

PERCEIVED SUSCEPTIBILITY TO NEGATIVE CONSEQUENCES OF RISKY SEXUAL
BEHAVIOR AMONG COLLEGE STUDENTS

A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE

MASTER OF COUNSELING

BY

JENEICE SHAW

ADVISED BY

DR. THERESA KRUCZEK

BALL STATE UNIVERSITY

MUNCIE, INDIANA

JULY 2013

Acknowledgments

I would like to thank my committee, Dr. Kristen Perrone-McGovern and Dr. Erin Snyder and especially Dr. Theresa Kruczek for her help and guidance with this thesis. I would also like to thank my friends in my cohort for their support during this process.

Abstract

Research has shown that college students understand the risks associated with risky sexual behavior, but make up to close to 50% of new STI cases every year. Previous research suggests that lower perceived susceptibility to negative consequences, extroversion, openness, and neuroticism are all related to risky sexual behavior. Three hypotheses are proposed. Hypothesis one proposes that men and women will have significantly different levels of perceived susceptibility. Hypothesis two proposes that perceived susceptibility, extroversion, openness, and neuroticism predict sexual risk taking. Finally, hypothesis three proposes that perceived susceptibility will be negatively correlated with sexual risk taking, whereas extroversion, openness, and neuroticism will be positively correlated with sexual risk taking. Hypothesis one was not supported, hypothesis two was supported, and hypothesis three was only partially supported. Future directions in safe sex education are suggested.

Perceived Susceptibility to Negative Consequences of Risky Sexual Behavior Among College Students

College students and adolescents, specifically those between the ages of 15 and 24, are at a particularly high risk for sexually transmitted infections when compared with other age groups in the US. This age group accounts for nearly half of the 10 million new cases of sexually transmitted infections reported each year (CDCP, 2006). College students are also at risk for the human immunodeficiency virus (HIV). Close to one in 500 college students are HIV positive (CDCP, 2007) and most of these cases were passed through sexual intercourse (CDCP, 2006). The majority (86%) of college students are sexually active, but a minority (35%) report consistent use of condoms during sexual intercourse (ACH, 2006). This, however, does not mean that college students are unaware of the risks, specifically the disease risks, associated with sexual behavior. College students are able to accurately identify disease risks associated with kissing, mutual masturbation, oral sex, vaginal sex, and anal sex with heterosexual partners (Lewis, Miglez-Burbano, & Malow, 2009; Spears, Abraham, Sheeran, & Abrams, 1995). This ability to identify risks associated with unsafe sexual behavior does not seem to have any major effect upon college students' sexual behavior, particularly high risk behavior (Ratcliff-Crain, Donald, & Dalton, 1999).

If college students understand the risks involved with unsafe sexual behavior, why would they continue to participate in risky behavior that could lead to negative and, in some cases, life altering or life ending consequences? Perhaps even though college students may realize the risks associated with unsafe sexual behavior, they may not think that those risks apply to them or that they are in some way less vulnerable to the risks. College students may have an "it couldn't happen to me" attitude, believing that although these risks are very real and that they happen to

their peers, they have less of a chance of being affected by them. Therefore, if they do not perceive themselves as vulnerable to these risks, they may be more likely to disregard them and engage in high risk sexual behaviors. It is also possible that college students participating in risky sexual behavior are more extroverted or open to different experiences. Even if these individuals are aware of the risks, they may disregard them because of their own personalities.

It is hypothesized that students engaging in high risk sexual behavior are less likely to perceive themselves as susceptible to any negative consequences of sexual activity (sexually transmitted infections and unplanned pregnancy) and more likely to rate as extroverted, neurotic, and open to experiences on The Big Five Inventory and that these factors can predict sexual risk taking. Gender differences in perceived susceptibility will also be examined. It is hypothesized that female participants will have a higher level of perceived susceptibility than will male participants. This hypothesis was determined because when pregnancy occurs, females typically have more stress and responsibility placed upon them than do males since they will be carrying the child or ultimately choosing whether or not to abort the pregnancy. Since women are at a higher risk for consequences related to pregnancy, they may be more likely to perceive themselves as susceptible to negative consequences of sexual behavior.

Literature Review

As mentioned in the introduction, American college students are at a particularly high risk for sexually transmitted disease infections when compared with other populations. College students are able to accurately describe the risks involved with safe and unsafe sexual behavior, but this does not seem to have an effect upon their sexual behavior (Ratcliff-Crain, Donald, & Dalton, 1999). This leaves researchers with the question, why?

One explanation is that college students perceive themselves as less susceptible to negative consequences of risky sexual behavior. Perceived susceptibility is the perceived likelihood of incurring a particular outcome at some point in the future (Crosby, DiClement, Wingood, Sionean, Cobb, & Harrington, 2000). There has been much research conducted on perceived susceptibility among several different populations (Snyder & Rouse, 1992, Crosby, et. al., 2000, Janz & Becker, 1984, Greening & Chandler, 1997). Greening & Chandler (1997) studied perceived vulnerability of participants in several different situations. Participants were provided with a scenario and asked to rate their chances that a negative outcome would occur. An example of this was driving a car and experiencing an automobile accident. When participants believed that they had some sort of control over their situation, they were more likely to believe that the negative outcomes would not happen to them. Researchers reported that participants approached the experiment logically, but used their own faulty information and self schemas in completing the task. The majority of participants rated themselves as above average for several skill related tasks, such as driving. This, of course, is illogical as the majority cannot be above average. The researchers suggested that people may develop schemas that lead to these feelings of invulnerability. Since extremely negative things do not happen to an individual on a daily basis, a false schema (for example, this couldn't happen to me) is not contradicted, often causing the individual to believe the schema to be true (Horswill & McKenna, 1999). This same idea can be applied to sexual behavior. A college student does not contract a sexually transmitted infection or experience an unplanned pregnancy every time he or she participates in unsafe sex. Therefore, a schema of "this could not happen to me" goes unchallenged.

In order to change college students' unsafe sexual behavior, this schema must be changed. Students need to be made aware that if they are participating in unsafe sexual behavior,

they are just as likely to suffer from negative consequences as a peer participating in the same type of behavior. Janz & Becker (1984) have found that this strategy works and that people who are aware of the risks associated with their behavior and who see themselves as susceptible to these risks are more likely to change their behavior than their counterparts. The AIDS Risk Reduction Model (ARRM) also suggests the same idea (Catania, Kegeles, & Coates, 1990): people need to understand the risks associated with their behavior before they can or are willing to make any changes.

If the current study is able to conclude that students at Ball State University who engage in unsafe sex do so because they do not perceive themselves as susceptible to negative consequences of risky sexual behavior, education can be implemented focusing on making students understand that they are not exempt from these consequences. This has worked in a high school setting in previous research. Coyle, Basen-Engquist, Kirby, Parcel, Banspach, Harrist, Baumler, & Weil (1999) implemented a sexual risk reduction intervention program for high school students that targeted students' accuracy of their perceived susceptibility to sexually transmitted infections. After completion of the program, researchers found that the students involved in the study participated in less risky sexual behavior than their classmates who were in the control group.

Students may not perceive themselves as susceptible to negative outcomes of unsafe sexual behavior because they do not consider themselves to be the "average" student. Ross & Bowen (2010) found that the majority of the college students they surveyed considered themselves cautious when participating in sexual behavior, but that they thought their peers were not. The students took on a superior attitude towards the "typical" student, believing that their own actions were safe, when they were not. The majority of students did not consider

themselves to be average or susceptible to the same risks as average students, and did not feel that sexually transmitted disease and pregnancy prevention education applied to them.

College students seem to be influenced by their perceived susceptibility to negative consequences. This research hopes to determine if a difference exists between those individuals participating in a high frequency of unsafe sexual practices and those participating in a low frequency of such behaviors. Crosby et al. (2000) found that unprotected sex was negatively related to perceived susceptibility to sexually transmitted infections but that it was positively related to worry about pregnancy. When considering unplanned pregnancies, it is also important to look at any gender differences. Although a man experiences many of the same consequences as do women in the case of an unplanned pregnancy (tighter financial situation, greater responsibility, etc.), there are several that are impossible for a man to experience. For example, a pregnant woman will gain weight, experience hormone changes, and will be the one giving birth. This puts added stress on the woman that the man can avoid. Perhaps in Crosby et al.'s (2000) study, if gender differences were examined it would have been able to shed some light on why there was a difference between perceived susceptibility to sexually transmitted infections and unplanned pregnancy.

In addition to perceived susceptibility, three of the five factors in the Five-Factor Model (FFM) of personality may be linked to risky sexual behavior. The five factors in the FFM are neuroticism (sensitive vs. secure), extroversion (outgoing vs. reserved), openness (curious vs. cautious), agreeableness (compassionate vs. unkind), and conscientiousness (organized vs. careless) and describe five large groups of personality traits (Pervin and John, 1999). The factors under consideration for this study are neuroticism, extroversion, and openness.

Neuroticism has been linked to an aspect of impulsivity known as negative urgency (Cyders and Smith, 2008). Urgency describes an individual's need to react immediately to a stimulus. In the context of neuroticism, the stimulus is generally emotions and those rated high in neuroticism tend to have a rash reaction to these emotions, be they positive or negative. This leads to impulsive behaviors that include risky sexual behavior (Trobst, Herbst, Masters, & Costa, 2002, Settles, Fischer, Cyders, Combs, Gunn, and Smith, 2012).

Extroversion and openness have been found to have a relationship to sensation seeking and risk-taking behaviors. Specifically, those who have been found to have high levels of sensation seeking tend to also rate higher in openness and extroversion than those with low levels of sensation seeking (Aluja, Garcia, and Garcia, 2003). Researchers have found a connection between sensation seeking and risky sexual behavior (Donohew, Zimmerman, Cupp, Novak, Colon, and Abell, 2000, Deckman and DeWall, 2011, & Mashegoane, Moalusi, Ngoepe, & Peltzer, 2002). In a study by Donohew et al. (2000), researchers found strong associations between sensation seeking and several risky sexual behaviors in ninth grade students. Students rated high in sensation seeking were more likely than those rated as low in sensation seeking to be sexually active. Among students who reported being sexually active, high sensation seeking students were more likely to have used alcohol or marijuana before sex.

This connection between sensation seeking and risky sexual behavior exists in the college population as well. In a longitudinal study on the college student population by Deckman and DeWall (2011), researchers investigated what facets of impulsivity (positive urgency, negative urgency, lack of premeditation, sensation seeking, and lack of perseverance) predict risky sex behavior. Their results suggest that the best predictors of risky sexual behavior are negative urgency and sensation seeking. A study focusing on students at the University of South Africa

also found that sensation seeking was a predictor for risky sexual behavior among sexually active college students (Mashegoane et al., 2002).

Studies have also found that these constructs are related to risk taking behavior in areas other than sexual activity (Tok, 2011 & Hong and Paunonen, 2009). In a study by Tok (2011), the researcher found that participants in risky sports had significantly higher levels of extroversion and openness to experience on The Big Five Inventory than those not participating in risky sports. It was also found that those participating in risky sports had lower levels of conscientiousness and neuroticism compared to those not participating in risky sports. In another study by Hong and Paunonen (2009), researchers tried to match The Big Five personality traits with health harming behavior in college students, specifically tobacco consumption, alcohol consumption, and speeding in an automobile. Researchers found that low conscientiousness and low agreeableness were uniformly associated with the health harming behaviors and that extroversion was specifically associated with alcohol use.

Purpose

The purpose of this study is to determine if perceived susceptibility to negative consequences of risk taking sexual behavior, neuroticism, openness to experience, and extroversion are predictors of high risk sexual behavior among college students. It is hypothesized that students engaging in high risk sexual behavior are less likely to perceive themselves as susceptible to any negative consequences of sexual activity, such as sexually transmitted infections or pregnancy. It is also hypothesized that high levels of neuroticism, openness to experience, and extroversion will be predictors of high risk sexual behavior.

Gender differences in perceived susceptibility will also be examined. It is hypothesized that female participants will have a higher level of perceived susceptibility than will male

participants. This hypothesis was determined because when pregnancy occurs, women typically have more stress and responsibility placed upon them than do males since they will be carrying the child or ultimately choosing whether to abort the pregnancy. Since women are at a higher risk for consequences related to pregnancy, they may be more likely to perceive themselves as susceptible to negative consequences of sexual behavior.

Therefore the following hypotheses are proposed:

Hypothesis 1: Women will demonstrate higher levels of perceived susceptibility than men. This hypothesis will be tested first. If there is a significant difference between genders, it will be kept as a factor in the regression analysis.

Hypothesis 2: Perceived susceptibility, extroversion, openness, and neuroticism will be predictors of sexual risk taking behaviors.

Hypothesis 3: Low levels of perceived susceptibility and high levels of extroversion, openness, and neuroticism will correlate with higher levels of sexual risk taking.

Significance

By determining if students' perceptions of their susceptibility to negative consequences of sexual activity predict their level of risky sexual behavior, educators can determine if education to eliminate the "it couldn't happen to me" mindset will be useful when working with high risk college students. If there is no discernible connection between level of risky sexual behavior and students' perceived susceptibility to negative sexual consequences, STI's and pregnancy prevention education could focus on another tactic to educate high risk college students. However, if there proves to be a connection between students' perceptions of their susceptibility to negative consequences of sexual activity and their levels of risky sexual

behavior, education can be implemented to counter students' feelings of invulnerability to negative consequences. By discovering and focusing on the main cause of risky sexual behavior, educators can waste less time on things that may actually have no real effect on college students' sexual behavior.

Method

Participants

Participants consisted of 170 undergraduate students enrolled in counseling psychology courses at Ball State University in Muncie, Indiana. As an incentive to participate, students were granted research credit for completing the survey and an opportunity to enter to win a fifteen dollar Visa gift card. The survey was made available to undergraduate students via Qualtrics.

Procedure

Undergraduate students were notified about the opportunity to receive research credit by taking the survey and were explained the purpose of the study without providing enough information to skew the results. When participants chose to participate in the study, they were prompted to go to Qualtrics. Once participants accessed the survey they were directed to read and confirm that they understood the informed consent form. If participants still wished to participate in the study, they answered basic demographic questions such as age, gender, ethnicity, etc. After completion of demographic questions, participants were asked to complete a sexual history questionnaire. The questionnaire assessed the participants' past and current sexual experiences and the frequency of such behaviors. After completion of the sexual history questionnaire, participants completed The Big Five inventory and afterwards answered questions concerning their perceived vulnerability to negative consequences to high risk sexual behavior (unplanned pregnancy, sexually transmitted infections, etc.).

Instrumentation

The survey students were asked to take consisted of four separate sections. The first section was a questionnaire collecting basic demographic data (See Appendix 1). The information collected from this questionnaire helped determine if there were any cultural differences that could be accounted for. Gender was the demographic focused upon most heavily.

Sexual Risk Taking Scale

The second section of the survey was a Sexual Risk Taking scale as developed by Turchik & Garske (2008) (See Appendix 2). This survey assessed the frequency of sexual risk taking behavior, defined as behaviors that could lead to unintended pregnancies and STI's, of a participant in the six months immediately prior to taking the survey. To develop the scale, researchers polled undergraduate students about common sexual experiences. They then combined similar responses to create the items on the survey. Researchers then conducted an exploratory principal components analysis. The survey has 23 items and five factors. These factors include sexual risk taking with uncommitted partners, risky sex acts, impulsive sexual behaviors, intent to engage in risky sexual behaviors, and risky anal sex acts. The Kaiser-Meyer-Olkin measure of sampling adequacy for the five factors was .89. The Sexual Risk Taking scale has been found to have an acceptable level of internal consistency (Cronbach's alpha = .88).

Big Five Inventory

The version of The Big Five Inventory (BFI) used in this study (John, Donahue, and Kentle, 1991) has 44 items measuring the big five domains of personality based on the personality domains described by Costa and McCrae (1995) (See Appendix 3). Items are

measured using a five point Likert scale ranging from “disagree strongly” to “agree strongly.” The BFI has acceptable levels of internal consistency on each domain (Openness to Experience $\alpha = .83$, Conscientiousness $\alpha = .82$, Extroversion $\alpha = .86$, Agreeableness $\alpha = .79$, and Neuroticism $\alpha = .87$). It also has an acceptable level of test-retest reliability at .83.

Perceived Susceptibility Scale

Participants also completed a short questionnaire to assess their perceived susceptibility to negative consequences related to risky sexual behavior (See Appendix 4). These questions were modeled after a scale used by Bryan, Aiken, and West (1997) in their study *Young Women’s Condom Use: The Influence of Acceptance of Sexuality, Control Over the Sexual Encounter, and Perceived Susceptibility to Common STDs*. In their study, the construct of perceived susceptibility was measured in regard to susceptibility to catching STI’s. This perceived susceptibility scale has been found to have an acceptable level of internal consistency with a Cronbach’s alpha of .86. In the current study, Bryan, Aiken, and West’s (1997) original four questions assessing perceived susceptibility to STI’s were included and a modification of these questions (replacing STI’s with unplanned pregnancy) assessing perceived susceptibility to unplanned pregnancy was added for a total of eight questions. Answers were measured using a Likert scale with a range from one to seven.

Results

The variables had the following means and standard deviations: perceived susceptibility $M=2.3$, $SD=1.14$; openness $M=35.05$, $SD=6.39$; neuroticism $M=24.18$, $SD=6.14$; extroversion $M=26.7$, $SD=6.55$; sexual risk taking $M=70.52$, $SD=109.49$. The average participant was 21 years old, heterosexual, and female. See Table 1 for more demographic information.

Table 1

Age	N	Sexual Orientation	N	Race	N
18	4	Straight/Heterosexual	142	African/Black American	24
19	13	Gay	2	Latino/a	2
20	34	Lesbian	4	Caucasian/White American	137
21	46	Bisexual	10	Asian American	3
22	34	Pansexual	1	Multiracial	3
23	13	Unsure	1	Albanian American	1
24+	13	No Answer	9		
Currently in a Romantic Relationship	N	Currently Sexually Active	N		
Yes	112	Yes	124		
No	58	No	46		

Analysis

It was hypothesized that perceived susceptibility to negative consequences of risky sexual behaviors, neuroticism, openness, and extroversion predict risky sexual behavior and that lower levels of perceived susceptibility and higher levels of neuroticism, openness, and extroversion predict higher levels of risky sexual behavior. Perceived susceptibility was measured using the scale modeled after Bryan, Aiken, & West's (1997) perceived susceptibility scale, the three personality factors were measured using the Big Five Inventory (John, Donahue, and Kentle, 1991), and risky sexual behavior was measured by the Sexual Risk Taking Scale developed by Turchik and Garske (2008). The independent variables are perceived susceptibility to negative consequences, neuroticism, openness, and extroversion and the dependent variable is risky sexual behavior.

To determine if there is a statistically significant difference between the means of perceived susceptibility in men and women, an independent samples t-test was conducted.

Hierarchical regression analysis was used in order to test the hypothesis that risky sexual behavior is predicted by perceived susceptibility, neuroticism, openness, and extroversion. Variables that explain students' risky sexual behavior were entered in two steps. In step one, students' risky sexual behavior was the dependent variable and neuroticism, openness to experience, and extraversion were the independent variables. In step two, perceived susceptibility was entered into the step one equation.

In order to determine if the independent variables predict risky sexual behavior in the ways hypothesized (lower perceived susceptibility and higher neuroticism, extroversion, and openness predicting more risky sexual behavior), the Pearson correlation coefficient was examined.

There was no significant difference between genders in sexual risk taking and it was thus eliminated from the regression analysis.

To test hypothesis two, hierarchical multiple regression was conducted to determine which independent variables (perceived susceptibility, extroversion, neuroticism, and openness) were predictors of sexual risk taking. Data screening led to the elimination of 4 cases in which data was incomplete or directions were followed incorrectly. Regression results indicated an overall model of four predictors (perceived susceptibility, extroversion, neuroticism, and openness) that significantly predict sexual risk taking, $R^2=.185$, $R^2_{adj}=.166$, $F(4,165)=9.39$, $p<.001$. This model accounted for 18.5% of variance in sexual risk taking. A summary of

regression coefficients indicates that only perceived susceptibility significantly contributed to the model ($p < .001$) (see Table 2).

Table 2

Model Summary^c

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	F Change	df1	df2	Sig. F Change
1	.176 ^a	.031	.014	108.74589	.031	1.772	3	166	.154
2	.431 ^b	.185	.166	100.00789	.154	31.275	1	165	.000

a. Predictors: (Constant), Extroversion, Neuroticism, Openness

b. Predictors: (Constant), Extroversion, Neuroticism, Openness, Perceived Susceptibility

c. Dependent Variable: SRS

To test hypothesis three, a Pearson correlation was run. There was a positive correlation between perceived susceptibility and risky sexual behavior, $r(170) = .397, p < .001$ and extroversion and risky sexual behavior, $r(170) = .171, p = .013$. The correlations between neuroticism and risky sexual behavior and openness and risky sexual behavior were not significant. While neuroticism was non-significant it was negatively correlated with risky sexual behavior $r(170) = -.071, p = .180$ (see Table 3).

Table 3

Correlations

		SRS	Openness	Neuroticism	Extroversion	Perceived Susceptibility
Pearson Correlation	SRS	1.000	.045	-.071	.171	.397
	Openness	.045	1.000	-.140	.296	.005
	Neuroticism	-.071	-.140	1.000	-.182	.073
	Extroversion	.171	.296	-.182	1.000	.052
	Perceived Susceptibility	.397	.005	.073	.052	1.000

Sig. (1-tailed)	SRS	.	.278	.180	.013	.000
	Openness	.278	.	.034	.000	.474
	Neuroticism	.180	.034	.	.009	.173
	Extroversion	.013	.000	.009	.	.250
	Perceived Susceptibility	.000	.474	.173	.250	.

Discussion

Results suggested that the hypotheses were only partially supported. There was no difference found between genders in perceived susceptibility to sexual risk taking, however, sample sizes for men (N=34) and women (N=132) were greatly unequal. This may have led to this finding of no difference and lack of support for hypothesis one.

Without gender, results suggested that a model including perceived susceptibility, extroversion, neuroticism, and openness can predict sexual risk taking behavior which supports the second hypothesis. But, only perceived susceptibility contributed significantly to the model. Also, the variables did not predict sexual risk taking in the direction expected by the researcher in the final hypothesis. Only perceived susceptibility and extroversion had significant correlations with sexual risk taking. The correlation between perceived susceptibility and sexual risk taking was positive meaning that, in this sample, the more students perceived themselves as susceptible to STI's and unplanned pregnancy, the more risky sexual behavior they participated in. Not only does this go against the hypothesis proposed by the researcher, but also literature on the topic of perceived susceptibility and sexual risk taking. Extroversion and sexual risk taking had a positive correlation, as hypothesized. The final two variables, neuroticism and openness, did not have significant correlations.

Strengths

The major strength of this study was the inclusion of the personality factors. Similar to the results concerning perceived susceptibility, the results concerning neuroticism and openness did not agree with prior research. It is helpful to understand that, in this population, the personality factors do not predict risky sexual behavior. Also, extroversion was correlated with risky sexual behavior. Perhaps if extroversion would not have been grouped with other personality factors, it may have significantly predict risky sexual behavior. The inclusion of the personality factors provided evidence that extroversion is different than openness and neuroticism concerning risky sexual behavior.

Limitations

There were several limitations to this study, the first and foremost being generalizability. The sample was an availability sample and does not capture a representative sample of the student demographics at Ball State University. Also, since the survey was only offered to Ball State students taking counseling psychology courses, results cannot be generalized to other college campuses since not all campus social environments are identical. The study would need to be replicated with a different sample if researchers wish to examine larger, smaller, or more diverse universities and universities in different geographical areas.

Also, after participants report any high risk sexual behaviors they participate in, the idea of negative consequences of risky sexual behavior may possibly be prominent in their minds. Participants may then be carefully considering negative consequences of high risk sexual behavior. Of course, when students are engaging in or considering engaging in unsafe sexual behavior in a non-experimental setting (their real lives) they may have less time to carefully consider the consequences or will shove the consequences to the back of their minds. When

actually participating in high risk sexual behavior, students may convince themselves that they are at a lower risk for negative consequences so as not to worry themselves. While taking the survey, however, these students will have more time to consider their susceptibility and may give the answer they think is correct, not the one they believe when actually engaging in unsafe sex.

Also, the order of administration of surveys may have affected the results. That is, participants were first asked to report the high risk sexual behaviors they participate in. Therefore, the idea of negative consequences of risky sexual behavior may possibly have been prominent in their minds when completing other measures. After answering questions about their sexual activity in the past six months, some students may realize how much risky sexual behavior they are actually participating in. At this point, students may suddenly begin to perceive themselves as susceptible to negative consequences. If the perceived susceptibility survey was presented to the participants first, without the chance to consider past risky sexual behavior, their answers may have been different.

Finally, the study heavily depended upon self reported data. Although a participant may participate in a high amount of unsafe sexual behavior, he or she may be unwilling to acknowledge the activity on the sexual history questionnaire. This could be because participants may be embarrassed or ashamed by their sexual behavior and do not wish to acknowledge it even to themselves. Or, even though participants will be assured that all of their information will remain confidential and their name will never be placed anywhere on the survey, they may still be concerned about confidentiality and therefore may answer in a more socially acceptable way.

Implications

Armed with this knowledge that perceived susceptibility is a significant predictor of sexual risk taking in the college population, safe sex educators and advocates can tailor their education and outreaches keeping this characteristic in mind. The current researcher suggests an open dialogue between students and educators about negative consequences of risky sexual behavior as opposed to a lecturing styled program. In this way, educators can learn from the students themselves what messages they have received about consequences of unsafe sex and the origins and reasoning behind these messages and beliefs. This can make the program more personal for many students instead of feeling like a generic “one size fits all” program meant to apply to all students in the same manner. Of course, not all misconceptions will be able to be addressed due to time restraints, but the personal attention spent on some messages (that may be shared by several students) can address and question the thought processes behind many misconceptions students may hold about unprotected sex. This style of education can also bring to light why students continue to engage in risky sexual behavior even though they know preventative measures to take to reduce risk, understand the consequences, and, from this study’s results, also perceive themselves as susceptible to the consequences.

To address students rating high in extroversion and openness and low in neuroticism, the idea of safe sex being boring and unprotected sex being a sort of “rush” should be challenged. This can be accomplished in a similar open dialogue as suggested for perceived susceptibility. Also, providing easy access to condoms and other methods of protection against pregnancy and STI’s can possibly prevent some instances of unsafe sex as a result of sensation seeking.

Conclusion

This study sought support for three hypotheses. Hypothesis one was not supported and no gender differences were found between levels of perceived susceptibility, possibly due to unequal groups of men and women. When investigating the second hypothesis, perceived susceptibility was found to be a predictor of high risk sexual behavior. The correlation matrix used to evaluate hypothesis three revealed a positive correlation between level of perceived susceptibility and level of high risk sexual behavior. Further, extroversion also had a positive correlation with sexual risk taking. Neuroticism and openness did not have significant correlations. Given that the personality variables from the Big Five were entered into the regression analysis as a block, it is possible that if extroversion had been considered independently it would also have predicted high risk sexual behavior. Future research should consider investigating personality variables independently versus as a group in order to determine more detailed relationships between personality factors and sexual risk taking.

This study hoped to shed some light upon why so many college students participate in high risk sexual behavior. By understanding why college students participate in risky sexual behavior, safe sex educators and advocates can adjust their education to the college population to focus on that reasoning. It is suggested that educators focus upon messages and beliefs held by students about unprotected sex and its consequences and facilitate an open discussion to make the program feel more personal to the students. Also, by allowing students to take part in the discussion and share their views without judgment, students may be empowered to consider what they have learned and make changes. This differs from a lecture style program in which students are told what to believe without first understanding their reasoning or the origin of their belief

structure. Also, access to condoms and other methods of protection should be made easily accessible to students.

Appendix 1

Please answer the following questions.

1. What is your age? _____
2. What is your class year?
 - a. Freshman
 - b. Sophomore
 - c. Junior
 - d. Senior
3. What is your major(s)? _____
4. How many credit hours are you currently taking?
 - a. 3
 - b. 6
 - c. 9
 - d. 12
 - e. 15+
5. Are you currently employed?
 - a. Yes
 - b. No
6. If you are currently employed, do you work full-time or part-time?
 - a. Full-time
 - b. Part-time
7. Are you currently in a relationship?
 - a. Yes
 - b. No
8. Do you identify with any of the following religions?
 - a. Christianity
 - b. Judaism
 - c. Islam
 - d. Buddhism
 - e. Hinduism
9. What race would you classify yourself as?
 - a. African American
 - b. Caucasian
 - c. Hispanic
 - d. Asian
 - e. Native American
 - f. Multiracial
 - g. Other
10. What best describes your gender? _____

11. How would you describe your sexual orientation?
12. Do you currently live on or off campus?
 - a. On campus
 - b. Off campus
13. Do you have an academic scholarship?
 - a. Yes
 - b. No
14. Are you a member of the Honors College?
 - a. Yes
 - b. No
15. Are you a member of Greek life?
 - a. Yes
 - b. No
16. What extracurriculars do you participate in?
17. What sports do you participate in?

Appendix 2

Sexual Risk Survey (SRS) Items

Instructions: Please read the following statements and record the number that is true for you over the past 6 months for each question on the blank. If you do not know for sure how many times a behavior took place, try to estimate the number as close as you can. Thinking about the average number of times the behavior happened per week or per month might make it easier to estimate an accurate number, especially if the behavior happened fairly regularly. If you've had multiple partners, try to think about how long you were with each partner, the number of sexual encounters you had with each, and try to get an accurate estimate of the total number of each behavior. If the question does not apply to you or you have never engaged in the behavior in the question, put a "0" on the blank. Please do not leave items blank. Remember that in the following questions "sex" includes oral, anal, and vaginal sex and that "sexual behavior" includes passionate kissing, making out, fondling, petting, oral-to-anal stimulation, and hand-to-genital stimulation. Refer to the Glossary for any words you are not sure about. Please consider only the last 6 months when answering and please be honest.

In the past six months:

1. How many partners have you engaged in sexual behavior with but not had sex with?
2. How many times have you left a social event with someone you just met?
3. How many times have you "hooked up" but not had sex with someone you didn't know or didn't know well?
4. How many times have you gone out to bars/parties/social events with the intent of "hooking up" and engaging in sexual behavior but not having sex with someone?
5. How many times have you gone out to bars/parties/social events with the intent of "hooking up" and having sex with someone?
6. How many times have you had an unexpected and unanticipated sexual experience?
7. How many times have you had a sexual encounter you engaged in willingly but later regretted?

For the next set of questions, follow the same direction as before. However, for questions 8–23, if you have never had sex (oral, anal or vaginal), please put a "0" on each blank.

8. How many partners have you had sex with?
9. How many times have you had vaginal intercourse without a latex or polyurethane condom?
Note: Include times when you have used a lambskin or membrane condom.
10. How many times have you had vaginal intercourse without protection against pregnancy?
11. How many times have you given or received fellatio (oral sex on a man) without a condom?
12. How many times have you given or received cunnilingus (oral sex on a woman) without a dental dam or "adequate protection" (please see definition of dental dam for what is considered adequate protection)?
13. How many times have you had anal sex without a condom?
14. How many times have you or your partner engaged in anal penetration by a hand ("fisting") or other object without a latex glove or condom followed by unprotected anal sex?

15. How many times have you given or received anilingus (oral stimulation of the anal region, “rimming”) without a dental dam or “adequate protection” (please see definition of dental dam for what is considered adequate protection)?
16. How many people have you had sex with that you know but are not involved in any sort of relationship with (i.e., “friends with benefits”, “fuck buddies”)?
17. How many times have you had sex with someone you don’t know well or just met?
18. How many times have you or your partner used alcohol or drugs before or during sex?
19. How many times have you had sex with a new partner before discussing sexual history, IV drug use, disease status and other current sexual partners?
20. How many times (that you know of) have you had sex with someone who has had many sexual partners?
21. How many partners (that you know of) have you had sex with who had been sexually active before you were with them but had not been tested for STIs/HIV?
22. How many partners have you had sex with that you didn’t trust?
23. How many times (that you know of) have you had sex with someone who was also engaging in sex with others during the same time period?

Appendix 3

Big Five Inventory

How I am in general

Here are a number of characteristics that may or may not apply to you. For example, do you agree that you are someone who *likes to spend time with others*? Please write a number next to each statement to indicate the extent to which **you agree or disagree with that statement.**

1	2	3	4	5
Disagree Strongly	Disagree a little	Neither agree nor disagree	Agree a little	Agree strongly

I am someone who is...

1. _____ Is talkative
2. _____ Tends to find fault with others
3. _____ Does a thorough job
4. _____ Is depressed, blue
5. _____ Is original, comes up with new ideas
6. _____ Is reserved
7. _____ Is helpful and unselfish with others
8. _____ Can be somewhat careless
9. _____ Is relaxed, handles stress well.
10. _____ Is curious about many different things
11. _____ Is full of energy
12. _____ Starts quarrels with others
13. _____ Is a reliable worker
14. _____ Can be tense
15. _____ Is ingenious, a deep thinker
16. _____ Generates a lot of enthusiasm
17. _____ Has a forgiving nature
18. _____ Tends to be disorganized
19. _____ Worries a lot
20. _____ Has an active imagination
21. _____ Tends to be quiet
22. _____ Is generally trusting
23. _____ Tends to be lazy
24. _____ Is emotionally stable, not easily upset
25. _____ Is inventive
26. _____ Has an assertive personality
27. _____ Can be cold and aloof
28. _____ Perseveres until the task is finished
29. _____ Can be moody

30. _____ Values artistic, aesthetic experiences
31. _____ Is sometimes shy, inhibited
32. _____ Is considerate and kind to almost everyone
33. _____ Does things efficiently
34. _____ Remains calm in tense situations
35. _____ Prefers work that is routine
36. _____ Is outgoing, sociable
37. _____ Is sometimes rude to others
38. _____ Makes plans and follows through with them
39. _____ Gets nervous easily
40. _____ Likes to reflect, play with ideas
41. _____ Has few artistic interests
42. _____ Likes to cooperate with others
43. _____ Is easily distracted
44. _____ Is sophisticated in art, music, or literature

Appendix 4

Please answer the following questions:

1. How susceptible to sexually transmitted diseases do you feel?
Not Susceptible 1 2 3 4 5 6 7 Extremely Susceptible
2. What is the chance that you will be exposed to a sexually transmitted disease?
No Chance 1 2 3 4 5 6 7 Extremely High Chance
3. How likely do you think it is that you will catch a sexually transmitted disease in your lifetime?
Not Likely At All 1 2 3 4 5 6 7 Extremely Likely
4. Would you say that you are the type of person who is likely to get a sexually transmitted disease?
No 1 2 3 4 5 6 7 Yes
5. How susceptible to unplanned pregnancy do you feel?
Not Susceptible 1 2 3 4 5 6 7 Extremely Susceptible
6. What is the chance that you could unintentionally become pregnant or father a child?
No Chance 1 2 3 4 5 6 7 Extremely High Chance
7. How likely do you think it is that you will unintentionally become pregnant or father a child in your lifetime?
Not Likely At All 1 2 3 4 5 6 7 Extremely Likely
8. Would you say that you are the type of person who is likely to become pregnant or father a child unintentionally?
No 1 2 3 4 5 6 7 Yes

References

- Aluja, A., Garcia, O., & Garcia, L.F. (2003). Relationships among extraversion, openness to experience, and sensation seeking, *Personality and Individual Differences, 35*, 671-680
- American College Health Association (2006). American college health association–national college health assessment (ACHA-NCHA). *Journal of American College Health, 54*(4), 201–211.
- Bryan, A. D., Aiken, L. S., & West, S. G. (1997). Young women’s condom use: The influence of acceptance of sexuality, control over the sexual encounter, and perceived susceptibility to STDs. *Health Psychology, 16*(5), 468-479. doi: 10.1037/0278-6133.16.5.468
- Catania, J.A., Kegeles, S.M., & Coates, T.J. (1990). Towards an understanding of risk behavior: an AIDS risk reduction model (ARRM). *Health Education Quarterly, 17*(1), 53–72. doi: 10.1177/109019819001700107
- Center for Disease Control and Prevention (2007). *HIV/AIDS in college students: a CDC pathfinder*. Retrieved from: [http://www.aegis.com/pubs/Cdc Fact Sheets/1995/CPATH003.html#1](http://www.aegis.com/pubs/CdcFactSheets/1995/CPATH003.html#1)
- Center for Disease Control and Prevention (2006). *Adolescents and young adults: STD surveillance*. Retrieved from: <http://www.cdc.gov/std/stats/adol.htm>
- Costa, P. T., & McCrae, R. R. (1995). Domains and facets: Hierarchical personality assessment using the Revised NEO Personality Inventory. *Journal of Personality Assessment, 64*(1), 21-50.
- Coyle, K., Basen-Engquist, K., Kirby, D., Parcel, G., Banspach, S., Harrist, R., Baumler, E., & Weil, M. (1999). Short-term impact of safer choices: a multicomponent, school-based

- HIV, other STD, and pregnancy prevention program. *Journal of School Health*, 69(5), 181–188. doi: 10.1111/j.1746-1561.1999.tb06383.x
- Crosby, R.A., DiClemente, R.J., Wingood, G.M., Sionean, C., Cobb, B., & Harrington, K. (2000). Correlates of unprotected vaginal sex among African American female adolescents: importance of relationship dynamics. *Archives of Pediatric Adolescent Medicine*, 154 (9), 893–899.
- 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/a0013341
- Deckman, T. & DeWall, C.N. (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.
- Donohew, L., Zimmerman, R., Cupp, P.S., Novak, S., Colon, S., Abell, R. (2000). Sensation seeking, impulsive decision-making, and risky sex: Implications for risk-taking and design of interventions. *Personality and Individual Differences*, 28 (6), 1079-1091. doi: [http://dx.doi.org/10.1016/S0191-8869\(99\)00158-0](http://dx.doi.org/10.1016/S0191-8869(99)00158-0)
- Greening, L. & Chandler, C. C. (1997). Why it can't happen to me: The base rate matters, but overestimating skill leads to underestimating risk. *Journal of Applied Social Psychology*, 27 (9), 760-780. doi: 10.1111/j.1559-1816.1997.tb00658.x
- Hong, R.Y. & Paunonen, S.B. (2009). Personality traits and health risk behaviors in university students. *European Journal of Personality*, 23, 675-696,
- Horswill, M.S. & McKenna, F.P. (1999). The effect of perceived control on risk taking. *Journal of Applied Social Psychology*, 29(2), 377-391. doi: 10.1111/j.1559-1816.1999.tb01392.x

- Janz, N.K., & Becker, M.H. (1984). The health belief model: A decade later. *Health Education Quarterly*, *11*(1), 1–47. doi: 10.1177/109019818401100101
- John, O. P., Donahue, E. M., & Kentle, R. L. (1991). *The Big Five Inventory--Versions 4a and 5*. Berkeley, CA: University of California, Berkeley, Institute of Personality and Social Research.
- Lewis J. E., Miglez-Burbano M. J., Malow, R. M. (2009). HIV risk behavior among college students in the United States. *College Student Journal*, *43*, 475–491.
- Mashegoane, S., Moalusi, K. P., Ngoepe, M. A., & Peltzer, K. (2002). Sexual sensation seeking and risky sexual behavior among South African University students. *Social Behavior & Personality: An International Journal*, *30*(5), 475-483.
- Pervin, L.A. & John, O.P. (1999). *Handbook of personality: Theory and research*. New York, NY: The Guilford Press.
- Ratcliff-Crain J, Donald KM, Dalton J. (1999). Knowledge, beliefs, peer norms, and past behaviors as correlates of risky sexual behavior among college students. *Psychological Health*, *14* (4), 625–641. doi:10.1080/08870449908410754
- Ross, L. L. & Bowen, A. M. (2010). Sexual decision making for the “better than average” college student. *Journal of American College Health*, *59* (3), 211-216.
doi:10.1080/07448481.2010.502198
- Settles, R. E., Fischer, S., Cyders, M. A., Combs, J. L., Gunn, R. L., & Smith, G. T. (2012). Negative urgency: A personality predictor of externalizing behavior characterized by

- neuroticism, low conscientiousness, and disagreeableness. *Journal of Abnormal Psychology*, 121(1), 160-172. doi:10.1037/a0024948
- Snyder, L. B. & Rouse, R. A. (1992). Targeting the audience for AIDS messages by actual and perceived risk. *AIDS Education and Prevention*, 4 (2), 143-159.
- Spears, R., Abraham, C., Sheeran, P., Abrams, D. (1995). Students' judgments of the risk of HIV infection as a function of sexual practice, sex of target partner, and age and sex of student. *Journal of College Student Development*, 36(2), 103–111.
- Tok, S. (2011). The big five personality traits and risky sport participation. *Social Behavior and Personality*, 39(8), 1105-1112.
- Trost, K. K., Herbst, J. H., Masters, H. L., & Costa, P. T. (2002). Personality pathways to unsafe sex: Personality, condom use, and HIV risk behaviors. *Journal of Research in Personality*, 36, 117– 133. doi: 10.1006/jrpe.2001.2334
- Turchik, J. A. & Garske, J. P. (2008). Measurement of sexual risk taking among college students. *Archives of Sexual Behavior*, 38(6), 936-948. doi: 10.1007/s10508-008-9388-z