

**UP CLOSE AND PERSONAL: AN EXAMINATION OF HOW
PERSONALITY DIMENSIONS, SELF-ESTEEM, AND EARLY ENGAGEMENT
IN RISKY SEXUAL BEHAVIORS ARE CORRELATED WITH RISKY SEXUAL
BEHAVIORS RELATED TO HIV**

by

ZAVER D. MOORE

A Thesis Submitted in Partial Fulfillment
of the Requirements for the Degree of
Master of Arts in Psychology

Middle Tennessee State University
August 2015

Thesis Committee:

Dr. Thomas Brinthaupt, Chair

Dr. William Compton

Dr. Gloria Hamilton

ACKNOWLEDGEMENTS

I would like to thank Dr. Tom Brinthaupt for his unwavering support and understanding throughout this long process. Without his greatly appreciated support, expertise, and constructive feedback, I may not have reached this dream of mine. I also want to extend thanks to Dr. Bill Compton and Dr. Gloria Hamilton for providing their support and expertise throughout my time at Middle Tennessee State University. Finally, I would like to thank Mrs. Cindy Howell and Mrs. Karen Nunley for their support and assistance through my time in the Experimental Psychology program.

ABSTRACT

The facts related to how one contracts the Human Immunodeficiency Virus (HIV) are common knowledge through advertisements, television commercials, and educational classes. Even though the general facts of HIV are being taught, the mechanisms behind two of the main behavioral factors related to the contraction process (i.e., unprotected sex and intravenous drug usage) are still being studied. The present study sought to understand how personality dimensions, engagement in risk sexual behaviors during adolescence, and self-esteem are related to increased likelihood of engaging in risky sexual behaviors (RSB) that are associated with contracting HIV. The results indicated that sensation-seeking and early engagement in risky sexual behaviors were correlated with increased likelihood to engage in risky sexual behaviors. Also, the multiple regression model was found to be significant, but only early engagement in risky sexual behaviors was a significant predictor for increased likelihood of engaging in RSB. By examining these relationships, we will be able to more effectively tailor intervention programs and better understand some of the underlying factors related to this chronic sexually transmitted disease.

TABLE OF CONTENTS

	Page
LIST OF TABLES.....	vi
CHAPTER I: INTRODUCTION AND REVIEW OF THE LITERATURE.....	1
Involvement of Sensation-Seeking in Risky Sexual Behaviors.....	2
Involvement of Impulsivity in Risky Sexual Behaviors	5
Involvement of Self-Esteem in Risky Sexual Behaviors	8
Early Engagement in Risky Sexual Behaviors	12
Statement of the Problem and Hypotheses	15
CHAPTER II: METHOD	17
Participants.....	17
Procedure	18
Measures	19
Student Sexual Risks Scale.....	19
Rosenberg Self-Esteem Scale	20
Brief Sensation-Seeking Scale	21
Sensation-Seeking Scale: Thrill and Adventure Seeking Subscale	21
Temperament and Character Inventory: Impulsive Control Subscale.....	21
Early Engagement in Risky Sexual Behavior Items	22
CHAPTER III: RESULTS OF THE STUDY.....	23
Descriptive Statistics and Distributions	23

Test of Hypotheses.....	24
Supplemental Analyses	26
CHAPTER IV: DISCUSSION, IMPLICATIONS, AND LIMITATIONS.....	31
Discussion of Main Hypotheses.....	31
Discussion of Supplemental Analyses	35
Limitations and Future Research Implications	36
Conclusion	37
REFERENCES	39
APPENDICES.....	50
Appendix A: IRB Approval Letter	51
Appendix B: Pre-Screen Assessment.....	52

LIST OF TABLES

	Page
Table 1 – Descriptive Statistics for Major Measures	23
Table 2 – Correlations among the Major Measures	25
Table 3 – Multiple Linear Regression Model for Predicting Risky Sexual Behaviors	26
Table 4 – Significant One-Way ANOVAs for Demographic Variables and Major Measures	27
Table 5 – Tukey HSD Comparisons for Major Measures	28
Table 6 – Games-Howell Comparisons for Major Measures	29

CHAPTER I

Introduction and Review of the Literature

Since the turn of the 21st century, there has been an increase in publicity about getting tested for sexually transmitted infections. Although many HIV prevention organizations have spent time and money bringing about awareness for getting tested, there is still a large possibility that many individuals have the disease and do not know it (Chen et al., 2012; Hall et al., 2008; MacKellar et al., 2005; Nunn et al., 2011; Weinstock, Dale, Linley, & Gwinn, 2002). Studies have shown that certain personality traits and simple behaviors can increase one's chances of contracting a sexual transmitted infection due to various situational factors (Courtney et. al., 2012; Wichers, Gillespie, & Kendler, 2013; Zule et al., 2007). Based on these studies, the major risk factors and behaviors correlated with HIV have increasingly become common knowledge due to education about the disease provided to the public (Chen et al., 2012; Weinstock et al., 2002).

Researchers and HIV prevention organizations have already identified the direct risky behaviors which, if engaged in, would increase one's chances of contracting HIV. This study examined how personality dimensions, early engagement in risky sexual behaviors during adolescence, and self-esteem are related to increased likelihood of engaging in risky sexual behaviors. In the first section, I discuss how three personality dimensions (i.e., sensation-seeking, thrill-seeking, and impulsivity) are implicated in being linked to differing forms of risky sexual behaviors. Section two examines how self-esteem, in and of itself, has varying influences on the severity of risky sexual behaviors engaged in. The third section links early engagement in risky sexual behaviors with

increases in contraction of sexually transmitted infections and HIV. The overall conclusion of the literature implicates impulsivity, thrill-seeking, sensation-seeking, self-esteem, and early engagement in risky behaviors with increased chances of contracting HIV.

Involvement of Sensation-Seeking in Risky Sexual Behaviors

Sensation-seeking is “a trait defined by the seeking of varied, novel, complex, and intense sensations and experiences, and the willingness to take physical, social, legal, and financial risks for the sake of such experience” (Zuckerman, 1994, p. 27). Within the area of personality dimensions, sensation-seeking has been implicated with increases of risky sexual behaviors (Gullette & Lyons, 2005; Hendershot, Stoner, George, & Norris, 2007; Spitalnick et al., 2007). In addition, there have been recent studies suggesting that sensation-seeking may be related to increased likelihood of engaging in risky sexual behaviors, especially when observing participants between the ages of 18 and 24.

Previous studies have shown that college students frequently abuse alcohol and have unprotected sex with multiple partners; this increases their chances of contracting a sexually transmitted infection (STI), becoming pregnant, and contracting HIV (Chapin, 2001; Kalichman & Rompa, 1995; Rolison, 2002; Smith & Brown, 1998). Gullette and Lyons (2005) examined the relationship of sensation-seeking and other risky variables to risky sexual behaviors within a college student population. Utilizing a random sample of undergraduate students, participants completed a questionnaire about sexual compulsivity, sexual sensation-seeking, and alcohol-related tendencies. The data showed

that over half of the participants who used alcohol also participated in unprotected sex. Gullette and Lyons also found that there was not an interaction effect with self-esteem and sensation-seeking, but those who scored higher on sensation-seeking tended to have more sexual partners than those low in sensation-seeking. Overall, all factors, including sexual sensation-seeking, were highly correlated with engagement in HIV-related behaviors and activities. This provides correlational evidence that there is a possible connection between sensation-seeking and contraction of HIV.

Gullette and Lyons (2006) conducted a study to see if sensation-seeking and self-esteem (1) were also correlated with higher rates of HIV and (2) if an interaction effect existed between the two variables. The Centers for Disease Control has found that men and women between the ages of 25 and 34 make up 28 percent of the new cases of HIV found in the United States (CDC, 2005). They further found that most of the people in this age range have contracted the virus through unprotected sexual encounters during their adolescent and/or early college years. Recruiting 3,000 undergraduate students, Gullette and Lyons instructed the participants to complete questions about self-esteem, sexual sensation-seeking, condom use, HIV risk behaviors, and alcohol tendencies. The data showed that female high sensation seekers were more likely to consume higher amounts and quantities of alcohol, binge drink, become unaware of possible dangers around them, and engage in risky sexual behaviors. The conclusions were that both self-esteem and sensation-seeking are correlated with increased chances of engagement in risky behaviors. These links further provide possible evidence of how these two variables effect HIV contraction rates.

Spitalnick et al. (2007) investigated further how the mechanisms underlying sexual sensation-seeking and risky sexual behavior are linked. Early researchers like Zuckerman, Tushup, and Finner (1976) had found that high sensation seekers tend to engage in a wider range of risky sexual behaviors with multiple partners. In turn, both sexual and nonsexual sensation-seeking were studied and found to be useful in examining the relationships among risky behaviors. So, Spitalnick et al. instructed the participants to complete a 40 minute online survey. Items included sexual sensation-seeking, frequency of intercourse, and other sex-related questions. They found that the African-American females who showed higher engagement in sexual sensation-seeking attitudes and behaviors also stated that they engaged in increased risky sexual behaviors like inconsistent condom usage, having sex with multiple partners, and more frequent vaginal sex. Despite the limitations reported by the researchers, this study extended the knowledge base of how sensation-seeking has a significant, positive relationship with risky sexual behaviors.

Other researchers have examined sexual sensation-seeking, but added alcohol usage and drug usage to their analysis. For example, Hendershot et al. (2007) investigated how these factors predicted HIV risk behaviors before sexual intercourse occurred. They argued that a low understanding for personality-HIV relationships requires the understanding of sexually-related factors within the context of theory-based models about sexual behavior. This means that in order to understand potentially small differences in personality's link to HIV risk behaviors, one must construct their assumptions using theoretical models. They believed that alcohol would contribute to a small, mediatory influence on sensation-seeking in a sexual context. Collecting data from 611 individuals

in Seattle, Washington, they found that sexual sensation-seeking was directly correlated with HIV risk as well as indirectly with sex-related activities that incorporate alcohol and drinking expectancies. They made recommendations for future research to continue incorporating personality dimensions into research examining HIV risk behaviors.

In summary, the research literature has provided sound evidence that sensation-seeking is positively correlated with engagement in risky sexual behaviors linked to contracting HIV. There are other related traits that have also been examined in the risky sexual behavior (RSB) literature. For instance, impulsivity has been correlated with RSB. This personality dimension refers to action without foresight (Winstanley, Eagle, & Robbins, 2006), which means engaging in behaviors without thought of potential consequences. The next section details findings from the literature on impulsivity.

Involvement of Impulsivity in Risky Sexual Behaviors

Along with the review of previous research on sexual behaviors, Deckman and DeWall (2011) conducted a study examining how the multifaceted personality trait of impulsivity plays a role in risky sexual behaviors. Specifically, they tested how positive/negative urgency, lack of premeditation, sensation-seeking, and lack of perseverance (all of which are components of impulsivity) are related to risky sexual behaviors. Positive urgency refers to making decisions during a short-term, positive moment whereas negative urgency refers to making decisions during a small, negative moment. Previous literature has stated that it is necessary to break impulsivity down into its individual facets when examining the relationship between it and risky sexual

behaviors (Birthing, & Latzman, 2014; Cyders & Smith, 2008; Whiteside & Lynam, 2001). The reason for the use of college students was because these individuals are prone to impulsive behaviors, which allow the experience of positive and negative emotions to affect the decision-making process and sometimes lead to unstable, regretful activities. Deckman and DeWall recruited students from an undergraduate psychology class to complete questionnaires about their impulsive tendencies (using the Impulsive Behavior Scale), drug and alcohol use, and sexual behaviors that seemed risky. The results indicated that negative urgency was related to high rates of risky sexual behaviors, and lack of premeditation and positive urgency were related to lifetime risky sexual behaviors. What this means is that these three sub-dimensions of impulsivity have the potential to predict one's timeline of risky sexual behaviors. Overall, negative urgency was found to correlate with risky sexual behaviors, which had yet to be addressed in previous literature.

Courtney et al. (2012) designed a study examining how dimensions of impulsivity and alcohol misuse are related. They focused on impulsive decision making, along with other risk attitudes and behaviors. Previous studies have found that impulsive decision making is related to increased relapse rates of individuals who participate in alcohol treatment communities (Bowden-Jones, McPhillips, Rogers, Hutton & Joyce; 2005; Fein, Klein, & Finn, 2004). Courtney et al. interviewed participants in the Los Angeles area about alcohol use, problems with alcohol, types of decision making, attitudes to risky behaviors, and inhibition. The results showed that all of the subtypes for impulsivity interrelated to support global impulsivity, and having high levels of extended delay in non-inhibition (i.e., not inhibiting oneself) increased the likelihood of greater alcohol

consumption and more problems with alcohol. This means that individuals who were slower to inhibit their negative behaviors were more likely to consume greater amounts of alcohol. Overall, global impulsivity was found to correlate with alcohol misuse.

Drawing on previous research, Charnigo et al. (2013) examined sensation-seeking and impulsivity and their relationship to HIV-related risk behaviors. Like Courtney et al., (2012), Charnigo and his research collaborators stated that utilizing young adults (between the ages of 18 to 24) in behavioral research has shown the relationship of particular psychosocial variables on RSB. The information gathered could show how personality traits could also be involved in predicting sexual behaviors. The results showed a positive relationship between sensation-seeking, impulsivity and both personality traits with HIV-related risk factors. Specifically, sensation-seeking and impulsive decision-making were found to be consistently related to sexual risk behaviors over 11 risk-related outcomes. Overall, this connection between sensation-seeking and impulsivity was related to alcohol activities and sexual risk behaviors linked to HIV.

In summary, these studies suggest that impulsivity is correlated with risky sexual behaviors related to HIV (e.g., increased frequency of sexual intercourse, multiple sexual partners, etc.), and thus should be included in research. This section focused on how impulsivity plays a role in the level of engagement in risky sexual behaviors, but other literature has also found that self-esteem could play a significant, relational role in the likelihood to engage in risky sexual behaviors.

Involvement of Self-Esteem in Risky Sexual Behaviors

As stated in the previous section, the relevance of personality dimensions to contraction rates of sexually transmitted infections (STIs) has been a research focus in recent years. In particular, self-esteem has been found to be related to a wide range of adjustment difficulties at the individual level (Banaji & Prentice, 1994; Boden & Horwood, 2006; Colquhoun, 1997; Nicholson & Long, 1990). Researchers have debated whether self-esteem is positively or negatively related to RSB. For example, Cole (1997) completed a meta-analysis that showed how self-esteem was related to the participation in risky sexual behaviors. He concluded that high levels of self-esteem were indicative of adolescents and young adults who participate in risky behaviors and have more than one sexual partner. He recommended that (1) future research should examine the link between self-esteem, sexual prevention, and HIV and (2) researchers should be sure to examine possible confounding variables when examining the relationship between self-esteem and RSB. Although it was not shown to directly influence HIV contraction, self-esteem does present an indirect relationship, with risky sexual behaviors being mediating factors between the two.

Taking the recommendations of previous literature, MacDonald and Martineau (2002) examined the relationship between current mood with self-esteem and decisions to engage in unhealthy behaviors. After recruiting undergraduate females, randomly assigning them to either positive or negative mood groups, and having them complete activities gauging self-esteem, MacDonald and Martineau found that the participants who had a negative mood (with low self-esteem) showed higher intentions to engage in

unprotected sex than those who were in a positive mood. They also found that lower self-esteem left participants more prone to the negative mood manipulations than those with higher self-esteem. Overall, they found that along with negative mood, having low self-esteem increases people's chances of engaging in risky sexual behaviors, dependent on the situation they encounter. This also supports Cole (1997) in that mediating factors like mood need to be examined with self-esteem when considering the relationship with RSB. For my study, I am choosing not to include mood due to the significance level in the MacDonald and Martineau study only being marginally significant.

Wild, Flisher, Bhana, and Lombard (2004) explored adolescents' feelings of global self-worth in relation to risky sexual behaviors. Recruiting high school students (grade 8 through 11), they provided self-report questions about demographical information, risky behaviors and overall self-esteem. The results showed that each subscale of the self-esteem measure (i.e., peers, school, family, sports/ athletics, and body image) was linked to one or more risky behaviors in both male and female teenagers. The results also indicated that low self-esteem had a strong correlation with engaging in/experiencing risky behaviors such as likelihood of committing suicide, using alcohol, and being bullied. Overall, Wild et al. showed the individual links between the six domains of self-esteem and the risky behaviors associated with them that could increase one's chances of contracting HIV. Previous researchers have been able to provide general conclusions about self-esteem and how it is related to engagement in risky behaviors; however, this study was able to examine the six domains of self-esteem and show how each was related to individual risky behaviors.

Other researchers have examined different kinds of risky behaviors and factors in their research to further understand how self-esteem is related to them. For example, Boden and Horwood (2006) viewed the connection between self-esteem among adolescents and future risks of pregnancy brought on by risky sexual behaviors. Utilizing participants from the Christchurch Health and Development Study, they assessed degrees of self-esteem and involvement in unprotected sexual activities at age 14 and ages 18-21, along with other variables related to family functioning, socioeconomic status background, child abuse, and individual characteristics and behaviors. They hypothesized that lower levels of self-esteem around age 15 are negatively correlated with higher sexual risk taking and pregnancies later in adolescence and that this relationship would remain after controlling for family, social, and demographical factors. Using a test of linearity, they found evidence for a negative relationship between self-esteem at age 15 and measures of RSB; lower self-esteem was correlated with higher rates of reported unprotected sex, multiple sexual partners, and either becoming or causing pregnancy. Overall, Boden and Horwood further investigated and extended Cole's (1997) conclusion that self-esteem creates a somewhat "roller coaster" effect with RSB, but this effect only becomes evident when controlling for possible confounding variables.

With the establishment of what potential confounds exist when including self-esteem in the research, the literature turned to examining different aspects of self-esteem. For example, Pedersen, Hsin Hsu, Neighbors, Paves, and Larimer (2013) investigated how two forms of self-esteem are related to alcohol use. Specifically, they looked at global self-esteem (which pertains to the rating of one's overall self-worth) and collective self-esteem (which pertains to the rating of one's self-worth within a social/racial group

and/or population). Previous research has found that the link between alcohol use and self-esteem is unclear. Some studies have found a negative association while others indicate that there is a positive relationship; possibly due to social satisfaction and social status related to socioeconomic status (SES) (Brennan, Walfish & AuBuchon, 1986; Corbin, McNair & Carter, 1996; Gerrard, Gibbons, Reis-Bergan, & Russell, 2000; Glindemann, Geller & Fortney, 1999). Because of these findings, researchers have suggested that the relationship between self-esteem and alcohol use be observed with a clearer operationalized definition.

Recruiting college students, Pedersen et al. (2013) found that Asian-Americans reported drinking less alcoholic beverages than Caucasian students, and global self-esteem had a strong relationship to drinking, but only for Caucasian students. Also, collective self-esteem showed no relationship to drinking for any of the students. These results show that the influences of global and collective self-esteem do have varying effects on alcohol use.

In summary, these studies have shown that levels of self-esteem are negatively related to RSB. When evaluating the two types of self-esteem (global versus collective), only global self-esteem was related to increased alcohol use. These results suggest that a person's overall self-esteem should be examined when conducting research that involves RSB. This section focused on the relationship between self-esteem and risky sexual behaviors, but the literature also indicates that early engagement in risky sexual behaviors should be examined when studying RSB. The next section details the results of studies looking at this relationship.

Early Engagement in Risky Sexual Behaviors

Some researchers have argued that early engagement in risky sexual behaviors can impact future tendencies for increased engagement in sexual behaviors, which could subsequently lead to decreases in health in adulthood (Stulhofer, Jelovica & Ruzic, 2008; Trenez et al., 2012; Wichers, Gillespie, & Kendler, 2013). For example, Bajrachary, Sarvela, Isberner (1995) examined how the causes of first experiences in sexual intercourse are perceived and internalized by individuals who have had sex (both forceful and consensual). Using undergraduate students from various disciplines, they found that most students experienced their first sexual experience through sexual assault and/or rape as the victim. They also found that gender was the most important predictor of being a victim in that females were more at risk for being victims of date rape than males, and there was a positive correlation with one's closest friend's risky behaviors. Overall, those who mutually agreed to engage in consensual sex were more likely to also engage in initial personal risk behaviors than those who were forced to have sex. This means that those individuals who agreed to have consensual sex during adolescence were also more likely to engage in other risky behaviors.

Stulhofer et al. (2008) examined how early exposure to pornography could lead to higher sexual compulsivity and other risky sexual behaviors. They defined sexual compulsivity as “a clinical phenomenon characterized by sexual urges, fantasies and behaviors that are sufficiently recurrent and intense to interfere with one's normal daily functioning” (p. 270). Using participants from multiple universities in Croatia, they found that the earlier one is exposed to pornography, the greater the perceived reality of

sexually explicit materials, and that pornography was related to one's attitudes toward sex. However, their analyses indicated that there was not a significant relationship of pornography to sexual thoughts and behaviors.

Other researchers have discussed how early engagement in RSB predicted use of injection drugs. Trenez et al. (2012) examined how early engagement with alcohol, marijuana, and tobacco was linked to injection drug usage (IDU) later in life. Having participants complete measures of substance use, drug use, and HIV risk information, they discovered that early use of alcohol and other polysubstances (i.e., opiates, cannabis, inhalants, etc.) were linked to increased IDU use, although substances like opiates, cannabis, and inhalants had greater odds of predicting IDU. Early engagement in polysubstance use was correlated with increased IDU among Caucasians, but not African Americans within the sample; and Caucasians were at increased risk of following the typical sequence of initiation from alcohol and/or tobacco to marijuana and other, harsher drugs. Overall, Trenez et al. were able to find a direct relationship between early engagement in risky behaviors and future use of harsher drugs and activities.

In a study of more generalizable relationships between early-engagement behaviors and risk behaviors, Pflieger, Cook, Niccolai, and Connell (2013) examined how sexual activity and STIs vary longitudinally between various ethnicities/races, specifically Black, Hispanic, and White females. Pflieger et al. sought to delineate the types of sexual behaviors as markers (distinct classifications) of RSB. Their literature review showed that both anal and oral sex are linked to high risk of contracting an STI. Participants from the National Longitudinal Study of Adolescent Health completed questions about sexual risk behaviors and STI status. The results indicated that early

engagement in high-risk sexual behaviors was linked to the highest odds of contracting an STI across race/ethnicity, but the risk behaviors did vary by racial/ethnic group.

Whites were more likely to have higher rates of STIs while Blacks and Hispanics were more likely to have higher frequency of unprotected sex, unknown sexual partners, and engagement in more risky behaviors.

To further expand on how past risk behaviors are linked to present and future behaviors, Wichers et al. (2013) focused on how alcohol use in adolescence was related to future alcohol use in adulthood. Using fraternal and identical twins, they assessed alcohol use, risk factors, and sensation-seeking. The analysis indicated that genetic factors that are linked to externalizing problem behaviors (e.g., aggression, antisocial personality disorder, problems with conduct, etc.) were more related to alcohol use than genetic factors related to alcohol disorders directly. They also found that the way parents monitored and were involved in their child's life reduced the likelihood of further risky behavior engagement. Overall, Wichers et al. concluded that genetic factors do, indeed, play a role in predicting future engagement in risky behaviors for adolescents.

In summary, the literature provides sound evidence that early engagement in risky sexual behaviors needs to be incorporated into studies that examine links between RSB and HIV. There is evidence that researchers need to assess past engagement in behaviors considered risky in order to better understand the mechanisms that further influence increases in the given behaviors. This is why the present study includes early engagement in risky sexual behaviors.

Statement of the Problem and Hypotheses

Building on the results of past research, the present study seeks to examine the relationships among sensation-seeking, impulsivity, thrill-seeking, self-esteem, early engagement in risky sexual behaviors, and risky sexual behaviors related to contracting HIV. No research has examined these factors in combination, particularly with respect to predicting their relationship to RSBs related to contracting HIV. Previous literature has yet to test whether thrill-seeking, outside of sensation-seeking, is linked to increases in RSB.

There are six hypotheses that this study seeks to test:

1. Sensation-seeking scores will be significantly and positively correlated with increased likelihood of engaging in risky sexual behaviors. Previous studies have indicated that sensation-seeking is related to risky sexual behaviors, and the current study seeks to replicate this finding.
2. Thrill-seeking scores will be significantly and positively correlated with increased likelihood of engaging in risky sexual behaviors. The research literature in the subject area of risky sexual behaviors has yet to include this variable when examining personality dimensions related to risky sexual behaviors. I predict that thrill-seeking will be positively correlated with RSB. Zuckerman (1994) defined thrill-seeking as searching for exciting yet risky physical activities for the sensation in an unusual manner. This leads me to predict that thrill-seeking will be positively and significantly correlated with likelihood of engaging in risky sexual behaviors.

3. Impulsivity scores will be significantly and positively correlated with increased likelihood of engaging in risky sexual behaviors. Previous researchers have concluded that impulsivity is related to risky sexual behaviors, and the current study seeks to replicate this finding.
4. Self-esteem scores will be significantly and negatively correlated with increased likelihood of engaging in risky sexual behaviors. The literature review indicated that self-esteem is negatively related to risky sexual behaviors, and the current study seeks to replicate this finding.
5. Early engagement in risky sexual behaviors in adolescence (starting at age 15) will be significantly and positively correlated with increased likelihood of engaging in risky sexual behaviors in adulthood. Previous studies have indicated that early engagement in risky behaviors was related to increased future likelihood of engaging in risky sexual behaviors in adulthood, and the current study seeks to replicate this finding.
6. In a multiple regression model, sensation-seeking, thrill-seeking, impulsivity, self-esteem, and early engagement in risky sexual behaviors will be significant predictors of increased likelihood of engaging in risky sexual behaviors. This hypothesis will assess the relative importance of these factors in predicting RSB.

CHAPTER II

Method

Participants

One hundred and eighty-five (70 male, 115 female) undergraduate, graduate, and degreed individuals completed either a paper or electronic questionnaire. Some students completed the questionnaire for extra credit in their classes. The participant age range was 18-42 with a mean of 20.58 years ($SD = 4.16$). The majority of participants were not in a current relationship (56.2%, $n = 104$) and not living with their partner (84.9%, $n = 157$). For ethnicity, 54% ($n = 90$) of the participants were Caucasian/White, 34% ($n = 63$) were African-American/Black, and 3% ($n = 6$) were Asian/Pacific Islander. With respect to sexual orientation, 92% ($n = 170$) identified as straight, 5% ($n = 9$) identified as bisexuals, 2% ($n = 3$) identified as gay, and 1% ($n = 2$) identified as lesbian. Two hundred and fourteen surveys were attempted; twenty-seven participants did not pass the pre-screen assessment, one participant skipped more than 75% of the questions within one of the main questionnaire measures, one participant wrote identifiable information on the questionnaire, and one participant placed all 1's for one of the major questionnaire measures.

Procedure

The paper questionnaires were delivered during set study times through the MTSU Sona system. These participants had the option to choose to participate in the study by both signing up through the Sona system and attending the data collection session that they signed up for.

The research was approved by the Institution Review Board of Middle Tennessee State University (Appendix A) and all participants were informed as to the nature and intent of the study and were afforded the opportunity to accept or decline consent to participate. Each participant received an introduction to the study which included information that the results would be used in a publishable manuscript, no personal data would be collected, and the data collected would be used to help make HIV prevention programs more effective. After the participants completed the questionnaire, they were debriefed and then left the study area.

The electronic questionnaires were delivered via a QR code on advertisement flyers for the study. The QR code is scanned using a free QR scanner application that is available for all mobile phone operating systems. The flyer detailed the name of the study, the requirements to participate, and the QR code. When the participants scan the QR code, they are brought to Google survey system, an online research study website that provides free data collection services. They were taken to a cover letter page that informed the participants that the results of the study would be used in a publishable manuscript, not personal data would be collected, and information collected would be used to help make HIV prevention programs more effective. Participants then selected

“Yes” or “No”, in regards to consent. If “Yes” was selected, the web page opened to allow them to complete the pre-screen assessment. This assessment was incorporated to gauge whether the participants would feel any negative emotions as a result of answering questions in the questionnaire. If a participant answered “Yes” or “Not Sure”, they were excluded from participating in the study. If they selected “No”, they were then able to complete the online questionnaire. In regard to the paper version, each participant was given an informed consent form and a pre-screen assessment to complete before completing the questionnaire. As with the electronic version, if a participant answered “Yes” or “Not Sure”, they were excluded from participating in the study. If they selected “No”, they were then given the questionnaire to complete. See appendix B for a copy of the pre-screen assessment.

Measures

The questionnaire consisted of several personality and behavioral measures, including sexual risks, self-esteem, sensation-seeking, thrill and adventure, and risk behaviors. These measures appear in the order listed in the survey. Additionally, participants indicated their gender, age, and sexual preference/orientation at the end of the survey. Participants had the option to skip any question that they did not wish to answer.

Student Sexual Risks Scale. The Student Sexual Risks Scale (SSRS; DeHart & Birkimer, 1997) is a 38-item measure that assesses the level of risk for engaging in

behaviors that are linked to contracting HIV. Items include condom usage, sexual activities, and other sexual behaviors. Participants used a 5-point Likert scale to rate the items (1 = *Strongly Disagree*, 5 = *Strongly Agree*). The Likert scale data were converted to the original scoring system for the measure. “1” and “2” were coded as “*Disagreed (D)*”, “3” was coded as “*Undecided (U)*”, and “4” and “5” were coded as “*Agreed (A)*”. Each student starts with a score of 80, and for every undecided or disagreed response, 1 point and 2 points are subtracted respectively. A score of 14 and below is considered “Lower Risk,” a score of 15 to 37 is considered “Average Risk,” and a score of 38 or above is considered “Higher Risk.” Example items were “I would avoid using condoms if at all possible” and “I am determined to practice safe sex.” DeHart and Birkimer reported an internal reliability of .88 for the SSRS; the Cronbach’s alpha was .92 for the current study.

Rosenberg Self-Esteem Scale. Rosenberg (1965) developed the 10-item, uni-dimensional self-esteem scale (SES) to assess global self-worth by examining positive and negative feelings about the self. Using a 5-point Likert scale (1 = *Strongly Disagree*, 5 = *Strongly Agree*), participants rated items reflecting how they felt about themselves. The participants’ scores ranged from 10 to 50. Higher scores were indicative of higher self-esteem. Example items include “I take a positive attitude toward myself” and “I feel I do not have much to be proud of.” A great deal of research indicates that the SES is a reliable and valid measure of global self-worth (Gray-Little, Williams, & Hancock, 1997). In the current study, the Cronbach alpha coefficient was .90.

Brief Sensation-Seeking Scale. Sensation-Seeking was measured with the 8-item Brief Sensation-seeking Scale (BSSS8; Hoyle et al., 2002), which uses a 5-point Likert scale (1 = *Strongly Disagree*, 5 = *Strongly Agree*). On the questionnaire, the Likert scale was reversed, but was reorganized to its original form to be analyzed. Higher scores were indicative of higher levels of sensation-seeking. Examples items are “I like wild parties” and “I would like to try bungee jumping.” Hoyle et al. (2002) reported an internal reliability value of .76 for the BSSS8. In the present study, the Cronbach alpha coefficient was .73.

Sensation-Seeking Scale: Thrill and Adventure Seeking Subscale. Thrill-seeking was measured using the Thrill and Adventure Seeking subscale (TAS) from the Sensation-seeking Scale, form V (Zuckerman, 1979). The subscale consists of 10 items that examine the seeking of unusual sensations through risky and exciting activities. High scores on this measure are indicative of higher levels of thrill-seeking. Respondents choose between two contradictory statements for each item. An example would be “A. I often wish I could be a mountain climber” or “B. I can’t understand people who risk their necks climbing mountains.” Deditius-Island and Caruso (2002) reported an internal reliability for the TAS of .75. In the current study, the Cronbach alpha coefficient was .71.

Temperament and Character Inventory: Impulsive Control Subscale (TCI). The Impulsive Control subscale (Cloninger et al., 1994) is a 10-item measure that examines the level of impulse control one has. The measure uses a 5-point Likert scale (1 =

Strongly Agree, 5 = *Strongly Disagree*). Higher scores are indicative of less impulse control. An example item is “I carry out my plans.” Cloninger et al. (1994) reported an internal reliability value of .78. In the present study, the Cronbach alpha coefficient was .73.

Early Engagement in Risky Sexual Behavior Items: This is a 13-item measure developed to examine both age of engagement in risky sexual behaviors (i.e., unprotected anal, oral, and/or vaginal sex) and frequency of engagement in said behaviors. Each answer choice is given a number (Ex., A = 6, B = 5, etc.), and the higher the overall score, the more engaged in risky sexual behaviors the participant was at an early age (starting at the age of 15). Example items were “At what age did you first engage in vaginal sex (Females)?”, “How frequently did you engage in this sexual activity within a given week?”, and “Was a prophylactic (i.e., condom, female condom, etc.) used?” Items in the questionnaire used either a 4, 6 or 7-point Likert scale. The range of scores for this measure were 13 to 60, where 60 represents high scores and 13 represents lower scores. For this measure, the Cronbach alpha coefficient was .64.

CHAPTER III

Results

Descriptive Statistics and Distributions

The descriptive statistics for the six main measures can be found in Table 1. For each one, the skewness and kurtosis estimates were calculated. In regard to skewness, all of the measures were normally distributed except self-esteem, which had a skewness of 3.82 ($SE = 0.18$). In regard to kurtosis, all measures were normally distributed except early engagement in risky sexual behaviors, which had kurtosis of -2.11 ($SE = 0.37$), thrill-seeking, which had kurtosis of -2.28 ($SE = 0.36$), and RSB, which had kurtosis of 3.06 ($SE = 0.36$). Despite these non-normal values, the given variables were found to be usable for this study.

Table 1
Descriptive Statistics for Major Measures

Variable	Mean	Standard Deviation	Cronbach's Alpha
EarlyBehave ¹	18.51	7.42	0.64
Impulsivity	24.85	5.76	0.73
Thrill-Seeking	15.77	2.59	0.71
Sensation-Seeking	25.00	5.97	0.73
Self-Esteem	21.58	7.04	0.90
Risky Sexual Behaviors	110.17	10.89	0.92

Note. 1. Early Engagement in Risky Sexual Behaviors

Test of the Hypotheses

Table 2 presents the correlations among the major measures. Hypothesis one stated that sensation-seeking scores would be significantly and positively correlated with increased likelihood of engaging in risky sexual behaviors in adulthood. The Pearson's correlation indicated that sensation-seeking was positively associated with increased likelihood of engaging in risky sexual behaviors. Thus, hypothesis one was supported.

According to hypothesis two, thrill-seeking would be significantly and positively correlated with increased likelihood of engaging in risky sexual behaviors in adulthood. However, the correlation indicated that thrill-seeking was not significantly correlated with increased likelihood of engaging in risky sexual behaviors. Thus, hypothesis two was not supported.

According to the third hypothesis, impulsivity scores were expected to be significantly and positively correlated with increased likelihood of engaging in risky sexual behaviors. However, impulsivity was not significantly correlated with increased likelihood of engaging in risky sexual behaviors in adulthood. Thus, there was also no support for this hypothesis.

Hypothesis four stated that self-esteem scores would be significantly and negatively correlated with increased likelihood of engaging in risky sexual behaviors in adulthood. Pearson's correlation indicated that self-esteem was not significantly correlated with increased likelihood of engaging in risky sexual behaviors. Thus, hypothesis four was not supported.

Hypothesis five stated that early engagement in risky sexual behaviors in adolescence (starting at age 15) would be significantly and positively correlated with increased likelihood of engaging in risky sexual behaviors in adulthood. As Table 2 indicates, early engagement in risky sexual behaviors was significantly and positively correlated with increased likelihood of engaging in risky sexual behaviors. Thus, hypothesis five was supported.

Table 2
Correlations among the Major Measures.

Variable	1	2	3	4	5	6
Thrill ¹						
Sensation ²	.49**					
Impulsivity ³	.09	.20**				
Esteem ⁴	.06	.06	.52**			
Early ⁵	.25**	.17*	-.02	-.03		
RSB ⁶	.00	.15*	.11	-.07	.24**	

Note. 1. Thrill-Seeking ($N = 184$), 2. Sensation-Seeking ($N = 185$), 3. Impulsivity ($N = 182$), 4. Self-Esteem ($N = 182$), 5. Early Engagement in Risky Sexual Behaviors ($N = 169$), 6. Risky Sexual Behaviors ($N = 176$).

* $p < .05$; ** $p < .01$.

Hypothesis six stated that in a multiple linear regression model, sensation-seeking, thrill-seeking, impulsivity, self-esteem, and early engagement in risky sexual behaviors would be significant predictors of increased likelihood of engaging in risky sexual behaviors. The overall model was significant in the prediction of increased likelihood of engagement in risky sexual behaviors, ($F(5, 150) = 3.88$, $MSE = 113.76$, $p = .002$, $R^2 = .114$). As Table 3 shows, only the early engagement in risky behavior was a significant predictor of future risky behavior. Therefore, hypothesis six was partially supported for increased likelihood of engaging in RSB in adulthood.

Table 3
Multiple Linear Regression Model for Predicting Risky Sexual Behaviors

Predictor	B	SE (B)	<i>B</i>	95% CI
Constant	100.79	6.17		
Sensation ¹	.34	.18	.18	-0.02, 0.69
Thrill ²	-.57	.39	-.14	-1.35, 0.21
Impulsivity ³	.31	.18	.16	-0.05, 0.67
Esteem ⁴	-.22	.14	-.14	-0.51, 0.06
Early ⁵	.38**	.12	.25	0.14, 0.62

Note. $N = 156$. 1. Sensation-Seeking, 2. Thrill-Seeking, 3. Impulsivity, 4. Self-Esteem, 5. Early Engagement in Risky Sexual Behaviors.

** $p < .01$.

Supplemental Analyses

Other correlational data (not related to the specific hypotheses) provided additional information about the measures used. The correlational analysis (see Table 2) indicated that thrill-seeking and sensation-seeking were both significantly correlated with early engagement in risky sexual behaviors.

I also conducted one-way ANOVA supplemental analyses with pairwise comparisons to see if one or more of the demographic variables were related to one or more of the major measures. See Table 4 for significant ANOVA statistics. A familywise alpha of .05 was used unless otherwise stated.

Table 4
Significant One-Way ANOVAs for Demographic Variables and Major Measures

Variable	<i>df</i> ₁	<i>df</i> ₂	<i>F</i>	η^2	<i>p</i>
Orientation ¹					
EarlyBehave ²	4	164	3.47	.08	.01
Sensation ³	4	180	3.74	.08	.006
Esteem ⁴	4	177	2.99	.06	.02
Relation ⁵					
EarlyBehave ²	2	19.25	15.88	.14	<.001
Length ⁶					
EarlyBehave ²	5	43.06	3.82	.10	.006
LiveTogether ⁷					
Early Behave	1	166	17.26	.09	.01
Race					
Thrill ⁸	6	177	2.76	.09	.01
Esteem ⁴	6	175	3.12	.10	.006
Gender					
Impulsivity	1	180	5.52	.03	.02

Note. 1. Sexual Orientation, 2. Early Engagement in Risky Sexual Behaviors, 3. Sensation-Seeking, 4. Self-Esteem, 5. Relationship Status, 6. Length of Relationship, 7. Living Together or not, 8. Thrill-Seeking, 9. Risky Sexual Behaviors.

Using gender as the independent variable and the main measures as the dependent variables, impulsivity differed by whether one was male or female. The analysis indicated that the female participants had higher impulsivity scores than the male participants.

Using whether one lives with their partner or not as the independent variable and the main measures as the dependent variable, the analysis found that early engagement in risky sexual behavior scores differed between whether one lived with their partner or not.

Using sexual orientation as the independent variable, the one-way ANOVA indicated that the dependent variables early engagement in risky sexual behaviors scores all differed by sexual orientation. The Tukey HSD procedure was used to conduct the pairwise comparisons. It revealed that the participants who identified as bisexual had significantly higher early engagement in risky sexual behaviors scores than the

participants who identified as straight. With sensation-seeking, the pairwise analysis found that those participants who identified as bisexual had significantly higher sensation-seeking scores than those who identified as lesbian and straight. Last, with self-esteem, the pairwise analysis indicated that none of the pairwise comparisons reached statistical significance. Table 5 shows the Tukey HSD comparisons.

Table 5
Tukey HSD Comparisons for Major Measures

(I)	(J)	Mean Difference (I-J)	95% CI	
			Lower Bound	Upper Bound
Sexual Orientation				
EarlyBehave²				
Bisexual	Straight	8.85*	1.61	16.08
Bisexual	Lesbian	3.00	-12.01	18.01
Lesbian	Straight	5.85	-7.48	19.17
Lesbian	Gay	6.67	-10.42	23.76
Sensation-Seeking				
Straight	Lesbian	6.28	-4.41	16.97
Bisexual	Straight	6.11*	0.97	11.25
Bisexual	Lesbian	12.39*	0.64	24.14
Gay	Straight	2.56	-6.20	11.31
Race/Ethnicity				
Self-Esteem				
Caucasian	African American/Black	7.37*	0.45	14.29
Caucasian	Native American	1.56	-12.96	16.07
Asian/Pacific Island	Caucasian	3.78	-4.79	12.34
Native American	African American/Black	1.87	-12.71	16.46

Note. * $p < .05$. The mean difference is significant at the .05 familywise alpha level.

With race as the independent variable and the main measures as the dependent variable, the ANOVA analysis indicated that thrill-seeking and self-esteem scores differed by race/ethnicity. The Tukey HSD pairwise analysis indicated that, for thrill-

seeking, none of the pairwise comparisons reached statistical significance, and for self-esteem, Caucasian individuals had significantly higher self-esteem than African American/Black individuals.

Using relationship status as the independent variable and the main measures as the dependent variables, the one-way Welch ANOVA analysis found that early engagement in risky sexual behaviors scores differed by relationship status. The Games-Howell pairwise analysis indicated that individuals not in a relationship were more likely to have higher early engagement in risky sexual behavior scores than those who were currently married and currently in a relationship. See Table 6 for Games-Howell comparisons.

Table 6
Games-Howell Comparisons for Major Measures

(I)	(J)	Mean Difference (I-J)	95% CI	
			Lower Bound	Upper Bound
Relationship Status				
EarlyBehave²				
Married	In Relationship	1.90	-2.74	6.54
Married	Not in Relationship	7.24*	2.61	11.88
In Relationship	Not in Relationship	5.35*	2.79	7.91
Length of Relationship				
EarlyBehave²				
Less than 6 Months	Not in Relationship	3.23	-4.41	10.88
13-24 Months	Not in Relationship	5.03*	1.04	9.02
25-36 Months	13-24 Months	0.68	-7.47	7.61
Over 3 Years	Not in Relationship	5.78*	0.10	11.46

Note. * $p < .05$. The mean difference is significant at the .05 familywise alpha level.

With length of relationship as the independent variable and the main measures as the dependent variables, the one-way Welch ANOVA analysis indicated that early

engagement in risky sexual behaviors scores differed by the length of the relationship with one's partner. As Table 6 indicates, the Games-Howell pairwise analysis found that those not in a relationship had higher scores in early engagement in risky sexual behaviors than those in a relationship for over 3 years and those in a relationship for thirteen to twenty-four months.

A Pearson correlation was conducted using age as the independent variable and the major measures as dependent variables. The analysis indicated that only sensation-seeking, was significantly correlated with age, ($r(175) = -.22, p = .004$).

CHAPTER IV

Discussion, Implications, and Limitations

This study marks the first attempt to assess simultaneously the effects of sensation-seeking, thrill-seeking, self-esteem, impulsivity, and early engagement in risky sexual behaviors on increased likelihood of engaging in risky sexual behaviors in adulthood. The aim of the study was to investigate the association between sensation-seeking, impulsivity, thrill-seeking, self-esteem, and early engagement in risky sexual behaviors to see if one or more were related to RSB while also examining whether one or more contributed more toward increasing the increased likelihood of engaging in risky sexual behaviors in adulthood (age 18 and over).

Discussion of Main Hypotheses

The results for hypothesis one revealed that high sensation-seeking was correlated with increased likelihood of engaging in risky sexual behaviors. As suggested by previous studies, being highly sensation-seeking may play a role in increasing one's likelihood to engage in risky sexual behaviors (Gullette & Lyons, 2005; Spitalnick et al., 2007). These results show that being highly sensation-seeking could potentially increase one's likelihood of engaging in antisocial behaviors, like unprotected sex and binge drinking. The results also mimic results from previous literature in regard to sensation-seeking having a positive relationship with engaging in RSBs. Gullette and Lyons (2005) noted a relationship between level of sensation-seeking and number of sexual partners.

In regard to the second hypothesis, thrill-seeking was not significantly correlated with increased likelihood to engage in RSBs. This hypothesis was not previously examined in prior studies, so there was not necessarily a research foundation to support the claim that there was a relationship between thrill-seeking and RSB. The reason that the present study included this variable was because thrill-seeking, in the context of this study, was operationalized as searching for exciting yet risky physical activities for the sensation in an unusual manner (Zuckerman, 1994). One possible reason for this relationship not being significant could be due the fact that the measure used did not adequately screen for thrill-seeking tendencies as described in the operational definition. Because of the fact that a free-standing thrill-seeking measure, outside of Zuckerman's measure for sensation-seeking, has yet to developed, it was difficult to independently analyze this variable within the subject area of RSB. Another alternative explanation could be that participants viewed thrill-seeking as participation in "extreme" activities (e.g., untethered rock climbing), which goes against the operational definition set for this measure.

With hypothesis three, the results indicated that having higher impulsive tendencies were related to increases in likelihood to engage in risky sexual behaviors. This finding directly contradicts what previous studies have found. For example, Deckman and DeWall (2011) conducted a similar study and found that individual facets of impulsivity were related to increased engagement in risky sexual behaviors. Beyond their findings, other studies (Cyders & Smith, 2008; Whitesident & Lynam, 2001) had also found that individual facets of impulsivity (i.e., negative and positive urgency) are related to higher engagement in RSBs. One potential difference between the previous

studies and the current one was that the previous studies utilized the Impulsive Behavior Scale (UPPS-P) while the current study used Cloninger's Impulse Control subscale from the Temperament and Character Inventory (TCI) because of its shorter length. By using the TCI instead of the UPPS-P, this study was not able to differentiate between the four facets of impulsivity (negative and positive urgency, (lack of) premeditation, and (lack of) perseverance). It is possible that one or more of the individual facets of the personality dimension could be related to RSB.

For the fourth hypothesis, the results indicated that self-esteem was not significantly correlated with RSB. Studies about self-esteem and RSB have indicated conflicting conclusions. For example, Cole (1997) found that adolescents and young adults who had higher levels of self-esteem were more likely to engage in risky sexual behaviors while Boden and Horwood (2006) found that a negative relationship existed between self-esteem and engagement in risky sexual behaviors. The differences between these two findings were influenced by how the researchers viewed RSB. For instance, Cole examined RSB using an overarching measure that gauged overall engagement in RSB while Boden and Horwood measured RSB using frequency of engaging in activities such as unprotected sex, number of sexual partners, and becoming/causing pregnancy. These differences have influenced the results obtained within each study, which indicates that the measure used for the present study could have influenced the results. This study used an overarching measure that asked whether the participants agreed, disagreed, or were undecided about their opinions to the measure items. By using this measure instead of one that examined frequency of engagement in RSB, the results contradicted those presented by previous research

With hypothesis five, the results determined that individuals who engage in risky sexual behaviors starting around the age of 15 are more likely to report engaging in risky sexual behaviors in adulthood (age 18 and over). Previous literature has reached similar conclusions. For example, Pflieger et al. (2013) found that early engagement in risky sexual behaviors in adolescents was linked to higher odds of contracting STI due to increased engagement in risky sexual behaviors in adulthood.

The analysis for hypothesis six found that the model was significant in predicting increased likelihood of engaging in risky sexual behaviors, but only early engagement in risky sexual behaviors was a significant predictor of future risky behaviors. This hypothesis was not previously predicted in previous studies, yet each of the studies reviewed for the current study alluded to the notion that all of the major measures in this study could potentially help predict increased likelihood of engaging in future risky sexual behaviors (Pflieger et al., 2013; Wichers et al., 2013). One possible reason for contradiction in findings could lie in the type of measure used to gauge engagement in RSB. As alluded to before, the RSB measure used for this study used overarching items that asked how similar the questionnaire items were to each participant's opinions instead of asking about frequency of engagement in unprotected sex, condom usage, number of sexual partners, etc. By using a frequency measure, there is a possibility that the major measures could have been found to help predict future engagement in RSBs.

Discussion of Supplemental Analyses

As with the main hypotheses, the supplemental analyses revealed interesting relationships among the major measures and the demographical variables. Of interest, a correlation analysis found that two variables, thrill-seeking and sensation-seeking, were both significantly correlated with early engagement in risky sexual behaviors. Previous literature has made similar conclusions about the relationship between sensation-seeking, early engagement in risky sexual behaviors, and thrill-seeking (Pflieger et al., 2013; Zuckerman, 1994). This provides some reasoning for thrill-seeking, which has previously not been incorporated as a stand-alone measure, to be further investigated in regards to its relationship with early engagement in risky sexual behaviors.

Another interesting finding from the supplemental analyses was that early engagement in risky sexual behaviors, sensation-seeking, and self-esteem scores all differed by sexual orientation. In regard to early engagement in risky sexual behaviors, it seems that participants who identified as bisexual had higher early engagement scores than those who identified as straight. Interestingly enough, research has found that because sexual-minority youth (LGBTQ youth) tend to be more stigmatized and stereotyped than their heterosexual counterparts, they tend to pursue sexual activities outside the context of a dating relationship (Diamond, 2000; Diamond, Savin-Williams, & Dube, 1999). Despite their findings, previous studies do not necessarily explain why the bisexual participants, on average, had the highest scores of all the sexual orientations examined in this study. Future research could further examine the relationship between early engagement in risky sexual behaviors and sexual orientation in adolescents. With

sensation-seeking, the comparisons found that those who identified as bisexual had higher scores than those who identified as lesbian and straight.

Limitations and Future Research Implications

Despite the interesting findings of this study, there were several possible limitations that needed to be addressed. As noted earlier, the Impulse Control subscale of the Temperament and Character Inventory did not adequately take into account the individual facets that make up the Impulsivity personality dimension. For example, Deckman and DeWall (2011) stressed the importance of understanding how the individual facets of Impulsivity (positive/negative urgency, (lack of) premeditation, sensation-seeking, and (lack of) perseverance) were connected to higher rates of RSB and potentially predicting lifetime RSB, which was why they used the Impulsive Behavior Scale. Future research should use an impulsivity measure that incorporates the examination of the five facets of impulsivity.

Another possible limitation was that participants were asked retrospective questions about their potential engagement in risky sexual behaviors during adolescence. By using this type of measure, I allowed for biases and memory distortions to potentially influence the outcomes of the results. Future research would benefit from utilizing a longitudinal design. Using a longitudinal study would help to better understand the relationship between engaging in risky sexual behaviors in adolescence and likelihood of increased engagement in RSB in adulthood.

A third potential limitation was the fact that the risky behavior measures were based on self-report. This left room for errors to be included in the analyzed data. By using a self-report measure, there was a possibility that the participants answered the items in such a way to either present themselves to look more favorably or risky. Despite this, the only way to ethically gauge RSB was to use a self-report measure. Continuing forward, future research would benefit from incorporating activities that directly gauge one's actual condom and other prophylaxis usage. This would allow for a more accurate depiction of one's engagement level in risky sexual behaviors.

Conclusion

In conclusion, this study sought to understand how self-esteem, sensation-seeking, thrill-seeking, impulsivity, and early engagement in risky sexual behaviors related to likelihood of engaging in risky sexual behaviors. The results showed that a significant relationship existed between sensation-seeking and increased likelihood of engaging in risky sexual behaviors and early engagement in risky sexual behaviors and RSB. They also showed that early engagement in risky sexual behaviors helped to predict future RSB. With these findings, we could better tailor HIV prevention programs and measures that target individuals in a college setting. The results show that the focus of prevention programs should be on starting to discuss comprehensive sexual education at an earlier age, mainly before adolescents begin engaging in sexual activities, which could lead to decreases in likelihood of engaging in risky sexual behaviors during adulthood. The results also help show a need for prevention programs to better address how personality

dimensions play a potential role in how likely one may engage in certain risky sexual behaviors.

REFERENCES

- Bajracharya, S. M., Sarvela, P. D., & Isberner, F. R. (1995). A retrospective study of first sexual intercourse experiences among undergraduates. *Journal of American College Health, 43*(4), 169-177.
- Banaji, M. R. & Prentice, D. A. (1994). The self in social contexts. *Annual Review of Psychology, 45*, 297-332.
- Birthrong, A. & Latzman, R. D. (2014). Aspects of impulsivity are differentially associated with risky sexual behaviors. *Personality and Individual Differences, 8*, 8-13. doi:10.1016/j.paid.2013.09.009
- Boden, J. & Horwood, L. (2006). Self-esteem, risky sexual behavior, and pregnancy in a New Zealand birth cohort. *Archives of Sexual Behavior, 35*(5), 549-560.
- Bowden-Jones, H., McPhillips, M., Rogers, R., Hutton, S., & Joyce, E. (2005). Risk-taking on tests sensitive to ventromedial prefrontal cortex dysfunction predicts early relapse in alcohol dependency: A pilot study. *The Journal of Neuropsychiatry and Clinical Neurosciences, 17*(3), 417-420.
doi:10.1176/appi.neuropsych.17.3.417

Brennan, A. F., Walfish, S., & AuBuchon, P. (1986). Alcohol use and abuse in college students: II. Social/environmental correlates, methodological issues, and implications for intervention. *International Journal of the Addictions*, 21(4-5), 475-493.

Centers for Disease Control and Prevention (CDC). (2014). YRBS Questionnaires.

Retrieved January 2015, from

http://www.cdc.gov/healthyyouth/yrbs/questionnaire_rationale.htm

Chapin, J. (2001). Self-protective pessimism: Optimistic bias in reverse. *North American Journal of Psychology*, 3(2), 253-262.

Charnigo, R., Noar, S. M., Garnett, C., Crosby, R., Palmgreen, P., & Zimmerman, R. S.

(2013). Sensation-seeking and impulsivity: Combined associations with risky sexual behavior in a large sample of young adults. *Journal of Sex Research*, 50(5), 480-488. doi:10.1080/00224499.2011.652264

Chen, M., Rhodes, P. H., Hall, I. H., Kilmarx, P. H., Branson, B. M., & Valleroy, L. A.

(2012). Prevalence of undiagnosed HIV infection among persons aged ≥ 13 years—National HIV Surveillance System, United States, 2005-2008. *MMWR. Morbidity and Mortality Weekly Report*, 61, 57-64.

- Cloninger, C.R., Przybeck, T.R., Svrakic, D.M., Wetzel, R.D. (1994). *The Temperament and Character Inventory (TCI): A Guide to Its Development and Use*. St Louis, Missouri: Center for Psychobiology of Personality, Washington University.
- Cole, F. (1997). The role of self-esteem in safer sexual practices. *JANAC: Journal of the Association of Nurses in AIDS Care*, 8(6), 64-70.
- Colquhoun, D. (1997). Researching with young people on health and environment: The politics of self-esteem and stress. *Health Education Research*, 12(4), 449-460.
doi:10.1093/her/12.4.449
- Corbin, W. R., McNair, L. D., & Carter, J. (1996). Self-esteem and problem drinking among male and female college students. *Journal of Alcohol & Drug Education*, 42(1), 1-14.
- Courtney, K., Arellano, R., Barkley-Levenson, E., Galvan, A., Poldrack, R., MacKillop, J., & ... Ray, L. (2012). The relationship between measures of impulsivity and alcohol misuse: An integrative structural equation modeling approach. *Alcoholism-Clinical and Experimental Research*, 36(6), 923-931.
- Cyders, M. A. & Smith, G. T. (2008). Emotion-based dispositions to rash action: Positive and negative urgency. *Psychological Bulletin*, 134(6), 807-828.
doi:10.1037/a00133413

- Deckman, T. & DeWall, C. (2011). Negative urgency and risky sexual behaviors: A clarification of the relationship between impulsivity and risky sexual behavior. *Personality and Individual Differences, 51*(5), 674-678.
- Deditius-Island, H. K. & Caruso, J. C. (2002). An examination of the reliability of scores from Zuckerman's Sensation-seeking Scales, Form V. *Educational and Psychological Measurement, 62*(4), 728-734.
doi: 10.1177/0013164402062004012
- DeHart, D. D. & Birkimer, J. C. (1997). Sexual Risks Scale. *Journal of Sex Research, 34*(1), 11-25.
- Diamond, L. (2000). Passionate friendships among adolescent Sexual-minority women. *Journal of Research on Adolescence, 10*(2), 191-209.
- Diamond, L. M., Savin-Williams, R. C., & Dubé, E. M. (1999). Sex, dating, passionate friendships, and romance: Intimate peer relations among lesbian, gay, and bisexual adolescents. In W. Furman, B. B. Brown, C. Feiring, W. Furman, B. B. Brown, C. Feiring (Eds.) , *The development of romantic relationships in adolescence* (pp. 175-210). New York, NY, US: Cambridge University Press.

- Fein, G., Klein, L., & Finn, P. (2004). Impairment on a simulated gambling task in long-term abstinent alcoholics. *Alcoholism: Clinical and Experimental Research*, 28(10), 1487-1491. doi:10.1097/01.ALC.0000141642.39065.9B
- Gerrard, M., Gibbons, F. X., Reis-Bergan, M., & Russell, D. W. (2000). Self-esteem, self-serving cognitions, and health risk behavior. *Journal of Personality*, 68(6), 1177-1201. doi:10.1111/1467-6494.00131
- Glindemann, K. E., Geller, E. L., & Fortney, J. N. (1999). Self-esteem and alcohol consumption: A study of college drinking behavior in a naturalistic setting. *Journal of Alcohol and Drug Education*, 45(1), 60-71.
- Gray-Little, B., Williams, V.S.L., & Hancock, T. D. (1997). An item response theory analysis of the Rosenberg Self-Esteem Scale. *Personality and Social Psychology Bulletin*, 23, 443-451.
- Gullette, D. & Lyons, M. (2005). Sexual sensation-seeking, compulsivity, and HIV risk behaviors in college students. *Journal of Community Health Nursing*, 22(1), 47-60.
- Gullette, D. L. & Lyons, M. A. (2006). Feature: Sensation-seeking, self-esteem, and unprotected sex in college students. *Journal of the Association of Nurses in AIDS Care*, 17, 23-31. doi:10.1016/j.jana.2006.07.001

Hall, H. I., Song, R., Rhodes, P., Prejean, J., An, Q., Lee, L. M., Karon, J., Brookmeyer, R., Kaplan, E. H., McKenna, M. T., & Janssen, R. S. (2008). Estimation of HIV incidence in the United States. *Jama*, *300*(5), 520-529.

doi:10.1001/jama.300.5.520

Hendershot, C. S., Stoner, S. A., George, W. H., & Norris, J. (2007). Alcohol use, expectancies, and sexual sensation-seeking as correlates of HIV risk behavior in heterosexual young adults. *Psychology of Addictive Behaviors*, *21*(3), 365-372.

doi:10.1037/0893-164X.21.3.365

HIV prevalence, unrecognized infection, and HIV testing among men who have sex with men -- five U.S. cities, June 2004-April 2005. (2005). *MMWR: Morbidity & Mortality Weekly Report*, *54*(24), 597-601.

Hoyle, R. H., Stephenson, M. T., Palmgreen, P., Pugzles Lorch, E., & Donohew, R. L. (2002). Reliability and validity of a brief measure of sensation-seeking. *Personality and Individual Differences*, *32*(3), 401-414.

doi:10.1016/S0191-8869(01)00032-0

Kalichman, S. C. & Rompa, D. (1995). Sexual sensation-seeking and sexual compulsivity scales: Validity, and predicting HIV risk behavior. *Journal of Personality Assessment*, *65*(3), 586.

- MacDonald, T. & Martineau, A. (2002). Self-esteem, mood, and intentions to use condoms: When does low self-esteem lead to risky health behaviors. *Journal of Experimental Social Psychology, 38*(3), 299-306.
- MacKellar, D. A., Valleroy, L. A., Secura, G. M., Behel, S., Bingham, T., Celentano, D. D., & ... Thiede, H. (2005). Unrecognized HIV infection, risk behaviors and perceptions of risk among young men who have sex with men: Opportunities for advancing HIV prevention in the third decade of HIV/AIDS. *Journal of Acquired Immune Deficiency Syndromes, 38*(5), 603-614.
- Nicholson, W. D. & Long, B. C. (1990). Self-esteem, social support, internalized homophobia, and coping strategies of HIV+ gay men. *Journal of Consulting and Clinical Psychology, 58*(6), 873-876. doi:10.1037/0022-006X.58.6.873
- Nunn, A., Zaller, N., Cornwall, A., Mayer, K. H., Moore, E., Dickman, S., & ... Kwakwa, H. (2011). Low perceived risk and high HIV prevalence among a predominantly African- American population participating in Philadelphia's rapid HIV testing program. *AIDS Patient Care & STDs, 25*(4), 229-235. doi:10.1089/apc.2010.0313

- Pedersen, E., Hsu, S., Neighbors, C., Paves, A., & Larimer, M. (2013). Exploring relationships between facets of self-esteem and drinking behavior among diverse groups of young adults. *Addictive Behaviors, 38*(10), 2581-2585.
doi:10.1016/j.addbeh.2013.06.004
- Pflieger, J. C., Cook, E. C., Niccolai, L. M., & Connell, C. M. (2013). Racial/ethnic differences in patterns of sexual risk behavior and rates of sexually transmitted infections among female young adults. *American Journal of Public Health, 103*(5), 903-909. doi:10.2105/AJPH.2012.301005
- Rolison, M. R. (2002). College student risk-taking from a decision-making perspective: Including the effects of sensation-seeking, locus of control, and peer influence. *Dissertation Abstracts International, 63*, 1590.
- Rosenberg, M. (1965). *Society and the adolescent self-image*. Princeton, NJ: Princeton University Press.
- Smith, C. D. & Brown, J. M. (1998). Sexual behaviors, extroversion, and alcohol use among college students. *Journal of Alcohol & Drug Education, 44*(1), 70-79.
- Spitalnick, J. S., DiClemente, R. J., Wingood, G. M., Crosby, R. A., Milhausen, R. R., Sales, J. M., & ... Younge, S. N. (2007). Sexual sensation-seeking and its

relationship to risky sexual behavior among African-American adolescent females. *Journal of Adolescence*, 30(1), 165-173.

Stulhofer, A., Jelovica, V., & Ruzic, J. (2008). Is early exposure to pornography a risk factor for sexual compulsivity? Findings from an online survey among young heterosexual adults. *International Journal of Sexual Health*, 20(4), 270-280.

Trenz, R., Scherer, M., Harrell, P., Zur, J., Sinha, A., & Latimer, W. (2012). Early onset of drug and polysubstance use as predictors of injection drug use among adult drug users. *Addictive Behaviors*, 37(4), 367-372.

Weinstock, H., Dale, M., Linley, L., & Gwinn, M. (2002). Unrecognized HIV infection among patients attending sexually transmitted disease clinics. *American Journal of Public Health*, 92(2), 280-283.

Wichers, M., Gillespie, N., & Kendler, K. (2013). Genetic and environmental predictors of latent trajectories of alcohol use from adolescence to adulthood: A male twin study. *Alcoholism, Clinical and Experimental Research*, 37(3), 498-506.

doi:10.1111/j.1530-0277.2012.01939.x

- Wild, L. G., Flisher, A. J., Bhana, A., & Lombard, C. (2004). Associations among adolescent risk behaviours and self-esteem in six domains. *Journal of Child Psychology & Psychiatry, 45*(8), 1454-1467. doi:10.1111/j.1469-7610.2004.00851.x
- Winstanley, C. A., Eagle, D. M., & Robbins, T. W. (2006). Behavioral models of impulsivity in relation to ADHD: Translation between clinical and preclinical studies. *Clinical Psychology Review, 26*(4), 379–395.
doi:10.1016/j.cpr.2006.01.001
- Zuckerman, M., Tushup, R., & Finner, S. (1976). Sexual attitudes and experience: Attitude and personality correlates and changes produced by a course in sexuality. *Journal of Consulting and Clinical Psychology, 44*(1), 7-19.
doi:10.1037/0022-006X.44.1.7
- Zuckerman, M. (1979). *Sensation-seeking: Beyond the optimal level of arousal / Marvin Zuckerman*. Hillsdale, N.J.: L. Erlbaum Associates; New York: distributed by the Halsted Press Division of Wiley.
- Zuckerman, M. (1994). Behavioral expressions and biosocial bases of sensation-seeking. *New York: Cambridge Press. 26-27.*

Zule, W. A., Costenbader, E., Coomes, C. M., Meyer, W. J., Riehman, K., Poehlman, J., & Wechsberg, W. M. (2007). Stimulant use and sexual risk behaviors for HIV in rural North Carolina. *The Journal of Rural Health, 23*(11), 73-78.
doi:10.1111/j.1748-0361.2007.00127.x

APPENDICES

APPENDIX A: IRB APPROVAL LETTER



4/6/2015

Investigator(s): Zaver Moore, Tom Brinthaup
Department: Psychology
Investigator(s) Email: zdm2i@mtmail.mtsu.edu

Protocol Title: "Up close and personal: An examination of how personality dimensions, self-esteem, and early risk behaviors are correlated with risky behaviors related to HIV"

Protocol Number: 15-199

Dear Investigator(s),

The MTSU Institutional Review Board has reviewed the research proposal identified above. The MTSU IRB has determined that the study poses minimal risk to participants or that you have satisfactorily worked to minimize risks, and you have satisfactorily addressed all of the points brought up during the review.

Approval is granted for one (1) year from the date of this letter for 150 participants.

Please note that any unanticipated harms to participants or adverse events must be reported to the Office of Compliance at (615) 494-8918. Any change to the protocol must be submitted to the IRB before implementing this change.

You will need to submit an end-of-project form to the Office of Compliance upon completion of your research located on the IRB website. Complete research means that you have finished collecting and analyzing data. **Should you not finish your research within the one (1) year period, you must submit a Progress Report and request a continuation prior to the expiration date.** Please allow time for review and requested revisions. Failure to submit a Progress Report and request for continuation will automatically result in cancellation of your research study. Therefore, you will not be able to use any data and/or collect any data. Your study expires **4/6/2016**.

According to MTSU Policy, a researcher is defined as anyone who works with data or has contact with participants. Anyone meeting this definition needs to be listed on the protocol and needs to complete the required training. **If you add researchers to an approved project, please forward an updated list of researchers to the Office of Compliance before they begin to work on the project.**

All research materials must be retained by the PI or faculty advisor (if the PI is a student) for at least three (3) years after study completion and then destroyed in a manner that maintains confidentiality and anonymity.

Sincerely,

Institutional Review Board
Middle Tennessee State University

APPENDIX B: PRE-SCREEN ASSESSMENT

The following questions are being asked to gauge the potential emotional impact of this study on the participants who are volunteering to participate in this study. As stated on the informed consent page, if you wish to withdraw consent, withdraw from the study, and/or skip questions, you may do so without any consequences. If you have any questions or concerns about your participation in this study, you may email Zaver Moore at Zdm2i@mtmail.mtsu.edu or the faculty advisor, Tom Brinthaup, Ph.D., at Tom.Brinthaup@mtsu.edu.

Thank you for volunteering to participate in this study!

1. Will it be difficult for you to answer questions regarding your history of engaging in possibly risky sexual behaviors?
 - Yes
 - No
 - Not Sure

2. Do you feel that answering questions about your history of engaging in possibly risky sexual behaviors would bring up negative emotions that would be difficult for you to handle?
 - Yes
 - No
 - Not Sure

A number of statements that people have used to describe how they feel are given below. Please read each one and indicate the number which best describes how frequently you felt that way in the past seven days, including today. Some statements describe positive feelings and some describe negative feelings. You may have experienced both positive and negative feelings at different times during the past seven days.

- 0 = Never**
- 1 = Rarely**
- 2 = Sometimes**
- 3 = Often**
- 4 = Always**

3. ___ Change my mood a lot
4. ___ Am relaxed most of the time
5. ___ Get stressed out easily
6. ___ Am easily disturbed
7. ___ Seldom feel blue (sad)
8. ___ Worry about things
9. ___ Get upset easily
10. ___ Get irritated easily
11. ___ Often feel blue (sad)
12. ___ Have frequent mood swings