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# How Relationship Quality Influences Male Condom Use in College Women

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Abstract

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Doctor of Philosophy

Health Psychology

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## Abstract

Young adult women in their first and second year of college are a group more commonly impacted by health-related concerns associated with condom use. Due to lack of consistent condom use and the increase in sexual partners, STIs remain an epidemic. Various types of studies have been conducted to investigate condom use among women college students. One factor that may influence condom use is the partner relationship. The literature on safe sex practices shows a gap regarding relationship quality and its potential influence on condom use. Guided by the Fletcher et al. model and Sternberg's triangular theory of love, the goal of this study was to explore whether the likelihood of using condoms is influenced by relationship quality components. Using a sample of 85 women college students, relationship quality was examined using the Perceived Relationship Quality Components Inventory. Using a binary logistic regression model, no statistically significant associations among relationship satisfaction, commitment, intimacy, trust, passion, love, overall relationship quality and condom use were found. The findings in this study confirm the existing knowledge, that is, condom use trends and behaviors among young college women remain unpredictable. Limitations to the study include a small sample size, age of majority in Nebraska, and failure to screen for important demographics. For the future, longitudinal studies would offer insight into how condom use behaviors vary depending on fluctuations in relationship quality. This study has implications for positive social change: It suggests an emphasis on a relationship-focused approach to condom use behaviors when working with freshman and sophomore college women.

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# Dedication

This study is dedicated to my husband and son. I love you both to the moon and back.

Acknowledgments

I would like to thank my husband for his constant love and support; my son for his patience and unconditional love; and my parents and sister for believing in me. Thank you Dr. David Rentler and Dr. Caren Jordan for your guidance, patience, and expertise.

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# Chapter 1: Introduction to the Study

## Introduction

This study was an investigation into whether or not relationship quality influenced condom use among freshman and sophomore college women. Sexually transmitted infections (STIs) and unintended pregnancies are a major concern for women's health. A majority of college students believe that condoms should be worn during sexual intercourse, yet two out of three students will not adhere to their use (Bird, Solis, & Mbonu, 2016). While most women are aware of the negative health consequences that result from not using condoms consistently during sex, condoms are not used because most do not feel they are at risk. (Lance, 2001). It is well known that condoms used consistently can help reduce the chances of certain cervical infections and STIs (Winer et al., 2006). This study was necessary because it is unclear why many women refrain from using condoms during sex despite awareness of the negative health consequences (Davis, 2015). It is not known how a particular relationship may or may not affect whether a condom is used consistently. Researchers have provided information on how the quality of a relationship affects condom use, both positively and negatively (see, for example, Hock-Long et al. [2013], Strachman & Impett [2009], Cox, Hindin, Otupiri, & Larsen-Reindorf, [2013]), but further investigation into how relationships influence condom use was needed to learn how relationship quality affects condom use in college women. The major sections of this chapter include the background of the research, the problem, and purpose of the study, the research questions and theory, assumptions, scope and

delimitations, along with a description of the nature of the study, limitations and its significance.

## Background

Occurrences of human papillomavirus (HPV) are more prevalent than other STIs (Centers for Disease Control and Prevention, [CDC], 2016). Each year roughly 11,000 women in the United States get cervical cancer (CDC, 2016). According to the American Cancer Society (ACS), approximately 12,820 women in 2017 were diagnosed with cervical cancer. In 2018, the ACS estimates 13,240 women will be affected with uterine cervix cancer, with 4,170 of those resulting in death (ASC, 2018). It was estimated that 4,210 women in the United States died in 2017 from cervical cancer (ACS, 2017). It has been recognized that HPV causes cervical cancer (Walboomers et al., 1999). HPV is spread through unprotected sex, and many cervical cancers can be prevented. Researchers suggest that more women, specifically those over the age of 65, are dying from cervical cancer (Beavis, Gravitt, & Rositch, 2017), and that the disease may lie dormant for ten years or more, with minimal to no symptoms. Theoretically, if younger women were more aware of HPV and how using a condom can protect them later in life, they would be more apt to use protection during sex.

Researchers propose that relationship quality may influence condom use among college students (Ssewanyana et al., 2015). A number of peer-reviewed articles in the literature have shown that relationship quality increases condom use (Cox et al., 2013). At the same time, articles in the literature have proposed that relationship quality decreases condom use (Strachman & Impett, 2009). Clearly, the findings are

contradictory. The problem is that unprotected sex is a common practice among young college women. Although the health risks are well known, many women continue to engage in sexual activity without using a condom (Davis, 2015). The purpose of this study was to investigate how specific relationship components affect condom use in first- and second-year college women.

There is not an obvious understanding of how a relationship affects condom use. Some women who identify as being in loving, trusting, and positive relationships avoid condom use for a number of reasons (Hock-Long et al., 2013). Yet, other women who identify as being in positive relationships use condoms consistently (Ssewanyana et al., 2015). This study aimed to further explore how relationship quality influences the male condom use among college women by using the Perceived Relationship Quality Components (PRQC) Inventory (Fletcher, Simpson, & Thomas, 2000). This study was needed because poor health outcomes remain a threat to young adult women. It is imperative to gain a better understanding of what influences condom use so educators can be informed and reach women in college.

## Problem Statement

College women, between the ages of 20–24, who have sex without condoms increase their risk of poor sexual health (Bandu et al., 2014; Dunne et al., 2007). STIs can be spread by not wearing a condom during sex (Wang, 2013). STIs, such as HPV, and unintended pregnancies, are common consequences of unprotected sex (Frost, Lindberg, & Finer, 2012; Finer & Zolna, 2014), and 20–24 year old women, more than any other age group, are at the highest risk of developing cervical cancer due to the growth of HPV

(Bendik, Mayo, & Parker, 2011). Researchers indicate that college students participate in high-risk sexual practices, despite knowing the health threats (O'Sullivan, Udell, Montrose, Antoniello, & Hoffman, 2010). Worsening the problem is the fact that the number of sex partners college students are having is increasing while, for women in their first year of college, the number of condoms being used is decreasing (Fielder & Carey, 2010; Fielder, Carey, & Carey, 2013; Walsh, Fielder, Carey & Carey, 2013), and thus increasing their risk of acquiring HPV and other STIs. Furthermore, women are slightly at more health risk compared to men because of condom nonuse (Calsyn et al., 2013). For an example, Lewis, Melton, Succop, and Rosenthal (2000) studied condom use influences among a sample of 138 African American college women and found that only 24% always used condoms. In addition, the women in the study did not view wearing condoms as standard and 38% of the participants had previously experienced STIs. According to the World Health Organization (WHO), each day more than 1 million STIs affect people worldwide (WHO, 2017). Each year, chlamydia, gonorrhea, syphilis, and trichomoniasis affect 357 million people worldwide, and more than 290 million women have HPV (WHO, 2017). STIs can pose serious reproductive health risks to women, such as infertility (Tsevat, Wiesenfeld, Parks, & Peipert, 2017) and some cancers (ACS, 2018).

Knowledge of the consequences of not wearing a condom has not consistently shown a rise in male condom use for women in college. For instance, researchers have suggested that some women who perceive their relationship as vulnerable and likely to contract an STI themselves, are still not using condoms even though the health risk is

recognized (Ober et al., 2011). Uhrig, Friedman, Poehlman, Scales and Forsythe (2013) reported similar data on awareness and risk. The researchers found that health risk was perceived as low in a group of men and women who believed that STIs were applicable to many relationships (Uhrig et al., 2013). Roberts and Kennedy (2006) found that one-half of college women between the ages of 18-24 perceived their relationship as vulnerable to contracting STIs, yet only one-third of them wore condoms consistently despite indicating that they would talk with their partner about wearing a condom (Roberts & Kennedy, 2006). Additionally, Nesoff, Dunkle, and Lang (2015) discovered that women with a history of STIs did not consistently use a condom, and yet women with a college education who were not in steady relationships were more likely to use condoms. The contradictions in the research showed a need to assess predictors of condom use.

Many well-studied factors are contributing to condom nonuse among women. Researchers have discovered that women experience challenges practicing safe sex with the male condom for reasons such as difficulty putting on a condom, power imbalances, or insufficient communication strategies (East, Jackson, O'Brien, & Peters, 2011; French & Holland, 2013). According to Kershaw, Arnold, Gordon, Magriples, & Niccolai (2012), unsatisfactory relationships reduce the chances of condom use. They also propose that belief systems, communication styles, and emotions are factors that contribute to relationship quality, which in turn, may affect whether a condom is used. For example, Hock-Long et al. (2013) found that people in serious relationships were less likely to use a condom because of trust. Hock-Long et al. reported that condoms were used more in

casual relationships. Strachman & Impett (2009) found that condoms were used less often in relationships that were high-satisfactory. Other studies found an association between an increase in condom use and high-satisfactory relationships (Cox et al., 2013). Less has been published on the study of various relationship components such as, relationship satisfaction, commitment, intimacy, trust, passion, love and their impact on condom use. (Hock-Long et al., 2013).

The research has yielded mixed results and appears contradictory. Variables such as commitment, trust, and passion have been studied independently in regards to relationship quality (Fletcher et al., 2000). However, Fletcher et al. identified six constructs that typically represent perceived relationship quality: relationship satisfaction, commitment, intimacy, trust, passion, and love. These were the six variables investigated in this study. Fletcher et al. examined these six variables and found that greater perceived relationship quality was associated with longer lasting relationships. Few studies have been conducted on relationship quality with respect to multiple components— focusing on first- and second-year college women who fall in the high-risk group—and condom use. Researchers have examined relationship quality too narrowly, for example, concentrating only on trust or satisfaction levels. A more comprehensive look at the many constructs of relationship quality was needed to address what is missing in research in regards to condom use. The problem is that it was not entirely understood how relationship satisfaction, commitment, intimacy, trust, passion, and love influenced the male condom use in college women (Fletcher et al., 2000; Hock-Long et al., 2013). This study sought to fill the research gaps.

## Purpose of the Study

This quantitative, nonexperimental, correlational study explored whether the quality of relationship variables were predictive of condom use among a sample of first- and second-year college women at a Nebraska university and a Connecticut university. The purpose of the study was to determine if relationship quality, as conceptualized by the Fletcher et al. model (2000)—relationship satisfaction, commitment, intimacy, trust, passion, and love—predicted self-reported condom use, using the PRQC.

## Research Questions

This study was guided by the following seven research questions.

RQ1. Are higher levels of relationship satisfaction predictive of condom use in first- and second-year college women as measured by the relationship satisfaction scale on the PRQC Inventory?

$H1_0$. Relationship satisfaction is not predictive of condom use.

$H1_A$. Higher levels of relationship satisfaction is predictive of condom use among first- and second-year college women.

RQ2. Are higher levels of commitment predictive of condom use in first- and second-year college women as measured by the commitment scale on the PRQC Inventory?

$H2_0$. Commitment is not predictive of condom use.

$H2_A$. Higher levels of commitment is predictive of condom use among first- and second-year college women.

RQ3. Are higher levels of intimacy predictive of condom use in first- and second-year college women as measured by the intimacy scale on the PRQC Inventory?

$H3_0$. Intimacy is not predictive of condom use.

$H3_A$. Higher levels of intimacy is predictive of condom use among first- and second-year college women.

RQ4. Are higher levels of trust predictive of condom use in first- and second-year college women as measured by the trust scale on the PRQC Inventory?

$H4_0$. Trust is not predictive of condom use.

$H4_A$. Higher levels of trust is predictive of condom use among first- and second-year college women.

RQ5. Are higher levels of passion predictive of condom use in first- and second-year college women as measured by the trust scale on the PRQC Inventory?

$H5_0$. Passion is not predictive of condom use.

$H5_A$. Higher levels of passion is predictive of condom use among first- and second-year college women.

RQ6. Are higher levels of love predictive of condom use in first- and second-year college women as measured by the love scale on the PRQC Inventory?

$H6_0$. Love is not predictive of condom use.

$H6_A$. Higher levels of love is predictive of condom use among first- and second-year college women.

RQ7. Are higher levels of relationship quality as measured by the total score on the PRQC Inventory predictive of condom use in first- and second-year college women?

$H7_0$. Higher levels of relationship quality is not predictive of condom use.

$H7_A$. Higher levels of relationship quality is predictive of condom use among first- and second-year college women.

The null hypothesis for this quantitative design was, there is no relationship between the quality of a relationship and condom use in first- and second-year college women. The alternative hypothesis for this quantitative design was, there is a relationship between the quality of a relationship and condom use in first- and second-year college women. The variables were measured by using the PRQC Inventory, a six construct, three-item subscale. All items were answered on a seven-point Likert scale.

## Theoretical Framework

The theoretical framework for this study was the Fletcher et al. model (2000). The theory that grounds the Fletcher et al. model is more of an eclectic one. Fletcher et al. reviewed the empirical literature on relationship quality components and identified six common constructs that typically represented perceived relationship quality: relationship satisfaction, commitment, intimacy, trust, passion, and love. This diverse and assorted way of gathering information was the premise that guided the creation of a tool used to measure relationship quality comprehensively: the PRQC Inventory. These variables have been assessed independently in previous research, but little attention has been paid to how multiple components are correlated.

The authors of the PRQC Inventory propose that relationship satisfaction, commitment, intimacy, trust, passion, and love are the main variables that are important to relationship quality. They created the PRQC Inventory to study relationship quality. I

used the Fletcher et al. model to investigate how the six components of relationship quality were associated with condom use.

Sternberg's triangular theory of love, focusing on the love elements of intimacy, passion, and commitment, is the second theoretical framework that grounded this study. This theory of love identifies intimacy, passion, and commitment as the core of love and relationships (Sternberg, 1986). The theory provides ideas on ways relationship quality can be understood and it is similar to the constructs used in the Fletcher et al. model (2000). Sternberg's theory of love suggests that relationship quality may be influenced by relationship development and its love components, and that love is made up of three components: intimacy, passion, and commitment (Sternberg, 1986). He proposes that a person can "nonlove" (Sternberg, 1987, p. 340), meaning that intimacy, passion, and commitment are not present in the relationship. Sternberg believes that an individual can like their partner without loving them. The theory implies that high levels of intimacy, passion, and commitment are equal to love. Fletcher et al. (2000) considers intimacy, passion, and commitment as important components in view of relationship quality. Additional information about theory is described in more detail in Chapter 2.

## Nature of the Study

This quantitative study used a survey design. Because the goal was a prediction and the predictors could be considered continuous and the dependent variable dichotomous (or categorical), a logistic regression analysis was the most appropriate. A regression model can analyze multiple independent variables that control a dichotomous result to predict the outcome of a response variable, in this case, condom use. Because I

sought an *always* or *never* outcome, the dependent variable was considered discrete, signifying a logistic regression analysis. In this study, the independent variables were relationship satisfaction, commitment, intimacy, trust, passion, and love, as measured by subscales on the self-reported PRQC Inventory (Fletcher et al., 2000), and the dependent variable was condom use. Using the scale *always*, *sometimes*, and *never* condom use was assessed by asking: Do you wear a condom with your current (or past) partner? A seventh independent variable, the overall score of relationship quality, was also measured. The female condom was not measured in this study.

Fletcher, Simpson, and Thomas (2000) used the PRQC Inventory to study relationship quality and found it to have good internal reliability (i.e., alpha =.85-.88). Costa and Brody (2007), used the PRQC Inventory to investigate sexual behaviors and relationship quality and found that sexual intercourse was positively correlated to better relationship qualities. The inventory has been used in hundreds of studies.

## Assumptions

This study was subject to three assumptions. (a) It was assumed that the participants answered the surveys truthfully. It was important to address such assumptions because research with sensitive topics can be skipped and certain questions not answered. (b) For regression analysis, it was assumed that the data would have a linear relationship. (c) It was assumed that there would be no multicollinearity.

## Scope and Delimitations

The specific aspects of the research problem addressed in this study were derived from the gap in the literature. The problem was as follows: college-aged women are at continued risk of experiencing major health problems by engaging in unprotected sex. Despite awareness of the health risk, condom use in both satisfying and unsatisfying relationships is inconsistent and unpredictable. The research goal was to delve into the phenomenon of why some women use condoms and others do not, and to see whether relationship quality influenced the decision.

According to what researchers have reported, relationship quality affects whether or not condoms are worn. However, the results are not consistent. The literature on condom use and relationships is contradictory. This study focused on the relationship quality components derived from Fletcher et al. (2000) and 18–24-year-old women because this target population is a group more commonly impacted by health-related concerns associated with condom use.

The identified population and inclusionary criteria were 18-24-year-old freshman and sophomore college women, at two different universities. The population was recruited via e-mail requests to faculty; distributing flyers to classrooms, or posting the flyer/study link on Blackboard/Canvas/psychology bulletin board. The exclusionary criteria were men, and any woman younger than 18 or older than 24, or a participant in their junior or senior year (19 years of age in Nebraska). All of the data were collected from a small sample of college students .The identified population is explained in more detail in Chapter 3.

## Limitations

As with any study, there were limitations. The PRQC Inventory uses closed-ended questions that could lower validity. With survey research, a participant can skip over a specific question she wished not to respond to, and thus create self-report response bias (Choi & Pak, 2005). This did occur. A few respondents did not answer the question about condom use and were removed from the data analysis. There were a couple missed or skipped cases on the survey, as well. It is quite possible that the participant skipped the question relating to condom use because of embarrassment or response bias. For instance, recall and truthfulness due to the sensitive nature probably existed. It is not always easy addressing sex or condom issues or admitting to how one uses condoms. Response bias is discussed in more detail in Chapter 5.

The research design may possess other limitations. I used a non-probability sample verses (vs.) a probability sample. Probability sampling helps keep selection bias out of research (Feild, Pruchno, Bewley, Lemay, & Levinsky, 2006). However, nonprobability sampling is easier to organize, less time consuming, and offers a more accessible and convenient population (Frankfort-Nachmias & Nachmias, 2008). The participants were collected in a way that did not allow for all individuals in a population to be sampled. Because of this, it can be presumed that the results do not represent the entire population, age groups from different geographical regions or sociocultural backgrounds. The history bias, known as the environment in which the participant took the survey (Creswell, 2009), is also something that was not controlled and is a potential limitation to the internal validity. History bias is events that happen at the same time the

study takes place (Creswell, 2014). For example, participants may be in the middle of completing the survey while being interrupted by a phone call or a noisy roommate.

There also may be cofounding variables or other variables that I did not measure in this study. Factors such as self-esteem, alcohol and drug use, the pleasure component, and gender imbalances were not measured. Other factors that were not measured were history of abuse, negative experiences associated with condoms, condom negotiation strategies and communication skills, and the female condom. Also, I did not measure awareness of health risk. Additional limitations are discussed in Chapter 5.

## Significance

This study contributes to filling the identified gap in the literature by further investigating how specific components of relationship quality influenced condom use. Studying relationship quality along with identifying relationship status offers additional insight into condom use decision-making during sexual relationships among college women. Understanding how relationship factors are associated with sexual behavior and condom use contributes to the development of interventions and strategies to promote improvement in the lives of women.

The results can assist health psychology professionals, mental health therapist, and health care providers in educating women on safer sexual strategies by offering insight into which relationship quality variables are predictive of condom use. Understanding the relationship quality variables predictive of condom use helps inform the profession and promote the development of interventions, which in turn, promotes self-respect and values individuals. The findings in this study could lead to positive social

change by offering information about relationship quality variables associated with condom use, possibly leading to an increase in condom use and fewer problems associated with condom use. Exploring the connection between relationship quality and condom use can provide vital information that is lacking in current literature and provide insight into the discrepancies and contradictions the literature reveals. Additional information regarding relationship quality may assist in identifying why some relationships foster condom use but others do not. Overall, understanding relationship quality variables may lead to condom use compliance and thus improved health for women.

## Summary

The main points in Chapter 1 were to introduce and describe the problem that was investigated and to define the background and why it matters to the field of health psychology. It is not fully understood how the quality of a relationship can influence condom use among college women. Researchers have reported that the male condom is worn in both high-quality relationships and low-quality relationships. The research appears contradictory.

Unprotected sex is a major issue for women today. Learning why young women do not use condoms, despite awareness of health risks, and whether the quality of a relationship is associated with condom use, may lead to a decrease in STIs. The purpose of this study was to investigate the relationship between relationship quality and condom use among a sample of 85 women college students between 18-24 years old.

The research questions were derived from the Fletcher et al model. (2000). According to Fletcher et al., relationship quality consists of relationship satisfaction, commitment, intimacy, trust, passion, and love. Seven research questions were measured in this study. The 18-item PRQC Inventory was used to measure the six above mentioned components that represent relationship quality on a seven-point Likert scale with scores ranging from 1 (not at all) to 7 (extremely). A logistic regression model was used to analyze the data. This study's assumptions and limitations were also outlined. Chapter 2 includes a review of the literature, specifically, the history of condom use, explanation of the Fletcher et al., model and Sternberg's triangular theory of love, and key variables and concepts.

## Chapter 2: Literature Review

### Introduction

This quantitative, nonexperimental, correlational study explored whether the quality of relationship variables were predictive of condom use among a sample of first- and second-year college women at a Nebraska university and a Connecticut university. The purpose was to determine if relationship quality, as conceptualized by the Fletcher et al. model (2000)—relationship satisfaction, commitment, intimacy, trust, passion, and love—predicted self-reported condom use, using the PRQC.

The problem is that young college women are not consistently using condoms, even though they are aware of the health risks (Davis, 2015). Further research was needed to address why college-age women do not use condoms during sex, and specifically how the quality of a relationship affects condom use. The dilemma is that the

current literature is inconsistent. Some researchers report findings that indicate high-quality relationships increase condom use, whereas other studies express the opposite. The research contradiction was addressed by incorporating the Fletcher et al. model (2000) and Sternberg's triangular theory of love (1986). This study includes the introduction, literature review, theoretical foundation research design, methodology, data collection, and lastly, the results.

The frequency of condom use among college women is a vital health concern today. Although condoms are the most effective preventative measure against the spread of STIs, other than abstinence, (WHO, 2015; Winer et al., 2006), only 34% of students reported always using a condom during sexual intercourse (Peterson, Johnson, Hutchins, & Florence, 2013). Researchers propose that even though students are aware of the health risk accompanied by unprotected sex, condom use remains unpredictable (Davis, 2015).

There are various reasons why women are not consistently using condoms during sex. Researchers indicate that condoms are often not used because of past experiences. Women who have a history of abuse or intimate partner violence are less likely to acknowledge the use of condoms during sex (Jama Shai, Jewkes, Levin, Dunkle, & Nduna, 2010). Researchers also report that condoms are not used because of adverse experiences associated with using a condom (Williamson, Buston, & Sweeting, 2009) such as, not knowing the proper way to wear a condom or an overall dislike. Some individuals choose not to use condoms because it reduces sexual pleasure (Higgins & Wang, 2015). For example, Higgins and Wang investigated 2,328 young adults' attitudes associated with condom use and found that the pleasure component was a major predictor

to lack of condom use. Additionally, women and men reported not wearing a condom as most pleasurable compared to wearing one (Randolph, Pinkerton, Bogart, Cecil, and Abramson, 2007).

Communication appears to play a role in condom use. Goldman, Martin, Bryand, DiClemente, and Ditrinco (2014) investigated 223 college students' communication apprehension and their views about discussing condom use with their partner. The students completed an online survey to investigate apprehension with a coefficient alpha scale of 0.96 on a five-point Likert scale with scores ranging from 1 (strongly disagree) to 5 (strongly agree). The researchers gathered information on attitudes related to condoms by using a semantic differential scale, with a coefficient alpha scale of 0.97. The researchers found that students with communication apprehension had negative views regarding discussing condom use with their partner. In another study, Lehmiller, VanderDrift, and Kelly (2014) sought to investigate sexual communication and relationship type among individuals in either a casual or primary relationship. The researchers found that those individuals who were in a "friends with benefits" status versus (vs.) a romantic one, typically communicated less about their sexual expectations (p. 74). Again, the above findings demonstrate how communication can influence whether or not a condom is worn in a relationship. DePadilla, Windle, Wingood, Cooper, and DiClemente (2011) found that communication with a partner was a major predictor to condom use among women between the ages of 14-20.

Likewise, responsibility can play a major role in condom use. For example, Crosby et al. (2014) conducted an investigation to determine whether or not condom use

was influenced by the belief of one's partner having an STI. The researchers found that if an individual believed their risk of contracting an STI from their partner was high, condoms were likely worn. In other words, if there was a concern of a health risk, people were more apt to wear a condom during sex indicating a sense of responsibility to one's health.

The female condom, which was not measured in this study, can also influence condom use consistency. For example, Masvawure et al. (2014) investigated male college students' experiences of using the female condom. The researchers found that using the female condom is a shared responsibility between both partners. Numerous men in the study viewed the female condom negatively because of being unfamiliar with it. Some men felt that women recommending the female condom signified lack of trust. Weeks et al. (2015) report that 32% of women and 26% of men had used a female condom at least once in their lifetime. Factors such as expense, access, past negative experiences, and lack of knowing what a female condom is, were reasons the female condom was not used. The above mentioned factors are a few areas that have been explored highlighting condom use and nonuse. Various reasons explain condom use behavior, yet the solid data required for further understanding into consistent condom use is lacking. This study focused on the area of relationship quality components and its association with condom use. This study did not specifically address or focus on the previous research explored, but concentrated more on the data that seemed to be missing from current literature; why women do not use condoms regardless of knowing the health risks, and how relationship quality influenced condom use. The amount of literature on sex behaviors and condom

use is massive, with Internet searches greater than 111,000 results. The purpose of the literature review is to provide a summary of the background of condom use and relationship quality and its contribution to current literature to better understand condom use in women college students.

## Literature Search Strategy

I conducted a detailed review of the relevant literature on relationship quality and its association with condom use among first- and second-year college women. The goal was to provide the necessary background and current data, findings, and theory that contributed to the gap in the literature and the problem at hand. The review built on other studies that focused on sexual behaviors and relationship quality among young adults (see, for example, (a) Vamos et al. [2013], (b) Wildsmith, Manlove, & Steward-Streng, [2015], (c) McKay & Schneider, [2010]). Articles were included in this study if they highlighted condom use among young women with either a connection to relationship quality components or to current barriers to consistent condom use.

I investigated primarily peer-reviewed articles dated from 2011-2017 to identify significant information about the relationship between relationship quality and condom use. Some older articles were also reviewed and included. I assessed key articles to acquire an understanding of how the quality of a relationship can influence whether or not a condom is worn during sexual relations. The findings drawn from the literature review lead to the identified variables in the study and the noted gap in research. The Fletcher et al. (2000) model was examined and integrated into the study as one of the

main theoretical concepts. Other seminal works such as Sternberg's triangular theory of love were reviewed and incorporated.

The following databases were used: PsycINFO, PsycARTICLES, ERIC, MEDLINE, Google Scholar, and Sage Premier. They were used to research the six variables that represented relationship quality and its association with condom use. The following search terms were used: *condom use, college women, relationship quality, Sternberg's triangular theory of love, relationship status, Perceived Relationship Quality Components Inventory, relationship satisfaction, commitment, intimacy, trust, passion, love,* and *risk*. The primary combinations of search terms were used to get a thorough understanding of the six relationship quality constructs concerning condom use among young college women: *women* and *condoms; relationship quality* and *sex behavior; women, condoms,* and *relationships; condom utilization* and *trust; condom use* and *college students; awareness of health risk, Perceived Relationship Quality Components Inventory* and *condom use,* and *condom use*.

## History of Condom Use and Women

Condoms are the most effective way to keep STIs at bay (WHO, 2013). When used correctly and consistently, condom use significantly reduces the number of STIs spread throughout the country (WHO, 2016). A study conducted to investigate regular condom use and STIs found that individuals who consistently and correctly used condoms during sex had 59% lower odds of contracting a STI compared with those who did not use condoms (Crosby, Charnigo, Weathers, Caliendo, & Shrier, 2012). Specifically, the male condom is the most common form of STI prevention. The female

condom is less common than the male condom because of access (WHO, 2016). Researchers have determined that college students in their early twenties are at the highest risk of contracting STIs and facing unplanned pregnancies, hence the motivation for this study.

Condom use analysis has been investigated and studied for decades. For example, Helweg-Larsen and Collins (1994) used the UCLA Multidimensional Condom Attitudes Scale (MCAS) to study condom use in college students. The researchers found that factors such as stigma, stereotypes, and gender roles were components to condom use behavior. Their work suggests that condom use analysis should be studied in a multidimensional approach focusing on many predictors and not just one determinant (Helweg-Larsen & Colllins, 1994). Specifically, the researchers focused on five domains: condom effectiveness and reliability, stigma, embarrassment and negotiation techniques, and the discomfort and anxiety associated with purchasing condoms. The researchers also assessed for sexual experience and gender. The Helweg-Larsen and Collins study is mentioned because it is an example of Seminole research on the investigation of various condom use components and the development of the UCLA MCAS. The findings indicate that attitudes relating to condom use are multidimensional. This study focused on six predictors: relationship satisfaction, commitment, intimacy, trust, passion, and love derived from the PRQC Inventory.

Researchers have studied condom use behavior through many approaches and investigating numerous variables. For example, Baldwin and Baldwin (1988) used a quantitative approach and mailed questionnaires to students at a university in California

to examine factors influencing sexual risk-taking among college students. Interestingly, the researchers discovered that condom use was not affected by students who had taken a course on human sexuality. In other words, background knowledge on risk-taking behaviors and STIs were not predictors to safer sex practices as one would assume. These findings demonstrate how knowledge and awareness about condom use and the related health issues were not necessarily a protective factor, in the 1980s.

Other researchers have investigated alcohol use as a variable and its contributor to sexual risk-taking (Cooper & Orcutt, 2000). Cooper and Orcutt conducted face-to-face interviews with 1,417 participants between the ages of 15-24 and found that relationship status influenced condom use, as condoms and alcohol were used more in relationships that were noted to be casual. Knowing that relationship status influences condom use is important for this study because it highlights the significance of serious relationships vs. casual relationships and how relationship type can affect safe sex practices. Fehr, Vidourek, and King (2015) reviewed the literature to identify the barriers to condom use among college students and found that relationship gender roles were common barriers to condom use. Again, the above studies are examples of investigations that are available in the literature that offer some insight into sexual risk-taking behaviors.

Condom use and sexual behaviors have been examined through qualitative studies, as well. Williamson et al. (2009) investigated 20 women's thoughts on condom use through face-to-face interviews. The women talked about their feelings of dislike for condoms, particularly in serious relationships. In the serious relationships condoms were worn less and women believed their STI risk to be low. Also, only three out of the 20

women reported consistently wearing a condom during sexual intercourse. Condom use was discontinued after some time in the primary relationships, signifying trust (Williamson et al., 2009). The researchers were able to determine through their exploration that women in serious relationships were less likely to use condoms during sex because of greater feelings of trust while interpreting the relationship as a protective factor against illness or disease. O'Sullivan et al., 2010 found that college students made excuses for not wearing condoms consistently and ignored the potential health risks of not using condoms. The above findings are significant to this study because it relates to the gap in the literature. Some researchers have indicated that condoms are worn more often in serious relationships because of trust, whereas other researchers have proposed that condoms are used minimally in relationships that are considered serious and trustworthy. It also demonstrates that many women have a skewed view of risk, and faulty assumptions are a major part of condom use behavior.

Additionally, Ybarra, Rosario, Saewyc and Goodenow (2016) propose that sexual identity in women can be associated with condom use. The researchers focused on adolescent sexual identity and sexual behavior. They found that lesbian and bisexual girls make riskier sexual health decisions and do not use condoms during sex, increasing their risk of poor sexual health (Ybarra et al., 2016). Again, researchers have been investigating condom use behavior focusing on many perspectives and variables within research. Many dynamics contribute to condom use and nonuse and the above literature and research provides respected information into condom use predictors.

There are a plethora of reasons why women do not use condoms consistently in their relationships. Other factors that have been explored and deemed predictors of condom nonuse are gender imbalances, condom negotiation skills, and the pleasure component to wearing a condom. For example, some women do not use condoms because of gender roles and power, inadequate communication skills, and low condom use self-efficacy (East et al., 2011; French & Holland, 2013). This study focused on the relationship quality factor. Various researchers propose that a lack of condom use is due to insufficient relationships (Kershaw et al., 2012). In other words, satisfying relationships can be expected to foster healthy sex behavior and promote condom use. This study centered on six specific relationship quality components and their influence on condom use and did not control for the above-mentioned condom use reasons.

## Theoretical Foundation

This study focused on the association of relationship quality and condom use. The purpose of this study was to explore relationship quality and its components to condom use. Various theories have been applied in previous literature to understand the predictors of condom use. For example, models such as the theory of planned behavior (Protogerou, Flisher, Wild, & Aarø, 2013), information-motivation and behavior model (Liu et al., 2014) and the theory of gender and power (Wingood, & DiClemente, 2000), offer valuable insight into sexual behavior and condom use. Other theories that may explain sexual behavior are Bowlby's attachment theory (McElwain, Kerpelman, & Pittman, 2015), Erikson's model of psychosocial development (Raiford, Seth, & DiClemente, 2013), and interdependence theory (Dick, Rink, & FourStar, 2015). These

theories have been applied in the investigation of sexual behavior and condom use, providing a considerable amount of data on condom use behavior. However, this study focused on two other theories that have been studied minimally in regards to condom use; the Fletcher et al. model (Fletcher et al., 2000) and Sternberg's triangular theory of love (Sternberg, 1986).

The theoretical foundation for this study derived from the Fletcher et al. model (Fletcher et al., 2000) and Sternberg's triangular theory of love (Sternberg, 1986). Together, they provide insight into how levels of relationship quality could influence condom use. The two models provided a framework that grounded the study. Sternberg's theory and its constructs, intimacy, passion and commitment, offer insight into how these variables relate to relationship satisfaction; as a result, providing awareness into condom use predictors.

The Fletcher et al. model (2000) was chosen to guide this study because of the relationship quality variables the model indicates. Fletcher and his colleagues did an extensive study where they collected data from previous works to create a collection of constructs that routinely represent perceived relationship quality (Fletcher et al., 2000). Researchers have studied various variables independently, however, few studies have investigated many relationship quality variables together. Fletcher and his colleagues constructed a questionnaire based on their findings called the PRQC Inventory (Fletcher et al., 2000).

Sternberg's triangular theory of love was also pursued because of its focus on interpersonal relationships and the different aspects of love, such as commitment and

passion (Sternberg, 1986). Researchers today propose that factors such as love and commitment influence sexual behavior such as condom use. What is not entirely understood, is if factors such as love and commitment in a relationship increase or decrease condom use. The theory of love can offer insight into how feelings and emotions are associated with condom use consistency.

This study's main purpose was to investigate why college women are not consistently wearing condoms with new and old relationships, specifically, perceived serious and causal relationships, and how the characteristics of a relationship predict condom use. The Fletcher et al. model (2000) was used to explore women's perceptions of relationships and condom use frequency. Few studies have been conducted examining relationship quality regarding multiple components in first- and second-year college women and condom use using the PRQC Inventory. Exploring the six constructs together and gathering data on relationship status adds to the existing knowledge and literature.

Despite awareness of the health risk that is associated with inconsistent condom use, researchers report that women are not consistently using condoms during sexual relationships (Williamson et al., 2009). It was determined that the Fletcher et al. model (2000) could be applied in support of further developing and understanding the gap in literature. The Fletcher et al. model was used to investigate the specific factors that represent relationship quality. The available research, past and present, consists of conflicting information regarding condom use and relationships. Examining the gaps using models that are used sparsely could offer new and different information. The Fletcher et al. model considered the six specific constructs to be the primary variables

signifying relationship quality. Investigating and examining the constructs to condom use can offer valuable insight into the motivations behind relationship quality and may provide additional information on one's emotion and sex behavior tendencies.

**The Fletcher et al. Model**

An explanation of the connection between relationship quality and condom use comes from the Fletcher et al. model. Fletcher, Simpson, and Thomas identify six constructs that represent perceived relationship quality: relationship satisfaction, commitment, intimacy, trust, passion, and love. Fletcher et al. investigated the six variables and found that greater perceived relationship quality is associated with longer lasting relationships. Fletcher et al. reviewed the empirical literature on relationship quality components and identified the six common constructs that typically represent perceived relationship quality. The complex way of gathering information is the premise that guided the creation of the PRQC Inventory used to measure relationship quality, comprehensively. The theorists propose that participants will rate relationship quality both as a single dimension and as an overall evaluative dimension, and that high relationship quality ratings equal to positive and high-qualitied relationships.

Fletcher et al. incorporated several known theories to guide their model. John Bowlby and Mary Salter Ainsworth believed that early attachment to one's mother was associated with trust later in life (Bretherton, 1992). Intimacy vs. isolation are concepts within Erik Erikson's model of psychosocial development. Erikson advised that young adults go through a contemplation stage of being single or being in a relationship. Erickson believed intimacy had a lot to do with commitment and good sense of self-

identity (Pittman, Keiley, Kerpelman, & Vaughn, 2011). Additionally, relationships can be superficial or intimate (Marcia, 2002). Commitment and satisfaction are variables from interdependence theory (Etcheverry, Le, WU, & Wei, 2013) and Sternberg's theory of love model represents passion (Sternberg, 1986).

Fletcher et al. (2000) studied various works and theory that shaped the Fletcher et al. model that was used in this study. The individual constructs have been assessed and measured independently in previous research: The correlation of multiple components have not been studied at length. Studying a more comprehensive look at various constructs of relationship quality was the aim of this study.

**Sternberg's Triangular Theory of Love**

Sternberg's triangular theory of love confirms this research is grounded and similar to the literature and theory. Sternberg's theory centers on intimacy, passion, and commitment, similar to the Fletcher et al. model (2000). The triangular theory of love focuses on intimacy, passion, and commitment representing the components of love and relationships (Sternberg, 1986). Sternberg believes that high levels of these components equal love signifying perhaps a high-satisfactory relationship. This theory offers insight into how relationship quality might be influenced by levels of love, passion, intimacy, and commitment. Sternberg advises that relationship stages or the love components may influence relationship quality. Sternberg's theoretical concept provides guidance on ways relationship quality can be understood because it is similar to the constructs used in the Fletcher et al. model.

Sternberg believes that intimate love is when people are highly satisfied in their relationship, communicate well with one another, and are emotionally close (Sternberg, 1986). Passionate love is a great sexual attraction and desire to have sexual relationships, physical attraction, and romance; commitment refers to the decision to love someone or not (Sternberg, 1986). He also suggests that a person can have empty love, where one is committed but not intimate or passionate. With the love dimensions in mind, the theory potentially provides insight into how emotions and feelings predict condom use.

Sternberg's theory of love indicates that relationship quality is affected by the levels of intimacy, passion, and commitment. More specifically, Sternberg's theory outlines how love is experienced in various relationships. In other words, relationship quality assessment may depend on the different components of love and relationships. Sternberg suggests that love and relationship stages influence relationship quality, which relates to the Fletcher model (2000). For example, some women will not use a condom if they are in love and feel protected from STIs. He also suggests that all three love components need to be present for a stronger, longer lasting relationship. Jones and Paulhus (2012) report that condoms are worn less in relationships where love is present. Umphrey and Sherblom (2007) report that women in committed and serious relationships will use less condoms and women in spontaneous relationships will use more condoms. In other words, the way a woman feels emotionally towards her partner may influence such responses about relationship quality, thus affecting condom usage.

The goal of this study was to enhance current knowledge about condom use predictors by focusing on relationship quality among first- and second-year college

women. Having an understanding of how relationship qualities are associated with sexual behavior and condom use contributes to the development of intervention strategies to promote improvement in the lives of women (Brady, Gruber, & Wolfson, 2016; Sayegh, Fortenberry, Shew, & Orr, 2006). Studies that have utilized both the Fletcher et al. model (Fletcher et al., 2000) and Sternberg's triangular theory of love (Sternberg, 1986) to investigate sexual behavior associated with relationship quality and condom use, are limited. For example, variables such as commitment, trust, and passion have been studied independently in regards to relationship quality (Corbett, Dickson-Gomez, Hilario, & Weeks, 2009). The theories serve to inform and guide the research by providing both a foundation of what has been done and direction to what remains to be studied. The theories provide information on the components that have contributed to the study of condom use and factors that have predicted or been associated with sexual behavior. The Fletcher et al. model (2000) fits this study because it incorporates the constructs understood to represent relationship quality. Sternberg's theory is used because it provides some background into how factors such as passion affects a relationship.

## Literature Review Related to Key Variables and Concepts

### Awareness of Risk

Women remain a vulnerable population and are at increased risk of contracting STIs (CDC, 2014). Women are affected by STIs at a greater rate compared to men; specifically, women between the ages of 15-24 (CDC, 2014). Women face severe health consequences such as cervical cancer, infertility and unintended pregnancies. One of the most effective ways to stay protected from such illness is by using a condom during

sexual intercourse. Researchers indicate that most young college women have some degree of knowledge regarding the health consequences of unprotected sex. In fact, Marlow, Zimet, McCaffery, Ostini, and Waller (2013) conducted a survey study of 2,242 men and women to explore the knowledge of HPV and the HPV vaccine. The researchers chose international samples representing the United States, the United Kingdom, and Australia. The methodology was recruitment via e-mail through an online panel. The participants were required to complete an online questionnaire (*true* or *false*) that focused on HPV awareness and HPV vaccination (Marlow et al., 2013). The researchers found that 88% of women in the United States were aware of HPV and its vaccination and how it is contracted. The statistic confirms that most women have some awareness of HPV, and is relevant to the gap in research for this study: Despite awareness of risk, condoms are not consistently worn in relationships.

It is well known that not wearing a condom elevates the risk of contracting HPV (Wang, 2013) and unplanned pregnancies (Frost et al., 2012; Finer & Zolna, 2014), yet the percentage of women using condoms during sexual activity remains low. As mentioned above, college women between the ages of 20-24 are at greater risk of experiencing sexual health problems because of unprotected sex than other age groups (Baudu et al., 2014; Dunne et al., 2007). What worsens the issue is that college students participate in unprotected sex regardless of the awareness of risk (O'Sullivan et al., 2010).

It is quite a phenomenon that awareness of risk does not necessarily indicate that a condom will be used. For example, some women who identify their relationship as high-risk continue to not use a condom even with the knowledge of STIs (Ober et al., 2011).

To demonstrate this, Ober et al. examined women's views and awareness of partner health risk and condom use. They interviewed 1,967 high-risk women from three cities in the United States. The methodology was a respondent-driven sampling approach, and women were recruited if they were considered high-risk (i.e., drug user or having sex with men who have sex with men). The cross-sectional study found that women with primary sexual partners failed to use condoms despite recognizing their partner as high-risk for STIs. A limitation of Ober et al. study included the failure to measure other potential variables that could impact condom use such as relationship quality and trust and its effect on perceived risk.

Additionally, some men and women believe STIs to be a major problem collectively, yet they feel unsusceptible to the potential health problems (Uhrig et al., 2013). Uhrig et al. examined 185 men and women's attitudes and knowledge about STIs, risk, and prevention, in a cross-sectional survey approach. Approximately 76% of the participants identified STIs as a problem in their community, yet only one-half felt they were at risk. Acknowledging that STIs are a problem and not using protection during sex reveals an oblivious and careless perspective to one's personal health risk.

Uhrig et al. report that condoms are not worn in over one-half of people because monogamous relationships are considered a protective factor from health risks. The researchers found that communication played a major role in assessing sexual risk safety and further research is needed to address self-awareness of STIs. Researchers have found that women believe STIs to be more problematic within their communities more often than men. However, the finding contradicts current trends, as men are more likely to use

condoms than women (Holland & French, 2012). Women believe STI risk is a serious problem, yet men utilize condoms more often than women. Another example is Roberts and Kennedy's (2006) study, where they found that 50% of college women aged 18-24 felt they were at risk of STIs, however, roughly 30% wore a condom consistently. The women had good intention on talking with their partner about safe sex practices but never did. The above studies are included in the literature review because they show how awareness and what a person says is inconsistent with one's behavior, thus highlighting the need to investigate further factors that are associated with condom use.

Various angles of research have been investigated shedding light on the predictors of condom use. Nesoff et al. (2015) found that condom negotiation strategies and relationship status was associated with condom use in college-education women and that a college education is a protective factor with women in relationships considered casual. However, interestingly enough, condoms were not consistently worn in women who have had a STI. Thus, even though higher education was a predictor of condom use, personal experience of STIs was not. Similarly, Navarro-Cremades et al. (2016) found that women with knowledge of the health consequences of unprotected sex and STIs (i.e., current students in a healthcare related field), was not a protective factor in a sample of college women in Spain. In other words, college students enrolled in a specific healthcare-related course highlighting the importance of condom use, health risk, and STIs does not increase condom usage (e.g., similar to the 1988 study by Baldwin & Baldwin). Knowledge about how to avoid illness does not predict condom use, thus further supporting the need to investigate additional factors.

A study performed in Malawi, Africa found similar results. Awareness of poor health was not a determent for consistent condom use among a sample of young adults in a study done by Romero, Ellis, and Gurman (2012). The Malawi study statistics show the necessity in further studying condom use and why condoms are not used even though most people are aware of the importance of using one.

**Serious and Casual Relationships and the Quality of a Relationship**

The conclusion based on the literature is that women are using condoms less and having multiple sex partners (Tyden, Palmqvist, & Larsson, 2012) even though health problems are appreciated. This unsafe sex trend puts young college women at an increased risk of health problems (Baudu et al., 2014; Dunne et al., 2007). Or, maybe relationship quality components are affecting condom use decision-making because of elements of communication and trust (Kershaw et al., 2012). The researchers propose that knowing the health risk does not necessarily increase condom use consistency. Investigating relationship quality more thoroughly provides additional information into the condom use dilemma.

It is possible that relationship quality is linked to sexual decision-making and condom use behavior. Manlove, Welti, Wildsmith and Berry (2014) report that young adults in long-term, serious relationships are using condoms less than those in short-term, casual relationships. Hock-Long et al. (2013) found similar results in their study: Consistent condom use was found more often in casual relationships. Much of the research proposes that condoms are used less often in primary, long-term, and positive

relationships. Factors such as a person's attitude and other conflicts in emotional expression and intimacy may affect overall relationship quality (Kershaw et al, 2012).

Few studies have investigated the combination of these factors, thus further supporting the need for this study. Vamos et al. (2013) report that people in longstanding relationships are more susceptible to health problems and infections compared to those in temporary relationships. The findings are the opposite of what one would expect. In fact, women in serious, primary relationships are also at risk of contracting STIs. For example, O'Leary (2000) reports that women in long-term, serious relationships are at greater risk of contracting HIV compared to women in casual relationships. The indication is that women in primary, long-term relationships are more satisfied and content than women in temporary relationships, and condoms are not used, increasing risk of infection. In other words, women in monogamous relationships are equally at risk of experiencing poor health problems related to unprotected sex.

Wang (2013) adds to the literature proposing that people in relationships will use condoms less than people not in relationships. Wang adds that communication effectiveness is vital to condom use consistency among relationships. Perhaps poor communication and faulty assumptions result in increased susceptibility to infections. Bolton et al. (2010) report that negative STI results in women led to a belief that they were invulnerable for future infection; a serious misassumption. Roberts and Kennedy (2006) posit that roughly 50% of college women believe they are at risk of developing health problems from unprotected sex. These same women also had good intentions of talking about wearing a condom with their sex partner, however, regular condom use was

consistent in only 3-out-of-10 women (Roberts & Kennedy, 2006). The information from Roberts and Kennedy shows that women believe they can initiate and negotiate condom use initially, but ultimately fail to do so, solidifying that awareness of risk does not always increase condom use in women. Even though women who believe they are high-risk for contracting infection from sex, still have do not use condoms (Umphrey & Sherblom, 2007).

Relationship status may play a major role in understanding condom use behavior. Researchers indicate that college students often stereotype their sex partner based on relationship status. Conley and Collins (2002) believe that judgments about STIs are based on whether someone is single or in a relationship. For example, a person in a relationship is less likely to have an STI because he or she has been in a steady relationship and is less exposed to infection. Or, a single person is believed to have STIs because he or she is having random, impulsive sex. The idea is that people who are single are having casual sex with multiple partners, compared to people in committed relationships where couples are only having sex with each other. Additionally, some people will make assumptions based on physical appearance (Bolton et al., 2010) and peer groups (Bolton et al., 2010; Zhang, Abler, Bao, & Pan, 2014). Judging a person's risk of STIs based on physical characteristics (Noar et al., 2012) influences condom use for many college students.

Walsh, Fielder, Carey and Carey (2014) did a longitudinal study and found that women used condoms and birth control more often with friends than romantic relationships. The finding from Walsh et al. is similar to Jones and Paulhus's (2012)

suggestions, that safer sex practices are decreased in romantic, long-lasting relationships. Researchers have reported that condoms will be worn less over time (Bolton, McKay, Schneider, 2010; Walsh et al., 2013); proposing that as relationships progress, condom use drops. Furthermore, Diekman, McDonald, and Gardner (2000) recommend glorifying the use of condoms among young people will increase its use. The idea is to associate condom use with love and make it okay and desirable (Corbett et al., 2009). Perhaps investigating love and commitment, for example, can shed new light on the various predictors of condom use within different types of relationships.

According to researchers, relationship quality is a predictor of condom use (Manning, Flanigan, Giordano, & Longmore, 2009). Manning et al. (2009) found that inconsistent condom use is directly correlated with positive relationships, thus, education should be veered towards informing women in serious, primary, long-term relationships that they may be at risk of infection. If condom use and safe sex practices are glorified, perhaps women would be more inclined to consistently use a condom.

Lehmiller et al. (2014) investigated condom use in college students in romantic relationships compared to those in "friends with benefits" relationships (p. 74). The researchers found that romantic partners reported greater satisfaction in their relationships compared to "friends with benefits" partners, and condom use was reported more often within the friends with benefits couples compared to romantic partners (p. 74). The Lehmiller et al. (2014) study collaborates with much of the research that people in satisfying and steady relationships do not consistently participate in protected sex behaviors. However, researchers reveal a gap:  How is perceived relationship quality and

condom use associated and how does it affect women in college? Researchers propose that relationship status and relationship quality predict condom use. Some researchers confirm that primary and high satisfactory relationships decrease condom use. Other researchers found that high-satisfactory relationships increase the use of condoms. For example, Ssewanyana et al. (2015) did a pilot study to investigate condom use in romantic and steady relationships in young university students. The researchers found that students in romantic, steady relationships were more likely to wear a condom compared to those students who were not in a relationship (e.g., engaged in casual sex). Pilkington, Kern, and Indest (1994) report that women in unhappy relationships are wearing more condoms. On the other hand, Hock-Long et al. (2013) found that condoms were worn less in primary relationships compared to women in causal relationships, with trust levels playing a role in condom prediction. In other words, some individuals in long-term, primary relationships use a condom and some do not. And, some people in a new relationship may or may not use a condom.

Researchers also indicate that a woman might use a condom if she feels comfortable in the relationship (Cox et al., 2013), whereas other findings propose comfort decreases condom use (Strachman & Impett, 2009). For example, where gender imbalances, and power and control is a concern, some women might not talk to their partner about wearing a condom (Bui et al., 2012). Researchers suggest that women believe their partner will initiate the condom, or lack the confidence and self-efficacy to address safer sex strategies with their partner (East et al., 2011). Poor communication skills relating to protection during sexual activity can result in the failure to wear a

condom. The information from Cox et al. (2013) and Bui et al. (2012) is added to piggyback off of the above information: Often women do not wear a condom even though they want to. Trust level may or may not indicate a condom will be worn in some relationships.

The primary goal of this study was to explore relationship quality and its influence to condom use. Noftle and Shaver (2006) found that women typically rate relationship quality higher than men. Noftle and Shaver's findings are noteworthy because women are the key subjects in this study and one of the research questions is whether or not relationship quality predicts condom use. Noftle and Shaver 6found that relationship status is correlated with higher ratings of relationship quality: Individuals not in a relationship will have lower relationship quality compared to the high quality ratings from those in a current relationship (Noftle & Shaver, 2006).

Researchers have indicated that love and trust elements affect condom use (Gibbs, Manning, Longmore, & Giordano, 2014). Gibbs et al. (2014) report on how negative relationship qualities tend to influence condom use more often than a positive relationship. For example, distrust and jealousy reduce condom use (Gibbs et al., 2014). The researchers suggest that relationship quality and relationship status influences condom use and should be further investigated. This information is pertinent to this study because it demonstrates how poor relationship quality decreases safe sexual practices within dating relationships and is one avenue this study highlighted. The following sections in this study are motivated by the importance of understanding how relationship quality and relationship status influences consistent condom use in young college

students. The overall current study was driven by the need to identify further ways to enhance condom use consistency to reduce STIs.

**Relationship satisfaction.** Fletcher et al. (2000) did extensive research and identified six primary constructs that six primary constructs that typically represent relationship quality within the literature. Fletcher et al. were interested in creating a more accurate assessment tool that assessed relationship quality more thoroughly. They found that people judge their opinions on relationship quality based on their attitudes towards their partner with relationship satisfaction differing from person to person. Furthermore, Fletcher, Simpson, Thomas, and Giles (1999) investigated ideals in relationships and the common characteristics that represent relationship satisfaction by asking 100 men and women to describe their ideal partner. Characteristics such as physical attractiveness were found to be highly relevant. The researchers did further studying to investigate the common features noted to be ideal. The ideal partner in their study was someone who was attractive, trustworthy, loyal, passionate, and resourceful (Fletcher et al., 1999). Additionally, Dariotis and Johnson (2015) studied a sample of 18-24-year-olds and found that condoms were used less when partners were perceived to be more attractive and assumed not to have a STI.

Researchers indicate that condom use behavior may be related to relationship satisfaction (He, Hensel, Harezlak, & Fortenberry, 2016). For example, some researchers propose that individuals satisfied in their relationships will not use a condom (He et al., 2016), compared to a dissatisfying relationship (Gibbs et al., 2014). Contrarily, other researchers propose that condom use increases in high satisfying relationships (Cox et al.,

2013). Levels of trust and effective communication make it easier for women to communicate with their partner about using a condom. The researchers have revealed contradicting results.

Researchers indicate that women are satisfied in their relationship when they have a high sexual self-esteem. That is, women who feel confident, competent, and worthy of love and happiness (Zimmer-Gembeck, See, & O'Sullivan, 2015). When a person is able to communicate their sexual expectations with their partner, satisfaction levels increase. Steady, primary relationships foster more positive feelings and report undesirable feelings, less (Zimmer-Gembeck et al., 2015). In other words, women in multiple relationships report negative, unsatisfactory feelings more often than women in monogamous relationships. Furthermore, researchers report that people who feel confident in their ability to discuss safer sex with their partner are more likely to use a condom (Addoh, Sng, & Loprinzi, 2017). Relationship satisfaction may be an essential factor to why a condom is worn in a relationship: It is important to know why some satisfied women use condoms and why some satisfied women do not.

Condom use behavior is related to the level of satisfaction within the relationship. According to He et al. (2016), condom use was reduced in high-satisfactory relationships over time. And so, highly satisfied couples do not use condoms. Women used condoms less due to relationship satisfaction compared to men. On the contrary, some researchers report that women in seemingly poor relationships or those who are unsatisfied in their relationship will use a condom during sex (Gibbs et al., 2014).

Strachman & Impett (2009) report condoms were used less in relationships that were considered high-satisfactory. Other researchers found that condoms were worn more often in high satisfying relationships (Cox et al., 2013). The inconsistent use of condoms shows that trust, love, and high-satisfactory scores do not always indicate condoms will not be used. Some women do not use a condom because of trust, love, and high-satisfactory relationships because they do not want their partner to question their loyalty or because they feel safe with their partner in regards to health-related concerns (Masvawure et al., 2014; William et al., 2009).

More researchers suggest condoms are used in positive relationships than negative ones (Gevers, Jewkes, & Mathews, 2013). Condoms are used in positive, long-term relationships because the couple feels comfortable communicating about their relationship expectations. Because women are more apt to assess their relationship as positive, one would assume, based on this information, that condoms would be used. Women report feeling positive in their relationship when they can talk with their partner, as they are typically more expressive than men (Simon & Nath, 2004). Men, on the other hand, report positive relationships based on the amount of arguing within the relationship. Open communication is a key factor in relationship quality for women (Simon & Nath, 2004). Additionally, couples in monogamous relationships report greater positive feelings (Gevers et al., 2013).

Researchers have made known that good communication styles foster safe settings that encourage safer sex behaviors. Women report better relationship quality and more condom use if they can communicate openly with their partner about sex (Quinn-

Nilas et al., 2015). Unfortunately, some college students are hesitant and nervous to talk to their partner about using a condom (Goldman et al., 2014). Some women who feel anxious about their relationship will not talk to their partner for fear of rejection (Williamson et al., 2009).

There are many types of feelings one can experience in a relationship. Researchers indicate that attachment anxiety affects condom use. For instance, individuals who are enmeshed, or experience high anxiety surrounding their relationship use condoms less (Strachman & Impett, 2009). People who are not anxious and are confident and independent, are more likely to wear a condom because they can initiate conversations about safe sex. Adequate communication skills is associated with an increase in condom use (Gevers et al., 2013). High-satisfactory relationships can indicate condoms will not be worn (Strachman & Impett, 2009).

Despite awareness of risk in positive relationships, a condom may not be worn (Strachman & Impett, 2009). Some researchers indicate that positive relationships promote healthy sexual behavior because couples can talk confidently about using a condom without fear of negative consequences from the other. However, not all serious, long-term relationships are having conversations about safe sex (Gevers et al., 2013).

Other researchers have found that people engage in less risky sexual activity if they are in a satisfying relationships; condom use is increased and sex behaviors are more monogamous (Vamos et al., 2013). Dating couples who experience positive and satisfactory relationships are more likely to use condoms. Cox et al. (2013) found that good relationship quality and communication had a positive affect on condom use. In

other words, positivity, happiness, and good communication creates safe environments to have conversations about sex, and couples are more likely to wear a condom (Strachman & Impett, 2009; Wang, 2013). It appears that relationship quality to condom use will affect people differently. The relationship between the level of closeness to a partner and condom use initiation remains unclear.

Furthermore, Pulerwitz, Amaro, Jong, Gortmaker, and Rudd (2002) studied relationship power and condom use and HIV risk in women from the United States. There have been no recent studies; thus the Pulerwitz et al. study is included because it is considered Seminole and the only one identified in the area. The researchers investigated 369 women's relationship power and condom use using the Sexual Relationship Power Scale (SRPS). Internal consistency reliability was 0.84. The researchers found that women with high power in relationships were more likely to wear a condom compared to women with lower power consistently. In other words, condom negotiation skills and the ability to exercise safer sex practices increased when gender-based power was balanced within the relationship. The researchers found that high level of relationship satisfaction coincided with higher relationship power (Pulerwitz et al., 2002). The findings are examples of how relationship components can influence condom use and the further need to explore what is missing in the research.

In summary, the way relationship quality and relationship status influence consistent condom use remains to be studied and is the motivation behind the proposal. As indicated above, relationship quality can either decrease or increase condom use. It is

imperative to identify and recognize the specific predictors so the targeted population can live healthier lives.

**Commitment.** The Merriam-Webster dictionary online defines commitment as (a) “a promise to do or give something,” (b) "a promise to be loyal to someone or something," and (c) “the attitude of someone who works very hard to do or support something” (*Merriam-Webster’s online dictionary*, 11th ed.) To be committed in a romantic relationship may look very similar to these definitions. Individuals committed to their relationship will express loyalty and devotion and communicate well with one another (Yamaguchi, Smith, & Ohtsubo, 2015). The operational definition established by Sternberg (1986) defines commitment as a gradual process depending on the type of relationship. Sternberg explains that commitment will become greater as the relationship becomes more successful and satisfying. On the other hand, if the relationship is at a standstill, the level of commitment will begin to decrease. Sternberg suggests that commitment is the “decision that one loves someone else, and in the long term, the commitment to maintain that love” (p. 119).

Many researchers have reported that commitment in a relationship can influence condom use among college students (Alvarez & Garcia-Marques, 2011; Umphrey & Sherblom, 2007); that is, people involved in steady relationships use condoms less than people in casual relationships. However, Lehmiller et al. (2014) examined relationship satisfaction and condom use in a sample of 376 predominately women (74%) adults and found that couples in romantic relationships communicate their sexual desires more than friends with benefits relationships. Interestingly, the researchers found that friends with

benefits actually practiced safe sex more often even though overall communication about sex was better in romantic relationships.

Bauman and Berman (2005) examined trust, love, and commitment and how it affects condom use in a sample of 20 adolescents in advisory groups and interviews. The researchers found that condom use was based upon the type of relationship. For example, if trust was high or if the relationship was considered serious, condom use declined. Additionally, if the respondent reported love in the relationship or a level of commitment to one another, condom use was less likely to be worn.

The bulk of the relevant research articles found to establish the background of commitment, and condom use are older, and only a few articles were found that were dated within the last five years, regarding commitment (Cooper & Gordon, 2015; Lehmiller et al., 2014). A study by Lennon, Stewart, and Ledermann (2013) found that women are more satisfied in their relationships than men are. Dissatisfaction is associated with power and lack of commitment. For example, power and control and gender inequalities can result in unhappiness. Other researchers define commitment in a relationship as exclusive and stable (Marston, Hecht, Manke, McDaniel, & Reeder, 1998). The Marston et al. findings are included in this study because it reports on the association between commitment and relationships which are relevant to this study.

Furthermore, some people feel safe from STIs in committed relationships and people in non-monogamous relationships might feel more vulnerable (Swan & Thompson, 2016). The feeling protected from illness could be because of trust level. For instance, Harvey et al. (2006) did a study to investigate women's condom use intentions.

The researchers interviewed 435 women between the ages of 18-25 on relationship characteristics, condom use self-efficacy, and STI heuristics to better understand how factors such as commitment and relationship status influenced condom use decision making. The researchers found that women who were highly committed to their partner and in long-term relationships reported less intention to use a condom, in addition to, feelings of decreased vulnerability of contracting STIs (Harvey et al., 2006). It is plausible that women trust their partners more in long-term, committed relationships and believe the level of trust and commitment for one another as reciprocated.

Making healthy sexual decisions is an essential part of keeping STIs at bay. Researchers Cooper and Gordon (2015) discuss the relevance of sexual decision making in casual relationships. The researchers investigated 11 young women's sexual decision making in a causal relationship via face-to-face interviews. They found that the importance of being in a relationship influenced condom use. Women hoped that having casual sex would demonstrate their availability to be in a serious relationship. In other words, casual sex would lead to a primary relationship (e.g., boyfriend-girlfriend status) (Cooper & Gordon, 2015).

Bisson and Levine (2009) examined "friends with benefits;" why friends have sex with one another and negotiation strategies (p. 66). The researchers used Sternberg Triangle Love Scale to measure intimacy, passion, and commitment. The researchers reported that people engaging in "friends with benefits" relationships scored higher in intimacy than passion or commitment (p. 66). One of the most frequently reported advantages a "friends with benefits" relationship is lack of commitment (p. 66). In other

words, a plus to being in a "friends with benefits" relationship is not having to worry about relationship quality components such as love, fidelity, or other responsibilities to a relationship (p. 66). Approximately, 21% of the participants reported trust as an advantage in friends with benefits relationships, signifying that knowing the person offered some level of comfort (Bisson & Levine, 2009). The Bisson and Levine study is notable because it sheds some light into what intimacy means with it comes to sex. Unfortunately, literature regarding intimacy and condom use in college students specifically is scarce.

The desire to be in serious or primary relationships is high in some women and having sex proves one's commitment and dedication (Cooper & Gordon, 2015). When an individual refrains from asking questions about sex expectations or inquire about their partner's past sexual experiences, this validates their loyalty. In other words, women choose not to talk about sex expectations and experiences because they want to demonstrate trust towards their partner and appear devoted. This information relates to the gap in the research because it shows how trust and the desire to be in a relationship (e.g., relationship status) can influence condom use. Trust has been identified as one of the variables that may contribute to condom use by the Fletcher et al. model (2000).

In summary, trust within a relationship has been identified as an important component to relationship quality. As mentioned in the above paragraphs, trust levels can either decrease or increase condom use in some relationships. This study sets out to gather additional data to why some women use condoms, and others do not.

**Intimacy.** Intimacy is one of the constructs that represent relationship quality, according to the Fletcher et al. model (2000). Sternberg (1986) operationally defines intimacy as "feelings of closeness, connectedness, and bondedness in loving relationships" (p. 199). Quite regretfully, research in this area is limited, and only a couple relevant studies were found. The lack of extensive and recent studies further supports the need for the study on intimacy. If intimacy were to be studied more thoroughly today, perhaps one would see that certain levels of affection within a relationship do affect sex behaviors such as condom use.

Gebhardt, Kuyper, and Greunsven (2003) investigated intimacy and condom use among 701 adolescent men and women between the ages 15-23 (mean age is 18) using a survey method design. Using a five-point Likert scale with scores ranging from 1 (never) to 5 (always), condom use was measured by asking: "Do you use condoms when having sex with a steady partner(s)?" and "Do you use condoms when having sex with casual partner(s)?" (p. 156). The respondents who reported inconsistent condom use were asked why using a checklist provided. The researchers measured intimacy on a nine-item questionnaire about dating goals. An example question measuring intimacy is, "In my dating relationships I share my most intimate thoughts and feelings" (p. 157). A Pearson correlation analysis was used and the researchers found that that need for intimacy was associated with less condom use in steady relationships. The participants participating in casual sex did not always search for intimacy in their relationship.

Some researchers focusing on the study of intimacy examines friendships and sex (Marston et al., 1998), concentrating on how a couple communicates or how they express

their emotions and affection. High intimacy is when a couple can communicate well, and display affection and love. This intimacy statistic is relevant because it demonstrates how intimacy may relate to relationship quality. It shows that intimacy has been considered and investigated in regards to sex and relationships.

Intimacy is a variable that is studied in this study (Fletcher et al., 2000). Intimacy has also been considered when investigating relationship quality (Marston et al., 1998). Martson et al. examined couples' experiences of intimacy, passion, and commitment. They conducted face-to-face interviews with 79 couples, inquiring about communication strategies and relationship stage. The qualitative study conducted by Marston et al. found that couples experienced intimacy six ways: "openness, sex, affection, supportiveness, togetherness, and quiet company" (p. 15). The researchers noted that further study is needed on whether or not levels of intimacy affects relationship satisfaction. Minimal research was found on commitment and condom use alone.

In summary, intimacy within a relationship has been identified as an important component to relationship quality. As mentioned in the above paragraphs, levels of intimacy can either decrease or increase condom use in some relationships depending on relationship type. Because research is limited in regards to levels of intimacy in relationships and its potential influences to condom use, it is vital to further discover the association between intimacy and condom use.

**Trust.** Trust has been studied regarding relationship satisfaction and condom use behavior. Fletcher et al. (2000) measured dependability levels to assess trust. Bolton et al. (2010) studied trust and condom use and found that comfort levels and knowing their

sexual partner for a period represented trust. In other words, women who felt comfortable with their partner were less likely to use a condom. In their study, trust was defined as the level of comfort a person has to their partner (Bolton et al., 2010). The researchers additionally reported that consistent condom use is reduced in progressive relationships. Because levels of trust and intimacy are high, many women will back-off using condoms. Corbett et al. (2009) indicate that condoms are used to build trust, but are also not used to show trust. For example, Corbett et al. suggest that some couples attempt to assure their partner they are free of STIs by not using a condom. Condom usage is often not discussed if a woman believes she is in a monogamous relationship (East et al., 2011).

In a study done by Uhrig et al. (2013) men reported having sex with a trusted partner (55% vs. 40%) and using condoms for prevention more often than women (71% vs. 55%). The findings from Uhrig et al. study are significant because trust and monogamy are considered protective factors and predictors of condom nonuse and is highlighted later in this study. Higher levels of commitment are associated with a decrease in condom use. Once a relationship gets stronger and the individuals become more committed, trust increases, which decreases condom use. Trust can make people believe they are safe from harm (Harvey et al., 2006).

As mentioned above, people who feel safe and insusceptible to STIs are less likely to use a condom (Pilkington et al., 1994). Negative relationships are more apt to foster a concern for STIs, resulting in an increase in condom use. Gibbs, Manning, Longmore, and Giordano (2014) report similar findings: Individuals who have negative feelings in a relationship are more likely to use a condom (Gibbs et al., 2014).

There are many predictors of risky sexual behaviors that have been studied at length. Many questions remain as to why women do not consistently use condoms with their sex partners. Park, Hsieh, Collins, Levonyan-Radloff and King (2009) interviewed 241 women using several measures and found that alcohol was not a significant predictor of condom use and partner type. Specifically, they wanted to know how a person's individual characteristics affected condom use in both new and old relationships. To study risky sexual behavior, the authors used the Risky Sexual Activities Subscale of the Cognitive Appraisal of Risky Events Questionnaire (Fromme, Katz, & Rivet, 1997). The questionnaire had a Cronbach's α of 0.87 and α = 0.76 (Parks, Hsieh, Collins, Levonyan-Radloff, & King, 2009). To study individual characteristics, the authors used the Sexual Assertiveness Scale (SAS) with internal consistency as α = 0.66, 0.67, and 0.86. The sexual risk of a regular partner was measured by asking the participants if their current partner was using intravenous drugs or had a current STI. The researchers found that women reported reduced condom use with regular partners compared with new partners, despite alcohol intoxication. The women said that their regular sex partners were not sexually risky and could be trusted. The majority of women in the Parks et al. (2009) study appreciated that condoms should be worn during new sex partners. Rates of sexual risk taking were higher with regular partners. Some women will use condoms less with primary sex partners because of trust and beliefs that their partner is monogamous, thus, at a lower risk of contracting STIs.

According to various researchers, people in relationships with high trust feel protected from risk and will use condoms less. Nevertheless, many questions remain.

Does trust and relationship quality influence the frequency of condom use? This study addressed these questions.

**Passion.** Fletcher et al. (2000) investigated relationship quality by assessing levels of sexual intensity and lustfulness. Sternberg (1986) defines passion as "the drives that lead to romance, physical attraction, sexual consummation, and related phenomena in loving relationships" (p. 119). Fletcher et al. (2000) identified passion as an element to perceived relationship quality that is important to many. Hatfield and Walter (1978) report that passion is "the profound desire to be with another" (as cited in Marston et al., 1998, p. 16). Passion is a way to describe emotions that are almost uncontrollable. Sternberg (1986) suggests that passion can be felt almost immediately within a relationship where physical attraction is strong and the need for the feeling of passion is necessary. Sternberg also points out that passion is essential to a romantic relationship. After some time, the feelings can become habitual, then the passionate feelings eventually subside (Sternberg, 1986). Condom use intent might be high, but because of strong sexual arousal, a condom is not worn (Noar et al., 2012).

Furthermore, Civic (2000) examined reasons why condoms are not used in dating relationships in 210 undergraduate college students using a cross-sectional survey design, and found that passion levels contributed to lack of condom use. The researcher found that the heuristic beliefs that one's partner is safe from STIs is one of the main reasons why condoms are not used during sex. Additionally, impulsive sex was another reason identified for condom nonuse in the beginning of relationships. Factors such as "heat of passion" were identified as reasons condoms were not worn (p. 103).

**Love.** Researchers have identified that some people will not use a condom as a way to establish a serious relationship (Corbett et al., 2009). Noar et al. (2012) suggests that nonuse of condoms represent love. Some people in serious relationships struggle to discuss safe sex practices with their partner because they worry about negative feedback or it affecting the relationship negatively (Noar et al., 2012). People in serious relationships may not use a condom because using a condom creates feelings of mistrust (Noar et al., 2012). Similar to Sternberg's triangular theory of love, researchers suggest that condoms are not worn because love and trust is great (Pilkington et al., 1994). The Pilkington et al. research is dated, however, demonstrates that Sternberg's idea of love has been connected to trust in the past. Love, trust, passion, and intimacy may be associated with relationship quality.

As mentioned previously, love appears to be a predictor of condom use. Some women feel invulnerable to STIs when in love. Jones and Paulhus (2012) report the phenomenon of women engaging in unprotected sex who identify with being in love with someone they do not know well, yet feel safe from contracting STIs is called "emotional promiscuity" (p. 1002). Emotional promiscuity is defined as the "tendency to fall in love easily, fast and often" (p. 1002). Poor emotional boundaries, premature trust, and overly comfortable reactions to sex are elements that have been identified as ways women are putting themselves at greater risk of health problems (Jones & Paulhus, 2012). Emotional promiscuity suggests that greater levels of love and trust reduces the use of condoms. In other words, high levels of trust and romance may be contributing to the maintenance of STIs.

Cooper and Gordon (2015) conducted a focus group with 11 women 18-25 years old to study women's sexual decision making in casual relationships. They found that some women report having casual sex often in hopes that it will make their partner love them. The Cooper and Gordon study is important to note because it indicates that women participate in casual relationships freely because they want their partner to fall in love with them, ultimately resulting in a committed, primary relationship. Inclusionary criteria was that the participant had unprotected casual sex at least once with a male partner. One major theme identified as reasons to casual sex was the desire to be in a relationship and secure a boyfriend. Additionally, the 11women reported feeling some level of pressure from their casual partner not to use a condom. Perhaps, women are not always using condoms in relationships, not only because of the quality of the relationship, but the mere desire to be in one. The Cooper and Gordon study is important to mention in regards to this study because it suggests that, whether relationship quality is good or bad, women may avoid wearing a condom in order to produce a primary and steady relationship with the partner. The remaining gap is the need to further investigate how relationship satisfaction, commitment, intimacy, trust, passion, and love influence condom use in college women.

## Summary

Researchers reveal countless reasons why women fail to use condoms during sexual encounters and initiating and negotiating the male condom has proven to be challenging for many. It is important to address these reasons so one can acquire a

background of knowledge into the various explanations and motives to condom use. Poor self-efficacy, gender inequality, power imbalances, and inadequate communication strategies about using condoms are just a few factors that are highly influential to condom use and have extensively been studied throughout the literature. The six components that represent relationship quality according to Fletcher et al., are discussed in this chapter. Relationship satisfaction, commitment, trust, passion, and love may predict condom use in some relationships. Furthermore, although women are aware of the health consequences of unprotected sex, many continue to refrain from using a condom.

Relationship aspects have been widely studied to explain behaviors related to sexual risk, including condom use and nonuse. Most of the studies have established that relationship quality and the individual components that signify a relationship affect condom use in some realm. This study sought to understand how six distinct components, representing relationship quality, were associated with condom use, which is less understood. Chapter 3 covers a review of the research design methodology, the research questions, data collection methods and the PRQC Inventory.

# Chapter 3: Research Method

## Introduction

The aim of this quantitative, nonexperimental, correlational study was to explore the relationship between relationship quality and condom use among a sample of first- and second-year college women. Two separate universities were sampled; a central Nebraska university and a Connecticut university's regional campus. The purpose of this study was to determine if relationship satisfaction, commitment, intimacy, trust, passion, love, and overall relationship quality were predictive of condom use, as conceptualized by the Fletcher et al. model (2000). While researchers have done a considerable amount of work on condom use behavior, how relationship quality influences consistent condom use among college women is unclear (Hock-Long et al., 2013).

The major sections of this chapter consist of the research design and rationale, and the methodology: the population, sampling procedures, recruitment, data collection strategies, and all instruments used. Chapter 3 also addresses threats to validity. The Walden University's approval number for this study was 08-25-17-0453085.

## Research Design and Rationale

To examine whether or not relationship quality is predictive of condom use in women, the study was guided by the following research questions:

RQ1. Are higher levels of relationship satisfaction predictive of condom use in first- and second-year college women as measured by the relationship satisfaction scale on the PRQC Inventory?

$H1_0$. Relationship satisfaction is not predictive of condom use.

$H1_A$. Higher levels of relationship satisfaction is predictive of condom use among first- and second-year college women.

RQ2. Are higher levels of commitment predictive of condom use in first- and second-year college women as measured by the commitment scale on the PRQC Inventory?

$H2_0$. Commitment is not predictive of condom use.

$H2_A$. Higher levels of commitment is predictive of condom use among first- and second-year college women.

RQ3. Are higher levels of intimacy predictive of condom use in first- and second-year college women as measured by the intimacy scale on the PRQC Inventory?

$H3_0$. Intimacy is not predictive of condom use.

$H3_A$. Higher levels of intimacy is predictive of condom use among first- and second-year college women.

RQ4. Are higher levels of trust predictive of condom use in first- and second-year college women as measured by the trust scale on the PRQC Inventory?

$H4_0$. Trust is not predictive of condom use.

$H4_A$. Higher levels of trust is predictive of condom use among first- and second-year college women.

RQ5. Are higher levels of passion predictive of condom use in first- and second-year college women as measured by the trust scale on the PRQC Inventory?

$H5_0$. Passion is not predictive of condom use.

$H5_A$. Higher levels of passion is predictive of condom use among first- and second-year college women.

RQ6. Are higher levels of love predictive of condom use in first- and second-year college women as measured by the love scale on the PRQC Inventory?

$H6_0$. Love is not predictive of condom use.

$H6_A$. Higher levels of love is predictive of condom use among first- and second-year college women.

RQ7. Are higher levels of relationship quality as measured by the total score on the PRQC Inventory predictive of condom use in first- and second-year college women?

$H7_0$. Higher levels of relationship quality is not predictive of condom use.

$H7_A$. Higher levels of relationship quality is predictive of condom use among first- and second-year college women.

Using the scale *always*, *sometimes*, and *never* condom use was assessed by asking: Do you wear a condom with your current (or past) partner?

**Description of the Research Design**

A nonexperimental, survey design best fit my research questions; that higher levels of relationship quality affects condom use in women. I used a binary logistic regression analysis design to explore the relationship between relationship satisfaction, commitment, intimacy, trust, passion, love, overall relationship quality and condom use. The purpose of regression analysis is to assess how the variables change the dependent variable outcome (Field, 2013). By using a logistic regression analysis, I was able to investigate how the six predictors related to condom use (Creswell, 2009).

The main question was whether or not condom use was associated with the six identified relationship quality variables from the PRQC Inventory, and the overall score of the inventory. I was most interested in investigating high-risk sexual behavior, thus, if an individual decided not to use a condom one time, they engaged in the high-risk sexual behavior for purposes of this study. The number of times an individual engaged in this risky behavior was not relevant to this study's research questions. By using the scale *always*, s*ometimes*, and *never*, I was able to provide descriptive statistics about the reported frequency of using condoms for the entire group. I gathered demographical data such as age, gender, relationship status, college, year and any use of female birth control. It was necessary to control for birth control, as participants may not use condoms because they take some form of birth control.

For this study, I utilized an online survey approach methodology (See Appendix A). Groves, Fowler, Couper, Lepkowski, Singer, and Tourangeau (2009) describes survey research as a method of gathering and assessing the thoughts and opinions of others. Groves et al. define measurement as "ways to gather information about constructs" (p. 43). Using a survey research design allowed me to study the sample population of interest and make generalizations and assumptions about how the larger population views a certain problem (Barlett, Kotrlik & Higgins, 2001), specifically, how relationship quality affects condom use. I created a hyperlink to Survey Monkey. Online surveys are convenient and provide a high degree of privacy and confidentiality (Granello & Wheaton, 2004; Groves et al., 2009). Online research may also increase the response rate when dealing with sensitive issues (Ahern, 2005). Studying sex behavior is a

sensitive topic. Utilizing online methodology may increase response rate. It was important for me to consider the target population, access, and factors such as time, money, and convenience when I chose the methodology (Creswell, 2009).

## Methodology

### Population

The population who met the sampling criteria were women enrolled in their first- or second-year of college at a 4-year university in Nebraska who were between the ages of 19-24 years old, and women enrolled in their first- or second -year of college at a 4-year university from Connecticut who were between the ages of 18-24 years old.

### Sampling and Sampling Procedures

One out of two of the universities included in the analysis of this study was conducted at a Nebraska university. The school is a 4-year, public university, centering on business and education, fine arts and humanities, and natural and social sciences. According to an online 2017 fact book, there were approximately 4,843 undergraduate students in the 2017 fall semester and 2,783 of them were women. In addition to the above university, this study also included a regional campus at a Connecticut university. The school is a 4-year, public university, similar to the above university that includes four regional campuses. The regional campus centers on American studies, business administration, business data analytics, English, general studies, human development and family studies, and psychology. According to an online document, there were approximately 851 undergraduate students enrolled in the fall of 2017 at the regional

campus included in this study, and 463 of them were women. No data are available for spring 2018.

The participants were selected using a nonprobability design; specifically, a convenience sampling strategy and data was collected by a hyperlink to Survey Monkey. Nonprobability samples are useful when the researcher wants to answer a research question and learn how the variables relate (Meyer & Wilson, 2009). Nonprobability samples are often "homogeneous" which is good if the researcher wants to falsify the hypothesis (Lucas, 2003, p. 243). Participants were selected by convenience and not by simple random techniques.

A participant was eligible if she was a first- or second-year college student between the ages of 19-24 years old (for Nebraska), and 18-24 years old (for Connecticut) and was currently, or had been in a casual/temporary or steady/primary relationship. She could be married or single. Age of majority in Nebraska is 19 years old. In Connecticut, the age of majority is 18 years old. Male students did not qualify. Any woman student enrolled as a junior or senior, or younger than 18 years old or older than 24 years old was excluded from this study. The sample size desired was 208 participants, however, the actual sample size for the analysis was 85. The challenges to data collection are described in more detail in Chapter 5.

**Sample Size & G*Power**

An alpha level of 0.05 is standard for the type of research done in behavioral health. Cohen (1992) suggests having a power of 0.80, which means there is an 80% chance that I will detect effects if they indeed exist. The G*Power 3.1.9.2 program is an

analysis program for various statistical tests (Faul, Erdfelder, Buchner, & Lang, 2009). Initially, I used G*Power to calculate sample size needed for a *z* test logistic regression a priori type of power analysis with an effect size of 1.5, per power analysis guidelines established by Hsieh, Bloch, & Larsen (1998). Ferguson (2009) reports a small effect size of 2.0 and a moderate affect size of 3.0. Ferguson (2009) suggests effect size 1.5 as small for odds ratio. My original G*Power analysis input was a Pr(Y=1|X=1) H0 = 0.5 with zero covariates, a two-tailed test, an alpha level of 0.05, and a statistical power of .80. The desired sample size was 208. The actual sample size was 85. When I run a post hoc analysis with the above calculations, the power is 0.42. Because I was not able to obtain the desired sample size, I re-calculated a medium effect size, commonly used in social science research, of 2.50 and left the alpha level at 0.05 with a power of 0.80. I also added covariates under R-squared. Because the R-squared value can be estimated, and the covariates were expected to have moderate association with condom use, I entered $R^2 = 0.25$, the X-distribution was entered as normal for the predictor. With this calculation, the desired sample size is 71, and the post-hoc analysis is 88.

Similarly, Field (2013) recommends 10–15 pieces of data are needed for each predictor. I would need approximately 60–90 participants with Field's recommendation. Other researchers suggest 30 participants per variable, which would mean I would need 180 participants (Van Voorhis & Morgan, 2007). The discrepancy in the recommendations for data points depends on the size effect, power, and how strong the relationship is.

## Data Collection Methods

### Procedures for Recruitment, Participation, and Data Collection

**First data collection site.** I obtained permission from the first data collection site to conduct research on the premises at a Nebraska university. I received and printed the e-mails from department chairs and professors granting me permission to recruit students. The Nebraska university's IRB required a department or program chair or director or professor to give permission for recruitment of their students. Not one person could give permission to all of campus, thus, I obtained permission from several people. I contacted undergraduate department chairs, directors or professors and asked them if I could distribute flyers to their classrooms and/or if they would be willing to post my flyer and/or hyperlink to Blackboard or Canvas. I created a hyperlink to the survey that was shared on Blackboard or Canvas in departments and classrooms where I had permission to recruit. The flyer advertised the hyperlink. The PRQC Inventory questions were created in Survey Monkey, the online survey development software program, along with the link addressed to the survey. The consent form included a narrative that explained the inclusion criteria to participate in the study. Completing and submitting the surveys indicated approval and consent. Survey Monkey is Health Insurance Portability and Accountability Act (HIPAA) compliant and Statistical Package for Social Sciences (SPSS) compatible (Survey Monkey, 2017). The survey was available for approximately 3 months. Additional details regarding first data collection site is outlined in Chapter 4.

**Second data collection site.** I sought out to use the Walden University participant pool. I obtained permission from Walden IRB along with the participant pool to post my

study onto the virtual bulletin. The survey was available starting November 21, 2017 and open for 200 slots. The study was open until February 2, 2018 and it generated no results. Additional details regarding second data collection site is outlined in Chapter 4.

**Third data collection site.** I obtained permission from a university in Connecticut to conduct research at their university. I received a letter from the chair of the IRB granting me permission to recruit participants on a specific campus at the university via e-mail requests to faculty, including the study link, and to post the flyer on the psychology bulletin board. The institution did not require an independent review by the IRB, because the study had been approved by Walden University and another university. I contacted undergraduate department professors asking if they would be willing to post the flyer, along with the hyperlink to the psychology bulletin boards.

All IRB approvals were obtained from the Nebraska university, the Connecticut university, and the Walden IRB for the participant pool. An introduction to the study and informed consent was included with the survey describing the participant's rights and any foreseen consequences to participating. The consent form was updated when the participant pool and the third data collection site were added to the recruitment. The update was to reflect the age requirement changes and the after care information for support depending on the school attended. The participants could decline to participate. Accepting to take part in the study and submitting the survey indicated that informed consent was recognized and acknowledged. Informed consent included the description of the data collection procedures, approximately how many minutes the survey would take, all foreseeable risks, benefits of participating, how privacy was be maintained, and how

the participant could contact me at any time with questions or concerns. The specific demographic data that was collected was age, gender, freshman or sophomore status, relationship status, and the use of female birth control. The participant had the option to print a copy of the consent. Condom use data was collected by asking a question about condom use frequency. No incentives were given. Follow-up procedures were not necessary. No e-mails or phone calls were received during the 1 month data collection period. Additional details regarding third data collection site is outlined in Chapter 4.

**Instrumentation and Operationalization of Constructs**

The PRQC Inventory was developed by Fletcher, Simpson, and Thomas in 2000. The tool can be used for research purposes without seeking written permission. In this study, the independent variables relationship satisfaction, commitment, intimacy, trust, passion, and love, are measured by subscales on the self-report PRQC Inventory (Fletcher et al., 2000). Fletcher et al. (2000) used the PRQC Inventory to study relationship quality with college students. Validity and reliability were addressed by asking direct questions such as, “How satisfied are you with your relationship?” (Fletcher et al., 2000, p. 344). They found it to have good internal reliability. Confirmatory factor analysis (CFA) reveals the questionnaire represents quasi-independent constructs with good predictive validity (Fletcher et al., 2000). Psychometrics in survey research is concerned with validation of assessments tools, reliability and validity, and item response (Reardon & Miller, 2012). Scale development should address “substantive, structural, and external” components (Clark & Watson, 1995, p. 310). What this means to psychometrics is that

validity, both structurally and externally, is sound. A frequency scale measures how often the participant wears a condom. The PRQC Inventory fit this requirement.

As mentioned, the test consists of 18 questions. Relationship satisfaction is a predictor on the PRQC Inventory with three-item subscales to include:

1. “How satisfied are you with your relationship?”

2. “How content are you with your relationship?”

3. “How happy are you with your relationship?” These three questions are measured on a seven-point Likert scale with scores ranging from 1 (not at all) to 7 (extremely). Relationship satisfaction is operationally defined as how content and happy one is in their relationship. Commitment is a predictor on the PRQC Inventory with three-item subscales to include:

4. “How committed are you to your relationship?”

5. “How dedicated are you to your relationship?”

6. “How devoted are you to your relationship?” These three questions are measured on a seven-point Likert scale with scores ranging from 1 (not at all) to 7 (extremely). Commitment is operationally defined as how dedicated and devoted one is in their relationship. Intimacy is a predictor on the PRQC Inventory with three-item subscales to include:

7. “How intimate is your relationship?”

8. “How close is your relationship?”

9. “How connected are you to your partner? These three questions are measured on a seven-point Likert scale with scores ranging from 1 (not at all) to 7

(extremely). Intimacy is operationally defined as how close and connected one feels to their partner. Trust is a predictor on the PRQC Inventory with three-item subscales to include:

10. “How much do you trust your partner?”

11. “How much can you count on your partner?”

12. “How dependable is your partner?” These three questions are measured on a seven-point Likert scale with scores ranging from 1 (not at all) to 7 (extremely). Trust is operationally defined as partner dependability. Passion is a predictor on the PRQC Inventory with three-item subscales to include:

13. “How passionate is your relationship?”

14. “How lustful is your relationship?”

15. “How sexually intense is your relationship?” These three questions are measured on a seven-point Likert scale with scores ranging from 1 (not at all) to 7 (extremely). Passion is operationally defined as how lustful and sexual the relationship is. Love is a predictor on the PRQC Inventory with three-item subscales to include:

16) “How much do you love your partner?”

17) “How much do you adore your partner?”

18) “How much do you cherish your partner?” (Fletcher, et al. 2000, p. 352). These three questions are measured on a seven-point Likert scale with scores ranging from 1 (not at all) to 7 (extremely). Love is operationally defined as

adoring and cherishing one's partner. For the purpose of this study, sex is defined as sexual contact between two people involving penetration.

Survey research offers a simple and accessible way to gather data from participants (Eaker, Bergstrom, Bergstrom, Olov-Adami, & Olof-Nyren, 1998). The questionnaire was short in length, ideally increasing the response rate (Eaker et al., 1998). Confidentiality and anonymity were outlined in the consent form and maintained, as were the right to not participate and to withdraw from the study at any time. The assessment included closed-ended questions rather than open-ended questions, confidently supporting participants who had trouble with communication and expression (Krosnick, 1999).

Fletcher et al. (2000) found each subscale to the PRQC Inventory to have a good fit and were consistently high and positive ranging from 0.60-0.95 and were significant. The authors found that perceived relationship quality is a multidimensional construct and that people are consistent in their evaluations of their relationship. The subscales assess the constructs of relationship satisfaction, commitment, intimacy, trust, passion, and love. I was able to consult with Dr. Garth Fletcher, one of the authors of the inventory. G. J. Fletcher (G. J. Fletcher, personal communication, March 5, 2017) indicated there is no scoring manual. It was recommended to omit the labels, or headings when the scale is administered (Fletcher et al., 2000; G.J Fletcher, personal communication, March 5, 2017), which I did for this study. Higher scores indicate greater perceived quality of the relationship. The items were summed for each scale in my analysis. For Research

Question 7, I added each scale together to obtain a total score to assess for overall relationship quality. Instructions to the participant read:

> Circle the number that best reflects your relationship on a seven-point Likert scale with scores ranging from 1 (not at all) to 7 (extremely). If you are not in a current relationship, complete this survey using your previous relationship. Use the same relationship to answers all questions. Indicate what type of relationship you are referring to.

Several studies have been conducted using the PRQC Inventory. Tan, See, and Agnew (2015) studied partner attitudes and relationship quality using the PRQC and found the measure to have good internal reliability (0.88), and the alpha of the subscales ranged from 0.69-0.90. Costa and Brody (2007) used the PRQC inventory to investigate sexual behaviors and relationship quality and found that sexual intercourse was positively correlated to better relationship qualities through using the inventory, with good validity and reliability. Campbell, Simpson, Boldry and Kashy (2005) used the questionnaire to assess relationship quality and perceptions of conflict and support within the relationship. The test showed good reliability (i.e., alpha = 0.92 & 0.89).

There is also a short form of the scale that has been used to assess general perceived relationship quality, and it works reliably well (Fletcher et al., 2000; Overall, Flectcher, & Simpson, 2006; G. J. Fletcher, personal communication, March 5, 2017). This short scale consists of items, 1, 4, 7, 10, 13, and 16. Fletcher et al. (2000) indicates

that these items are the "best exemplars of the six relationship quality components" (p. 351). The authors describe how the subscales measuring each component can be omitted because of its redundancy. Items 1, 4, 7, 10, and 13 represent the core of what is being investigated. When only items 1, 4, 7, 10, 13, and 16 were used, the authors found the scale to have good internal reliability (i.e., alpha = .88 & alpha = .85). Other researchers have used the short version of the scale to assess relationship quality and found the measure to have good internal reliability (i.e., alpha = 0.83) (Overall et al., 2006). I did not use the short version of the scale.

I collected data on relationship satisfaction, commitment, intimacy, trust, passion, love, and the total score of relationship quality using the PRQC Inventory. Additionally, I collected other demographic information to include, age, freshman or sophomore status, casual or steady relationship status, and whether or not female birth control is being used. I included an introduction to the study and informed consent statement.

**Measuring Condom Use**

Using the scale *always*, *sometimes*, and *never* condom use was assessed by asking: Do you wear a condom with your current (or past) partner? I am mostly interested in two groups: *always* and *never*. I dummy-coded *sometimes* and *never* into one group. The dependent variable is on a dichotomous scale. I collapsed the latter two categories (i.e., *sometimes* and *never*) into one category for a dichotomous outcome and used the binary logistic regression analysis.

**Data and Statistical Analysis**

Data analysis was conducted through SPSS, Intellectus Statistics, and binary logistic regression. I was granted permission to consult a statistician. Intellectus Statistics is a software program developed and created by Statistics Solutions. Statisticians and professionals at Solutions Statistics use Intellectus Statistics software during consultation, thus, data was also analyzed using the Intellecctus Statistics software. Logistic regression allowed me to examine the independent variables and determine if any or all were predictors of condom use by focusing on odds. A binary logistic regression was used because there were only two levels to the dependent variable. The PRQC is a six, three-item subscale (18-item inventory): The first three questions on the Inventory compiled into Research Question 1. Questions 4, 5 and 6 and were compiled into Research Question 2 and so on. I dummy-coded the items in SPSS to create six independent variables. Furthermore, I dummy-coded all the items to create Research Question 7, the total score of the Inventory. Condom use was assessed by dummy-coding *sometimes* and *never* into one value for a dichotomous outcome. A stepwise was not run for this analysis because the research questions were concerned about variables predicting condom use and not the specific interactions among the variables. I dummy-coded *sometimes* and *never* into one value *never*. Once the variables were labeled, the data analysis was ran using SPSS, Intellectus Statistics, and binary logistic regression.

The dependent variable, condom use, was discrete and not continuous. The dependent variable measured condom use in two categories: *always* and *never*; *sometimes*

and *never* were combined for analysis purposes. The independent variables were considered ordinal. Logistic regression employs probability, two values to predict, in this case, *always* and *never*. Logistic regression calculates probability of group membership and provides information on relationships among the variables. In this case, I focused more on how condom use changes based on the predicting variables.

As previously indicated, the research question is whether or not specific relationship components influenced condom use among first- and second-year college women. The proposition was that relationship satisfaction, commitment, intimacy, trust, passion, love, and the overall score of the PRQC Inventory, is associated with condom use and greater levels of perceived relationship quality would be appreciated along with a lower use of condom. To test these elements, statistical and data analysis was initially conducted through SPSS binary logistic regression. A binary logistic regression analysis was appropriate because it allowed me to examine the associations of the predictors to the dichotomous dependent variable, condom use (Green & Salkind, 2014). By running a logistic regression analysis I was able to determine if any of the variables were predictive of condom use by calculating probability and odds. Additionally, missing at random (MAR) is when there is no data value for a given variable, for example, nonresponse or dropping out of a study (McPherson, Barbosa-Leiker, Burns, Howell, & Roll, 2012). Identifying and reporting any missing data that may or may not affect the results is included in more detail in Chapter 4. The PRQC Inventory does not include a *no opinion* option. A *no opinion* option can potentially affect the analysis (Krosnick et al., 2002).

Data cleaning was done by thoroughly reviewing the surveys and double-checking the entries in SPSS and Intellectus Statistics.

**Threats to Validity**

Anonymous survey research has its advantages and disadvantages. Nonprobability sampling does not protect against bias as probability sampling might. Probability sampling includes a random selection of participants that helps keep selection bias out of research (Field, 2013). Probability sampling allows individuals in a population equal chance of being selected, decreasing the chance of bias. Seltiz et al. (1976), as cited in Feild et al. (2006) reports that using nonprobability sampling may increase the risk of sampling error. By conducting online research and using a nonprobability sample design, I cannot guarantee representation (Witte, Amoroso, & Howard, 2000). I used the demographic information collected such as birth control to make sure the estimates of the data minimized bias (Witte et al., 2000). I addressed my own bias and stereotypes relating to the research subject. Bias addressed in the limitations section in Chapter 5.

The specific reliability and validity threats and concerns to my study were selection bias, history and mortality. For example, selection bias refers to a non-random sample and history refers to any change in the environment (e.g., where the survey is taken, a noisy dorm room; Creswell, 2009). Mortality should always be considered; participants whom have dropped out of the study and did not finish. At least one participant decided not to complete the survey, did not answer the question on condom use and was removed from the analysis.

The validity of measurement is similar to external validity. In external validity, generalizations or assumptions are made about the findings of the study to other people, places etc. (Creswell, 2009). Validity for measurement is also like internal validity. Internal validity is the experiences, maturation, and regression participants bring to the study. Threats to validity can make the test result invalid. For this study, this can include dishonest and inconsistent answers because of attitudes, perceptions and experiences. Studies about sex are sensitive in nature and can potentially cause a bias in the self-reporting. For my study, I considered that experience, attitudes and belief systems potentially affected the validity of the responses. Also, the question about condom use are approximate and by memory and recall. A diary of condom use was not kept, potentially resulting in inaccurate results. Further detail regarding limitations is outlined in Chapter 5.

**Ethical Procedures**

Hugman, Pittaway, and Bartolomei (2011) make it clear that research is only ethical when the research participants are protected and not harmed in any way, and the purpose of the research is expected to contribute to the needed social change for the studied population. Using anonymous surveys as a way to gather data might indicate a weak informed consent process. However, I was clear in the consent process. Participants were provided the informed consent form defining my role as a researcher and responsibility to the participant. Bersoff (2008) recommends including a contact number or e-mail address for those participants who do not understand the instructions or purpose of the research, which I did include.

The informed consent included a statement that informed the participant their right to withdraw and not participate (Eysenbach & Till, 2001). I considered the privacy and confidentially component of survey research. I did not ask for names and signatures; merely submitting via Survey Monkey implied consent. I have full knowledge of the assessment tool; it is my responsibility to be familiar with all the administration procedures and interpretation of test scores (Fisher, 2013), along with the validity, reliability, and objectivity of the assessment. I described the treatment of human participants and obtained approval from the Walden IRB to proceed with my study. Each participant was protected. Data will be kept anonymous and confidential. The consent form specified that I will store the data for five years and how results will be disseminated. Because dealing with sensitive issues in research could be risky, I provided contact numbers for the university, for after-care if needed. This study observed Walden University's ethical guidelines and the university's ethical standards, along with the IRB's ethical procedures. A letter of informed consent explained all concerns with privacy, conduct, and patient rights and responsibility. The letter included an outline of potential risks and benefits of participation. My contact information was provided for questions and concerns. The consent form also included the definition of sex for this study.

## Summary

Chapter 3 identified and described the research design, rationale, and methodology. It also outlined the seven research questions, the data collection methods, and the PRQC Inventory. A sample of 85 women college student were surveyed using the

PRQC Inventory to measure the six components that represent relationship quality, along with the total score of the Inventory. Data was collected from two collection sites via Survey Monkey. Demographics such as relationship type, gender, age, year in college, and use of birth control were also collected. A binary logistic regression was used to analyze the data in SPSS. Chapter 4 explains the data analysis and results.

# Chapter 4: Results

## Introduction

The purpose of this study was to investigate the relationship between relationship quality and condom use. I examined whether relationship satisfaction, commitment, intimacy, trust, passion, love, and overall relationship quality predicted condom use in a sample of women college students attending a university. Variables were measured using the PRQC Inventory and analyzed using both SPSS and Intellectus Statistics. The goal was to expand current knowledge about condom use based on the quality of a relationship while considering relationship type and year in college. Learning more about condom use can lead to positive social change by contributing to the development of interventions and strategies to promote improvement in the lives of women.

Seven research questions and null and alternative hypotheses were posed:

RQ1. Are higher levels of relationship satisfaction predictive of condom use in first- and second-year college women as measured by the relationship satisfaction scale on the PRQC Inventory?

$H1_0$. Relationship satisfaction is not predictive of condom use.

$H1_A$. Higher levels of relationship satisfaction is predictive of condom use among first- and second-year college women.

RQ2. Are higher levels of commitment predictive of condom use in first- and second-year college women as measured by the commitment scale on the PRQC Inventory?

$H2_0$. Commitment is not predictive of condom use.

$H2_A$. Higher levels of commitment is predictive of condom use among first- and second-year college women.

RQ3. Are higher levels of intimacy predictive of condom use in first- and second-year college women as measured by the intimacy scale on the PRQC Inventory?

$H3_0$. Intimacy is not predictive of condom use.

$H3_A$. Higher levels of intimacy is predictive of condom use among first- and second-year college women.

RQ4. Are higher levels of trust predictive of condom use in first- and second-year college women as measured by the trust scale on the PRQC Inventory?

$H4_0$. Trust is not predictive of condom use.

$H4_A$. Higher levels of trust is predictive of condom use among first- and second-year college women.

RQ5. Are higher levels of passion predictive of condom use in first- and second-year college women as measured by the trust scale on the PRQC Inventory?

$H5_0$. Passion is not predictive of condom use.

$H5_A$. Higher levels of passion is predictive of condom use among first- and second-year college women.

RQ6. Are higher levels of love predictive of condom use in first- and second-year college women as measured by the love scale on the PRQC Inventory?

$H6_0$. Love is not predictive of condom use.

$H6_A$. Higher levels of love is predictive of condom use among first- and second-year college women.

RQ7. Are higher levels of relationship quality as measured by the total score on the PRQC Inventory predictive of condom use in first- and second-year college women?

$H7_0$. Higher levels of relationship quality is not predictive of condom use.

$H7_A$. Higher levels of relationship quality is predictive of condom use among first- and second-year college women.

## Data Collection

Data collection was conducted from two collection sites from September 2017 to February 2018 using the PRQC Inventory through Survey Monkey. The questionnaire was posted to Surveymonkey.com and made available to participants on September 14, 2017. The survey was officially deactivated in Survey Monkey on February 19, 2018. Research time frames set forth for data collection was until 208 surveys were collected or one month. Data was collected from September 2017 to February 2, 2018. The survey consisted of 24, closed-ended questions that took approximately 2 minutes to complete.

Data collection differed greatly compared to what was initially intended in Chapter 3. Firstly, I had not previously anticipated the need to recruit from other

universities, and ultimately, included two other data collection sites in this study. Lack of responses from professors along with lack of participation from students with the first data collection site were barriers. Additionally, I was denied permission to recruit the psychology department, including the psychology pool, at the first data collection site. I also was not granted permission to recruit any the sororities at the first data collection site. Secondly, I assumed that students would participate in completing the paper-survey offered at the first data collection site, however, no student chose to participate via that method. Ultimately, I added two other data collection sites to my data collection recruitment methods.

**First Data Collection Site**

I obtained permission from the first data collection site's IRB to recruit students during the fall semester 2017. Per the request of the university's IRB, I sent an e-mail to department chairs and/or program directors asking permission to recruit their students and reach out to faculty. Once I obtained permission from department chairs, I e-mailed undergraduate professors asking for permission to recruit their students for a research study. I e-mailed professors from 32 undergraduate departments. The first e-mail sent out identified myself, explained the study, and asked for permission to recruit their students. A second e-mail was sent after 1–2 weeks of no response from the professor. Overall, 12 undergraduate departments gave me permission to recruit students.

Flyers advertising my study were distributed to classes to which I was invited. Some professors chose to post the survey information and hyperlink to Blackboard or Canvas. In addition, I had reserved a classroom for 1 hour, two times a week, for 5 weeks

to collect data via a paper-survey (i.e., Wednesday's 12:30-1:30 p.m. & Thursday's 4:15-5:15 p.m.), initially. No students participated via this method. Because no students participated via this method, I did not reserve additional classroom time.

A total of 27 surveys were collected from the first data collection site, however only 13 of them could count towards data analysis due to age requirements and reporting other than freshman or sophomore. There were three surveys found to be invalid due to the age requirement (i.e., two reported *other*, one reported older than 25). There were 11 participants that indicated not a freshman or sophomore. The valid 13 respondents came from Survey Monkey via the hyperlink advertised. There was no monetary incentive for participation. The only cost acquired was for the monthly subscription to Survey Monkey. No phone calls or e-mails were received from participants. Data collection was received over a course of 3 months; September 2017 to November 2017. There were no participants in December 2017. The survey was left in open status on Survey Monkey in case a participant decided to participate at a later date.

**Second Data Collection Site**

There were significant difficulties obtaining an adequate response rate from the first data collection site. Due to the small sample size and exhausting all recruitment options with the first data collection site, I submitted a change in request form to Walden University IRB asking to use the Walden University participant pool. My request for change was approved and on November 21, 2017, my survey was made available to the Walden participant pool through Walden University.

The Walden participant pool is a virtual bulletin board where studies are posted for interested students to participate. I was approved to update the consent form to include the Walden participant pool and change the age of majority to 18 years old. The consent form clearly stated the age requirements per state's age of majority. Unfortunately, no participation via this method was recorded. The survey was available for 200 slots from November 21, 2017 until February 2, 2018 at 3:00 pm. Not one student participated. There was no monetary incentive for participation offered. No phone calls or e-mails were received from participants.

**Third Data Collection Site**

On December 28, 2017, I submitted another change in procedure to Walden University's IRB. Because I had no response from the Walden participant pool, I chose to expand my recruitment methods to include another university. On January 11, 2018, Walden IRB approved recruitment at a third data collection site. I was approved to recruit participants on a particular campus at a university via e-mail requests to faculty (including the study link) and post the flyer on the psychology bulletin board. The university's IRB reviewed the referenced protocol and determined that it did not require an independent review by their IRB because two other universities had approved the study.

E-mails were sent to professors in the undergraduate departments at the regional campus, asking for their willingness to post the study link and flyer to the psychology bulletin board and share with their students beginning January 15, 2018. The survey was available to participants as soon as they received the hyperlink or were introduced to the

study beginning January 15, 2018. The survey remained in open status through February 18, 2018. It can be assumed that a total of 95 participants were collected from the third data collection site, however only 72 surveys were used for data analysis due to inclusionary criteria. It is possible that a survey was submitted from earlier recruitment methods via flyer from the first data collection site. The raw data of 95 surveys shows that seven males completed the survey and 15 participants identified as not a freshman or sophomore and were excluded from the analysis. One of the participants whom identified as not a freshman or sophomore was also over the age of 25. Three other surveys were excluded from the third collection site because the condom use question was skipped. There was no monetary incentive for participation. Seventy-two surveys were considered valid at the third collection site. No phone calls or e-mails were received from participants. Because I was only given permission to recruit from a regional campus with a small undergraduate department, the survey was available for approximately one month.

I updated the consent form to reflect the age of majority in Connecticut to 18 years old and it was approved by Walden University's IRB. This was extremely helpful, as it included 18-year-old participants. Nebraska's age of majority limited the number of first- and second-year college students who could participate in the study.

**Raw Data Descriptive Statistics**

Overall, there were very few missing data, incomplete surveys, or incomplete information. Out of the 122 surveys submitted on Survey Monkey, one survey was not completed at all and 121 surveys were answered. The proposed inclusion criteria were

women college students between the ages of 18 -24 years old (19 years of age in Nebraska) in their first- or second-year of college. The descriptive statistics analyzed through SPSS report seven males completed the survey, thus, were removed from analysis (no participants chose other for choice of gender). A total of four participants did not meet the age requirements (i.e., two were between the ages of 25-34 years old, and two were *other)*, thus, this data was removed from the analysis. In addition, 26 participants answered as not a freshman or sophomore, thus, were removed from the analysis. Three participants did not answer the question about condom use and this data was also removed from the analysis. In the raw data there were 47 responses to *always*, 36 responses to *sometimes,* and 36 responses to *never* in regards to the question regarding condom use.

A total of 85 surveys were considered valid and used for data analysis. In the 85 valid surveys there were 37 responses to *always*, 27 responses to *sometimes* and 21 response to *never* in regards to the condom use question. The values *sometimes* and *never* were combined for analytic purposes. I did not obtain the desired sample size as proposed in Chapter 3 Three, indicating a power analysis of 42. The post hoc analysis is described later in the chapter further discussing the sample size and power. Although I cannot guarantee generalization because of the small sample size, use of a non-probability sampling technique, collecting data at only two sites, and geographical location, the sample cannot be consider representative to the larger population because of specific age, sex and education requirements for inclusionary criteria.

### Assumptions

For this study, the dependent variable condom use, was dichotomous with two possible outcomes. The independent subscales on the PRQC Inventory show linear relationship. Homoscedasticity is not required. The assumption of absence of multicollinearity was examined. Multicollinearity is when one predictor may predict the next. In this case, there was no multicollinearity. To identify multicollinearity between the variables, variance inflation factors (VIFs) were calculated. The calculations of the VIFs are less than 10, which is good.

## Descriptive Statistics

### Sample Descriptive Statistics

The demographic characteristics of the sample is women students between the ages of 18-24, in their first- or second-year at a 4-year college. The sample size was 85. Data was not collected from specific groups, clubs, or interests. Non-probability sampling was the most fitting form of sampling for this study because the group of interest was college students and easily accessible. Albeit, a convenience sampling strategy was utilized, the entire sample population came from two separate universities and all respondents in the analysis fit the eligibility criteria. Table 1 presents the descriptive statistics analysis.

*Table 1*

*Descriptive Statistic Fitting Criteria for Analysis*

| Gender | *N* | Age | Freshman | Sophomore |
|---|---|---|---|---|
| Female | 85 | 18-24 | 30 | 55 |

**Data Analysis of Condom Use**

Using the scale *always*, *sometimes*, and *never* condom use was assessed by asking: Do you wear a condom with your current (or past) partner? The values *sometimes* and *never* were dummy-coded into one group so a logistic regression analysis could be used. Figure 1 shows the condom use percentages reported in both freshman and sophomore students, along with the mean and standard deviation calculations. Figure 1 shows that 56% of the students who participated in the study do not consistently use condoms, whereas 44% of the students reported always using condoms. Forty-eight women reported *never* using a condom and 37 women reported *always* using a condom.

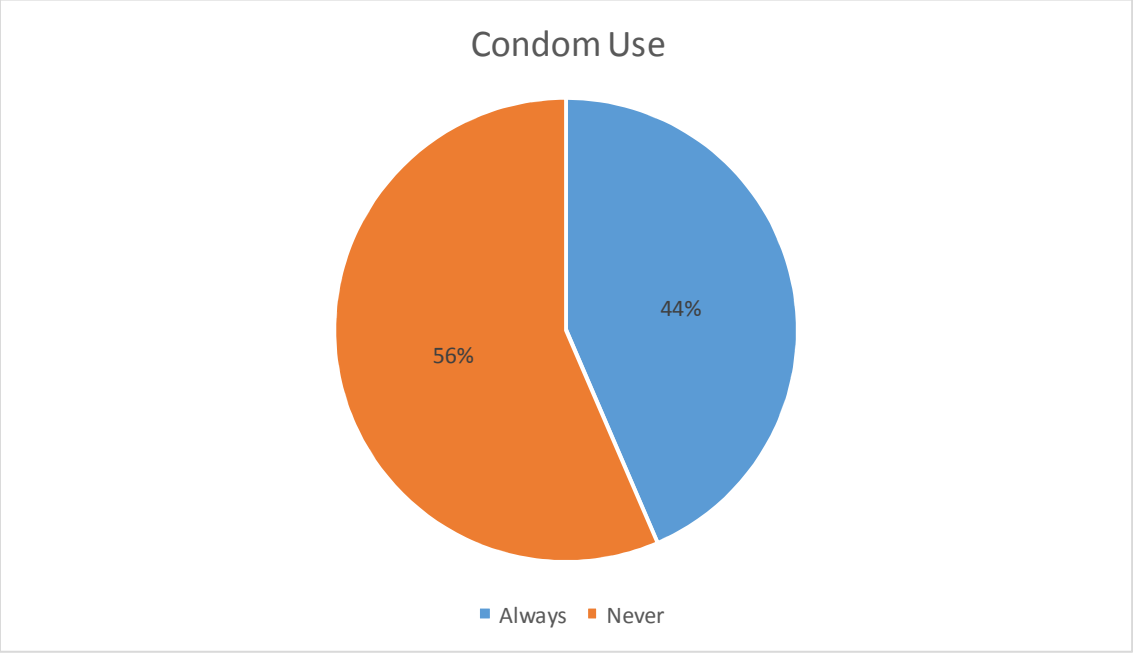


Figure 1. *Condom use frequency in* percentages*,* mean, sd, *and* n.

*Mean*= 1.44, *SD* = .499, *N* = 85

**Female birth control, relationship type, and condom use by college rank: Freshman.** Frequencies and percentages were calculated for female birth control, relationship type, and condom use among the freshman student participants. Female birth control was *yes* most often (*n* = 19, 63%). Relationship type was *steady/primary* most often (*n* = 22, 73%), and condom use was *never* most often (*n* = 17, 57%). Frequencies are displayed in Table 2. In this analysis, more freshman who participated in this study reported being in a *steady/primary* relationship, did use birth control, and did not use condoms.

Table 2

*Frequency Table for Nominal Variables*

| Variable | *n* | *%* |
|---|---|---|
| Female birth control | | |
| No | 11 | 36.67 |
| Yes | 19 | 63.33 |
| Missing | 0 | 0.00 |
| Relationship type | | |
| Casual/temporary | 8 | 26.67 |
| Steady/primary | 22 | 73.33 |
| Missing | 0 | 0.00 |
| Condom use | | |
| Always | 13 | 43.33 |
| Never | 17 | 56.67 |
| Missing | 0 | 0.00 |

*Note.* Due to rounding errors, percentages may not equal 100%.

**Female birth control, relationship type, and condom use by college rank: Sophomore**. Frequencies and percentages were calculated for female birth control, relationship type, and condom use among the sophomore student participants. Female birth control was *no* most often (*n* = 33, 60%). Relationship type was *steady/primary*

most often ($n$ = 40, 73%), and condom use was *never* most often ($n$ = 31, 56%). Frequencies are displayed in Table 3. In this analysis, more sophomore students reported being in a *steady/primary* relationship, are not using birth control and not using condoms. The main difference between freshman and sophomore students considering these descriptive statistics is the use of birth control.

Table 3

*Frequency Table for Nominal Variables*

| Variable | *n* | *%* |
|---|---|---|
| Female birth control | | |
| No | 33 | 60.00 |
| Yes | 22 | 40.00 |
| Missing | 0 | 0.00 |
| Relationship type | | |
| Casual/temporary | 15 | 27.27 |
| Steady/primary | 40 | 72.73 |
| Missing | 0 | 0.00 |
| Condom use | | |
| Always | 24 | 43.64 |
| Never | 31 | 56.36 |
| Missing | 0 | 0.00 |

*Note.* Due to rounding errors, percentages may not equal 100%.

**Relationship satisfaction, commitment, intimacy, trust, passion, and love by college rank: Freshman**. Summary statistics were analyzed for relationship satisfaction, commitment, intimacy, trust, passion, and love with the freshman class. The interpretations for relationship satisfaction averaged 15.93 ($SD$ = 5.78, $SE_M$ = 1.07, Min = 3.00, Max = 21.00). The interpretations for commitment averaged 17.70 ($SD$ = 5.96, $SE_M$ = 1.09, Min = 3.00, Max = 21.00). The interpretations for intimacy averaged 16.37 ($SD$ =

5.26, $SE_M$ = 0.96, Min = 3.00, Max = 21.00). The interpretations for trust averaged 15.53 (*SD* = 6.05, $SE_M$ = 1.10, Min = 3.00, Max = 21.00). The interpretations for passion averaged 14.53 (*SD* = 4.93, $SE_M$ = 0.90, Min = 3.00, Max = 21.00), and the interpretations for love averaged 18.13 (*SD* = 5.01, $SE_M$ = 0.91, Min = 3.00, Max = 21.00). Skewness and kurtosis results are shown in Table 4. Skewness measures asymmetry in variable distribution. According to Westfall and Henning (2013), a value greater than two is considered asymmetrical. Kurtosis measures the tail of the distribution, and a value of three or more means the distribution is more susceptible to outliers (Westfall & Henning, 2013). In this study, the kurtosis showed both negative and positive kurtosis, indicating the measure has tails prone to outliers and not prone to outliers. The skewness is negative, showing a skewness to the left which means it is less than the mode symmetrically.

Table 4

*Summary Statistics Table for Interval and Ratio Variables*

| Variable | *M* | *SD* | *n* | $SE_M$ | Skewness | Kurtosis |
|---|---|---|---|---|---|---|
| Relationship satisfaction | 15.93 | 5.78 | 29 | 1.07 | -0.79 | -0.73 |
| Commitment | 17.70 | 5.96 | 30 | 1.09 | -1.76 | 1.57 |
| Intimacy | 16.37 | 5.26 | 30 | 0.96 | -1.25 | 0.41 |
| Trust | 15.53 | 6.05 | 30 | 1.10 | -0.99 | -0.47 |
| Passion | 14.53 | 4.93 | 30 | 0.90 | -0.77 | -0.02 |
| Love | 18.13 | 5.01 | 30 | 0.91 | -2.15 | 3.62 |

*Note.* '-' denotes the sample size is too small to calculate statistic.

**Relationship satisfaction, commitment, intimacy, trust, passion, and love by college Rank: Sophomore**. Summary statistics were calculated for relationship satisfaction, commitment, intimacy, trust, passion, and love with the sophomore class.

The analysis for relationship satisfaction averaged 15.67 (*SD* = 4.96, $SE_M$ = 0.67, Min = 6.00, Max = 21.00). The analysis for commitment averaged 17.84 (*SD* = 4.32, $SE_M$ = 0.58, Min = 8.00, Max = 21.00). The analysis for intimacy averaged 16.45 (*SD* = 4.31, $SE_M$ = 0.58, Min = 6.00, Max = 21.00). The analysis for trust averaged 15.58 (*SD* = 5.13, $SE_M$ = 0.69, Min = 3.00, Max = 21.00). The interpretations for passion averaged 15.18 (*SD* = 4.41, $SE_M$ = 0.60, Min = 4.00, Max = 21.00), and the interpretations for love averaged 17.24 (*SD* = 5.28, $SE_M$ = 0.71, Min = 3.00, Max = 21.00). Table 5 shows negative skewness, with less susceptibility to outliers.

Table 5

*Summary Statistics Table for Interval and Ratio Variables*

| Variable | *M* | *SD* | *n* | $SE_M$ | Skewness | Kurtosis |
|---|---|---|---|---|---|---|
| Relationship satisfaction | 15.67 | 4.96 | 54 | 0.67 | -0.61 | -0.81 |
| Commitment | 17.84 | 4.32 | 55 | 0.58 | -1.03 | -0.47 |
| Intimacy | 16.45 | 4.31 | 55 | 0.58 | -0.76 | -0.55 |
| Trust | 15.58 | 5.13 | 55 | 0.69 | -0.83 | -0.31 |
| Passion | 15.18 | 4.41 | 55 | 0.60 | -0.64 | -0.24 |
| Love | 17.24 | 5.28 | 55 | 0.71 | -1.16 | -0.07 |

*Note.* '-' denotes the sample size is too small to calculate statistic.

**College rank, female birth control, relationship type, and condom use**

**descriptive.** Frequencies and percentages were calculated for college rank, female birth control, relationship type, and condom use. Sophomore college rank (*n* = 55, 65%), *no* for birth control (*n* =44, 52%0) and *steady/primary* relationships (*n* = 62, 73%), were the most frequently observed in the descriptive analysis. The *never* scale to using a condom was the most frequently identified (*n* = 48, 56%). Frequencies are displayed in Table 6.

Table 6

*Frequency Table for Nominal Variables*

| Variable | *n* | *%* |
|---|---|---|
| College rank | | |
| Freshman | 30 | 35.29 |
| Sophomore | 55 | 64.71 |
| Missing | 0 | 0.00 |
| Female birth control | | |
| No | 44 | 51.76 |
| Yes | 41 | 48.24 |
| Missing | 0 | 0.00 |
| Relationship type | | |
| Casual/temporary | 23 | 27.06 |
| Steady/primary | 62 | 72.94 |
| Missing | 0 | 0.00 |
| Condom use | | |
| Always | 37 | 43.53 |
| Never | 48 | 56.47 |
| Missing | 0 | 0.00 |

*Note.* Due to rounding errors, percentages may not equal 100%.

The data shows that more freshman reported being in a steady/primary relationship, were using birth control, and were not using condoms. More sophomore students reported being in a steady/primary relationship, were not using birth control and were not using condoms. The sophomore participants almost doubled that of the freshman. It can be assumed that roughly one-half of the participants use birth control and the other half do not. Majority of the participants in the study identified as being in a steady/primary relationship, and more students who participated in this survey reported not using a condom.

**Chi-Square Test for Condom Use, College Rank, and Relationship Type**

I used the results of descriptive statistics and chi-square to compare frequencies of condom use between freshman and sophomore students to identify group differences. I used this same analysis to compare relationship type. A chi-square test of independence was completed to analyze significance between relationship type and condom use. To calculate the test, I went to analyze, descriptive statistics and crosstabs in SPSS. There were two levels in relationship type: *casual/temporary* and *steady/primary*. There were two levels in condom use: *always* and *never*. Cell size was assessed and all cells had values greater than zero. McHugh (2013) recommends at least 80% of cells should be valued at five. In this study's analysis, all cells were greater than zero and all of them had frequencies of at least five. The chi-square test results were not significant, $\chi^2(1) = 0.25$, $p = .618$, suggesting that relationship type and condom use are independent. Because the $p$ value (.618) is greater than the significance level (0.05), I can conclude that there is not a relationship between relationship type and condom use. This implies that the observed frequencies were not significantly different than the expected frequencies. Table 7 presents the results of the chi-square test.

Table 7

*Observed and Expected Frequencies of Relationship Type and Condom Use*

| | Condom Use | |
|---|---|---|
| Relationship type | Always | Never |
| Casual/temporary | 9[10.01] | 14[12.99] |
| Steady/primary | 28[26.99] | 34[35.01] |

*Note.* $\chi^2((1) = 0.25$, $p = .618$. Values formatted as Observed[Expected].

**Assessment Statistics**

The PRQC Inventory is comprised of six, three-item subscales measuring each of the relationship quality domains for the six research questions. The sum of the six subscales was used as an overall measure of relationship quality to address Research Question 7. I performed rechecks of the data in SPSS to ensure accuracy of both the inclusionary and exclusionary criteria. All data met the inclusionary criteria at the time of analysis. Missing at random (MAR) variables were identified. There were two item-nonresponses under the relationship satisfaction scale, however the items on all the other scales were complete. Because the cases of missing values were very small, I did omit those values from the analysis. Table 8 shows score ranges and standard deviations for each of the subscales of the PRQC Inventory.

Table 8

*PRQC Inventory Subscale Score Ranges and Standard Deviations*

| | *N* | Minimum | Maximum | *Mean* | *SD* |
|---|---|---|---|---|---|
| Relationship satisfaction, content, happy | 83 | 3.00 | 21.00 | 15.7590 | 5.22328 |
| Committed, dedicated, devoted | 85 | 3.00 | 21.00 | 17.7882 | 4.92345 |
| Intimate, close, connected | 85 | 3.00 | 21.00 | 16.4235 | 4.63778 |
| Trust, count on, dependable | 85 | 3.00 | 21.00 | 15.5647 | 5.43675 |
| Passion, lustful, sexually intense | 85 | 3.00 | 21.00 | 14.9529 | 4.58233 |
| Love, adore, cherish | 85 | 3.00 | 21.00 | 17.5529 | 5.17666 |
| Valid N (listwise) | 83 | | | | |

**Reliability of the Coefficients**

Reliability in statistics is the consistency and reliability of a test or instrument. One-way reliability can be measured is by calculating the coefficient alpha. To analyze the Cronbach's alpha of reliability in SPSS, I ran a reliability analysis under scale for each subscale on the PRQC Inventory. Below, are tables displaying the calculations. Each subscale and total score for the PRCQ Inventory had acceptable, good, or excellent internal consistency. See the tables below for each reliability measure for each subscale.

**Reliability for relationship satisfaction scale.** Cronbach alpha coefficients were the relationship satisfaction scale. The items for relationship satisfaction had a Cronbach's alpha coefficient of 0.95, demonstrating excellent reliability, according to

George and Mallery (2016). Table 9 displays the results of the reliability analysis for relationship satisfaction.

Table 9

*Reliability Table for Relationship Satisfaction*

| Scale | No. of Items | α |
|---|---|---|
| Relationship satisfaction | 3 | 0.95 |

**Reliability for commitment scale.** Cronbach alpha coefficients were assessed for the commitment scale. The items for commitment had a Cronbach's alpha coefficient of 0.95, representing excellent reliability (George & Mallery, 2016). Table 10 displays the results of the reliability analysis for commitment.

Table 10

*Reliability Table for Commitment*

| Scale | No. of Items | α |
|---|---|---|
| Commitment | 3 | 0.95 |

**Reliability for intimacy scale.** Cronbach alpha coefficients were calculated for the intimacy scale. The items for intimacy had a Cronbach's alpha coefficient of 0.86, representing good reliability (George & Mallery, 2016). Table 11 displays the results of the reliability analysis for intimacy.

Table 11

*Reliability Table for Intimacy*

| Scale | No. of Items | α |
|---|---|---|
| Intimacy | 3 | 0.86 |

**Reliability for trust scale.** Cronbach alpha coefficients were calculated for the trust scale. The items for trust had a Cronbach's alpha coefficient of 0.91, representing excellent reliability (George & Mallery, 2016). Table 12 displays the results of the reliability analysis for trust.

Table 12

*Reliability Table for Trust*

| Scale | No. of Items | α |
|---|---|---|
| Trust | 3 | 0.91 |

**Reliability for passion scale.** Cronbach alpha coefficients were calculated for the passion scale. The items for passion had a Cronbach's alpha coefficient of 0.79, demonstrating acceptable reliability (George & Mallery, 2016). Table 13 displays the results of the reliability analysis for passion.

Table 13

*Reliability Table for Passion*

| Scale | No. of Items | α |
|---|---|---|
| Passion | 3 | 0.79 |

**Reliability for love scale.** Cronbach alpha coefficients were calculated for the love scale. The items for love had a Cronbach's alpha coefficient of 0.98, demonstrating excellent reliability (George & Mallery, 2016). Table 14 displays the results of the reliability analysis for love.

Table 14

*Reliability Table for Love*

| Scale | No. of Items | α |
|---|---|---|
| Love | 3 | 0.98 |

**Reliability for overall score of scale.** Cronbach alpha coefficients were calculated for the overall score. The items for overall score had a Cronbach's alpha coefficient of 0.96, demonstrating excellent reliability (George & Mallery, 2016). Table 15 displays the results of the reliability analysis for overall score.

Table 15

*Reliability Table for Overall Score*

| Scale | No. of Items | α |
|---|---|---|
| Overall score | 18 | 0.96 |

**Independent Sample *t* test of Collection Sites of the PRQC Inventory**

Independent sample *t* test were conducted to identify any differences in the means of the scores of the scales between the two data collection sites. The independent sample *t*-test results were statistically significant for relationship satisfaction, love, and the total score. The findings indicate that there were differences in these three scales between the two schools. As shown in Table 16, participants at the first collection site report higher scores for relationship satisfaction, love, and total score compared to the participants at the second collection site. The differences do not impact the regression analysis because the assumption is that the error terms are independent of one another (Field, 2013). For example, the standard error in predicting the responses between the participants at the two collection sites are independent, as the different collection sites would not influence the participant's responses.

Furthermore, the difference in group size between the two schools can impact the validity of the *t*-test results. According to Field (2013), independent *t* test are most appropriately used when the collected samples are equal in size. Small samples do not estimate the population as closely as large samples. The assumption is that parameters of the populations are normally distributed and show a homogeneity of variance when the collected samples are more equal in size (Field, 2013). Although the heterogeneity of variances are not equal on the relationship satisfaction, love, and total score scale, the

size differences between collection sites do not impact the regression analysis because the *p* value is not dependable in the *t* test analysis. Remarkably unbalanced designs increase the chances that the assumptions will be violated, threatening the validity of the test. Table 16 displays the independent samples *t*- test results.

Table 16

*Independent Samples* t *test for the Difference in Scales between Groups*

| | Group 1 ($n$ = 13) | | Group 2 ($n$ = 72) | | | | |
|---|---|---|---|---|---|---|---|
| Variable | *Mean* | *SD* | *Mean* | *SD* | *t* | *p* | *df* |
| Relationship satisfaction | 18.54 | 3.84 | 15.24 | 5.30 | 2.66 | .015 | 0.71 |
| Commitment | 18.54 | 4.33 | 17.65 | 5.04 | 0.59 | .554 | 0.19 |
| Intimacy | 17.92 | 2.87 | 16.15 | 4.85 | 1.27 | .207 | 0.44 |
| Trust | 17.54 | 3.93 | 15.21 | 5.61 | 1.43 | .156 | 0.48 |
| Passion | 16.38 | 4.57 | 14.69 | 4.57 | 1.23 | .223 | 0.37 |
| Love | 20.85 | 0.38 | 16.96 | 5.42 | 6.01 | < .001 | 1.01 |
| Total Score | 109.77 | 10.46 | 95.64 | 27.03 | 3.25 | .002 | 0.69 |

## Findings and Results

### Binary Logistic Regression Analysis

Binary logistic regression investigates the association between dichotomous dependent variables and independent variables. I wanted to analyze the independent variables to estimate the probability that a condom would be worn. The binary logistic regression creates a linear combination of the independent variables to predict the dependent variable. The overall significance of the model was tested by computing $X^2$ and the *df* (1-6) to find the *p* value (Field, 2013). Binary logistic regression analyzed whether relationship satisfaction, commitment, intimacy, trust, passion, and love had a significant effect on the odds of noting the *always* category of condom use. The reference category for condom use was *never*. Prior to the analysis, the assumption of absence of multicollinearity was examined. To identify multicollinearity, variance inflation factors (VIFs) were calculated through SPSS via analyze, regression, linear, and selecting

collinearity. Low multicollinearity is most desirable. VIFs greater than five are problematic (Menard, 2009). All variables in the regression model have VIFs less than five, which is desirable. Table 17 displays the VIF for each predictor in the model.

Table 17

*Variance Inflation Factors for Relationship Satisfaction, Commitment, Intimacy, Trust, Passion, and Love*

| Variable | VIF |
|---|---|
| Relationship satisfaction | 3.93 |
| Commitment | 2.47 |
| Intimacy | 4.38 |
| Trust | 2.84 |
| Passion | 1.96 |
| Love | 3.82 |

**Research Question 1.** Are higher levels of relationship satisfaction predictive of condom use in first- and second-year college women as measured by the relationship satisfaction scale on the PRQC Inventory?

Binary logistic regression was conducted to examine whether relationship satisfaction had a significant effect on the odds of observing the *always* group of condom use. The reference category for condom use was *never*. The overall model was not significant, $\chi^2(1) = 0.16$, $p = .691$, indicating that relationship satisfaction did not have a significant effect on the odds of observing the *always* group of condom use. The model fit was examined by figuring McFadden's R-squared, and values greater than 0.2 suggest excellent fit (Louviere, Hensher, & Swait, 2000). The McFadden R-squared results are 0.00, showing poor model fit. In sum, relationship satisfaction does not predict condom use. Because the findings were not significant, I accept the null hypothesis and reject the

alternative hypothesis, in other words, the null hypothesis is not rejected. Table 18 reviews the results of the regression model.

Table 18

*Logistic Regression Results with Relationship Satisfaction Predicting Condom Use*

| Variable | *B* | *SE* | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|
| (Intercept) | -0.00 | 0.70 | 0.00 | 1.000 | |
| Relationship satisfaction | -0.02 | 0.04 | 0.16 | .691 | 0.98 |

*Note.* $\chi^2(1) = 0.16$, $p = .691$, McFadden $R^2 = 0.00$.

**Research Question 2.** Are higher levels of commitment predictive of condom use in first- and second-year college women as measured by the commitment scale on the PRQC Inventory?

Binary logistic regression was conducted to investigate whether commitment had a significant effect on the odds of observing the *always* category of condom use. The reference category for condom use was *never*. The overall model was not significant, $\chi^2(1) = 1.83$, $p = .176$, indicating that commitment did not have a significant effect on the odds of observing the *always* group of condom use. The model fit was examined by figuring McFadden's R-squared with a result of 0.02, showing poor model fit. In sum, commitment does not predict condom use. Because the findings were not significant, I accept the null hypothesis and reject the alternative hypothesis, in other words, the null hypothesis is not rejected. Table 19 reviews the results of the regression model.

Table 19

*Logistic Regression Results with Commitment Predicting Condom Use*

| Variable | *B* | *SE* | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|
| (Intercept) | -1.44 | 0.91 | 2.51 | .113 | |
| Commitment | 0.07 | 0.05 | 1.83 | .176 | 1.07 |

*Note.* $\chi^2(1) = 1.83$, $p = .176$, McFadden $R^2 = 0.02$.

**Research Question 3.** Are higher levels of intimacy predictive of condom use in first- and second-year college women measure by the intimacy scale on the PRQC Inventory?

Binary logistic regression was conducted to examine whether intimacy had a significant effect on the odds of observing the *always* category of condom use. The reference category for condom use was *never*. The overall model was not significant, $\chi^2(1) = 0.16$, $p = .693$, indicating that intimacy did not have a significant effect on the odds of observing the *always* group of condom use. The model fit was examined by figuring McFadden's R-squared, with a result of 0.00, showing poor model fit. In sum, intimacy does not predict condom use. Because the findings were not significant, I accept the null hypothesis and reject the alternative hypothesis, in other words, the null hypothesis is not rejected. Table 20 reviews the results of the regression model.

Table 20

*Logistic Regression Results with Intimacy Predicting Condom Use*

| Variable | *B* | *SE* | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|
| (Intercept) | -0.57 | 0.82 | 0.49 | .485 | |
| Intimacy | 0.02 | 0.05 | 0.16 | .693 | 1.02 |

*Note.* $\chi^2(1) = 0.16$, $p = .693$, McFadden $R^2 = 0.00$.

**Research Question 4.** Are higher levels of trust predictive of condom use in first- and second-year college women as measured by the trust scale on the PRQC Inventory?

Binary logistic regression was conducted to examine whether trust had a significant effect on the odds of observing the *always* category of condom use. The reference category for condom use was *never*. The overall model was not significant, $\chi^2(1) = 0.53$, $p = .465$, indicating that trust did not have a significant effect on the odds of observing the *always* group of condom use. The model fit was examined by figuring McFadden's R-squared with a result of 0.00, showing poor model fit. In sum, Trust does not predict condom use. Because the findings were not significant, I accept the null hypothesis and reject the alternative hypothesis, in other words, the null hypothesis is not rejected. Table 21 reviews the results of the regression model.

Table 21

*Logistic Regression Results with Trust Predicting Condom Use*

| Variable | *B* | *SE* | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|
| (Intercept) | -0.73 | 0.68 | 1.14 | .285 | |
| Trust | 0.03 | 0.04 | 0.53 | .465 | 1.03 |

*Note.* $\chi^2(1) = 0.53$, $p = .465$, McFadden $R^2 = 0.00$.

**Research Question 5.** Are higher levels of passion predictive of condom use in first- and second-year college women as measured by the passion scale on the PRQC Inventory?

Binary logistic regression was conducted to examine whether passion had a significant effect on the odds of observing the *always* category of condom use. The reference category for condom use was *never*. The overall model was not significant, $\chi^2(1) = 1.13$, $p = .288$, indicating that passion did not have a significant effect on the odds of observing the *always* group of condom use. The model fit was examined by figuring McFadden's R-squared with a result of 0.01, showing poor model fit. In sum, passion

does not predict condom use. Because the findings were not significant, I accept the null hypothesis and reject the alternative hypothesis, in other words, the null hypothesis is not rejected. Table 22 reviews the results of the regression model.

Table 22

*Logistic Regression Results with Passion Predicting Condom Use*

| Variable | *B* | *SE* | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|
| (Intercept) | 0.51 | 0.75 | 0.45 | .501 | |
| Passion | -0.05 | 0.05 | 1.13 | .288 | 0.95 |

*Note.* $\chi^2(1) = 1.13$, $p = .288$, McFadden $R^2 = 0.01$.

**Research Question 6.** Are higher levels of love predictive of condom use in first- and second-year college women as measured by the love scale on the PRQC Inventory?

Binary logistic regression was conducted to examine whether love had a significant effect on the odds of observing the *always* group of condom use. The reference category for condom use was *never*. The overall model was not significant, $\chi^2(1) = 0.90$, $p = .342$, indicating that love did not have a significant effect on the odds of observing the *always* group of condom use. The model fit was examined by figuring McFadden's R-squared with a result of 0.01, showing poor model fit. In sum, love does not predict condom use. Because the findings were not significant, I accept the null hypothesis and reject the alternative hypothesis, in other words, the null hypothesis is not rejected. Table 23 reviews the results of the regression model.

Table 23

*Logistic Regression Results with Love Predicting Condom Use*

| Variable | *B* | *SE* | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|
| (Intercept) | -1.01 | 0.82 | 1.51 | .220 | |
| Love | 0.04 | 0.04 | 0.90 | .342 | 1.04 |

*Note.* $\chi^2(1) = 0.90$, $p = .342$, McFadden $R^2 = 0.01$.

**Research Question 7.** Are higher levels of relationship quality as measured by the total score on the PRQC Inventory predictive of condom use in first- and second-year college women?

Binary logistic regression was conducted to examine whether relationship quality total score had a significant effect on the odds of observing the *always* group of condom use. The 18-items were dummy-coded into a seventh independent variable in order to compute the overall sum. The reference category for condom use was *never*. The overall model was not significant, $\chi^2(1) = 0.29$, $p = .590$, indicating that relationship quality total score did not have a significant effect on odds of observing the *always* group of condom use. The model fit was examined by figuring McFadden's R-squared with a result of 0.00, showing poor model fit. In sum, higher levels of relationship quality as measured by the total score on the PRQC, does not predict condom use. Because the findings were not significant, I accept the null hypothesis and reject the alternative hypothesis, in other words, the null hypothesis is not rejected. Table 24 reviews the results of the regression model.

Table 24

*Logistic Regression Results with RQ Total Score Predicting Condom Use*

| Variable | *B* | *SE* | $\chi^2$ | *p* | *OR* |
|---|---|---|---|---|---|
| (Intercept) | -0.73 | 0.90 | 0.67 | .413 | |
| RQTotalScore | 0.00 | 0.01 | 0.29 | .590 | 1.00 |

*Note.* $X^2(1) = 0.29$, $p = .590$, McFadden $R^2 = 0.00$.

**Single Model Analysis**

I also wanted to include all the predictors together in the analysis by running a single model. When I run a single model, the variables collectivity impact one another. The overall model was not significant, $\chi^2(6) = 10.82$, $p = .108$, suggesting that relationship satisfaction, commitment, intimacy, trust, passion, and love did not have a significant effect on the odds of observing the *always* category of condom use. McFadden's R-squared was calculated to examine the model fit, with a calculation of 0.09, showing poor model fit. In sum, relationship satisfaction, commitment, intimacy, trust, passion, and love are not a significant set of variables to predict condom use. Table 25 summarizes the results of the regression model.

Table 25

*Logistic Regression Results with Relationship Satisfaction, Commitment, Intimacy, Trust, Passion, and Love Predicting Condom Use and CIs*

| Variable | *B* | *SE* | $\chi^2$ | *p* | *OR* | *95% CI Lower* | *95% CI Upper* |
|---|---|---|---|---|---|---|---|
| (Intercept) | -0.99 | 1.10 | 0.80 | .371 | | | |
| Relationship satisfaction | -0.21 | 0.09 | 5.16 | .023 | 0.81 | .68 | .97 |
| Commitment | 0.07 | 0.08 | 0.71 | .400 | 1.07 | .91 | 1.26 |
| Intimacy | 0.08 | 0.11 | 0.47 | .493 | 1.08 | .87 | 1.34 |
| Trust | 0.08 | 0.08 | 1.20 | .272 | 1.09 | .94 | 1.27 |
| Passion | -0.11 | 0.07 | 2.12 | .146 | 0.90 | .78 | 1.04 |
| Love | 0.10 | 0.10 | 1.16 | .281 | 1.11 | .92 | 1.34 |

*Note.* $\chi^2(6) = 10.82$, $p = .108$, McFadden $R^2 = 0.09$.

Confidence intervals (CI) were reported in Table 25 because the study recruited a small sample of the overall population. For example, when the overall model is analyzed collectivity, the odds ratio for relationship satisfaction Exp*(B)* = 0.81, = [.68, .97], does not cross 1, and $p < 0.02$, indicating that relationship satisfaction in conjunction with the other independent variables, could have some association with condom use. Because the single model showed no significance, I can determine that relationship satisfaction does not reliably predict condom use. After running a single model, the results differ because the variables are collectively impacting one another. When running separate regression models, as my research questions indicated, each predictor contributes to unique variance towards the outcome variable. When ran as a single model, commitment, intimacy, trust, passion, and love's CI's do cross one, that tells us that these variables are not reliable predictors of condom. CIs for commitment are Exp*(B)* = 1.07, = [.91, 1.26]; CIs for

intimacy are Exp*(B)* = 1.08, = [.87, 1.34]; CIs for trust are Exp*(B)* = 1.09, = [.94, 1.27]; CIs for passion are Exp*(B)* = .90, [.78, 1.04], and CIs for love are Exp*(B)* = 1.11, [92, 1.34].

**Post hoc Analysis**

Originally, I set the data analysis for this study at the 0.05 α level, two-tailed, 80 % power and did not account for other covariates setting them at zero. My original plan was for a sample size of 208, with a medium effect size of 1.5, per Hsieh et al. (1998). Regretfully, the original desired sample size was not obtained. The post hoc analysis with the above calculations and a sample size of 85 indicates an actual power of 0.42. When the effect size is calculated at 2.5, the actual power analysis is 0.95 and the desired sample size is 53. According to Chen, Cohen, and Chen (2010), a 2.5 effect size would be the equivalent to Cohen's 0.5, medium effect size. So, a small effect size for odds-ratio is 1.5 and a medium effect size is equal to 2.50. My original power analysis was calculated based on a smaller effect size of 1.5. Because my original sample size was not obtained, I calculated a medium effect size of 2.5 instead. For good measure, I reran the power analysis for a logistic regression with the new information using G*Power 3.1.7 (Faul et al., 2009) and the recommended Demidenko (2007) with variance correction, with an alpha of .05, a power of 0.80, and a medium effect size (odds ratio = 2.50) and a two-tailed *z* test. I calculated the P0 as 0.50 and entered the R-squared as 0.25 because the covariates were expected to be moderately associated with condom use. The X-distribution was kept as normal. Based on the aforementioned assumptions, the desired sample size is 71.

I ran a post hoc analysis to compute achieved power. With a total sample size of 85, and using the above calculations (i.e., odds ratio 2.5, P0 as .50, & R-squared as 0.25), the actual power is 0.88. There is not a true power analysis for binary logistic regression because the number of predictors in an analysis determines the sample size. Hosmer, Lemeshow, and Sturdivant (2013) and VanVoorhis and Morgan (2007) recommend a minimum sample size of at least 10 participants for each predictor variable for binary logistic regression. LeBlanc and Fitzgerald (2000) suggest at least 30 participants for each predictor. Additionally, VanVoorhis and Morgan (2007) recommend a sample size of at least 50 participants when measuring relationships (e.g., regression and correlation). According to Hosmer et al. (2013), I would need at least 60 participants. It appears that criteria for sample size for logistic regression analysis differs depending on the researcher's preferences and cutoff. . Post hoc was also reviewed in Chapter 3.

## Summary

Binary logistic regression was used to analyze levels of relationship satisfaction, commitment, intimacy, trust, passion, love, and overall relationship quality and their prediction to condom use. The overall significance of the regression model was tested and was not significant. In other words, relationship satisfaction, commitment, intimacy, trust, passion, love and overall relationship quality were not predictive of condom use in first- and second-year college women in this study. The predictors were assessed individually and no independent variable was statistically significant, thus, neither overall relationship quality nor any of the individual components of relationship quality were

reliable predictors to condom use. The null hypotheses were retained for each of the seven research questions.

The findings of the independent sample *t* test suggest that there were differences in the scales relationship satisfaction, love, and the total score between the two schools. Reliability for all scales were acceptable to excellent. The model fit for each scale was examined by McFadden's R-squared, and each scale showed poor model fit.

In conclusion, the findings in this study were not significant and the null hypothesis is not rejected. Relationship satisfaction, commitment, intimacy, trust, passion, love and overall relationship quality did not predict condom use in this study. Chapter 5 includes the introduction, a summary of the findings, implications for practice, recommendations for future research, results of the *t* test, and the conclusions.

# Chapter 5: Discussion, Conclusions, and Recommendations

## Introduction

This quantitative, nonexperimental, correlational study explored whether the quality of relationship variables were predictive of condom use among a sample of first- and second-year college women at a Nebraska university and a Connecticut university. The purpose was to determine if relationship quality, as conceptualized by the Fletcher et al. model (2000)—relationship satisfaction, commitment, intimacy, trust, passion, and love—predicted self-reported condom use, using the PRQC.

Additionally, condom use by relationship type, year in college, and female birth control was examined. The data were collected using the site Survey Monkey. According to the results, there was no statistically significant association among relationship satisfaction, commitment, intimacy, trust, passion, love or the overall relationship quality as measured by the total score of the PRQC Inventory and condom use.

This study was conducted because young adult women in their first- and second-year of college are a group more commonly impacted by health-related concerns associated with condom use. While women may be aware of the health consequences, some women still refrain from wearing condoms (O'Sullivan et al., 2010). STIs such as HPV, can lead to cervical cancer (Walboomers et al., 1999) and wearing condoms consistently can prevent both STIs and HPV.

A plethora of studies have been conducted on the variables that influence condom use in students. However, studies that measure relationship content regarding trust and intimacy, for example, may shed light on what is missing in the literature (Hock-Long et

al., 2013). The goal of this study was to investigate whether or not relationship satisfaction, commitment, intimacy, trust, passion, love and overall relationship quality, measured by the total score of the PRQC Inventory, predicted condom use among a sample of women college students.

Binary logistic regression was used to measure the overall score of relationship quality and the individual scales of relationship satisfaction, commitment, intimacy, trust, passion, love and overall relationship quality, and whether they predicted condom use. The overall significance of the regression model was tested and found to be not statistically significant; thus, the null hypotheses were retained for each of the seven research questions.

## Interpretations of the Findings

### Analysis and Interpretation of RQ1

The results of this study did not find a statistically significant association between relationship satisfaction and condom use, $\chi 2(1) = 0.16$, $p = .691$, and the results partially confirmed the findings of previous studies that examine relationship satisfaction and condom use. He et al. (2016) investigated the number of times condoms were used with new relationships while accounting for relationship quality and satisfaction in both men and women. Relationship satisfaction was measured by a ten-point Likert scale with scores ranging from 1 (very low) to 10 (very high). Relationship satisfaction and condom use frequencies were recorded three times a day via a journal. According to a univariate analysis, there were no statistically significant findings between relationship satisfaction

and using condoms. Nor were there significant differences noted between relationship satisfaction and condom use probability—similar to the results of this study,

However, in the He et al. (2016) study, using a multivariable model to include gender revealed that condom use was predicted by levels of satisfaction in a relationship. The researchers found that condoms were used less in relationships that were reported as high-satisfactory. Overall, the researchers found that condoms were used less over the period of the relationship in both men and women on multivariable analysis, and particularly for women, condoms were used less depending on the levels of reported relationship satisfaction. This study ran separate logistic regression analyses similar to the He et al. (2016) study and condom use was not influenced by relationship satisfaction. One of the main differences between the He et al. (2016) study and this study is that the He et al. study included condom use analysis in males. When the He et al. study used multivariable analysis to include gender, the researchers found that relationship satisfaction with women participants did predict condom use. Studies investigating condom use barriers in a single gender sample is common. However, researchers indicate that studying just one gender may increase the chances that inaccurate assumptions are made about the other gender, and studies that compare condom use barriers between men and women will offer a better understanding of treatment and prevention tactics needed (Caslyn, Peavy, & Tross, 2013).

Additionally, the results of this study are inconsistent with the findings from previous data collected from a study conducted by Cox et al. (2013). Cox et al. studied the quality of relationships and how it affects reproductive decision making in couples in

Ghana. Cox et al. revealed that satisfaction in relationships influenced condom use in, withdrawal method, or spermicide use with a partner. The researchers used a logistic regression model, similar to this study, for both bivariate and multivariate analyses. On both the bivariate and multivariate analyses, women's satisfaction scores and contraceptive use showed a positive association, suggesting that women's relationship satisfaction levels influence the use of contraceptives than with nonuse. Cox et al. found that women reported higher relationship satisfaction levels when both partners were aware that a contraceptive was used.

The Cox et al. study is an example of a study that found relationship satisfaction to predict condom use, differing from this study. One difference between the Cox et al. study and this study is the use of secondary data. The secondary data for their analysis came from a longitudinal study of cohabitating and married couples in a specific country. Using secondary data allows researchers to compare old data to the new data, and may provide research method alternatives, and essential background information clarifying the research problem (Frank-fort-Nachmias & Nachmias, 2008). A second difference is the fact that the data from the Cox et al. (2013) study is from cohabitating and married couples. Some researchers found that condoms are not used within cohabitating and married couples (Marlow, Tolley, Kohli & Mehendale, 2010; Wildsmith et al., 2015). Because the Cox et al. (2013) data are based on the reports of cohobating and married participants, perhaps condoms were not used in the relationships. In this study, the participant could be single, cohabitating, or married, and these demographics were not

accounted for. It is possible that some of the participants in this study were in cohabitating relationships or married, resulting in fewer reports of condom use.

The implications for inconsistent results are contributed to various factors. For one, the Cox et al. study measured not only condom use but other contraceptive methods such the withdrawal method. Measuring for other types of safe sex practices allowed the researchers to investigate whether or not condoms are not used because of reliance on other methods. Although this study did control for birth control methods to include IUD, the birth control pill, and the Depo-Provera injection, this study did not report statistically significant results. Additionally, the Cox et al. study excluded pregnant women. This study did not screen for whether or not the participant was pregnant. Because pregnant women would not need to use birth control, this may have resulted in women indicating that condoms were not used in the current relationship because they were not needed.

Additionally, the Cox et al. (2013) study used separate analysis for five relationship quality components, similar to the analysis used in this study. The five dimensions measuring relationship quality measured in the Cox et al. study are "commitment, trust, constructive communication, destructive communication, and satisfaction" (p. 188). This study did not measure communication as the Cox et al. study did. Communication and safe sex behaviors have been studied in research and show an association between condom-related behaviors and communication (Carter et al., 2012; Hock-Long et al., 2009). By examining the variable communication, the researchers were able to analyze levels of communication and its association with contraceptive use and found a positive correlation between communication and contraceptive use. It is

important to mention that the researchers also divided the dependent variables into three categories: (a) “no use of contraceptive”, (b) “use of a nonawareness method”, and (c) “use of an awareness method” (Cox et al., 2013, p. 188). This study analyzed condom use on an *always* to *never* scale by merely asking the participant if she used a condom with her relationship, potentially resulting in the discrepancies. Measuring condom use awareness and nonawareness methods, in addition to nonuse allowed the researchers to investigate whether or not the male partner knew a form of contraceptive was used.

Another study that found significant results relating to relationship satisfaction and condom use is a study led by Strachman and Impett (2009). Their study examined relationship satisfaction and condom use in a sample of 75 participants, similar to this study’s sample size, by measuring satisfaction, condom use, and sexual intercourse on a daily log for 14 consecutive days. The researchers found that condom use was decreased on days that were reported as high levels of relationship satisfaction. One reason the Strachman and Impett study may have found significant results compared to this study is the way condom use was measured. Measuring condom use via a daily journal can provide more accurate results, especially when considering feelings and emotions. It might be that asking “do you or don’t you” is not is not enough to accurately measure condom use (Weir, Roddy, Zekeng, Ryan, & Wong, 1998, p. 293). For example, Weir et al. studied condom use measurement styles and found that the type of measurement affected responses. They found that methods such as keeping a log for a short time offered more accurate results than using *always* to *never* scales. Additionally, Noar, Cole, and Carlyle (2006) analyzed 56 studies regarding condom use measurement. The

researchers recommend measuring condom use by using count measures as this study did, however also using shorter intervals regarding recall period of 3 months or less. It is possible that because this study measured condom use merely by memory and did not indicate a timeframe to report on, (e.g., in the last 3 months), the results were not as precise as the results in the Strachman and Impett (2009) study.

Interestingly, when Strachman and Impett analyzed attachment anxiety along with relationship satisfaction and condom use, condom use was not predicted by relationship satisfaction. When the researchers controlled for covariates such as sex occurrences and awareness of partner's sexual past, the findings were significant. This study did not control for other mediators that are likely to impact condom use. Ignoring such factors underestimates the effects of relationship quality. Perhaps, controlling for factors such as attachment anxiety as the Strachman and Impett study did, would portray a more reliable picture of how relationship quality components affect condom use.

**Analysis and Interpretation of RQ2**

The results of this study did not find a statistically significant association between commitment and condom use $\chi 2(1) = 1.83$, $p = .176$, and the results confirmed the findings of previous studies relating to commitment and condom use. As mentioned above, Cox et al. (2013) studied overall relationship quality and contraceptive use in 698 married and cohabitating couples and found that contraceptive use was low and relationship quality was reported as high. The study was interested in examining relationship quality under five dimensions, one of which was a commitment subscale. The researchers site Sternberg's Theory of Love Scale (Sternberg, 1997, as cited in Cox

et al., 2013) and use the love scale to guide their adaptation of the commitment subscale. Cox et al. found no statistical significance between commitment levels and contraceptive use in both the bivariate and multivariate analysis, in a sample of men and women. These results are similar to the findings of this study.

One similarity to the Cox et al. (2013) study and this study is the way commitment was measured. This study used the PRQC Inventory and commitment was a subscale of the PRQC Inventory. Using a seven-point Likert scale with scores ranging from 1 (not at all) to 7 (extremely), commitment was measured by asking: "How committed are you to your relationship?", "How dedicated are you to your relationship?" and "How devoted are you to your relationship?" (Fletcher, Simpson, Thomas, 2000, p. 352.) The Cox et al. (2013) study measured commitment on a nine-point Likert scale with scores ranging from 1 (lowest) to 9 (highest) by inquiring, "I expect my love for my current partner to last for the rest of my life," "I view my relationship with my current partner as permanent," "I am committed to maintaining my relationship with my current partner," and, "I have confidence in the stability of my relationship with my current partner" (p. 188). It is possible that using Likert-type scales to measure commitment levels might not be the most accurate measurement tool. Perhaps, utilizing qualitative measures when investigating feelings and emotions regarding relationships and commitment would shed light on how commitment matters to condom use and relationships.

A study conducted by Umphrey and Sherblom (2007) found that commitment predicted condom use. The researchers investigated relational commitment and its

influences on condom use in men and women college students. Using regression analysis, the researchers found that condoms were worn more in casual relationships compared to steady, married relationships.

Condom use in the Umphrey and Sherblom study was measured on a seven-point semantic differential scale by asking three questions: "I intend to use a condom during my next sexual encounter, "I intend to use a condom the next time I have sex," and "I will not use a condom in the near future" (p. 64). The researchers measured condom use intention, rather than the frequency, as this study measured. Perhaps, recall and societal biases affected the results of the Umphrey and Sherblom study. It is possible that asking questions about condom use intention portrays a skewed report, where the participants are responding to the question the way they believe they should, similar to response bias (Frankfort-Nachmias & Nachmias, 2008). For example, the participant may feel pressure to answer a question that is most socially acceptable and not answer the question truthfully. In this study, condom use was measured by inquiring about frequency and not the intention. This study found that most women reported good relationship quality and over 50% did not use condoms. I believe that this study expands on the Umphrey and Sherblom (2007) study by measuring condom use frequency instead of intention.

Another study that disconfirmed the results from this study is a study by Milhausen et al. (2013) that examined condom use predictors in 653 men and women college students in Canada. The students completed a survey that assessed for demographics, contraceptive method, condom use decision making, STI concerns and concerns related to pregnancy, sexual health awareness, and whether or not condoms

were accessible on campus. The researchers used logistic regression analysis and found that women used less condoms in committed dating relationships. Respondents who indicated they had never engaged in sexual intercourse before were excluded from the study. Less than one-half of the participants used a condom during their most recent sexual encounter indicating birth control as the main reason why condoms are not worn. Although this study accounted for birth control and relationship type, it did not find statistically significant results relating to commitment levels and condom use using logistic regression analysis. Furthermore, this study did not screen for whether the participant was in a sexually active relationship. It is possible that respondents who participated in this study were virgins. If a participant was in a relationship where a condom was not needed because she was not sexually active, it is likely that the respondent would select *never* on the scale in regards to the condom use question due to irrelevancy.

**Analysis and Interpretation of RQ3**

The results of this study did not find a statistically significant association between intimacy and condom use $\chi 2(1) = 0.16$, $p = .693$. Research in the area of intimacy as measured independently with condom use is minimal. There were only a couple notable studies found that were discussed in Chapter 2 regarding intimacy and condom use. One of the studies mentioned was a study conducted by Gebhardt et al. (2003), measuring intimacy and condom use in a sample of adolescence. The researchers found that levels of intimacy did affect whether or not a condom was worn in certain types of relationships. For example, intimacy was not as important to people who were in casual

relationships. Women participants who used a condom reported higher scores on the intimacy need scale, and those in steady relationships looking for intimacy are less likely to wear a condom. Higher levels of intimacy are associated with fewer occurrences of condom use in relationships. Although, this study assessed for relationship type (i.e., casual vs. primary), along with levels of intimacy, the results were not statistically significant.

There are several factors that may account for the difference in results of Gebhardt et al. (2003) and this study. The first factor that may account for the difference is the sample size, as the sample size in the Gebhardt et al. study is much larger. The second factor that may account for the differences is the fact that this study did not account for gender differences. A third factor that may account for the differences is the fact that the Gebhardt et al. study screened for current sexual activity by asking "Have you ever had sexual intercourse?" (p.156). this study did not screen for current sexual activity and it is possible that a portion of the participants were not currently sexually active perhaps making it challenging to answer the condom use question. For example, out of the initial 701 sample size in the Gebhardt et al. study, only 470 were sexually active and included in the analysis. Additionally, participants who did not approve of sex were excluded from the analysis. This study did not screen for current views on sex behavior (e.g., sex before marriage, religious beliefs). It is possible that beliefs regarding sexual practices or religion had moderating influences on the results. The Gebhardt et al. study also measured attitudes relating to condom use, condom use self-efficacy, and pressure from societal norms. It is possible that by accounting for attitudes relating to

condom use and whether or not condoms were worn or not worn because of societal norms would offer a clearer picture of relationship quality and condom use. Furthermore, identifying whether or not the participants are currently sexually active would have been relevant to the analysis, as it is entirely possible that some participants were not having sex in their relationship.

**Analysis and Interpretation of RQ4**

The results of this study did not find a statistically significant association between trust and condom use $\chi 2(1) = 0.53$, $p = .465$, partially confirming results of a study conducted by Hock-Long et al. (2013) relating to trust and condom use. To measure condom use predictors in casual and serious relationships in a sample of young adults, Hock-Long et al. asked the respondents whether or not condoms were used at first and last sexual encounter and if using condoms with one another was talked about on a *yes* or *no* scale. They used fixed-choice responses to measure reasons for use and nonuse. Interestingly, although trust was not an option on the multi-choice, trust was the most commonly indicated reason why condoms are not used among those participants who chose the *other* option. This is interesting because it suggests that using the fixed-choice responses did not adequately measure condom use reasons for the participants. Using open-ended questions or even qualitative measures first, may lead to better understanding of why condoms are not used in relationships.

Furthermore, Hock-Long et al. measured trust on a four-point Likert scale with scores ranging from 1 (strongly disagree) to 4 (strongly agree), by asking if not using a condom symbolized trust. The researchers report a significant association between trust

and condom use in serious relationships, however, in casual relationships, the association was not significant when measured on the bivariate analysis. Hock-Long et al. asked the respondents if they believed not wearing a condom with their partner represented trust and were able to report a significant association in serious relationships. The way the researchers in the Hock-Long et al. study measured trust via an agreeance Likert scale appears to be an appropriate measure. This study measured trust by asking three questions relating to trust within relationships and not specifically towards condom use, and then used logistic regression to investigate whether or not trust levels on the PRQC Inventory were associated with condom use. Perhaps, the Hock-Long et al. study found a significance because the scale was specific to what it intended to measure.

Another difference between the Hock-Long et al. and this study is the inclusionary criteria. Hock-Long et al. screened for participants who were in a current relationship to reduce errors in recall and memory of condom use. For this study, the participant could report on a past relationship and the relationship did not have to be current, resulting in inaccurate recollection of condom use. One more difference is the methodology used. Hock-Long et al. used previous qualitative findings to guide their survey development and included other factors relating to condom use that were deemed relevant based on their literature review. This study used a previously validated and produced assessment (i.e., PRQC Inventory) and did not make any changes to it. Perhaps, adjusting the survey to include other significant mediators such as talking about condoms with one another or condom use at first and last sexual encounter, would have shed light on condom use frequency.

**Analysis and Interpretation of RQ5**

The results of this study did not find a statistically significant association between passion and condom use $\chi 2(1) = 1.13$, $p = .288$, and the results disconfirmed the findings of a previous study conducted by Civic (2000) relating to passion and condom use. Civic used a survey design with men and women undergraduate students to explore condom use decision making and reasons for use and nonuse of condoms in those who were in dating relationships. Civic gathered demographic information such as race and ethnicity, how old the participant was when he or she first started having sex, total lifetime partners, number of relationships in a period, pregnancy and STI history. Civic also screened for contraceptive use, as did this study. One factor that may account for the differences between the Civic study and this study is the fact that Civic used both men and women in the analysis. As mentioned previously, using both men and women in studies relating to condom use might offer a more precise picture of condom use predictions. A second factor is that the Civic study is a qualitative study. Qualitative research is a good approach to answering the why and how questions to certain types of behavior, primarily relating to sex. This study took a survey research approach, using a questionnaire to discover trends about condom use. Qualitative research designs are concerned with interviews, as in the case of the Civic study. By conducting focus groups, Civic found that that impulsive sex was one reason for condom nonuse at the beginning of a relationship because of the "heat of passion" phenomena (Civic, 2000, p. 99). Passion was one of the independent variables investigated in this study. It might be that

passion is difficult to assess on a quantitative measure, and may be more suitable for a more qualitative approach.

A study conducted by Alvarez and Garcia-Marques (2011) is another example of a study that found significance in the association between feelings of romance and passion, and condom use. The study consisted of a men and women college sample and found that condom use was viewed as unromantic. In other words, not introducing condoms during sex is considered passionate and not using a condom represented deeper feelings of commitment and intimacy. One of the reasons why the Alvarez and Garcia-Marques (2011) study differs from this study could be how the variables were measured. The researchers used sexual encounter scenarios to examine relationship perception and sexual protection focusing on the variables condom use, gender, and relationship type. The two dependent variables, opinions regarding the situation and expectations of the relationship, were analyzed by several adjectives that define romance. By analyzing contextual and perceptional variables and using condom use as an independent variable and not a dependent variable, the researchers were able to identify that condoms were viewed as unromantic. This study measured condom use as the dependent variable. In this study's analysis, condom use was grouped into a dichotomous scale for a logistic regression model. The Alvarez and Garcia-Marques (2011) study was interested in investigating whether or not specific characteristics of a relationship from hypothetical scenarios was influenced by condom use. Their study and this study's research questions differed, yet they were able to identify that condom use was viewed as unromantic by their approach. This characteristic is similar to predictors such as intimacy or overall

relationship quality. Perhaps, if this study looked at differences in relationship quality variables between groups, for example, those who use condoms and those who do not, the study may have yielded different results.

**Analysis and Interpretation of RQ6**

The results of this study did not find a statistically significant association between love and condom use $\chi 2(1) = 0.90$, $p = .342$, and the results were partially consistent with a study conducted by Ewing and Bryan (2015) relating to love and condom use. Ewing and Bryan conducted a mixed study to investigate the role of love and trust in adolescent relationships. The researchers found that participants in high trust and love relationships did not always use condoms. One factor that may account for differences in results was the participant's age requirement. The Ewing and Bryan study consisted of participants 12-19 years old, much younger than the age requirement in this study. The age differences could account for differences in responses. For example, youth may tend to answer questions in a way that will be viewed socially acceptable or favorable, or feel embarrassed about relationship quality or sexual behaviors. Youth may simply not understand the questions, resulting in misinterpreted responses.

Additionally, Ewing and Bryan measured love by asking if the respondents were "in love," with their partner by answering *yes* or *no*, and trust by asking the respondents to rate trust levels on a four-point Likert scale with scores ranging from 1 (no trust at all) to 4 (a lot of trust). (Ewing & Bryan, 2015, p. 4). The way love is measured in the Ewing and Bryan study is quite different than the way love is measured in this study. However, the way trust is measured is similar. This study measured trust by asking a series of

questions and the scales were additive, and the higher number indicated higher levels of trust, similar to this study. Ewing and Bryan did not find a significant relationship between trust and condom use using regression analysis. However, they did find a significant relationship between love and condom use, where love signified less condom use. Perhaps, because love was measured simply by asking a straightforward question of *yes* or *no*, and this study's measure of love was more defined and operationalized and may not have been consistent with the generic and subjective question asked by Ewing and Bryan, explains the discrepancies.

The second part of the Ewing and Bryan study consisted of the respondents reading scenarios to evaluate the level of trust within a relationship by studying three different groups. Using hypothetical scenarios to assess condom use frequency, trust levels, duration of the relationship, and level of experience, through a factorial ANOVA, revealed a significant interaction between trust, length of the relationship, and frequency of sex occurrences in the sexually experienced group. The respondents revealed that condoms were used more when the relationship was new and trust levels were low. In the current relationship group, there was a significant association between trust and condom use, that is, youth predicted that condoms would be worn more in low trust relationships. The third group, sexually inexperienced respondents, found that girls believed condoms were used in low trust relationships. However, boys believed condoms to be used more often in high trust relationships.

Some factors that may account for the differences between the Ewing and Bryan study and this study are the measuring techniques used to evaluate condom use. For

example, information was gathered about current relationship status, duration of the relationship, if they were currently having intercourse, and if a condom was worn at the beginning of the relationship. The participants were asked about how often they were having sex and how many times they were using condoms. This study simply asked the participants if condoms were worn on an *always* to *never* scale. It is possible, that screening for condom use trends from the beginning of the relationship would yield different results.

Additionally, the inclusionary requirements in the Ewing and Bryan study were participants in a current relationship and sexually active. This study did not screen whether or not participants were sexually active, and participants could complete the survey based on a past relationship. Perhaps, not screening for current sexual activity or current sexual experience, participants indicated no condom use because they were not currently sexually active. Completing the PRQC Inventory based on a past relationship may have encountered recall and memory issues.

**Analysis and Interpretation of RQ7**

The results of this study did not find a statistically significant association between the overall score of relationship quality $\chi 2(1) = 0.29$, $p = .590$ and is consistent with the findings of the study conducted by Hock-Long et al. (2013) in regards to relationship quality and condom use. Hock-Long et al. examined condom use predictors and relationship status. They analyzed 380 surveys from young men and women between the ages of 18-25, similar age group as this study. The focus included inquiring about condom use behaviors, beliefs, and relationship quality. To measure relationship quality,

the researchers used three, four-point Likert scales with scores ranging from 1 (strongly disagree) to 4 (strongly agree), that asked the participant to rate "the importance of the relationship," "how much they cared about the partner," and "the likelihood of being in a sexual relationship with the partner one year from now" (Hock-Long et al., p. 903). The researchers did not find significant results regarding relationship quality and condom use in both serious and causal relationships on a bivariate analysis using conditional logistic regression.

However, as mentioned above, the Hock-Long et al. study reports a significant association between trust and condom use in serious relationships, however not when relationship quality was evaluated. The Hock-Long et al. study and this study are similar in many ways: (a) The age range was similar. (b) Both serious and casual relationships were examined. (c) A Regression analysis was used. However, the inclusionary was different. The participants in the Hock-Long et al. study were required to have had at minimum, one sexual encounter in the past 6 months. The inclusionary requirements are different from this study, as this study did not require participants to report on only heterosexual relationships, and this is one way this study extends beyond the Hock-Long et al. study. Furthermore, a timeframe for reporting concerns was never outlined in this study, as the Hock-Long et al. study indicated. This study builds on the prior study because the research problem impacts women in both past and current relationships. Including women who are single, cohabitating, married, or reporting on a past relationship, because sexual health affects all women, and not setting boundaries ensures all women had the opportunity to participate and report on condom use.

Another factor that may account for differences in the two studies is that the Hock-Long et al. study measured relationship quality based on open-ended questions from participants, asking them to describe their partner. This study did not operationally define what casual/temporary or steady/primary meant in regards to relationships type. It is possible that participants were not sure if their relationship constituted as casual or primary as there are various types of casual and primary relationships. For example, it is possible that a relationship is considered primary, yet casual. In other words, a participant may have one primary casual, or friends with benefits relationship. I believe the way this study investigated relationship quality may expand on the prior study. For example, relationship quality was measured by using the PRQC Inventory. Researchers have reported that high levels of relationship satisfaction, commitment, intimacy, trust, passion, and love represents a good relationship. Studying these components separately and in combination may offer insight into how specific parts of a relationship contributes to safer sex behaviors.

One final study to mention is where researchers, Sakaluk and Gillath (2016) assessed attachment and condom use in three different experiments. Specifically, in one experiment they were concerned with evaluating relationship quality mediators and used the PRQC Inventory by Fletcher et al. (2000); the inventory used in this study. The researchers recruited 149 participants that were randomly assigned to an attachment condition (i.e., security, anxiety, avoidance, or control). The participants completed the PRQC Inventory because the researchers were interested in measuring whether or not perceived relationship quality components affected attachment conditions on condom

use. The researchers found that the six relationship quality components, relationship satisfaction, commitment, intimacy, trust, passion, and love were not supported mediators similar to this study. One reason why the Sakaluk and Gillath (2016) study and this study are similar is that they did not control for relationship length. A second reason the studies are similar is that it is not known whether respondents were sexually active in their relationships. Thirdly, there are various factors that may influence condom use that was not controlled. The above are limitations in both studies. It may be that the hypothesized relationships simply do not exist. The results of this study were consistent with the Sakaluk and Gillath study, building on and expanding the knowledge gap because it shows that relationship quality components, as identified by Fletcher et al. (2000) do not necessarily predict condom use. However, there may be other mediators that should be accounted for. For example, the Sakaluk and Gillath (2016) study report that attachment has a role in whether or not condoms are worn. In other words, some relational components do matter in regards to condom use behavior.

Collectively, the findings in this study confirm the existing knowledge available; that is, condom use trends and behaviors among young women remains contradicting. Researchers have studied various condom use predictors and have found mixed results. Condoms are often not used in relationships that are reported as high-quality (Manning et al., 2009). Researchers have also investigated cases where condoms are used more often in relationships considered high-quality, comfortable, and positive (Cox et al., 2013; Ssewanyana et al., 2015). This study found that relationship satisfaction, commitment, intimacy, trust, passion, love, and overall relationship quality are not predictors of

condom use among first- and second-year college women in this sample. The findings of the independent sample *t* test suggest that there were differences between the scales relationship satisfaction, love, and overall total score between the two collection sites. The participants at the first collection site rated higher scores on relationship satisfaction, love, and total score of relationship quality.

## Limitations of the Study

This study noted several limitations. First, a specific type of bias that may be present in this study is response bias. Response bias is when the participant underreports or denies the behavior in question (Frankfort-Nachmias & Nachmias, 2008). Similarly, the participant may report results the way they believe the researcher would want them to. Because any question relating to sexual practices can be considered a threatening question, it is entirely possible that response bias took place in this study. Self-reporting bias (Choi & Pak, 2005) did occur in this study, as there were questions skipped on the survey and the question about condom use was not answered, twice. Recall bias may also be at play because this study did not limit the analysis sample to individuals in current relationships. Second, there are various dimensions of relationship quality and this study measured only six. For example, Hasserbrauck and Fehr (2002) found that factors such as relationship agreement and independence are important to understanding relationship quality.

One of the most considerable limitations of this study was the age requirement for participation in Nebraska. Regretfully, 18-year-old freshman and sophomore students in Nebraska were excluded from this study because the age of majority in Nebraska is 19-

years-old. I suspect that many of the freshman and sophomore student body is 18-years-old. I believe this is one of the reasons why the sample size and participation was so low in Nebraska.

Another major limitation was the fact that I was not able to gather the desired initial 208 surveys. The recruitment challenges were major. As I discussed in Chapter 4, I was not able to recruit from programs that I had planned for at the first data collection site. Plus, the lack of response from professors was overwhelming. I attempted to recruit from the first data collection site for 3 months. Once it appeared that all recruitment efforts had been exhausted, I requested approval from Walden University IRB to post my study to the Walden participant pool. My study was available for an entire quarter and no students participated. Once it appeared that recruitment at Walden participant pool was not going to generate any survey responses, I requested approval from Walden University IRB to recruit from another university. I was only granted permission to recruit from one of the regional campuses within the university and the psychology bulletin. I sent e-mails to professors and had a decent response. The survey was available for roughly 1 month. Once it appeared that no additional surveys were completed through Survey Monkey at the third data collection site, I consulted with my chair and second committee member and decided to halt recruitment at the 122 surveys collected.

Another limitation of this study was the denial to recruit from certain programs and groups at the Nebraska campus. I was not permitted to recruit the psychology department or participant pool, or the sororities on the Nebraska campus. This was a major drawback. I had accounted for the psychology department and psychology

participant pool along with the several groups of sororities as viable participants with a large participation rate. Also, I received more denials and more non-responses from professors that I had anticipated. My personal belief and speculation is that due to the sensitive topic of sex, the response rate was low.

Although the findings in this study are different from what was expected, and many new questions have risen to the forefront that can pave the way for future researchers. I hypothesized that higher levels of relationship quality would be associated with a decrease in condom use and there are many possible reasons why the results challenged the expectations. For one, the sample population was small. Typically, with logistic regression analysis, the larger sample size is most desirable (Field, 2013). Perhaps, the number of applicable surveys was too small for this type of analysis. Two, maybe there were negative cofounding variables influencing the independent and dependent variable, or other effect modifiers or mediators not considered. A cofounder is a variable that is not analyzed in the study that may be affecting results directly (Pourhoseingholi, Baghestani, Vahedi, 2012). Mediators are variables that explain reasons why, for this example, relationship quality, is related to condom use. For instance, I did not control for the participant's number of sexual partners, perceived susceptibility to health risks, or ethnicity. Knowing if the women perceived themselves at low, medium, or high for health risks from unprotected sex with their partner may have shed some light on the use and nonuse of condoms. It is possible that the definition of casual partner and steady partner differed for each participant, as well. Maybe controlling these variables would have generated different result.

Lastly, sexual orientation was not screened for on the survey. It would be interesting to know how many, if any, of the respondents, were in same-sex relationships. Obviously, condoms would not be needed for lesbian couples. A lesbian participant would not need a condom for sex with their partner and answering *no* to the question about using a condom during sex would not exactly reflect what the survey is wanting to measure. Additionally, this study did not account for whether or not the participant was in a cohabitating relationship or married, pregnant, or sexually experienced. For example, is it likely that a pregnant or married participant would not use a condom. The differences in groups could be a limitation because condoms are less likely to be worn within these groups. Identifying if the participant is in a same sex relationship, married, or pregnant as a cofounding variable within the analysis would most likely portray more reliable findings relating to condom use and relationship quality.

## Recommendations for Future Research

Recommendation for future research would be to look at different measures of the components of relationship quality such as attachment, communication styles, and respect levels. Perhaps, the future researcher could assess for the duration of the relationship and whether or not the participant is married, dating, or cohabitating. It would be thought-provoking to measure relationship development and how ideals may change from early on to later in a relationship and how relationship changes affect condom use over time (Fletcher et al., 2000). Perhaps, a longitudinal study would offer insight into how relationship quality changes or measured depending on the stages of a relationship. Perhaps, a study could measure the components of relationship quality individually,

along with other mediators. For example, one could study condom use, trust levels, and awareness of health risk and susceptibility levels. Factors such as condom use attitudes and sex beliefs and how it relates to the quality of a relationship could be measured in future research.

More qualitative studies may shed light on what this study is lacking. A mixed study design could provide statistical information from a survey why the participant answered the way they did from an interview. It might be interesting for future researchers to examine relationship quality in a qualitative matter first, and then use the information to guide survey development. Additionally, based on the literature review, it is recommended for future studies to measure potential mediators such as sexual identity and awareness of health risk and how it relates to relationship quality components and condom use. Additionally, history of STIs or pregnancy may affect condom use in a multitude of relationships. Also, it can be assumed that multiple sex partners increases the chances of contracting HPV, therefore increases the risk of cervical cancer. Researchers have found that students have multiple sex partners and are using condoms less by the time they are sophomores in college (Fielder & Carey, 2010; Walsh et al., 2013). Perhaps, studying relationship quality with the number of partners would provide information on how relationship quality effects condom use. I recommend that future researchers measuring condom use assess for whether or not participants are currently sexually active, lesbian, married, or pregnant, and include both men and women in the analysis. Additionally, the independent sample *t* test conducted between the two groups discussed in Chapter 4 revealed many implications for future studies. There are various

reasons that could explain the mean score differences between the two groups. Perhaps factors such as geographical location, a community's economy or available resources influence relationship satisfaction. Perhaps, schools, smaller communities or a state's population foster relationships differently. Maybe, levels of domestic violence, mental health rates, or religious differences have some effect on overall relationship quality depending on where people live. I would highly recommend future scholars further explore how relationship quality components differ based on geographical location.

**The Fletcher et al. model**

The Fletcher et al. model (2000) focuses on six components that represent relationship quality. Fletcher et al. explored the constructs relationship satisfaction, commitment, intimacy, trust, passion, and love with men and women college students and found that when a person's relationship ideals and perceptions were closely aligned, higher relationship quality was often reported (Fletcher, Simpson, Thomas, 2000). The Fletcher et al. model was chosen as the basis for this study because it proposes the variables that represent perceived relationship quality. The theory suggests that participants will rate relationship quality both as a single dimension and as an overall evaluative dimension and that high relationship quality ratings equal to positive and high-quality relationships.

The Fletcher et al. model (2000) relates to this study in that it guided the variables measured in this study. The goal of this study was to better understand how relationship quality components are associated with condom use. This is essential because researchers

have indicated that emotional aspects of relationships such as trust, relationship satisfaction, and love, for example, influence condom use in young college students.

The independent variables that were investigated in this study were measured because researchers have proposed that relationship satisfaction, commitment, intimacy, trust, passion, and love are predictors of condom use. The variables provided additional insight into how relationship quality component relate to condom use. For example, this study's results did not find a significant difference between relationship quality components and condom use. The results of this study confirmed results of previous studies that certain emotional aspects of relationships, such as trust and relationship quality do not necessarily predict whether or not a condom will be worn among college students. Albeit, the results of this study did not find statistically significant results among relationship quality components and condom use, the results still suggest the need for an on-going investigation into how specific relationship quality components impact condom use. The fact that the results did not generate statistical significance adds to the body of literature and is equally important The Fletcher et al. model (2000) contributes to our knowledge base in regards to the emotional factors that represent a good relationship. The theory proposes that high relationship quality ratings equal to positive and high-quality relationships.

**Sternberg's Triangular Theory of Love**

Sternberg's triangular theory of love was chosen as another theory base to this study, as it focuses on the components, intimacy, passion, and commitment, similar to the Fletcher et al. model (2000). Sternberg suggests that the love dimensions intimacy,

passion, and commitment may influence relationship quality. Sternberg's theory offers insight into how levels of love could potentially affect whether or not a condom is worn in a relationship. Researchers have indicated that women in love will not consistently use condoms (Jones & Paulhus, 2012). The love theory concept supports the idea that emotional aspects of relationships can play a part in how relationship quality is measured and that safe sex practices might be influenced by love. Sternberg's theory also contributes to our understanding of how intimacy, passion, and commitment can have some influence on relationship quality. Sternberg's theory relates to this study because it suggests that love signifies high-quality relationships.

## Implications for Positive Social Change

Positive social change is discovering new ways to live that promote improved, stronger, and more sustainable communities (Maton, 2008). This study contributes to the gap in research by further investigating how specific components of relationship quality influence condom use. Learning that relationship factors were not statistically significant predictors of condom use adds to the knowledge base and proves that additional research in this area is needed. Although the non-significant findings were surprising, the results further suggests the need for researchers to study the use of relationship measures of sexual behavior because the findings remain inconsistent.

Researchers have reported that emotional aspects of relationships do affect condom use. Interventions that promote improvement in the lives of women remain an essential goal of social change. This study promotes social change by providing information that relationship quality does not necessarily predict condom use in casual or

steady relationships among students. University health care professionals, doctors, nurses, and health psychologists should continue to explore the connection between relationship quality and condom use with young women and talk openly about healthy relationships and using condoms during sex to prevent STIs. Overall, further understanding relationship quality variables may lead to condom use compliance and improved health for women. Furthermore, factors such as sexuality, current sexual activity, pregnancy, relationship status (e.g., cohabitating or married) and duration of the relationship should be controlled.

## Conclusion

Decreasing the number of STIs and HPV among women college students remains taxing for public health. The use of the male condoms is the most effective way to steer clear of cervical infections and STIs Researchers have often failed to test relationship quality regarding multiple components in first- and second-year college students. A more comprehensive look was needed because it is not thoroughly understood how relationship satisfaction, commitment, intimacy, trust, passion, love, and overall relationship quality affects condom use in college women. Many women are dying from cervical cancer in the United States The problem is that men and women, despite awareness of the adverse health risks, are still not consistently wearing condoms within various types of relationships. Researchers have reported condom use trends in all kinds of relationships, yet a true answer to what leads women to condom use decision making depending on their relationship status and relationship quality is still unknown. The results of this study

solidify the need for a relationship-focused approach to condom use when working with students across all campuses.

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Appendix A: Perceived Relationship Quality Components Inventory

Age: ___Gender:____Freshman: __Sophomore: __ Are you using female birth control?

Y/N

(e.g.,IUD, birth control pill, Depo-Provera)

**Note: if you are <u>not in a current relationship, complete this survey using your previous relationship. Use the same relationship to answers all questions.</u>**

**<u>Indicate what type of relationship you are referring to:</u>**

Casual/Temporary Relationship: _____

Steady/Primary Relationship: _____

<u>Circle the number that best reflects your relationship. 1=not at all to 7=extremely</u>

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 1. How satisfied are you with your relationship? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 2. How content are you with your relationship? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 3. How happy are you with your relationship? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 4. How committed are you to your relationship? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 5. How dedicated are you to your relationship? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 6. How devoted are you to your relationship? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 7. How intimate is your relationship? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 8. How close is your relationship? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 9. How connected are you to your partner? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 10. How much do you trust your partner? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 11. How much can you count on your partner? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| 12. How dependable is your partner? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 13. How passionate is your relationship? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 14. How lustful is your relationship? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 15. How sexually intense is your relationship? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 16. How much do you love your partner? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 17. How much do you adore your partner? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| 18. How much do you cherish your partner? | 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Note. Each statement is answered on a 7-point Likert-type scale (ranging from 1 = not at all to 7 = extremely).

## Indicate your condom use:

Condom Use

1. "Do you wear a condom with your current (or past) partner?"

Please circle one:

*always* *sometimes* *never*

**NOTE:** For the purpose of this study, sex is defined as, **sexual contact between two people involving penetration.**