The Dangerous Reality: Sexual Risk Taking Among College Women

Shannon Greybar Milliken

*DePaul University*

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DePaul University
College of Education

THE DANGEROUS REALITY:
SEXUAL RISK TAKING AMONG COLLEGE WOMEN

A Dissertation in Education
with a Concentration in Educational Leadership

by

Shannon J. Greybar Milliken

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We approve the dissertation of Shannon J. Greybar Milliken.

Father Patrick-McDevitt  
Associate Professor of Counseling, DePaul University  
President, All Hallows College  
Chair of Committee

Date  
October 18, 2013

Ronald Chennault  
Associate Dean  
Associate Professor of Educational Policy Studies & Research  
DePaul University

Date  
October 18, 2013

Alice Stuhlmacher  
Professor of Industrial and Organizational Psychology  
DePaul University

Date  
October 18, 2013
Abstract

Research has shown a link between sexual risk taking among college women and a decrease in self-esteem. The primary purpose of this study is to explore the sexual risk-taking practices occurring within the academic achieving, more affluent, Caucasian and female college student population. The secondary purpose of this study is to explore what sexual risk-taking patterns exist within behavioral and sociocultural constructed variables and demographic information among college women. The variables examined are religion, self-esteem and reported depressive symptoms. Additional variables used during analysis are body weight and race and/or ethnicity of college women.

There are three primary research questions being examined in this study: (a) Do college women with higher academic achievement report more sexual risk-taking practices than those with lower academic achievement? (b) Do women of a higher socioeconomic status choose birth control over disease prevention in their sexual encounters? (c) Do behavioral and sociocultural variables make a difference in risky sexual behavior of college women?

The American College Health Association (ACHA) National College Health Assessment II (NCHA-II) has been used to measure the college student health habits and practices at over 540 college and universities in the United States and Canada. The instrument was administered online in spring 2010 and received 872 responses, of which 542 were from female students. The data is analyzed through multiple logistic regressions.

Findings of statistical significance were found between academic achievement and sexual risk taking, the number of partners a college woman has and sexual risk
Taking, and increase in human papillomavirus (HPV). This study also affirmed prior research that there was a significant difference in the sexual risk taking between college women who had been diagnosed with depression in the last year.

The study demonstrates the connection between depressive symptoms and sexual risk taking. The research does not present a judgment about sex—but rather, evidence regarding the lack of disease prevention, the long-term implications, and possible causes of increases in casual sex on college campuses.
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Chapter One

Introduction

Overview

The college years are often the first time students are on their own and left to experience life without close parental supervision. While students are experiencing the independence of college life, their activities outside of the classroom are of concern and focus for educators. “College represents the only time in many people’s lives when a single integrated setting encompasses their main activities – both career-related and social – as well as health services and other support services” (Hunt & Eisenberg, 2010). Student Affairs educators assist in complementing the learning students experience in the classroom, as well as support students through their time away from family and friends. The personal life of a college student is particularly evident to Student Affairs practitioners because they work in health, wellness, and/or counseling centers, facilitate student activities and student conduct offices, and supervise residential facilities. Given the exposure staff has to students at colleges and universities, there is also an awareness of campus trends around sexuality. The college campus environment wields a strong authority on a majority of students’ view of sexual behaviors and attitudes (Lefkowitz, 2005; Lefkowitz, Boone, & Shearer, 2004; Lefkowitz, Gillen, Shearer, & Boone, 2004). Additionally, college students have a more relaxed view on pre-marital sex while attending school without parental oversight (Arnett, 2004; Laumann, Gagnon, Michael, & Michaels, 1994). College students, in particular, believe that education is a liberal
environment for sexual behaviors and that it promotes a more permissive atmosphere (Reiss, 1986a, 1986b).

One of the topics that students share with professionals is their sex life. The conversation remains professional in nature, but students are looking for an advisor with whom to discuss sex without fear of judgment. College women want to share their personal experiences, stories of hope, and struggles with professionals in Student Affairs. The stories Student Affairs professionals hear from heterosexual college women about their sexual risk taking (SRT) indicate a need for greater information and education through research. Research on the sexual risk taking of college women will better inform professionals when in dialogue with students and equip Student Affairs professionals with information to better support college students through their coping strategies (Lehmbeck, Beesly, Saw, Gillman, & Behrens, 2007).

When educators find themselves trusted by a student sharing her sexual history, it causes them to reflect on the role of sexual risk taking in college. Educators find that similar discussions of sexual conquests and experiences are happening with college women that are typical in a men’s locker room. The place the women have the conversations may not be a locker room, but instead during Saturday and Sunday morning brunch at a sorority house. Women’s personal narratives in the last 10 to 20 years of sexual risk-taking behavior on college campuses are likely very similar. There are many research opportunities and insights to discover from college women’s stories and experiences. Student Affairs practitioners want to be positioned to help their students, and they frequently discuss which populations need additional services, and who are considered the most at-risk students. This research examines Caucasian females, who
may not typically be targeted for education or interventions, especially about sexual health practices. There is very little research available about the sexual risk-taking practices of Caucasian college women, and none comparing their risk taking to their academic achievement and socioeconomic status. This study seeks to add to the literature in new way, while highlighting a public health issue for college campus administrators.

**Purpose Statement**

The purpose of this quantitative study is to examine differences between women who report high academic achievement (“A” grade point average) and those who do not report “A” averages in their sexual risk taking. A secondary purpose of this study was to see if there was a difference based on socioeconomic status in choice of disease or pregnancy prevention for sexual encounters. Finally, the purpose was to see if depressive symptoms impacted sexual risk taking of college women.

**Problem Statement**

The number of college women who are practicing high-risk sexual activity is unknown, largely because it is unreported. Currently, we do not know if the efforts to reduce sexual risk taking are targeted at the correct audience, those whose actions are, in fact, high risk on college campuses. Many high academic-achieving women in college are having high-risk sexual encounters through a lack of disease prevention, and this study seeks to uncover the information about how widespread the risk taking is by college students, including those with high grade point averages. This study seeks to establish the risk taking of those women on college campus who are getting good grades, but may exhibit risk taking in other areas of their lives.
Research Questions

The primary questions that the researcher is aiming to answer are the following:

1. Do college women with higher academic achievement report more sexual risk-taking practices than those with lower academic achievement?

2. Do women of a higher socioeconomic status choose pregnancy prevention over disease prevention in their sexual encounters?

3. Do behavioral and sociocultural factors (religion, socioeconomic status, body weight, and reported depressive symptoms) make a difference in risky sexual behavior of college women?

Significance of topic. The number of students enrolled in post-secondary education in the United States as of 2009 was 20.4 million people (Institute of Education Sciences, 2012). A majority of those enrolled in college and universities are women, nearly 60%, and on most college campuses women now outnumber men (Science Daily, 2012). Due to the large amount of women in college and universities, and the evidence that sexual risk taking has a number of negative consequences, particularly for women, this research is extremely relevant. Women have more physical implications from sexual risk taking because of carrying the pregnancy than men doing the same activities. In addition to pregnancy, there is a possibility of contracting and passing on diseases without disease prevention methods in place. Young adults account for 50% of new diagnoses of sexually transmitted disease and HIV/AIDS each year, which amounts to nearly 19 million people (Weinstock, Berman, & Cates, 2004).

Sex between college students and on college campuses is pervasive, with nearly every college student reporting being sexually active. Studies have documented the
number of students sexually active on a college campus at any given time is between 75-
90% (LaBrie, Earleywine, Schiffman, Pedersen, & Marriot, 2005; Paul & Hayes, 2002).
Despite the high number of sexually active students on campus, many campuses do not
seek out information from students on their sexual activities or want to address sex as a
topic.

Researchers have documented that casual sex and hooking up on college
campuses is extremely common and indicative of the type of sexual risk taking presently
occurring (Grello et al., 2006; Paul & Hayes, 2002). Studies of late adolescents have
documented that sexual risk taking is very high among college students (Bishop &
Lipsitz, 1991; DiClemente, Forrest, & Mickler, 1990; Leik, Malow, Ireland, Porter, &
Lewis, 1995; Lewis, Malow, & Ireland, 1997; Mahoney, Thombs, & Ford, 1995;
O'Leary, Goodhart, & Jemmott, 1992; Parsons, Halkitis, Bimbi, & Borkowski, 2000).
Likewise, research shows that sexual risk taking is a problem that continues to persist and
even rise on college campuses presently (Pluhar, Fongillo, Stycos, & Dempster-McClain,
2003; Turchik & Garske, 2009).

A certain degree of risk taking is expected in learning and development at the age
of traditional college students. Additionally, research also suggests that risk taking is a
normal behavior based on their mental development and statistics regarding sexual
behavior (Baumrind, 1987; Parsons, Halkitis, Bimbi, et al., 2000; Parsons, Siegel, &
Cousins, 1997; Shedler & Block, 1990). However, sexual risk taking is distinctively
different from other generalized risk taking, because of the possible outcomes of sexual
risk taking compared to alcohol or drug risk taking. A single instance of sexual risk
taking can have a significant impact on a life because of the risk of pregnancy,
HIV/AIDS, or other STIs (Parsons, Halkitis, Bimbi, et al., 2000). Based on severity of consequences and frequency, there is a need to understand the sexual risk taking by college aged women (Raj & Pollack, 1995).

**Key definitions.** Many definitions and terms of sex are present in the literature and used interchangeably. In an effort to bring some common understanding to the terms used here, definitions of commonly used and referenced terms are provided below. The literature encompasses many terms and definitions of casual sex, sexual risk taking, and hooking up. For the purposes of this review, the definitions below are the ones most applicable and will be referred to consistently.

The first key term definition used in this research is *sex*. The study includes references to three main types of heterosexual sex: oral-genital, penile-vaginal, and penile-anal sex. All “types” of sex will be considered under the broader term “sex” and specified when appropriate. The study considers all types of sex, even though 60% of college students do not identify oral sex (oral-genital contact) as sex (Bogart, Cecil, Wagstaff, Pinkerton, & Abramson, 2000; Pitts & Rahman, 2001; Sanders & Reinisch, 1999). Studies also suggest that 20% of college students do not consider penile-anal intercourse as sex (Pitts & Rahman, 2001; Sanders & Reinisch, 1999).

The second key term definition used in this research is *casual sex*. The term *casual sex* has been used in popular culture for a number of years and is defined as sex without emotional commitment between partners (Grello et al., 2006). Researchers agree there is not a universal definition of casual sex in the literature (Paul, McManus, & Hayes, 2000). Casual sex is happening frequently on college campuses, with as many as 53% of college students reportedly having engaged in sex with someone they are not
involved in with a romantic relationship at the time of the encounter (Grello et al., 2006). When comparing casual sex between men and women, engagement in casual sex by males is more socially acceptable in society than when it is by women (Walsh, 1991). Research suggests that fear of intimacy may be a trait for women who engage in casual sex (Paul et al., 2000).

The third key word used in this research is sexual risk taking (SRT). Sexual risk taking behavior refers to “any behavior that increases the probability of negative consequences associated with sexual contact, including AIDS or other sexually transmitted diseases and unplanned pregnancy” (Cooper, 2002, pp. 101-102). Sexual risk taking can also include having multiple partners, sexual intercourse without contraception, and/or having sexual relations while under the influence of drugs or alcohol (Turchik & Garske, 2009). All of those factors are a form of sexual risk taking and are taking place on college campuses. The type of sexual risk taking studied in this survey specifically includes actions that can result in sexually transmitted infections (STI), sexually transmitted diseases (STDs), or pregnancy.

The study divides participants into three groups related to their sexual risk taking: no, low, and high sexual risk taking (SRT). The no sexual risk-taking group are those who identify as never having engaged in oral, vaginal, or anal sex. The no SRT group was not included in the data analysis for this study due to the questions being about those who were taking some degree of risk in their sexual encounters. The low SRT group is defined as those who only participated in oral and vaginal sex in their lifetime. The high SRT group is defined as those who have ever participated in oral, vaginal, and anal sex. The groups are categorized as such because the risk of HIV transmission from an infected
partner though oral sex is much less than from anal or vaginal sex (Centers for Disease Control, 2009). Conversely, anal sex is the most risky activity for sexual disease transmission for both men and women (New York State Health Department, 2013). The human anatomy of the rectum has thin walls with many blood vessels that can be injured during anal sex, and condoms fail more often with anal sex than with vaginal or oral sex, increasing the chance of sexually transmitted diseases (New York State Health Department, 2013).

The final key word is hookups. Hookups are defined as a sexual encounter that may (or may not) include intercourse between two people, who may be strangers or acquaintances (Paul et al., 2000). Hookups are relatively common on college campuses today (Kooyman, Pierce, & Zavadil, 2011). Based on one report, 92% of college students reported having at least one hookup in college (Paul & Hayes, 2002). A hookup could include other sexual activity besides intercourse, such as oral sex and heavy petting. Students usually only “hookup” in a single occurrence, or may on a regular basis, with no relationship commitment (Kooyman et al., 2011; Paul et al., 2000; Turchik & Garske, 2009). Hookup is different from casual sex because hookup does not only mean sexual intercourse occurred – it could be all physical intimacy except intercourse. Casual sex exclusively refers to sexual intercourse, not heavy petting or kissing. The terms hookup and casual sex could be used interchangeably to refer to sexual intercourse.

The research is looking at academic achievement, and the measurement in this study is based on the self-reported grade point average of the respondents on an “A, B, C, D/F” scale. When discussing high academic achievement, the reference groups are those who reported an “A” average for their grades.
Survey. The instrument used in this study was created by the American College Health Association (ACHA) and is called the National College Health Assessment II (NCHA). The instrument has 65 items on the survey and 5 additional questions from the specific school that was administering the instrument, for a total of 70 questions. The questions on the survey fall into one of these categories for health: 1. Health, Health Education, and Safety; 2. Alcohol, Tobacco, and Drugs; 3. Sex Behavior and Contraception; 4. Weight, Nutrition, and Exercise; 5. Mental Health; 6. Physical Health; 7. Impediments to Academic Performance; 8. Demographic Characteristics; or 9. School Specific Questions. A total of 872 students completed the survey, and 542 are women, whose answers will be used for this study. The data collected through the instrument will be analyzed using SPSS statistical software. The data is analyzed using ANOVAs, MANOVAs, logical regressions, and factor analysis.

Literature. The literature includes what heterosexual (unless indicated otherwise) students are doing currently with respect to sexual risk taking, including a summary of statistics from research regarding contraceptive devices, outcomes from sexual risk taking, and the impact of prevention education. The second section of the review consists of factors that influence and contribute to sexual risk taking in young adults. The factors are broken down into two subgroups: behavioral and sociocultural. The variables for the literature review are: alcohol use, drug use, sensation seeking, self-esteem/depressive symptoms, past relationship history, religion, gender, race, ethnicity, and socioeconomic status influences on SRT. Finally, the review ends with a summary of instruments used to measure SRT and discussion of implications, conclusions, and recommendations.
It is clear from the literature that there are many factors to sexual risk taking for college women. It is also clear that the behavioral factors that may increase the likelihood of casual sex are low self-esteem or symptoms of depression, intoxication, and type of relationship style (Turchik & Garske, 2009). Additionally, if a woman is living away from home while attending college, her symptoms of depression may be difficult for her family to see or understand. Symptoms of depression could result from many aspects of college life, from social anxiety or rejection, stress over finances and a job search process, or being away from family for an extended amount of time.

We know that females who report the highest depressive symptoms frequently engage in casual sex (Grello, Welsh, Harper, & Dickson, 2003; Paul et al., 2000). Moreover, the men they are frequently engaging in casual sex with are the most confident, which could be seen as them taking advantage of women. The cycle of casual sex between high depression symptom women and confident men presents an interesting social paradigm on college campuses. As educators hear students discuss social events, it might be important to make some recommendations for interventions. If the most confident men on campus (presumably athletes, social extroverts, those in leadership positions on campus) are the ones typically having sex with more depressed women, education efforts should be targeted to men about the dangers of casual sex, but also the dangers of sexual relations with women experiencing depression-like symptoms. We also know women tend to be seeking a relationship out of sexual encounters and hope sex will help establish a romantic relationship (Grello et al., 2006). When a woman with depressed symptoms has casual sex with the hope of a relationship developing out of it and then is rejected, it can lead to a perpetuation of the cycle of depression and more
casual sex. The women who start this cycle in college may have a very difficult time establishing a healthy romantic relationship later in life.
Chapter Two

Literature Review

Overview of the Literature Review

The literature covers a wide variety of sexual risk taking done by adolescents, college-aged students, and adults. The literature primarily focuses on the behavioral and sociocultural variables associated with sexual risk taking: socioeconomic status, religion, gender roles, personality, and race/ethnicity. The literature pulled covers a span over 60 years, including some landmark works on theory development and college student development. The literature review includes clinical terminology of types of sex and data of the health impacts of sexual risk taking for college students. The review covers a great deal of data of what students are currently doing to raise awareness of the urgency of the problems, particularly for women.

The literature is organized by first presenting the theories that are applicable in the research. Following theory are key definitions of important and repeatedly used terms. Definitions are provided to allow for consistency in understanding between the researcher and reader for the sake of clarity. The body of the review will include what heterosexual (unless indicated otherwise) students are doing currently with respect to sexual risk taking, including a summary of statistics from research regarding contraceptive devices, outcomes from sexual risk taking, and the impact of prevention education. The second section of the review consists of factors that influence and contribute to sexual risk taking in young adults. The factors are broken down into two subgroups: behavioral and sociocultural. The variables of interest of influence on sexual risk taking in the literature review are: (a) alcohol use, (b) drug use, (c) sensation seeking,
(d) self-esteem/depressive symptoms, (e) past relationship history, (f) religion, (g) gender, (h) race, (i) ethnicity, and (j) socioeconomic status. Finally, the review ends with a summary of instruments used to measure SRT and a discussion of implications, conclusions, and recommendations.

**Theoretical Considerations**

A few theories are particularly applicable to this literature review. The theories that will be highlighted during this review are Banduras’ Social Cognitive Theory and Social Exchange Theory. Both applicable theories are being utilized based on the support and references in the literature and the researchers’ experience and observation of working with college women.

Bandura’s (2001) Social Cognitive Theory posits that people have control over their own lives, including their health, and are responsible for providing meaning and purpose to their own lives. Key components of Bandura’s theory are intentionality and fortuity within his human agency aspect of the theory. Intentionality asserts what a person desires to happen in the future and actually sets up an action plan for things to make that desire into a reality, both the expected and unexpected (Bandura, 2001). According to Bandura, there are not necessarily random happenings in life, but rather a series of small events that leads up to an intersection and results in an event that at first glance seems random. In the later section of the review, on hooking up and casual sex, other researchers will touch on the intentionality of college students and their sexual risk taking.

Self-reflectiveness is attributed to coping with stress and reduces a person’s feelings of vulnerability, which connects with research findings on how wealthier people
may engage in sexual risk taking (Bandura, 2001). People are not eager to be in control and shoulder responsibility, and they often would prefer to let someone else have control over them and a situation (Bandura, 2001). The later sections that address the use of protective devices, or the lack thereof, sound very similar to the release of control by many college women. Finally, self-efficacy is defined as confidence in one’s ability to demonstrate the motivation and capability to act on a goal (Bandura, 1986). In order to reduce sexual risk taking in college, students have to know how to prevent STIs and pregnancy AND want to actually take the steps necessary to do it. One reason why sexual risk taking may still be high is because “Bandura’s social cognitive theory posits perceptions of self-efficacy and expected outcomes of behavior to be the key determinants of behavior” (Raj & Pollack, 1995, p. 214). However, research states that while students know an STI or pregnancy can occur out of their casual sex or hookup and they have access to prevention, it is not enough to change to safer sexual behavior (Raj & Pollack, 1995).

Social exchange theory is related to this study on sexual risk taking because often both partners in a sexual encounter are receiving something for the interaction (Turchik & Garske, 2009). Social exchange theory states that two individuals get what they individually want out of exchanging goods or services (Homans, 1958). The theory is gendered and sexualized, because men are frequently more desiring of the pleasure of sexual intercourse and women have the ability to decide what they want in return for having sex (Luke, Goldberg, Mberu, & Zulu, 2011).

The negotiation is addressed later in terms of women requesting use of protection and the role of social status of men and women. Additionally, the literature is able to
guide us through a cycle of sexual encounters for both men and women engaging in heterosexual intercourse. While this cycle is not the only one that could happen, it is one that is relevant given the connection to the depressive symptoms present in the female. The cycle starts with a confident man and a high depressive symptom woman. The depressive symptom woman believes that sexual intercourse with the confident man will improve her depressive symptoms, and satisfying his sexual desires will give her a boost of self-esteem. However, after the encounter, the man does not realize the impact a single sexual hookup will have the woman, and the woman becomes more depressed. In this cycle, the man is getting his sexual desires fulfilled by the woman, and at the same time the man believes the woman wants simply the hookup. The woman believes that she is assisting the man in his desire and that it will make her feel better after intercourse.

The sexual encounter is based on sex being a commodity, a transaction that is agreed upon, and each party is expecting to get something in return (Luke et al., 2011). Social exchange theory says that the potential for a relationship to come out of sexual encounter can be a reason for the involved parties to feel powerful during negotiations of sex and also dependent (Sprecher, 1998; van de Rijt & Macy, 2006). Research has also found that women may use all of their negotiating power in one sexual area and sacrifice it in another sexual area (Luke et al., 2011). For example, a woman may use all of her negotiating to try and get her partners to use condoms, over limiting sexual activity (Luke et al., 2011).

**Current Statistics**

It is important to understand the statistical realities of the sexual risk taking happening on our college campuses and, for the purpose of this literature review, how
women are participating in risk-taking behavior. A self-reporting study of the sexual encounters by college students in the last year found 30% of students who engaged in vaginal or anal intercourse said they used no or passive protection, such as withdrawal or the rhythm method (Reinisch, Hill, Sanders, & Ziemba-Davis, 1995). Many researchers have found that adolescents see the benefits of unprotected sex outweighing its costs (S. Moore & Gullone, 1996; Parsons, Halkitis, Bimbi, et al., 2000; Parsons et al., 1997; Siegel et al., 1994). Researchers have found numerous benefits of unprotected sex from a student’s perspective, and they are summarized in a later section of this review. Overall, students choose protection against pregnancy (i.e., birth control pill) over sexually transmitted infections (STIs) (i.e., condoms).

College females seemed to be primarily concerned with preventing pregnancy through their contraceptive choice, instead of STIs, based on their preferred method (pills over protective barriers, like condoms) (Raj & Pollack, 1995). While there is a desire to prevent pregnancy, only 66% of college females reported always using contraception (Ozer, Demir, & Ferrari, 2009). There is also evidence that contraception use decreases sexual inhibitions, so if a female student is taking a birth control pill, she may be more likely to participate in a sexual encounter without a condom (Dekin, 1996; Farmer & Meston, 2006; Green, Fulop, & Kocsis, 2000). Only three out of 10 students chose condoms, the highest degree of protection from pregnancy and STIs, during their last sexual intercourse experience (Reinisch et al., 1995). In that same study of 10 students, five out of 10 students were found to use active protection (birth control pill, tubal/vasectomy) against pregnancy, but no protection for STI in their most recent intercourse (Reinisch et al., 1995). Finally, two out of 10 students report using no
protection or passive methods (withdrawal or emergency contraception), and less than one out of 10 students used a barrier method that provides little protection against STDs (sponge, diaphragm) (Reinisch et al., 1995). As a result of the low priority placed on prevention of diseases, one out of five male students and one out of three female students in college have an STI (Reinisch et al., 1995).

A distinguishing feature of casual sex and hookups is the difference between the experience and the outcomes expected by men and women (Grello et al., 2006). One example of the large disparity of expected outcomes following an encounter is that 18% of females believed their most recent casual sex experience was “the beginning of a romance” compared to 2% of male respondents (Grello et al., 2006). Following a casual sex encounter, 33% of males believe their most recent casual sex experience was “the beginning of a casual sex relationship” compared to 16% of females (Grello et al., 2006). The hookup encounter leads into the casual sex culture, because 52% of females thought their most recent casual sex encounter was “just a one-time thing” compared to 57% of males (Grello et al., 2006). Grello et al. (2006) found that over 50% of college students do not believe they will have sex with the same partner again, but a hookup sexual encounter can be just that, sex with someone you are not romantically linked with and whom you did not expect to have sex with a day earlier. There is an element of curiosity and excitement for some college students that comes from having a hookup or casual sex. That degree of curiosity for women, in particular, resulted in nearly 14% of females reporting their most recent casual sex encounter was “experimentation” compared to 7% of males (Grello et al., 2006).
Frequency. A major factor to consider when discussing sexual risk taking, hooking up, and casual sex is the frequency of the occurrence. Hookup culture is very prevalent on college campuses, with as many as 78% of males and females in college having experienced one (Paul et al., 2000). The research has found students are hooking up on a weekly basis, and one-third of hook ups were sexual intercourse with an acquaintance or stranger, instead being limited to heavy petting or kissing (Paul et al., 2000). However, this is not the first time many have been exposed to this culture in college or with such regularity. Many students reported having a “hookup” each year they were in college and some reported hooking up in high school (Paul et al., 2000).

In research that has looked at what students’ perceive others are doing sexually while in college, students estimate that 85% of other students in college have hooked up at least once, and 70% said they themselves have participated in at least one hookup while in college (Paul & Hayes, 2002). When comparing genders and their hooking up, there was a difference between men and women hooking up more than once: 84% of women had, and 75% of men reported hooking up multiple times (Paul & Hayes, 2002). A distinguishing aspect of this type of non-romantic sexual encounter is that 50% of students reported that hookups are planned, but not with a specific person in mind to be the partner (Paul & Hayes, 2002). Consequently, 55% of students report that their hookup partner was a stranger, someone who they never knew before the hookup (Paul & Hayes, 2002).

Unprotected sex. Despite many years of effort and education helping young people understand the implications of unprotected sex, the data is still alarming about the current practices of college students. Only 38% of students reported that protection is
used *sometimes* in hookup intercourse, 15% said no protection is used when hooking up, and 20% said precautions are taken when hooking up (Paul & Hayes, 2002). However, consistently females report less temptation and more costs of unprotected sex (Parsons, Halkitis, Bimbi, et al., 2000).

The statistics regarding sexual risk taking in women, particularly, is alarming and cause for concern for educators. Depending on the situation, sex may be happening on the first date, so there is very little known about a partner. Consequentially, the communication leading up to a sexual encounter is limited; only 1% of students report talking about sexual history and STI/pregnancy prevention with partner before intercourse (Paul & Hayes, 2002).

Research in Sweden on college-age women’s sexual health practices between 1999 and 2004 shows an increase from 37% to 45% in the reports of unprotected first date intercourse without a condom (Larsson & Tyden, 2006). Additionally, the use of emergency contraception more than doubled in the same study from 22% to 52% over the same five-year period, as did the number of sexual partners, from 5.4 in 1999 to 7.4 in 2004 (Larsson & Tyden, 2006). A common question researchers examine is why young women participate in unprotected sex when they know the consequences are usually greater for them than men. Women are more conscientious of sexual risk taking because of the investment of their body through pregnancy, which is very different for a man (Fulton, Marcus, & Payne, 2010; Trivers, 1972). Researchers state those who are looking for highly stimulating sexual activity feel it is not possible while using condoms and some believe that having unprotected sex demonstrates a trust in the partner (S. Moore & Gullone, 1996; Parsons, Halkitis, Bimbi, et al., 2000). The additional barriers for
protected sex beyond the physical and psychological can be affordability, fear of side effects, religious views, fear of parents finding out, and desire for pregnancy (Edwards, Haglund, Fehring, & Pruszynski, 2011).

A major factor to using contraceptive devices is self-efficacy. Sexual risk taking is greatly influenced by self-efficacy (J. D. Fisher & Fisher, 1992; Goldman & Harlow, 1993; Grimley et al., 1996; Parsons, Halkitis, Bimbi, et al., 2000; Parsons et al., 1998). Higher self-efficacy was predicted to lead to lower sexual risk taking (Parsons, Halkitis, Bimbi, et al., 2000). Parsons et al. (2000) found:

There are two different components to self-efficacy to consider: 1. Confidence in the ability to practice safer sex (e.g. confidence in using condoms correctly, negotiating safer sex with a partner); and 2. Situational temptation to have unsafe sex (e.g., under the influence of alcohol or drugs, when condoms are not available). (p. 380)

Measurements of self-efficacy include one’s ability to decline unsafe sex, engaging in alternatives to unsafe sex, confidence to use condoms correctly, and ability to negotiate safer sex through communication with a partner (Parsons, Halkitis, Bimbi, et al., 2000).

Research has found gender differences in condom use behaviors, self-efficacy, and attitudes (Farmer & Meston, 2006; S. Moore & Gullone, 1996). A majority of research on self-efficacy of condom use when comparing gender differences has found that women have higher self-efficacy when compared to men (Dekin, 1996; Farmer & Meston, 2006; J. L. Fisher, 1996; Parsons, Halkitis, Bimbi, et al., 2000). The more confidence college women have in their ability to use condoms correctly, the more frequently they engage in sexual intercourse (Farmer & Meston, 2006; Heinrich, 1993).
Self-efficacy in women regarding condoms considers their ability to apply condoms and discipline when aroused and while negotiating condom usage (Allen, Emmers-Sommer, & Crowell, 2002; Carter, McNair, Corbin, & Williams, 1999; Farmer & Meston, 2006).

Condoms are a common choice of contraception device for college students, and a great deal of research has focused on sexual risk taking as it pertains to condom use (Basen-Engquist et al., 1999; Lollis, Johnson, & Antoni, 1997; Parsons, Halkitis, Bimbi, et al., 2000; Sheeran, Abraham, & Orbell, 1999; Thompson, Anderson, Freedman, & Swan, 1996). Condoms are not always the first choice for students and are rarely used with another form of contraception. Condoms are used less frequently when other contraception is used because of decreased risk of pregnancy (Dekin, 1996; Farmer & Meston, 2006; Green et al., 2000).

As stated earlier, students often do a cost benefit analysis of condom use. Benefits of condom use were listed as preventing HIV/STIs, a sense of responsibility and demonstrating care for their partner, excitement, and pleasure of feelings of connection to partner. Costs of sexual risk taking were described by students as interrupting a sexual interlude, potential for negative feelings, outcomes, and associations with condom use (Parsons, Halkitis, Bimbi, et al., 2000). It is more likely that college students have experienced the benefits of unprotected sex (closeness to partner, lack of interrupting an intense moment) than the costs associated with them (pregnancy, STIs) (S. Moore & Gullone, 1996; Parsons, Halkitis, Bimbi, et al., 2000).

Additionally, research found patterns for what indicates condom usage. Condom use is suggested to increase with sexual experience, which typically increases with age (Farmer & Meston, 2006; Heinrich, 1993). However, this finding seems to only apply to
those who are having multiple partners over time. The length of time in a relationship shows a negative relationship with condom use; consequently, those in long-term relationships used condoms less consistently (Farmer & Meston, 2006; Glaser, 1997; Raj & Pollack, 1995). According to one researcher, there are stages of change for condom use to become a preferred method. The Stages of Change of Condom Use are: 1. Pre-contemplation, 2. Contemplation, 3. Preparation, 4. Action, and 5. Maintenance (Parsons, Halkitis, Bimbi, et al., 2000). Students are not working their way through to the action and maintenance phases, and therefore, other methods are more preferable, including using no protection method at all.

Despite many of the protective aspects of condom use, “Almost half of sexual encounters with new partners are not expected and even if condom use is considered, both men and women may rationalize condom non-use” (Farmer & Meston, 2006, p. 323). Condoms remain to be an undesirable form of contraception device for college students with:

Nearly half, 48%, of participants reported not using a condom during the most recent sexual intercourse. 25% reported not using condoms at all in the last month, and only 30% reported using condoms 100% of the time in the past month. (Parsons, Halkitis, Bimbi, et al., 2000, p. 383)

The low rate of condoms being the preferred method is obvious when 66% of a sample of college students report always using contraception, but only 17% always use condoms (Raj & Pollack, 1995). Of those students that were always using contraception, 53% preferred the pill (Raj & Pollack, 1995). Reasons condoms are not used could be a lack of perceived health risks of partner, another form of contraceptive is being used,
inconvenience, or barriers to condom use (Carter et al., 1999; Farmer & Meston, 2006; Green et al., 2000). Other common reasons for rejecting condom use are the unnatural feeling, a reduction in intimacy by using a barrier, and embarrassment in halting an interlude for application (Parsons, Halkitis, Bimbi, et al., 2000).

**Contributors to sexual risk-taking behavior.** There are many factors that can influence sexual risk taking, including substances, pre-disposition to risk taking, social skills, self-esteem, and relationship history (Farmer & Meston, 2006; Parsons, Halkitis, Bimbi, et al., 2000; Paul et al., 2000; Reinisch et al., 1995). Collectively, each area is multi-layered, and individually each area alone could have a great impact on sexual risk taking. Some college women will have risk factors in multiple areas, which could predict greater risk taking in college. Presented is a summary of the content relevant specifically to the sexual risk taking of college women.

**Behavioral Variables**

**Alcohol and drug use.** Alcohol and/or drugs frequently influence sexual risk-taking behavior. Sexual risk taking may be justified by participants more easily when depressed or under the influence of drugs or alcohol because they are already compromised in their thinking (Parsons, Halkitis, Bimbi, et al., 2000). Alcohol lowers inhibitions and increases sexual attraction to the opposite sex, which increases the likelihood of casual sex under its influence (Buss & Schmitt, 1993; Grello et al., 2006; Jones, Jones, Thomas, & Piper, 2003; Paul et al., 2000). There is a linear relationship between the amount of alcohol consumed and casual sex. The likelihood of casual sex increases for both men and women as alcohol use goes up (Cooper & Orcutt, 1997; Leigh & Schafer, 1993; Testa & Collins, 1997). The frequency and quantity of alcohol
consumption that typically precedes a sexual encounter was correlated to the number of sexual partners of college students (Desiderato & Crawford, 1995). As many as 65% of respondents confirmed using alcohol or drugs before or during their most recent casual sex interlude (Grello et al., 2006). Consumption of alcohol is likely to continue for females and males when they are not familiar with their sexual partner (Temple & Leigh, 1992).

**Sensation seeking.** Zuckerman (as cited by Fulton, Marcus, and Payne, 2010) defines sensation seeking as “the seeking for 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” (p.10). A component of sexual risk taking is simply generalized risk-taking behavior. Researchers believe risky behavior may be more desired because it is seen as more pleasurable (S. Moore & Gullone, 1996). There are many theories of why general risk taking exists in the literature; however, when focusing on sexual risk taking, there were two types—sensation seeking and excitement risk taking.

When researchers were looking to find the reasons for jeopardizing health during sex, temptation was the most significant factor in sexual risk taking (Parsons, Halkitis, Bimbi, et al., 2000). An increase in temptation in a sexual situation is believed to be associated with greater sexual risk taking (Parsons, Halkitis, Bimbi, et al., 2000). Enticement situations can include a variety of situations: when under the influence of drugs/alcohol, when in love, when depressed, or when condoms are not available (Parsons, Halkitis, Bimbi, et al., 2000). Sexual risk taking may be more about seeking the positive outcomes and benefits of unprotected sex than about the costs (Parsons, Halkitis,
Bimbi, et al., 2000). Adolescents may not believe in the benefits of safer sex and see it as a barrier to the positive benefits of unsafe sex (Parsons, Halkitis, Bimbi, et al., 2000). In an effort to find out what types of people are more likely to be risk takers, researchers have studied personality traits. In research findings, many personality traits have been associated with sexual risk taking and studied thoroughly (Hoyle, Fejfar, & Miller, 2000; Kalichman, Cain, Knetch, & Hill, 2005). Personalities that are high-sensation seeking, high extraversion, low agreeableness, and low conscientiousness are all positively associated with sexual risk-taking behavior (Barnes, Malamuth, & Cheek, 1984; Miller et al., 2004; Vollrath, Knock, & Cassano, 1999).

**Communication skills.** Communication skills play an important role in sexual risk taking, especially as it relates to condom usage (Allen et al., 2002; Farmer & Meston, 2006; Grello et al., 2006; Sterk, Klein, & Elifson, 2003). College women identified feeling pressured to have sex in their “worst hookups” (Paul & Hayes, 2002). Sources of pressure include: male partner aggression, use of alcohol by either or both partners, and individual characteristics (low self-esteem or passivity) (Paul & Hayes, 2002). Men and women reported different expectations of the outcome of casual sex encounters, which suggest a focus on communication in sexual education programs could be warranted (Grello et al., 2006).

With respect to condom usage, men report being more likely to use a condom after being convinced by a woman (Carter et al., 1999). In fact, research documents that assertive communication is the most reliable way to obtain partner consent for condom use (Farmer & Meston, 2006; Sterk et al., 2003; Uddin, 1996). Additionally, women who had confidence to effectively communicate a negotiation of safe sex reported an increase
in use of condoms (Allen et al., 2002; Farmer & Meston, 2006). Researchers agree that a relationship exists between strong communication skills and self-efficacy when considering condom usage (Farmer & Meston, 2006). Another option for students is the concept of negotiated safety between sexual partners. The topic has been researched in homosexual couples, but may be an easily transferable concept for heterosexual couples when deciding on sexual risk taking (Kippax, Noble, Prestage, Crawford, & Campbell, 1997; Parsons, Halkitis, Bimbi, et al., 2000). The implications of negotiated sex involve testing for STIs and then agreeing to a monogamous sexual relationship and condom usage if sex occurs outside of the relationship.

**Depressive symptoms, self-esteem, and mental health.** The impact of self-esteem on sexual risk taking has been well documented in the literature, as has the complex relationship between sexual attitudes and behaviors (Paul et al., 2000). The measurement of self-esteem is most frequently referred to through a review of depressive symptoms. Depressive symptoms can include many aspects of mental health and were referred to frequently in the literature. Grello and Welsh (2006) are pioneers in examining the link between casual sex encounters and overall health and well being of college students. Grello and Welsh state, “Guilt, regret, and the violation of societal expectations may contribute to the female psychological distress” associated with casual sex (p. 265). When examining the impact of hooking up, the regret of the students afterwards can lower self-esteem (Paul et al., 2000). Additionally, students who “hookup” are less likely to have an emotionally healthy romantic relationship later (Paul et al., 2000). Conversely, students who did not “hookup” were likely to rate themselves with higher self-esteem (Paul et al., 2000).
Women who are engaging in casual sex report higher levels of delinquency, violent victimization, and symptoms of depression—all of which existed before casual sex, not because of their engagement in casual sex (Grello et al., 2006). At the same time, research indicates there is a positive relationship between depressive symptoms and participation in casual sex (Grello et al., 2003). Depressed females may be seeking external validation through sex, which can lead to repeating a depression cycle in which they seek validation from men sexually, but are never satisfied (Grello et al., 2006; Welsh, Grello, & Harper, 2003). The cycle of depression of an unsatisfying sexual relationship starts early, usually with the woman’s first sexual partner. If a woman’s first sexual encounter was with someone they did not know well, they typically report the most depressive symptoms (Grello et al., 2006). The earlier the first sexual encounter, the greater the chances for depression and casual sex later in the life (Grello, et al., 2006).

Females who report the highest level of depressive symptoms and men who reported the lowest level of depressive symptoms are the most likely to engage in casual sex (Grello et al., 2006; Grello et al., 2003). It is important to note that attractive males and depressed and vulnerable females are the most likely to engage in casual sex with each other (Buss, 1988, 1989). Additionally, despite a possible interpretation of the more popular men and women being the most commonly involved in sexual risk taking, “Social desirability was not found to be related to sexual risk taking…” (Turchik & Garske, 2009, p. 936). As the cycle continues, and as the number of sexual partners for females increased, so do the symptoms of depression (Grello et al., 2006). As women have more encounters, the feeling of guilt associated with casual sex can exacerbate the negative impact on self-esteem (Paul et al., 2000). Comparatively, women who report
engaging in romantic sex report no depressive symptoms associated with their encounter (Grello et al., 2006). Overall, “Females who had a history of engaging in casual sex reported the most depressive symptoms” (Grello et al., 2006, p. 266). The impact on self-esteem for women who participate in casual sex is clear; a majority of females report regret after their casual sex encounters (Grello et al., 2006).

**Personality.** Personality can have an influence on sexual risk taking. Certain traits in a personality have been found to make someone more likely to take risks, specifically with sex. For example, extroverts are more inclined toward sexual risk taking (Barnes et al., 1984; Miller et al., 2004). A woman with a dominant personality is less likely to engage in sexual risk taking, because she is more capable of rejecting any suggestion of risky behavior (Clark & Hatfield, 1989; Fulton et al., 2010).

There is an ethnographic study on love and casual sex profiles of people, and six different types of personality profiles were found: Eros (passionate love), Ludus (game-playing love), Storge (friendship love), Pragma (practical love), Mania (neurotic love), and Agape (altruistic love) (Grello et al., 2006; Lee, 1988). Of the five types, two types of lovers engage in casual sex most often and for different reasons: one (Ludic) is for physical pleasure with no intention of commitment, and the other (Eros) is for the expectation of emotional and physical intimacy (Grello et al., 2006; Lee, 1988).

**Past relationships.** The number of sexual partners is also a researched area of the literature that is indicative of sexual risk taking. In one study, 36% of college women report having had vaginal intercourse with more than five partners in their lifetime (Reinisch et al., 1995). Additionally, in the same study, the 36% of college women who less than four years earlier had lost their virginity reported an average of 6 male sexual
partners just while in college (Reinisch et al., 1995). College students who reported participating in anal intercourse had nearly double the number of vaginal sex partners than those that had not, with an average of 12 partners (Reinisch et al., 1995). An interesting additional piece of information from this study is that 80% reported that their political identity was moderate or conservative (Reinisch et al., 1995). Additionally, there is an association between lower use of birth control and the likelihood of more than one partner in the preceding six months (Farmer & Meston, 2006; Lauby, Semaan, A., Person, & Vogel, 2001).

The students who report participating in casual sex also report more sexual partners in the last year than those who did not report any casual sex in the last year (Grello et al., 2006). However, even in romantic relationship sex, the length of time in a relationship showed a negative relationship with condom use; consequently, those in long-term relationships used condoms less consistently (Farmer & Meston, 2006; Glaser, 1997; Raj & Pollack, 1995).

One aspect that impacts sexual risk taking, according to the literature, is the context and relationship a woman has with her first sexual encounter. The average age for first sexual intercourse was 17 for men and women (Reinisch et al., 1995). Virgins whose first sexual encounter was of a romantic nature were less likely to have depressive symptoms than those whose first sexual encounter was casual sex (Grello et al., 2006).

Females who report casual sex also more likely report having a negative experience with their first sexual encounter (Grello et al., 2006). Those who engage in casual sex before romantic sex are more likely to have problematic behavior, which was present before the sexual intercourse (Grello et al., 2006). If the first sexual partner of a
female was someone they did not know well, they were more likely to report depressive symptoms (Grello et al., 2006). Depressive symptoms and negative feelings about the first sexual encounter for females also meant they were less satisfied sexually, possibly because of the feelings associated with the first encounter (Grello et al., 2006).

**Sociocultural Variables**

**Socioeconomic status.** Socioeconomic status (SES) has an influence on sexual risk taking (Tanfer, Cubbin, & Billy, 1995). When defining socioeconomic status, many variables are considered in the literature. The definition of SES constitutes resources of both financial and a cultural nature (Bourdieu, 1984; Bourdieu & Passeron, 1990; Higgins & Browne, 2008). When measuring socioeconomic status in a university setting, the metrics are usually family income, parental education, and parental occupation (Kraus, Piff, & Keltner, 2009). Some researchers believe that cultural and psychological factors of social class contribute more to sexual risk taking than income or education (Higgins & Browne, 2008; Skeggs, 1997).

There is limited literature about the sexual activity of those who come from a higher SES and demonstrate a level of sexual risk taking. The majority of the literature is on lower-level or poverty-level men and women, often in foreign countries, and their sexual risk taking. Overall, higher social status men and women are attractive sexual partners to others because of their resources, and they often have sex with other people similar in social class to themselves (Becker, 1981). While college women in a higher SES are more likely to have access and attend a physician regarding sexual health than men or those in lower SES, it is not necessarily translating to prevention or protection in their future sexual encounters (Tanfer et al., 1995). A college education for a woman is
associated with having more anal intercourse and increases the chances of having an STI by 50% over men or those with less than a high school degree (Tanfer et al., 1995). This high STI rate could be attributed to higher SES individuals feeling less vulnerable than lower SES and overestimating their invincibility and protection from harm (Hansen, Hahn, & Wolkenstein, 1990; Kraus, Piff, Mendoza-Denton, Rheinschmidt, & Keltner, 2012).

**Religion.** One aspect of influence on sexual risk taking is religion. Religiosity is defined as the “importance of religion and the frequency of attending religious services” (Edwards et al., 2011, p. 871). The results of one study about religiosity and sexual risk taking found a higher importance for religion and a higher frequency of attending religious services are associated with later age of first sexual encounter and a lower number of partners among Latinas (Edwards et al., 2011). The researcher made a distinction between valuing religion, without being an active practicing member, and actually being a member who attends religious service regularly. In the researchers’ findings, there was a difference between the two on the amount of sexual risk taking. Among Latinas, attending religious services regularly is highly associated with lower sexual risk taking compared to solely valuing religion (Edwards et al., 2011).

**Gender roles.** The role of gender plays a significant role in sexual risk taking. For the purposes of this research, the focus in the literature was specifically about the role women play in a sexual encounter. Researchers plainly state, “Females are more likely to agree to have a sexual relationship to satisfy their partner and to increase intimacy in a potential relationship” (Grello et al., 2006, p. 256). Based on gender roles, women may engage in risky sexual behavior because they feel they have to respond agreeably to a
man’s sexual desires (Impett & Peplau, 2003). There is a gender difference in perceived control during a sexual encounter that could explain lower condom use by women compared to men and increased barriers to use (Bryan, Aiken, & West, 1997; Farmer & Meston, 2006; Gerteisen, 1998). Women are generally expected and more likely to take responsibility for sexual protection in an encounter, and if it is not used, it is generally because the woman has not planned for it (Hansen et al., 1990; S. M. Moore & Rosenthal, 1991; Murray, Harvey, & Beck, 1989; Raj & Pollack, 1995; Whitley & Schoenfield, 1986). Women like to satisfy their partner with casual sex, even though it will not always lead to a relationship (Grello et al., 2006). However, females are more likely to engage in a sexual encounter if they believe it will lead to a romantic relationship (Impett & Peplau, 2003).

**Race and ethnicity.** Ethnicity and racial differences have been found to relate to sexual risk taking. Many variables of sexual risk taking correspond to race and ethnicity. For example, sexual partner characteristics, condom use, and diversity of sexual experience vary by ethnicity (Farmer & Meston, 2006). Some researchers state ethnicity predicts sexual risk behavior and explains the variance in risky sexual behavior (Farmer & Meston, 2006; Faryna & Morales, 2000).

Ethnicity had a significant effect on the number of sexual partners, number of one-time sexual encounters, and anticipated number of partners in the next five years (Farmer & Meston, 2006). In general, across various ethnic origins, men anticipate more sexual encounters than women (Farmer & Meston, 2006). Also, the literature agrees that Asian and Pacific Islanders report the least amount of sexual behavior and fewest sexual partners of all ethnicities (Faryna & Morales, 2000). “When the most critical dimensions
in predicting risks were examined, ethnicity, reflecting culture and diversity, bore the strongest and most powerful relationship, more so than gender, self-efficacy, knowledge, attitudes and beliefs” (Faryna & Morales, 2000, p. 52).

Self-efficacy of condom use and other contraception also seem to play a role in racial and ethnic differences in sexual risk taking. In general, Hispanics have low condom use self-efficacy (Farmer & Meston, 2006; Faryna & Morales, 2000; Gomez & Marin, 1996). Additionally, “Condom use self-efficacy of currently sexually active participants was also predicted by the number of one-time sexual encounters and Hispanic ethnicity” (Farmer & Meston, 2006, p. 323). Latinas reported less condom use confidence and self-efficacy than Caucasian women (Farmer & Meston, 2006). In research of Caucasians who have previously used contraception, 17% report always using condoms, and 48% said they never use condoms, compared to Latinas, 10% of whom always use condoms and 58% of whom never use condoms (Farmer & Meston, 2006; Gomez & Marin, 1996). Overall, “White students report more benefits of condom use” (Parsons, Halkitis, Bimbi, et al., 2000, p. 385). The benefits listed in the survey included, “feelings of responsibility, demonstrating love for a sexual partner, and effectiveness in preventing HIV/STDs” (Parsons, Halkitis, & Bimbi, 2000).

**Impact of Sexual Risk-Taking Consequences**

**Measurements and instruments for sexual risk taking.** Measurements for sexual risk taking are self-reported, which provides some challenges. However, no standard measure of sexual risk taking currently exists to be used in research (Chng & Moore, 1994). Additionally, lack of a psychometrically sound sexual risk-taking instrument exists in the literature (Turchik & Garske, 2009). Sexual risk taking is on the
rise based on information from students on campuses where there are reports of multiple partners and sexual permissiveness (Turchik & Garske, 2009). More research is needed on the difference of reporting between the sexes because there is disagreement if reporting is consistent with actions (Chng & Moore, 1994).

**Outcomes of risk-taking behavior.** Outcomes of sexual risk taking can be legal, familial, and romantic relationship conflict, damage to health and reputation, and negative financial implications (Paul et al., 2000; Turchik & Garske, 2009). The two most common negative outcomes of sexual risk taking are unintended pregnancy and STIs (including HIV/AIDS) (Turchik & Garske, 2009). One in 10 women report an accidental pregnancy between the ages of 18-24 (Finer & Henshaw, 2006). In one study, 24% of enrolled students at four-year institutions and 48% of those enrolled at two-year institutions reported becoming pregnant or getting someone pregnant (Centers for Disease Control and Prevention, 1995). Additionally, it is estimated that one in four women in the total adolescent and adult population of the United States carries herpes or the virus that causes herpes and is incurable (Centers for Disease Control and Prevention, 2000). An estimated 28-46% of women under the age of 25 are infected with the virus that causes genital warts, human papilloma virus (HPV), some strains of which are also connected with causing cervical cancer (Centers for Disease Control and Prevention, 2000; Pluhar et al., 2003).

**Prevention and Education**

The literature has already established that the primary concern for college students when choosing contraception is not STI prevention (Raj & Pollack, 1995). However, researchers have provided even more useful and concerning information on the
implications of those decisions. Perceptions of risk of unprotected sex for college women remain low even though presence of HIV and other STIs remain high in college populations. Infection rates, especially for HPV and Chlamydia, state one in 200 college students has an STD (Gilbert Health Center, 1993; Raj & Pollack, 1995). Additionally, 73% of women had not been tested for HIV (Raj & Pollack, 1995). The consequences for having sex without STI protection can be much worse for those who have not been tested especially since, “Less than half of the women knew if their partner(s) had been tested for any STDs including HIV” (Raj & Pollack, 1995, p. 221). Ironically, 64% of college students say the use of protection was for unwanted pregnancy and protection from STIs (Raj & Pollack, 1995). However, most often they are not choosing a device that actually protects them from STIs, rather they are choosing a method that only prevents pregnancy. Additionally, the rates of using contraception after possible pregnancy are starting to be noted in literature. This is possible because of the emergency contraceptive device, available over the counter without a prescription and known as the “morning after pill.” The use of it and how it figures into contraceptive use on college campuses is still in the beginning stages of being researched. However, one early researcher documented that there was an increase of nearly double the reported use of emergency contraceptive pills (ECP) in the years between 1999-2004 in Sweden (Larsson & Tyden, 2006).

Females use “knowledge” as their protective device against STIs instead of a barrier device, meaning they believe they know the past sexual encounters of a partner and know them well enough to believe they are STI-free, all of which are unreliable methods (Raj & Pollack, 1995). Even if it is a hookup with someone they have never met, they are judging someone else’s probability of having an STI by their appearance,
reputation, or the company they keep prior to sex. Essentially, the students do not believe their partner “looks like” someone with a STI. Additionally, women have a false sense of protection from STIs when they are in a monogamous relationship, especially if they do not know if their partner has ever been tested or is being honest about their sexual partner history, including their number of partners (Raj & Pollack, 1995).

Novello’s report (as cited in Raj and Pollack, 1995) defines sexual knowledge as total knowledge of sexual, contraceptive, and reproductive matters that people believe to be the best way to combat unwanted pregnancy, sexually transmitted diseases, and HIV transmission. Risk reduction programs have primarily been built on the premise that if people know the dangerous consequences of sexual risk taking it will discourage risk taking in the future (Parsons, Halkitis, Bimbi, et al., 2000). However, this brings up many questions, primarily if students are aware of the impact of STIs on their life, why don’t they take measures to prevent the spread of infections? The literature suggests that pure knowledge is not the only answer, but rather assertiveness, social skills, and self-esteem education may help decrease the sexual risk taking by women (Fulton et al., 2010).

Educators should note that interventions for Caucasian students, in particular, could including focusing on increasing condom use and promoting HIV and STI testing (Buhi, Marhefka, & Hoban, 2010). In the same literature, the author makes note that education for black students should focus on reducing the number of sexual partners and promoting the use of hormonal contraceptives in addition to condoms (Buhi et al., 2010). Recommendations for implementation include partnering with student groups that have cultural-specific missions, which can assist in targeting the risky sexual behavior by different ethnic groups on a college campus (Buhi et al., 2010).
While social norming education has been prevalent in alcohol and drug prevention, research also suggests it could improve some of the sexual risk taking happening on college campus as well (Martens et al., 2006). The assertion of the impact of social norm interventions is a reduction in the frequency of risky sexual behavior for those who already engage in it and correcting misperceptions by those who are not engaging in the risky behavior (Martens et al., 2006). It is also possible that students are under-reporting their sexual risk taking to health professionals when seeking treatment, which college campus professionals should be aware of given the current literature (Gute, Eshbaugh, & Wiersman, 2008). Finally, mental health professionals should assist students in coping in a healthy way with depression to avoid the continuation of risky sexual behavior (Lehmbeck et al., 2007).

**Summary of the Literature**

It is clear from the literature that there are many factors to sexual risk taking for college women. It is also clear that the factors that may increase the likelihood of casual sex are low self-esteem, symptoms of depression, intoxication, and type of relationship style (Turchik & Garske, 2009). We know that females who report the highest depressive symptoms frequently engage in casual sex (Grello et al., 2003; Paul et al., 2000). The cycle of casual sex between high-depression symptom women and confident men presents an interesting social paradigm on college campuses. We also know women are more likely to agree to a sexual encounter with a male partner in the hope sex will help establish intimacy and the potential for a romantic relationship (Grello et al., 2006). When a woman with depressed symptoms has casual sex with the hope of a relationship out of it, and then she is rejected, it can lead to a perpetuation of the cycle of depression.
and more casual sex. The women who start this cycle in college may have a very difficult time establishing a healthy romantic relationship later in life.

As an educator, it is also important to note that “Knowledge and availability of sexual protection are not enough to bring about safer sex behaviors” (Grello et al., 2006, p. 221). As educators, if we care about the holistic wellness of our students, we must address their risky sexual practices through our educational institutions. Sexual relations will happen on college campuses regardless of whether the administration addresses the needs of students. We need to sit with this question: Whose job is it to help educate students on sexual topics? What if their family and educational institutions are not doing it or are providing limited information based on their lack of comfort with the subject matter? What will be the result of students’ sexual lives if no one makes any advances of education as a result of the literature and research available? We cannot be naïve or oblivious to the impact of the grave possibilities of the current casual sex culture among young people. Finally, research also indicates that responsible sexual behavior increased with women as they age (Raj & Pollack, 1995). Even though their sexual behavior may get better with age, it is important to note the role that educators can play in reducing risk taking even earlier for young women.

There are many implications from the literature reviewed. First, there are differences between casual sex and romantic sex (Farmer & Meston, 2006; Magoun & Alison, 2000). We now know how important the first sexual encounter is in determining sexual risk taking in the future. Perhaps the most significant implication is that instead of focusing on messaging safer sex, we need to further analyze the benefits of sexual risk taking from the college students’ perspective and target a specific population with
conversation (Grello et al., 2006). Education on communication skills for women and training in condom usage could be the most beneficial. We also know that it is clear that the higher the number of sexual partners a college woman has, the higher the number of depressive symptoms may be present. We know the cycle perpetuates itself and that self-esteem and depressive symptoms for women have far worse implications for women than men.
Chapter Three

Methodology

Type of Research Design

The purpose of this quantitative study was to examine the sexual health practices of heterosexual college women. The study examined the sexual health practices among college women from different socioeconomic, academic achievement, depressive symptoms, race/ethnicity, and religious backgrounds. The study utilized an online survey and data collection from the American College Health Association’s National College Health Assessment (ACHA-NCHA II), administered during the spring semester of 2010. The ACHA-NCHA survey was developed in 1999 by an advisory group of college health professionals in collaboration with the Centers for Disease Control and Prevention (American College Health Association, 2012).

The ACHA-NCHA survey has been utilized by higher education administrators to assess mental health and health indicators with over 350,000 students at over 540 colleges and universities in the United States and Canada (American College Health Association, 2012; Jackson, 2008; Ketcham & Hoban, 2008). In 2007, the ACHA-NCHA was revised to new version, the ACHA-NCHA II, to include questions on a variety of health behaviors, such as use of illegal drugs, use of contraception, and self-harming behaviors (American College Health Association, 2012; Ketcham & Hoban, 2008).

For psychometric purposes, the ACHA-NCHA II survey items were examined in relation to existing surveys of college student health, including the CDC’s (1995) National College Health Risk Behaviors survey, Harvard University’s School of Public Health (1999) College Alcohol Study survey, and the United States Department of Justice
(2000) National College Women Sexual Victimization Study survey. The ACHA-NCHA II is comprised primarily of single-item indicators. While the inter-item reliability of the total survey items has been shown to be poor to adequate, with Cronbach’s alphas in the .40s to .60s, the items are not typically used in aggregate (Ketcham & Hoban, 2008). The inter-item reliability of items within domains or subscales (e.g., substance use, negative effect, eating disorders) have been very strong, with Cronbach’s alphas in the mid to high .80s (Jackson, 2008). Moreover, specific subscales have shown strong construct and discriminant validity; the substance abuse subscales, for example, have been significantly correlated with Harvard University’s School of Public Health (1999) College Alcohol Study survey (American College Health Association, 2012; Jackson, 2008; Ketcham & Hoban, 2008).

In this study, the focus is on the sexual risk-taking items of the ACHA-NCHA II. In research using ACHA-NCHA II data, single-item sexual risk-taking indicators—as opposed to a sexual risk-taking scale comprised of items—have most often been used (Lehmbeck et al., 2007; Trieu, Bratton, & Marshak, 2011; Trieu, Bratton, & Marshall, 2011). The use of single-item indicators has nonetheless been effective in discriminating between theoretically-valid groups (e.g., gender, relationship status, those who do and do not use drugs), providing evidence of discriminant validity. For example, Trieu et al. (2008) found that those college students who had an HIV test were more likely to consistently use condoms as compared to college students who had not had an HIV test. In addition, Lehmbeck et al. (2007) found that college students who reported more depressive symptoms were more likely to report more sexual partners as compared to college students with few depressive symptoms. Sexual risk-taking has been utilized as a
composite or scale score in studies (Adams & Rust, 2006; Trepka et al., 2008). Adams and Rust (2006) developed a sexual activity scale by combining responses in regard to past 30-day frequency of oral sex, vaginal intercourse, and anal intercourse. Trepka et al. (2008) created a risky sex scale comprised of items inquiring about HIV testing, hepatitis B vaccination, having an STD, and receiving information about HIV or STDS. While inter-item reliabilities for these scales were not provided, both Adams and Rust and Trepka et al. did provide evidence of discriminant validity of the scales, especially in relation to sexual risk-taking behavior discriminating between students who used drugs and those who did not.

The study divides participants into two distinct groups related to their sexual risk taking: low and high sexual risk taking (SRT). The low SRT group is defined as those who only participated in oral and vaginal sex in their lifetime. The high SRT group is defined as those who have ever participated in oral, vaginal, and anal sex. The groups are categorized as such because the risk of HIV transmission from an infected partner though oral sex is much lower than from anal or vaginal sex (Centers for Disease Control, 2009). Conversely, anal sex is the most risky activity for sexual disease transmission for both men and women (New York State Health Department, 2013).

**Research Questions and Hypothesis**

The primary three research questions for this study were:

1. Do college women with higher academic achievement report more sexual risk-taking practices than those with lower academic achievement?

2. Do women of a higher socioeconomic status choose pregnancy prevention over disease prevention in their sexual encounters?
3. Do behavioral and sociocultural factors (religion, socioeconomic status, body weight, and reported depressive symptoms) make a difference in risky sexual behavior of college women?

The researcher’s hypothesis for question one is that women who are performing better academically will report more sexually risky behavior than those who are lower academic achieving. A primary reason for doing the research is to test if college women who are achieving well academically, and presumably highly intelligent, have intelligence that also translates to their sexual encounters. The transferable use of intelligence from the classroom to intimate encounters is being called *sexual intelligence* for the purpose of this research. The research study presented here tests the belief on many college campuses that college students who achieve well academically are also making good choices when it comes to their safety sexually. The hypothesis is that higher academic achievement will not translate into healthy sexual behaviors, with low risk, therefore stating that sexual intelligence is unrelated to academic achievement.

The researcher’s hypothesis for the second research question is college women of a higher socioeconomic status will choose pregnancy prevention over disease prevention. The hypothesis for why college women of a higher socioeconomic status would behave this way is because of feelings of invincibility, social stigma associated with pregnancy, lack of targeted education about disease prevention, and a lack of passive methods of disease prevention available to utilize in sexual encounters.

The hypothesis for research question three is that social factors do make a difference in the risks that women take sexually while in college. The behavioral and
sociocultural factors expected to influence the sexual risk taking of college women are religion, socioeconomic status, and self-reported depressive symptoms.

Sample, Population, and Participants

The site of the study was a large (enrollment of undergraduates over 15,000), urban, Catholic, co-educational college in a Midwestern city. Male and female students were surveyed; however, only results collected from females are used for data analysis. The survey collected data from both undergraduate and graduate students enrolled at the school in spring 2010. Students were randomly selected to receive a web-based invitation to participate in the survey. A total of 872 students completed the survey, a 21.9% response rate, of which 542 were women. Of the sample of women, the study focused on responses from the full-time undergraduates, single, heterosexual, Caucasians who were ages 18 to 24 at the time of the survey.

Data Collection Instruments, Variables, and Materials

Instrument. The survey used from the American College Health Association can be administered as a scantron paper format or web-based format. In this study, the instrument was given through a web-based link sent in an email to students. The national instrument used has a standard of eight different sections and totals 65 questions. In this study, there was an option to include additional questions specific to the institution, and there were an additional five questions that were added to the survey that were institution specific (see Appendix B). The survey was administered in spring 2010 as an initiative of the sexual health wellness task force within the division of Student Affairs.

The first section of the survey is titled “Health, Health Education and Safety” and has seven questions. Each question has several questions underneath it, which ask the
user to answer either yes/no or use a scale for answers. The second section of the instrument is titled “Alcohol, Tobacco, and Drugs” and has 11 questions that ask the participant to use scales to answer frequency of use questions about a variety of substances. The third section is titled “Sex Behavior and Contraception” and has eight questions about the number of sexual partners, yes/no questions about use of pregnancy prevention and disease prevention, and frequency of risky sexual behavior. The fourth section of the survey, titled “Weight, Nutrition, and Exercise,” has four questions. The fifth section is titled “Mental Health” and includes eight questions regarding depressive symptoms, use of counseling services on campus, and stress. The sixth section of the survey is titled “Physical Health” and includes seven questions about sleep habits, sexually transmitted diseases, and genital exams. The seventh section is titled “Impediments to Academic Performance” and is only one question, but it asks about a variety of factors (29 total) that can influence academics. The final section title on the standard ACHA/NCHA II is titled “Demographics” and includes 20 questions that include socioeconomic status, gender, sexual orientation, and relationship status. Finally, the additional school-specific questions include school of study and religion.

**Variables of interest.** The variables of interest being studied from the information provided by study participants are sexual risk taking, socioeconomic status, religion, depressive symptoms, body weight, academic achievement, and race/ethnicity.

In order to assess sexual risk taking, several questions were asked on the survey that will assist in determining how much risk taking is happening sexually and what types of risks are being taken. The primary measurement of sexual risk taking is the question, “**Within the last 30 days, did you have: oral sex, vaginal intercourse, anal intercourse.**”
The answer options for each of the types of sexual behaviors listed are, “No, never have done this sexual activity,” “No, have done this sexual activity in the past, but not in the last 30 days,” and “Yes.” All answers of “Yes” and “No, have done this sexual activity in the past, but not in the last 30 days” will classify as ever having engaged in sex. All participants who have participated in oral and vaginal sex will be classified as low sexual risk taking, and those that have ever participated in oral, vaginal, and anal will be classified as high sexual risk takers. Participants who have not participated in any sex activity are classified as no sexual risk takers and are not the focus of this study.

The first question used to assess sexual risk taking is, “Within the last 12 months, have you or your partner(s) used emergency contraception (‘morning after pill’)?” The answer options are, “N/A, have not had vaginal intercourse in the last 12 months,” “No,” “Yes,” or “Don’t know.” Any answer of “yes” will classify as sexual risk taking behavior to this question, and all other answers will classify as non-sexual risk taking behavior, including “Don’t know.”

A second measurement of sexual risk taking behavior is the question, “Within the last 12 months, have you or your partner(s) become pregnant?” The possible answers to this question are, “N/A, have not had vaginal intercourse in the last 12 months,” “No,” “Yes, unintentionally,” “Yes, intentionally,” or “Don’t know.” All answers except ones that were “Yes, unintentionally” will be considered non-sexual risk taking behavior. Any answers of “Yes, unintentionally” will classify as sexual risk taking behavior.

The third measurement of sexual risk taking is measured from the answer to the question, “Did you or your partner use a method of birth control to prevent pregnancy the last time you had vaginal intercourse?” The study participants have these answers to
choose from: “Yes,” “N/A, have not had vaginal intercourse,” “No, have not had vaginal intercourse that could result in a pregnancy,” “No, did not want to prevent pregnancy,” “No, did not use any birth control method,” and “Don’t know.” The answer of “No, did not use any birth control method” will classify as sexual risk taking behavior. Additionally, the follow up answers to the next question for those that answered “yes” will help inform what, if any, sexual risk taking behavior is present with their choice of birth control.

The fourth measurement of sexual risk taking is measured from the answer to the question, “Please indicate whether or not you or your partner used each of the following methods of birth control to prevent pregnancy the last time you had vaginal intercourse.” The list of options below includes the answer options of “Withdrawal” and “Fertility awareness” (i.e., rhythm method or body temperature testing) that will be considered sexual risk taking for the purpose of this study. The reason they are considered sexual risk taking is because neither has scientific backing to support them as barriers to disease spread or pregnancy prevention. All answers listed, except “Male condom” and “Female condom,” will be considered pregnancy prevention only (with the above-noted exception for “Withdrawal” and “Fertility awareness”) because they cannot protect against diseases.

The fifth measurement of sexual risk taking is based on the number of sexual partners reported by study participants. The question on the instrument asks participants, “Within the last 12 months, how many partners have you had oral sex, vaginal intercourse, or anal intercourse?” The participants are asked to fill in a number between zero and 99.
In order to assess socioeconomic status, students were asked, “Do you receive the Pell Grant in financial aid?” Students could answer “yes” or “no” or “unsure.” A Pell Grant in the 2010-2011 school year, when the research study was conducted, was $5,500. In order for a student to qualify for the grant, which does not need to be paid back, the student’s family needs to have less than $4,617 expected family contribution based on the information they provide on the Free Application for Federal Student Aid (FASFA) (U.S. Department of Education, 2013). Answers to this question will classify respondents into two subsections for socioeconomic status – high or low SES. If a student answers “yes” to this question, they are classified as lower socioeconomic background for the purpose of this study. If a student answers “no” to this question, they are classified as higher socioeconomic background.

In order to assess religion, students were asked, “What is your Religion?” Students had 10 options for answers, which were “Catholic,” “Protestant Christian,” “Eastern Orthodox,” “Other Christian,” “Jewish,” “Muslim,” “Hindu/Vedic,” “Buddhist,” “None/Secular/Atheist,” or “other.” The question about religion was an institution-specific question added to the survey by the institution since it is a Catholic school.

To assess students’ academic achievement, the survey asked, “What is your approximate cumulative grade average?” The response choices were “A,” “B,” “C,” “D/F,” or “N/A.” In data analysis, students who reported “A” and “B” averages for this question were classified as high academic achievement. Students who reported averages of “C” and “D/F” averages were classified as a low academic achievement group of participants.
To assess students’ racial identity, they were asked to self-report to the following question, “How do you usually describe yourself?” The options they had to choose from on the national instrument were, “White, non Hispanic (includes Middle Eastern),” “Black, non Hispanic,” “Hispanic or Latino/a,” “Asian or Pacific Islander,” “American Indian, Alaskan Native, or Native Hawaiian,” “Biracial or Multiracial,” or “other.” The data analysis in this study will look at the participants who identified in the “White, non Hispanic (includes Middle Eastern)” category. Additionally, this study is being done at a predominantly White institution, so presumably the majority of the participants will identify in this racial category.

To assess students’ depressive symptoms, one question with multiple options for answers will be used. The question the participants are asked to respond to is “Have you ever:” followed by 11 descriptive depressive symptoms. The depressive symptoms list includes: “Felt things were hopeless,” “Felt overwhelmed by all you had to do,” “Felt exhausted (not from physical activity),” “Felt very lonely,” “Felt very sad,” “Felt so depressed that it was difficult to function,” “Felt overwhelming anxiety,” “Felt overwhelming anger,” “Intentionally cut, bruised, or otherwise injured yourself,” “Seriously considered suicide,” or “Attempted suicide.” Each study participant is asked to answer each prompt using a five-point scale with answers of either, “No, never,” “No, not in the last 12 months,” “Yes, in the last 2 weeks,” “Yes, in the last 30 days,” or “Yes, in the last 12 months.” All participant responses that are “yes” will be grouped as having had depressive symptoms and those that responded to questions with “no” will be considered to not show any depressive symptoms. If a participant responded “yes” to any of the items, they will be considered as having shown depressive symptoms. Any
individual who responded with “yes” to six or more (over half) of the items on the inventory will be considered to have a high level of depressive symptoms.

To assess body weight of study participants, they were asked to respond to two survey questions; the first is “How do you describe your weight?” The options for responses to this question are “Very underweight,” “Slightly underweight,” “About the right weight,” “Slightly overweight,” or “Very overweight.” The second question that will help assess weight is “Are you trying to do any of the following about your weight?” The options for survey respondents to answer this question are “I am not trying to do anything about my weight,” “Stay the same weight,” “Lose weight,” or “Gain weight.” The primary usefulness with this measurement is not actually how much a participant’s body weight is compared to their height and scientific charts of healthy weight. Rather the measurement trying to be seen with this survey question is how college women perceive their weight and what, if anything, are they doing about it. Also, the questions will help demonstrate how they feel about their own physical appearance, which can be closely tied to their sexual habits.

Data Analysis Procedures

The data in this study was analyzed using the software package of SPSS 20.0. The data analysis included data from many parts of the National College Health Assessment Survey (NCHA), including the sexual health, mental health, physical health, demographic, and school-specific questions. Prior to conducting data analyses for hypothesis testing, data was examined for outliers (i.e., data numerically distant from the normal distribution) (Vogt, 2007). Descriptive statistics (e.g., frequencies and
percentages for categorical variables, means, standard deviations, range for continuous variables) were then calculated on sample demographic data and study variable data.

In this study, a sexual risk-taking scale was created using the items assessing (a) frequency of oral sex in the past month; (b) frequency of vaginal intercourse in the past month; and (c) frequency of anal intercourse in the past month. These three items are answered using the same response scale. All participants who answered “Yes” or “No, have done this activity in the past, but not in the last 30 days” were counted in analysis. The study was looking at ever participated in any of the types of sexual intercourse.

The sexual risk-taking scale was used as the criterion variable in a hierarchical linear regression to answer research question one, “Do college women with higher academic achievement report more sexual risk taking practices than those with lower academic achievement?” and research question three, “Do behavioral and sociocultural factors (religion, socioeconomic status, body weight, and reported depressive symptoms) make a difference in risky sexual behavior of college women?” In the hierarchical linear regression, the sociocultural variables of (a) socioeconomic status, (b) ethnicity, and (c) religion will be entered on the first step; the variables of (a) depression and (b) weight will be entered on the second step; and the variable of (a) academic achievement will be entered on the third step. To provide a more cohesive understanding of the socioeconomic/political risk and behavioral and psychological predictors of sexual risk-taking, another hierarchical linear regression will be conducted with the same variables entered on steps one-three. This will be followed by interaction terms combining depression and (a) socioeconomic status, (b) ethnicity, and (c) religion on the fourth step; an interaction term combining depression and (a) weight on the fifth step; and an
interaction term combining depression and (a) academic achievement on the sixth step.

Significance of the overall model will be determined by the model F-value and corresponding significance (p) value, which needs to be < .05 for significance.

Significance of each predictor variable will be determined by the standardized beta (β) weight, t-value, and corresponding significance (p) value, which needs to be < .05 for significance (Vogt, 2007).

For research question two, ”Do women of a higher socioeconomic status choose pregnancy prevention over disease prevention for their sexual encounters?” the criterion variable will be a nominal variable that is coded as 1 = used pregnancy prevention during last vaginal intercourse and 0 = did not use pregnancy prevention during last vaginal intercourse. The appropriate statistical analyses when there is a criterion variable that is nominally coded and there are predictor variables that are nominally and continuously coded is a multiple logistic regression (Vogt, 2007). In logistic regression, it is assumed that the relationship between the predictor variables and the criterion variable is logarithmic versus linear, and as such, the relationship between variables is addressed as odds or probabilities (Vogt, 2007).

In the multiple logistic regression analysis, the behavioral and sociocultural factors of (a) socioeconomic status, (b) ethnicity, and (c) religion will be entered on the first step; the variables of (a) depression and (b) weight will be entered on the second step; and the variable of (a) academic achievement will be entered on the third step. To provide a more cohesive understanding of the social and intrapersonal predictors of sexual risk-taking, another multiple logistic regression will be conducted with the same variables entered on steps one-three. This will be followed by interaction terms
combining depression and (a) socioeconomic status, (b) ethnicity, and (c) religion on the fourth step; an interaction term combining depression and (a) weight on the fifth step; and an interaction term combining depression and (a) academic achievement on the sixth step. The values utilized in logistic regression are the model chi-square (χ²) and the group member classification value as overall model indicators, and odds ratio statistics and Wald χ² values as indicators of single item significance (Vogt, 2007).

**Suggestions for further research.** The literature documented women who report depressive symptoms also have a high degree of sexual risk taking. The literature did not demonstrate if there has been a connection between those who have depressive symptoms and who are risk taking to their academic performance. Overall, there was a gap in the literature regarding a link of academic performance of women and sexual risk taking.

In the United States, many studies have shown academic achievement is strongly influenced by SES, so a new study would take that one step further by looking at the sexual risk taking of those with educational and financial privilege. There are very few studies of women with means (academic, financial, cultural capital) and their sexual risk taking practices. This study focuses on a group of college women who are believed to not be “at-risk” because of their social status and/or academic achievement. This group of women could be practicing riskier sex than many are aware. Is it possible that these women are overly commended for their academic achievement and personal characteristics, and it does not translate into self-esteem when thinking about sexual relationships?
Chapter Four

Results

The purpose of this quantitative study was to examine the predictive value of specific socio-demographic variables on sexual risk-taking and pregnancy prevention use behaviors. Sexual risk-taking behavior was the criterion variable for research questions one and three, whereas pregnancy prevention use was the criterion variable for question two. The sample was comprised of White, heterosexual, full-time undergraduate college women, ages 18 to 24, who attended a private, Catholic university in a Midwestern state in the United States. The study utilized archival data from the 2010 National College Health Assessment (NCHA) dataset.

The focus of this chapter is to provide the study’s statistical results, especially hypothesis testing results. The chapter begins with a presentation of the study sample demographic descriptive statistics. Descriptive statistical information for the study variables, including information on scale computations, follows. The chapter focus then shifts to a presentation and discussion of results from hypothesis testing of the study research questions. The chapter ends with a discussion of findings from post hoc analyses.

Sample Descriptive Data

Descriptive statistics were calculated for the sample of participants (see Table 1). The participants for this study were 180 White, heterosexual, full-time undergraduate college women, ages 18 to 24 years of age, attending a private Catholic university in a Midwestern state of the United States. The mean age of participants was 20.35 years ($SD = 1.32$), with ages ranging from 18 to 24 years of age. Participants were relatively
equally divided across freshman, sophomore, junior, and senior groups; however, only five (2.8% of) participants were fifth-year seniors. A significant number ($n = 91, 50.3\%$) of participants were in the Liberal Arts and Sciences academic college (see Table 1 for other academic colleges). The 180 participants reported high GPAs, with 104 (57.8%) participants reporting a GPA of A and 74 (41.1%) participants reporting a GPA of B; only two (1.1%) participants reported a GPA of C. A substantial number of participants ($n = 86, 47.8\%$) resided off-campus, while 51 (28.3%) resided on campus, 39 (21.7%) resided at their parents’ home, and four (2.2%) participants resided elsewhere. Of the participants, 145 (80.6%) were not eligible for a Pell Grant. With regard to religion, 76 (42.2%) participants were Catholic, 61 (33.9%) were Protestant, and 43 (23.9%) were agnostic/atheist. With regard to relationship status, 95 (52.8%) of participants were currently not in a relationship while 85 (47.2%) of participants were currently in a relationship.

Table 1

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<th>Study Participant Descriptive Statistics ($N = 180$)</th>
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<td>College Year</td>
</tr>
<tr>
<td>Freshman ($1^{st}$ year)</td>
</tr>
<tr>
<td>Sophomore ($2^{nd}$ year)</td>
</tr>
<tr>
<td>Junior ($3^{rd}$ year)</td>
</tr>
<tr>
<td>Senior ($4^{th}$ year)</td>
</tr>
<tr>
<td>Senior ($5^{th}$ year)</td>
</tr>
<tr>
<td>Academic College</td>
</tr>
<tr>
<td>Major</td>
</tr>
<tr>
<td>------------------------------</td>
</tr>
<tr>
<td>Liberal Arts &amp; Sciences</td>
</tr>
<tr>
<td>Business</td>
</tr>
<tr>
<td>Technology</td>
</tr>
<tr>
<td>Education</td>
</tr>
<tr>
<td>Communication</td>
</tr>
<tr>
<td>Fine Arts (Music, Theatre)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>GPA</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>104</td>
<td>57.8</td>
</tr>
<tr>
<td>B</td>
<td>74</td>
<td>41.1</td>
</tr>
<tr>
<td>C</td>
<td>2</td>
<td>1.1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Current Residence</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Campus Residence Hall</td>
<td>36</td>
<td>20.0</td>
</tr>
<tr>
<td>Other Campus Housing</td>
<td>15</td>
<td>8.3</td>
</tr>
<tr>
<td>Parent/Guardian Home</td>
<td>39</td>
<td>21.7</td>
</tr>
<tr>
<td>Off-Campus Housing</td>
<td>86</td>
<td>47.8</td>
</tr>
<tr>
<td>Other Housing</td>
<td>4</td>
<td>2.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pell Grant</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>No, Do not Have Pell Grant</td>
<td>145</td>
<td>80.6</td>
</tr>
<tr>
<td>Yes, Have Pell Grant</td>
<td>35</td>
<td>19.4</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Religion</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Catholic</td>
<td>76</td>
<td>42.2</td>
</tr>
<tr>
<td>Protestant</td>
<td>61</td>
<td>33.9</td>
</tr>
<tr>
<td>Agnostic/Atheist</td>
<td>43</td>
<td>23.9</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Relationship Status</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Not in a Relationship</td>
<td>95</td>
<td>52.5</td>
</tr>
<tr>
<td>In a Relationship, Not Living Together</td>
<td>80</td>
<td>44.2</td>
</tr>
<tr>
<td>In a Relationship, Living Together</td>
<td>6</td>
<td>3.3</td>
</tr>
</tbody>
</table>
Descriptive statistics were conducted on the continuous variables of number of sexual partners in the past year, perceived weight, and depression. The mean number of sexual partners in past year was $M = 1.64$ ($SD = 1.64$). With regard to perceived weight and depression, the means were $3.23$ ($SD = .62$) and $17.62$ ($SD = 5.77$), respectively. The participants, overall, noted that they were about the right weight and displayed low levels of depression.

Table 2

<p>| Descriptive Statistics of Continuous Study Variables ($N = 180$) |
|---|---|---|---|---|---|---|---|---|</p>
<table>
<thead>
<tr>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>Min</th>
<th>Max</th>
<th>SK</th>
<th>K</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of sexual partners</td>
<td>180</td>
<td>1.58</td>
<td>1.64</td>
<td>0.00</td>
<td>9.00</td>
<td>1.59</td>
<td>2.82</td>
</tr>
<tr>
<td>Perceived weight$^a$</td>
<td>180</td>
<td>3.23</td>
<td>.62</td>
<td>2.00</td>
<td>5.00</td>
<td>0.40</td>
<td>0.52</td>
</tr>
<tr>
<td>Depression$^b$</td>
<td>180</td>
<td>17.62</td>
<td>5.77</td>
<td>8.00</td>
<td>32.00</td>
<td>0.57</td>
<td>-0.27</td>
</tr>
</tbody>
</table>

Note. $^a$The coding scale for this measure was 1 = very underweight, 2 = slightly underweight, 3 = about the right weight, 4 = slightly overweight, and 5 = very overweight. Based on coding, a mean of 3.23 is equivalent to “about the right weight.” $^b$The depression scale was computed from the eight depression items; a higher score denotes higher levels of depression.

**Participant Sexual Activity Behavior**

To provide an understanding of the sexual activity behaviors of the study participants, the frequency and percentages of participants who engaged in oral, vaginal, and anal sex were calculated. Of the 180 participants, 37 (20.6%) participants had never engaged in oral sex, 46 (25.6%) participants had never engaged in vaginal intercourse, and 140 (77.8% of) participants had never engaged in anal sex. A sexual risk-taking categorical variable was computed based on the type of sexual activity in which the
participants engaged. Of the 180 participants, 36 (20.0%) participants had never engaged in oral, vaginal, or anal sex, 11 (6.1%) had engaged in oral sex only, 93 (51.7%) had engaged in both oral and vaginal sex, and 40 (22.2%) of participants had engaged in oral, vaginal, and anal sex (see Table 3).

Table 3

*Study Participant Descriptive Statistics: Sexual Behaviors (N = 180)*

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Sexual Activity</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oral Sex (Ever)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>143</td>
<td>79.4</td>
</tr>
<tr>
<td>No</td>
<td>37</td>
<td>20.6</td>
</tr>
<tr>
<td>Vaginal Sex (Ever)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>134</td>
<td>74.4</td>
</tr>
<tr>
<td>No</td>
<td>46</td>
<td>25.6</td>
</tr>
<tr>
<td>Anal Sex (Ever)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>40</td>
<td>22.2</td>
</tr>
<tr>
<td>No</td>
<td>140</td>
<td>77.8</td>
</tr>
<tr>
<td><strong>Sexual Risk-Taking Groups</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never had oral, vaginal, anal sex</td>
<td>36</td>
<td>20.0</td>
</tr>
<tr>
<td>Had oral sex only</td>
<td>11</td>
<td>6.1</td>
</tr>
<tr>
<td>Had oral and vaginal sex</td>
<td>93</td>
<td>51.7</td>
</tr>
<tr>
<td>Had oral, vaginal, anal sex</td>
<td>40</td>
<td>22.2</td>
</tr>
</tbody>
</table>

**Sexual Risk-Taking Group Categorization**

As the focus of this study was on sexual risk-taking behavior among White, heterosexual, full-time college female students, the 36 participants who had not engaged in oral, vaginal, or anal sex were removed from analyses, resulting in a final sample of $N = 144$. The sample of 144 participants was comprised of 11 participants who had oral sex only, 93 participants who had oral and vaginal sex, and 40 participants who had oral, vaginal, and anal sex. The 93 participants who had oral and vaginal sex are considered the low sexual risk-taking group, and the 40 participants who had oral, vaginal, and anal
sex are considered the high sexual risk-taking group. Of the 144 participants, the mean number of sexual partners for the past year was $M = 1.97$ ($SD = 1.60$) and ranged from 0 to 9 partners (see Table 4). With regard to pregnancy prevention use during last vaginal intercourse, 16 (11.1%) participants either did not use pregnancy prevention or used withdrawal\(^1\), 85 (59.0%) participants used birth control pills, 26 (18.1%) used male condoms, and 8 (5.6%) used other types of pregnancy prevention, such as IUD, birth control shot, or birth control patch (nine or 6.3% of participants responded that they had not had vaginal sex in the past year). Over 20% of participants ($n = 31$) reported having used emergency contraceptives in the past year. Of the 144 participants, only one (0.7%) participant reported having an unintentional pregnancy in the past year.

Table 4

**Study Participants: Sexual Behaviors ($N = 144$)**

<table>
<thead>
<tr>
<th>Category</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Sexual Partners in last 12 months</td>
<td>0</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>74</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>22</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>18</td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>9</td>
</tr>
<tr>
<td></td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td>7</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td>9</td>
<td>1</td>
</tr>
</tbody>
</table>

\(^1\) No participants stated that they used fertility awareness as an alternative to birth control
Birth Control Use Last Vaginal Intercourse

<table>
<thead>
<tr>
<th>Method</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, did not use birth control</td>
<td>13</td>
<td>9.0</td>
</tr>
<tr>
<td>No, used withdrawal</td>
<td>3</td>
<td>2.1</td>
</tr>
<tr>
<td>Yes, birth control pills</td>
<td>85</td>
<td>59.0</td>
</tr>
<tr>
<td>Yes, male condom</td>
<td>26</td>
<td>18.1</td>
</tr>
<tr>
<td>Yes, other birth control (e.g., IUD, shots, patch)</td>
<td>8</td>
<td>5.6</td>
</tr>
<tr>
<td>Missing (N/A: did not have vaginal sex in past year)</td>
<td>9+</td>
<td>6.3</td>
</tr>
</tbody>
</table>

Emergency Contraception

<table>
<thead>
<tr>
<th>Method</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, used emergency contraception in past year</td>
<td>31</td>
<td>21.5</td>
</tr>
<tr>
<td>No, did not use emergency contraception in past year</td>
<td>98</td>
<td>68.1</td>
</tr>
<tr>
<td>Missing (N/A: did not have vaginal sex in past year)</td>
<td>15</td>
<td>10.4</td>
</tr>
</tbody>
</table>

HPV Diagnosis In Last Year

<table>
<thead>
<tr>
<th></th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>135</td>
<td>93.8</td>
</tr>
<tr>
<td>Yes</td>
<td>9</td>
<td>6.3</td>
</tr>
</tbody>
</table>

Pregnancy

<table>
<thead>
<tr>
<th>Method</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>128</td>
<td>88.9</td>
</tr>
<tr>
<td>Yes, unintentionally</td>
<td>1</td>
<td>0.7</td>
</tr>
<tr>
<td>Missing (N/A: did not have vaginal sex in past year)</td>
<td>15</td>
<td>10.4</td>
</tr>
</tbody>
</table>

*Note. *+n = 6 participants of the 15 who had not had vaginal sex stated that they did not use birth control as they had not had vaginal sex in past year

**Examination of differences between sexual risk-taking groups.** A series of statistical analyses were conducted to validate the sexual risk-taking group categorization (i.e., oral sex only group; oral and vaginal sex group; and oral, vaginal, and anal sex group). A one-way analysis of variance (ANOVA) was first conducted to examine sexual risk-taking group mean differences on the number of sexual partners in the past year. The one-way ANOVA showed that the groups showed similar error variances,
Levene’s test, $F(2, 141) = 2.28, p = .11$. The one-way ANOVA showed that groups significantly differed on the number of sexual partners in past year, $F(2, 141) = 3.52, p = .032$. The high-risk group of participants who had oral, vaginal, and anal sex ($n = 40$) had significantly more sexual partners in the past year ($M = 2.33, SD = 1.67$) than did participants who had had engaged in oral sex only ($n = 11, M = .91, SD = 0.83$) and participants who had engaged in oral and vaginal sex ($n = 93, M = 1.95, SD = 1.60$).

For further validation of category placements, sexual risk-taking groups were then assessed with regard to sexual behavior risk outcomes of HPV diagnosis and unintended pregnancy. With regard to HPV diagnosis in the past year, a chi-square ($\chi^2$) test of independence showed that sexual risk-taking groups significantly differed on receiving a HPV diagnosis in the past year, $\chi^2(2) = 7.41, p = .025$. Of the nine participants who had been diagnosed as having HPV within the past year, six (66.7%) were participants who had engaged in oral, vaginal, and anal sex. In contrast, within the HPV diagnosis group, three (3.2%) were participants who had in engaged in oral and vaginal sex, and zero (0.0%) were participants who had engaged in oral sex only. While the sample size of one (1) for the variable of having an unintended pregnancy in past year was too small to conduct statistical analyses, this one participant who had an unintended pregnancy was classified in the oral, vaginal, and anal sex category. The one (1) respondent to unintentional pregnancy also was not one who reported she had not had non-consensual sex, to confirm it was not a pregnancy by rape.

A chi-square ($\chi^2$) test of independence determined that the sexual risk-taking groups did not differ on type of pregnancy prevention used during last vaginal intercourse, $\chi^2(8) = 4.43, p = .817$. A total of eight (8.6%) of the 93 participants who had
engaged in oral or vaginal sex did not use pregnancy prevention during last vaginal intercourse. Similarly, four (10.0%) of the 40 participants who had engaged in oral, vaginal, or anal sex did not use pregnancy prevention during last vaginal intercourse. Moreover, two (2.2%) participants who had oral and vaginal sex and one (2.5%) participant who had oral, vaginal, and anal sex used withdrawal (rather than birth control) during last vaginal intercourse. A chi-square ($\chi^2$) test of independence showed that sexual risk-taking groups did not differ on the use of emergency contraception, $\chi^2(1) = 1.13, p = .287$. Notably, 19 (21.3%) of the 93 participants who had engaged in oral or vaginal sex had used emergency birth control in past year, which was similar to the 12 (30.0%) of the 40 participants who had engaged in oral, vaginal, or anal sex.

Based on these results, the 40 participants who had engaged in oral, vaginal, and anal sex can be considered high risk, due to associations with the number of sexual partners per year, HPV diagnosis status, and, to a lesser extent, unintended pregnancy. This group was classified as high sexual risk takers. As the 11 participants who had engaged in oral sex only and the 93 participants who had oral and vaginal sex did not significantly differ from one another on sexual activity behavior, these two groups were collapsed into one low sexual risk group category ($n = 104$) for hypothesis testing of research questions one and three. Moreover, as sexual risk-taking group status was not significantly associated with use of pregnancy prevention, pregnancy prevention use was examined separately, in alignment with research question two of the study.

**Hypothesis Testing**

In order to address the first research question, “Do college women with higher academic achievement report more sexual risk-taking practices than those with lower
academic achievement?,” and the third research question, “Do behavioral and sociocultural factors make a difference in risky sexual behavior of college women?,” a logistic regression was conducted (see Table 5). A logistic regression was considered the optimal statistical analysis, as the criterion variable was high sexual risk-taking and low sexual risk-taking groups, a dichotomous variable, and the predictor variables were both categorical and continuous (Muijs, 2008). The criterion variable was coded where 0 = high-risk sexual group (i.e., have had oral, vaginal, and anal sex) and 1 = low sexual risk group (i.e., have had oral sex only or oral and vaginal sex). The predictor variables included the demographic factors of socioeconomic status (as measured by receipt of Pell Grant, 0 = Yes and 1 = No) and religion (i.e., 1 = Catholic, -1 = Protestant, 0 = Agnostic/Atheist); depression; perceived weight; and GPA (i.e., 0 = “B/C” and 1 = “A”).

The results of the binary logistic regression analysis showed that the overall model was not significant, $\chi^2(6) = 8.01, p = .237$. The Nagelkerke $R^2$ value of .073 indicated that the model predictors explained only 7.3% of the variance in the variable of sexual risk-taking group. With regard to univariate effects, GPA was the only significant predictor of sexual risk-taking group membership, $Wald \chi^2(1) = 5.53, p = .019$. A chi-square ($\chi^2$) test of independence was conducted with the dichotomous GPA variable (i.e., “B/C” versus “A”), and the test confirmed the logistic regression significant result, $\chi^2(1) = 6.49, p = .011$. A chi-square ($\chi^2$) test of independence was additionally conducted with the “C” category separated out and was found to be more significant, $\chi^2(2) = 10.36, p = .006$. Results showed that of the two participants who had a GPA of “C”, two (100%) were in the high sexual risk-taking group and that of the 60 participants who had a GPA
of “B”, 38 (63.3%) were in the high sexual risk-taking group. Only 12 (15%) of the “A” GPA self-identified students were part of the high sexual risk-taking group.

Table 5

*Binary Logistic Regression: Pell Grant Status, Religious Group, Depression, Perceived Weight, and GPA Predicting Sexual Risk-Taking Group (N = 144)*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>B</th>
<th>SE</th>
<th>Wald</th>
<th>P</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pell Grant (Y/N)</td>
<td>-.17</td>
<td>.50</td>
<td>.11</td>
<td>.741</td>
<td>.85</td>
</tr>
<tr>
<td>Religion (Group)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Catholic-Agnostic/Atheist</td>
<td>-.11</td>
<td>.46</td>
<td>.06</td>
<td>.813</td>
<td>.90</td>
</tr>
<tr>
<td>Catholic-Protestant</td>
<td>-.19</td>
<td>.48</td>
<td>.16</td>
<td>.693</td>
<td>.83</td>
</tr>
<tr>
<td>Depression</td>
<td>-.02</td>
<td>.03</td>
<td>.54</td>
<td>.462</td>
<td>.97</td>
</tr>
<tr>
<td>Perceived Weight</td>
<td>-.25</td>
<td>.32</td>
<td>.61</td>
<td>.436</td>
<td>.78</td>
</tr>
<tr>
<td><em>GPA</em></td>
<td>-.93</td>
<td>.39</td>
<td>5.53</td>
<td>.019</td>
<td>.40</td>
</tr>
</tbody>
</table>

Prior to conducting analyses for hypothesis testing, descriptive statistics were calculated to determine the frequency of participants in each birth control category (see Table 6). Very few participants ($n = 13, 9.8\%$) did not use any form of birth control during last vaginal intercourse, and only three (2.3\%) participants used withdrawal in place of birth control during last vaginal intercourse. A Kolmogorov-Smirnov $Z$ test was conducted to determine whether there were significant differences in the distribution of participants across categories and to determine if the data violate the assumption of normality. It was found to be significant, $Z(135) = 3.95, p < .001$. There were significantly higher numbers of study participants ($n = 83, 62.4\%$) who used birth control pills during last vaginal intercourse as compared to the number of participants who did not use any method of disease or pregnancy prevention and participants who used other
forms of pregnancy prevention during last vaginal intercourse (see Table 6 for frequencies).

Table 6

*Birth Control Use Last Vaginal Intercourse: Categories (N = 133)*

<table>
<thead>
<tr>
<th>Birth Control Category</th>
<th>Frequency</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did not use birth control</td>
<td>13</td>
<td>9.8</td>
</tr>
<tr>
<td>Did not use birth control, used withdrawal method</td>
<td>3</td>
<td>2.3</td>
</tr>
<tr>
<td>Used birth control pills</td>
<td>83</td>
<td>62.4</td>
</tr>
<tr>
<td>Used male condom</td>
<td>26</td>
<td>19.5</td>
</tr>
<tr>
<td>Used other type of birth control (e.g., IUD, birth control shots)</td>
<td>8</td>
<td>6.0</td>
</tr>
</tbody>
</table>

Note. N = 133 as the participants (n = 11) who had only had oral sex were not included.

The second research question for the study was, “Do women of a higher socioeconomic status choose birth control over disease prevention in their sexual encounters?” To test this research question via binary logistic regression, birth control use categories were collapsed into two categories: (a) those female students who used pregnancy prevention methods (e.g., birth control pill, birth control patch, IUD) the last time they had vaginal intercourse (n = 91) and (b) those female students who used disease prevention methods via the use of a male condom only the last time they had vaginal intercourse (n = 26). The n = 16 female students who did not use birth control or used withdrawal the last time they had vaginal intercourse were not included in this analysis.

Socioeconomic status was the predictor of interest, and it was measured by: (a) perceived financial difficulties in past 12 months (yes/no), (b) hours worked per week, and (d) receipt of Pell Grant (yes/no).
The overall model was not significant, $\chi^2(3) = 2.62, p = .454$. The Nagelkerke $R^2$ value of .034 indicated that the model predictors explained only 3.4% of the variance in the variable of use of birth control for pregnancy prevention versus disease prevention. With regard to univariate effects, having financial difficulties did not predict pregnancy prevention versus disease prevention status, $Wald(1) = .23, p = .632$, nor did hours worked per week or Pell Grant status, $Wald(1) = .87, p = .350$ and $Wald(1) = .92, p = .339$, respectively (see Table 7).

Table 7

*Binary Logistic Regression: Socioeconomic Factors Predicting Birth Control Use (N = 117)*

<table>
<thead>
<tr>
<th>Predictors</th>
<th>$B$</th>
<th>$SE$</th>
<th>$Wald$</th>
<th>$p$</th>
<th>Exp(B)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Financial difficulties (Y/N)</td>
<td>.22</td>
<td>.46</td>
<td>.23</td>
<td>.632</td>
<td>1.250</td>
</tr>
<tr>
<td>Hours worked per week</td>
<td>-.17</td>
<td>.18</td>
<td>.87</td>
<td>.350</td>
<td>.843</td>
</tr>
<tr>
<td>Pell Grant (Y/N)</td>
<td>.52</td>
<td>.54</td>
<td>.92</td>
<td>.339</td>
<td>1.675</td>
</tr>
</tbody>
</table>

*Note. $\chi^2(3) = 2.62, p = .454*

To provide a more detailed understanding of the relationship between Pell Grant status and birth control purpose (i.e., pregnancy prevention or disease prevention), a chi-square ($\chi^2$) test of independence was conducted (see Table 8). The chi-square ($\chi^2$) test of independence was not significant, $\chi^2(1) = 1.44, p = .230$. Despite this non-significance, there were 76 (80.0%) female students who used a method of birth control as a means of pregnancy prevention and who did not have a Pell Grant as compared to 19 (20.0%) female students who used a method of birth control as a means of disease prevention and who did not have a Pell Grant.
Table 8

*Chi-square (χ²) Test of Independence: Pell Grant Predicting Birth Control Use (N = 117)*

<table>
<thead>
<tr>
<th>Pell Grant Status</th>
<th>Pregnancy Prevention</th>
<th>Disease Prevention</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>76</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>(80.0%)</td>
<td>(20.0%)</td>
</tr>
<tr>
<td>Yes</td>
<td>15</td>
<td>7</td>
</tr>
<tr>
<td></td>
<td>(68.2%)</td>
<td>(31.8%)</td>
</tr>
</tbody>
</table>

*Note.* χ²(1) = 1.44, *p* = .230. Percentages in parentheses reflect percentages within Pell Grant status

To provide a more comprehensive understanding of the relationship between health insurance status and birth control use, a chi-square (χ²) test of independence was conducted. The predictor variable of health insurance was categorized as (a) on university health plan, (b) on parents’ health insurance plan, and (c) do not have health insurance. The criterion variable of birth control use was categorized as (a) no, did not use birth control during last vaginal intercourse and (b) yes, did use birth control during last vaginal intercourse. The chi-square (χ²) test of independence showed a trend toward significance, χ²(2) = 5.51, *p* = .064. Results showed that, of the 16 participants who did not use any method of birth control during last vaginal intercourse, 12 (75%) of these participants were on their parents’ health insurance plan, as compared to two (12.5%) of participants who used their university health insurance plan and two (12.5%) who did not have health insurance.
Post Hoc Analyses

To provide a more comprehensive understanding of the predictors of sexual risk taking and birth control use, additional statistical analyses were conducted with regard to the predictor variables related to the constructs of depression and satisfaction with weight and weight loss. A series of chi-square ($\chi^2$) tests of independence were conducted to examine the associations between depression variables and the sexual risk-taking and birth control use behaviors. With regard to the relationship between having received a diagnosis of depression within the past year and sexual risk taking, the chi-square ($\chi^2$) tests of independence was significant, $\chi^2(2) = 14.20, p = .007$. Within the sexual risk-taking groups, significantly higher numbers of high sexual risk takers ($n = 11, 27.5\%$) as compared to low sexual risk takers ($n = 7, 6.7\%$) had been diagnosed with depression. With regard to the relationship between ever having received a diagnosis of depression and sexual risk taking, the chi-square ($\chi^2$) tests of independence was significant, $\chi^2(2) = 6.25, p = .012$. Significantly higher numbers of high sexual risk takers ($n = 16, 41\%$) as compared to low sexual risk takers ($n = 21, 20.4\%$) had been diagnosed with depression within their lifetime. There were no significant associations between any measures of depression and birth control use.

With regard to the relationship between dieting to lose weight in the past 30 days (yes or no) and sexual risk taking, there was a trend toward significance, $\chi^2(2) = 3.46, p = .063$. Higher numbers of high sexual risk takers ($n = 25, 62.5\%$) as compared to low sexual risk takers ($n = 47, 45.2\%$) had been dieting in the past month to lose weight. The relationship between ever having received a diagnosis of bulimia and birth control use behavior was significant, $\chi^2(2) = 32.22, p < .001$. Of the two participants diagnosed as
having bulimia, 100% used another type of birth control (e.g., IUD) as compared to using birth control pills or male condoms. With regard to the relationship between having vomited or used laxatives to lose weight in the past 30 days (yes or no) and birth control use behavior, there was a trend toward significance, \( \chi^2(2) = 8.90, p = .064 \). Of the eight participants who reported having vomited or used laxatives to lose weight, seven (87.5%) had used a form of birth control, whether it is birth control pills, male condom, or other type of birth control, such as an IUD.
Chapter Five

Discussion and Conclusions

Purpose and Questions

The primary purpose of this study was to examine the sexual habits of Caucasian college women and see how those habits were impacted by social factors like socioeconomic status, race, and behavioral variables such as academic achievement, body weight, and depressive symptoms. The study intended to examine differences between women who report high academic achievement (“A” grade point average) and those who do not report “A” averages in their sexual risk taking. A secondary purpose was to see if there was a difference based on socioeconomic status in choice of disease or pregnancy prevention for sexual encounters. Finally, the third purpose of this study was to see if behavioral or sociocultural factors impacted sexual risk taking of college women.

The number of college women who are practicing high-risk sexual activity is unknown, largely because it is unreported and difficult to document in a reliable method. In this study, using a standardized and reliable instrument for measurement, the data was collected online in spring 2010 using the American College Health Association - National College Health Assessment II from a large, Catholic, urban institution in the Midwest. The goal of the research was to discover how educational interventions and resources might need to be allocated given the data and to raise awareness of professionals working with college students of the sexual risk taking done by college women on campus.

The primary questions that the researcher aimed to answer are the following:

1. Do college women with higher academic achievement report more sexual risk-taking practices than those with lower academic achievement?
2. Do women of a higher socioeconomic status choose pregnancy prevention over disease prevention in their sexual encounters?

3. Do behavioral and sociocultural factors (body weight and reported depressive symptoms) make a difference in risky sexual behavior of college women?

**Significance of Findings**

While the specific research question linking high sexual risk taking to high academic achievement was not proven to be significant, a new finding of significance tied to academic achievement did emerge from the study. The significance tied to academic achievement was that the lower the average grades of a college female, the more likely it is that her sexual risk taking is increased. The study found increases in the likelihood a college woman would be exhibiting high sexual risk taking as her reported grade point average decreases. There was a statistically significant difference between students who reported an “A” average to a “B” average, and from the “B” average to a “C” average. The study participants who said they had a “C” average were all (100%) in the high sexual risk-taking group, and 63% of the group who identified as having a “B” average were in the high sexual risk-taking group. Significance was found in the number of sexual partners in the last year between those in the high sexual risk-taking group (engaged in oral, vaginal, and anal) and those in the low-risk group (oral and vaginal only). The significant difference in the number of sexual partners was even greater for the high-risk group from the oral sex only group.

The group of college women who were in the high sexual risk-taking group was also significantly more likely to report having been diagnosed with genital human papillomavirus (HPV), the most common STI in the United States. There are over 100
different types of HPV, nearly half of which can lead to cancers in the penis, throat, cervix, anus, vagina, or vulva regions of the human body (Hariri, Dunne, Saraiya, Unger, & Markowitz, 2011; Watson, Saraiya, & Wu, 2009; Weinstock et al., 2004).

Overall the study wanted to examine the impact of mental health for college women and their sexual risk taking. A great deal of research indicated that the cycle of depressive symptoms for women can lead to sexual risk taking, and then the sexual risk taking leads to greater depression, and the cycle continues (Grello et al., 2006). This study also affirmed prior research that there was a significant difference in the sexual risk taking between college women who had been diagnosed with depression in the last year. Of those who were high sexual risk taking in the last year, 27.5% of the group had been diagnosed with depression in the last year, compared to only 6% of the low sexual risk-taking sample group. When looking at the impact of a diagnosis of depression over the lifetime of a college student, the findings were still significant—with 41% of the college females in the high sexual risk-taking group being diagnosed with depression in their lifetime, compared to only 20% in the low sexual-risk taking group. This study supports the connection between mental health (depressive symptoms) and sexual risk taking for college women.

Related to mental health, when looking at the women who reported an eating disorder diagnosis (two), specifically bulimia, there was a significant difference in the type of prevention they used – they did not use pills or condoms, but rather another form (IUD) that would not impact effectiveness given their eating disorder.


Discussion

During the preliminary data analysis, it appeared that the sexual risk-taking scales used in other research were not consistent and were not useful given the data set being examined in this study. Therefore, a new sexual risk-taking subscale was created using the differences in the data that were apparent – 77.8% of the participants had never engaged in anal sex, and only 22% had engaged in oral, vaginal, and anal sex. This sexual risk-taking subscale worked for this research because the sample size was not big enough to use any of the other previously used scales. High sexual risk taking was classified as those who had engaged in oral, vaginal, and anal sex in the last year due to the associations with the higher number of sexual partners and the HPV diagnosis.

Approximately 20% of the sample of college women studied have been abstinent up to the point of the survey, meaning they never engaged in oral, anal, or vaginal sex. Additionally, 22% of the sample had engaged in all three sexual acts. This vast difference in sexual activity being engaged in by relatively equal portions of the female students presents the wide array of implications for health center staff and professionals working with students in an educational setting.

Another statistic is that, of the participants in the study who did engage in vaginal intercourse, a little over 12% said they did not use any method of birth control or used withdrawal as their preferred method of contraception. While those students are not a majority of the study, since the possible implications for their future sexual encounters includes sexually transmitted infections and/or pregnancy, it is important to note that element of the data for administrators and for possible educational programs. Demonstrating how quickly that 12% could pass on sexually transmitted diseases could
assist in raising the probability of using a scientifically proven method of pregnancy and/or disease prevention. An example of how that might be able to be compounded over 10 years would be to take the average number of partners that 12% had in the last year, multiple it by 10 (over a number of years) to demonstrate the number of diseases that could be transmitted, how quickly they can be spread, and how many people can be infected.

Consistent with the literature, the majority of the participants in the survey did select birth control pills as their preferred contraception method – a total of 62.4%. A total of 80.5% of the female students in the survey chose pregnancy prevention only OR no prevention at all – which opens a large amount of students to sexually transmitted infections. While the study did not find a significant difference between those with higher socioeconomic status to use pregnancy prevention over disease prevention, the overall finding of so few students using disease prevention (male condoms) could have a high and long-term impact on the women (and the men they have having sex with) in this study (Raj & Pollack, 1995).

Related to the birth control methods research question, 23% of those who had vaginal sex had used emergency contraception in the last year. There was not a statistically significant difference between the higher sexual risk group using emergency contraception and those in the lower sexual risk-taking group. This study found that one in five women who were sexually active have used emergency contraception, which appears to be a relatively high number considering that it has only been available over the counter since August 2006 to women 18 years and older (Katherine Dexter McCormick Library, 2011).
The findings of the women who reported a diagnosis of bulimia not using the birth control pill (when effectiveness would be impacted by the eating disorder) is significant and meaningful. This finding is meaningful because it shows a conscious, less common choice by the women of their sexual activities and how to choose methods of protection that will still be effective for the women, given their disordered eating habit.

The significant difference in the number of sexual partners means the high sexual risk-taking group who are engaging in oral, vaginal, and anal sex continues to increase their sexual risk taking with multiple partners. A cycle seems to be present that the more likely women are to have had anal sex, the more likely they are to have a higher number of sexual partners than someone who has not had anal sex. The addition of anal sex without any protection and with more partners makes those students even more susceptible to contracting sexually transmitted diseases and passing them on to their future partners. A note should also be made that 84% of the college women in the study had three or less sexual partners in the last year. This statistic includes the 5.6% of the women who have had sex, but not in the last year and who therefore reported zero partners in the last year.

**Implications**

We have an epidemic in higher education regarding the sexual risk taking of college students, in particular women. This research shows the link between mental health and sexual risk taking – 41% of those in the high SRT group had been diagnosed in their lifetime with depression compared 20% of the low SRT. Of that group, 28% of high SRT had been diagnosed in the last year – which means for many it was since they had been in college. Nearly half of the women who participated in anal sex in their
lifetime had also been diagnosed with depression. The link between mental health and sexual activity through this study is clear – while not causal, it is a high enough percentage that college administrators and parents should take note.

Additionally, this study found that 81% of participants choose pregnancy prevention or no prevention at all during sexual intercourse. Accompany that statistic with two others—only 20% are using protection from diseases and only 37% total reported ever being tested for HIV—and the epidemic is obvious. Many college students are not protecting themselves in sexual encounters from diseases and are not being tested to know if they are already carriers. The combination of these two statistics, plus the reported diagnosis of nine women with herpes, 34 with genital warts, two with gonorrhea, one with HIV, and eight with Chlamydia means that these diseases are only likely to increase dramatically in the four to six years each student spends in college.

While 20% of the women who fit the study’s demographic criteria were virgins or participated in oral sex only (6%), the majority of the women who have participated in oral sex by college age have also had vaginal intercourse (51.7%). The majority of college women had participated in some, or multiple, types of sexual intercourse (oral, vaginal, and/or anal). Educators and parents should note the low (20%) of participants practicing abstinence. Oral sex will be a new topic for some who have not participated in it before, and it would be important to recognize that 20% when offering education on college campuses.

Finally, anal sex proved to be a major risk factor for many reasons stated previously, additionally though, 67% of those women who had anal sex in the last 30 days never or rarely used a barrier. Since pregnancy is not a concern with anal sex, and
over 80% are not using disease prevention with their vaginal intercourse, this statistic may not be surprising. However, with the increased risk of disease transmission through anal intercourse, and so few using a barrier, the potential for spread of diseases is also very high with those students who are participating in anal sex. Overall, the lack of protection against diseases used by this population of women is concerning and has the potential for very long term implications on their health and the health of their future sexual partners and potentially children. Prior research has not looked specifically at the sexual risk taking of Caucasian college women who are affluent and high-achieving academically – this study demonstrates that the risk taking regarding the lack of disease prevention sexually, in this population, is dangerous.

The additions to the body of literature and knowledge for higher education are far reaching. One of the points of reflection, given the research, needs to be on the question of how has society created, according to many statistics, more promiscuous women in present day than any group of females before. In looking back to the women’s liberation movement, a time period in American history where a sexual revolution was also part of the movement, it might be possible that society has gone much further than originally even thought possible – with more promiscuous women, more women in college, more women choosing not to marry, and more women choosing not to have children. It is possible that the continuum of progress and independence for women has reached a significant marker in history for American culture in reference to these data points. It would be important to recognize there are still many data points at which women are not achieving at the rate of men in pay equity for work or in senior level positions in higher education or corporate America. Women’s beliefs are more wide-reaching than perhaps
ever before in society—from the traditional, conservative stay-at-home mother who was much more prevalent in the 1960s and ‘70s, to the modern working woman with children, to the executive-level working woman with children (e.g., Facebook COO Sheryl Sandburg or Yahoo! CEO Marissa Meyer), to the working, high-achieving woman without a partner or children (e.g., Condoleezza Rice), to the images of women in the media, often sexualized in dress, emotional, and depicted as helpless.

When thinking about causes for sexual risk taking with college women, it is evident that the social norms around sexuality, especially before marriage, have evolved over time. A significant factor having an impact on sexuality in our culture is the media, including television, magazines, movies, music, and social media. It was much more difficult to know what college students were wearing to parties or doing at parties—or even to hear about someone’s dating or sex life—prior to the internet. Presently, a student can know about many of the sexual interactions of multiple people by just opening their laptop computer. This is not a judgment about the sexuality in media, but more a question if our society has become de-sensitized to sex, specifically casual sex, especially women. 

Sex and the City was a groundbreaking show when it originally aired in the 1990s. It was groundbreaking because it featured four female characters in their late 30s, none of whom were married or had children, and who frequently would talk during breakfast together about their latest sexual relationships. The show featured a lead character who had had numerous sexual relationships with both men and women and who was very powerful and successful in her career. The images current college students grew up with in the media are those of the women of Sex and the City, women glorified in the Sports Illustrated swim suit issue, American Pie movies, and the switch from music videos
being only those suited for broadcasting on cable television to those unrated and visible on the internet. The media’s “sex sells” mantra has had an impact on the way college students were cultured growing up with respect to sexual relationships and what is an attractive way for women to behave.

As a society, we need to be aware of the implications of sexually transmitted diseases on both the young people on college campuses and their future. While the study shows that students are choosing pregnancy prevention over disease prevention, these diseases will only become more widespread as a monogamous relationship (traditionally solidified through marriage) happens at a later and later age. People staying single longer and practicing pregnancy prevention only during sexual encounters will spread disease more than when an earlier onset of monogamy occurred. Additional reasons the prevalence of the disease will grow is because during the years in between college and marriage (if desired) those individuals accumulate more and more sexual partners. Some of the diseases that are most common are lifelong, can be passed on through childbirth from mother to child, can cause cancer, and are incurable. The study and data demonstrate that along with other societal health issues for adults, preventable sexually transmitted disease rates could become even higher with the current college generation, resulting in many more adults out of college having incurable disease than ever before. The long-term ramifications for that related to missed days at work or increased cost in medical expenses will remain to be seen for now, but could result from the casual sex that is commonplace on many college campuses.

As a society we need to think about how we are educating all girls and young women to be good communicators and to have self-esteem. The study demonstrates the
connection between depressive symptoms and sexual risk taking—but depressive symptoms and how a young woman feels about herself and her body is engrained long before college. Perhaps the images in the home and in the media are not focusing on helping young girls see themselves as valuable without a boy being attracted to them. Perhaps more programming is needed outside of the classroom to help teach young people self-worth. Additionally, if a young girl hears her own mother be self-deprecating about her own physical appearance, it is reinforcing the value of looks and teaching the girl what could be “wrong” with her in the future. At the same time, the absence of fathers in young girls’ lives can have a lifelong impact. The first male relationship that a young girl can have would be with her father. If her father treats her well, comments on more than her physicality, and treats the mother well in front of the girl, that will make a difference. With our society having more than half of marriages end in divorce, many homes are split and so is the time children spend with their parents. In single-parent households, it is even more challenging to ensure role models of both genders to demonstrate healthy, respectful relationships between men and women. As a society, we have to think about what messages are being sent to children through advertising—especially young girls—through television shows, magazines, and music. The access young children have to adult content is unprecedented with the internet, even if parents are being mindful of what is happening within their household. Teachers in middle schools are talking about oral sex happening between their students and the need for sex education awareness at younger and younger ages; however, society struggles with who should be educating children about sex (schools or parents) and the message at many schools is abstinence. In addition, sex education is not revisited in college environments,
where we acknowledge that abstinence is not a common choice made by many students. Society has observed how sexualized images of women and casual sex relationships have been present, but perhaps the missing link is that we are still not comfortable talking about it, especially with young, impressionable children or adults. While we have ‘progressed’ to having women own their sexuality in the media, parents and teachers have not grown more comfortable in facilitating a dialogue about what it means for confused children or young women looking to imitate a celebrity performer by choosing a sexy Halloween costume. As a society, maybe the adults who have not engaged in this level of sexual risk taking also need to educate themselves about the reality of the research in this study and start to think about how they are going to help their sons, daughters, nieces, nephews, and neighbors with making life-altering decisions. The lifelong decision goes beyond a sexually transmitted disease, because with the internet, people can post things about someone they have had casual sex with, including pictures and/or video. While these images can be taken down, there are many people who can navigate to retrieve online content that could impact college student’s ability to find employment and have a negative impact on personal relationships in the future.

The implications for women of this research and the discussion of how young women came to this point of regularly participating in casual sex without any form of disease prevention are imperative to empower and educate young girls and women in the future. The research does not present a judgment about casual sex, but rather evidence regarding the lack of disease prevention, the long-term implications, and the possible causes of the increase of casual sex on college campuses. Additionally, the impact of the first sexual experience for women can have major implications on the ability to develop
intimate partner relationships in the future and frequency of casual sex as an adult. Since some young adults have their first sexual experience prior to college, this is an educational piece of information for parents and teachers to take note of when having discussions with young women prior to their first sexual encounter. While teaching self-worth to women (particularly Caucasian women), it will be important to return to the old adage that “beauty comes from within” and treating one’s body and mind kindly and respectfully could really make a difference. Perhaps with the focus on childhood obesity and eating more nutritious food and getting exercise, women can also speak with girls about overall respect for their body.

Administrators in higher education should think about health education and identifiers they use to target interventions for at-risk students. The research in this study demonstrates that while targeting students who have depressive symptoms and/or who are not meeting academic requirements, the interventions should all be around wellness and risk education. The students who are academically lower performing are also more likely to be engaged in sexual risk taking, especially Caucasian women. Instead of just addressing the academics needed to be in good standing, could the university intervention include a broad range of interventions? On larger college campuses, perhaps the academic advisor role is too narrowly defined as one that does not regularly partner with health services and counseling services when meeting with students who are not meeting academic requirements – but what if staff members worked in partnership? What if campuses used this research empower academic advisors and other staff to implement an overall risk checklist and approach interventions holistically instead of just worrying about their respective silos’ responsibilities? The counseling center staff is impacted in
their work if a low-performing student is also using substances and taking tremendous sexual risk, but they cannot be the only people on campus who are aware of the connections between the risk data points.

Overall, the purpose of the research presented here is to assess current sexual risk-taking practices by Caucasian women and to see what we (as a society, as higher education administrators, as parents and families of girls and women) can do to care more for them. The current practices will lead to unknown long-term outcomes, but we must be willing to ask and address some questions: How and why did young women become more promiscuous? What and where are young girls learning about their own sexuality? What do we need to be doing to help boys and men understand the long-term impact this has on them? The reality is that college women are frequently having sex without preventing diseases, and emergency contraception is being used to “prevent” pregnancy after risky sex. If society is not willing to care enough to talk about these patterns, we have no reason to believe the risky behavior will curb itself. With the establishment of the fact that sexually transmitted diseases lead to cancer in both men and women, an ethic of care for health might be just the reason for parents and society to become more comfortable discussing sex. This research and the body of literature present a call to action to care for the mental health of girls and women and to increase disease prevention contraceptive device use in sexual relationships among young people.

Limitations of Research

While trying to measure socioeconomic status, Pell Grant was the only income-specific variable available for analysis; however, many different variables could have been used that might have been more accurate for analysis. The factors that could be used
when measuring socioeconomic status include the following: if the student applied for federal aid (loans, work study) when applying to college, the expected family contribution from the Free Application for Federal Student Aid (FAFSA), or an estimate of family income levels. The difficulty in asking students about their family income is that there is tremendous room for error. However, coming up with a reliable indicator of socioeconomic status for use with the NCHA II would be helpful for campuses with students with diverse economic backgrounds. When using the Pell Grant question as a variable for analysis, some participants could have been left out of analysis that have lower socioeconomic status but are ineligible for Pell Grants due to not qualifying for federal aid, like being an undocumented student for example. There was a gap in the literature about sexual habits of college students based on socioeconomic status, and this gap attributed to the difficulty of the study. Perhaps this information is also not widely available because there is not a significant difference in sexual risk taking based on socioeconomic status.

Another limitation with the instrument was the scale for grades. The self-reported grade point average scale was a limitation, because the research is relying on an honest assessment of grades. The scale used for the grade point average being letter grades instead of incremental and continuous numbers (4.0, 3.5, 3.0, etc.) was a limitation.

The sexual risk-taking scale used in the data analysis was different than the ones used in other studies. While there was no consistent sexual risk-taking scale present in the literature, the scale used has not been tested for reliability or validity. Likewise, the other scales cited in the literature had only each been used by one researcher and had not been tested for reliability and validity.
The size of the data was much larger before placing limits based on the research questions. The starting size of the sample of just females who completed the survey was 542, however, when limiting by full-time student status, not married, and between 18-24 years of age, the sample shrunk. Ideally, the sample would have originally included more participants who fit the research criteria. Additionally, the participants were a convenient sample.

The response rate was lower than desired for this survey, but it still provided rich data to be expanded on in the future. Additionally, the initial response rate included many students who were left out of the data analysis because of the research questions (racial/ethnic minorities, male, graduate students), so the results could not be applied to the entire university, but only to the specific demographic analyzed.

**Recommendations for Practice and Further Research**

Future research could include a study of the material in the national data set using a similar methodology that could support the findings in the study of one institution. The American College Health Association collates all data by the semester it is collected, and it could be used with a similar statistical analysis, providing a more diverse sample to study. Utilization of the study at colleges and universities abroad may also present some interesting comparison data and might highlight what patterns are universal and those specifically tied to American culture. Additionally, research could look more specifically at the reasons through a qualitative methodology of why students engage in the sexual risk taking they do in order to assist practitioners with educational offerings for college students. Students reported that they find the information from health educators, administrators, and faculty to be more believable and reliable regarding health-related
information than their peers, which would suggest educating the faculty and staff at schools is extremely important to ultimately help students (American College Health Association, 2009; Kadison & DiGeronimo, 2004; Kooyman et al., 2011).

More research could be done regarding sexual risk taking and women with eating disorders. It is interesting with this small sample that the women were choosing to have pregnancy prevention in a method that would be effective even with their eating disorder. The selection of a device that is clearly not the most popular with this sample (i.e., birth control pills) shows a level of care for them that would be interesting to examine juxtaposed with the bulimic actions that are causing harm to their bodies.

The low percentage of students using disease prevention (less than 20%) in this study suggests education and availability of resources regarding the importance of pregnancy AND disease prevention is much needed. Perhaps when doing further research, one could look more into the reasons that students are choosing pregnancy prevention over disease prevention. With the use of the emergency contraception being one in five students, perhaps the education could focus on the fact that cures for many sexually transmitted diseases are not available over the counter.

Educational administrators should note the significant differences and links between academic achievement and sexual risk taking. Educational leaders should focus on how they can assist with more targeted information regarding the link between grades and sexual risk taking through academic advisors. Additionally, this could be a reason to see more partnerships between the academic affairs units and health centers on campus to show a joint interest in the wellness of students, including their sexual health.

Implications for practice could be to make sure that health centers (including counseling)
are part of the discussions with students who are not in good academic standing. The literature and this study demonstrate the link between sexual risk taking and depressive symptoms, so including academic performance should be a discussion that many parties are privy to in order to address the overall wellness of students.

Overall, colleges and universities need to include educational offerings in consideration of Caucasian women in the efforts to reduce sexual risk taking. Also, this study may call on redefining who we target and view as high risk on college campuses. Finally, we need to understand why women are choosing pregnancy prevention over STI prevention in their sexual encounters. Are women compromising their intellectual awareness of sexual risk taking in these encounters because approval of a man is more important than protecting their health? We must try to figure out, as educators, how to assist our young people in reducing the sexual risk taking happening on college campuses, and in turn, in reducing its lifelong impact.

In summary, if perceptions of the positive outcomes of unprotected sex, combined with the inability to resist temptation and low self-efficacy for safer sex, are the best predictors of sexual risk-taking among college-age youth, then assessment of the benefits and costs associated with condom use per se may not be useful. Instead, assessment of the perceived benefits (and potentially the costs) for unprotected sex should be emphasized, in order to better identify those adolescents more likely to be at risk for HIV infection through sexual risk-taking behaviors (Parsons, Halkitis, & Bimbi, 2000).

A recommendation for further research would be to use a similar data analysis utilizing the national data set to see any trends and compare to campus statistics for sexual risk taking, academic achievement, and depressive symptoms of college women.
The national data set would also provide a more diverse sample to allow for analysis by race and/ethnicity.

Finally, a recommendation would be to further explore the sexual intelligence that some young people have to choose protection against pregnancy and diseases, and why others (even with high academic achievement) are choosing to only protect against pregnancy. Exploring the relationship between academic achievement, emotional intelligence, and sexual decision making (sexual intelligence) could be impactful for society in general and parents and educators in particular.
Appendix A

ACHA NCHA II
1362 Mellon Road,  
Suite 180  
Hanover, MD 21076  
Tel: (410) 859-1500  
Fax: (410) 859-1510  
www.acha.org

July 11, 2013

Shannon Greybar Milliken,  
M.S. 1404 Blackmore Dr.  
Cleveland Heights,  
OH 44118

Dear Shannon,

You have permission to include a copy of the American College Health Association – National College Health Assessment survey instrument as an appendix in your doctoral dissertation entitled “Kissing and Telling: Sexual Risk Taking among college women.”

Per the ACHA-NCHA data use agreement, we would appreciate an electronic copy of your dissertation once it’s completed.

Best of luck with your studies. Sincerely,

Mary Hoban, PhD, CHES  
Director, ACHA-NCHA Program Office

Enclosure: ACHA-NCHA Data Use Guidelines and Agreement
**Instructions:**

The following questions ask about various aspects of your health.

To answer the questions, fill in the oval that corresponds to your response.

Select only one response unless instructed otherwise.

Use a No. 2 pencil or blue or black ink pen only. Do not use pens with ink that soaks through the paper.  

**CORRECT: ☐  INCORRECT: ✓ ☓**

This survey is completely voluntary. You may choose not to participate or not to answer any specific question. You may skip any question you are not comfortable in answering.

Please make no marks of any kind on the survey which could identify you individually.

Composite data will then be shared with your campus for use in health promotion activities.

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Thank you for taking the time and thought to complete this survey.  
We appreciate your participation!

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American College Health Association

National College Health Assessment

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### Health, Health Education and Safety

1. **How would you describe your general health?**
   - Excellent
   - Very good
   - Good
   - Fair
   - Poor
   - Don’t know

2. **Have you received information on the following topics from your college or university?**

   (Please mark the appropriate column for each question to the right)

<table>
<thead>
<tr>
<th>Topic</th>
<th>No</th>
<th>Yes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcohol and other drug use</td>
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<tr>
<td>Cold/Flu/Sore throat</td>
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<tr>
<td>Depression/Anxiety</td>
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<td>Eating disorders</td>
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<td>Grief and loss</td>
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<tr>
<td>How to help others in distress</td>
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<tr>
<td>Injury prevention</td>
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<td>Nutrition</td>
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<td>Physical activity</td>
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<tr>
<td>Pregnancy prevention</td>
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<tr>
<td>Problem use of Internet/computer games</td>
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<tr>
<td>Relationship difficulties</td>
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<tr>
<td>Sexual assault/Relationship violence prevention</td>
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<tr>
<td>Sexually transmitted disease/Infection (STD/I) prevention</td>
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<td>Sleep difficulties</td>
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<td>Stress reduction</td>
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<td>Suicide prevention</td>
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<tr>
<td>Tobacco use</td>
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<tr>
<td>Violence prevention</td>
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</tbody>
</table>

3. **Are you interested in receiving information on the following topics from your college or university?**

   (Please mark the appropriate column for each question to the right)

4. **Within the last 12 months, how often did you:**

   (Please mark the appropriate column for each row)

   **N/A, did not do this activity within the last 12 months**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Always</th>
<th>Most of the time</th>
<th>Sometimes</th>
<th>Rarely</th>
<th>Never</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wear a seatbelt when you rode in a car?</td>
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<tr>
<td>Wear a helmet when you rode a bicycle?</td>
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<tr>
<td>Wear a helmet when you rode a motorcycle?</td>
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<tr>
<td>Wear a helmet when you were inline skating?</td>
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</tbody>
</table>

5. **Within the last 12 months:**

   (Please mark the appropriate column for each row)

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
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</thead>
<tbody>
<tr>
<td>Were you in a physical fight?</td>
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<td>Were you physically assaulted (do not include sexual assault)?</td>
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<td>Were you verbally threatened?</td>
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<td>Were you sexually touched without your consent?</td>
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<tr>
<td>Was sexual penetration attempted (vaginal, anal, oral) without your consent?</td>
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<tr>
<td>Were you sexually penetrated (vaginal, anal, oral) without your consent?</td>
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<tr>
<td>Were you a victim of stalking (e.g., waiting for you outside your classroom, residence, or office; repeated email/phone calls)?</td>
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</tbody>
</table>
6. Within the last 12 months, have you been in an intimate (coupled/partnered) relationship that was:
   (Please mark the appropriate column for each row)
   - Emotionally abusive? (e.g., called derogatory names, yelled at, ridiculed)
   - Physically abusive? (e.g., kicked, slapped, punched)
   - Sexually abusive? (e.g., forced to have sex when you didn’t want it, forced to perform or have an unwanted sexual act performed on you)
   - Yes
   - No

7. How safe do you feel:
   (Please mark the appropriate column for each row)
   - On this campus (daytime)?
   - On this campus (nighttime)?
   - In the community surrounding this school (daytime)?
   - In the community surrounding this school (nighttime)?
   - Very safe
   - Somewhat safe
   - Somewhat unsafe
   - Not safe at all

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### Alcohol, Tobacco, and Drugs

8. Within the last 30 days, on how many days did you use:
   (Please mark the appropriate column for each row)
   - Cigarettes
   - Tobacco from a water pipe (hookah)
   - Cigars, little cigars, clove cigarettes
   - Smokeless tobacco
   - Alcohol (beer, wine, liquor)
   - Marijuana (pot, weed, hashish, hash oil)
   - Cocaine (crack, rock, freebase)
   - Methamphetamine (crystal meth, ice, crank)
   - Other stimulants (diet pills, benzos)
   - Sedatives (downers, ludes)
   - Hallucinogens (LSD, PCP)
   - Anabolic steroids (Testosterone)
   - Opiates (heroin, smack)
   - Inhalants (glue, solvents, gas)
   - MDMA (Ecstasy)
   - Other club drugs (GHB, Ketamine, Rohypnol)
   - Other illegal drugs

   - 3-5 days
   - 1-2 days
   - 6-9 days
   - 10-19 days
   - 20-29 days
   - Used daily
   - Have used, but not in last 30 days
   - Never used

---

PAGE THREE

PLEASE DO NOT WRITE IN THIS AREA

SERIAL #
9. Within the last 30 days, how often do you think the typical student at your school used:

(State your best estimate; Please mark the appropriate column for each row)

<table>
<thead>
<tr>
<th>Substances</th>
<th>3-5 days</th>
<th>6-9 days</th>
<th>1-2 days</th>
<th>10-19 days</th>
<th>20-29 days</th>
<th>Used daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cigarettes</td>
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<tr>
<td>Tobacco from a water pipe (hookah)</td>
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<tr>
<td>Cigars, little cigars, cube cigarettes</td>
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<tr>
<td>Smokeless tobacco</td>
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<td>Alcohol (beer, wine, liquor)</td>
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<td>Marijuana (pot, weed, hashish, hash oil)</td>
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<td>Cocaine (crack, rock, freebase)</td>
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<td>Methamphetamine (crystal meth, ice, crank)</td>
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<td>Other amphetamines (diet pills, benzos)</td>
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<td>Sedatives (downers, ludes)</td>
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<tr>
<td>Hallucinogens (LSD, PCP)</td>
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<td>Anabolic steroids (Testosterone)</td>
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<tr>
<td>Opiates (heroin, smack)</td>
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<tr>
<td>Inhalants (glue, solvents, gas)</td>
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<tr>
<td>MDMA (Ecstasy)</td>
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<tr>
<td>Other club drugs (GHB, Ketamine, Rohypnol)</td>
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<td>Other illegal drugs</td>
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</tbody>
</table>

One drink of alcohol is defined as a 12 oz. can or bottle of beer or wine cooler, a 4 oz. glass of wine, or a shot of liquor straight or in a mixed drink.

10. The last time you “partied”/socialized how many drinks of alcohol did you have? (If you did not drink alcohol, please enter 00. If less than 10, enter 01, 02, 03, etc.)

<table>
<thead>
<tr>
<th>Drinks</th>
<th>D</th>
<th>R</th>
<th>I</th>
<th>N</th>
<th>K</th>
<th>S</th>
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</thead>
</table>

11. The last time you “partied”/socialized over how many hours did you drink alcohol? (If you did not drink alcohol, please enter 00. If less than 10, enter 01, 02, 03, etc.)

<table>
<thead>
<tr>
<th>Hours</th>
<th>H</th>
<th>O</th>
<th>U</th>
<th>R</th>
<th>S</th>
</tr>
</thead>
</table>

12. How many drinks of alcohol do you think the typical student at your school had the last time he/she “partied”/socialized? (If you think the typical student at your school does not drink alcohol, please enter 00. If less than 10, enter 01, 02, 03, etc.)

<table>
<thead>
<tr>
<th>Drinks</th>
<th>D</th>
</tr>
</thead>
</table>

13. Over the last two weeks, how many times have you had five or more drinks of alcohol at a sitting?

- N/A, don’t drink
- None
- 1 time
- 2 times
- 3 times
- 4 times
- 5 times
- 6 times
- 7 times
- 8 times
- 9 times
- 10 or more times

14. Within the last 30 days, did you:

(Please mark the appropriate column for each row)

- Drive after drinking any alcohol at all
- Drive after drinking five or more drinks of alcohol

Yes
No

N/A, don’t drink
N/A, don’t drive
15. During the last 12 months, when you
"partied"/socialized, how often did you:

(Please mark the appropriate column for each row)

<table>
<thead>
<tr>
<th>Rarely</th>
<th>Never</th>
<th>Sometimes</th>
<th>Most of the time</th>
<th>Always</th>
</tr>
</thead>
<tbody>
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</table>

- Alternate non-alcoholic with alcoholic beverages
- Avoid drinking games
- Choose not to drink alcohol
- Determine, in advance, not to exceed a set number of drinks
- Eat before and/or during drinking
- Have a friend let you know when you had enough
- Keep track of how many drinks you were having
- Pace your drinks to 1 or fewer per hour
- Stay with the same group of friends the entire time you were drinking
- Stick with only one kind of alcohol when drinking
- Use a designated driver

16. Within the last 12 months, have you experienced any of the following as a consequence of your drinking?

(Please mark the appropriate column for each row)

- Did something you later regretted
- Forgot where you were or what you did
- Got in trouble with the police
- Had sex with someone without giving your consent
- Had sex with someone without getting their consent
- Had unprotected sex
- Physically injured yourself
- Physically injured another person
- Seriously considered suicide

17. Within the last 30 days, what percent of students at your school used:
State your best estimate. (If less than 10, please enter 00, 01, 02, etc.)

<table>
<thead>
<tr>
<th>Cigarettes</th>
<th>Alcohol</th>
<th>Marijuana</th>
</tr>
</thead>
<tbody>
<tr>
<td>% Used</td>
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18. Within the last 12 months, have you taken any of the following prescription drugs that were not prescribed to you?

(Please mark the appropriate column for each row)

- Antidepressants (e.g., Celexa, Lexapro, Prozac, Wellbutrin, Zoloft)
- Erectile dysfunction drugs (e.g., Viagra, Cialis, Levitra)
- Pain killers (e.g., OxyContin, Vicodin, Codeine)
- Sedatives (e.g., Xanax, Valium)
- Stimulants (e.g., Ritalin, Adderall)
### Sex Behavior and Contraception

19. Within the last 12 months, with how many partners have you had oral sex, vaginal intercourse, or anal intercourse? (If you did not have a sex partner within the last 12 months, please enter 00. If less than 10, enter 01, 02, 03, etc.)

20. Within last 12 months, did you have sexual partner(s) who were:

(Please mark the appropriate column for each row)

- Female
- Male
- Transgender

21. Within the last 30 days, did you have:

(Please mark the appropriate column for each row)

- Oral sex?
- Vaginal intercourse?
- Anal intercourse?

22. Within the last 30 days, how often did you or your partner(s) use a condom or other protective barrier (e.g., male condom, female condom, dam, glove) during:

(Please mark the appropriate column for each row)

- Oral sex?
- Vaginal intercourse?
- Anal intercourse?

23A. Did you or your partner use a method of birth control to prevent pregnancy the last time you had vaginal intercourse?

- Yes (continue to item 23B)
- No, have not had vaginal intercourse (skip to item 24)
- No, have not had vaginal intercourse that could result in a pregnancy (skip to item 24)
- No, did not want to prevent pregnancy (skip to item 24)
- No, did not use any birth control method (skip to item 24)
- Don't know (skip to item 24)

23B. Please indicate whether or not you or your partner used each of the following methods of birth control to prevent pregnancy the last time you had vaginal intercourse. (Please mark the appropriate column for each row)

- Birth control pills
- (monthly or extended cycle)
- Birth control shots
- Birth control implants
- Birth control patch
- Vaginal ring
- Intrauterine device (IUD)
- Male condom
- Female condom
- Diaphragm or cervical cap
- Contraceptive sponge
- Spermicide (e.g., foam, jelly, cream)
- Fertility awareness (e.g., calendar, mucous, basal body temperature)
- Withdrawal
- Sterilization (e.g., hysterectomy, tubes tied, or vasectomy)
- Other method
24. Within the last 12 months, have you or your partner(s) used emergency contraception ("morning after pill")?
- ☐ N/A, have not had vaginal intercourse in the last 12 months
- ☐ No
- ☐ Yes
- ☐ Don't know

25. Within the last 12 months, have you or your partner(s) become pregnant?
- ☐ N/A, have not had vaginal intercourse in the last 12 months
- ☐ No
- ☐ Yes, unintentionally
- ☐ Yes, intentionally
- ☐ Don't know

### Weight, Nutrition, and Exercise

26. How do you describe your weight?
- ☐ Very underweight
- ☐ Slightly underweight
- ☐ About the right weight
- ☐ Slightly overweight
- ☐ Very overweight

27. Are you trying to do any of the following about your weight?
- ☐ I am not trying to do anything about my weight
- ☐ Stay the same weight
- ☐ Lose weight
- ☐ Gain weight

28. How many servings of fruits and vegetables do you usually have per day?
(1 serving = 1 medium piece of fruit; 1/2 cup fresh, frozen, or canned fruits/vegetables; 3/4 cup fruit/vegetable juice; 1 cup salad greens; or 1/4 cup dried fruit)
- ☐ 0 servings per day
- ☐ 1–2 servings per day
- ☐ 3–4 servings per day
- ☐ 5 or more servings per day

29. On how many of the past 7 days did you:

![Chart showing 7 days and options for exercise](chart)

(Please mark the appropriate column for each row)

- Do moderate-intensity cardio or aerobic exercise (caused a noticeable increase in heart rate, such as a brisk walk) for at least 30 minutes? 3 days
- Do vigorous-intensity cardio or aerobic exercise (caused large increases in breathing or heart rate, such as jogging) for at least 20 minutes? 4 days
- Do 8–12 strength training exercises (such as resistance weight machines) for 8–12 repetitions each? 2 days

### Mental Health

30. Have you ever:

![Chart showing mental health options](chart)

(Please mark the appropriate column for each row)

- Felt things were hopeless
- Felt overwhelmed by all you had to do
- Felt exhausted (not from physical activity)
- Felt very lonely
- Felt very sad
- Felt so depressed that it was difficult to function
- Felt overwhelming anxiety
- Felt overwhelming anger
- Intentionally cut, burned, bruised, or otherwise injured yourself
- Seriously considered suicide
- Attempted suicide
31. Within the last 12 months, have you been diagnosed or treated by a professional for any of the following?

(Please mark the appropriate column for each row)

- Anorexia
- Anxiety
- Attention Deficit and Hyperactivity Disorder (ADHD)
- Bipolar Disorder
- Bulimia
- Depression
- Insomnia
- Other sleep disorder
- Obsessive Compulsive Disorder (OCD)
- Panic attacks
- Phobia
- Schizophrenia
- Substance abuse or addiction (alcohol or other drugs)
- Other addiction (e.g., gambling, internet, sexual)
- Other mental health condition

Yes, other treatment
- Yes, treated with medication and psychotherapy
- Yes, treated with psychotherapy
- Yes, treated with medication
- Yes, diagnosed but not treated

No

32. Have you ever been diagnosed with depression?  
☐ No  ☐ Yes

33. Within the last 12 months, have any of the following been traumatic or very difficult for you to handle?

(Please mark the appropriate column for each row)

- Academics
- Career-related issue
- Death of a family member or friend
- Family problems
- Intimate relationships
- Other social relationships
- Finances
- Health problem of a family member or partner
- Personal appearance
- Personal health issue
- Sleep difficulties
- Other

Yes

No

34. Have you ever received psychological or mental health services from any of the following?

(Please mark the appropriate column for each row)

- Counselor/Therapist/Psychologist
- Psychiatrist
- Other medical provider (e.g., physician, nurse practitioner)
- Minister/Priest/Rabbi/Other clergy

Yes

No
35. Have you ever received psychological or mental health services from your current college/university's Counseling or Health Service?  
- No  
- Yes

36. If in the future you were having a personal problem that was really bothering you, would you consider seeking help from a mental health professional?  
- No  
- Yes

37. Within the last 12 months, how would you rate the overall level of stress you have experienced?  
- No stress  
- Less than average stress  
- Average stress  
- More than average stress  
- Tremendous stress

### Physical Health

38. Within the last 30 days, did you do any of the following?  
- Exercise to lose weight  
- Diet to lose weight  
- Vomit or take laxatives to lose weight  
- Take diet pills to lose weight

39. Have you:  
- Had a dental exam and cleaning in the last 12 months?  
- (Males) Performed testicular self exam in the last 30 days?  
- (Females) Performed breast self exam in the last 30 days?  
- (Females) Had a routine gynecological exam in the last 12 months?  
- Used sunscreen regularly with sun exposure?  
- Ever been tested for Human Immunodeficiency Virus (HIV) Infection?

40. Have you received the following vaccinations (shots)?  
- Hepatitis B  
- Human Papillomavirus/HPV (cervical cancer vaccine)  
- Influenza (flu) in the last 12 months (shot or nasal mist)  
- Measles, Mumps, Rubella  
- Meningococcal disease (meningococcal meningitis)  
- Varicella (chicken pox)

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**PAGE NINE**
41. Within the last 12 months, have you been diagnosed or treated by a professional for any of the following?

<table>
<thead>
<tr>
<th>Condition</th>
<th>Yes</th>
<th>No</th>
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<tbody>
<tr>
<td>Allergies</td>
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<td>Asthma</td>
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<td>Back pain</td>
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<td>Broken bone/Fracture/Sprain</td>
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<td>Bronchitis</td>
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<td>Chlamydia</td>
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<td>Diabetes</td>
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<td>Ear Infection</td>
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<td>Endometriosis</td>
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<td>Genital herpes</td>
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<td>Genital warts/Human Papillomavirus (HPV)</td>
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<td>Gonorrhea</td>
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<td>Hepatitis B or C</td>
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<td>High blood pressure</td>
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<td>High cholesterol</td>
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<td>Human Immunodeficiency Virus (HIV)</td>
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<td>Irritable Bowel Syndrome (IBS)</td>
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<td>Migraine headache</td>
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<td>Mononucleosis</td>
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<td>Pelvic Inflammatory Disease (PID)</td>
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<td>Repetitive stress injury (e.g., carpal tunnel syndrome)</td>
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<td>Sinus infection</td>
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<td>Strep throat</td>
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<td>Tuberculosis</td>
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<td>Urinary tract infection</td>
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42. On how many of the past 7 days did you get enough sleep so that you felt rested when you woke up in the morning?

- 0 days
- 1 day
- 2 days
- 3 days
- 4 days
- 5 days
- 6 days
- 7 days

43. People sometimes feel sleepy during the daytime. In the past 7 days, how much of a problem have you had with sleepiness (feeling sleepy, struggling to stay awake) during your daytime activities?

- No problem at all
- A little problem
- More than a little problem
- A big problem
- A very big problem

44. In the past 7 days, how often have you:

<table>
<thead>
<tr>
<th>Event</th>
<th>0 days</th>
<th>1 day</th>
<th>2 days</th>
<th>3 days</th>
<th>4 days</th>
<th>5 days</th>
<th>6 days</th>
<th>7 days</th>
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<tbody>
<tr>
<td>Awakened too early in the morning and couldn’t get back to sleep?</td>
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<td>Felt tired, dragged out, or sleepy during the day?</td>
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<td>Gone to bed because you just could not stay awake any longer?</td>
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<td>Had an extremely hard time falling asleep?</td>
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## Impediments to Academic Performance

(Please select the most serious outcome for each item below)

- Significant disruption in thesis, dissertation, research, or practicum work
- Received an incomplete or dropped the course
- Received a lower grade in the course
- Received a lower grade on an exam or important project
- I have experienced this issue but my academics have not been affected
- This did not happen to me/not applicable

45. Within the last 12 months, have any of the following affected your academic performance?

- Alcohol use
- Allergies
- Anxiety
- Assault (physical)
- Assault (sexual)
- Attention Deficit and Hyperactivity Disorder (ADHD)
- Cold/Flu/Sore throat
- Concern for a troubled friend or family member
- Chronic health problem or serious illness (e.g., diabetes, asthma, cancer)
- Chronic pain
- Death of a friend or family member
- Depression
- Discrimination (e.g., homophobia, racism, sexism)
- Drug use
- Eating disorder/problem
- Finances
- Gambling
- Homesickness
- Injury (fracture, sprain, strain, cut)
- Internet use/computer games
- Learning disability
- Participation in extracurricular activities (e.g., campus clubs, organizations, athletics)
- Pregnancy (yours or your partner’s)
- Relationship difficulties
- Roommate difficulties
- Sexually transmitted disease/Infection (STD)
- Sinus Infection/Ear infection/Bronchitis/Strep throat
- Sleep difficulties
- Stress
- Work
- Other (please specify)

## Demographic Characteristics

46. How old are you?

47. What is your gender?

- Female
- Male
- Transgender

48. What is your sexual orientation?

- Heterosexual
- Gay/Lesbian
- Bisexual
- Unsure

49. What is your height in feet and inches?

50. What is your weight in pounds?
51. What is your year in school?
☐ 1st year undergraduate
☐ 2nd year undergraduate
☐ 3rd year undergraduate
☐ 4th year undergraduate
☐ 5th year or more undergraduate
☐ Graduate or professional
☐ Not seeking a degree
☐ Other

52. What is your enrollment status?
☐ Full-time
☐ Part-time
☐ Other

53. Have you transferred to this college or university within the last 12 months?
☐ No ☐ Yes

54. How do you usually describe yourself? (Mark all that apply)
☐ White, non Hispanic (includes Middle Eastern)
☐ Black, non Hispanic
☐ Hispanic or Latina/o
☐ Asian or Pacific Islander
☐ American Indian, Alaskan Native, or Native Hawaiian
☐ Biracial or Multiracial
☐ Other

55. Are you an international student?
☐ No ☐ Yes

56. What is your relationship status?
☐ Not in a relationship
☐ In a relationship but not living together
☐ In a relationship and living together

57. What is your marital status?
☐ Single
☐ Divorced
☐ Married/Partnered
☐ Other
☐ Separated

58. Where do you currently live?
☐ Campus residence hall
☐ Fraternity or sorority house
☐ Other college/university housing
☐ Parent/guardian’s home
☐ Other off-campus housing
☐ Other

59. Are you a member of a social fraternity or sorority? (e.g., National Interfraternity Conference, National Pan-Hellenic Conference, National Pan-Hellenic Council, National Association of Latino Fraternal Organizations)
☐ No ☐ Yes

60. How many hours a week do you work for pay?
☐ 0 hours
☐ 1–6 hours
☐ 10–19 hours
☐ 20–29 hours
☐ 30–39 hours
☐ More than 40 hours

61. How many hours a week do you volunteer?
☐ 0 hours
☐ 1–9 hours
☐ 10–19 hours
☐ 20–29 hours
☐ More than 40 hours

62. What is your primary source of health insurance?
☐ My college/university sponsored plan
☐ My parents’ plan
☐ Another plan
☐ I don’t have health insurance
☐ I am not sure if I have health insurance

63. What is your approximate cumulative grade average?
☐ A ☐ B ☐ C ☐ D ☐ F ☐ N/A

64. Within the last 12 months, have you participated in organized college athletics at any of the following levels?
(Please mark the appropriate column for each row)
☐ Yes
☐ No
☐ Varsity
☐ Club sports
☐ Intramurals

65. Do you have any of the following disabilities or medical conditions?
(Please mark the appropriate column for each row)
☐ Yes
☐ No
☐ Attention Deficit and Hyperactivity Disorder (ADHD)
☐ Chronic illness (e.g., cancer, diabetes, auto-immune disorders)
☐ Deaf/Hard of hearing
☐ Learning disability
☐ Mobility/Dexterity disability
☐ Partially sighted/Blind
☐ Psychiatric condition
☐ Speech or language disorder
☐ Other disability

THANK YOU FOR COMPLETING THIS SURVEY

PAGE TWELVE
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SERIAL #
Appendix B

University Specific Questions
1. What is your Academic College?
   a. Liberal Arts & Sciences
   b. Commerce
   c. Computing and Digital Media
   d. Education
   e. School for New Learning
   f. Communication
   g. Law
   h. Music
   i. Theatre

2. Please describe yourself using this second set of demographics, which are more useful to (the university) community.
   a. White/Caucasian
   b. Latina/o, Chicana/o, Hispanic
   c. Asian American
   d. Vietnamese, Hmong, Laotian
   e. Pacific Islander, Samoan, Tongan
   f. Middle Eastern, Arab, Persian
   g. Native American/Alaskan/Hawaiian
   h. Biracial or Multiracial
   i. Other

3. Do you receive the Pell Grant in financial aid?
   a. No
   b. Yes
   c. Unsure

4. Number of children?
   a. 0 (zero)
   b. 1
   c. 2
   d. 3
   e. 4 or more

5. What is your Religion?
   a. Catholic
   b. Protestant Christian
   c. Eastern Orthodox
   d. Other Christian
   e. Jewish
   f. Muslim
   g. Hindu/Vedic
   h. Buddhist
   i. None/Secular/Atheist
   j. Other
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