., 2003). Lastly, this scale was also shown to have a test-retest reliability coefficient of .73 and an alpha coefficient of $\alpha = .84$.

The items of the Family Support CSW scale assess whether self-esteem is based on feeling loved by one's family more so than assessing whether individuals feel good about their self-worth when they receive parental approval for behaving according to parental standards. As the latter type of contingent self-esteem was important to the current study, the investigator revised the items from the Family Support CSW accordingly. The investigator then titled the new measure, the Contingent Self-Esteem – Parent/Caregiver Approval Measure (CSE – P/C;

see Appendix K). The scale includes items such as, “It is important to my self-esteem that my parent approves of my behavior.” Beta testing was conducted to determine the extent to which the items from the Contingent Self-Esteem – Parent/Caregiver Approval Measure reflect the construct under investigation and should be included in the measure. Similar procedures that were used to assess the appropriateness of the items from the Risky Sexual Attitudes Measure were employed for this measure. Specifically, after reading a definition of parental approval contingent self-esteem, four graduate level students from the field of psychology, social work, and finance were instructed to rate the items of the CSE – P/C on a Likert scale of 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). The average rating for the items was 4, which suggests that the raters agreed that they are suitable for the study.

The Approval from Generalized Others domain includes five items that assess the extent to which self-esteem is contingent on obtaining approval from others (Crocker et al., 2003). Based on the results of confirmatory analysis, the extent to which the five items loaded on to the Approval from Generalized Others CSW ranged from .47 to .79 (Crocker et al., 2003). The Generalized Others CSW correlated significantly and positively with Neuroticism and nonsignificantly with Agreeableness. In light of these findings, the authors suggested that Approval from Generalized Others CSW might be a less healthy form of contingent self-esteem (Crocker et al., 2003). Approval from Generalized Others also obtained a test-reliability of .76 and an alpha coefficient of α = .84.

It must be noted that the items from the Approval from Generalized Others CSW do not measure contingent self-esteem as it relates to a specific individual or group, such as one’s peers. As it was important for participants in this study to indicate the extent to which they feel good about their self-worth when they receive peer approval for behaving according to peer standards, the investigator revised the items from the Approval from Generalized Others CSW accordingly. The revised items (e.g., “My self-esteem would increase if my friend approved of my behavior”) were subsequently grouped into a scale that was entitled, the Contingent Self-Esteem – Peer Approval Measure (CSE – P; see Appendix L). Using beta testing and similar procedures that were described above, the appropriateness of the items from the CSE – P were rated on a Likert scale of 1 (*Strongly Disagree*) to 5 (*Strongly Agree*) to determine the extent to which the raters believed that they reflect the construct under investigation and should be included in the measure. Based on a sample of four graduate level students from the field of psychology, social work, and finance, the items obtained an average rating of 4, which suggests that the items are suitable for the study.

For both measures that were used for this study, participants rated the five items on a Likert scale that ranged from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). In line with the scoring procedures that were developed by Crocker et al. (2003), a separate sum was obtained based on participants’ responses to the five items from the CSE – P/C and the CSE – P. Following this, each sum was divided by the total number of items within that particular measure, which yielded a separate overall score for CSE – P/C and CSE – P. In addition, for the parent/caregiver measure, item 1 was scored in the reverse such that *Strongly Disagree* equaled 5 and *Strongly Agree* equaled 1. For the peer measure, item 4 was scored in the reverse such that *Strongly Disagree* equaled 5 and *Strongly Agree* equaled 1. Overall, a score of 5 indicated the highest degree of contingent self-esteem and a score of 1 indicated the lowest degree of contingent self-esteem. Based on additional analyses for the current study, CSE – P/C obtained a reliability coefficient of $\alpha = .87$ and CSE – P obtained a reliability coefficient of $\alpha = .82$. When correlated with each other, they exhibited a positive and significant relationship ($r = .32$, $p <$

.01). When correlated with global self-esteem level (RSES; Rosenberg, 1965), CSE – P/C (*r* = -.04) and CSE – P (*r* = -.09) each exhibited a weak and negative relationship. Overall, these findings suggest that the internal consistency of the contingent self-esteem measures that were revised for the current study is comparable to the internal consistency of the CSWS. The findings also indicate that the constructs that CSE – P/C and CSE – P assess are similar to each other but that they are less similar to the construct that RSES measures.

Social desirability. Social desirability was measured using the shortened version of the Marlowe-Crowne Social Desirability Scale (Crowne & Marlowe, 1960), which has been identified as the most popular assessment of social desirability. The original scale includes 33 items (e.g., "I never hesitate to go out of my way to help someone in trouble") that are rated as *true* (score = 1) or *false* (score = 0). Reported data indicate that the Marlowe-Crowne has obtained an alpha coefficient of α = .88. Test-retest reliability has also been shown to be .89 (Barger, 2002). Additional information indicates that the Marlowe – Crowne significantly correlates with the Edwards Social Desirability Scale (Edwards, 1957; *r* = .35), which suggests that they are measuring the same construct. However, because of the length of this scale, the study utilized the Marlowe-Crowne Social Desirability Scale – Form C (MCSD), which includes 13 items that was developed and tested by Reynolds (1982; see Appendix M). Based on a sample of 608 undergraduate students, Reynolds found that it strongly and significantly correlated with the original Marlowe-Crowne measure (*r* = .92) and that it correlated with the Edwards Social Desirability Scale (*r* = .41). Based on additional analyses using the sample from the current study, MCSD obtained an alpha coefficient of α = .65. Overall, lower scores suggest that individuals are willing to respond in a socially undesirable manner despite the possibility of receiving disapproval. In contrast, higher scores suggest that individuals are responding in a socially desirable manner in order to avoid social disapproval.

Data Analysis

Statistical Package for the Social Sciences (SPSS) was used to conduct most analyses and Microsoft Excel was used to plot interaction effects. During the initial stages of analyses, all variables that were assessed for the current study were examined using descriptive statistics for the sample as a whole and then according to participants' gender and relationship (i.e., being in a committed versus noncommitted relationship) and sexual status (e.g., whether they engaged in sexual activity at least once in their lifetime). Following this, analyses were conducted to test the assumptions (i.e., presence of outliers, multicollinearity, normality, linearity, and homoscedasticity) of multiple regression using the predictor and outcome variables. Boxplots were used to identify outliers, and log transformations were used to correct for them. Bivariate correlations were produced to assess multicollinearity, histograms were used to assess normality, and scatterplots were used to assess linearity and homoscedasticity.

In the final stages of analyses, hierarchical multiple regression analyses were used during the question analyses and hypotheses testing to predict participants' risky sexual attitudes and risky sexual behavior using self-, parent/caregiver, and peer related variables. With this approach, the variables were entered into steps, with social desirability (i.e., MCSD) entered as a control variable into the first block to determine its individual contribution to the model apart from the predictor variables. Following this, self- (e.g., gender, for which dummy coding was used: "Female" = 0 and "Male" = 1), parent/caregiver (e.g., RSA – P/C), and/or peer (e.g., RSA – P) variables were entered into subsequent blocks to assess main effects (i.e., the effect of an individual independent variable on the dependent variable). Finally, interaction effects (i.e., the extent to which the relationship between the dependent and independent variable changes according to the different levels of another independent variable) were assessed in subsequent blocks to determine how much more they would add to the prediction over and above just examining the extent to which the dependent variable is predicted by an individual independent variable (i.e., main effect). To create the interaction terms, the variables that were used to assess main effects were multiplied together. Lastly, R statistics values were used to examine the extent to which each block of variables that was added to a particular model resulted in a significant increment to the prediction over the previous blocks that were added. Standardized beta values were used to identify the predictors that made a significant contribution to their corresponding model.

CHAPTER IV

Results

The primary goal of this study was to evaluate the extent to which self-, family, and peer related variables are associated with participants' attitudes toward and engagement in risky sexual behavior. The chapter first reports the descriptive statistics for self-, family, and peer variables that were assessed while also reviewing differences in participants' responses to the survey questions according to their gender and relationship (i.e., being in a committed versus noncommitted relationship) and sexual status (i.e., those who have never engaged in sexual intercourse at least once in their lifetime; those who have engaged in sexual intercourse at least once in their lifetime, but not during the four weeks prior to participating in the study; and those who have engaged in sexual intercourse at least once in their lifetime and during the four weeks before participating in the study). The chapter then reviews the results from the analyses that addressed the study's questions and hypotheses.

Descriptive Statistics

Parent and peer demographics, relationship quality, and communication level. Participants reported on the parent/caregiver who has had the most impact on them and the peer with whom they spend most of their time. Table 2 presents the results from participants' responses. As the table shows, most participants reported the gender of their most influential parent/caregiver to be female (*n* = 188) and, more specifically, most reported this individual to be their mother (*n* = 175). In terms of their peer, approximately 50% reported spending most of their time with a male peer, and approximately 45% reported spending most of their time with a female peer.

Table 2

Demographics of Parents/Caregivers and Peers

Variable	*n*	%
Influential Parent/Caregiver		
Parent/Caregiver Gender		
Female	188	75.2
Male	62	24.8
Relation of Parent/Caregiver to Participant		
Father	58	23.2
Grandfather	3	1.2
Grandmother	14	5.6
Mother	175	70.0
Peer		
Peer Gender		
Female	113	45.2
Gender queer	1	.4
Male	126	50.4
Incorrect response[a]	10	4

[a]"Incorrect response" was entered if participants provided another response (e.g., "my roommate") other than their peer's gender.

As shown in Table 3, on average, participants reported that they feel moderately to extremely close to their identified parent/caregiver (*M* = 3.22, *SD* = .84) and to their peer (*M* = 3.46, *SD* = .72) and that they moderately to frequently speak with their parent/caregiver (*M* = 3.97, *SD* = .86) and with their peer (*M* = 4.14, *SD* = .95) about general topics. They also reported that they rarely talk with their parent/caregiver (*M* = 1.99, *SD* = .93) about sex but that they frequently talk with their peer (*M* = 3.28, *SD* = 1.14) about this topic.

Table 3

Descriptive Statistics and Mean Differences for Parent/Caregiver and Peer Relationship and Communication Variables for All Participants

	Parent/ Caregiver		Peer		Paired Samples *t*-test		
Variable	*M*	*SD*	*M*	*SD*	*t*	*df*	*Sig.*
Closeness	3.22	.84	3.46	.72	-3.63	248	.003
General Communication	3.97	.86	4.14	.95	-2.28	248	.024
Sex Communication	1.99	.93	3.28	1.14	-16.08	248	.001

Note. *N* = 250. Scale scores for the closeness measure range from 1 – 4, with higher scores indicating a greater level of perceived closeness; Scale scores for the communication measure range from 1 – 5, with higher scores indicating frequent engagement in general and sex related conversations.

As indicated by the correlation matrix in Table 4, the closer participants reported feeling to their parent/caregiver and to their peer, the more that they reported talking to these individuals about general and sex related topics. However, the extent to which participants reported feeling close to their parent/caregiver and the extent to which they reported communicating with this individual did not relate to their level of closeness to or communication with their peer. Based on the results of paired samples *t*-tests, participants appear to feel slightly closer to their peer than they do to their parent/caregiver, *t*(248) = -3.63, *p* = .003, as well as appear to speak more with their peer about general, *t*(248) = -2.28, *p* = .024, and sex related topics, *t*(248) = -16.08, *p* = .001 than they do with their parent/caregiver (see Table 3).

Table 4

Bivariate Correlations amongst the Relationship and Communication Variables

Variable	1	2	3	4	5
Closeness – P/C	-				
Gen. Com. – P/C	.61**	-			
Sex Com. – P/C	.19**	.20**	-		
Closeness – P	.10	.09	.08	-	
Gen. Com. – P	.11	.17**	.03	.70**	-
Sex Com. – P	.07	.11	.27**	.45**	.42**

Note. *N* = 250. Closeness – P/C = Closeness – Parent/Caregiver; Gen. Com. – P/C = General Communication – Parent/Caregiver; Sex Com. – P/C = Sex Communication – Parent/Caregiver; Closeness – P. = Closeness – Peer; Gen. Com. – P = General Communication – Peer; Sex. Com. – P = Sex Communication – Peer. Scale scores for the closeness measure range from 1 – 4, with higher scores indicating a greater level of perceived closeness; Scale scores for the communication measure range from 1 – 5, with higher scores indicating frequent engagement in general and sex related conversations.

Sexual attitudes/behavior. Table 5 presents the means, standard deviations, ranges, and alpha coefficients for each of the following risky sexual attitudes measures: Risky Sexual Attitudes – Self (RSA – S), Risky Sexual Attitudes – Parent/Caregiver (RSA – P/C), and Risky Sexual Attitudes – Peer (RSA – P). Overall, the lowest mean score pertained to participants' perceptions of their parent/caregiver's attitudes (*M* = 9.59, *SD* = 4.13) followed by the mean score for participants' sexual attitudes (*M* = 13.37, *SD* = 5.05) and the mean score for participants' perceptions of their peer's attitudes (*M* = 14.63, *SD* = 5.60). Taken together, participants believe that their peer, relative to their parent/caregiver, is more accepting of risky sexual practices, and participants' personal attitudes appear to be more closely matched to their perceptions of their peer's attitudes.

Table 5

Descriptive Statistics for Participants' Responses on the Risky Sexual Attitudes Measure

Variable	*N*	*M*	*SD*	*Mdn.*	*Min-Max*	*α*
RSA – S	250	13.37	5.05	13.00	6 – 30	.79
RSA – P/C	250	9.59	4.13	8.00	6 – 25	.81
RSA – P	250	14.63	5.60	14.00	6 – 28	.84

Note. RSA – S = Risky Sexual Attitudes – Self; RSA – P/C = Risky Sexual Attitudes – Parent/Caregiver; RSA – P = Risky Sexual Attitudes – Peer. Scale scores range from 1 – 5, with higher scores indicating greater approval of risky sexual behavior.

Table 6 presents the data for the sexual behavior variables that are based on the responses of all 250 participants. Overall, 76.4% (*n* = 191) of all participants reported that they have engaged in sexual intercourse at least once in their lifetime. Of those who have had sex, the average age at which they first initiated sexual intercourse was 17.17 (*SD* = 2.23). It must be noted that one individual indicated that he was five years old when his first sexual encounter occurred. A closer examination of his responses to the remaining survey questions indicate that they do not extremely deviate from the average. As such, one could speculate that he might have inadvertently indicated that he sexually debuted at five years of age or it is possible that he was sexually abused at this age. Table 7 presents the data for the 131 participants who were sexually active during the four weeks before participating in the study. Readers will note that approximately half of the sample (52.4%) was sexually active during the four weeks preceding the study. In addition, for Table 6 and 7, the median was reported in addition to the mean because the scores for some of these variables were skewed toward the lower end of the distribution. According to Agresti and Finlay (2009), the median is typically more appropriate in instances when the data are highly skewed.

Table 6

Sexual Behavior of All Participants

Variable	*N*	*M*	*SD*	*Mdn.*	*Min-Max*
Sexual debut age[a]	191	17.17	2.23	17.00	5 – 23
Number of lifetime sexual partners	250	4.84	8.31	2.00	0 – 60
Sex frequency during the four weeks before study	250	4.34	6.54	1.00	0 – 30
Sexual partners[b]	250	.58	.62	1.00	0 – 3
Sex without a condom[b]	250	3.00	6.10	0.00	0 – 30
Unaware of partner's STI and HIV/AIDS status[b]	250	1.54	4.09	0.00	0 – 28
Alcohol/drug related sex[b]	250	.94	2.82	0.00	0 – 30
TRSBS	250	6.06	1.00	4.50	0 – 61

Note. TRSBS = Total Risky Sexual Behavior Score.
[a]Analysis excluded the 59 participants who reported that they have not engaged in sexual intercourse at least once in their lifetime. [b]Sexual behaviors that occurred during the four weeks before the study that contributed to the TRSBS.

Table 7

Sexual Behavior of Participants who were Sexually Active during the Four Weeks before the Study

Variable	*N*	*M*	*SD*	*Mdn.*	*Min-Max*
Sexual debut	131	16.98	2.02	17.00	12 – 22
Lifetime sexual partners	131	7.81	8.31	2.00	0 – 60
Sex frequency during the four weeks before study	131	8.28	6.99	7.00	0 – 30
Sexual partners[a]	131	1.11	.40	1.00	1 – 3
Sex without a condom[a]	131	5.72	7.45	2.00	0 – 30
Unaware of partner's STI and HIV/AIDS status[a]	131	2.95	5.27	0.00	0 – 28
Alcohol/drug related sex[a]	131	1.80	3.70	0.00	0 – 30
TRSBS	131	11.57	12.42	8.00	1 – 61

Note. TRSBS = Total Risky Sexual Behavior Score.
[a]Sexual behaviors that occurred during the four weeks before the study that contributed to the TRSBS.

Self-esteem and social desirability. Table 8 provides the descriptive statistics for the three self-esteem measures (i.e., Rosenberg Self-Esteem Scale, Contingent Self-Esteem – Parent/Caregiver – Approval, and Contingent Self-Esteem Peer – Approval) and the social desirability measure (Marlowe-Crowne Social Desirability Scale – Short Form C). Collectively, participants exhibited a positive level of global self-esteem (30.30, *SD* = 6.49). They also exhibited a moderate level of parental approval based self-esteem (*M* = 3.00, *SD* = .93), peer approval based self-esteem (*M* = 2.89, *SD* = .82), and social desirable responding (*M* = 6.03, *SD* = 2.67).

Table 8

Descriptive Statistics for Participants' Responses on the Self-Esteem and Social Desirability Measures

Variable	*N*	*M*	*SD*	*Min*	*Max*	*α*
RSES	250	30.30	6.49	12	40	.92
CSE – P/C	250	3.00	.93	1	5	.87
CSE – P	250	2.89	.82	1	5	.82
MCSD	250	6.03	2.67	0	13	.65

Note. RSES = Rosenberg Self-Esteem Scale; CSE – P/C = Contingent Self-Esteem – Parent/Caregiver Approval; CSE – P = Contingent Self-Esteem – Peer Approval; MCSD = Marlowe-Crowne Social Desirability Scale. Scale scores for the RSES range from 10 to 40, with higher scores indicating a higher level of global self-esteem; Scale scores for the contingent self-esteem measures range from 1 – 5, with higher scores indicating a higher level of contingent self-esteem; Scale scores for the MCSD range from 1 to 13, with higher scores indicating a higher level of social desirable responding.

Preliminary Analyses: Differences according to Gender and Relationship and Sexual Status

Gender differences. As gender was used as a key predictor in all analyses that addressed the study's questions and hypotheses, the investigator conducted preliminary analyses to examine gender differences amongst participants' responses to items that assessed their current living arrangement (i.e., whether they currently live with a parent/relative versus whether they currently live alone/with someone else; that is, that they do not live with a parent/relative), relationship and level of communication with their parent/caregiver and peer, sexual attitudes and behavior, self-esteem, and social desirable responding. Analyses were first conducted using the responses of all participants and were then conducted using the responses of those participants who were sexually active during the four weeks before the study.

A chi-square test for independence was conducted to determine whether females and males differed according to whether they reported that they currently live with a parent/relative versus whether they reported that they do not live with a parent/relative (see Appendix N). Based on the responses of all participants, gender was not related to participants' living arrangement, $\chi^2(1, n = 250) = 2.51$, $p = .110$, $\phi = -.10$. Gender, in contrast, was related to the living arrangement of those participants who were sexually active during the four weeks before the study, $\chi^2(1, n = 131) = 6.68$, $p = .010$, $\phi = -2.43$. Specifically, females were less likely to report living with a parent/relative than they were to report living elsewhere. Males, however, were just as likely to report living with a parent/relative as they were to report living somewhere else.

Additional analyses were conducted to determine whether females and males differed according to the parent/caregiver and peer whom they identified (see Appendix N). Based on the responses of all participants, females and males did not differ according to the exact nature of how their identified parent/caregiver is related to them (i.e., mother, father, or grandmother), $\chi^2(2, n = 247) = 1.01$, $p = .602$, $\phi = .06$. They were also just as likely to identify their most influential parent/caregiver as being female as they were to identify this individual as being male, $\chi^2(1, n = 250) = 1.21$, $p = .271$, $\phi = .08$. In contrast, females and males were both more likely to spend most of their time with a same gendered peer, $\chi^2(1, n = 239) = 47.75$, $p = .001$, $\phi= .46$. Based on the responses of those participants who were sexually active during the four weeks before the study, a significant difference only emerged with regard to the reported gender of participants' identified peer, $\chi^2(1, n = 131) = 13.40$, $p = .001$, $\phi = .34$. Female participants who were sexually active prior to the study were more likely to report spending most of their time with a female peer. Similarly, males were more likely to report spending most of their time with a male peer.

Using independent samples *t*-tests, analyses were conducted to determine whether females and males differed according to their perceived level of closeness to their parent/caregiver and peer and their perceived level of general and sex related communication with these individuals (see Appendix O). Based on the responses of all participants, females and males did not differ in terms of their perceived level of closeness to and level of general communication with their parent/caregiver and their peer. However, females, relative to males, were more likely to engage in sex related communication with their parent/caregiver, *t*(248) = 2.40, *p* = .017, and with their peer, *t*(248) = 3.43, *p* = .001. Based on the responses of those participants who were sexually active during the four weeks prior to the study, participants only differed in terms of their level of sex communication with their identified peer, *t*(129) = .97, *p* = .001, with females engaging in this type of communication more frequently.

Additional independent samples *t*-tests were conducted to examine gender differences across each risky sexual attitudes variable (see Appendix P). Based on the responses of all participants, females (*M* = 12.50, *SD* = 5.03), relative to males (*M* = 14.20, *SD* = 4.95), exhibited lower approval of risky sexual behavior, *t*(248) = -2.69, *p* = .008, and they were also less likely to perceive that their parent/caregiver, *t*(248) = -2.40, *p* = .017, and peer approves of this behavior, *t*(248) = -2.83, *p* = .005. Further analyses were conducted to determine whether gender differences would exist amongst parents/caregivers and peers in terms of their risky sexual attitudes, as reported by participants (see Appendix Q). Based on participants' perceptions, there were no gender differences in terms of male (*n* = 62; *M* = 9.98, *SD* = 4.86) and female (*n* = 188; *M* = 9.46, *SD* = 3.86) parents/caregivers' attitudes toward risky sexual behavior, *t*(248) = -.87, *p* = .385 (see Appendix P). In other words, participants perceived female and male parents/caregivers as exhibiting similar attitudes toward risky sexual behavior. However, participants perceived female peers (*n* = 113; *M* = 13.85, *SD* = 6.06), relative to male peers (*n* = 126; *M* = 15.54, *SD* = 5.06), as exhibiting less approval of risky sexual behavior, *t*(237) = -2.35, *p* = .021 (see Appendix Q). Based on the responses of those participants who were sexually active during the four weeks prior to the study, females (*M* = 13.81, *SD* = 4.97) and males (*M* = 15.34, *SD*= 5.06) exhibited a similar level of approval toward risky sexual behavior, *t*(129) = -1.74, *p* = .084 (see Appendix P). However, males (*M* = 16.81, *SD* = 5.06), relative to females (*M* = 14.70, *SD* = 5.58), rated their peer as being more accepting of these practices (see Appendix P). Based on additional information, female (*n* = 100; *M* = 9.11, *SD* = 3.46) and male (*n* = 31; *M* = 9.65, *SD* = 4.36) parents/caregivers exhibited similar sexual attitudes, as measured by participants, *t*(129) = -.71, *p* = .482 (see Appendix Q). The same held true for female (*n* = 64; *M* = 15.33, *SD* = 5.73) and male (*n* = 61; *M* = 16.36, *SD* = 4.97) peers, as measured by participants' perceptions, *t*(125) = -1.07, *p* = .285 (see Appendix Q).

In terms of participants' sexual behavior, there were no significant differences with regard to the proportion of females and males who reported that they have or have not engaged in sexual intercourse at least once in their lifetime, $\chi^2(1, n = 250) = 2.04$, *p* = .153, $\phi = -.091$ (see Appendix R). Specifically, at least 70% of participants from both genders have had sexual intercourse at least once in their lifetime. Based on the responses of all participants, females, relative to males, reported having slightly more sexual partners during the four weeks before participating in the study, *t*(248) = 2.93, *p* = .004. Females and males, however, did not significantly differ across the remaining sexual behavior variables. Appendix R also shows no significant differences in the sexual behavior of the females and males who were sexually active during the four weeks prior to the study.

Lastly, independent samples t-tests were conducted to examine the relationship between participants' gender and the self-esteem and social desirability constructs (see Appendix S). Based on the responses of all participants, females and males exhibited similar levels of global self-esteem, *t*(248) = -.46, *p* = .647, parent/caregiver approval contingent self-esteem, *t*(248) = -

.91, *p* = .362, and peer approval contingent self-esteem, *t*(248) = -1.59, *p* = .113. They also exhibited a similar level of social desirable responding, *t*(248) = -.94, *p* = .349. Similar findings emerged with regard to those participants who were sexually active during the four weeks prior to the study.

Differences according to participants' relationship status. As there was a subset of individuals who indicated that they were currently married (*n* = 19), engaged (*n* = 12), or in a domestic partnership or civil union (*n* = 13), analyses were conducted to determine whether these 44 (17.6%) individuals (i.e., those in a committed relationship) differed significantly from the rest of the sample (i.e., those not in a committed relationship) in relation to the outcome variables (i.e., risky sexual attitudes and risky sexual behavior). Results showed that those in a committed relationship (*M* = 1.09, *SD* = .15) and those in a noncommitted relationship (*M* = 1.12, *SD* = .16) exhibited similar attitudes toward risky sexual behavior, *t*(248) = -1.01, *p* = .316, and those in a committed relationship (*M* = 18.98, SD = 28.14) and those in a noncommitted relationship (*M* = 15.93, *SD* = 27.02) exhibited similar sexual behavior, *t*(248) = .67, *p* = .501.

Differences according to participants' sexual status. A chi-square test for independence was used to evaluate differences in participants' living arrangement according to their sexual status (i.e., have not engaged in sexual intercourse at least once in their lifetime; engaged in sexual intercourse at least once in their lifetime, but not during the past four weeks before participating in the study; and engaged in sexual intercourse at least once in their lifetime and during the past four weeks before participating in the study) and, as shown in Appendix T, a significant difference emerged, χ^2 (1, *n* = 250) = 37.16, *p* = .001, *cramer's V* = .386. Specifically, those who were sexually active in the past and during the four weeks before participating in the study were least likely to report that they currently live with their parent(s)/relative(s) while those who never engaged in sexual intercourse at least once in their lifetime were more likely to report that they currently live with their parent(s)/relative(s). In contrast, those who were sexually active in the past, but not during the four weeks before participating in the study were just as likely to report that they currently live with their parent(s)/relative(s) as they were to report that they live elsewhere. Interestingly, further analyses indicated that amongst those who were sexually active during the four weeks prior to the study, fewer participants (n = 36) reported that they currently live with a parent/relative compared to those who reported that they live somewhere else (n = 95), χ^2 (1, n = 131) = 26.57, p = .001.

A one-way analysis of variance (one way – ANOVA) was used to evaluate differences in participants' responses on measures that assessed quality of relationship and level of communication with participants' parent/caregiver and peer, sexual attitudes, self-esteem, and social desirability according to their sexual experience (i.e., never had sex, had sex but not recently, and had sex during the four weeks prior to the study). As Appendix U shows, there were significant differences amongst the three sexually diverse groups in terms of the extent to which participants reported that they talk to their parent/caregiver, F(2, 247) = 3.34, p = .037, and peer about sex, F(2, 247) = 28.92, p = .001, talk to their peer about general topics, F(2, 247) = 5.37, p = .005, feel close to their peer, F(2, 247) = 5.36, p = .005, endorse favorable attitudes toward risky sexual behavior, F(2, 247) = 7.91, p = .001, and perceive that their peer endorses favorable attitudes toward this behavior, F(2, 247) = 4.65, p = .011. There was also a significant difference in terms of participants' self-esteem level, F(2, 247) = 6.10, p = .003.

Post hoc comparisons using the Tukey HSD (Honestly Significantly Difference) were subsequently performed to determine the specific groups amongst which these differences emerged (see Appendix U). Compared to those who never engaged in sexual intercourse during their lifetime, those who were sexually active in the past and during the four weeks leading up to the study were slightly more likely to talk to their parent/caregiver about sex, feel closer to their peer, and talk to their peer about general topics. Significant differences emerged for all groups in terms of their level of sex related communication with their peer. When compared to those who never had sex (*M* = 2.53, *SD* = 1.04) and those who had sex in the past but not prior to the study (*M* = 3.05, *SD* = 1.08), participants who were sexually active during the four weeks before participating in the study (*M* = 3.72, *SD* = 1.01) were more likely to engage in sex related conversations with their peer. Participants who had sex during the four weeks before the study, relative to those who never engaged in sexual intercourse, were also more likely to approve of risky sexual behavior and believe that their peer approves of this behavior. Lastly, participants who engaged in sexual intercourse prior to the study (*M* = 31.63, *SD* = 6.19) were more likely to report a much higher level of global self-esteem compared to participants who never had sex (*M* = 11.58, *SD* = 4.78) and those who had sex in the past but not during the four weeks before participating in the study (*M* = 12.68, *SD* = 4.74).

Summary of preliminary analyses. Results of the analyses indicated no differences according to participants’ relationship status as well as indicated few gender differences in relation to participants’ current living arrangement and their relationship and level of communication with their parent/caregiver and peer. Relative to males, females: (a) engaged in more sex related communication with their parent/caregiver and with their peer, (b) exhibited less approval toward risky sexual behavior, and (c) were more likely to perceive their parent/caregiver and peer as being less likely to approve of this behavior. In general, participants reported a fairly low engagement in risky sexual behaviors, and although females reported slightly more sexual partners than did males, there were no other gender differences relative to sexual behavior. Participants of both sexes also did not differ in their responses to the three self-esteem measures and to the social desirability items.

More differences emerged when the analyses were conducted according to participants' sexual status. Participants who were more sexually active (i.e., had sex during the four weeks before the study) were less likely to live with their parents, and were generally more likely to talk with their parent/caregiver and peer about sex and to endorse attitudes that were more positive toward risky sexual behavior. Participants who were more sexually active also had higher levels of global self-esteem than did less sexually active participants (i.e., those who have never engaged in sexual intercourse and those who have had sex at least once in their lifetime but not during the four weeks before the study).

Results of Research Question Analyses and Hypotheses Testing

This section presents the results from the analyses that were conducted to address the study's questions and hypotheses. Prior to conducting these analyses, the investigator examined the data to determine whether they violated the following assumptions of multiple regression: presence of outliers, normality, multicollinearity, linearity, and homoscedasticity. Overall, the data violated many of these assumptions. As outliers were present, logarithm transformations were conducted to correct for them, which also helped to improve the normality of the data. Appendix V provides the data examination narrative.

The first section below reviews the findings that were obtained for the study's questions, and the next section reviews the findings that were obtained for the study's hypotheses. For each question and hypothesis, two tables are provided. The first table consists of R statistics that include R^2 change values. These values provide an indication of how much each block of variables (model) that was added to a particular model resulted in a significant increment to the prediction over the other blocks (models) that were added previously. The second table consists of beta values that are associated with the predictors in each model. The standardized beta values were used to identify the predictors that made significant contributions to their respective model. A negative beta value indicated a negative relationship between the predictor and the outcome variable, and a positive beta value indicated a positive relationship. In addition, a higher beta value indicated a stronger contribution to the model.

Question Analyses. The study had four research questions that were answered using hierarchical multiple regression analyses.

Question 1. Question 1 asked if participants' risky sexual attitudes (RSA – S) would best be explained by whether their global self-esteem (RSES) is high or low, the extent to which they base their self-esteem on obtaining approval from their parent/caregiver (CSE – P/C), or the extent to which they base their self-esteem on obtaining approval from their peer (CSE – P). The second component to this question addressed whether gender differences would emerge in the relationship between each self-esteem variable and participants' attitudes.

Using a hierarchical multiple regression analysis, all 250 participants' responses were included and the log transformation of RSA – S (LogRSA – S) was entered as the outcome variable. In Model 1, social desirability was entered as the control variable. RSES, CSE – P/C, CSE – P, and Gender were entered into Model 2 to assess main effects. In the third Model, RSES X Gender, CSE – P/C X Gender, and CSE – P X Gender were entered to assess gender differences between each self-esteem construct and the outcome variable and to determine whether the interaction terms would add to the prediction over and above the previous variables. Table 9 presents the R^2 change values for each block of variables. Collectively, the three self-esteem variables and Gender (Block 2) significantly increased the prediction of participants' risky sexual attitudes over that predicted by the social desirability control variable (Block 1) alone. The Model 3 interaction terms, however, did not increase the prediction of risky sexual attitudes.

Table 9

Hierarchical Multiple Regression: R Statistics for Models Predicting Participants' Risky Sexual Attitudes in Q1

Model	*R*	R^2	*Adjusted* R^2	*SE*	R^2 *Change*	*F Change*	*df1*	*df2*	*Sig. F Change*
1[a]	.17	.03	.03	.16					
2[b]	.28	.08	.06	.15	.05	6.18	4	244	.012
3[c]	.31	.09	.06	.15	.02	1.65	3	241	.232

Note. *N* = 250.
[a]Predictors: MCSD
[b]Predictors: MCSD, Gender, RSES, CSE-P/C, CSE-P
[c]Predictors: MCSD, Gender, RSES, CSE-P/C, CSE-P, RSES X Gender, CSE-P/C X Gender, CSE-P X Gender

Table 10 presents the standardized beta values for the predictors that were entered into each block. Amongst the terms that were entered into Model 2 to assess main effects, Gender obtained a significant beta value while the three self-esteem constructs did not. In terms of Gender, its beta value indicates that males exhibited higher endorsement of risky sexual behavior relative to females. This finding, however, should be interpreted in light of the social desirability variable that also obtained a significant beta value in Model 2, with lower endorsement of risky sexual behavior being associated with higher levels of social desirable responding. Lastly, Table 10 shows that interaction effects were not observed in Model 3. Overall, neither global self-esteem (RSES), self-esteem that is based on parental approval (CSE – P/C), or self-esteem that is based on peer approval (CSE – P) was shown to be the best predictor of participants' risky sexual attitudes, and the relationship between each self-esteem construct and participants' attitudes did not vary according to participants' gender. As a result of the analysis, both parts of Question 1 received negative answers.

Table 10

Coefficients of Variables Predicting Participants Risky Sexual Attitudes in All Models for Q1

	Unstandardized Coefficients		Standardized Coefficients		
Variable	*B*	*SE*	*β*	*t*	*Sig.*
Model 1					
MCSD	-.01	.00	-.17	-2.72	.007
Model 2					
MCSD	-.01	.00	-.20	-3.17	.002
RSES	.00	.00	.11	1.79	.074
CSE – P/C	.00	.01	.01	.16	.874
CSE – P	.00	.01	.02	.31	.756
Gender	.06	.02	.19	3.03	.003
Model 3					
MCSD	-.01	.00	-.20	-3.15	.002
RSES	.01	.00	.22	2.59	.011
CSE – P/C	.01	.02	.06	.73	.464
CSE – P	-.01	.02	-.04	-.48	.632
Gender	.21	.13	.65	1.60	.111
RSES X Gender	-.01	.00	-.54	-1.76	.079
CSE – P/C X Gender	-.02	.02	-.16	-.70	.486
CSE – P X Gender	.02	.03	.22	.85	.398

Note. *N* = 250. Gender was coded as follows: "Female" = 0 and "Male" = 1.

Question 2. Question 2 asked if participants' risky sexual behavior (TRSBS) would be best explained by global self-esteem level (RSES), Contingent Self-Esteem – Parent/Caregiver Approval (CSE – P/C), or Contingent Self-Esteem – Peer Approval (CSE – P). The second component to this question addressed whether gender differences would emerge in the extent to which the three self-esteem variables predict participants' sexual behavior.

For the analysis, and all other analyses of risky sexual behavior, only the responses from the 131 participants who engaged in sexual activity during the four weeks before participating in the study were included. As the goal was to understand the factors that relate to participants' risky sexual practices versus safer sexual practices, it appeared logical to include only those individuals who were sexually active during the four weeks before the study. Including participants (i.e., participants who reported that they have not had sex at least once in their lifetime and participants who were sexually active at least once in their lifetime but not during the four weeks before the study) who were not sexually active during this period would not provide information about the factors that relate to the extent to which young people engage in risky to less riskier forms of sexual behavior.

Using a hierarchical multiple regression analysis, the log transformation of TRSBS (LogTRSBS) was entered as the dependent variable. Social desirability was entered into Block 1 as the control variable. Gender, RSES, CSE – P/C, and CSE – P were entered into Block 2 to assess main effects. RSES X Gender, CSE – P/C X Gender, and CSE – P X Gender were entered into Block 3 to assess interaction effects. Table 11 shows that, collectively, the three self-esteem variables and Gender (Model 2) did not significantly increase the prediction of participants' risky sexual behavior over the social desirability control variable in Block 1. The Model 3 interaction terms also did not significantly increase the prediction of participants' behavior.

Table 11

Hierarchical Multiple Regression: R Statistics for Models Predicting Participants' Risky Sexual Behavior in Q2

Model	*R*	*R*^{2}	*Adjusted R*^{2}	*SE*	*R*^{2} *Change*	*F Change*	*df1*	*df2*	*Sig. F Change*
1[a]	.06	.00	-.04	.44					
2[b]	.24	.06	.02	.44	.05	1.71	4	125	.153
3[c]	.33	.11	.05	.43	.05	2.41	3	122	.071

Note. *N* =131.

[a] Predictors: MCSD

[b] Predictors: MCSD, Gender, RSES, CSE-P/C, CSE-P

[c] Predictors: MCSD, Gender, RSES, CSE-P/C, CSE-P, RSES X Gender, CSE-P/C X Gender, CSE-P X Gender

As shown in Table 12, the beta values for CSE – P/C and for Gender were significant in Model 3, but were not significant when they were entered into the previous model (Model 2). This perhaps relates to the possibility that Model 3 accounts for residual variance that was left over after Model 2 was tested. The Model 3 beta values for these two variables indicate that lower engagement in risky sexual behavior was associated with identifying as male and with having higher parental approval based self-esteem. Model 3 also obtained a significant interaction effect for global self-esteem level and gender (see Figure 4 for the graph of this interaction). As depicted in the graph, engagement in risky sexual behavior was associated with higher levels of global self-esteem for males, but females' level of risky sexual behavior did not vary according to their level of global self-esteem. Overall, CSE – P/C was the best predictor variable in Model 3 relative to the other two self-esteem variables (i.e., RSES and CSE – P), and gender differences only emerged as they pertained to the relationship between global self-esteem level and participants' risky sexual behavior.

Table 12

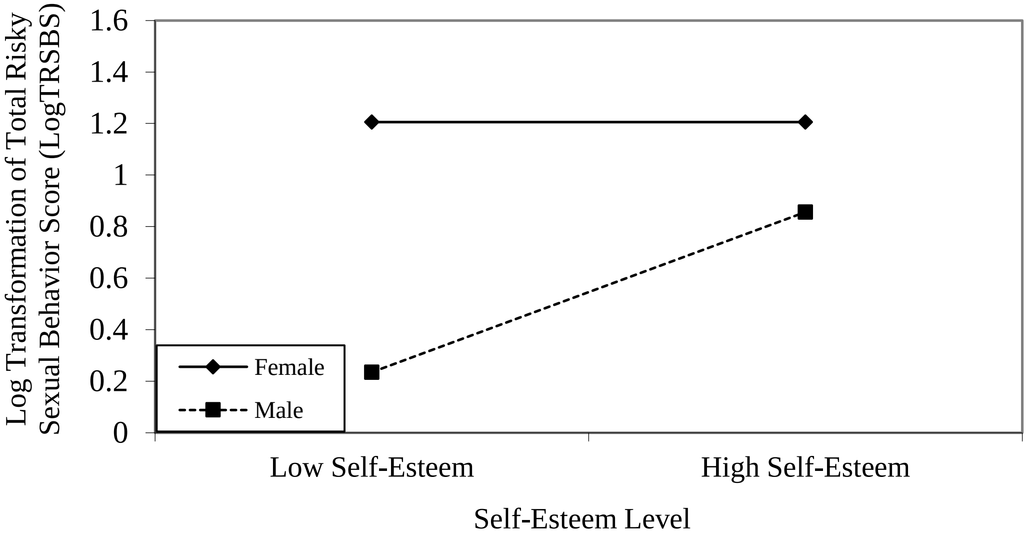
Coefficients of Variables Predicting Participants Risky Sexual Behavior in All Models for Q2

	Unstandardized Coefficients		Standardized Coefficients		
Variable	*B*	*SE*	*β*	*t*	*Sig.*
Model 1					
MCSD	-.01	.01	-.06	-.73	.468
Model 2					
MCSD	-.02	.01	-.10	-1.09	.279
RSES	.01	.01	.17	1.89	.061
CSE – P/C	-.05	.04	-.11	-1.23	.222
CSE – P	.04	.05	.08	.91	.362
Gender	-.08	.08	-.09	-1.04	.299
Model 3					
MCSD	-.01	.01	-.08	-.91	.364
RSES	.00	.01	.01	.05	.961
CSE – P/C	-.11	.05	-.23	-2.09	.038
CSE – P	.03	.07	.05	.41	.681
Gender	-1.43	.54	-1.61	-2.67	.009
RSES X Gender	.03	.01	1.01	2.17	.032
CSE – P/C X Gender	.13	.09	.49	1.51	.135
CSE – P X Gender	.03	.10	.11	.32	.753

Note. $N = 131$; Gender was coded as follows: “Female” = 0 and “Male” = 1.

Figure 4

Gender Differences in the Relationship between Global Self-Esteem Level and Risky Sexual Behavior



Question 3. Question 3 addressed whether perceived parental attitudes (RSA – P/C) or perceived peer attitudes (RSA – P) toward risky sexual behavior would emerge as a better predictor of participants' risky sexual attitudes (RSA – S). It also addressed whether the tested relationships would differ according to participants' gender.

Using a hierarchical multiple regression analysis, the responses of all 250 participants were included and the log transformation of RSA – S (LogRSA – S) was entered as the outcome variable. In Block 1, social desirability was entered as a control variable. Gender was entered into Block 2. To determine whether perceived parental attitudes would add to the prediction over and above perceived peer attitudes, RSA – P was entered into Block 3 and the log transformation of RSA – P/C (LogRSA – P/C) was entered into Block 4. Lastly, RSA – P/C X Gender and RSA – P X Gender were entered into Block 5 to assess interaction effects. As shown in Table 13, perceived parental attitudes (Model 4) slightly but significantly increased the prediction of participants' risky sexual attitudes over and above perceived peer attitudes (Model 3). The interaction terms (Block 5), in contrast, did not result in a significant increment to the model.

Table 13

Hierarchical Multiple Regression: R Statistics for Models Predicting Participants' Risky Sexual Attitudes in Q3

Model	*R*	R^2	*Adjusted* R^2	*SE*	R^2 *Change*	*F Change*	*df1*	*df2*	*Sig. F Change*
1[a]	.17	.03	.03	.16	.03				
2[b]	.26	.07	.06	.16	.04	9.74	1	247	.002
3[c]	.65	.42	.41	.12	.35	148.68	1	246	.001
4[d]	.67	.45	.44	.12	.03	12.20	2	245	.001
5[e]	.67	.45	.44	.12	.00	.84	2	245	.433

Note. *N* = 250
[a]Predictors: MCSD
[b]Predictors: MCSD, Gender
[c]Predictors: MCSD, Gender, RSA-P
[d]Predictors: MCSD, Gender, RSA-P, LogRSA-P/C
[e]Predictors: MCSD, Gender, RSA-P, LogRSA-P/C, LogRSA - P/C X Gender, RSA - P X Gender

The beta values for each predictor are presented in Table 14. Although both perceived parental and perceived peer attitudes made significant contributions in predicting participants' attitudes, the beta weights in Table 14 indicate that perceived peer attitudes made a somewhat greater contribution. Thus, the first part of Question 3 was answered in favor of perceived peer attitudes as a better predictor of participants' risky sexual attitudes relative to perceived parent/caregiver attitudes. As gender differences were not observed in the relationship between perceived parental and perceived peer attitudes and participants' attitudes, the answer to the second part of Question 3 is negative.

Table 14

Coefficients of Variables Predicting Participants' Risky Sexual Attitudes in All Models for Q3

Variable	*Unstandardized Coefficients* *B*	*SE*	*Standardized Coefficients* *β*	*t*	*Sig.*
Model 1					
MCSD	-.01	.00	-.17	-2.72	.007
Model 2					
MCSD	-.02	.00	-.18	-2.95	.004
Gender	.06	.02	.19	3.12	.002
Model 3					
MCSD	.00	.00	-.06	-1.14	.254
Gender	.03	.02	.08	1.53	.128
RSA – P	.02	.00	.62	12.19	.001
Model 4					
MCSD	.00	.00	-.07	-1.37	.171
Gender	.02	.02	.06	1.13	.262
RSA – P	.02	.00	.57	11.27	.001
LogRSA – P/C	.18	.05	.17	3.49	.001
Model 5					
MCSD	.00	.00	-.06	-1.18	.240
Gender	-.09	.10	-.27	-.84	.401
RSA – P	.02	.00	.61	8.56	.001
LogRSA – P/C	.11	.08	.10	1.36	.176
RSA – P X Gender	.00	.00	-.09	-.59	.557
LogRSA – P/C X Gender	.13	.11	.42	1.26	.209

Note. *N = 250.* Dummy coding for Gender - "Female" = 0 and "Male" = 1

Question 4. Question 4 addressed whether participants' risky sexual behavior (TRSBS) would be best explained by their sexual attitudes (RSA – S), perceived parental attitudes (RSA – P/C), or perceived peer attitudes (RSA – P). The second component to this question addressed whether gender differences would emerge in the relationship between the three types of risky sexual attitudes (RSA – S, RSA – P/C, and RSA – P) and participants' sexual behavior.

To answer Question 4, a hierarchical multiple regression analysis was conducted using the responses of the 131 participants who were sexually active just prior to participating in the study. The log transformation of TRSBS (LogTRSBS) was entered as the outcome variable. Social desirability was entered into Block 1 as a control variable. To determine their individual increment to the prediction of participants' risky sexual behavior, Gender and RSA – S were entered into Block 2, RSA – P was entered into Block 3, and the log transformation of RSA – P/C (LogRSA – P/C) was entered into Block 4. Lastly, RSA – S X Gender, RSA – P X Gender, and LogRSA – P/C X Gender were entered into Block 5 to assess interaction effects. As Table 15 shows, Gender and RSA – S in Model 2 and RSA – P in Model 3 significantly yet slightly added to the prediction of participants' risky sexual behavior. LogRSA – P/C (Model 4) and the interaction terms in Model 5 did not, however.

Table 15

Hierarchical Multiple Regression: R Statistics for Models Predicting Participants' Risky Sexual Behavior in Q4

Model	*R*	*R*^{2}	*Adjusted R*^{2}	*SE*	*R*^{2} *Change*	*F Change*	*df1*	*df2*	*Sig. F Change*
1[a]	.06	.00	.00	.44					
2[b]	.35	.12	.10	.42	.12	8.47	2	127	.001
3[c]	.39	.15	.12	.42	.03	4.13	1	126	.044
4[d]	.39	.16	.12	.42	.01	.96	1	125	.329
5[e]	.42	.17	.12	.42	.02	.90	3	122	.445

Note. *N* = 131
[a]Predictors: MCSD
[b]Predictors: MCSD, Gender, RSA-S
[c]Predictors: MCSD, Gender, RSA-S, RSA-P
[d]Predictors: MCSD, Gender, RSA-S, RSA-P, LogRSA-P/C
[e]Predictors: MCSD, Gender, RSA-S, RSA-P, LogRSA-P/C, RSA-S X Gender, RSA-P X Gender, LogRSA-P/C X Gender

Table 16 presents the beta values for Question 4. Participants' attitudes toward risky sexual behavior emerged as a significant predictor in Model 2, with greater participant approval of risky sexual behavior being associated with higher engagement in this behavior. Participants' personal attitudes remained significant in all models, and emerged as the strongest predictor relative to all predictors that were included in the analysis. With participants' personal attitudes included in the analysis, perceived peer attitudes negatively predicted participants' behavior in Model 3, with greater perceived peer endorsement of risky sexual behavior being associated with less participant engagement in risky sexual behavior. In Model 5, the interaction terms were not significant. Taken together, the answer to the first part of Question 4 indicates that participants' risky sexual behavior is best predicted by their personal attitudes relative to their perceptions of their parent/caregiver and peer's attitudes, and the answer to the second part of Question 4 (i.e., will gender interact with the three types of attitudes to predict behavior) is negative.

Table 16

Coefficients of Variables Predicting Participants' Risky Sexual Behavior in All Models for Q4

	Unstandardized Coefficients		Standardized Coefficients		
Variable	*B*	*SE*	*β*	*t*	*Sig.*
Model 1					
MCSD	-.01	.01	-.06	-.73	.468
Model 2					
MCSD	.00	.01	.00	.03	.973
Gender	-.13	.08	-.14	-1.66	.099
RSA – S	.03	.01	.34	3.98	.001
Model 3					
MCSD	.00	.01	.00	-.01	.994
Gender	-.11	.08	-.12	-1.42	.159
RSA – S	.04	.01	.49	4.36	.001
RSA – P	-.02	.01	-.23	-2.03	.044
Model 4					
MCSD	.00	.01	.02	.18	.857
Gender	-.10	.10	-.11	-1.28	.203
RSA – S	.05	.01	.51	4.45	.001
RSA – P	-.02	.01	-.21	-1.86	.065
LogRSA – P/C	-.26	.27	-.09	-.98	.329
Model 5					
MCSD	.00	.01	.02	.25	.805
Gender	-.43	.53	-.48	-.80	.424
RSA – S	.05	.01	.52	3.41	.001
RSA – P	-.03	.01	-.34	-2.19	.031
LogRSA – P/C	-.19	.39	-.06	-.47	.638
RSA – S X Gender	.00	.02	-.08	-.20	.841
RSA – P X Gender	.03	.02	.53	1.33	.185
LogRSA – P/C X Gender	-.03	.55	-.03	-.05	.959

Note. *N* = 250. Gender was coded as follows: "Female" = 0 and "Male" = 1.

Hypotheses testing. Hierarchical multiple regression analyses were used to test the study's six hypotheses.

Hypothesis 1. Hypothesis 1 stated that the relationship between participants' risky sexual attitudes (RSA – S) and perceived parental attitudes (RSA – P/C) would depend on how much participants based their self-esteem on their parent/caregiver's approval (CSE – P/C) and on whether they identified as female or male.

A hierarchical multiple regression analysis was used to test Hypothesis 1. The analysis included the responses of all 250 participants, and the log transformation of RSA – S (LogRSA – S) was entered as the dependent variable. Social desirability was entered into Block 1 as a control variable, and Gender, the log transformation of RSA – P/C (LogRSA – P/C), and CSE – P/C were entered into Block 2 to assess main effects. To assess interaction effects, LogRSA – P/C X Gender, CSE – P/C X Gender, and LogRSA – P/C X CSE – P/C were entered into Block 3 and LogRSA – P/C X CSE – P/C X Gender was entered into Block 4. Table 17 shows that the main effect terms in Model 2 resulted in a significant increment to the prediction of participants' attitudes toward risky sexual behavior. In contrast, adding the interaction terms in Models 3 and 4 did not significantly add to the prediction.

Table 17

Hierarchical Multiple Regression: R Statistics for Models Predicting Participants' Risky Sexual Attitudes in HO1

Model	*R*	*R*^{2}	*Adjusted R*^{2}	*SE*	*R*^{2} *Change*	*F Change*	*df1*	*df2*	*Sig. F Change*
1^a	.17	.03	.03	.16					
2^b	.40	.16	.15	.15	.13	12.61	3	245	.001
3^c	.41	.17	.14	.15	.01	.88	3	242	.452
4^d	.41	.17	.14	.15	.00	.48	1	241	.491

Note. *N* = 250.
^{a}Predictors: MCSD
$^{b.}$Predictors: MCSD, LogRSA-P/C, CSE-P/C, Gender
^{c}Predictors: MCSD, LogRSA-P/C, CSE-P/C, Gender, CSE-P/C X Gender, LogRSA-P/C X Gender, LogRSA-P/C X CSE-P/C
^{d}Predictors: MCSD, LogRSA-P/C, CSE-P/C, Gender, CSE-P/C X Gender, LogRSA-P/C X Gender, LogRSA-P/C X CSE-P/C, LogRSA-P/C X CSE-P/C X Gender

The beta values in Table 18 indicate significant Model 2 main effects for MCSD, Gender, and LogRSA – P/C, with lower participant endorsement of risky sexual behavior being associated with identifying as female, lower perceived parental approval of risky sexual behavior, and higher levels of social desirable responding. Gender and LogRSA – P/C, however, were not significant in subsequent Models (3 and 4), although social desirable responding remained significant in these models. Overall, support was not obtained for the hypothesis that the relationship between perceived parental attitudes and participants' personal attitudes would depend on how much participants based their self-esteem on parental approval and on whether they identified as female or male.

Table 18

Coefficients of Variables Predicting Participants' Risky Sexual Attitudes in All Models for HO1

	Unstandardized Coefficients		Standardized Coefficients		
Variable	*B*	*SE*	*β*	*t*	*Sig.*
Model 1					
MCSD	-.01	.00	-.17	-2.72	.007
Model 2					
MCSD	-.01	.00	-.18	-3.06	.002
Gender	.04	.02	.14	2.32	.021
LogRSA – P/C	.32	.06	.31	5.20	.001
CSE – P/C	.01	.01	.03	.54	.590
Model 3					
MCSD	-.01	.00	-.18	-2.93	.004
Gender	14	.14	.44	.99	.324
LogRSA – P/C	.05	.22	.05	.23	.821
CSE – P/C	-.08	.07	-.47	-1.21	.226
CSE – P/C X Gender	-.02	.02	-.20	-.94	.346
LogRSA – P/C X Gender	-.04	.13	-.14	-.34	.737
LogRSA – P/C X CSE – P/C	10	.07	.62	1.43	.154
Model 4					
MCSD	-.01	.00	-.18	-2.94	.004
Gender	-.15	.45	-.47	-.34	.738
LogRSA – P/C	-.05	.26	-.05	-.20	.841
CSE – P/C	-.12	.08	-.67	-1.39	.167
CSE – P/C X Gender	.08	.14	.79	.54	.587
LogRSA – P/C X Gender	26	.46	.83	.57	.571
LogRSA – P/C X CSE – P/C	.14	.09	.85	1.56	.121
LogRSA – P/C X CSE – P/C X Gender	-.10	.15	-1.06	-.69	.491

Note. *N* = 250. Gender was coded as follows: "Female" = 0 and "Male" = 1.

Hypothesis 2. Hypothesis 2 addressed whether the relationship between perceived parental attitudes toward risky sexual behavior (RSA – P/C) and participants' sexual behavior (TRSBS) would depend on how much participants based their self-esteem on their parent/caregiver's approval (CSE – P/C) and on whether they identified as female or male. A hierarchical multiple regression analysis was used to test this hypothesis using the responses of those participants who were sexual active during the four weeks before participating in the study. The log transformation of TRSBS (LogTRSBS) was entered as the dependent variable and social desirability was entered into Block 1. The log transformation of RSA – P/C (LogRSA – P/C), CSE – P/C, and Gender were entered into Block 2 to assess main effects. LogRSA – P/C X Gender, CSE – P/C X Gender, and LogRSA – P/C X CSE – P/C were entered into Block 3 and LogRSA – P/C X CSE – P/C X Gender was entered into Block 4 to assess interaction effects. At each step, these variables resulted in a nonsignificant change to the prediction (see Table 19).

Table 19

Hierarchical Multiple Regression: R Statistics for Models Predicting Participants' Risky Sexual Behavior in HO2

Model	*R*	*R*^{2}	*Adjusted R*^{2}	*SE*	*R*^{2} *Change*	*F Change*	*df1*	*df2*	*Sig. F Change*
1[a]	.06	.00	.00	.44					
2[b]	.15	.02	-.01	.45	.02	.79	3	126	.504
3[c]	.23	.05	.00	.44	.03	1.27	3	123	.289
4[d]	.24	.06	.00	.44	.01	.69	1	122	.406

Note. *N* = 131.
[a]Predictors: MCSD
[b]Predictors: MCSD, LogRSA-P/C, CSE - P/C, Gender
[c]Predictors: MCSD, LogRSA-P/C, CSE-P/C, Gender, CSE-P/C X Gender, LogRSA-P/C X Gender, LogRSA-P/C X CSE-P/C
[d]Predictors: MCSD, LogRSA-P/C, CSE-P/C, Gender, CSE-P/C X Gender, LogRSA-P/C X Gender, LogRSA-P/C X CSE-P/C, LogRSA-P/C X CSE-P/C X Gender

Based on the beta values in Table 20, the analysis failed to show that the relationship between participants' behavior and perceived parental attitudes depended on how much they based their self-esteem on parental approval and on whether they identified as female or male. Thus, Hypothesis 2 was not supported.

Table 20

Coefficients of Variables Predicting Participants' Risky Sexual Behavior in All Models for HO2

	Unstandardized Coefficients		Standardized Coefficients		
Variable	*B*	*SE*	*β*	*t*	*Sig.*
Model 1					
MCSD	-.01	.01	-.06	-.73	.468
Model 2					
MCSD	-.01	.01	-.07	-.75	.455
Gender	-.07	.08	-.07	-.83	.409
LogRSA – P/C	-.01	.27	.00	-.05	.959
CSE – P/C	-.05	.04	-.10	-1.17	.246
Model 3					
MCSD	-.01	.01	-.05	-.53	.599
Gender	-.86	.59	-.97	-1.46	.147
LogRSA – P/C	.09	.94	.03	.09	.926
CSE – P/C	.00	.29	-.01	-.01	.992
CSE – P/C X Gender	.16	.09	.57	1.79	.075
LogRSA – P/C X Gender	.36	.56	.40	.63	.527
LogRSA – P/C X CSE – P/C	-.11	.30	-.26	-.37	.710
Model 4					
MCSD	-.01	.01	-.05	-.56	.579
Gender	-2.41	1.95	-2.71	-1.24	.219
LogRSA – P/C	-.42	1.12	-.14	-.38	.708
CSE – P/C	-.17	.35	-.37	-.48	.629
CSE – P/C X Gender	.66	.61	2.42	1.08	.283
LogRSA – P/C X Gender	2.00	2.05	2.27	.98	.331
LogRSA – P/C X CSE – P/C	.07	.37	.15	.18	.859
LogRSA – P/C X CSE – P/C X Gender	-.53	.64	-2.00	-.83	.406

Note. *N* = 131. Gender was coded as follows: “Female” = 0 and “Male” = 1.

Hypothesis 3. Hypothesis 3 stated that participants' attitudes toward risky sexual behavior (RSA – S) and their perceptions of their peer's attitudes (RSA – P) would relate to each other based on how much participants based their self-esteem on their peer's approval (CSE – P/C) and on whether they identified as female or male. Using a hierarchical multiple regression analysis and including the responses of all 250 participants, the log transformation of RSA – S

(LogRSA – S) was entered as the outcome variable. Social desirability was controlled for in Block 1 and RSA – P, CSE – P, and Gender were entered into Block 2 to assess main effects. Interaction effects were assessed at Step 3 using RSA – P X Gender, CSE – P X Gender, and RSA – P X CSE – P and at Step 4 using RSA – P X CSE – P X Gender. Table 21 indicates that the Block 2 variables produced a significant increase in the prediction of participants' attitudes toward risky sexual behavior over the social desirability control variable (Block 1). In contrast, the interaction terms in Block 3 and Block 4 did not significantly add to the prediction of participants' attitudes.

Table 21

Hierarchical Multiple Regression: R Statistics for Models Predicting Participants' Risky Sexual Attitudes in HO3

Model	*R*	R^2	*Adjusted* R^2	*SE*	R^2 *Change*	*F Change*	*df1*	*df2*	*Sig. F Change*
1[a]	.17	.03	.03	.16					
2[b]	.65	.42	.41	.12	.39	55.03	3	245	.001
3[c]	.66	.43	.42	.12	.01	1.90	3	242	.131
4[d]	.66	.44	.42	.12	.00	1.95	1	241	.164

Note. *N* = 250.
[a]Predictors: MCSD
[b]Predictors: MCSD, LogRSA-P/C, CSE - P/C, Gender
[c]Predictors: MCSD, LogRSA-P/C, CSE-P/C, Gender, CSE-P/C X Gender, LogRSA-P/C X Gender, LogRSA-P/C X CSE-P/C
[d]Predictors: MCSD, LogRSA-P/C, CSE-P/C, Gender, CSE-P/C X Gender, LogRSA-P/C X Gender, LogRSA-P/C X CSE-P/C, LogRSA-P/C X CSE-P/C X Gender

The beta values for Hypothesis 3 are presented in Table 22. As shown in Table 22, a main effect was observed for RSA – P in all models, with peer endorsement of risky sexual behavior exhibiting a positive relationship with participant approval of risky sexual behavior. However, Hypothesis 3 was not supported, as the interaction term in Model 4 was not significant. Overall, the relationship between perceived peer attitudes toward risky sexual behavior and participants' attitudes did not depend on participants' gender and how much participants based their self-esteem on their peer's approval.

Table 22

Coefficients of Variables Predicting Participants' Risky Sexual Attitudes in All Models for HO3

	Unstandardized Coefficients		Standardized Coefficients		
Variable	*B*	*SE*	*β*	*t*	*Sig.*
Model 1					
MCSD	-.01	.00	-.17	-2.72	.007
Model 2					
MCSD	.00	.00	-.05	-1.01	.315
CSE – P	.01	.01	.05	.96	.340
RSA – P	.02	.00	.62	12.22	.001
Gender	.02	.02	.07	1.41	.161
Model 3					
MCSD	.00	.00	-.04	-.87	.383
CSE – P	-.04	.03	-.20	-1.56	.121
RSA – P	.01	.00	.42	2.43	.016
Gender	-.04	.08	-.13	-.57	.569
CSE – P X Gender	.03	.02	.30	1.56	.119
RSA – P X Gender	.00	.00	-.08	-.52	.601
RSA – P X CSE – P	.00	.00	.30	1.42	.157
Model 4					
MCSD	.00	.00	-.05	-.93	.351
CSE – P	-.01	.03	-.04	-.25	.802
RSA – P	.02	.01	.64	2.73	.007
Gender	.15	.16	.46	.95	.341
CSE – P X Gender	-.04	.05	-.35	-.69	.492
RSA – P X Gender	-.01	.01	-.80	-1.49	.138
RSA – P X CSE – P	-4.45	.00	-.01	-.02	.985
RSA – P X CSE – P X Gender	.00	.00	.77	1.40	.164

Note. $N = 250$. Gender was coded as follows: "Female" = 0 and "Male" = 1.

Hypothesis 4. Hypothesis 4 stated that the extent to which perceived peer attitudes (RSA – P) would predict participants' sexual behavior (TRSBS) would depend on how much they base their self-esteem on their peer's approval (CSE – P) and on whether they identified as female or male. A hierarchical multiple regression analysis was used to test Hypothesis 4. The analysis included only the responses of the 131 participants who were sexually active during the four weeks before participating in the study. The log transformation of TRSBS (LogTRSBS) was entered as the dependent variable and social desirability was entered into Block 1 as a control variable. RSA – P, CSE – P, and Gender were entered into Block 2 to assess main effects. The following two-way interaction terms were entered into Block 3: RSA – P X Gender, CSE – P X Gender, and RSA – P X CSE – P. Lastly, RSA – P X CSE – P X Gender was entered into the fourth and final block. The R^2 change values in Table 23 indicate that none of the models resulted in a significant increment to the prediction.

Table 23

Hierarchical Multiple Regression: R Statistics for Models Predicting Participants' Risky Sexual Behavior in HO4

Model	*R*	R^2	*Adjusted* R^2	*SE*	R^2 *Change*	*F Change*	*df1*	*df2*	*Sig. F Change*
1[a]	.06	.00	.00	.44					
2[b]	.15	.02	-.01	.45	.02	.81	3	126	.493
3[c]	.23	.05	.00	.44	.03	1.23	3	123	.302
4[d]	.27	.07	.01	.44	.02	2.71	1	122	.102

Note. *N* = 131.
[a]Predictors: MCSD
[b]Predictors: MCSD, Gender, CSE-P, RSA-P
[c]Predictors: MCSD, Gender, CSE-P, RSA-P, RSA-P X Gender, CSE-P X Gender, RSA-P X CSE-P
[d]Predictors: MCSD, Gender, CSE-P, RSA-P, RSA-P X Gender, CSE-P X Gender, RSA-P X CSE-P, RSA-P X CSE-P X Gender

As presented in Table 24, the analysis yielded nonsignificant beta values for the predictors that were used to assess main and interaction effects, and thus it failed to support Hypothesis 4. As such, the relationship between participants' attitudes toward risky sexual behavior and their perceptions of their peer's attitudes did not vary according to how much they base their self-esteem on their peer's approval and on their gender.

Table 24

Coefficients of Variables Predicting Participants' Risky Sexual Behavior in All Models for HO4

	Unstandardized Coefficients		Standardized Coefficients		
Variable	*B*	*SE*	*β*	*t*	*Sig.*
Model 1					
MCSD	-.01	.01	-.06	-.73	.468
Model 2					
MCSD	-.01	.01	-.04	-.50	.618
CSE – P	.03	.05	.05	.54	.587
RSA – P	.01	.01	.09	1.03	.304
Gender	-.10	.08	-.11	-1.25	.212
Model 3					
MCSD	.00	.01	-.02	-.25	.805
CSE – P	-.06	.13	-.12	-.48	.633
RSA – P	-.02	.02	-.20	-.70	.484
Gender	-.51	.38	-.58	-1.35	.178
CSE – P X Gender	.01	.10	.03	.10	.924
RSA – P X Gender	.02	.02	.49	1.54	.125
RSA – P X CSE – P	.01	.01	.25	.64	.523
Model 4					
MCSD	.00	.01	-.03	-.30	.762
CSE – P	.09	.16	.17	.56	.574
RSA – P	.01	.03	.15	.43	.665
Gender	.72	.84	.80	.86	.394
CSE – P X Gender	-.41	.27	-1.48	-1.50	.135
RSA – P X Gender	-.05	.05	-1.10	-1.08	.281
RSA – P X CSE – P	-.01	.01	-.28	-.56	.579
RSA – P X CSE – P X Gender	.03	.02	1.78	1.65	.102

Note. *N* = 131. Gender was coded as follows: "Female" = 0 and "Male" = 1.

Hypothesis 5. A hierarchical multiple regression analysis was used to test Hypothesis 5, which stated that the extent to which self-esteem level (RSES) predicts participants' risky sexual behavior (TRSBS) would vary according to how much participants base their self-esteem on their parent/caregiver's approval, on how much they perceive that their parent/caregiver approves of risky sexual behavior, and on whether they identified as female or male. Responses from only those 131 participants who engaged in sexual behavior during the four weeks before participating in the study were included in the analysis. The log transformation of TRSBS (LogTRSBS) was entered as the outcome variable and social desirability was controlled for in Block 1. Global self-esteem level, the log transformation of RSA – P/C (LogRSA – P/C), CSE – P/C, and Gender were entered into Block 2 to assess main effects. The following two-way interaction terms were entered into Block 3: RSES X LogRSA – P/C, RSES X CSE – P/C, RSES X Gender, CSE – P/C X LogRSA – P/C, and CSE – P/C X Gender. In Block 4, the following three-way interaction terms were entered: RSES X LogRSA – P/C X Gender, RSES X CSE – P/C X LogRSA, RSES X CSE – P/C X Gender, and CSE – P/C X LogRSA – P/C X Gender. Lastly, RSES X CSE – P/C X LogRSA – P/C X Gender was entered into the fifth and final block. Table 25 indicates that only Model 3 resulted in a significant increment to the prediction of participants' risky sexual behavior.

Table 25

Hierarchical Multiple Regression: R Statistics for Models Predicting Participants' Risky Sexual Behavior in HO5

Model	*R*	R^2	*Adjusted* R^2	*SE*	R^2 *Change*	*F Change*	*df1*	*df2*	*Sig. F Change*
1[a]	.06	.00	.00	.44					
2[b]	.22	.05	.01	.44	.05	1.50	4	125	.206
3[c]	.38	.15	.08	.43	.10	2.74	5	120	.022
4[d]	.39	.16	.05	.43	.01	.28	4	116	.888
5[e]	.39	.16	.05	.43	.00	.05	1	115	.824

Note. *N* = 131.

[a] Predictors: MCSD

[b] Predictors: MCSD, Gender, CSE-P/C, LogRSA-P/C, RSES

[c] Predictors: MCSD, Gender, CSE-P/C, LogRSA-P/C, RSES, CSE-P/C X Gender, RSES X CSE-P/C, RSES X Gender, RSES X LogRSA-PC, LogRSA-P/C X CSE-P/C

[d] Predictors: MCSD, Gender, CSE-P/C, LogRSA-P/C, RSES, CSE-P/C X Gender, RSES X CSE-P/C, RSES X Gender, RSES X LogRSA-PC, LogRSA-P/C X CSE-P/C, RSES X LogRSA-PC X Gender, RSES X CSE-P/C X Gender, LogRSA-P/C X CSE-P/C X Gender, RSES X CSE-P/C X LogRSA-PC

[e] Predictors: MCSD, Gender, CSE-P/C, LogRSA-P/C, RSES, CSE-P/C X Gender, RSES X CSE-P/C, RSES X Gender, RSES X LogRSA-PC, LogRSA-P/C X CSE-P/C, RSES X LogRSA-PC X Gender, RSES X CSE-P/C X Gender, LogRSA-P/C X CSE-P/C X Gender, RSES X CSE-P/C X LogRSA-PC, RSES X CSE-P/C X LogRSA-PC X Gender

Table 26 shows that, according to the beta values in Model 3, higher engagement in risky sexual behavior was associated with lower levels of global self-esteem, identifying as female, and lower perceived parental approval of risky sexual behavior. An interaction effect was also observed in Model 3 for RSES X LogRSA – P/C (see Figure 5). Its beta value indicates that higher global self-esteem was associated with higher engagement in risky sexual behavior amongst those who were more likely to believe that their parent/caregiver approves of risky sexual behavior. Conversely, higher global self-esteem was associated with lower engagement in risky sexual behavior amongst those who were least likely to believe that their parent/caregiver approves of risky sexual behavior. For the remaining models, main and interaction effects were not observed. As there was a nonsignificant beta value for RSES X CSE – P/C X LogRSA – P/C X Gender, Hypothesis 5 was not supported. As such, the relationship between participants' sexual behavior and global self-esteem level did not vary according to their level of parental approval contingent self-esteem and their gender.

Table 26

Coefficients of Variables Predicting Participants' Risky Sexual Behavior in All Models for HO5

	Unstandardized Coefficients		Standardized Coefficients		
Variable	*B*	*SE*	*β*	*t*	*Sig.*
Model 1					
MCSD	-.01	.01	-.06	-.73	.468
Model 2	.69	.37		1.87	.063
MCSD	-.02	.01	-.11	-1.20	.233
RSES	.01	.01	.17	1.90	.060
Gender	-.08	.08	-.08	-.95	.345
LogRSA – P/C	.06	.27	.02	.23	.820
CSE – P/C	-.04	.04	-.09	-1.04	.301
Model 3					
MCSD	-.01	.01	-.09	-1.00	.318
RSES	-.10	.04	-1.45	-2.39	.018
Gender	-1.29	.48	-1.45	-2.67	.009
LogRSA – P/C	-3.38	1.63	-1.12	-2.08	.041
CSE – P/C	-.28	.36	-.61	-.78	.436
RSES X Gender	.02	.01	.87	1.86	.066
RSES X CSE – P/C	.00	.01	.25	.54	.592
RSES X LogRSA – PC	.10	.04	1.62	2.44	.016
LogRSA – P/C X CSE – P/C	.09	.29	.20	.30	.766
CSE – P/C X Gender	.16	.08	.58	1.87	.063
Model 4					
MCSD	-.01	.01	-.09	-.95	.344
RSES	-.17	.15	-2.36	-1.14	.257
Gender	-2.23	1.43	-2.50	-1.56	.121
LogRSA – P/C	-5.54	4.77	-1.83	-1.16	.248
CSE – P/C	-1.06	1.35	-2.25	-.78	.434
RSES X Gender	.02	.06	.63	.28	.778
RSES X CSE – P/C	.03	.04	2.13	.63	.533
RSES X LogRSA – PC	.16	.15	2.60	1.07	.288
LogRSA – P/C X CSE – P/C	.83	1.37	1.91	.60	.547
CSE – P/C X Gender	.77	.80	2.82	.96	.337
LogRSA – P/C X CSE – P/C X Gender	-.30	.55	-1.14	-.56	.580
RSES X CSE P/C X LogRSA – PC	-.02	.04	-1.82	-.52	.605

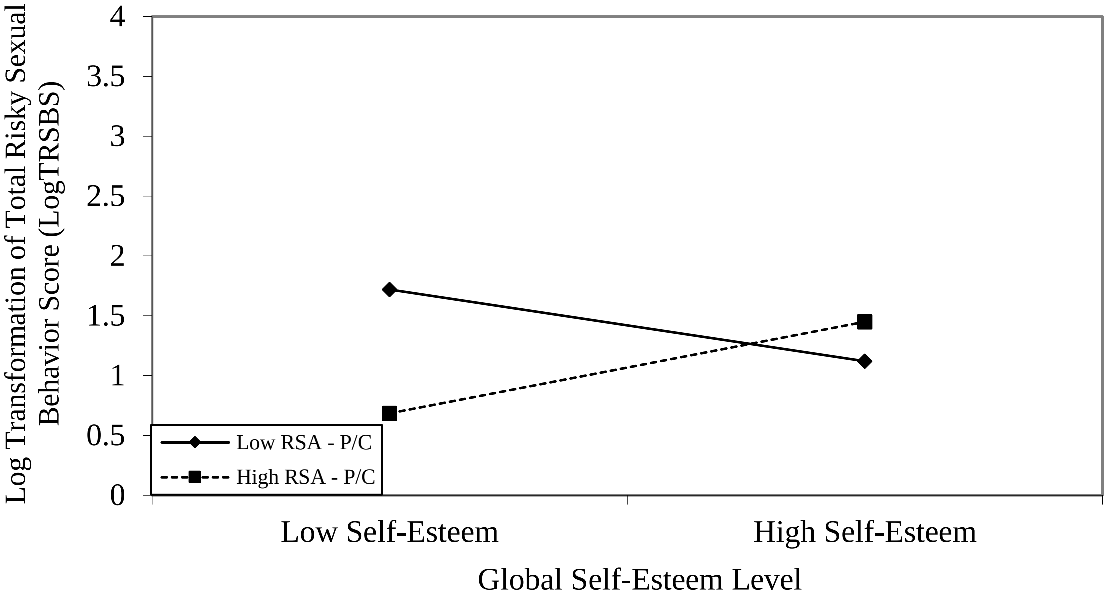
Table 26 *Continued*

Variable	Unstandardized Coefficients *B*	*SE*	Standardized Coefficients *β*	*t*	*Sig.*
RSES X CSE – P/C X Gender	-.01	.01	-1.18	-.70	.488
RSES X LogRSA – PC X Gender	.04	.05	1.35	.68	.498
Model 5					
MCSD	-.01	.01	-.09	-.95	.342
RSES	-.17	.15	-2.43	-1.15	.251
Gender	-2.26	1.44	-2.54	-1.57	.120
LogRSA – P/C	-5.78	4.91	-1.91	-1.18	.241
CSE – P/C	-1.08	1.36	-2.29	-.79	.430
RSES X Gender	.01	.07	.40	.16	.871
RSES X CSE – P/C	.03	.04	2.10	.61	.541
RSES X LogRSA – PC	.17	.15	2.68	1.08	.281
LogRSA – P/C X CSE – P/C	.84	1.38	1.95	.61	.542
CSE – P/C X Gender	.63	1.02	2.31	.62	.537
LogRSA – P/C X CSE – P/C X Gender	-.15	.89	-.56	-.17	.868
RSES X CSE P/C X LogRSA – PC	-.02	.04	-1.78	-.50	.615
RSES X CSE – P/C X Gender	.00	.03	-.38	-.10	.923
RSES X LogRSA – PC X Gender	.04	.06	1.64	.69	.492
RSES X CSE – P/C X LogRSA – PC X Gender	-.01	.03	-.89	-.22	.824

Note. *N* = 131. Gender was coded as follows: “Female” = 0 and “Male” = 1.

Figure 5

Relationship between Participants' Risky Sexual Behavior and their Global Self-Esteem Level according to their Perceptions of their Parent/Caregiver's Attitudes toward Risky Sexual Behavior



Hypothesis 6. Hypothesis 6 stated that the relationship between self-esteem level (RSES) and participants' risky sexual behavior (TRSBS) would depend on how much they base their self-esteem on their peer's approval (CSE – P), how much they perceive that their peer approves of risky sexual behavior (RSA – P), and on whether they identified as female or male. To test this hypothesis, a hierarchical multiple regression analysis was used with the log transformation of TRSBS (LogTRSBS) entered as the outcome variable. Social desirability was entered into Block 1 as the control variable and RSES, RSA – P, CSE – P, and Gender were entered into Block 2 to assess main effects. To assess interaction effects, RSES X Gender, RSES X CSE – P, RSES X RSA – P, CSE – P X Gender, and RSA – P X CSE – P were entered into Block 3, RSES X CSE – P X Gender, RSES X CSE – P X RSA – P, RSES X RSA – P X Gender, and RSA – P X CSE – P X Gender were entered into Block 4, and RSES X CSE – P X RSA – P X Gender was

entered into Block 5. As Table 27 shows, the variables that were added at each step resulted in a nonsignificant increment to the prediction.

Table 27

Hierarchical Multiple Regression: R Statistics for Models Predicting Participants' Risky Sexual Behavior in HO6

Model	*R*	R^2	*Adjusted* R^2	*SE*	R^2 *Change*	*F Change*	*df1*	*df2*	*Sig. F Change*
1[a]	.06	.00	.00	.44					
2[b]	.23	.05	.01	.44	.05	1.58	4	125	.185
3[c]	.32	.10	.03	.44	.05	1.36	5	120	.245
4[d]	.38	.15	.04	.43	.04	1.51	4	116	.202
5[e]	.39	.15	.04	.43	.00	.39	1	115	.534

Note. *N* = 131.
[a]Predictors: MCSD
[b]Predictors: MCSD, Gender, CSE-P, RSES, RSA-P
[c]Predictors: MCSD, Gender, CSE-P, RSES, RSA-P, CSE-P X Gender, RSA-P X CSE-P, RSES X Gender, RSES X RSA-P, RSES X CSE-P
[d]Predictors: MCSD, Gender, CSE-P, RSES, RSA-P, CSE-P X Gender, RSA-P X CSE-P, RSES X Gender, RSES X RSA-P, RSES X CSE-P, RSES X RSA-P X Gender, RSA-P X CSE-P X Gender, RSES X CSE-P X Gender, RSES X CSE-P X RSA-P
[e]Predictors: MCSD, Gender, CSE-P, RSES, RSA-P, CSE-P X Gender, RSA-P X CSE-P, RSES X Gender, RSES X RSA-P, RSES X CSE-P, RSES X RSA-P X Gender, RSA-P X CSE-P X Gender, RSES X CSE-P X Gender, RSES X CSE-P X RSA-P, RSES X CSE-P X RSA-P X Gender

Based on the beta values in Table 28, significant main and interaction effects were not observed across each model. Thus, Hypothesis 6 was not supported; the relationship between participants' behavior and self-esteem level did not vary according to their level of peer approval contingent self-esteem, their perception of their peer's attitudes toward risky sexual behavior, and their gender.

Table 28

Coefficients of Variables Predicting Participants' Risky Sexual Behavior in All Models for HO6

	Unstandardized Coefficients		Standardized Coefficients		
Variable	*B*	*SE*	*β*	*t*	*Sig.*
Model 1					
MCSD	-.01	.01	-.06	-.73	.468
Model 2					
MCSD	-.01	.01	-.09	-.94	.351
RSES	.01	.01	.18	1.96	.053
Gender	-.11	.08	-.12	-1.31	.191
RSA – P	.01	.01	.09	1.00	.317
CSE – P	.03	.05	.05	.59	.558
Model 3					
MCSD	-.01	.01	-.05	-.59	.556
RSES	-.03	.03	-.46	-1.22	.226
Gender	-.80	.53	-.90	-1.53	.129
RSA – P	-.06	.05	-.73	-1.27	.207
CSE – P	-.34	.32	-.64	-1.08	.282
RSES X Gender	.02	.01	.66	1.33	.186
RSES X CSE – P	.01	.01	.50	.84	.404
RSES X RSA – P	.00	.00	.60	1.09	.278
CSE – P X Gender	.04	.10	.16	.46	.650
RSA – P X CSE – P	.01	.01	.40	1.05	.298
Model 4					
MCSD	-.01	.02	-.08	-.84	.402
RSES	.00	.06	.00	.00	.998
Gender	1.38	1.66	1.55	.83	.410
RSA – P	-.05	.16	-.56	-.29	.773
CSE – P	.45	.88	.84	.51	.611
RSES X Gender	-.03	.05	-.94	-.48	.629
RSES X CSE – P	-.01	.02	-.71	-.41	.682
RSES X RSA – P	.00	.00	.87	.42	.674
CSE – P X Gender	-1.11	.64	-3.98	-1.74	.084
RSA – P X CSE – P	-.01	.06	-.46	-.16	.869
RSES X CSE – P X RSA – P	5.89	.00	.10	.04	.972
RSES X CSE – P X Gender	.02	.02	2.75	1.34	.181
RSES X RSA – P X Gender	.00	.00	-.96	-1.10	.272

Table 28 *Continued*

	Unstandardized Coefficients		Standardized Coefficients		
Variable	*B*	*SE*	*β*	*t*	*Sig.*
RSA – P X CSE – P X Gender	.02	.01	1.56	1.65	.101
Model 5					
MCSD	-.01	.02	-.08	-.82	.414
RSES	-.01	.07	-.17	-.18	.857
Gender	1.51	1.68	1.70	.90	.372
RSA – P	-.08	.17	-.94	-.46	.644
CSE – P	.22	.95	.41	.23	.816
RSES X Gender	-.02	.05	-.83	-.42	.674
RSES X CSE – P	.00	.03	-.19	-.10	.919
RSES X RSA – P	.00	.00	1.34	.61	.545
CSE – P X Gender	-.90	.72	-3.24	-1.26	.212
RSA – P X CSE – P	.01	.06	.41	.13	.896
RSES X CSE – P X RSA – P	.00	.00	-.87	-.27	.786
RSES X CSE – P X Gender	.02	.02	1.76	.68	.499
RSES X RSA – P X Gender	.00	.00	-1.26	-1.26	.209
RSA – P X CSE – P X Gender	.01	.03	.44	.22	.828
RSES X CSE – P X RSA – P X Gender	.00	.00	1.42	.62	.534

Note. *N* = 131. Gender was coded as follows: “Female” = 0 and “Male” = 1.

Summary of Findings from Question Analyses and Hypotheses Testing

Table 29 provides an overview of the results of the analyses for the study’s questions and hypotheses.

Question analyses. Hierarchical multiple regression analyses were used to answer the study’s questions. Question 1 and Question 2 addressed the relationship between three self-esteem constructs (i.e., global self-esteem level, self-esteem that is contingent on parent/caregiver approval, and self-esteem is contingent on peer approval) and participants’ sexual attitudes/behavior while also assessing for gender differences. For Q1, neither self-esteem construct significantly predicted participants’ attitudes, although social desirable responding emerged as a significant predictor. In the final model, gender differences were not observed in the relationship between the self-esteem constructs and participants' attitudes. For Q2, parental approval contingent self-esteem was shown to be the best predictor of participants' risky sexual behavior and gender differences were observed in the extent to which global self-esteem level predicted participants' behavior.

Question 3 and 4 addressed the relationship amongst participants' risky sexual attitudes/behavior, perceived parental attitudes toward risky sexual behavior, and perceived peer attitudes toward risky sexual behavior. For Q3, perceived peer attitudes toward risky sexual behavior, relative to perceived parental attitudes, emerged as the best predictor of participants' risky sexual attitudes. For Q4, participants' sexual attitudes, relative to perceived parental and peer attitudes, emerged as the strongest predictor of participants' sexual behavior. For both Q3 and Q4, interaction effects were not observed when gender and the predictor variables were used to predict participants' risky sexual attitudes/behavior.

Hypotheses testing. Hypotheses 1 through 6 were tested through a series of hierarchical multiple regression analyses. The readers will note that the analyses failed to support all hypotheses.

Table 29

Summary of Findings from Question Analyses and Hypotheses Testing

Q/HO	*Study Questions/Hypotheses*	*Findings*
Q1	Will global self-esteem level, contingent self-esteem – parent/caregiver approval, or contingent self-esteem – peer approval emerge as the best predictor of participants' risky sexual attitudes? Will the relationship between each self-esteem construct and participants' attitudes vary according to participants' gender?	No significant differences amongst the self-esteem variables. No gender interaction effects were observed.
Q2	Will global self-esteem level, contingent self-esteem – parent/caregiver approval, or contingent self-esteem – peer approval be the best predictor of participants' risky sexual behavior? Will the relationship between each self-esteem construct and participants' behavior vary according to participants' gender?	CSE – P/C negatively predicted risky sexual behavior, and an interaction effect was observed for global self-esteem level and gender.
Q3	Will participants' risky sexual attitudes be better explained by their perceptions of their parent/caregiver's attitudes toward risky sexual behavior or by their perceptions of their peer's attitudes toward risky sexual behavior? Will the relationship between participants' risky sexual attitudes and perceived parental and peer attitudes vary according to participants' gender?	Perceived parental attitudes and perceived peer attitudes emerged as significant, with perceived peer attitudes being the stronger predictor of risky sexual attitudes. No gender interaction effects were observed.
Q4	Will participants' risky sexual behavior be best explained by their sexual attitudes, perceived parental sex attitudes, or perceived peer sex attitudes? Will these targeted relationships vary according to participants' gender?	Participants' personal attitudes and perceived peer attitudes emerged as significant, with participants' personal attitudes emerging as the strongest predictor of risky sexual behavior. No gender interaction effects were observed.

Table 29 *Continued*

HO1	It is expected that the relationship between perceived parental sex attitudes and participants’ sex attitudes will vary according to participants’ level of parental approval contingent self-esteem and gender.	Not supported. No significant hypothesis-related interaction effects were observed.
HO2	It is expected that the relationship between perceived parental sex attitudes and participants’ risky sexual behavior will vary according to participants’ level of parental approval contingent self-esteem and gender.	Not supported. No significant hypothesis-related interaction effects were observed.
HO3	It is expected that the relationship between perceived peer sex attitudes and participants’ sex attitudes will vary according to participants’ level of peer approval contingent self-esteem and gender.	Not supported. No significant hypothesis-related interaction effects were observed.
HO4	It is expected that the relationship between perceived peer sex attitudes and participants’ risky sexual behavior will vary according to participants’ level of peer approval contingent self-esteem and gender.	Not supported. No significant hypothesis-related interaction effects were observed.
HO5	It is expected that the relationship between global self-esteem level and risky sexual behavior will vary according to participants’ level of parental approval contingent self-esteem, perceived parental sex attitudes, and gender.	Not supported. No significant hypothesis-related interaction effects were observed.
HO6	It is expected that the relationship between global self-esteem level and risky sexual behavior will vary according to participants’ level of peer approval contingent self-esteem, perceived peer sex attitudes, and gender.	Not supported. No significant hypothesis-related interaction effects were observed.

CHAPTER V

Discussion

Within the context of the literature that was reviewed for the current investigation, this chapter discusses key results from the preliminary analyses and the results that were obtained from the question analyses and hypotheses testing. It is important to note that analyses in which risky sexual behavior was predicted were based on the responses of participants who were sexually active during the four weeks prior to the study. Analyses in which participants' risky sexual attitudes were examined were based on the responses of all participants. The study's limitations, implications, and directions for future research are also provided.

Youth Risky Sexual Attitudes/Behavior

Youth risky sexual attitudes. As a whole, the sample exhibited a moderate level of approval toward risky sexual behavior. However, additional analyses revealed some gender differences with regard to participants' responses on the risky sexual attitudes measure. Relative to female participants, for example, male participants rated themselves as holding greater approval of risky sexual behavior, which previous research has also demonstrated (e.g., Rostosky et al., 2003; Santor et al., 2000). Male participants were also more likely to rate their peer and their parent/caregiver as being more approving of risky sexual practices. Furthermore, regardless of participants' gender, the sample collectively rated their male peer, relative to their female peer, as having riskier attitudes.

Additionally, the analysis demonstrated that participants' self-reported risky attitudes weakly yet significantly correlated with their level of social desirable responding. As participants' level of social desirability increased, they were less likely to rate risky sexual practices as being acceptable. This finding reflects scholars' (e.g., Alexander et al., 1993) belief that participants sometimes respond to sex related surveys in a socially desirable manner. Notably, as social desirability was used as a control variable during the question analyses and hypotheses testing, it sometimes emerged as a significant predictor of participants' attitudes toward risky sexual behavior. The findings from those analyses should subsequently be interpreted with consideration that some participants might have responded to the survey items with a certain level of social desirability.

Youth risky sexual behavior. The analyses also demonstrated that participants' reported level of sexual activity during the four weeks before the study was rather low, with females and males similarly exhibiting low engagement in sexual activity. This was unexpected in light of researchers' assertion that risky behaviors sometimes increase when young people leave the parental home (McCabe et al., 2005; Park et al., 2009). It was thus assumed that, as collegiate youth represent one category of individuals who sometimes leave the parental home once they enter college, the participants in the current study would evidence higher engagement in risky sexual behavior. Participants' low level of sexual activity was also unexpected in light of the CDC's (2014b) report that young people in their teens to early twenties are disproportionally affected by STIs.

Two possible reasons might account for why participants did not exhibit a wider range of sexual behaviors. First, the study began its recruitment at the end of May, and asked participants to report on behavior that occurred four weeks prior to when they were recruited. For some participants, this might have meant reporting on what occurred during when most college students are studying for or taking their final exams. It is thus possible that some of the participants who were recruited limited their sexual behavior during the four weeks before participating in the study because of their need to prepare for or take their final exams. Second, it is possible that the participants who were recruited for the present study are not representative of the individuals on whom the CDC's STI data are based. While the present study exclusively recruited college students, perhaps the CDC's data are based on the responses of collegiate and noncollegiate youth. As such, it is possible that had the present study recruited collegiate and noncollegiate 18 to 24 year olds, the sample, as a whole, would have exhibited a wider range of sexual practices that more accurately reflect the CDC's STI findings.

Although participants' level of sexual activity was low, the study obtained findings that support researchers' suggestion that there is a relationship between how young people regulate their sexual behavior and whether they live with their parents (Bailey et al., 2011). For example, the study showed that those who lived with a parent/relative were much less likely to have had sexual intercourse at least once in their lifetime compared to participants with greater sexual experience (i.e., those who were sexually active during the four weeks before the study and those who were sexually active in the past, but not during the four weeks before the study). When comparisons were made amongst only those participants who were sexually active during the four weeks before the study, a smaller proportion reported that they currently live with a parent/relative. This was especially the case for females.

Youth Risky Sexual Attitudes/Behavior and Self-Esteem

With the literature yielding inconsistent findings regarding global self-esteem level, scholars (e.g., Crocker & Wolfe, 2001) have suggested shifting the focus from this construct to contingent self-esteem because of the belief that it would yield a better understanding of human behavior. The present study subsequently investigated whether global self-esteem level, parental approval contingent self-esteem, or peer approval contingent self-esteem would emerge as the best predictor of participants' sexual attitudes and their behavior while also assessing gender differences.

Youth risky sexual attitudes. Overall, the results indicated that neither of the contingent self-esteem constructs was a better predictor of participants' risky sexual attitudes and, like Chapin (2000) and Lawal (2010), the results from the question analysis failed to demonstrate a significant relationship between global self-esteem level and participants' attitudes. Moreover, while the analyses showed that males exhibited riskier sexual attitudes relative to females, gender differences were not observed in the relationship between each of the self-esteem constructs and participants' attitudes. Lastly, social desirability emerged as a significant predictor of participants' attitudes, with higher levels of social desirable responding being associated with lower participant approval of risky sexual practices.

Youth risky sexual behavior. Amongst the three self-esteem constructs that were used to predict participants' risky sexual behavior, only parental approval contingent self-esteem emerged as significant. The more participants based their self-esteem on their parent/caregiver's approval, the less likely they were to report engaging in risky sexual behavior. It could subsequently be speculated that young people will be less likely to engage in risky sexual behavior the more that they base their self-esteem on parental approval, which might only hold true if their parent/caregiver stipulates standards that are disapproving toward this behavior. However, as parents/caregivers' sexual attitudes were not included in this analysis, there are limits to making this assumption based on the current finding.

Although a main effect was not observed for global self-esteem level, an interaction effect was observed for this self-esteem construct and gender. Specifically, male participants with a higher level of global self-esteem exhibited higher engagement in risky sexual behavior compared to males with lower global self-esteem. In contrast, the extent to which female participants engaged in risky sexual behavior during the four weeks prior to the study did not vary according to their global self-esteem level. These findings partly mirror the results that were obtained in Spencer et al.'s (2002) study. In their study, males with a higher level of global self-esteem were more than two times more likely to initiate sexual activity at an earlier age relative to males with a low level of global self-esteem. However, unlike the current study, they found that female participants' initiation of sexual activity also depended on their self-esteem level, with those exhibiting higher global self-esteem being three times more likely to initiate sexual activity at a later age relative to females with low self-esteem. Quite possibly, Spencer et al.'s (2002) study demonstrated a significant relationship amongst their female participants while the current study failed to do so because both studies focused on different sexual behaviors. Interestingly, this was not an issue as it relates to the male participants in both studies. Nevertheless, the current study provides some support for the assertion that the relationship between global self-esteem level and risky sexual behavior might not always be straightforward. It shows that there might be instances in which having high global self-esteem might not necessarily relate to a lower engagement in maladaptive behavior, such as risky sex. This subsequently suggests that it might be useful to examine the moderating effect of a variable, such as gender, on the relationship between global self-esteem level and sexual behavior.

Youth Risky Sexual Attitudes/Behavior, Parental/Peer Sex Attitudes, and Contingent Self-Esteem

Studies suggest that young peoples' attitudes toward sexual behavior sometimes mirror the sexual views of individuals from the familial and peer systems (e.g., Booth-Butterfield & Sidelinger, 1998; Holman & Sillars, 2012). Studies additionally suggest that perceived parental and peer sexual attitudes in addition to young peoples' personal views toward sex are sometimes associated with their sexual behavior (e.g., Holman & Sillars, 2012; Maguen & Armistead, 2006; Rostosky et al., 2003). In light of these studies, the present investigation sought to determine: (a) the extent to which perceived parental and peer attitudes toward risky sexual behavior would predict participants' risky sexual attitudes and (b) the extent to which self and perceived parental/peer sexual attitudes would predict participants' risky sexual behavior. Gender differences were also investigated amongst these targeted relationships.

Youth risky sexual attitudes and parental/peer sex attitudes. When added to the regression model in separate steps, perceived parental attitudes resulted in a significant yet slight increment to the prediction of participants' risky sexual attitudes over and above perceived peer attitudes. Furthermore, as in previous research (e.g., Booth-Butterfield & Sidelinger, 1998; Holman & Sillars, 2012), perceived parental and peer sexual attitudes each emerged as a significant predictor of participants' personal risky sexual attitudes; that is, the more participants endorsed risky sexual behavior as being acceptable the more likely they were to perceive that their parent/caregiver and peer also approves of this behavior. It is important to note that although some researchers (e.g., Maguen & Armistead, 2006) have questioned whether peer influence is more important than parental influence, results from this current analysis showed that perceived peer attitudes emerged as the stronger predictor when compared to perceived parental attitudes.

Youth risky sexual behavior and self, parental, and peer sex attitudes. In the case of risky sexual behavior, perceived peer attitudes individually contributed to the prediction of participants' behavior over and above participants' personal attitudes. Perceived parental attitudes, in contrast, resulted in a nonsignificant increment to the prediction of participants' sexual behavior over and above perceived peer attitudes. Of the three types of attitudes that were used to predict participants' risky sexual behavior, participants' personal attitudes emerged as the stronger predictor. Similar to findings of previous research (e.g., Sterk et al., 2004), participants' sexual attitudes positively predicted their sexual behavior; that is, the more participants endorsed risky sexual practices as being acceptable, the more likely they were to report engaging in risky sexual behavior. Relatedly, Sterk et al. showed that females' unfavorable attitudes toward condoms positively predicted their likelihood of engaging in risky sexual behavior. The current study, however, failed to demonstrate gender differences in the relationship between participants' attitudes toward and engagement in risky sexual behavior. This contrasts with Rostosky et al.'s (2003) study, which demonstrated gender differences in the relationship between similar attitude and behavioral variables. Quite possibly, Rostosky et al. were able to obtain gender differences because the female and male participants in their study exhibited sexual attitudes that were significantly different from each other. In contrast, the female and male participants who were sexually active prior to the current study exhibited statistically similar sexual attitudes.

As indicated above, perceived peer attitudes were also a significant predictor of participants' sexual behavior, but perceived parental attitudes emerged as a nonsignificant predictor. The analysis also showed that gender differences did not emerge in the relationships between risky sexual behavior and either perceived parental attitudes or perceived peer attitudes. Interestingly, participants' perceptions of their peer's risky sexual attitudes negatively predicted participants' risky sexual behavior, despite participants' perception of their peer's attitudes toward risky sexual behavior exhibiting a positive relationship with participants' sexual attitudes. Specifically, when participants perceived their peer as being more in favor of risky sexual behavior, they were less likely to report engaging in this behavior. This finding is notable considering previous research has shown that participants who perceived their peer as having conservative or permissive sexual attitudes exhibited sexual behaviors that positively matched these perceptions (e.g., Holman & Sillars, 2012). The current study's finding also contradicts the major tenant of social norms theory that young people are likely to regulate their behavior in response to their perception of whether or not their peer approves of a particular behavior (Perkins et al., 2011). Furthermore, unlike previous research (e.g., Davis & Friel, 2001; Maguen & Armistead, 2006), the current study failed to demonstrate a significant relationship between participants' sexual behavior and their perceptions of their parent/caregiver's sexual attitudes. Quite possibly, the current study's results contrasted with those of other studies because the current study included more variables (e.g., social desirability, participants' risky sexual attitudes) in the analysis to predict risky sexual behavior than did other authors. It should be noted, however, that the inclusion of additional variables in the prediction of participants' risky sexual attitudes did not produce results that differed from those of other studies.

Youth risky sexual attitudes/behavior, parental/peer sex attitudes, and contingent self-esteem. To clarify further the relationship between participants' risky sexual attitudes/behavior and perceived parental/peer risky sexual attitudes, additional analyses examined whether these relationships would vary according to participants' level of contingent self-esteem and their gender. It was expected that participants' sexual attitudes/behavior would align most with their perceptions of their parent/caregiver and peer's sexual attitudes the more that they base their self-esteem on the approval of these individuals. However, the relationship between participants' sexual attitudes/behavior and their perceived parental and peer sexual attitudes did not vary according to participants' level of contingent self-esteem. Using a variable (i.e., peer closeness, as measured by items such as, “I care about what this person thinks”) that was somewhat comparable to contingent self-esteem, Holman and Sillars (2012) also found that their variable failed to moderate the relationship between participants’ sexual behavior and perceived peer sex norms.

Summary. Taken together, the current study suggests that young peoples’ sexual attitudes are more likely to mirror their perceptions of their peer’s attitudes rather than their perceptions of their parent/caregiver’s attitudes. Although this is the case, the similarity between their attitudes and their peer’s attitudes might not always be reflected in their sexual behavior. It is also important to note that when taking variables such as participants’ risky sexual attitudes into account, perceived parental risky attitudes did not matter as much as participants’ personal views in explaining participants’ risky sexual behavior. Furthermore, how much participants base their self-esteem on parental/peer approval was not a factor that changed the extent to which perceived parental/peer attitudes predicted participants’ sexual attitudes/behavior.

Youth Risky Sexual Attitudes/Behavior, Global Self-Esteem Level, Contingent Self-Esteem, and Parental/Peer Sex Attitudes

Previous studies have shown that participants with low or with high levels of global self-esteem are sometimes equally likely to engage in risky behavior (e.g., Smith et al., 1997). Based on the literature, it seemed likely that individuals with high or low global self-esteem level are probably just as likely to engage in risky sexual behavior because their self-esteem might be based on a domain (e.g., peer approval contingent self-esteem) that they believe endorses such behavior (e.g., perceptions of peer’s attitudes toward risky sexual behavior). The current study subsequently examined whether global self-esteem level and risky sexual behavior would vary according to participants’ level of contingent self-esteem and perceived parental/peer attitudes.

Gender differences amongst these targeted relationships were also analyzed. For both analyses, obtained results failed to support the study's hypotheses. Participants' level of global self-esteem and risky sexual behavior did not collectively depend on their gender, contingent self-esteem (i.e., parental approval contingent self-esteem or peer approval contingent self-esteem), and perceived risky sexual attitudes (i.e., parental attitudes or peer attitudes).

Instead, it only varied according to participants' perceptions of their parent/caregiver's attitudes toward risky sexual behavior. Participants with the highest global self-esteem level who rated their parent/caregiver as having riskier attitudes were slightly more likely to engage in risky sexual behavior compared to those with the same global self-esteem level who rated their parent/caregiver as being less accepting of risky sexual practices. Surprisingly, participants with the lowest global self-esteem level who rated their parent/caregiver as being less accepting of risky sexual behavior were still much more likely to engage in this behavior compared to those with a similar low level of global self-esteem who rated their parent/caregiver as endorsing riskier sexual attitudes. Taken together, these findings suggest that having a parent/caregiver who is perceived as having a lower level of approval toward risky sexual behavior might be a protective factor amongst young people with high global self-esteem. It is unclear, however, as to why having this type of parent might not serve as a protective factor amongst young people with low global self-esteem.

Limitations

A number of limitations of the current investigation should be noted. One limitation pertains to the generalizability of the research findings. Although the sample size was adequate, the sample was not very diverse. All participants were enrolled in college and identified as either female or male. In addition, the majority of participants indicated that they were White, were heterosexual, did not have a religion, and/or were raised in a two-parent household. Furthermore, because participants were recruited from MTurk's online community of "Workers," it is possible that they represent a specific subgroup of 18 to 24 year olds who are different from 18 to 24 year olds who are not part of this community. Taken together, it is unclear as to whether the findings from the current study would generalize to ethnic/racial and sexual minorities, individuals who are religiously diverse, and 18 to 24 year olds who are not members of MTurk's online community.

Another limitation pertains to the measures the current study used to assess risky sexual attitudes and contingent self-esteem as well as participants' sexual behavior. Although the risky sexual attitudes and contingent self-esteem measures obtained alpha coefficients that ranged from $\alpha = .80$ to $\alpha = .87$ and although the items were evaluated as being fit for the study, as shown through beta testing, the measures were not comprehensively validated. The beta testing was based on the responses of only four individuals and other psychometric properties (e.g., convergent and divergent validity using validated measures that assess similar constructs) were not assessed. In terms of the measure that was used to assess risky sexual behavior, it obtained a rather low alpha coefficient of $\alpha = .49$, which suggests that the items poorly measured the targeted construct (i.e., risky sexual behavior). However, it is possible that the measure obtained a low Cronbach alpha value because it consisted of only four items. Subsequently, future studies that are aimed at understanding youth risky sexual behavior should use a measure that consists of more items.

The study also relied exclusively on self-reported information that was provided through an online format. Online surveys were used to help participants feel more comfortable responding to the surveys that assessed sensitive information, such as their attitudes toward risky sexual behavior and their level of engagement in this behavior. However, by using an online format, participants who might have had a question about the wording of the survey items, for example, were unable to obtain clarification from the investigator before providing a response. This is especially likely, as some participants incorrectly responded to the item for which they had to indicate the gender of their peer.

Instead of using parental/peer actual attitudes toward risky sexual behavior, the study relied on participants' perceptions of these attitudes because, as social norms theory suggests, perceptions of others' attitudes can influence young peoples' attitudes and behavior. However, it is possible that some participants provided responses that do not reflect how they truly feel their parent/caregiver and peer would view risky sexual behavior. Instead, it is possible that such participants simply responded to the items by guessing or perhaps responded in a socially desirable manner.

The final limitation relates to the assumptions (i.e., outliers, normality, multicollinearity, homoscedasticity, and linearity) of multiple regression. Although the data did not violate the assumption of multicollinearity, the remaining assumptions were violated by some or all of the data. Log transformations were successfully able to correct for the outliers that appeared amongst the data, and were able to help improve the normality of the data. However, violations of linearity and homoscedasticity remained.

Implications and Directions for Future Research

This section aims to discuss the implications of the study's findings and to provide directions for future research. First, although the evidence was not overwhelming, findings suggest that global self-esteem might not always exhibit a straightforward relationship with youth sexual behavior. Gender, as in previous research (e.g., Spencer et al., 2002), and perceived parental attitudes toward sexual behavior emerged as variables that affected the manner in which global self-esteem level related to young peoples' risky sexual behavior. These findings subsequently suggest that helping young people to increase their global self-esteem level might not necessarily be associated with reducing the rate of risky sexual behavior amongst those in their age group. These findings also suggest that it would be informative for future studies to examine the extent to which the relationship between global self-esteem level and risky sexual behavior varies according to the different levels of a variable such as gender. Doing so might provide further clarification regarding the relationship between global self-esteem and risky sexual behavior.

Second, the study did not obtain overwhelming support showing that contingent self-esteem, relative to global self-esteem level, is a better predictor of risky sexual attitudes or behavior. It is likely that the study would have yielded stronger empirical support had it utilized a well-validated measure of contingent self-esteem. As limited research exists in this area, additional studies should be conducted to examine the relationship between contingent self-esteem and risky sexual attitudes and behavior. However, these studies should develop measures that assess the same contingent self-esteem constructs that were targeted in the current investigation, and then conduct analyses that ensure that they are well validated.

Lastly, the few significant findings that emerged suggest that young peoples' sexual attitudes and behavior might be affected by parental and peer variables, such as perceived parental/peer risky sexual attitudes. Despite the limited support, the study showed that it might still be useful to develop prevention/intervention programs that are multisystemic in nature in order to help young people adapt attitudes that are more favorable toward risky sexual behavior and help them to exhibit safer sexual practices. The study also showed that it might still be useful for future studies to look at how variables from the familial and peer systems are associated with youth sexual attitudes and behavior.

Conclusion

With young people in their teens to early twenties evidencing high rates of sexually transmitted infections, it is critical to identify the factors that are associated with youth risky sexual behavior. Scholars argue that because youth sexual behavior is a complex area of study it should be examined using a multisystemic focus (Kotchick et al., 2001). With this approach, attention can be directed toward the personal and environmental factors that might influence young peoples' choice to engage or refrain from engaging in risky sexual behavior. The current investigation subsequently investigated the extent to which systemic related variables (i.e., gender, global self-esteem, contingent self-esteem, and perceived parental and peer sexual attitudes) individually predicted youth risky sexual attitudes (i.e., extent to which risky sexual practices are endorsed as being acceptable) and behavior (e.g., condom nonuse) as well as the extent to which the interactions amongst these variables predicted these outcome variables. The specific systems that were of interest to this dissertation were the self-system, family system, and peer system. Overall, the results from the study highlight the importance of considering the possible influence of variables, such as gender, on the relationship between global self-esteem level and risky sexual behavior. Relatedly, findings suggest that helping young people to improve how they evaluate their worth (i.e., global self-esteem) might not necessarily be associated with lower engagement in risky sexual behavior. It also highlights the need for additional studies that examine the relationship between youth sexual attitudes and behavior and the type of contingent self-esteem variables that were investigated in the current study, especially in light of researchers' (e.g., Crocker et al., 2001) assertion that contingent self-esteem can influence how individuals regulate their behavior. Lastly, the few findings that emerged with regard to the family and peer related variables suggest that it is still important for researchers to adapt a multisystemic approach when trying to understand youth sexual attitudes and behavior and for prevention/intervention programs to adopt such an approach. Doing so would essentially reflect an understanding that young people do not exist within a vacuum, but are influenced by the environment in which they are embedded.

APPENDIX A

MTurk Advertisement

Demographic Survey to Determine Eligibility to Participate in a Paid Research Study

Requester: Chamane Simpson **Reward:** $1.0 per HIT **HITS available:** 1 **Duration:** 45 minutes

Qualifications Required: Masters has been granted

Number of HITs Approved greater than or equal to 500

HIT Approval Rate(%) for all Requesters' HITS greater than or equal to 95

Location is UNITED STATES

APPENDIX B

Consent Letter for Demographic Screening Measure

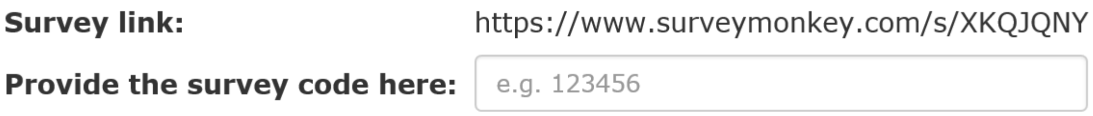
Dear Prospective Participant:

My name is Chamane Simpson, and I am a doctoral candidate in the Educational Psychology program at the City University of New York Graduate Center. I am currently working on my dissertation, and I am recruiting participants for my study, whereby I will investigate human sexual behavior and attitudes. All eligible participants will receive $1 as compensation for their participation, which should last no more than 30-45 minutes at most. Overall, I intend to recruit at least 250 participants.

However, to be eligible for my study, prospective participants will be asked to complete a 3-5 minute demographic survey. It must be noted that completing this survey will not entail monetary compensation. Participants who are found to be eligible for my study will be redirected to a webpage where they will be able to consent to participate in the research study. If they consent, they will then be able to complete the study’s seven questionnaires/surveys. After completing the study’s questionnaires/surveys, participants will receive a verification code that they are to paste into the box below to receive monetary compensation for their participation. Please note that you will only be paid once for participating in the study. Attempts to submit the verification code multiple times will not result in multiple payments. Anyone who attempts to submit the verification code multiple times will be prevented from submitting the code again in the future.

Participants must leave this window open as they complete all surveys. Upon completion, return to this page and paste the code into the box.

If you agree to complete the 3-5 minute demographic survey, which will involve no monetary compensation, to determine whether you are eligible for the paid research study, please click the following link.



Survey link:	https://www.surveymonkey.com/s/XKQJQNY
Provide the survey code here:	e.g. 123456

APPENDIX C

Brief Demographic Questionnaire

Instructions: Please respond to the following items. Do not skip any item. Thank you.

1. Please indicate your gender:________________

2. What is your sexual orientation? _______________________________

3. What is your race/ethnicity?
   a. African American/Black
   b. American Indian/Alaskan Native
   c. Asian American
   d. European American
   e. Hispanic/Latino(a) American
   f. International
   g. Multiracial
   h. Other (please specify how you identify yourself):_______________________________

4. Which category does your age fall within:
   a. 17 or younger
   b. 18 to 24 years old
   c. 25 to 39 years old
   d. 40 to 49 years old
   e. 50 to 59 years old
   f. 60 and older

5. Please specify your age:______

6. Are you an:
   a. Adult, Undergraduate Student
   b. Adult, Graduate Student
   c. Adult, Non-Undergraduate or Non-Graduate Student
   d. N/A

7. If you are a college student, please indicate your current college level.
   a. Freshman
   b. Sophomore
   c. Junior

   d. Senior
   e. N/A

8. Please indicate your religion: ____________________________

9. What is your relationship status?
   a. Dating
   b. Divorced
   c. Engaged
   d. Married
   e. Not currently in a relationship
   f. Separated
   g. Widowed

10. With whom do you currently live?
    a. Friend(s)
    b. I live alone
    c. Parent(s) or relative(s)
    d. Romantic partner
    e. Other (please specify with whom you currently live):_______________________

11. Please describe the family/home in which you grew up.
    a. Nuclear (Two biological parents)
    b. Single parent household (Father headed – widowed or divorced)
    c. Single parent household (Mother headed – widowed or divorced)
    d. Step-family (with biological father)
    e. Step-family (with biological mother)
    f. Other (Please define):_____________________________________

APPENDIX D

Consent Letter for Study

Dear Participant:

You are invited to participate in a research study that will be conducted under the direction of Chamane Simpson (Principal Investigator), who is a graduate student at the CUNY Graduate Center. She will conduct this research study while being advised by Dr. Georgiana Tryon, who is a professor at the CUNY Graduate Center. The goal of this study is to obtain a clearer understanding of the factors that influence human sexual behavior and attitudes.

The Principal Investigator will use Amazon Mechanical Turk (MTurk) to recruit approximately 250 individuals to participate in her study. She will ask prospective participants to complete a brief demographic questionnaire to determine if they are eligible for the study. Prospective participants will be able to access the questionnaire through SurveyMonkey. Eligible participants will then be able to consent to participate in the study. If they agree to participate in the study, eligible participants will be able to complete the study's seven questionnaires/surveys through SurveyMonkey. The Principal Investigator estimates that it will take 30 to 45 minutes to complete all questionnaires/surveys. In addition, participants will be able to complete the questionnaires/surveys on their personal computer.

Participation in this study may involve some discomfort due to the personal nature of the survey questions. To minimize this discomfort, the Principal Investigator will take precautions to protect participants from being linked to their responses. First, participants will not provide survey responses through Amazon Mechanical Turk in order to prevent their MTurk worker IDs from being linked to their survey responses. Instead, participants will complete the study's surveys through an external site: SurveyMonkey. Second, SurveyMonkey will assign participants with a respondent ID to protect their identity. The respondent ID will be linked to their responses and will be used in lieu of personal identifiers (e.g., name). In addition, the Principal Investigator will never ask participants to provide any personal identifying information (e.g., name). She will also not collect or save their IP address when the complete the study's surveys through SurveyMonkey. If participants are troubled because of this study, they should contact the Principal Investigator at csimpson@gc.cuny.edu or (516) 880 – 4716.

There are no direct benefits that may be received from participating in this study. However, participation in this study may help to contribute to the research field as it relates to understanding the factors that influence human sexual behavior and attitudes. Participation in this study is voluntary. Participants may freely choose to opt out of this study, discontinue their participation, or refuse to answer any question at any time. However, to receive compensation for participating in this study, participants will be required to complete all questions that are on the surveys. Participants will be provided with compensation for their full participation. Each participant will receive $1.00 for completing all questions on the surveys. So that participants can receive compensation, a verification code will automatically appear on their screen only after they have completed the study's surveys. Participants will need to enter the code into the textbox on the MTurk webpage where they clicked on the link to take the brief demographic survey. MTurk will provide the Principal Investigator with a list of worker IDs of all those who have submitted the code. For each individual on the list, the Principal Investigator will "approve" her/him. This will allow MTurk to transfer $1.00 from her account to their MTurk account. The Principal Investigator, however, will review this list to identify worker IDs that appear multiple times. The Principal Investigator will not approve any individual to receive multiple payments if their worker ID appears multiple times. Participants will only receive one payment for their participation. The Principal Investigator will block any participant whose worker ID appears multiple times so that they cannot enter the code again. It is important to note that being blocked may be reflected in participants' MTurk work history.

The Principal Investigator will collect all data through the Internet. All data will be accessible to the Principal Investigator and her advisor, Dr. Georgiana Tryon. All data will be stored in a password protected electronic format, and will be coded. To help protect participants' confidentiality, participants will complete the study's measures using an external website: SurveyMonkey. By using this website, the Principal Investigator will not be able to link participants' responses to their MTurk worker ID. However, MTurk will provide the Principal Investigator with access to participants' MTurk worker ID during the implementation of the study. The Principal Investigator will not use participants' MTurk worker ID for any other purpose but to alert MTurk as to who should be compensated, to view participants' work history, and to ensure that there are no participants who have submitted the verification code multiple times. In addition, the Principal Investigator will not save any worker IDs on her computer; she will only access the IDs when she logs into her MTurk account. After the Principal Investigator has completed her study, she will ask MTurk to delete her account, and she will no longer have access to participants' MTurk worker ID. In addition, the Principal Investigator will never ask participants to provide personal identifying information.

If participants have any questions about the research now or in the future regarding their rights as a participant in this study, they may contact Kay Powell at KPowell@gc.cuny.edu or (212) 817-7525. Participants should also note that the Principal Investigator's contact information is (516)880-4716 or csimpson@gc.cuny.edu and her advisor's contact information is gtyron@gc.cuny.edu.

Statement of Consent:

"I have read the above description of this research and I understand it. I understand that the study will investigate human sexual behavior and attitudes. I have also been informed of the risks and benefits involved."

If you do wish to participate in the research study, please select “Agree.” If not, please select “Disagree”

○ Agree
○ Disagree

Thank you in advance for your participation!

Chamane Simpson

APPENDIX E

Demographic Characteristics of Disqualified Responders

Demographic Characteristics of Disqualified Respondents (N = 1,953)

Variable	*n*	%
Gender		
Cisfemale	8	.004
Female	1,118	57.2
Gender fluid	6	.003
Male	821	42.5
Sexual orientation		
Asexual	6	.3
Bisexual	174	8.9
Cissexual	1	.1
Demisexual	1	.1
Heterosexual	1,654	84.7
Homosexual	67	3.4
Lesbian	31	1.6
Open	1	.1
Pansexual	16	.8
Queer	1	.1
Questioning	1	.1
Race/ethnicity		
American Indian/Alaska Native	27	1.4
Asian/ Pacific Islander	132	6.8
Black	165	8.4
Caribbean	1	.1
Hispanic/Latino(a)	96	4.9
Indian	1	.1
International	16	.8
Middle Eastern	1	.1
Multiracial	17	.9
White	1,497	76.7
Age group (*M* = 35.8, *SD* = 11.47)		
18 – 24	203	10.4
25 – 29	538	27.5
30 – 39	651	33.3

Variables	*n*	%
40 – 49	261	13.4
50 – 59	203	10.4
60 – 69	82	4.2
70 – 79	15	.8
College Status		
Graduate Student	67	3.4
Non-Undergraduate/Non-Graduate Student	115	5.9
N/A	20	1.0
No answer provided	1,751	89.7

APPENDIX F

Demographic Characteristics of Qualified Non-Completers

Demographic Characteristics of Qualified Non-Completers (N = 19)

Variable	*n*	%
Gender		
Female	10	52.6
Male	9	47.4
Sexual orientation		
Bisexual	2	10.5
Heterosexual	16	84.2
Lesbian	1	5.2
Race/ethnicity		
Asian	2	10.5
Black	4	21.1
Hispanic/Latino(a)	3	15.8
International	1	5.2
White	9	47.4
Age group (M = 20.6, SD = 2.05)		
18	4	21.1
19	2	10.5
20	3	15.8
21	3	15.8
22	3	15.8
23	4	21.1
College level		
Freshman	4	21.1
Sophomore	9	47.4
Junior	2	10.5
Senior	4	21.1
Relationship status		
Dating	10	52.6
Not currently in a relationship	9	47.4
Residence		
Friend(s)	4	21.1
Lives alone	2	10.5
Parent(s)/relative(s)	10	52.6
Romantic partner	3	15.8

Variable	*n*	%
Religion		
Catholic	4	21.1
Christian	6	31.6
Jewish	1	5.3
No religion	8	42.1
Protestant	9	47.4
Did not provide a response	1	5.3
Family type		
Household with two biological parents	11	57.9
Single parent household (Father-headed)	1	5.3
Single parent household (Mother-headed)	5	26.3
Stepfamily (with biological father)	1	5.3
Stepfamily (with biological mother)	1	5.3

APPENDIX G

Parent/Caregiver and Peer Communication and Relationship Measure

Instructions: Please respond to the following items regarding your family and peer relationships. Do not skip any question. Thank you.

1. Please identify the parent/caregiver who has had the greatest impact on you:
    a. Mother
    b. Father
    c. Grandmother
    d. Grandfather
    e. Other:__________________

2. What is the gender of the parent/caregiver whom you have identified:_______________

3. How close would you rate your relationship with that parent/caregiver?
    a. Not At All Close
    b. Slightly Close
    c. Moderately Close
    d. Extremely Close

4. Describe the frequency of communication that you have had with this parent/caregiver.
    a. Never Communicate
    b. Very Rarely Communicate
    c. Moderately Communicate
    d. Frequently Communicate
    e. Very Frequently Communicate

5. Describe the frequency of communication that you have had with this parent/caregiver about sex.
    a. Never Communicate
    b. Very Rarely Communicate
    c. Moderately Communicate
    d. Frequently Communicate
    e. Very Frequently Communicate

6. Please identify the gender of the peer who has had the greatest impact on you:___________

7. Choosing the peer who has had the greatest impact on you, describe how close you feel to that peer.

   a. Not At All Close
   b. Slightly Close
   c. Moderately Close
   d. Extremely Close

8. Describe the frequency of communication that you have had with this peer.
   a. Never Communicate
   b. Very Rarely Communicate
   c. Moderately Communicate
   d. Frequently Communicate
   e. Very Frequently Communicate

9. Describe the frequency of communication that you have had with this peer about sex.
   a. Never Communicate
   b. Very Rarely Communicate
   c. Moderately Communicate
   d. Frequently Communicate
   e. Very Frequently Communicate

APPENDIX H

Risky Sexual Attitudes Measure

Instructions: The following statements refer only to individuals in noncommitted sexual relationships. Even if you never had sexual intercourse, please select the response that reflects your attitude towards each item. Additionally, for the parent/caregiver and friend whom you described earlier, enter the response you believe she or he would provide; your answers do not have to be based on information she or he has explicitly disclosed to you but they can be based on how you perceive she or he might respond. Thank you.

1 = Strongly Disagree 2 = Moderately Disagree 3 = Neutral 4 = Moderately Agree 5 = Strongly Agree

		Self	**Parent/ Caregiver**	**Peer**
1.	It is okay not to use a condom in order to maintain the spontaneity and pleasurableness of a sexual encounter (i.e., anal or vaginal sexual intercourse).			
2.	Not using a condom during sexual intercourse (i.e., anal or vaginal sexual intercourse) is okay when one’s partner insists against using one.			
3.	It is okay to drink alcohol or use drugs to enhance the experience of sexual intercourse (i.e., anal or vaginal sexual intercourse).			
4.	When one does not have the financial means to buy protection (e.g., condoms), it is okay to have sexual intercourse (i.e., anal or vaginal sexual intercourse) without one.			
5.	In order to achieve true intimacy between sexual partners during anal or vaginal sexual intercourse, it is best to proceed without a condom.			
6.	If some form of protection (e.g., condom) is unavailable in the moment, it is acceptable to proceed with sexual intercourse (i.e., anal or vaginal sexual intercourse) without one.			

APPENDIX I

Sexual Behavior Measure

Instructions: Sexual intercourse will be defined as any sexual activity that involves vaginal or anal penetration between individuals. Please answer the following questions honestly and to the best of your ability. Thank you.

1. Have you had sexual intercourse (i.e., vaginal or anal sexual intercourse) with another individual at least once in your lifetime?
    a. Yes
    b. No

2. If you have engaged in sexual intercourse at least once in your lifetime, how old were you when you first had sex? ________

3. How many sexual partners did you have:
    a. During your lifetime:____________
    b. During the past four weeks:_________

4. How often did you engage in sexual intercourse during the past four weeks? ____________

5. How often were you under the influence of drugs or alcohol prior to having sexual intercourse during the past four weeks? ______________

6. During the past four weeks, how many times did you engage in sexual intercourse while being unaware of your partner's HIV/AIDS status or whether she/he currently had a sexually transmitted infection (STI), such as gonorrhea?______________

7. During the past four weeks, how many times did you not use a condom while engaging in sexual intercourse:__________

APPENDIX J

Rosenberg Self-Esteem Scale

Instructions: Please answer the following questions honestly and to the best of your ability. Do not skip any question. Thank you.

1. I feel that I am a person of worth, at least on an equal plane with others.
   a. Strongly Disagree
   b. Disagree
   c. Agree
   d. Strongly Agree

2. I feel that I have a number of good qualities.
   a. Strongly Disagree
   b. Disagree
   c. Agree
   d. Strongly Agree

3. All in all, I am inclined to feel that I am a failure.
   a. Strongly Disagree
   b. Disagree
   c. Agree
   d. Strongly Agree

4. I feel I do not have much to be proud of.
   a. Strongly Disagree
   b. Disagree
   c. Agree
   d. Strongly agree

5. I wish I could have more respect for myself.
   a. Strongly Disagree
   b. Disagree
   c. Agree
   d. Strongly Agree

6. I am able to do things as well as most other people.
   a. Strongly Disagree
   b. Disagree

   c. Agree
   d. Strongly Agree

7. I take a positive attitude toward myself.
   a. Strongly Disagree
   b. Disagree
   c. Agree
   d. Strongly Agree

8. On the whole, I am satisfied with myself.
   a. Strongly Disagree
   b. Disagree
   c. Agree
   d. Strongly Agree

9. I certainly feel useless at times.
   a. Strongly Disagree
   b. Disagree
   c. Agree
   d. Strongly Agree

10. At times I think I am no good at all.
   a. Strongly Disagree
   b. Disagree
   c. Agree
   d. Strongly Agree

APPENDIX K

Contingent Self-Esteem – Parent/Caregiver Approval Measure

Instructions: Using the parent/caregiver whom you identified earlier, please rate each item by selecting the response that best describe how you feel. Do not skip any question. Thank you.

1. My self-esteem does not depend on whether my behavior reflects the standards of my parent.
    a. Strongly Disagree
    b. Moderately Disagree
    c. Agree
    d. Moderately Agree
    e. Strongly Agree

2. Not living up to the expectations of my parent would lower my self-esteem.
    a. Strongly Disagree
    b. Moderately Disagree
    c. Agree
    d. Moderately Agree
    e. Strongly Agree

3. It is important to my self-esteem that my parent approves of my behavior.
    a. Strongly Disagree
    b. Moderately Disagree
    c. Agree
    d. Moderately Agree
    e. Strongly Agree

4. If my behavior aligns with the values of my parent, then I feel good about myself.
    a. Strongly Disagree
    b. Moderately Disagree
    c. Agree
    d. Moderately Agree
    e. Strongly Agree

5. When I think that I am doing something that my parent finds unacceptable, my self-esteem suffers.
    a. Strongly Disagree
    b. Moderately Disagree

c. Agree
d. Moderately Agree
e. Strongly Agree

APPENDIX L

Contingent Self-Esteem – Peer Approval Measure

Instructions: Using the peer whom you identified earlier, please rate each item by selecting the response that best describe how you feel. Do not skip any question. Thank you.

1. It is important to my self-esteem that I behave similar to the way that my friend behaves.
   a. Strongly Disagree
   b. Moderately Disagree
   c. Agree
   d. Moderately Agree
   e. Strongly Agree

2. My self-esteem would increase if my friend approved of my behavior.
   a. Strongly Disagree
   b. Moderately Disagree
   c. Agree
   d. Moderately Agree
   e. Strongly Agree

3. When I behave contrary to the typical way that I believe my friend behaves, I feel bad about myself.
   a. Strongly Disagree
   b. Moderately Disagree
   c. Agree
   d. Moderately Agree
   e. Strongly Agree

4. I do not care if my friend has a negative opinion of my behavior.
   a. Strongly Disagree
   b. Moderately Disagree
   c. Agree
   d. Moderately Agree
   e. Strongly Agree

5. Behaving in ways that go against the values of my friend would lower my self-esteem.
   a. Strongly Disagree
   b. Moderately Disagree
   c. Agree

d. Moderately Agree
e. Strongly Agree

APPENDIX M

Marlowe-Crowne Social Desirability Scale – Short Form C

Instructions: Please read the following statements and decide whether the statement is true or false as it pertains to you. It is best to go with your first judgment and not spend too long thinking over any one question. Thank you.

1. It is sometimes hard for me to go on with my work if I am not encouraged. ____
2. I sometimes feel resentful when I don't get my way. ____
3. On a few occasions, I have given up doing something because I thought too little of my ability. ____
4. There have been times when I felt like rebelling against people in authority even though I knew they were right. ____
5. No matter who I'm talking to, I'm always a good listener. ____
6. There have been occasions when I took advantage of someone. ____
7. I'm always willing to admit it when I make a mistake. ____
8. I sometimes try to get even rather than forgive and forget. ____
9. I am always courteous, even to people who are disagreeable. ____
10. I have never been irked when people expressed ideas very different from my own. ____
11. There have times when I was quite jealous of the good fortune of others. ____
12. I am sometimes irritated by people who ask favors of me. ____
13. I have never deliberately said something that hurt someone's feelings. ____

APPENDIX N

Gender Differences in Participants’ Family and Peer Preferences and Living Arrangement

All Participants

	Female Participants’ Preferences/ Arrangements		Male Participants’ Preferences/ Arrangements		Chi-Square Test for Independence		
Variable	*n*	%	*n*	%	χ^2	*df*	*p*
Influential Parent/Caregiver Gender					1.21	1	.271
Female	96	78.7	92	71.9			
Male	26	21.3	36	28.1			
Relation of Influential Parent/Caregiver to Participant[a]					1.01	2	.602
Mother	90	73.8	85	68.0			
Father	26	21.3	32	25.6			
Grandmother	6	4.9	8	6.4			
Peer Gender[b]					47.75	1	.001
Female	82	70.7	31	25.2			
Male	34	29.3	92	74.8			
Living Arrangement					2.51	1	.110
Does not live with parent	76	62.3	66	51.6			
Lives with parent	46	37.7	62	48.4			

Note. Unless otherwise stated, all 250 participants were included in the analysis.

[a] As a result of the small number of individuals (*n* = 3) who identified their grandfather as their most influential parent/caregiver, these participants were omitted from the analysis leaving 247 participants who were included in the analysis; [b] Participants (*n* = 11) were excluded from the analysis if they provided another response other than their peer’s gender or if there was not enough individuals who provided the same gender response (i.e., “gender queer”), which left 239 participants in the analysis.

Participants who were Sexually Active during the Four Weeks before the Study

	Female Participants' Preferences/ Arrangements		Male Participants' Preferences/ Arrangements		Chi-Square Test for Independence		
Variable	*n*	%	*n*	%	χ^2	*df*	*p*
Influential Parent/Caregiver Gender					.001	1	.823
Female	52	75.4	39	73.6			
Male	17	24.6	14	26.4			
Relation of Influential Parent/Caregiver to Participant[a]					.001	1	.823
Mother	52	75.4	39	73.6			
Father	17	24.6	14	26.4			
Peer Gender[b]					14.75	1	.001
Female	46	66.7	18	32.1			
Male	23	33.3	38	67.9			
Living Arrangement					6.68	1	.005
Does not live with parent	60	82.2	35	60.3			
Lives with parent	13	17.8	23	39.7			

Note. Unless otherwise stated, the responses of the 131 participants who were sexually active during the four weeks before the study were included in the analysis.

[a] As a result of the small number of individuals (*n* = 9) who identified their grandmother as their most influential parent/caregiver, these participants were omitted from the analysis leaving 122 participants who were included in the analysis; [b] Participants (*n* = 6) were excluded from the analysis if they provided another response other than their peer's gender or if there was not enough individuals who provided the same gender response (i.e., "gender queer"), which left 125 participants in the analysis.

APPENDIX O

Gender Differences across Relationship and Communication Variables

All Participants

	Female (*n* = 122)		Male (*n* = 128)		Independent Samples *t* – Test		
Variable	*M*	*SD*	*M*	*SD*	*t*	*df*	*Sig.*
Parent/Caregiver							
Closeness – P/C	3.14	.88	3.29	.80	-1.42	248	.158
Gen. Com. – P/C	4.05	.88	3.90	.83	1.39	248	.165
Sex Com. – P/C	2.13	1.03	1.85	.80	2.40	248	.017
Peer							
Closeness – P	3.48	.77	3.44	.66	.42	248	.677
Gen. Com. – P	4.20	.99	4.09	.91	.92	248	.359
Sex Com. – P	3.52	1.20	3.04	1.05	3.43	248	.001

Note. $N = 250$. Closeness – P/C = Closeness – Parent/Caregiver; Gen. Com. – P/C = General Communication – Parent/Caregiver; Sex Com. – P/C = Sex Communication – Parent/Caregiver; Closeness – P = Closeness – Peer; Gen. Com. – P = General Communication – Peer; Sex Com. – P = Sex Communication – Peer. Scale scores for the closeness measure range from 1 – 4, with higher scores indicating a greater level of perceived closeness; Scale scores for the communication measure range from 1 – 5, with higher scores indicating frequent engagement in general and sex related conversations.

Participants who were Sexually Active during the Four Weeks before the Study

	Female (*n* = 73)		Male (*n* = 58)		Independent Samples *t* – Test		
Variable	*M*	*SD*	*M*	*SD*	*t*	*df*	*Sig.*
Parent/Caregiver							
Closeness – P/C	3.15	.92	3.36	.85	-1.35	129	.180
Gen. Com. – P/C	4.05	.86	3.98	.87	.47	129	.637
Sex Com. – P/C	2.16	.94	2.07	.97	.57	129	.571
Peer							
Closeness – P	3.55	.75	3.59	.53	-.33	129	.742
Gen. Com. – P	4.34	.92	4.26	.76	.56	129	.577
Sex Com. – P	3.99	.99	3.38	.93	.97	129	.001

Note. $N = 131$. Closeness – P/C = Closeness – Parent/Caregiver; Gen. Com. – P/C = General Communication – Parent/Caregiver; Sex Com. – P/C = Sex Communication – Parent/Caregiver; Closeness – P = Closeness – Peer; Gen. Com. – P = General Communication – Peer; Sex Com. – P = Sex Communication – Peer. Scale scores for the closeness measure range from 1 – 4, with higher scores indicating a greater level of perceived closeness; Scale scores for the communication measure range from 1 – 5, with higher scores indicating frequent engagement in general and sex related conversations

APPENDIX P

Gender Differences in the Scores on the Risky Sexual Attitudes Measure

All Participants

	Female (*n* = 122)		Male (*n* = 128)		Independent Samples *t* – Test		
Variable	*M*	*SD*	*M*	*SD*	*t*	*df*	*Sig.*
RSA – S	12.50	5.03	14.20	4.95	-2.69	248	.008
RSA – P/C	8.95	3.85	10.20	4.31	-2.40	248	.017
RSA – P	13.61	5.68	15.59	5.38	-2.83	248	.005

Note. *N* = 250. RSA – S = Risky Sexual Attitudes – Self; RSA – P/C = Risky Sexual Attitudes–Parent/Caregiver; RSA – P = Risky Sexual Attitudes – Peer. Scale scores for the risky attitudes measures range from 1 – 5, with higher scores indicating greater approval of risky sexual behavior.

Participants who were Sexually Active during the Four Weeks before the Study

	Female (*n* = 73)		Male (*n* = 58)		Independent Samples *t* – Test		
Variable	*M*	*SD*	*M*	*SD*	*t*	*df*	*Sig.*
RSA – S	13.81	4.97	15.34	5.06	-1.74	131	.084
RSA – P/C	8.68	3.46	9.93	3.86	-1.95	131	.054
RSA – P	14.70	5.58	16.81	5.06	-2.24	131	.027

Note. *N* = 131. RSA – S = Risky Sexual Attitudes–Self; RSA – P/C = Risky Sexual Attitudes–Parent/Caregiver; RSA – P = Risky Sexual Attitudes – Peer. Scale scores for the risky attitudes measures range from 1 – 5, with higher scores indicating greater approval of risky sexual behavior.

APPENDIX Q

Differences in Perceived Parental and Peer Attitudes toward Risky Sexual Behavior according to the Gender of the Parent/Caregiver and Peer whom Participants Identified

All Participants

	Female		Male		Independent Samples *t* – Test		
Variable	*M*	*SD*	*M*	*SD*	*t*	*df*	*Sig.*
RSA – P/C	9.46	3.86	9.98	4.86	-.87	248	.385
RSA – P[a]	13.85	6.06	15.54	5.06	-2.35	237	.021

Note. *N* = 250. RSA – P/C = Risky Sexual Attitudes – Parent/Caregiver; RSA – P = Risky Sexual Attitudes – Peer. Scale scores for the risky sexual attitudes measures range from 1 – 5, with higher scores indicating greater approval of risky sexual behavior. [a]Participants (*n* = 11) were excluded from the analysis if they provided another response other than their peer's gender or if there was not enough individuals who provided the same gender response (i.e., "gender queer"), which left 239 participants.

Participants who were Sexually Active during the Four Weeks before the Study

	Female		Male		Independent Samples *t* – Test		
Variable	*M*	*SD*	*M*	*SD*	*t*	*df*	*Sig.*
RSA – P/C	9.11	3.46	9.65	4.36	-.71	129	.482
RSA – P[a]	15.33	5.73	16.36	4.97	-1.07	125	.285

Note. *N* = 131. RSA – P/C = Risky Sexual Attitudes – Parent/Caregiver; RSA – P = Risky Sexual Attitudes – Peer. Scale scores for the risky sexual attitudes measures range from 1 – 5, with higher scores indicating greater approval of risky sexual behavior. [a]Participants (*n* = 6) were excluded from the analysis if they provided another response other than their peer's gender or if there was not enough individuals who provided the same gender response (i.e., "gender queer"), which left 125 participants.

APPENDIX R

Gender Differences in Participants' Sexual Experiences

All Participants

	Female (*n* = 122)		Male (*n* = 128)		Chi-Square Test for Independence		
Variable	*n*	%	*n*	%	χ^2	*df*	*p*
Sexual Experience					2.04	1	.153
Never had sex	24	19.7	35	27.3			
Had sex at least once	98	80.3	93	72.7			

Note. $N = 250$.

All Participants

	Female		Male		Independent Samples *t* – Test		
Variable	*M*	*SD*	*M*	*SD*	*t*	*df*	*Sig.*
Sexual debut[a]	16.91	2.36	17.45	2.07	-1.66	189	.099
Lifetime sexual partners	5.57	8.98	4.15	7.58	1.36	248	.176
Frequency of sexual intercourse during the four weeks before the study	4.84	.35	3.87	6.70	1.17	248	.242
Sexual partners[b]	.70	.68	.47	.55	2.93	248	.004
Sex without a condom[b]	3.51	5.92	2.51	6.25	1.30	248	.195
Unaware of partner's STI and HIV/AIDS status[b]	1.73	4.17	1.37	4.02	.70	248	.485
Alcohol/drug related sex[b]	.93	1.94	.96	3.47	-.10	248	.923
TRSBS	6.86	10.03	5.30	11.25	1.15	248	.251

Note. $N = 250$. TRSBS = Total Risky Sexual Behavior Score.

[a] Does not include the 59 participants who have not debuted sexually. [b] Sexual behaviors that occurred during the four weeks before the study that contributed to the TRSBS.

Participants who were Sexually Active during the Four Weeks before the Study

	Female (*n* = 73)		Male (*n* = 58)		Independent Samples *t* -Test		
Variable	*M*	*SD*	*M*	*SD*	*t*	*df*	*Sig.*
Sexual debut	16.84	1.99	17.16	2.07	-.90	129	.371
Lifetime sexual partners	8.27	10.63	7.22	10.11	1.36	129	.567
Frequency of sexual intercourse during the four weeks before the study	8.08	6.41	8.53	7.72	-.37	129	.715
Sexual partners[a]	1.16	.47	1.03	.26	1.88	129	.063
Sex without a condom[a]	5.86	6.69	5.53	8.36	.25	129	.803
Unaware of partner’s STI and HIV/AIDS status[a]	2.89	5.08	3.02	5.56	-.14	129	.892
Alcohol/drug related sex[a]	1.55	2.31	2.12	4.92	-.88	129	.381
TRSBS	11.47	10.75	11.71	14.34	-.11	129	.913

Note. *N* = 131. TRSBS = Total Risky Sexual Behavior Score.

[a] Contributed to the TRSBS.

APPENDIX S

Gender Differences in Responses to the Self-Esteem and Social Desirability Measures

All Participants

	Female		Male		Independent Samples *t* – Test		
Variable	*M*	*SD*	*M*	*SD*	*t*	*df*	*Sig.*
RSES	30.11	6.82	30.48	6.19	-.46	248	.647
CSE – P/C	2.94	1.00	3.05	.86	-.91	248	.362
CSE – P	2.81	.83	2.98	.81	-1.59	248	.113
MCSD	5.89	2.68	6.21	2.67	-.94	248	.349

Note. *N* = 250. RSES = Rosenberg Self-Esteem Scale; CSE–P/C = Contingent Self-Esteem–Parent/Caregiver Approval; CSE–P = Contingent Self-Esteem–Peer Approval; MCSD = Marlowe-Crowne Social Desirability Scale. Scale scores for RSES range from 10 to 40, with higher scores indicating a higher level of self-esteem; Scale scores for the contingent self-esteem measures range from 1 – 5, with higher scores indicating a higher level of contingent self-esteem; Scale scores for MCSD range from 1 – 15, with higher scores indicating a higher level of social desirable responding.

Participants who were Sexually Active during the Four Weeks before the Study

	Female		Male		Independent Samples *t* – Test		
Variable	*M*	*SD*	*M*	*SD*	*t*	*df*	*Sig.*
RSES	31.49	6.46	31.81	5.88	-.29	129	.772
CSE – P/C	2.82	1.00	3.04	.87	-1.36	129	.176
CSE – P	2.69	.77	2.96	.88	-1.85	129	.066
MCSD	6.21	2.76	6.24	2.74	-.07	129	.941

Note. *N* = 131. RSES = Rosenberg Self-Esteem Scale; CSE–P/C = Contingent Self-Esteem–Parent/Caregiver Approval; CSE–P = Contingent Self-Esteem–Peer Approval; MCSD = Marlowe-Crowne Social Desirability Scale. Scale scores for RSES range from 10 to 40, with higher scores indicating a higher level of self-esteem; Scale scores for the contingent self-esteem measures range from 1 – 5, with higher scores indicating a higher level of contingent self-esteem; Scale scores for MCSD range from 1 – 15, with higher scores indicating a higher level of social desirable responding.

APPENDIX T

Differences in Participants' Living Arrangement according to their Sexual Status

All Participants

	Never Engaged (n = 59)	Engaged in Past but Not Past 4Wks. (n = 60)	Engaged in Past and Past 4Wks. (n = 131)	Chi-Square Test for Independence		
Variable	*n(%)*	*n(%)*	*n(%)*	χ^2	*df*	*p*
Lives with Parent(s)/Relative(s)				37.16	2	.001
Yes	44(74.6)	28(46.7)	36(27.5)			
No	15(25.4)	32(53.3)	95(72.5)			

Note. N = 250.

APPENDIX U

Differences in Relationship Quality, Communication Level, Self-Esteem, Sexual Attitudes, and Social Desirability according to Participants' Sexual Status

ANOVA Table Depicting Differences in Relationship Quality, Communication Level, Self-Esteem, Sexual Attitudes, and Social Desirability according to Sexual Status

	Never Engaged (*n* = 59)	Engaged in Past but Not Past 4Wks. (*n* = 60)	Engaged in Past and Past 4Wks. (*n* = 131)	One-Way ANOVA		
Variables	*M(SD)*	*M(SD)*	*M(SD)*	*F*	*df*	*Sig.*
Closeness – P/C	3.24(.75)	3.13(.79)	3.24(.90)	.39	247	.681
Gen. Com. – P/C	4.02(.82)	3.82(.87)	4.02(.86)	1.30	247	.274
Sex Com. – P/C	1.76(.86)	1.92(.91)	2.12(.95)	3.34	247	.037
Closeness – P	3.20(.85)	3.47(.65)	3.56(.66)	5.36	247	.005
Gen. Com. – P	3.83(1.05)	4.08(1.00)	4.31(.85)	5.37	247	.005
Sex Com. – P	2.53(1.04)	3.05(1.08)	3.72(1.01)	28.92	247	.001
RSES	28.63(6.50)	29.03(6.61)	31.63(6.19)	6.10	247	.003
CSE – P/C	3.19(.89)	2.99(.93)	2.92(.94)	1.78	247	.171
CSE – P	3.06(.92)	2.91(.67)	2.81(.83)	2.00	247	.138
RSA – S	11.58(4.78)	12.68(4.74)	14.49(5.05)	7.91	247	.001
RSA – P/C	10.47(4.80)	9.48(4.28)	9.24(3.68)	1.87	247	.157
RSA – P	13.31(5.44)	13.73(5.78)	15.63(5.44)	4.65	247	.011
MCSD	5.73(2.70)	6.02(2.51)	6.22(2.74)	.70	247	499

Note. *N* = 250. Never Engaged = Participants who never engaged in sexual intercourse during their lifetime; Engaged in Past but Not Past 4 Wks. = Participants who engaged in sexual intercourse at least once in their lifetime, but not during the past four weeks before participating in the study; Engaged in Past and Past 4 Wks. = Participants who engaged in sexual intercourse at least once in their lifetime and during the past four weeks before participating in the study. Closeness – P/C = Closeness – Parent/Caregiver; Gen. Com. – P/C = General Communication –Parent/Caregiver; Sex Com. – P/C = Sex Communication – Parent/Caregiver; Closeness – P = Closeness – Peer; Gen. Com. – P = General Communication – Peer; Sex Com. – P = Sex Communication – Peer; RSES = Rosenberg Self-Esteem Scale; CSE–P/C = Contingent Self-Esteem – Parent/Caregiver Approval; CSE – P = Contingent Self-Esteem – Peer Approval; RSA – S = Risky Sexual Attitudes – Self; RSA – P/C = Risky Sexual Attitudes – Parent/Caregiver; RSA – P = Risky Sexual Attitudes – Peer; MCSD = Marlowe-Crowne Social Desirability Scale; Scale scores for the closeness measure range from 1 – 4, with higher scores indicating a greater level of perceived closeness; Scale scores for the communication measure range from 1 – 5, with higher scores indicating frequent engagement in general and sex related conversations; Scale scores for RSES range from 10 to 40, with higher scores indicating a higher level of self-esteem; Scale scores for the risky sexual attitudes measures range from 1 – 5, with higher scores indicating greater approval of risky sexual behavior.

Post-Hoc Comparisons Depicting Significant Differences across the Relationship Quality, Communication Level, Self-Esteem, Risky Sexual Attitudes, and Social Desirability Variables according to Participants' Sexual Status

Dependent Variable	Sexual Status (I)	Sexual Status (J)	Mean Difference (I-J)	Standard Error	Sig.
Sex Com. – P/C	Engaged in Past but Not Past 4 Wks.	Never Engaged	.15	.17	.633
		Engaged in Past and Past 4 Wks.	-.21	.14	.326
	Never Engaged	Engaged in Past but Not Past 4 Wks.	-.15	.17	.633
		Engaged in Past and Past 4 Wks.	-.36	.14	.036
	Engaged in Past and Past 4 Wks.	Engaged in Past but Not Past 4 Wks.	.21	.14	.326
		Never Engaged	.36	.14	.036
Closeness – P	Engaged in Past but Not Past 4 Wks.	Never Engaged	.26	.13	.105
		Engaged in Past and Past 4 Wks.	-.10	.11	.645
	Never Engaged	Engaged in Past but Not Past 4 Wks.	-.26	.13	.105
		Engaged in Past and Past 4 Wks.	-.36	.11	.003
	Engaged in Past and Past 4 Wks.	Engaged in Past but Not Past 4 Wks.	.10	.11	.645
		Never Engaged	.36	.11	.003
Gen. Com. – P	Engaged in Past but Not Past 4 Wks.	Never Engaged	.25	.17	.306
		Engaged in Past and Past 4 Wks.	-.22	.15	.283
	Never Engaged	Engaged in Past but Not Past 4 Wks.	-.25	.17	.306
		Engaged in Past and Past 4 Wks.	-.48	.15	.004
	Engaged in Past and Past 4 Wks.	Engaged in Past but Not Past 4 Wks.	.22	.15	.283
		Never Engaged	.48	.15	.004
Sex Com. - P.	Engaged in Past but Not Past 4 Wks.	Never Engaged	.53	.19	.017
		Engaged in Past and Past 4 Wks.	-.68	.16	.001
	Never Engaged	Engaged in Past but Not Past 4 Wks.	-.53	.19	.017
		Engaged in Past and Past 4 Wks.	-1.19	.16	.001
	Engaged in Past and Past 4 Wks.	Engaged in Past but Not Past 4 Wks.	.67	.16	.001
		Never Engaged	1.19	.16	.000

Dependent Variable	Sexual Status (I)	Sexual Status (J)	Mean Difference (I-J)	Standard Error	Sig.
RSES	Engaged in Past but Not Past 4 Wks.	Never Engaged	.41	1.17	.935
		Engaged in Past and Past 4 Wks.	-2.60	.99	.025
	Never Engaged	Engaged in Past but Not Past 4 Wks.	-.41	1.17	.935
		Engaged in Past and Past 4 Wks.	-3.01	1.00	.008
	Engaged in Past and Past 4 Wks.	Engaged in Past but Not Past 4 Wks.	2.60	.99	.025
		Never Engaged	3.01	1.00	.008
RSA – S	Engaged in Past but Not Past 4 Wks.	Never Engaged	1.11	.90	.438
		Engaged in Past and Past 4 Wks.	-1.81	.77	.051
	Never Engaged	Engaged in Past but Not Past 4 Wks.	-1.11	.90	.438
		Engaged in Past and Past 4 Wks.	-2.91	.77	.001
	Engaged in Past and Past 4 Wks.	Engaged in Past but Not Past 4 Wks.	1.81	.77	.051
		Never Engaged	2.91	.77	.001
RSA – P	Engaged in Past but Not Past 4 Wks.	Never Engaged	.43	1.01	.906
		Engaged in Past and Past 4 Wks.	-1.90	.86	.072
	Never Engaged	Engaged in Past but Not Past 4 Wks.	-.43	1.01	.906
		Engaged in Past and Past 4 Wks.	-2.33	.87	.021
	Engaged in Past and Past 4 Wks.	Engaged in Past but Not Past 4 Wks.	1.90	.86	.072
		Never Engaged	2.33	.87	.021

Note. *N* = 250. Never Engaged = Participants who never engaged in sexual intercourse during their lifetime; Engaged in Past but Not Past 4 Wks. = Participants who engaged in sexual intercourse at least once in their lifetime, but not during the past four weeks before participating in the study; Engaged in Past and Past 4 Wks. = Participants who engaged in sexual intercourse at least once in their lifetime and during the past four weeks before participating in the study. Sex Com. – P/C = Sex Communication – Parent/Caregiver; Closeness – P = Closeness – Peer; Gen. Com. – P = General Communication – Peer; Sex Com. – P = Sex Communication – Peer; RSES = Rosenberg Self-Esteem Scale; CSE – P/C = Contingent Self-Esteem – Parent/Caregiver Approval; CSE – P = Contingent Self-Esteem – Peer Approval; RSA – S = Risky Sexual Attitudes – Self; RSA – P = Risky Sexual Attitudes – Peer; Scale scores for the closeness measure range from 1 – 4, with higher scores indicating a greater level of perceived closeness; Scale scores for the communication measure range from 1 – 5, with higher scores indicating frequent engagement in general and sex related conversations; Scale scores for RSES range from 10 to 40, with higher scores indicating a higher level of self-esteem; Scale scores for the risky sexual attitudes measures range from 1 – 5, with higher scores indicating greater approval of risky sexual behavior.

APPENDIX V

Assumptions Related to Multiple Regression

Outliers. Outliers refer to scores that are far above or below the majority of the data and, as such, they can potentially distort statistical findings (Pallant, 2014). For the study, boxplots were used to identify any existing outliers amongst the data set for the self-esteem, risky sexual attitudes, and social desirability variables for all participants (see Appendix W). Boxplots for these variables in addition to TRSBS (Total Risky Sexual Behavior Score) were examined only for participants who engaged in sexual intercourse during the four weeks before participating in the study (see Appendix W). For all participants, outliers were identified amongst the scores for RSA – S (Risky Sexual Attitudes – Self) and RSA – P/C (Risky Sexual Attitudes – Parent/Caregiver). For participants who engaged in sexual behavior during the four weeks before participating in the study, outliers were identified amongst the scores for RSA – P/C and TRSBS. Logarithm transformations were then performed to correct for these outliers, and these transformations were used during the question analyses and hypotheses testing. Specifically, LogRSA – S and LogRSA – P/C were used for the analyses that involved the sample as a whole and LogTRSBS and LogRSA – PC were used for the analyses that involved only those who were sexually active during the four weeks before participating in the study.

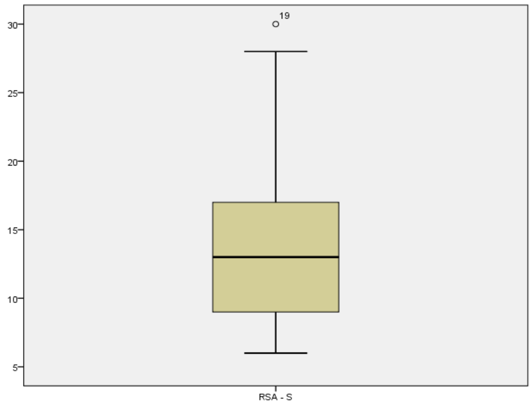
Normality. Normality refers to whether the distribution of scores for a particular variable form a symmetrical, bell shaped curve with most of the scores falling within the middle of the distribution and fewer scores falling toward the extreme ends of the distribution (Pallant, 2014). Histograms were examined to ascertain the normality of the distribution of scores for the outcome and explanatory variables and skewness values were examined to determine whether scores for a particular value fell mostly toward the left or right of the distribution. A distribution was identified as highly skewed if its value fell between -1 to +1, moderately skewed if its value fell between -1 and -.5 or +.5 and 1, and approximately symmetrical if its value fell between -.5 and +.5 (Bulmer, 1979). Furthermore, negative values indicated that the distribution was skewed to the left and positive values indicated that the distribution was skewed to the right. Overall, for participants as a whole, LogRSA – S, CSE – P (Contingent Self-Esteem – Peer Approval), CSE – P/C (Contingent Self-Esteem – Parent/Caregiver Approval), and MCSD (Marlowe-Crowne Social Desirability Scale) were approximately symmetrical (see Appendix X). RSES (Rosenberg Self-Esteem Scale) was also identified as approximately symmetrical, although its histogram shows that it is leaning toward being negatively skewed, and RSA – P was identified as being approximately symmetrical based on its skewness value, although its histogram shows that it is leaning toward being positively skewed. In contrast, LogRSA – P/C appears to be moderately skewed to the right, with most of participants' responses falling toward the lower end of the continuum. The data were also evaluated for normality of the distribution of scores for those participants who engaged in sexual behavior during the four weeks before participating in the study. As Appendix X shows, LogTRSBS, RSA – P, CSE – P/C, CSE – P, and MSCD were identified as being approximately symmetrical based on their skewness value. RSA – S was also identified as being symmetrical, but appears to be leaning toward the right. Lastly, RSES was identified as being moderately skewed to the left, with most of the responses falling toward the higher end of the continuum, and LogRSA – P/C was identified as being moderately skewed to the right, with most of the responses falling toward the lower end of the continuum.

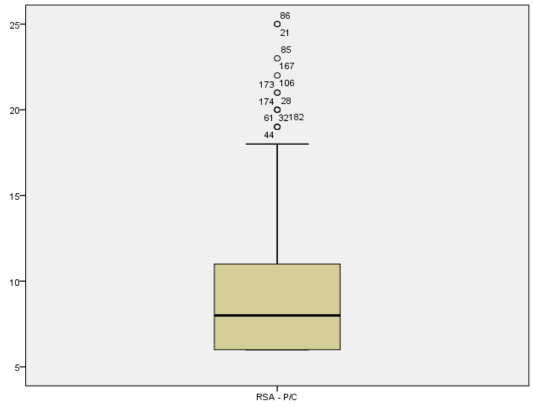
Multicollinearity. Multicollinearity occurs when there are high correlations amongst the predictor variables. Violation of this assumption might make it difficult to determine the unique contribution that a particular independent variable has in explaining the dependent variable. One way to check for this violation is to generate bivariate correlations. According to Pallant (2014), correlations that exceed *r* = .90 suggest the presence of multicollinearity. For this study, bivariate correlations were produced to check for multicollinearity amongst the explanatory variables for the sample as a whole (see Appendix Y) and for participants who engaged in sexual behavior during the four weeks before participating in the study (see Appendix Y). As the tables show, all correlations were well under *r* = .90 and most correlations were small and nonsignificant, which suggest that the assumption of multicollinearity was not violated. Notably, amongst the scores for the whole sample, the strongest significant correlation that emerged was between participants' attitudes toward risky sexual behavior and their perception of their peer's attitudes, *r* = .64, *p* < .01. These items yielded a similar correlation for those who were sexually active during the four weeks prior to the study, *r* = .63, *p* < .01.

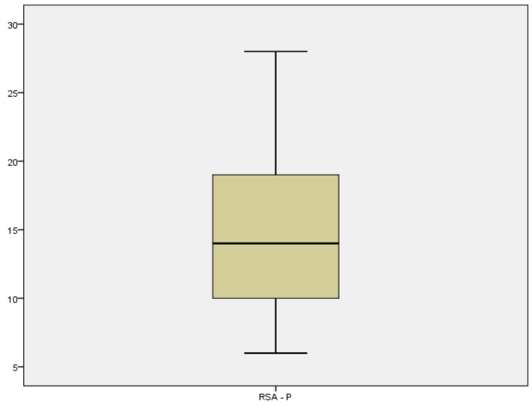
Linearity and homoscedasticity. Linearity refers to whether or not the relationship between the independent and dependent variables can be depicted by a straight line, and homoscedasticity refers to whether or not the variability amongst the scores for the independent variable is the same across all values of the dependent variable. Both can be assessed by examining scatterplots. When the points on a scatterplot take on an oval shape, the relationship can subsequently be described as linear. When the cluster of points on a scatterplot is the same width across the plot, the relationship between two variables has not violated the assumption of homoscedasticity. For the whole sample, LogRSA – S and RSA – P exhibited the most linear relationship and was less in violation of homoscedasticity while the assumption of linearity and homoscedasticity appears to be more grossly violated for the remaining relationships (see Appendix Z). In terms of participants who have engaged in sexual behavior during the past four weeks before participating in the study, RSA – S and LogTRSBS exhibited the strongest linear relationship, with the assumption of linearity and homoscedasticity appearing to be more violated for the remaining relationships (see Appendix Z).

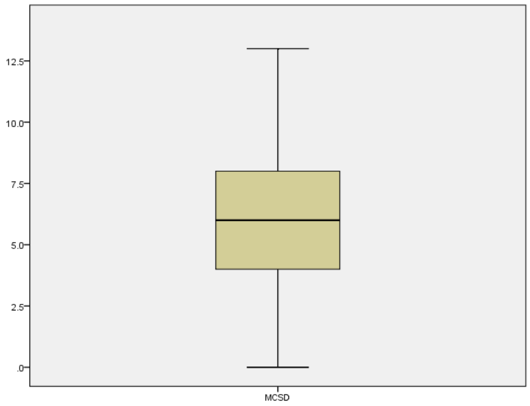
APPENDIX W

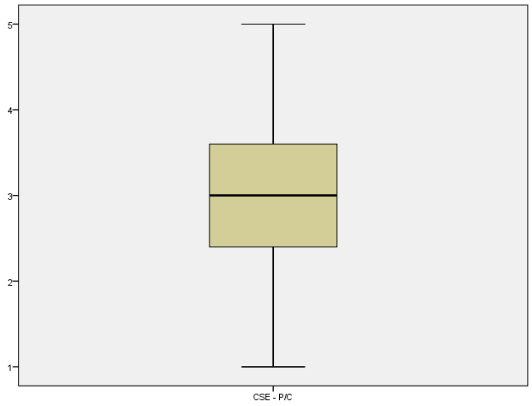
Boxplots for the Dependent and Independent Variables - All Participants

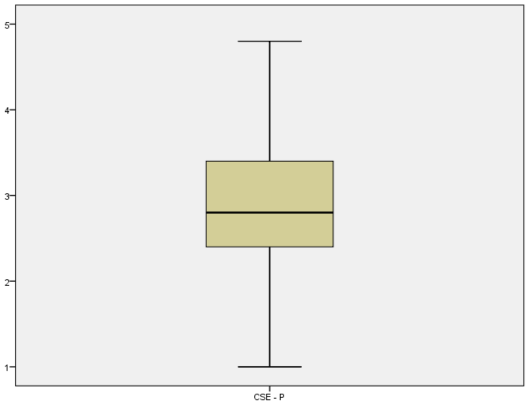




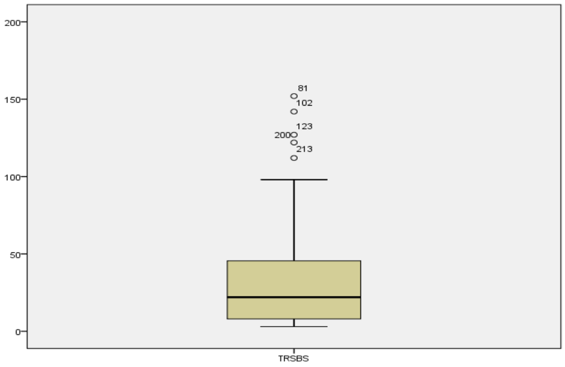


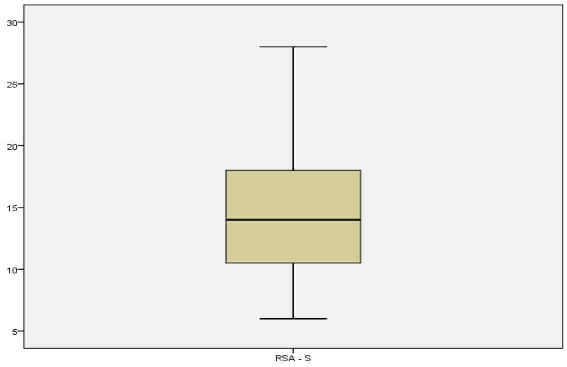


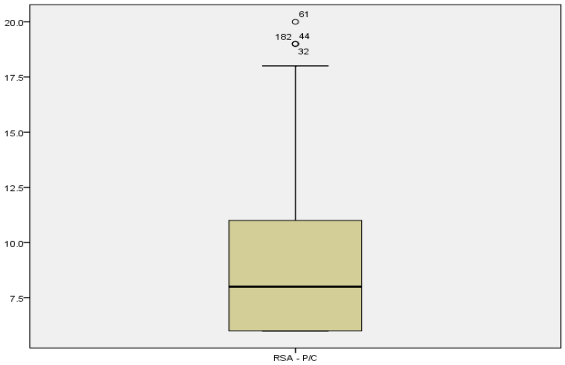


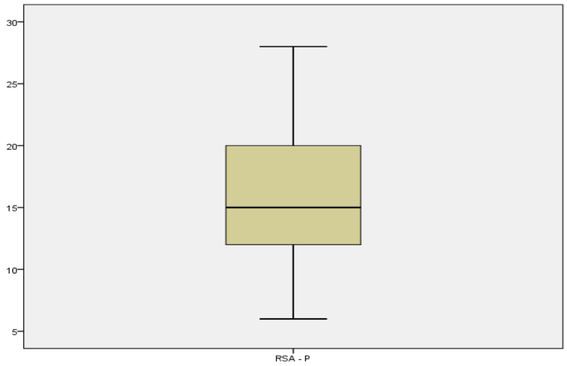


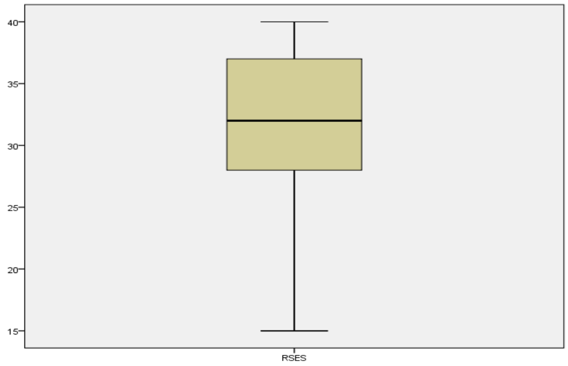
Boxplots for the Dependent and Independent Variables - Participants who were Sexually Active during the Four Weeks before the Study

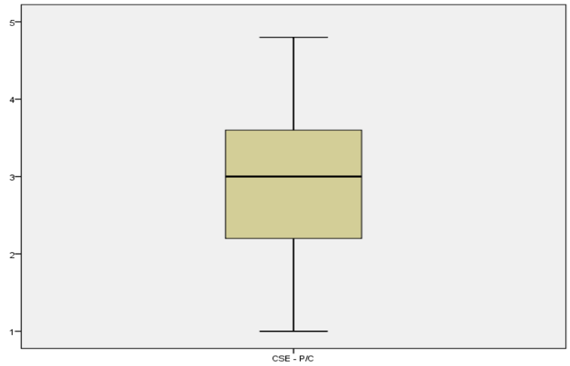


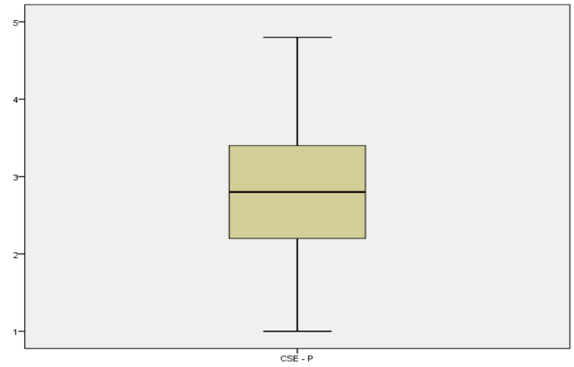


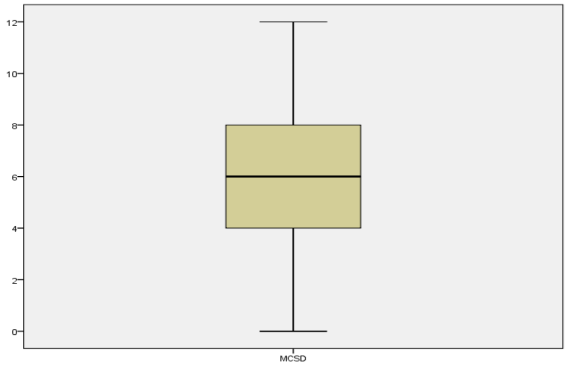






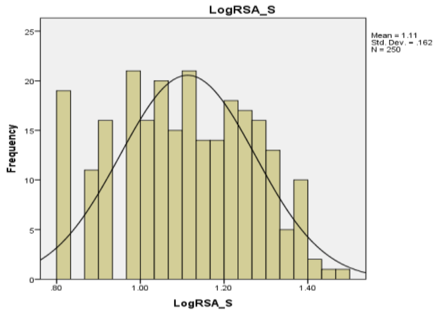


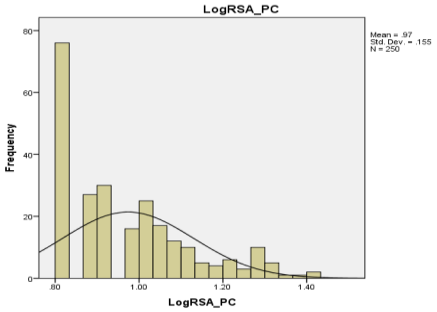


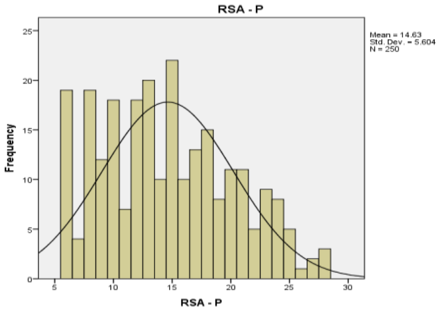


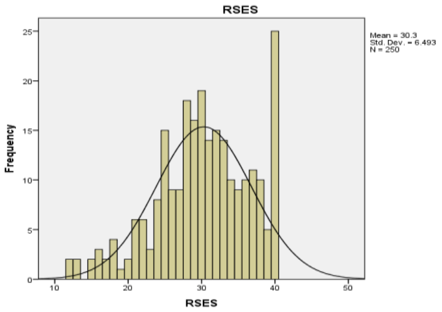
APPENDIX X

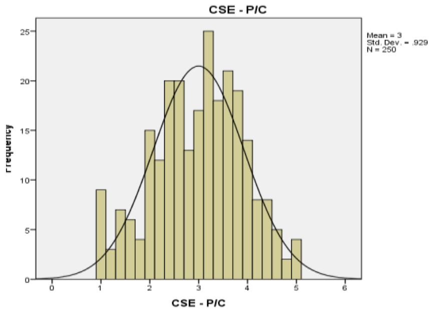
Histograms Depicting the Distribution of Scores for the Dependent and Independent Variables and Skewness Values Describing the Skewness of the Distribution - All Participants

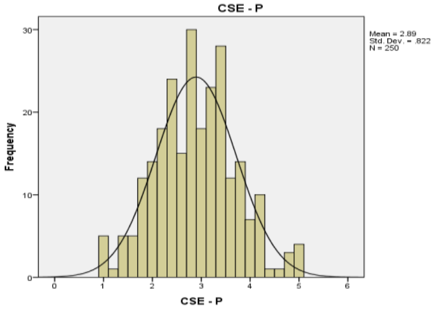


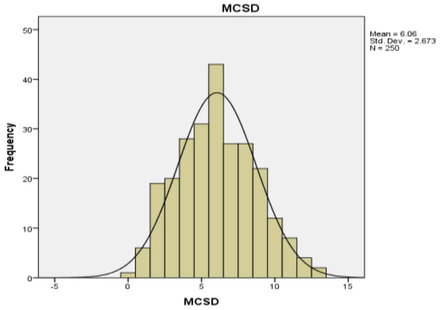










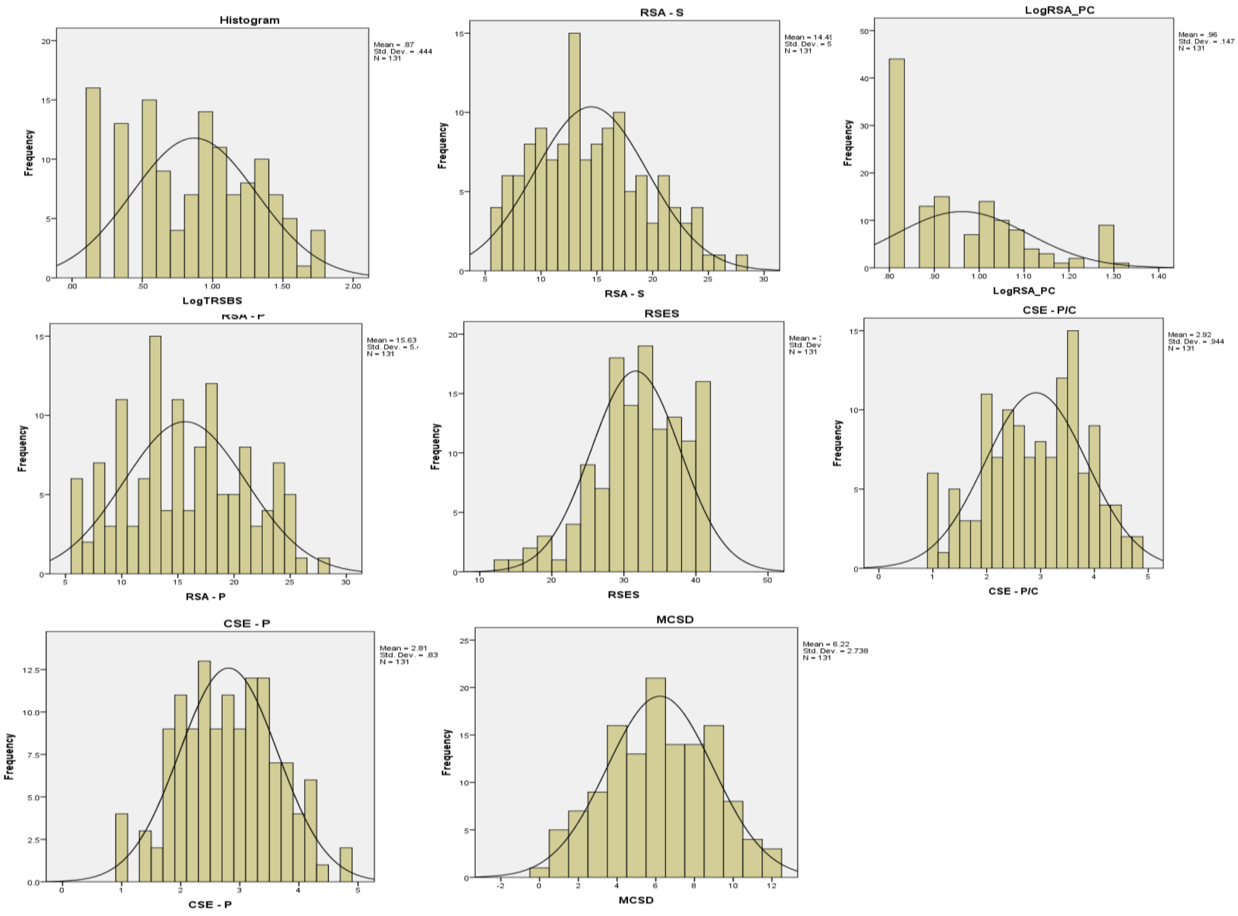


Skewness Values Based on the Responses of All Participants

Variable	*Statistic*	*Std. Error*
LogRSA – S	-.148	.154
LogRSA - P/C	.763	.154
RSA – P	.315	.154
RSES	-.468	.154
CSE - P/C	-.188	.154
CSE – P	.114	.154
MCSD	.186	.154

Note. *N* = 250. LogRSA – S = LogRisky Sexual Attitudes –Self; LogRSA – P/C = LogRisky Sexual Attitudes – Parent/Caregiver; RSA – P = Risky Sexual Attitudes – Peer; RSES = Rosenberg Self-Esteem Scale; CSE – P/C = Contingent Self-Esteem – Parent/Caregiver Approval; CSE – P = Contingent Self-Esteem – Peer Approval; MCSD = Marlowe-Crowne Social Desirability Scale.

Histograms Depicting the Distribution of Scores for the Dependent and Independent Variables and Skewness Values Describing the Skewness of the Distribution - Participants who were Sexually Active during the Four Weeks before the Study



Skewness Values

Variable	*Statistic*	*Std. Error*
LogTRSBS	.367	.212
RSA – S	.367	.212
LogRSA - P/C	.701	.212
RSA – P	.103	.212
RSES	-.652	.212
CSE – P/C	-.204	.212
CSE – P	.035	.212
MCSD	-.039	.212

Note. *N* = 131. LogTRSBS = Total Risky Sexual Behavior Score; RSA – S = Risky Sexual Attitudes – Self; LogRSA – P/C = LogRisky Sexual Attitudes – Parent/Caregiver; RSA – P = Risky Sexual Attitudes – Peer; RSES = Rosenberg Self-Esteem Scale; CSE – P/C = Contingent Self-Esteem – Parent/Caregiver Approval; CSE – P = Contingent Self-Esteem – Peer Approval; MCSD = Marlowe-Crowne Social Desirability Scale.

APPENDIX Y

Bivariate Correlations amongst the Dependent and Independent Variables

All Participants

Variables	1	2	3	4	5	6	7
1 LogRSA – S	-						
2 RSA – P	.64	-					
3 LogRSA – P/C	.33	.26	-				
4 RSES	.07	.02	-.06	-			
5 CSE – P/C	.05	.06	-.05	-.04	-		
6 CSE – P	.06	-.01	.05	-.09	.32	-	
7 MCSD	-.17	-.19	.02	.21	-.11	-.12	-
8 Gender[a]	.18	.18	.17	.03	.06	.10	.06

Note. *N* = 250. LogTRSBS = Total Risky Sexual Behavior Score; LogRSA – S = LogRisky Sexual Attitudes – Self; LogRSA – P/C = LogRisky Sexual Attitudes – Parent/Caregiver; RSA – P = Risky Sexual Attitudes – Peer; RSES = Rosenberg Self-Esteem Scale; CSE – P/C = Contingent Self-Esteem – Parent/Caregiver Approval; CSE – P = Contingent Self-Esteem–Peer Approval; MCSD = Marlowe-Crowne Social Desirability Scale. Scale scores for the risky sexual attitudes measures range from 1 – 5, with higher scores indicating greater approval of risky sexual behavior; Scale scores for RSES range from 10 to 40, with higher scores indicating a higher level of global self-esteem; Scale scores for the contingent self-esteem measures range from 1 – 5, with higher scores indicating a higher level of contingent self-esteem; Scale scores for MCSD range from 1 – 15, with higher scores indicating a higher level of social desirable responding.

[a]Gender was coded as follows: "Female" = 0 and "Male" = 1.

Participants who were Sexually Active during the Four Weeks before the Study

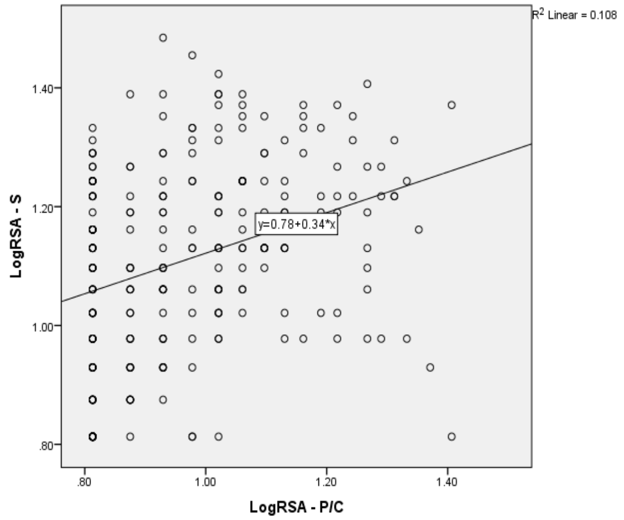
Variable	1	2	3	4	5	6	7	8
1 LogTRSBS	-							
2 RSA – S	.32	-						
3 RSA – P	.08	.63	-					
4 LogRSA – P/C	-.03	.31	.26	-				
5 RSES	.15	.08	.02	-.06	-			
6 CSE – P/C	-.11	.05	.06	-.05	-.04	-		
7 CSE – P	.04	.08	-.01	.05	-.09	.32	-	
8 MCSD	-.06	-.17	-.19	.02	.21	-.11	-.12	-
9 Gender[a]	-.09	.17	.18	.17	.03	.06	.10	.06

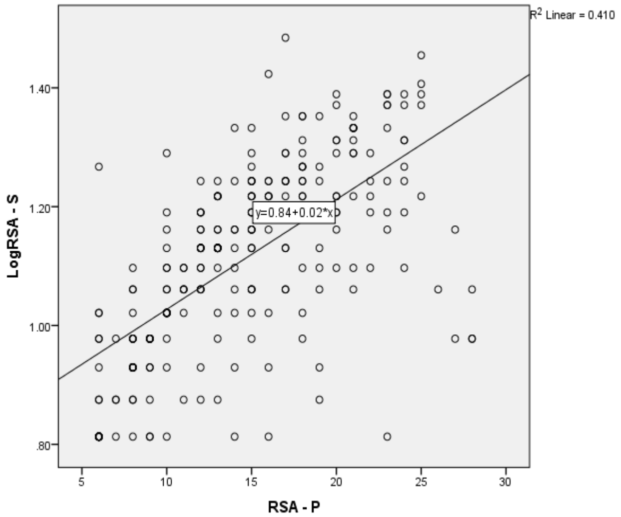
Note. *N* = 250. LogTRSBS = Total Risky Sexual Behavior Score; RSA – S = Risky Sexual Attitudes – Self; LogRSA – P/C = LogRisky Sexual Attitudes – Parent/Caregiver; RSA – P = Risky Sexual Attitudes – Peer; RSES = Rosenberg Self-Esteem Scale; CSE – P/C = Contingent Self-Esteem – Parent/Caregiver Approval; CSE – P = Contingent Self-Esteem – Peer Approval; MCSD = Marlowe-Crowne Social Desirability Scale; Scale scores for the risky sexual attitudes measures range from 1 – 5, with higher scores indicating greater approval of risky sexual behavior; Scale scores for RSES range from 10 to 40, with higher scores indicating a higher level of global self-esteem; Scale scores for the contingent self-esteem measures range from 1 – 5, with higher scores indicating a higher level of contingent self-esteem; Scale scores for MCSD range from 1 – 15, with higher scores indicating a higher level of social desirable responding;

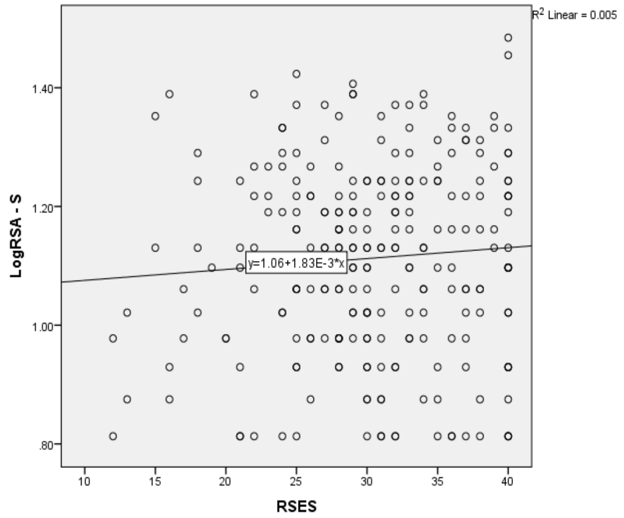
[a]Gender was coded as follows: "Female" = 0 and "Male" = 1.

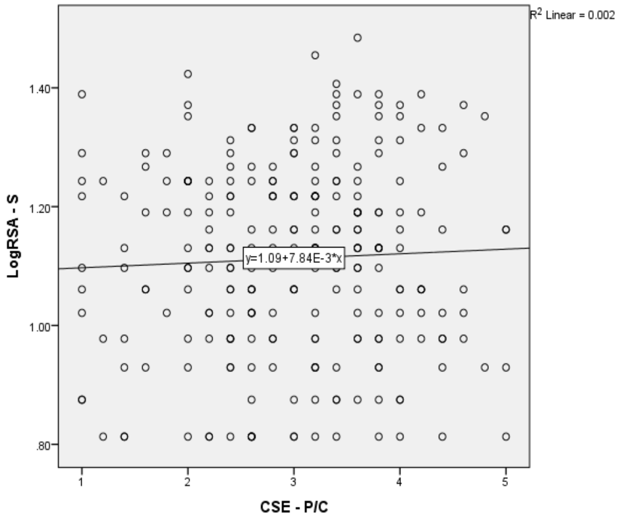
APPENDIX Z

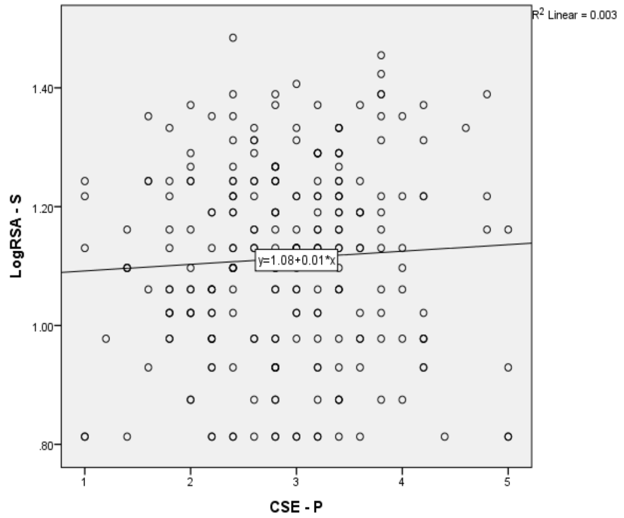
Scatterplots Depicting the Relationship between Participants' Risky Sexual Attitudes and the Independent Variables - All Participants

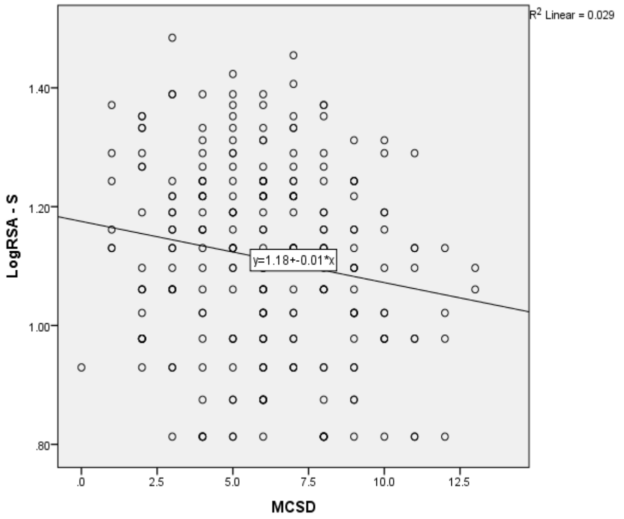




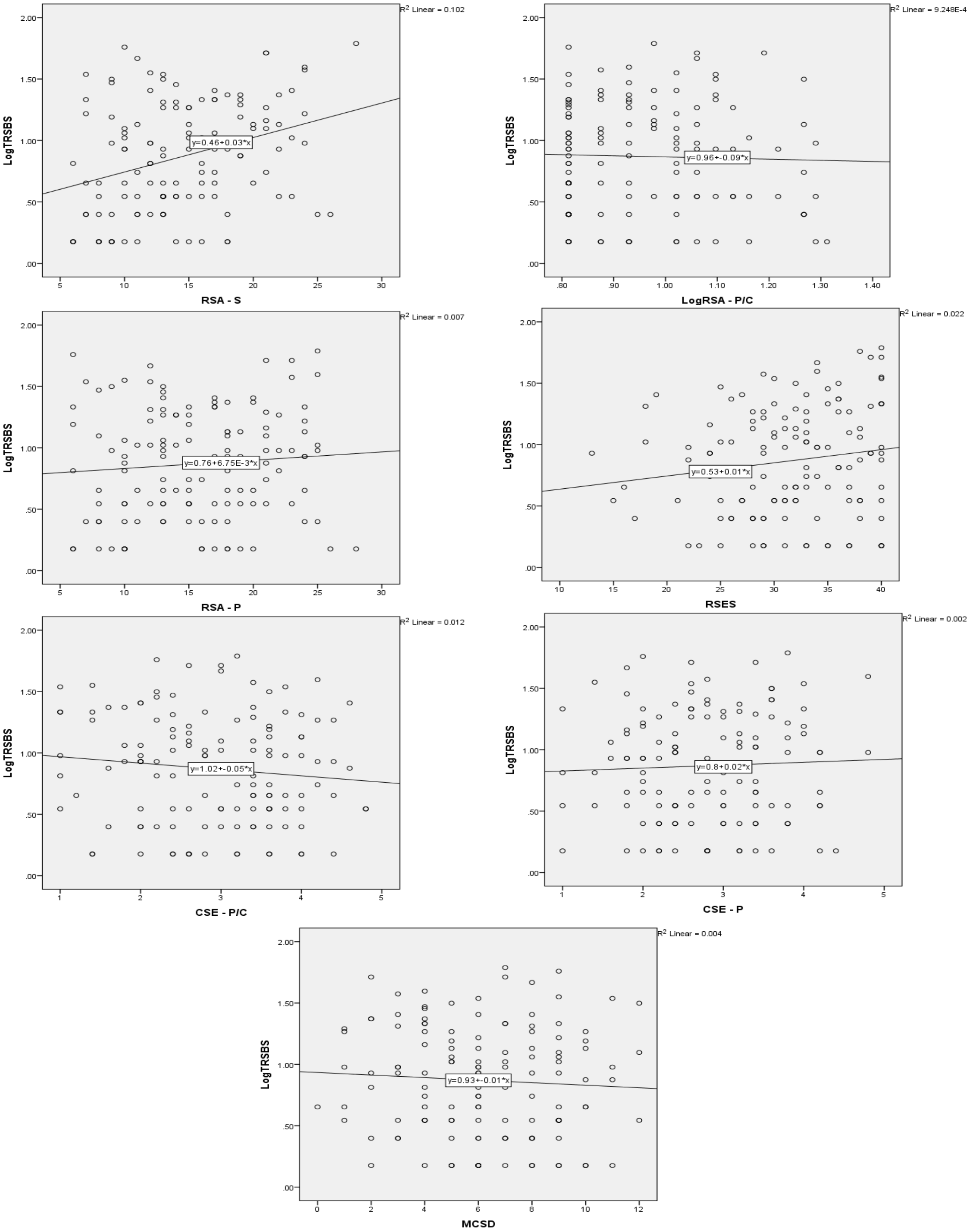








Scatterplots Depicting the Relationships between Participants' Risky Sexual Behavior and the Independent Variable – Participants who were Sexually Active during the Four Weeks before the Study



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