

2015

# Provider-Initiated Condom Education, HIV, and STDs Among Older African American Women

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# Walden University

College of Health Sciences

This is to certify that the doctoral dissertation by

Natasha N. Hall

has been found to be complete and satisfactory in all respects,  
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2015

Abstract

Provider-Initiated Condom Education, HIV, and STDs Among Older African American

Women

by

Natasha N. Hall

MS, University of Phoenix, 2007

BS, North Carolina Central University, 1998

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

Public Health

Walden University

November, 2015

## Abstract

Older African American (AA) women are at increased risk for HIV and STDs. The purpose of this quantitative study was to examine the influence of provider-initiated condom use education on condom use among unmarried, heterosexually active AA women aged 50 and over using the constructs of self-efficacy and attitudes of the health belief theoretical model. The relationships between provider education on condom use, condom use self-efficacy, condom use attitudes, and actual condom use were tested individually, and provider education on actual condom use was tested after controlling for condom use self-efficacy and attitudes among 95 study participants recruited primarily from Raleigh-Durham, NC. A 2-tailed sample *t* test or analysis of covariance was used for analysis. Provider education on condom usage failed to show a benefit with regard to condom usage, condom use self-efficacy, and attitudes toward condom usage. Additionally, women who received provider education on condom use were less likely to use condoms. Possibly these women had a low perception of risk and vulnerability to HIV and STDs, which correlated with lower condom use. The counter intuitive findings could also be related to another variable that was not tested and should spur more research. Results could be used to contribute to the design of an intervention model that specifically addresses the sexual behaviors of older AA women. Results of this study, combined with previous research, can help emphasize the need for improved patient-provider communication so that provider communication produces a more positive outcome and helps limit the spread of HIV and STDs, a limitation that would benefit individuals, whole communities, and the nation.

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## Dedication

“Trust in the Lord with all thy heart and lean not unto thine own understanding, in all thy ways acknowledge Him and He shall direct thy path” (Proverbs 3:5-6).

I dedicate this dissertation to my best friend, the love of my life Mr. Larry W. Hall, Jr. Thank you for your unwavering support and undeniable love and affection toward me, because of you I am here and I am forever grateful to my Father in heaven for giving you to me.

To my girls, Tacaria, Jordyn, and Chakelah, I love you and thank God for the special way that He brought each of you into my life. I encourage you not to live a mediocre life, but to be so courageous in your everyday living that you settle for nothing less than God’s best.

To my mom, thank you for *always* believing in me to achieve things I never imagined I could. Thank you for letting me cry, but not letting me quit. I love you so big!

To my beloved mentor, Dr. Sharon Douglass Ware, ‘We Did It’! My heart is filled with admiration, joy, and gratefulness for your friendship and for being more to me than just a mentor. Thank you for sharing your life’s journey, you are my everlasting inspiration.

## Acknowledgments

I first give thanks to God for being the head of my life and for carrying me through this journey, which at times seemed never ending.

I give thanks to my dear sister, Tamika for encouraging me through pray and words of encouragement, and a special thank you to my brothers, Corey and Mark whom I love so dearly.

Thank you to my dear friends Asheila, Kamillah, and Denise; we have a lot of catching up to do.

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I also thank all of the community partners who were instrumental in making my research study a success.

And lastly, I thank the Walden University faculty and my dissertation committee especially Dr. Peter Anderson and Dr. Cheri Langley. Thank you both for helping me find my *scholarly voice*; you are amazing!

## Table of Contents

List of Tables .....	v
List of Figures .....	vi
Chapter 1: Introduction to the Study.....	1
Introduction.....	1
Background and Problem.....	1
Research Questions and Hypotheses .....	3
Research Question 1 .....	3
Research Question 2 .....	3
Research Question 3 .....	4
Research Question 4 .....	4
Theoretical Framework.....	5
Nature of Study.....	5
Definitions of Terms .....	6
Definition of Covariates.....	7
Definition of Other Terms .....	7
Assumptions and Limitations .....	7
Delimitations.....	9
Significance and Social Change.....	10
Summary.....	11
Chapter 2: Literature Review.....	12
Introduction .....	12



Literature Search Strategy.....	13
Theoretical Foundation.....	14
Health Belief Model.....	14
Health Belief Model and Self-Efficacy.....	16
Health Belief Model and Attitudes.....	21
Health Belief Model Closing Summary.....	22
Literature Review Related to Key Variables.....	23
Provider Initiated Condom Use Education.....	23
Condom Use and African American Women.....	25
African American Women and Relationship Status.....	27
Covariates.....	30
Knowledge/Awareness.....	30
Level of Education.....	30
Length of Relationship.....	31
Summary of Covariates.....	31
Summary and Conclusion.....	32
Chapter 3: Research Method.....	34
Introduction.....	34
Research Design and Rationale.....	34
Methodology.....	37
Target Population.....	38
Sampling Procedures and Sample Size Justification.....	39

Procedures.....	40
Instrumentation and Operationalization of Variables.....	41
Operational Definitions.....	41
Data Analysis Plan.....	43
Research Questions and Hypothesis.....	43
Threats to Validity.....	46
Ethical Procedures.....	47
Summary.....	48
Chapter 4: Results.....	49
Introduction.....	49
Descriptive Analysis.....	51
Data Collection.....	51
Univariate Analysis.....	53
Interpretation of Results.....	55
Summary.....	68
Chapter 5: Discussion, Conclusions, and Recommendations.....	69
Introduction.....	69
Interpretation of the Findings.....	70
Limitations of the Study.....	81
Recommendations.....	82
Implications.....	82
Conclusion.....	84

References.....	86
Appendix A: SISTA Survey Tool.....	95
Appendix B: Consent Form .....	100
Appendix C: Consent Form .....	102
Appendix D: Copyright.....	104

## List of Tables

Table 1. Sociodemographic Characteristics of the Study Sample .....	53
Table 2. Univariate & Multivariate ANCOVA Model Comparisons .....	54
Table 3. Summary of Participant Disposition.....	55
Table 4. Summary & Analysis of Condom Usage by Condom Education Group .....	57
Table 5. Summary & Analysis of Condom Usage: Self-efficacy Condom Use .....	60
Table 6. Summary & Analysis of Condom Usage: Attitudes Toward Condom.....	63
Table 7. Summary & Analysis of Condom Usage: Attitudes Toward Condom Use and Condom Use Self-efficacy .....	66

## List of Figures

Figure 1. Structural equation model depicting regression paths in the health belief model ( <i>N</i> = 363).....	17
Figure 2. Structural equation model: The initial hypothesized model.....	18
Figure 3. Structural equation model: The final model.....	19
Figure 4. Distribution of condom usage ratios for each condom usage group .....	56
Figure 5. Distribution of condom use self-efficacy scores for condom use education groups.....	59
Figure 6. Distribution of attitudes toward condom use for condom use education groups.....	62

## Chapter 1: Introduction to the Study

### **Introduction**

The demographic profile of HIV and sexually transmitted disease (STD) has changed over the years, with older African American (AA) women being placed at increased risk for HIV and STDs. Limited access to HIV testing and information, lack of age-appropriate intervention programs, and reluctance to discuss HIV and risky sexual behaviors due to societal stigmas (Jacobs, 2009) have contributed to sexual risk among older AA women. Further impacting older AA women's sexual risk is limited provider education on sexual risk behaviors (Jacobs & Kane, 2009). Understanding the relationship between provider education and condom use can lead to positive social change through the development of strategies that change the way providers address sexual risk behaviors of unmarried, heterosexually active AA women ages 50 and over.

In this chapter, I provide an overview of the problem and highlight relevant literature using the constructs of self-efficacy and attitudes of the health belief model (HBM) as the guiding framework. I also list the study research questions and hypotheses, followed by the research design. Chapter 1 concludes with a brief summary of the chapter and implications for social change.

### **Background and Problem**

Physiological changes of older women increase their risk for HIV and other STDs. Older women experience thinning vaginal walls that increase their susceptibility to vaginal infections such as HIV and other STDs (Winningham, Richter, Corwin, & Gore-Felton, 2004). Furthermore, older men may experience erectile dysfunction, which may

be counteracted with erectile dysfunction medications that lead to increased sexual activity and HIV risk among older women (Jacobs, 2009). In addition to physiological changes, limited knowledge of HIV transmission and perception of risk are factors that increase risks among older women (Morton, Kim, & Treise, 2011). Morton et al. (2011) concluded that women aged 50 or older with and without high-risk behaviors had limited interest in HIV testing due to lack of perceived need or risk. Literature, television, and friends are a few additional contributors believed to influence older women's limited knowledge of HIV and STDs and their risk perception (Morton et al., 2011).

Researchers Boone and Lefkowitz (2004), Corneille, Zyniewski, and Belgrave (2008), and Nguyen et al. (2010) explored condom use self-efficacy and condom use attitudes as predictors of condom use among AA women in various age cohorts. Findings of these studies indicate a need to further examine condom use self-efficacy and condom use attitudes as predictors of condom use among AA women ages 50 and over in nonmarital relationships. Marital status was identified as a risk factor for condom nonuse among never-married and divorced AA women; risk behaviors were highest among divorced women (Liddon, Leichter, Habel, & Seygi, 2010). Similar to the work of researchers Boone and Lefkowitz, Corneille et al., and Nguyen et al., these studies were conducted among young, middle-aged, and older women, indicating a need to examine the variables of condom use self-efficacy and condom use attitudes (perceptions) among AA women ages 50 and over.

The purpose of this study was to determine whether provider-initiated condom use education influences condom use among unmarried, heterosexually active AA

women ages 50 and over living in or near Raleigh-Durham, NC, using the constructs of self-efficacy and attitudes of the HBM.

### **Research Questions and Hypotheses**

#### **Research Question 1**

Is there a statistically significant difference in condom use between those who received provider education on condom use and those who did not receive such education among unmarried, heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC?

*H1<sub>0</sub>*: There is not a significant difference in condom use between those who received provider education on condom use and those who did not.

*H1<sub>A</sub>*: There is a significant difference in condom use between those who received provider education on condom use and those who did not.

#### **Research Question 2**

Is there a statistically significant difference in condom use self-efficacy between those who received provider education on condom use and those who did not among unmarried, heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC?

*H2<sub>0</sub>*: There is not a significant difference in condom use self-efficacy between those who received provider education on condom use and those who did not.

*H2<sub>A</sub>*: There is a significant difference in condom use self-efficacy between those who received provider education on condom use and those who did not.



**Research Question 3**

Is there a statistically significant difference in attitudes toward condom use (i.e., perception of risk, perception of susceptibility, perception of barriers, and perception of benefit) between those who received provider education on condom use and those who did not among unmarried, heterosexually active AA women living in or near Raleigh-Durham, NC?

*H3<sub>0</sub>*: There is not a significant difference in attitudes toward condom use between those who received provider education on condom use and those who did not.

*H3<sub>A</sub>*: There is a significant difference in attitudes toward condom use between those who received provider education on condom use and those who did not.

**Research Question 4**

Is there a statistically significant difference in condom use between those who received provider education on condom use and those who did not receive provider education on condom use after controlling for attitudes toward condom use and condom use self-efficacy among unmarried, heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC ?

*H4<sub>0</sub>*: There is not a significant difference in condom use between those who received provider education and those who did not after controlling for attitudes toward condom use or condom use self-efficacy.

*H4<sub>A</sub>*: There is a significant difference in condom use between those who received provider education and those who did not that is moderated by attitudes toward condom use or condom use self-efficacy.

## **Theoretical Framework**

Constructs of self-efficacy and attitudes (perceptions) of the HBM provided the theoretical framework for this research. Originally, the HBM was used to help understand an individual's reluctance to participate in programs to prevent or to detect disease (Stretcher & Rosenstock, 1988). The HBM has since evolved to explore an individual's response to symptoms and to understand behaviors associated with a diagnosed illness (Stretcher & Rosenstock, 1988). A major proposition of this model is that an individual's participation in preventative care is contingent upon one's belief or perception toward a given condition (Stretcher & Rosenstock, 1988). In Chapter 2, I discuss constructs of the HBM and review literature that specifically examines HBM constructs of self-efficacy and attitudes (perceptions) as predictors of condom use among AA women.

## **Nature of Study**

In an effort to examine the influence of provider-initiated condom use education among AA women ages 50 and over, I used a quantitative nonexperimental comparative descriptive design. This design was used to determine whether a relationship existed between provider condom use education and condom use, if a relationship existed between provider condom use education and condom use attitudes, and if a relationship existed between provider condom use education and condom use self-efficacy. Use of this design also allowed me to examine actual condom use after controlling for attitudes toward condom use and condom use self-efficacy.

### **Definitions of Terms**

The HBM construct of attitude is defined as follows:

The individual is psychologically ready to take action relative to a particular health condition. The extent of readiness is determined by whether the individual feels susceptible or vulnerable to the particular condition and by whether the person perceives the consequences of contracting the condition as serious; the individual believes that the preventative measure is feasible to take and is efficacious; that it would reduce his/her perceived susceptibility and/or severity and would not entail serious psychological and/or other barriers such as cost, inconvenience, pain and embarrassment; and a stimulus occurs to trigger the advocated action. (Chen & Land, 1986, p. 45)

*Condom use:* Condom use is defined by the Centers for Disease Control and Prevention (CDC) as consistent and correct use of latex condoms to provide protection against STD/HIV transmission (CDC, 2013, p. 3).

*Provider-initiated education:* Provider-initiated testing and counseling (PITC) has been defined by World Health Organization (WHO) as “HIV testing and counseling which is routinely recommended by health care providers to persons attending health care facilities as a standard component of medical care” (WHO, 2007, para 3). For the purpose of this study, I elected to use PITC as the definition most closely related to independent variable provider initiated education.

*Self-efficacy:* Self-efficacy is defined as “the belief that one can successfully enact the behaviors prescribed and that those behaviors will result in particular outcomes” (Strecher, McEvoy-DeVellis, Becker, & Rosenstock, 1986, p. 74).

### **Definition of Covariates**

*Knowledge/awareness of HIV:* HIV knowledge/awareness is participants' knowledge about HIV transmission, prevention, and testing as indicated by 10 true-false questions in Section D of SISTA Evaluation Field Guide (SISTA, 2008).

*Length of relationship:* Length of relationship is defined in the Sisters Informing Sisters on the Topic of AIDS (SISTA) Evaluation Field Guide in Section F, Question 10: "How long have you been in this relationship?" (SISTA, 2008).

*Level of education:* Level of education is defined by the participant's selection from four response options: did not complete high school, high school, some college, and 4-year college/graduate degree (Corneille et al., 2008).

### **Definition of Other Terms**

*Heterosexual contact:* Persons whose transmission category is classified as heterosexual contact are persons who noted heterosexual contact with a person known to have, or to be at high risk for, HIV infection (e.g., an injection drug user or man who has sex with men)" (CDC, 2015, para.19).

*Older women:* Older women were defined as age 50 and older. This age cohort has been used by researchers (Morton et al., 2011; Winningham et al., 2004).

### **Assumptions and Limitations**

"Assumptions are statements that are taken for granted, or are considered true even though they have not been scientifically tested" (Burns & Grove, 2011, p. 228).

Older women have been presumed sexually abstinent, knowledgeable about HIV prevention measures, or having sexual education needs that differ from younger women

(Jacobs, 2008), suggesting that a new model of HIV prevention is needed to affect a greater number of women, specifically older women (Jacobs, 2008). This study addressed the need for age-specific sexual health provider education for older women, specifically AA women ages 50 and over.

Study limitations manifest when procedures used decrease credibility and generalizability of findings (Burns & Grove, 2011). Within this study, a single-item survey question was created to examine provider education on condom use. This item has not been tested, thus imposing a limitation on study findings. Burns and Grove (2011) identified measurement instruments with limited reliability and validity as a methodological limitation. An additional limitation was the use of a survey question to measure a concept not defined within the HBM (i.e., provider education on condom use). Another limitation is the use of a convenience sample. Convenience samples are inexpensive, accessible, and usually less time consuming to obtain (Burns & Grove, 2011). However, convenience sampling has been criticized for being a weak approach to obtaining subjects based on “right place at the right time,” providing limited control for biases (Burns & Grove, 2011). Yet another limitation is self-reporting of survey data. Due to the sensitive nature of the topic, it is possible that participants were not comfortable disclosing information related to sexual behaviors, therefore providing false responses.

Another limitation may have been the influence of confounding variables (i.e., participant drug use, alcohol abuse, and poverty) that directly or inversely influenced the independent variable (condom use) and the dependent variables (provider condom use

education, condom use self-efficacy, and condom use attitudes). In an effort to more accurately determine the effect of condom use on the identified dependent variables, participants were recruited from various community-based and health care settings.

### **Delimitations**

Participants recruited for this study were heterosexually active unmarried AA women ages 50 and over living in or near Raleigh-Durham, NC. Several studies have used young adult and middle-aged women because of the higher rates of HIV and STDs in these populations. However, in the effort to develop preventive interventions for all women, it is important to understand how variables such as provider education on condom use, condom use self-efficacy, and condom use attitudes are associated with condom use among older AA women. Researchers have also explored sexual behaviors of older women using protection motivation theory (PMT) and the extended parallel process model (EPPM; Morton et al., 2011). Theorists of these models explore concepts of self-efficacy and attitudes as factors that influence sexual behaviors of older women. PMT is founded on the premise that older women must understand threat susceptibility and threat severity and feel capable (self-efficacy) of discussing concerns openly in effort to negotiate safe sex behaviors (Morton et al., 2011). Self-efficacy as a component of EPPM is theorized to determine the course of action to mitigate a threat, as a high-perceived threat accompanied with low self-efficacy can result in increased risk for engaging in high-risk sexual behaviors (Morton et al., 2011). For the purpose of this study, I limited my scope to condom use self-efficacy and condom use attitudes as constructs of the HBM. This model served as the guiding framework for this study.

Generalizability of study findings may be limited to the sample population. Limitations in controlling confounders and use of a convenience sample versus random sampling constrict application of findings to a larger population. In addition, results of this study do not coincide with findings of previous research, further impacting application of results to a larger population.

### **Significance and Social Change**

In 2010, American men and women aged 55 and older accounted for nearly 5% (2,500) of the new HIV infections diagnosed. Fifteen percent of those infected were AA women (CDC, 2015b). Similar to rates of HIV infection among AA young adult populations, older AA women have disproportionately high rates of HIV and AIDS infection when compared to their Latino and White counterparts (CDC, 2013a). Unlike HIV and AIDS in young adult and middle-aged women, HIV and AIDS among older AA women is partly attributable to the lack of sexual health knowledge and low-levels of risk perception (Jacobs, 2009).

Effectively addressing condom use among older AA women through provider-initiated education requires practice standards that focus on prevention of HIV and STDs. Although provider education is only one component of the health care paradigm, provider influence as part of the socioecological framework (Jacobs, 2009) has implications for positive social change. Incorporating provider initiated education on condom use into standards of care for older AA women increases dialogue between physician and provider, thereby influencing dialogue within peer groups (Jacobs, 2009). The socioecological framework combines an individual's belief's and perception's about HIV

risk, an individual's ability to interact with elements of their environment (i.e., peer groups, community organizations, and community affiliations), cultural norms, and social capital (i.e., engagement in community advocacy or political groups) as factors that influence behavioral change among older adult women (Jacobs, 2008). Use of provider-initiated education as a resource for influencing social change aligns with Jacob's (2009) assertion that sexual behavior and HIV risk are linked to perception of risks, environment, and peer influence (2009).

### **Summary**

In Chapter 2, I provide a review of literature relevant to predictors of condom use among AA women using the constructs of self-efficacy and attitudes (perceptions) from the HBM. I also discuss literature relevant to provider-initiated condom use education highlighting PITC and voluntary testing and counseling as HIV prevention strategies. I also discuss the covariates knowledge/awareness of HIV, level of education, and length of relationship, concluding with a summary of the literature, and an introduction to my research methodology presented in Chapter 3.



## Chapter 2: Literature Review

### **Introduction**

The problem addressed in this quantitative study was the increased prevalence of HIV/AIDS among unmarried, sexually active, heterosexual, AA women, aged 50 and over. The increased prevalence of HIV/AIDS in this age group indicated a need for intervention (Morton et al., 2011). There is limited information about the attitudes or behaviors that increase sexual risk behaviors among women over 50, and more specifically AA women aged 50 and over. The purpose of this study was to assess the influence of provider education on condom use among unmarried sexually active heterosexual AA women aged 50, and over living in or near Raleigh-Durham, NC.

According to the CDC (2013b), surveillance reports from 2005 to 2009 indicated women aged 45 to 54 had the third highest rate of HIV diagnosis. Within this period, HIV diagnosis among women 55 to 64 increased from 6.7% in 2005 to 8.8% in 2009 (CDC, 2013b). An estimated 55,717 women over 50 were living with HIV in 2009, and 15% were new HIV/AIDS diagnoses (CDC, 2013a). When comparing rates of HIV transmission among older women across ethnicities, AA women have reported disproportionately high rates of heterosexual transmission (CDC, 2013a). In the United States, 61.8% of HIV/AIDS diagnosed among AA women, from 2005 to 2009, were attributed to heterosexual transmission, compared to 21.8% among Hispanics/Latinos and 13% among Whites (CDC, 2013b).

Furthermore, an increased occurrence of STDs such as chlamydia suggests a need exist for condom use education among older AA women (CDC, 2009). Indicated in the

CDC surveillance report was an increasing prevalence of chlamydia infection among women 50 and over, especially minority women (CDC, 2012). In 2011, 8,182 women between the ages of 45 to 54 were diagnosed with chlamydia, compared to 6,227 in 2007 (CDC, 2012).

In this chapter, an exhaustive literature review is provided to include literature search strategies, the theoretical foundation of this study, literature review related to the key variables of concepts of this study as well as the summary and conclusion of this study.

### **Literature Search Strategy**

The purpose of the literature review was to examine peer-reviewed research articles related to condom use among AA women aged 50 and over. Key search terms and phrases included *African American women*, *African American women and sexual behaviors*, *African American women and condom use*, *older women*, *older women and condom use*, *older women and sexual behaviors*, *older women and sexually transmitted diseases*, *condom use behaviors*, *health belief model*, *health belief model and self-efficacy*, *voluntary counseling and testing (VCT)*, *VCT and HIV*, *provider education*, *provider education on condom use*, *provider education and older women*, *provider education and Black women*, *provider education and African American women*, and *provider education and older African American women*. Information specific to provider initiated education related to sexual behaviors and/or condom use was limited. In an effort to accommodate for this shortfall, *PITC and HIV* was another key search term. In addition to peer-reviewed research articles, the CDC website was used to report statistical

data on sexually transmitted disease specific to type and mode of transmission categorized according to gender, age, and ethnicity.

This literature review was a combination of current and classical literature dated from 1986 through 2013. The primary source of peer-reviewed research articles used to substantiate the need for this study is from 2004 to 2013. Literature that predated 2004 served to build a historical perspective of the HBM as the theoretical framework for this study. Databases used to search the literature included EBSCO host databases (Academic Search Premier, CINAHL Plus with Full Text, CINAHL and MEDLINE simultaneous search), ProQuest databases (Dissertations & Theses @ Walden University), Triangle Research Libraries Network, GOOGLE Scholar, OVID Databases (Journals full text and MEDLINE), SAGE Full-text Collections, Duke University Libraries, Social Sciences Citation Index, and ERIC (online digital library of education research and information).

## **Theoretical Foundation**

### **Health Belief Model**

Understanding factors that influence health behavior was believed to be the key for developing strategies and methods that helped achieve health education goals (Corcoran, 2007). Health education goals are best achieved when interventions are linked to the relationships between influencing external and internal variables (Corcoran, 2007). Similar to other health promotion theories such as theory of planned behavior, protection motivation theory, and extended parallel process model, the HBM provided

information influential to an individual's health behavior and decision-making process (Corcoran, 2007).

The HBM, originally developed in 1950s, was one of the most prominent health behavioral models used to explain an individuals' health behavior with health beliefs (Chen & Land, 1986). The foundation of the HBM was based on Kurt Lewin's theory that a person's behavior was influenced by their perceptions of the world (Chen & Land, 1986). This theoretical framework guided researchers Hochbaum (1958) and Rosenstock (1966) into the development of the HBM as a model that explained individuals' participation in preventative care as an action dependent upon one's belief or perception toward a given condition (Chen & Land, 1986).

Unique to the HBM is the belief that behavior is based on an individual's perception of vulnerability to a condition or illness (Corcoran, 2007). Constructs within the HBM believed to predict behavior are based on an individual's perceived susceptibility, perceived severity of illness, perceived threat of illness or disease, perceived benefits of the preventative behavior, perceived barriers, and self-efficacy (Corcoran, 2007).

Significant to the study was understanding the relationship between provider initiated condom use education, condom use self-efficacy, and condom use attitudes as determinants of condom use, while controlling for knowledge/awareness, length of relationship, marital status, and age. In this study, I examined these relationships using the constructs of self-efficacy and attitudes of the HBM.

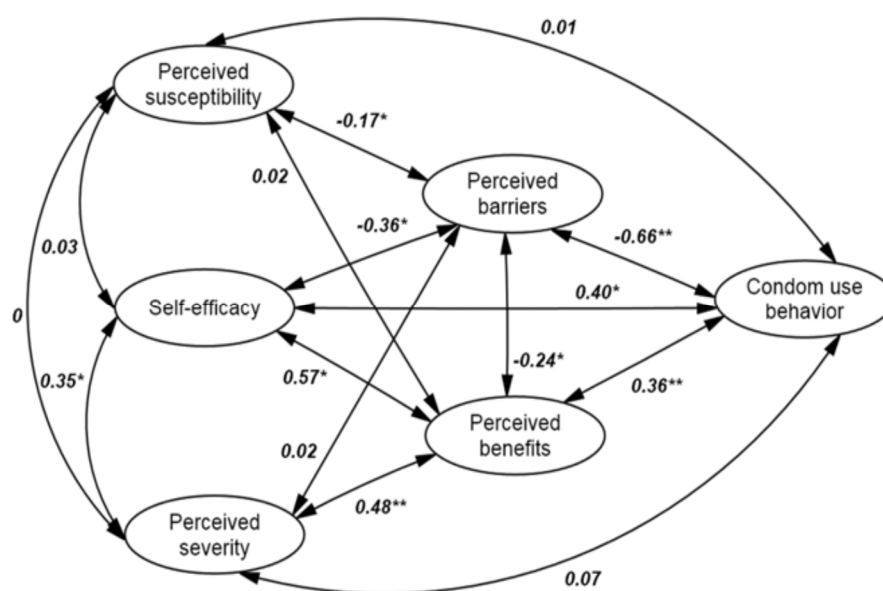
### **Health Belief Model and Self-Efficacy**

Self-efficacy, the most recently added HBM construct, was defined as an individual's confidence in his or her ability to perform and sustain the recommended behavior with minimal assistance from others (Schiavo, 2007). The following paragraphs provide an overview of research that addressed the association of HBM construct self-efficacy and condom use among women. This review served to identify previous works and the need to examine self-efficacy as a predictor of condom use among AA women aged 50 and older.

Researchers Boone and Lefkowitz (2004) expanded upon previous research to determine predictors of safer sex behaviors and behavioral change among college youth aged 18 to 25 using constructs of the HBM. Significant to my study was their examination of self-efficacy using a condom use self-efficacy scale to assess participants' ability to acquire, communicate, and use condoms (Boone & Lefkowitz, 2004). They concluded that condom use self-efficacy was associated with condom use in the partial correlations, but it was not a significant predictor in the regression analysis, suggesting self-efficacy does not contribute to the prediction of actual condom use (Boone & Lefkowitz, 2004). Limitations of their study included limited generalizability to non-White, noncollege educated youth in this age range, recommending an expansion of research to include a more diverse subset of the population (Boone & Lefkowitz, 2004).

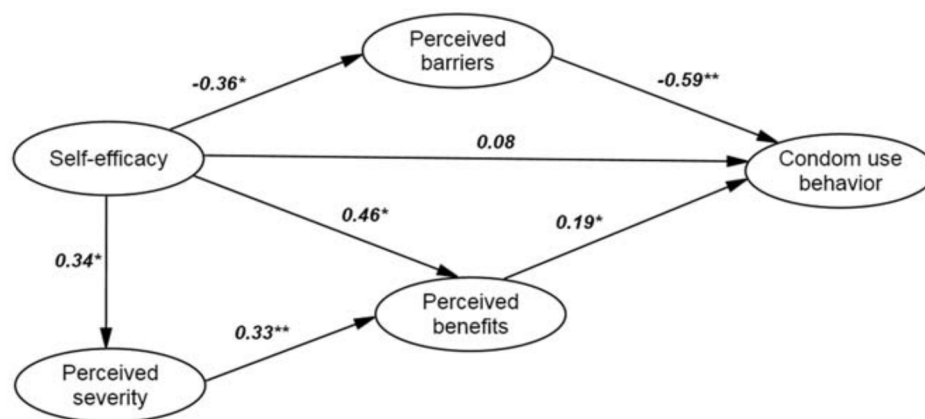
Zhao et al. (2012) explored predictors of condom use among female sex workers (FSWs) in China and examined the relationship between constructs of the HBM (i.e., perceived severity, perceived susceptibility, perceived benefits, perceived barriers, and

self-efficacy). Measures used to examine self-efficacy included a 3-item assessment scale and the structural equation model (SEM). SEM was used to analyze relationships between constructs of the HBM through factor analysis and path analysis. Figure 1 illustrates SEM used by Zhao et al. (2012) after confirmatory factor analysis determined its appropriateness. In this illustration, self-efficacy and condom use were identified as correlational indicated by double-headed arrows linking self-efficacy to condom use.



*Figure 1.* Structural equation model depicting regression paths in the HBM model ( $N = 363$ ). Self-efficacy has a .40 correlation to condom use behavior. Figure reprinted with permission by original author (Zhao, J., Song, F., Ren, S., Wang, Y., Wang, L., et al. (2012). Predictors of Condom Use Behaviors Based on the Health Belief Model (HBM) among Female Sex Workers: A Cross-Sectional Study in Hubei Province, China. *Plos One*, 7(11). doi:10.1371/journal.pone.0049542).

Figure 2 demonstrates Zhao et al.'s (2012) initial hypothesis that suggested self-efficacy was directly related to condom use as illustrated by a single-headed arrow linking self-efficacy to condom use.



*Figure 2.* Structural equation model: The initial hypothesized model. Path coefficients were shown above. Figure reprinted with permission by original authors (Zhao, J., Song, F., Ren, S., Wang, Y., Wang, L., et al. (2012). Predictors of Condom Use Behaviors Based on the Health Belief Model (HBM) among Female Sex Workers: A Cross-Sectional Study in Hubei Province, China. *Plos One*, 7(11). doi:10.1371/journal.pone.0049542.

*Figure 3* illustrates Zhao et al.'s (2012) concluding hypothesis identifying self-efficacy as a variable indirectly related to condom use. In this illustration, single headed arrows illustrate a direct link between self-efficacy to HBM constructs perceived barriers, and perceived benefits indicate an indirect relationship between self-efficacy and condom use.

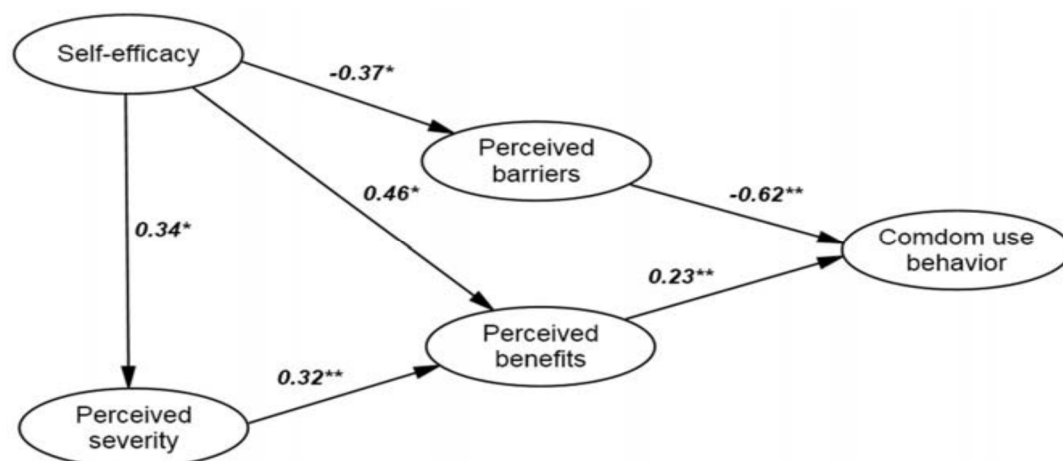


Figure 3. Structural equation model: The final model. Path coefficients were shown above. Figure reprinted with permission by original author (Zhao, J., Song, F., Ren, S., Wang, Y., Wang, L., et al. (2012). Predictors of Condom Use Behaviors Based on the Health Belief Model (HBM) among Female Sex Workers: A Cross-Sectional Study in Hubei Province, China. *Plos One*, 7(11). doi:10.1371/journal.pone.0049542).

Contrary to the depicted theoretical model illustrated in SEM (Figure 1) and Zhao et al.'s (2012) initial hypothesis (Figure 2), self-efficacy was found to be indirectly related to condom use among FSWs in China. Although they identified several limitations as related to convenience sampling, self-reporting, use of cross-sectional data, and low internal consistency in some areas, their findings aligned with other researchers (Crosby et al., 2001; Farmer & Meston, 2006; Li, Li, Stanton, Fang, & Zhao, 2010), suggesting self-efficacy is not a significant predictor of condom use. Zhao et al. (2012) contended that although their concluding hypothesis indicated self-efficacy had an indirect effect on condom use, its direct influence on other variables was indicative of its positive influence on condom use behaviors among women.



Significant to this study was previous literature that explored condom use self-efficacy among older women. Researchers Morton et al. (2011) explored sexual health risk attitudes and behaviors toward sexual health practices in an effort to gain an understanding of opportunities to better serve the needs of women aged 50 and older using qualitative methods. Participants were single females aged 50 or older in a sexually active relationship constituted by sex within the last 12 months (Morton et al., 2011). Focus group discussions were used to capture information on attitudes and self-efficacy related to sexual health behaviors. Morton et al. concluded that although aware of sexual health risks (i.e., HIV/AIDS, and other sexually transmitted diseases), the ability to negotiate condom use was low due to fear of relationship struggles or rejection. Participants were also reticent to raise the issue of sex with their provider due to feelings of embarrassment discouraging them from using their provider as a resource for information on sexual health. Recommended was the development of health communication messages and strategies focused on building older women's self-efficacy to communicate sexual health needs with providers and partners.

Morton et al. (2011) identified that a need exists for improved self-efficacy in communicating sexual health behaviors with providers and partners. Similar to their research, I focused on self-efficacy as it related to condom use negotiation with a male partner. However, the participant pool consisted of unmarried AA women aged 50 and over. Participants were surveyed using quantitative methods in an effort to add new knowledge specific to condom use negotiation efficacy as it related to condom use among the identified population. In addition, I examined the influence of provider initiated

condom use education to determine if provider initiated education was a predictor for condom use among unmarried AA women aged 50 and older.

### **Health Belief Model and Attitudes**

An individual's personal attitude (perception) toward a behavior or act is believed to influence the probability of adopting a changed behavior (Shojaeizadeh et al., 2012). Attitudes toward an act or behavior are constructs of the HBM identified as perception of susceptibility, perception of severity, perception of risk, perception of benefits, and perception of barriers. In addition to self-efficacy, Zhao et al. (2012) examined the HBM construct attitudes in an effort to explore predictors of condom use among FSWs in China. The SEM path model in Figure 1 illustrates a pair-wise correlation between HBM constructs attitudes and self-efficacy with the exception of perceived susceptibility (Zhao et al., 2012). Perceived susceptibility was identified as insignificant in all three models. Specific to attitudes Zhao et al.'s initial and concluding hypothesis as illustrated in Figures 2 and 3 suggested higher levels of perceived benefits and lower levels of perceived barriers were associated with increased condom use. Greater perceived severity, greater perceived benefits, and lower perceived barriers were associated with higher levels of self-efficacy (Zhao et al., 2012). Although study participants were among FSWs in China, a population with an increasing prevalence of heterosexual HIV transmission (Zhao et al., 2012), my study did not determine an association between attitudes towards condom use among heterosexual AA women aged 50 and older and women with known high risk sexual behaviors (i.e., multiple partners).

Morton et al. (2011) examined attitudes of women aged 50 and older as it related to sexual health risk behaviors (i.e., condom use). They found that sexual health risks were influenced by the perceived risk of their partner determined by their past sexual history. Participants believed condoms reduced STDs, but the ability to negotiate condom use was perceived as a barrier (Morton et al., 2011). Participants of Morton et al.'s study perceived provider communication and condom use negotiation efficacy as barriers to sexual health indicating a need for change.

### **Health Belief Model Closing Summary**

The central premise of the health belief model is to promote change through teaching new information about health risks and the behaviors that reduced/minimized those risks. The increased prevalence of STDs among AA heterosexual women aged 50 and older constituted a need to explore HBM constructs of self-efficacy and attitudes (i.e., perception of susceptibility, perception of severity, perception of risks, perception of benefits, and perception of barriers) as predictors of condom use.

The purpose of this study was to examine if provider initiated condom use education had as a unique influence on condom use among AA women aged 50 and over. The HBM model served as a framework for examining the constructs of self-efficacy and attitudes as factors that influenced condom use. This examination identified implications for future practice among health care providers that service AA women aged 50 and older.

## **Literature Review Related to Key Variables**

### **Provider Initiated Condom Use Education**

Voluntary counseling and testing (VCT) has been used to promote HIV/AIDS knowledge and awareness, and care and treatment of persons living with HIV/AIDS through an approach that promotes client initiated counseling and testing (Fonner, Denison, Kennedy, O'Reilly, & Sweat, 2012). Fonner et al. (2012) conducted a systematic review of literature to assess the efficacy of VCT in changing HIV risk related behaviors in developing countries across various populations. Studies were selected based on use of the following VCT guidelines (a) pretest counseling, (b) HIV testing, and (c) receiving post-test counseling and test results (Fonner et al., 2012.2012). Results of each study were compared using two outcome measures (a) participants who received VCT to those who did not and (b) participants behaviors prior to receiving VCT and after receiving VCT (Fonner et al., 2012). Behavioral outcomes measured within each study included participants HIV risk behaviors and condoms use/protected sex outcomes. In an effort to standardize, comparisons study rigor was assessed using an eight-point quality score and through the Cochrane Collaboration's Risk of Bias Assessment Tool (Fonner et al., 2012).

Fonner et al. (2012) concluded that participants who received VCT were more likely to reduce their number of sexual partners than those who did not receive VCT. They also concluded that VCT significantly increased condom use among HIV positive participants than among participants who tested HIV negative. Based on results of each

study Fonner et al. recommended the use of VCT among all populations as an intervention for decreasing HIV related risk behaviors.

Similar to VCT, PITC is an intervention model designed to address HIV risk taking behaviors through testing and counseling. Unique to PITC model is HIV testing and counseling initiated by health care providers among individuals receiving care in a health care facility (Njeru, Blystad, Shayo, Nymanongo, & Fylkesnes, 2010). Kennedy et al. (2013) conducted a meta-analysis of 19 studies that used components of PITC as defined by WHO guidelines.

Required PITC guidelines were as follows: (a) HIV testing had to be initiated by a provider using an opt-in or opt –out approach, (b) screenings had to be conducted in a health care setting for services other than HIV testing, and (c) individuals had to receive pre and posttest counseling and learn their HIV status. Similar to the approach used in Fonner et al. (2013) each selected study was analyzed according to specific rigorous criteria as defined by Kennedy et al. (2013).

Kennedy et al. (2013) evaluated the impact of PITC on HIV risk behaviors measuring outcomes related to condom use and HIV testing. They concluded that PITC increased HIV testing and the proportion of participants who choose to receive HIV test results (Kennedy et al., 2013). Use of PITC was also associated with increased condom use among HIV sero-discordant couples a year after PITC, increased condom use among pregnant women after receiving PITC, increased communication about condom use, and decreased risky sex acts among HIV positive individuals following PITC.

Discussion of VCT and PITC provides knowledge on two intervention models designed to address risk taking behaviors associated with HIV. Significant to this study was to understand the purpose of both models and their effectiveness in preventing HIV among various populations. Knowledge of both models (VCT and PITC) were useful in helping to understand the results of my study.

### **Condom Use and African American Women**

Predictors of condom use among African American women are increased age, condom use intentions, favorability of condom use by male partners, and attitudes towards condom use (Corneille et al., 2008; Nguyen et al., 2010). The following paragraphs highlight peer-reviewed literature on factors believed to influence condom use among unmarried AA women in heterosexual relationships.

Corneille et al. (2008) conducted a study among 325 AA unmarried women aged 18 to 61 in heterosexual relationships (mean age 23.32). They examined the impact of age (independent variable) on HIV risk and protective behaviors (dependent variables) such as condom use at last sexual encounter, condom use intentions, number of partners, attitude toward condom use, condom negotiation efficacy, and condom use self-efficacy while controlling for length of relationship, employment, and educational status. The researchers hypothesized that age would be a significant predictor of the dependent variables listed above. Measures used to test their hypotheses were hierarchical multiple regression and logistic regression. As predicted, increased age was associated with decreased condom use and condom use intentions (Corneille et al., 2008). Increased length of relationship and perception of partners' favorability toward condom use with

increased age were also associated with decreased condom use. Contrary to their prediction, increased age was identified as a predictor of increased condom negotiation efficacy (Corneille et al., 2008). Corneille et al. also concluded that age was not a predictor of condom use self-efficacy.

Researchers Corneille et al. (2008) provided insight into sexual risks, protective attitudes, and behaviors among unmarried heterosexual AA women using age as an independent variable. Although, noteworthy their results were not generalizable to older AA women. In this study I used AA women 50 and over, and expanded the participant pool to include married women. Similar to Corneille et al. (2008) I explored AA women's attitudes toward condom use (i.e., perceptions and beliefs) and condom negotiation efficacy using a Likert scale. A detailed explanation of study procedures are provided in Chapter 3.

Nguyen et al. (2010) conducted a study that examined the relationship between gender roles and condom related outcomes among 398 AA women, aged 18 to 45 whom self-identified as unmarried and in heterosexual relationships. Variables under study included caretaking/mindfulness of others, interpersonal sensitivity (determined by condom use intention), and persistent/active coping (determined by condom negotiation efficacy) (Nguyen et al., 2010). Researchers, Corneille et al. (2008), Sormanti and Shibusawa (2007), and Nguyen et al. (2010), also found that employment and increased levels of education were associated with increased condom use, but decreased as relationship length increased. Researchers, Nguyen et al. also concluded that women who scored high in persistent/active coping (condom use negotiation efficacy) were

associated with increased ability to negotiate condom use and were most likely to have used a condom at last sexual encounter. Condom use intention within the last three months was low among women who scored high in the interpersonal sensitivity domain (Nguyen et al., 2010). Interpersonal sensitivity was characterized by a women's need to receive approval from others, indicating the lack of self-assertion to negotiate or discuss condom use with their partner (Nguyen et al., 2010). Contrary to previous research conducted by Wyatt, Forge, and Guthrie (1998) and Nguyen et al. found that caretaking/mindfulness of others was not a predictor of any condom use outcomes indicating a need to further explore the relationship between caretaking/mindfulness of others with sexual attitudes and behaviors.

Corneille et al. (2008) and Nguyen et al. (2010) both studied condom use among a cohort of unmarried heterosexual AA women and concluded that as age increased condom negotiation efficacy increased. The age cohorts used within both studies did not pinpoint sexual risk, protective attitudes, and behaviors for a specific age cohort. The purpose of this study was to expand the cohort of older women by enrolling study participants aged 50 and over for the purpose of determining which factors contributed to condom use negotiation efficacy and attitudes toward condom use among married or unmarried AA women aged 50 and older.

### **African American Women and Relationship Status**

Trust, perception of body image, and assertiveness are a few factors believed to influence the use of condoms in sexual relationships among AA women (Jarama, Belgrave, Bradford, Young, & Honnold, 2007; Murray et al., 2013; Davis & Tucker-



Brown, 2013). Gender roles (Jarama et al., 2007; Corneille et al., 2008; Wingood, & DiClemente, 1998) using the socio-ecological perspective (Jacobs, 2008) have also been examined as variables associated with sexual behaviors and sexual decision making among AA women.

Murray et al. (2013) conducted a qualitative study among 51 AA females aged 15-24 to explore their understanding of 'dual protection' (DP) and how relationship factors influence their use of DP methods. Participants were stratified by age (four groups of females aged 15 to 18 years old and six groups of females aged 19 to 24 to establish focus groups; Murray et al., 2013). Focus group discussions addressed relationships, planning protection, pregnancy intentions, and STD worries, attitudes toward birth control and STD prevention, and understanding of DP and clinic experiences (Murray et al., 2013). Participants indicated parental communication and behaviors (i.e., their mothers' number of partners and pregnancies) were associated with participants' attitudes about sex, STDs, and pregnancy intentions (Murray et al., 2013). Relationship characteristics such as length of time, trust, and expectations of fidelity influenced participants' discontinuation of condom use (Murray et al., 2013). Discontinuation of condom use was viewed by participants as risky, but essential to maintaining and establishing trust in the relationship (Murray et al., 2013). Recommended were public health practice interventions that addressed adolescents and young adult's need to promote healthy relationships focusing on self-character, expression of emotions, and desires for parenting without risking personal health (Murray et al., 2013).

Liddon et al. (2010) analyzed differences in sexual risk of divorced women compared with never married, married, and cohabitating women. Data was collected using responses from The National Survey of Family Growth (NSFG), a U.S. household national probability sample (Liddon et al., 2010). Included in this analysis were 5,081 women aged 25 and older, 13% percent were currently divorced or separated, 62.1% were currently married, 8.3% were cohabitating, and 16.4% were never married (Liddon et al., 2010). When compared to never married and married women, divorced women scored highest for sexual risk behaviors indicated by having 5 or more lifetime sex partners, more than 2 sex partners in the last 12 months, and the least amount of condom use at last sex (Liddon et al., 2010). Among ethnic groups, Whites had the lowest reported percentage of condom use with last vaginal sex when compared to Blacks, Hispanics, and other ethnicities (Liddon et al., 2010). Liddon et al. concluded that divorced women should be identified as an at risk population and warranted the need for health care provider intervention to promote healthy behaviors post divorce.

Liddon et al. (2010) identified an association between marital status (i.e., married, divorced, never married, or cohabitating) and condom use among study participants. Marital status was identified as an important variable that contributed to high risk sexual behaviors especially among divorced older women engaging in new relationships. Researchers Lindau, Leitsch, Lundberg, and Jerome (2006) asserted that women aged 58 and older believed that an active sex life is good for health and ranked sexual satisfaction as high priority, further supporting the need for continued sex education among aging populations. For this study, married women were excluded in an effort to examine the

influence of provider education on condom use exclusively among unmarried AA women ages 50 and older.

### **Covariates**

The purpose of this study was to determine if a relationship existed between provider initiated condom use education and condom use among AA women aged 50 and over. Discussed in the following sections are covariables knowledge/awareness, level of education, and length of relationship were believed to influence condom use among women.

### **Knowledge/Awareness**

Knowledge/awareness of HIV/AIDS and STDs has been found to predict condom use among women. Jarama et al. (2007) suggested there is a disconnect between knowledge of HIV and actual behaviors contributing to women's perception of invulnerability to HIV/STDs. Lindau et al. (2006) examined the effects of race and marriage on sexual behaviors among older women and concluded that this covariable was not associated with sexual behavioral change. However, they also concluded that African American women's awareness about HIV and sexual risks are higher than their white counterparts (Lindau et al., 2006). Based on these findings it is possible that knowledge/awareness of HIV/AIDS and other STDs impacted sexual behavior among women.

### **Level of Education**

Reviewed literature also revealed the sociodemographic variable, level of education, as influential among women's sexual behaviors such as condom use.

Researchers Winningham et al. (2004) attributed low educational levels with high-risk sexual behaviors among women. This was similar to researchers Bowleg, Belgrave, and Reisen's (2000) assertion that increased levels of education was associated with increased condom use among this population.

### **Length of Relationship**

As mentioned previously, Corneille et al. 2008 conducted their study among AA women aged 18 to 61. They hypothesized that age would be associated with condom use and condom use intentions after controlling for length of relationship. They concluded that length of relationship was significantly associated with condom use during the past 3 months and accounted for 7% of the variance in condom use (Corneille et al., 2008). Similarly, researchers Sherman, Harvey, and Noell (2005) also contended that relationship length contributed to sexual risk behaviors among women.

### **Summary of Covariates**

Reviewed literature identified knowledge/awareness, level of education, and length of relationship as covariates that influence condom use among women. Scientific rigor is demonstrated in quantitative studies when the researcher identifies covariates that may influence the dependent variable. Controlling for covariates decreases the possibility of error, thereby increasing the probability of an accurate reflection of reality (Burns & Grove, 2011). In this study, I controlled variables provider condom use education, condom use attitudes, and condom use self-efficacy. Although knowledge/awareness of HIV/AIDS and STDs, length of relationship, and marital status were included on the Sisters Informing Sisters on the Topic of AIDS (SISTAS) survey

tool these items were not part of the analysis plan for this study.

### **Summary and Conclusion**

The purpose of this literature review was to examine studies related to sexual behaviors such as condom use and predictors of condom use among sexually active heterosexual women. Within this review condom use self-efficacy, condom use negotiation efficacy, attitudes towards condom use (Nguyen et al., 2010; and Corneille et al., 2010), and provider communication emerged as factors that influenced condom use (Kennedy et al., 2013; and Morton et al., 2011). However, age as a predictor of condom use was inconclusive. Morton et al. (2011) concluded that condom use negotiation was low among females aged 50 and older indicating a need for improved self-efficacy, whereas Corneille et al. (2008) concluded that as age was not a predictor of condom use self-efficacy. Limited provider communication emerged as a barrier to communicating sexual health needs among older women suggesting a need for health messages and strategies that focus on older women's ability to communicate sexual health needs with their provider (Morton et al., 2011). Length of relationship, relationship trust, and fear of relationship loss also emerged as variables that influenced condom use among women (Murray et al., 2013; Nguyen et al., 2010). These variables were identified as control variables or emerged during the course of the studies conducted by Murray et al. (2013), and Nguyen et al. (2010)

Researchers studying condom use among AA women aged 50 and older also revealed a need for sex education that extends beyond women of reproductive ages (Winningham, Richter, Corwin, & Gore-Felton, 2013). Stigmas and misconceptions

about HIV and STDs, and a lack of sex education during adolescents may have contributed to the current beliefs and sexual behaviors of AA women aged 50 and older (Jacobs & Thomilson, 2010). The health belief model has served as the framework for several HIV prevention initiatives identifying factors that influence behavioral change. Use of this model has been explored among AA women of various ages. However, the constructs of self-efficacy and attitudes of the HBM have not been examined among unmarried AA women aged 50 and over for the purpose of exploring the influence of provider initiated condom use education. The purpose of this study was to determine if provider initiated education influenced condom use while controlling for condom use self-efficacy and condom use attitudes. In Chapter 3, I discuss the quantitative methods used to examine the influence of provider education on condom use among unmarried AA women aged 50 and older.

## Chapter 3: Research Method

### **Introduction**

The purpose of this study was to assess the influence of provider education on condom use among unmarried heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC using a quantitative research design. This method was used to determine if provider education on condom use influenced condom use among unmarried AA women in this age cohort while controlling for condom use attitudes and condom use self-efficacy. In this chapter, I provide an overview of quantitative research and its appropriateness for this study. I also discuss the sample population and selection criteria and provide a detailed discussion of measurement instruments and data analysis plan. This chapter concludes with a discussion of the ethical procedures used to protect the rights of study participants.

### **Research Design and Rationale**

Quantitative research serves to quantify the relationship between or among dependent and independent variables (Sousa, Driessnack, & Mendes, 2007). The primary dependent variables in this research study were condom use, condom use self-efficacy, and attitudes towards condom use. The primary independent variable was provider education on condom use.

Quantitative research examines relationships among variables using a post positivists approach applied to experimental or nonexperimental designs. Post positivists believe that *causes* determine *effects* or *outcomes*, asserting a need to identify and assess the causes (variables) that influence outcomes (Creswell, 2009). Experimental and

nonexperimental are two types of designs used in quantitative research. Experimental designs use random assignment for control groups and experimental groups to determine relationships among variables (Sousa, 2007). Nonexperimental designs do not have random assignments of variables; instead, the researcher observes the relationship among variables as they occur naturally (Sousa et al., 2007). The design for this quantitative study is a nonexperimental comparative descriptive design used for the purpose of examining provider condom use education, condom use attitudes, and condom use self-efficacy as predictors of condom use among unmarried heterosexually active AA women ages 50 and older living in or near Raleigh-Durham, NC.

Quantitative research questions or hypotheses are derived from existing theories with the purpose of testing the strength of relationships among the independent and dependent variable(s) (Creswell, 2009). This is known as deductive reasoning, an approach used to test or verify theories in quantitative studies (Sousa et al., 2007). Significant to this study are research questions that seek to demonstrate if relationships exist between provider condom use education and condom use, if a relationship exists between provider condom use education and condom use attitudes, and if a relationship exists between provider condom use education and condom use self-efficacy. These questions are derived from constructs of the HBM as discussed previously in Chapter 2.

In this study, I used a quantitative method to answer the following research questions:

1. Is there a statistically significant difference in condom use between those who received provider education on condom use and those who did not receive such education



among unmarried, heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC?

2. Is there a statistically significant difference in condom use self-efficacy between those who received provider education on condom use and those who did not among unmarried, heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC?

3. Is there a statistically significant difference in attitudes toward condom use (i.e., perception of risk, perception of susceptibility, perception of barriers, and perception of benefit) between those who received provider education on condom use and those who did not among unmarried, heterosexually active AA women living in or near Raleigh-Durham, NC?

4. Is there a statistically significant difference in condom use between those who received provider education on condom use and those who did not receive provider education on condom use after controlling for attitudes toward condom use and condom use self-efficacy among unmarried, heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC ?

A quantitative research method was selected because of the rigorous systematic approaches used to examine relationships between and among variables. In addition, this approach has been used previously to examine condom use among AA women (Corneille et al., 2008; Nguyen et al., 2010). Recently, Nguyen et al. (2010) used this design to examine the contribution of age to HIV risk and protective behaviors among AA women ages 18 and older. The independent variable was age and HIV risk and protective

behaviors (i.e., condom use, condom use self-efficacy, and condom use negotiation efficacy) were the dependent variables. Nguyen et al. indicated a need for future research to examine sexual risk, protective attitudes, and behaviors specifically for different age cohorts of women.

Significant to qualitative or quantitative research is the ability to repeat or reproduce a study to determine if similar findings will be obtained despite minor changes in the research conditions (Burns & Grove, 2011). Replication of a study establishes credibility and generates evidence but also extends generalizability of findings to a larger population. The purpose of my study and selection of a quantitative approach was to expand upon Nguyen et al.'s (2010) research using the same methodology and similar variables but a different age cohort of AA women.

Time and resource constraints for this study included access to the sample population and the need to complete data collection within a 3-month timeframe. Necessary resources included IRB approval prior to participant recruitment and identification of clinical and nonclinical settings that service AA women ages 50 and older who have received and who have not received provider condom use education. Collectively these items extended or delayed procedures related to data collection and analysis.

### **Methodology**

North Carolina ranks #9 in the nation for persons ages 60 and older with the highest population of older adults living in Raleigh, NC or surrounding areas (North Carolina Division of Aging and Adult Services [NCDAAS], 2012). Currently, 53 of the

100 NC counties have a larger population of persons aged 60 and over than ages 0 to 17 (NCDAAS, 2012). This is projected to increase to 86 counties by the year 2031 (NCDAAS, 2012). Among minority populations in NC, AA are the largest of 60 populations (15.7%), followed by Hispanic or Latinos (1.2%; NCDAAS, 2012).

NC's statewide report of age group 60 and older has indicated that 58% of this population are women, 59% of age group 65 and older have a high school education or less, 201w and the median household income for persons 65 and older is \$35,237 (NCDAAS, 2012). Twenty-one percent of NC's 65 and over population live in 100 to 199% of the poverty line, and poverty is highest among minority women (NCDAAS, 2012). Nearly 56% of NC's population ages 65 and older are married; however, 74% of women ages 60 and older are unmarried compared to 42% of men (NCDAAS, 2012).

### **Target Population**

The projected increase of older persons living in or near Raleigh-Durham, NC and the majority of unmarried older persons being women further supports the need for this study. For this study, the target population was unmarried AA women ages 50 and older. The target area for recruitment was Raleigh-Durham, NC and surrounding counties. These counties included Wake County, Durham County, Orange County, Chatham County, Harnett County, Franklin County, Wilson County, Nash County, Johnston County, Lee County, and Granville County. Each of these counties has a projected increase of persons 60 and older between 50 to 61% by the year 2031 (NCDAAS, 2012).

### **Sampling Procedures and Sample Size Justification**

Sampling is the ability of a researcher to select members of a population based on events, behaviors, or other elements that represent the population under study (Burns & Grove, 2011). The two types of sampling procedures used in quantitative or qualitative research are probability (random) and nonprobability (nonrandom) sampling. These procedures serve to increase representativeness of the population and decrease systematic variation or bias (Burns & Grove, 2011). For this study, I focused on the nonprobability sampling procedure known as *convenience sampling*. Convenience sampling is a procedure used to recruit study participants based on sampling criteria (i.e., inclusion and exclusion criteria) and availability. This approach increases access to a larger sample of the population when accessibility is limited and when a need exists to conserve resources such as time and expense (Burns & Grove, 2011).

There are several ways to determine the sample size for a quantitative study (Faul, Erdfelder, Buchner, & Lang, 2009). A common strategy is to determine the number of participants required to reach a specified level of statistical power given fixed parameters (Faul et al., 2009). The a-priori power analysis was used to this end. An a-priori power analysis was conducted to determine the number of participants required to detect a medium effect (effect size = 0.30) with standard deviation = 0.50, power = .80 given the following testing parameters: a two-tailed independent samples *t* test conducted at  $p = .05$ . The analysis indicated a total sample size of 88 (44 per group) will detect a medium effect (0.30; Faul et al., 2009).

## Procedures

Participants were informed about the study via flyers disseminated throughout clinics, community health centers, senior centers, and other areas where potential participants were accessible. Information on flyers invited AA women ages 50 and older to participate in a survey on sexual health. Interested participants were provided a contact number for further information. Participants were also invited to participate through on-site recruitment at senior centers, community health centers, and clinics. Due to setting and sensitivity of the topic, participants recruited from senior centers and community health centers were invited to participate based on ability to provide privacy. Advanced preparation with facility personnel ensured provisions were made to ensure privacy, provided informed consent, and questionnaire completion.

Participants in clinic settings were recruited under the guidance of clinic staff in effort to maintain patient privacy and ensure patient care procedures were undisturbed. Upon acceptance, I followed-up with participants by providing information and obtaining informed consent prior to enrollment. All participants were provided tools needed for survey completion such as the questionnaire, questionnaire instructions, pencil, and clipboard. Participants exited the survey by returning completed forms.

Participants for this study were selected based on AA ethnicity, female gender, unmarried, and age 50 or over. Additional inclusion criteria were heterosexuality and sexual activity within the previous 12 months. Participants were excluded if they were Non-AA, male gender, aged 49 or less, married, separated, or self-identified as gay or bisexual.

### **Instrumentation and Operationalization of Variables**

The SISTAS survey tool was used previously by researchers Nguyen et al. (2010), and researchers Corneille et al. (2008). Nguyen et al. examined the effect of age on sexual risk and protective attitudes and behaviors among unmarried heterosexual AA women between the ages of 18 and 61. Corneille et al. examined the relationship between gender roles and condom-related outcomes among unmarried heterosexual AA between the ages of 18 and 45. Researchers of both studies established reliability of the measurement tool by using Cronbach's reliability coefficient. Significant to this study were Cronbach's reliability coefficient values related to condom use attitudes and condom use self-efficacy. Dichotomous questioning was used to assess condom use; therefore, Cronbach's reliability coefficient was not applicable. Cronbach's reliability coefficient for condom use attitudes was .86 (Nguyen et al., 2010) and .77 (Corneille et al., 2008), and the condom use self-efficacy reliability coefficient was .85 (Nguyen et al., 2010) and .93 (Corneille et al., 2008).

### **Operational Definitions**

A definition for provider-initiated education was not found in the literature. However, PITC has been used by researchers Njeru et al. (2010) and Kennedy et al. (2013). As mentioned in Chapter 2, PITC was associated with increased condom use, increased communication about condom use, and increased HIV testing (Njeru et al., 2010). The WHO organization defined PITC as HIV testing and counseling that is recommended by health care providers to persons attending health care facilities as a standard component of medical care (WHO, 2007). Provider education was determined

by asking the following question: In the past 12 months, has a doctor, nurse or other healthcare provider talked to you about preventing sexually transmitted disease(s) through condom use? Response options were *yes* or *no*.

Center for Disease Control (CDC) defines condom use as consistent and correct use of latex condoms to provide protection against STD/HIV transmission (CDC, 2013b). Condom use was determined by computing the percentage of time that condoms were used during sexual activity within the previous 12 months. To assess condom use, participants were asked the number of times they had engaged in sex in the past 12 months and the number of times they used a condom in the past 12 months.

Condom use attitudes were assessed using a 7-item condom use attitudes scale that measures women's attitudes toward condom use and their perception of their partner's attitudes toward condom use. An example item is "Sex doesn't feel as good when you use a condom" (SISTA, 2008). The scale options ranged from '*strongly disagree*' to '*strongly agree*'.

Self-efficacy is defined as the belief that one can successfully enact the behaviors prescribed and that those behaviors will result in particular outcomes (Rosenstock, Strecher, & Becker, 1988). Condom use self-efficacy was assessed using a 9-item measurement scale to determine self-efficacy for properly using a male condom. A question from the condom use self-efficacy scale was the following: How confident or sure are you that you could put a condom on a hard penis (SISTA, 2008)? The scale options ranged from *not confident or sure* to *very confident or sure*.

## Data Analysis Plan

### Research Questions and Hypothesis

The data were entered into SPSS 14.0. All statistical tests were conducted at  $p = .05$ . The following is a review of the data analysis procedures that were used to assess each research hypothesis.

*Research Question 1.* Is there a statistically significant difference between those who received provider education on condom use and those who did not on condom use among unmarried heterosexually active AA women ages 50 and over living in, or near Raleigh-Durham, NC?

$H_{10}$ : There is not a significant difference in condom use between those who received provider education on condom use and those who did not.

$H_{1A}$ : There is a significant difference in condom use between those who received provider education on condom use and those who did not.

*Research Question 2.* Is there a statistically significant difference between those who received provider education on condom use and those who did not on condom use self-efficacy among unmarried heterosexually active AA women ages 50 and over living in, or near Raleigh-Durham, NC?

$H_{20}$ : There is not a significant difference in condom use self-efficacy between those who received provider education on condom use and those who did not.

$H_{2A}$ : There is a significant difference in condom use self-efficacy between those who received provider education on condom use and those who did not.



*Research Question 3.* Is there a statistically significant difference between those who received provider education on condom use and those who did not on attitudes toward condom use ( i.e., perception of risk, perception of susceptibility, perception of barriers, and perception of benefit) among unmarried sexually active heterosexual AA women living in, or near Raleigh-Durham, NC?

*H3<sub>0</sub>:* There is not a significant difference in attitudes toward condom use between those who received provider education on condom use and those who did not.

*H3<sub>A</sub>:* There is a significant difference in attitudes toward condom use between those who received provider education on condom use and those who did not.

*Research Question 4.* Is there a statistically significant difference on condom use between those who received provider education on condom use, and those who did not receive provider education on condom use after controlling for attitudes toward condom use and condom use self-efficacy, among unmarried heterosexually active AA women ages 50 and over living in, or near Raleigh-Durham, NC ?

*H4<sub>0</sub>:* There is not a significant difference in condom use between those who received provider education and those who did not after controlling for attitudes toward condom use or condom use self-efficacy.

*H4<sub>A</sub>:* There is a significant difference in condom use between those who received provider education and those who did not that is moderated by attitudes toward condom use or condom use self-efficacy.

*Research Questions 1 - 3.* A two-tailed independent samples t-test will be conducted for each research hypothesis. Provider education on condom use (yes or no) will be the between-subjects independent variable for each test. The dependent variables will be condom use, condom use self-efficacy, and attitudes about condom use for tests 1 – 3, respectively.

The following testing procedures were used for each test. First, the data were screened for outliers prior to assessing the statistical assumptions. The participants' dependent variable scores were standardized by group, and the resulting z-scores were used to identify outliers in the data. A participant was considered an outlier when the |standardized score| was greater than 3.

Histograms were displayed for each group to assess the normality assumption. Levene's test was used to assess the homogeneity of variances assumption. The degrees of freedom were adjusted in cases of a significant Levene's test to compensate for heterogeneity of variances. If a serious violation of the normality assumption occurs, the nonparametric equivalent of the *t* test (i.e., Mann-Whitney test) was used. A *t* test table and descriptive statistics were also displayed for each test.

*Research Question 4.* An ANCOVA (analysis of covariance) was conducted to Research Hypothesis 4. The ANCOVA is appropriate when comparing two or more groups on a continuous dependent variable while controlling for one or more continuous covariates (i.e., control variable). Provider education on condom use (yes or no) was the between subjects independent variable, condom use was the dependent variable, and attitudes toward condom use and condom use self-efficacy were the covariates.

The data was screened for outliers prior to testing the statistical assumptions. The participants' dependent variable scores were standardized by group and the resulting scores were used to identify outliers in the data. A participant was removed from the analysis if  $|\text{standardized score}|$  was greater than 3.

Histograms were displayed for each group to assess to normality assumption. Levene's test was conducted to assess the homogeneity of error variances assumption. Lastly, a test of the independent X covariate interaction term was used to assess the homogeneity of regression slopes. Unadjusted and adjusted means and an ANCOVA table were displayed for each test.

### **Threats to Validity**

Validity indicates that a measure, measures what it purports to measure (Rudestam & Newton, 2007). It has also been described as the establishment of an instrument *trustworthiness* (Rudestam & Newton, 2007). SISTAS is a group level, gender and culturally relevant intervention designed to increase condom use with AA women aged 19 to 29 (Card et al., 2011). SISTAS had been widely used by researchers DiClemente and Wingood (2011), supported by the CDC (Card et al., 2011), and credited with effective HIV prevention through use of group level intervention (Card et al., 2011). SISTAS has also been used to develop SAHARA (SISTAS Accessing HIV/AIDS Resources At-a-click; Card et al., 2011), and AMIGAS (Amigas, Mujeres Latinas, Informandonos, Guiandonos, Apoyandonos contra el SIDA [friends, Latina women, informing each other, guiding each other, and supporting each other against AIDS]; Wingood et al., 2011). Constructs within the SISTAS measurement tool (i.e., condom

use, condom use attitudes, condom use efficacy) have been examined by content experts (i.e., Wingood & DiClemente) and cited in several research publications demonstrating construct and content related validity (Burns & Grove, 2011).

### **Ethical Procedures**

The Institutional Review Board (IRB) serves to ensure ethical standard adherence prior to the initiation of research that involves human subjects (Rudestam & Newton, 2007). Agreements to gain access to participants or data are provided through university review board committees and participating agencies or organizations (Rudestam & Newton, 2007). Walden Universities' review board committee serves to collect enough specific information to document that the study's benefits outweigh the cost and that procedures comply with federal regulations and university policies (Walden University IRB Application Version, 2010). By following Walden University's IRB approval process, I addressed issues that could have caused harm to the participant. Potential risk associated with this study were minimal, however participants could have experienced emotional discomfort due to the disclosure of sensitive information. This could have also influenced participants' willingness to participate. All participants were informed of voluntary participation and the option to withdrawal from the study at any time. Participants were also informed that upon withdrawal their information was discarded and not accessible for use. The IRB approval number and expiration date for this study were as follow: IRB# 09-04-14-0172729 and expiration date September 3, 2015.

Maintaining participants' confidentiality and anonymity was also imperative to conducting ethical research (Rudestam & Newton, 2007). Participants' confidentiality

was achieved by maintaining completed questionnaires in a locked file and prohibiting the discussion of personal and private information among persons external to the research committee. Information discussed with the research committee was provided as necessary to fulfill procedures identified and approved by the IRB. Personal identifiers such as name, address, social security numbers, or patient record numbers were not collected in effort to maintain participants' anonymity.

### **Summary**

The purpose of Chapter 3 was to present components of the proposed research design and methodology. In this study, a nonexperimental comparative descriptive study design was used to examine provider condom use education, condom use attitudes, and condom use self-efficacy as predictors of condom use among unmarried heterosexually active AA women ages 50 and older living in or near Raleigh-Durham, NC. Participants were selected based on age, ethnicity, and geographic location. Procedures for recruitment included use of clinic and nonclinic settings ensuring adherence to all ethical standards and IRB requirements. Data was analyzed using SPSS 14.0 for the purpose of assessing the identified four research questions.

In conclusion, an explanation of achievement and/or discrepancies in data collection procedures will be discussed in Chapter 4. Chapter 4 will include an overview of participant recruitment and ability to recruit participant's representative of the larger population. A discussion of study results will also be presented in this chapter. This discussion will include reporting of descriptive statistics, evaluating statistical assumptions, and reporting statistical analysis findings using SPSS 14.0.

## Chapter 4: Results

### **Introduction**

The purpose of this study was to assess the influence of provider education on condom use among unmarried heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC. For this study, I used a quantitative nonexperimental comparative descriptive study design that examined HBM constructs self-efficacy and attitudes (perceptions) as predictors of condom use among unmarried heterosexually active AA women ages 50 and older. Condom use, condom use self-efficacy, and attitudes toward condom use were the primary dependent variables used in this research. Provider education on condom use was the primary independent variable used in this research.

I investigated the following research questions using the SISTAS survey tool to collect data. The research questions assessed were as follows:

1. Is there a statistically significant difference in condom use between those who received provider education on condom use and those who did not receive such education among unmarried, heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC?
2. Is there a statistically significant difference in condom use self-efficacy between those who received provider education on condom use and those who did not among unmarried, heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC?
3. Is there a statistically significant difference in attitudes toward condom use

(i.e., perception of risk, perception of susceptibility, perception of barriers, and perception of benefit) between those who received provider education on condom use and those who did not among unmarried, heterosexually active AA women living in or near Raleigh-Durham, NC?

4. Is there a statistically significant difference in condom use between those who received provider education on condom use and those who did not receive provider education on condom use after controlling for attitudes toward condom use and condom use self-efficacy among unmarried, heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC ?

In this chapter, I will provide an overview of data collection processes and study results. Discussion of data collection processes will include an overview of the timeframe used for collecting data, discrepancies in the data collection process that deviated from the plan discussed in Chapter 3, and a description of the sample population. This section will be followed by an overview of study results, which will include a report of descriptive statistics that characterized the sample, an evaluation of statistical assumptions appropriate to this study, a report of statistical analysis findings, and information obtained as it related to additional statistical tests of hypotheses that emerged from the analysis of the main hypotheses. In Chapter 4, I use tables to illustrate study findings and conclude with a summary that overviews the answers to the study questions.

### **Data Collection**

Between October 2014, and December 2014, links were posted on Facebook and recruitment flyers were posted at a various community sites located in Raleigh-Durham, NC. On-site recruitment and surveying was conducted November 2014 through December 2014. The population from which the sample was drawn consisted of the following inclusion criteria: female, AA, unmarried, heterosexually active, and aged 50 or over. A total of 159 women responded to the survey. Of those women, 141 provided consent to provide data and participate further. However, only 95 women met all inclusion criteria to be considered and included in the study. Of the 95 women, 42 (44.2%) received provider-initiated education on condom use within the previous 12 months, and 53 (55.8%) did not receive provider-initiated education on condom usage within the previous 12 months.

### **Descriptive Analysis**

The two groups (received provider education group and did not receive provider education group) were comparable across the different demographic variables. The median age for the overall sample was 60 years, with a range from 50 to 71 years. Both groups had virtually identical median ages 59 (received provider education group) and 60 (did not receive provider education group). The median age also represented 53 of the 100 NC counties that had a larger population of persons aged 60 and over than ages 0 to 17 (NC State Data Center, 2010).

The two groups were virtually identical for median monthly income, \$935 per month (received provider education group) and \$934 per month (did not receive provider



education group). The median household income for NC residents aged 65 and older was reported as \$35,237 (NCDAAS, 2013). Participants of this study reported a median income significantly lower than the statewide average.

Eighty-one of the 95 subjects (85.3%) lived in Durham County, in which 37 of 42 (88.1%) subjects in the received provider education group and 44 of 53 (83.0%) subjects did not receive provider education group lived in Durham County. Seventy-eight of the 95 subjects (82.1%) lived with their partner, in which 36 of 42 (85.7%) subjects who received provider education and 42 of 53 (79.2%) subjects who did not receive provider education lived with their partner.

Sociodemographic characteristics of the study sample are presented in Table 1.

Table 1			
<i>Sociodemographic Characteristics of the Study Sample</i>			
Characteristics	Received provider education	Did not receive provider education	Overall
<b>Age</b>			
<i>N</i>	42	53	95
Mean	59.5	60.9	60.3
STD.	5.5	4.8	5.1
Min-Max	50-73	50-71	50-71
<b>Monthly income (\$)</b>			
<i>N</i>	32	40	72
Median	\$935	\$934	\$934
Min-max	\$0-\$3865	\$0-\$5917	\$0-\$5917
<b>Region</b>			
Durham County	37 (88.1%)	44 (83.0%)	81 (85.3%)
All others	5 (11.9%)	9 (17.0%)	14 (14.7%)
<b>Lives with partner</b>			
No	36 (85.7%)	42 (79.2%)	78 (82.1%)
Yes	6 (14.3%)	11 (20.8%)	17 (17.9%)

### Univariate Analysis

Results of the univariate analyses (Model 1 and Model 2), as shown in Table 2, indicated that the inclusion or exclusion of each covariate had very little effect on the final multivariate model (Model 3). There are virtually no differences in results or conclusions whether each variable is included in the model or not. In summary, the results and conclusions are the same whether the covariates (condom use self-efficacy and attitudes toward condom use) are included or excluded from the analyses.

Table 2				
<i>Univariate and multivariate ANCOVA model comparisons for condom usage by condom education group</i>				
<i>Model</i>	Group 1 <sup>[1]</sup>	Group 2 <sup>[2]</sup>	Difference	P-value
Model 1 <sup>[3]</sup>	0.271	0.487	-0.216	
Self-efficacy				0.512
Education group				0.033
Model 2 <sup>[4]</sup>	0.283	0.486	-0.203	
Attitudes				0.024
Education group				0.036
Model 3 <sup>[5]</sup>	0.271	0.487	-0.216	
Self-efficacy				0.393
Attitudes				0.028
Education group				0.029

*Note.* <sup>[1]</sup> Received provider education group

<sup>[2]</sup> Did not receive provider education group

<sup>[3]</sup> ANCOVA model with condom education group and condom use self-efficacy score as independent variables.

<sup>[4]</sup> ANCOVA model with condom education group and attitudes toward condom use score as independent variables.

<sup>[5]</sup> ANCOVA model with condom education group, condom use self-efficacy score, and attitudes toward condom use score as independent variables.

### Interpretation of Results

In this study, provider initiated education on condom use was defined as a subject answering *yes* to the following question: In the past 12 months has a doctor, nurse, or other healthcare provider talked to you about preventing sexually transmitted disease(s) through condom use? Participant or subject disposition is summarized in Table 3.

*Note.* <sup>[1]</sup>Includes unmarried, sexually active (past 12 months), heterosexual AA women,

<i>Table 3</i>			
<i>Summary of participant disposition</i>			
<i>Population</i>	<i>Received provider education</i>	<i>Did not receive provider education</i>	<i>Overall</i>
<i>All respondents</i>			<i>159</i>
<i>Consent given</i>			<i>141</i>
<i>Target population<sup>[1]</sup></i>	<i>42 (44.2%)</i>	<i>53 (55.8%)</i>	<i>95</i>

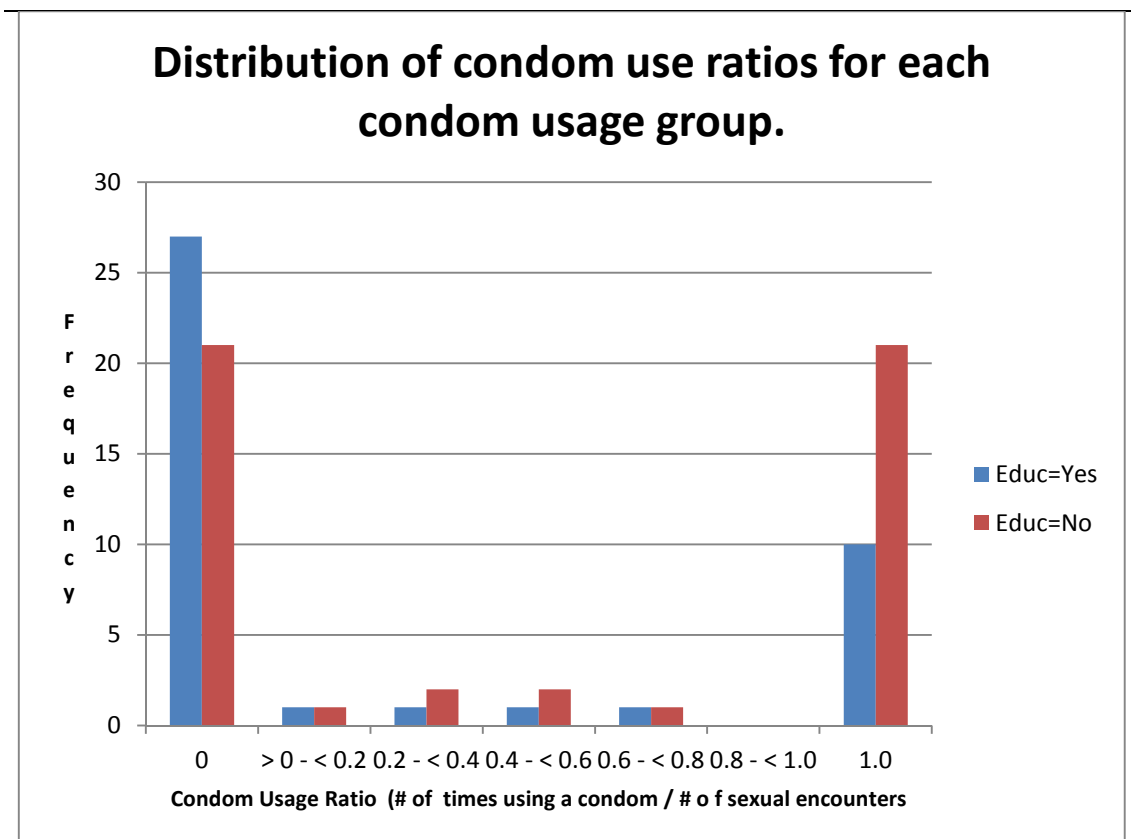
ages 50 and over who consented to participate in the study.

Research Question 1: Is there a significant difference between those who received provider education on condom use and those who did not on condom use among unmarried heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC?

*H*<sub>10</sub>: There is not a significant difference in condom use between those who received provider education on condom use and those who did not.

Results for Research Question 1: The dependent variable condom use was defined as the percentage (or ratio) of times that condoms were used during sexual activity with the previous 12 months, within each subject. A subject had to have had at least one

episode of sexual activity to be included in the analysis. A subject who used a condom for each episode of sexual activity had a value of 1, whereas a subject who never used a condom had a value of 0. The distribution of the ratio of condom use for each condom education group is displayed in Figure 4.



*Figure 4.* Distribution of condom use ratios for each condom usage group.

The results clearly indicate the non-normal distribution of the data. The corresponding tests for normality (Shapiro-Wilk test,  $p < 0.001$  for each of the two groups) further support the clear nonnormal distribution. There were no outliers in either group. As the data were clearly nonnormal, it was not necessary to assess the homogeneity of variance assumption (from Levene's test), and it was clear that a

nonparametric test was required. Therefore, the Wilcoxon rank sum test (which is equivalent to the Mann-Whitney test) was used instead of the  $t$  test. The summary and corresponding analysis of condom use for subjects by provider education group is displayed in Table 4.

Variable/statistics	Received provider education (N = 41)	Did not receive provider education (N = 48)	T-statistic and P-value
n	41	48	
mean	0.28	0.49	
median	0.00	0.42	
std	0.43	0.48	
min-max	0 - 1.00	0 - 1.00	
Condom usage			
N	41	48	
Always used	10 (24.4%)	21 (43.8%)	
Sometimes used	4(9.8%)	6 (12.5%)	
Never used	27(65.9%)	21 (43.8%)	
Wilcoxon Rank Sum Statistic <sup>[1]</sup>			-2.102
P-value			0.036

*Note.* Six subjects did not provide valid condom usage data.

[1] Normal approximation from the Wilcoxon two-sample test.

The mean ratio of condom usage was 0.28 for the received provider education group and 0.49 for the did not receive provider education group. A majority of the subjects in both groups either *always used condoms* or *never used condoms*. For summary and display purposes the data were further categorized into three groups; the three groups

were always used condoms, sometimes used condoms, and never used condoms. In the received provider education group, 10 of 41 (24.4%) subjects always used condoms. However, this percentage was lower than the *did not* receive provider education group, in which case 21 of 48 (43.8%) subjects always used condoms. The distribution of condom usage was statistically significantly different for the two groups (Wilcoxon Rank Sum Statistic = -2.102,  $p = 0.036$ ). Therefore, the null hypothesis was rejected, and it can be concluded that the two groups differed in condom usage. However, the group that did not receive condom education actually had higher condom usage rates compared to the group of subjects who did receive condom education.

Research Question 2: Is there a statistically significant difference between those who received provider education on condom use and those who did not on condom use self-efficacy among unmarried heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC? The null hypothesis stated there will not be a significant difference in condom use self-efficacy between those who received provider education on condom use and those who did not.

Results for Research Question 2: The dependent variable condom use self-efficacy was assessed using an 8-item measurement scale to determine self-efficacy for properly using a male condom. The 8-item scale is a subset of the 9-item scale for condom use self-efficacy (SISTA, 2008). For this study, one item was omitted from the survey. Therefore, the analysis is based upon the 8-items that were collected. The self-efficacy score was derived by taking the within subject average of the nonmissing responses in which the responses for each item were scored as 1 = *Not Confident*, 2 =

*Somewhat Confident*, 3 = *Confident*, and 4 = *Very Confident*. The distribution of average condom use self-efficacy scores for each condom education group is displayed in Figure 5.

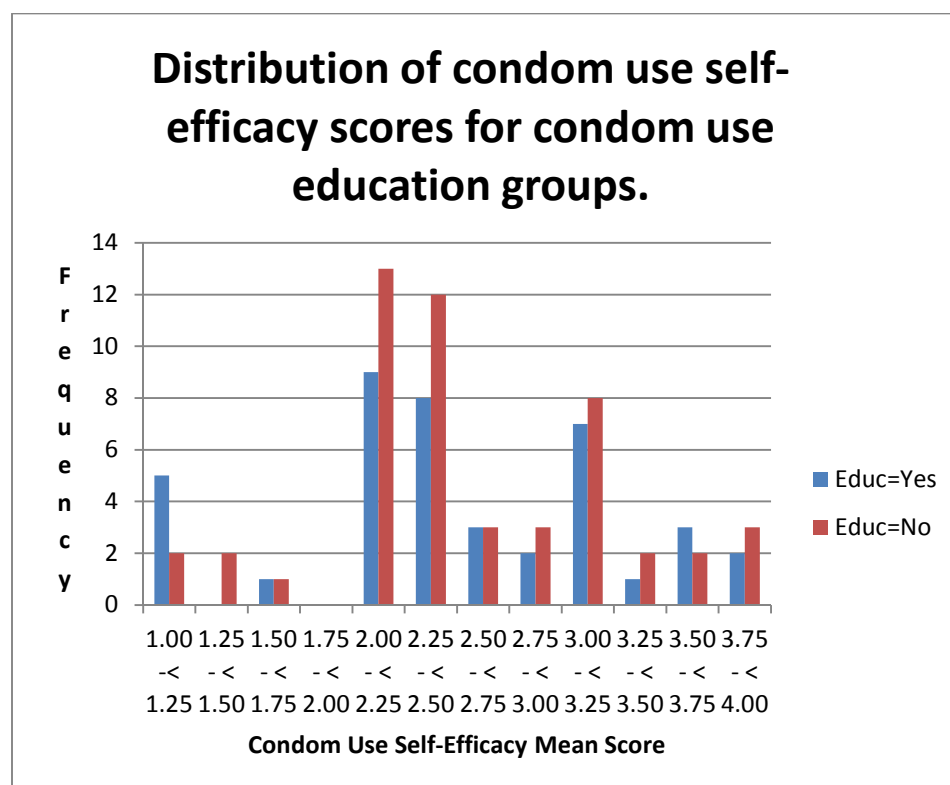


Figure 5. Distribution of condom use self-efficacy scores for condom use education groups.

The results indicate that the data were approximately close to a normal distribution. The corresponding tests for normality (Shapiro-Wilk test,  $p = 0.092$  for the “Did not Receive Provider Education” group and  $p = 0.067$  for the received provider education group) further supports that the assumption of normality was not violated. There were no outliers detected in either group. Levene’s test to assess the homogeneity of variance assumption was not statistically significant ( $p = 0.315$ ), indicating that the



homogeneity of variance assumption was met. Therefore, the planned analysis using the *t* test was conducted to assess the research hypothesis. The summary and corresponding analysis of condom use self-efficacy for subjects by provider education group is displayed in Table 5.

Table 5			
<i>Summary and analysis of condom usage by condom education group: Self-efficacy condom use<sup>[1]</sup></i>			
Variable/Statistics	Received provider education (N=42)	Did not receive provider education (N=53)	Difference
n	42	53	
mean	2.46	2.53	
median	2.50	2.50	
std	0.81	0.70	
min-max	1.00 – 4.00	1.00 – 4.00	
Difference (Std. Err.)			-0.07 (0.16)
Difference: 95% CI			(-0.38 – 0.25)
Difference: t statistic			0.42
Difference: p-value			0.677

[1] Note: Three subjects did not provide condom self-efficacy data.

Responses for each item were scored as 1=*Not Confident*, 2=*Confident*, 3=*Somewhat Confident*, 4=*Very Confident*. The average score across all items within a subject are summarized and analyzed.

The mean condom use self-efficacy scores were similar for the two condom education groups, 2.46 for the received provider education group and 2.53 for the did not receive provider education group. The mean and median scores (which were 2.50 for both groups) indicated that the typical response was in the center of the scale (in between

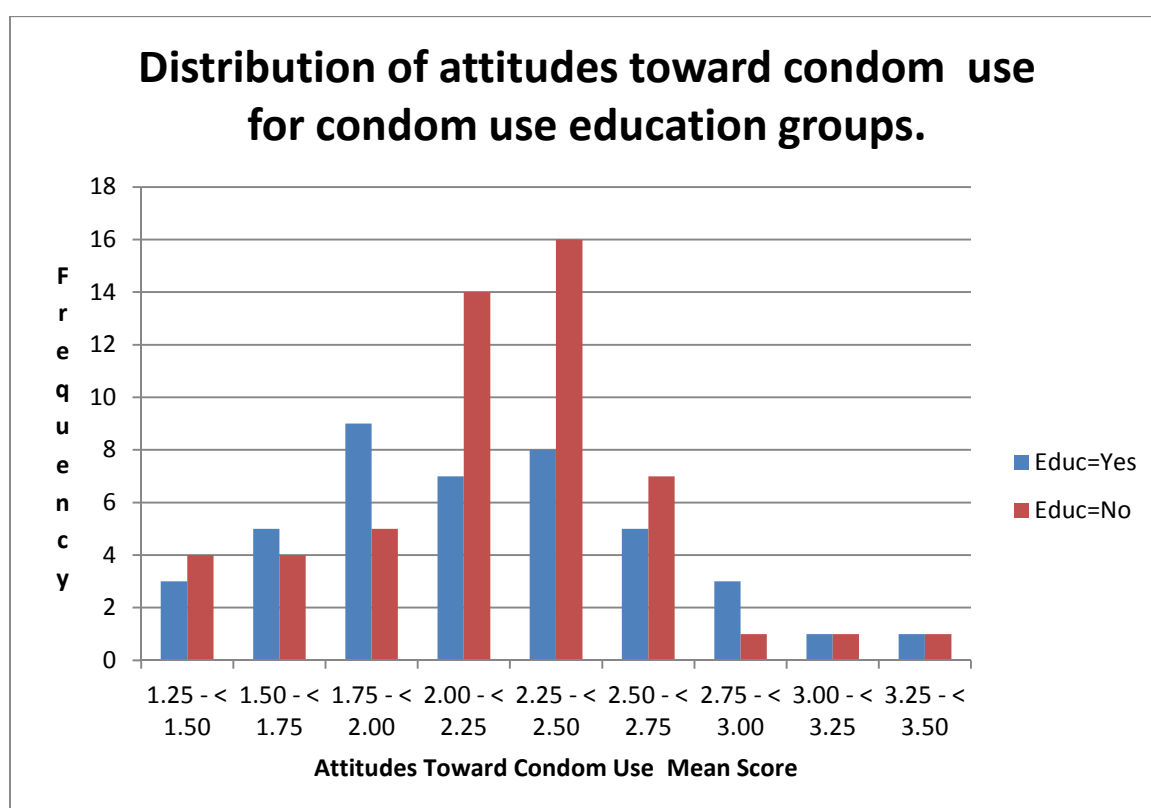
*confident* and *somewhat confident*). The mean difference between the two groups was -0.07 (std. error = 0.16) and was not statistically significant ( $t$  statistic = 0.42,  $p = 0.677$ ). Therefore, the null hypothesis is not rejected leading to the conclusion that there was no difference between the two provider education groups with regard to condom use self-efficacy

Research Question 3: Is there a statistically significant difference between those who received provider education on condom use and those who did not on attitudes toward condom use ( i.e., perception of risk, perception of susceptibility, perception of barriers, and perception of benefit) among unmarried sexually active heterosexual AA women living in or near Raleigh-Durham, NC?

H<sub>30</sub>: There is not a significant difference in attitudes toward condom use between those who received provider education on condom use and those who did not.

Results for Research Question 3: The dependent variable attitudes toward condom use was assessed using a 7-item condom use attitudes scale that measured women's attitudes toward condom use and their perception of their partner's attitudes toward condom use (SISTA, 2008). The condom use attitudes score was derived by taking the within subject average of the nonmissing responses in which the responses for each item were scored as 1=*Strongly Disagree*, 2=*Disagree*, 3=*Agree*, and 4=*Strongly Agree*, with the exception of Question #5 (using male condoms would help build trust between my partner and me), which was scored in reverse. This was required in order to ensure that the best and worst response was scored consistently for each question. For the other items, a score of 4 (*Strongly Agree*) was the most positive response possible with regards

to a positive attitude towards condom use. However, for Item #5 the score of 4 (*Strongly Agree*) was the most negative response possible with regards to a positive attitude towards condom use. Therefore, prior to summarization and analysis, the responses for Item #5 were reversed (e.g. 1=*Strongly Agree*,...,4=*Strongly Disagree*). The distribution of average attitudes toward condom use scores for each condom education group is displayed in Figure 6.



*Figure 6.* Distribution of attitudes toward condom use for condom use education groups.

The results indicate that the data was approximately close to a normal distribution. The corresponding test for normality (Shapiro-Wilk test,  $p = 0.141$  for the did not receive provider education group and  $p = 0.139$  for the received provider education group) further supports that the assumption of normality was not violated.

There were no outliers detected in either group. Levene's test to assess the homogeneity of variance assumption was not statistically significant ( $p = 0.250$ ) indicating that the homogeneity of variance assumption was met. Therefore, the planned analysis using the  $t$  test was conducted to assess the research hypothesis. The summary and corresponding analysis of attitudes toward condom use for subjects by provider education group is displayed in Table 6.

Variable/ Statistics	Received provider education (N=42)	Did not receive provider education (N=53)	Difference
Attitudes toward condom use[1]			
n	42	53	
mean	2.18	2.20	
median	2.14	2.14	
std	0.48	0.41	
min-max	1.43 - 3.29	1.43 - 3.29	
Difference (Std. Err.)			-0.02 (0.09)
Difference: 95% CI			(-0.20 – 0.16)
Difference: t statistic			0.23
Difference: p-value			0.821

Note. [1] Responses for each item were scored as 1=Strongly Disagree, 2=Disagree, 3=Agree, 4=Strongly Agree, with the exception of question #5 (Using male condoms would help build trust between my partner and me), which was scored in reverse. The average score across all items within a subject are summarized and analyzed.

The mean attitudes toward condom use scores were very similar for the two

condom education groups, 2.18 for the received provider education group and 2.20 for the did not receive provider education group. The mean and median scores (which were 2.14 for both groups) indicated that the typical response was in between *disagree* and *agree* but closer to *disagree*. The mean difference between the two groups was  $-0.02$  (std. error = 0.09) and was not statistically significant ( $t$  statistic = 0.23,  $p = 0.821$ ). Therefore, the null hypothesis is not rejected leading to the conclusion that there was no difference between the two provider education groups with regard to attitudes toward condom use.

Research Question 4: Is there a statistically significant difference between those who received provider education on condom use and those who did not receive provider education on condom use after controlling for attitudes toward condom use and condom use self-efficacy, among unmarried heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC? The null hypothesis for Research Question 4 stated that there will not be a significant difference on condom use between those who received provider education and those who did not receive provider education after controlling for attitudes toward condom use or condom use self-efficacy.

Results for Research Question 4: ANCOVA methods were used to assess whether or not a significant difference existed in condom use while controlling for attitudes toward condom use or condom use self-efficacy. It is noted that attitudes toward condom use and condom use self-efficacy were treated as dependent variables in Hypotheses 3 and 2 respectively. However, for Research Question 4, these variables were treated as independent (or explanatory) variables for the dependent variable of condom use.

Levene's test to assess homogeneity of variance was not done, as this test can only be done for a  $t$  test or a one-way analysis of variance. As noted in Hypothesis 1, the condom use variable is not at all normally distributed, therefore the use of ANCOVA is questionable. Therefore, an additional multiple logistic regression analysis was conducted in which condom use was collapsed into two categories (never used condoms, and always used, or sometimes used condoms). No outliers were noted for either model. Results of the analyses of the ANCOVA and multiple logistic regression models are displayed in Table 7.

Table 7			
Summary and analysis of condom usage by condom education group, controlling for attitudes toward condom use and condom use self-efficacy			
Variables/ Statistics	Received provider education (N=42)	Did not receive provider education (N=53)	P- value results

ANCOVA Results: <sup>[1]</sup> Ratio of Condom Usage			
N	41	48	
Raw mean (std.)	0.28 (0.43)	0.49 (0.48)	
LS Means (std. err.)	0.27 (0.07)	0.49 (0.07)	

Model Results (p-values)	
Condom education group	0.029
Condom use self-efficacy	0.393
Attitudes toward condom use	0.028
Difference: LS means (Std. Err.)	-0.22 (0.10)
Difference (95% CI)	(-0.41; -0.02)
Difference: p-value	0.029

Logistic Regression Results: <sup>[2]</sup> Condom Usage Category			
N	41	48	
Always or sometimes used	14 (34.1%)	27 (56.2%)	
Never Used	27 (65.9%)	21 (43.8%)	

Model Results (p-values)	
Condom education group	0.023
Condom use self-efficacy	0.898
Attitudes towards condom use	0.012

Note. Six subjects did not provide valid condom usage data.

<sup>[1]</sup> ANCOVA model with condom education group, condom use self-efficacy score, and attitudes toward condom use score as independent variables.

[2] Logistic regression model with condom education group, condom use self-efficacy score, and attitudes toward condom use score as independent variables.

Results of the ANCOVA analysis were similar to the results from hypothesis 1. When controlling for attitudes towards condom use and condom use self-efficacy, the least squares (LS) means (0.27 for the received provider education group and 0.49 for the *did not* receive provider education group) were nearly identical to the raw means. The corresponding  $p$  value ( $p = 0.029$ ) led to rejection of the null hypothesis of no difference between the two groups. However, as with Hypothesis 1, the difference was in favor of the *did not* receive provider education group.

The corresponding logistic regression analysis of the categorized response of condom usage (*never used*, *used sometimes*, or *all the time*) produced the same results and conclusion. In the *did not* receive provider education group, 27 of 48 subjects (56.2%) used condoms some or all of the time, whereas only 14 of 41 subjects (34.1%) used condoms some or all of the time ( $p = 0.023$ ).

From both models, condom use self-efficacy did not appear to be related to actual condom use ( $p = 0.393$  from the ANCOVA analysis,  $p = 0.898$  from the logistic regression analysis) whereas attitudes toward condom use did appear to be related to actual condom use ( $p = 0.029$  from the ANCOVA analysis,  $p = 0.012$  from the logistic regression analysis). In both models, interaction terms for each covariate (condom use self-efficacy by condom provider education group and attitudes toward condom use by condom provider education group) were not statistically significant supporting



homogeneity of the regression slopes. Therefore, the interaction terms were not included in either of the final models.

### **Summary**

The current study sought to examine the influence of provider education on condom use among unmarried heterosexually active AA women ages 50 and over living in, or near Raleigh-Durham, NC, using constructs self-efficacy and attitudes of the HBM. Although Research Hypothesis 1 was significant (in that women who received provider education on condom use were actually less likely to use condoms), Research Hypotheses 2 and 3 were not significant. The overall conclusion of the study is that provider education on condom usage failed to show a benefit with regards to condom usage, condom use self-efficacy, and attitudes toward condom usage.

The following chapter summed up the study and presented conclusions about the findings. In Chapter 5, I discuss the social change implications of these findings, the limitations of this study, and future recommendations for continued research in the area of HIV/AIDS prevention measures among unmarried heterosexually active AA women ages 50 and older.

## Chapter 5: Discussion, Conclusions, and Recommendations

### **Introduction**

The purpose of this study was to assess the influence of provider education on condom use among unmarried heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC. Condom use, condom use self-efficacy, and attitudes toward condom use were the primary dependent variables used in the research. Provider education on condom use was the primary independent variable used in the research. In an effort to examine the influence of provider initiated condom use education among AA women ages 50 and over, I used a quantitative research design. Use of this design allowed me to determine if a relationship existed between provider condom use education and actual condom use, if a relationship existed between provider condom use education and condom use attitudes, and if a relationship existed between provider condom use education and condom use self-efficacy. Constructs of self-efficacy and attitudes (perceptions) of the HBM provided the theoretical framework for this research and was used to help understand factors that influenced condom use.

The significant finding for women who received provider condom use education and women who did not receive provider condom use education was condom usage. Condom usage was significantly different between the two groups. However, the group who did not receive condom use education had higher condom usage rates compared to the group of subjects who did receive condom use education. Another significant finding was that condom use self-efficacy and condom use attitudes did not appear to be related to actual condom use.

### **Interpretation of the Findings**

Research Question 1: Is there a statistically significant difference between those who received provider education on condom use and those who did not on condom use among unmarried heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC?

The distribution of condom usage was statistically significantly different for the two groups. The Wilcoxon rank sum test showed that 24% of participants in the received provider education group always used condoms. However, this percentage was lower than the did not receive provider education group, in which case 43.8% of subjects always used condoms.

Information specific to provider education on condom use among older AA women was nonexistent in the literature. Major databases searched included EBSCO, ProQuest, Triangle Research Libraries Network, Google Scholar, OVID, and Duke Libraries. Most closely related to my topic was information on PITC, which I discussed in Chapter 2. PITC is an intervention model designed to address HIV risk taking behaviors through testing and counseling that is initiated by health care providers among individuals receiving care in a health care facility. Although this intervention model has been associated with increased condom use, increased communication about condom use and decreased risky sexual acts this model does not help explain findings of my study, and most specifically results of Research Question 1.

Findings of the current study failed to show that subjects who received provider education demonstrated greater condom usage when compared to subjects who did not

receive provider initiated condom use education. One possibility to explain this result is the sequence of events captured in the study. For each woman, the timing of condom use education was not captured. Therefore, it is possible that the actual education could have occurred at any time during the previous 12 months. Researchers Jemmott, Jemmott, and O'Leary (2007) tested the efficacy of brief HIV/STD risk-reduction interventions among AA women in primary care settings using a randomized control trial. Within this study, participants were randomly assigned to 20-minute, or 200-minute one-on-one or group behavioral skill-building interventions, or they were assigned to a 20-minute or 200-minute information intervention control group. One of the intervention methods consisted of self-reported measurements of sexual behaviors such as condom use during the previous 3 months. Participants completed confidential surveys at 3, 6, and 12 months after the intervention. Jemmott et al. concluded that participants in either of the skill building interventions group were more likely to report using a condom at 12-month follow-up than participants in the information interventions group. In regard to the current study, it is possible that greater insight on the effects of provider education could have been achieved if an approach similar to Jemmott et al. had been conducted through use of post education follow-up surveys at 3, 6, and 12 months. However, in the current study, I assessed provider education within 12 months and did not link it to a controlled intervention or any positive effects of education that may not have shown up.

In addition to assessing effects of provider education using post education follow-up at 3, 6, and 12 months, not assessing study participants knowledge of their partner risk behaviors such as HIV status, intravenous drug use, and multiple sex partners may also

explain results of this study. Participants in the received condom use education group indicated that less than a quarter of the women who received condom use education reported always using condoms in the last 12 months and fewer members of this group reported living with a partner. It is possible that members of the received condom use education group had a low perception of partner risks, which correlated with lower condom use. Winningham et al. (2004) assessed partner risk behaviors using five survey items. The five items included (a) partner having had a blood transfusion, (b) partner infected with HIV, (c) partner having injected heroin, speed, or cocaine, (d) partner also having sex with other women, and (e) partner also having sex with other men (Winningham et al., 2004). Many of the women in the Winningham et al. study were single and not living with a partner (58%). Contrary to results of my study, women in the Winningham et al. study who were not married or living with a partner reported greater perceptions of vulnerability to HIV compared to those who were married/partnered.

Winningham et al. (2004) asserted that many of the women in their study may find themselves looking for a partner in the ERA of HIV. However, their lack of awareness put the women in this study at increased risk for HIV/AIDS by engaging in unprotected sexual intercourse as evidenced by their reported self and partner behaviors (Winningham et al., 2004). Overall, the initial difference between the received provider education group and the did not receive provider education group may have been their perception of partner risk behaviors. This potential difference may possibly explain why findings of Research Question 1 were counterintuitive.

Within this study, I also did not examine if both groups considered their health care provider as a primary source for sexual health information. Possibly women in the did not receive provider education group used another source for sexual health information and this explains their increased use of condoms when compared to the received provider education group. Morton et al. (2011) explored sexual health risk attitudes among women aged 50 and older using focus group research. They concluded that women 50 plus were uncomfortable about seeking health information from their regular physician (Morton et al., 2011). Participants in this study reported that their comfort level in talking with their doctor was very low, attributing their discomfort to feelings of embarrassment and perception that their physicians were out of tune with their needs (Morton et al., 2011). Because women in Morton et al. (2011) study identified women's magazines and television personalities such as Dr. Oz from the Oprah Winfrey show and Dr. Sue Johanson host of *Talk Sex with Sue Johanson* as their primary source for sexual health information, future research should examine older AA women's use of sexual health educational sources other than their primary health care providers.

Research Question 2: Is there a statistically significant difference between those who received provider education on condom use and those who did not on condom use self-efficacy among unmarried heterosexually active AA women ages 50 and over living in, or near Raleigh-Durham, NC?

To determine if a significant difference existed among those who received provider education on condom use and those who did not, 8-items of the SISTAS survey tool were used to assess dependent variable condom use self-efficacy. Usage of the

Shapiro-Wilk test for normality indicated that the data were approximately close to a normal distribution. Moreover, Levene's test to assess the homogeneity of variance assumption was not statistically significant ( $p = 0.315$ ), indicating that the homogeneity of variance assumption was met. The mean difference between the two groups was not statistically significant; therefore, the null hypothesis could not be rejected, concluding that there was no difference between the two provider education groups with regard to condom use self-efficacy.

Boone and Lefkowitz (2004) researched predictors of safer sex behaviors and behavioral change among college youth aged 18 to 25 using constructs of the HBM. They concluded that condom use self-efficacy was associated with condom use in the partial correlations, but it was not a significant predictor in the regression analysis, suggesting self-efficacy does not contribute to the prediction of actual condom use (Boone & Lefkowitz, 2004). Zhao et al. (2012) explored predictors of condom use among FSWs in China and examined the relationship between constructs of the HBM (i.e., perceived severity, perceived susceptibility, perceived benefits, perceived barriers, and self-efficacy). Zhao et al. concluded that the hypothesis identified self-efficacy as a variable indirectly related to condom use. Indicating that self-efficacy has an indirect effect on condom use but has a direct influence on other variables is indicative of its positive influence on condom use behaviors among women. Morton et al. (2011) conducted focus group discussions to capture information on attitudes and self-efficacy related to sexual health behaviors. They concluded that although there was an awareness

of sexual health risks (i.e., HIV/AIDS and other sexually transmitted infections), the ability to negotiate condom use was low due to fear of relationship struggles or rejection.

An extensive literature review identified an abundance of information related to condom use self-efficacy. However, the way the HBM construct self-efficacy was measured varied among researchers. For example, Boone and Lefkowitz (2004) measured condom-use self-efficacy based on a participant's ability to acquire, communicate, and use condoms, whereas Zhao et al. (2012) examined the relationship between constructs of the HBM (i.e., perceived severity, perceived susceptibility, perceived benefits, perceived barriers, and self-efficacy). In addition, there was an abundance of literature that addressed condom use self-efficacy among young and middle-aged women. However, literature exclusive to condom use self-efficacy among heterosexually active AA women ages 50 and older was nonexistent.

Findings of my study indicated there is no difference among groups regarding condom use self-efficacy. This may have occurred because I exclusively explored condom use self-efficacy as it related to one's ability to properly use a condom. This outcome may have been different if I had evaluated the type of condom use education provided by providers. It is possible that participants who responded yes to having received provider education were not necessarily educated on how to properly use a condom but were educated on other measures of self-efficacy such as condom use negotiation self-efficacy. Moreover, because the measurement of HBM construct self-efficacy has been examined differently among researchers Zhao et al. (2012) and Boone and Lefkowitz (2004), I cannot compare findings of my study with theirs.



Research Question 3: Is there a statistically significant difference between those who received provider education on condom use and those who did not on attitudes toward condom use ( i.e., perception of risk, perception of susceptibility, perception of barriers, and perception of benefit) among unmarried sexually active heterosexual AA women living in or near Raleigh-Durham, NC?

The dependent variable attitudes toward condom use was assessed using a 7-item condom use attitudes scale that measured women's attitudes toward condom use and their perception of their partner's attitudes toward condom use (SISTA, 2008). A *t* test was conducted to assess the research hypothesis that there will not be a significant difference in attitudes toward condom use between those who received provider education on condom use and those who did not. Prior to use of the *t* test, a Shapiro-Wilk test confirmed that the data were approximately close to a normal distribution and Levene's test indicated that the homogeneity of the variance assumption was met. Results of the *t* test indicated that mean attitudes toward condom use scores were very similar for the two condom education groups (received provider education group and the did not receive provider education group). I concluded that there was no difference between the two provider education groups with regard to attitudes toward condom use.

Attitudes toward an act or behavior is a construct of the HBM identified as perception of susceptibility, perception of severity, perception of risk, perception of benefits, and perception of barriers (Shojaeizadeh et al., 2012). In this study, a review of the literature highlighted attitudes on condom use. Zhao et al. (2012) explored perceived benefits and perceived barriers as predictors of condom use. Results of their study

indicated that higher levels of perceived benefits and lower levels of perceived barriers were associated with increased condom use. Morton et al. (2011) examined attitudes of women aged 50 and older as it related to sexual health risk behaviors (i.e., condom use). They concluded that sexual health risk was influenced by the perceived risk of their partner determined by their past sexual history. Participants believed condoms reduced STDs, but the ability to negotiate condom use was perceived as a barrier (Morton et al., 2011).

Winningham et al. (2004) examined factors associated with perceived vulnerability to HIV among primarily unmarried (58%) AA women ages 50 and older living in rural SC using constructs of the HBM as the theoretical framework. Most significant is Winningham et al.'s (2004) examination of perceived vulnerability (dependent variable) with variables partner approval of using condoms and comfort with partner communication. Results indicated women in this study had a lack of perceived vulnerability to HIV risk based on responses to partner approval of using condoms, which ranked 3.7 on a Likert scale of 1 to 5 (1 indicating least comfortable, and 5 indicating most comfortable), followed by comfort with partner communication, which ranked 9.2 on a scale of 3 to 15 (3 indicating least comfortable and 15 indicating most comfortable).

In this study, women within both groups (received provider education and did not receive provider education) typically responded *disagree* and *agree* but closer to *disagree* as it related to their attitudes towards condom use and their perception of their partners attitude toward condom use. There were seven items in this response set ranging from *strongly agree* to *strongly disagree*. Some of the questions were as follows: male

condoms ruin the mood, sex with condoms does not feel natural, and using male condoms breaks up the rhythm of sex. The response *disagree* indicated that participants perceived their partners to have positive attitudes toward condom use. Interestingly, Winningham et al. (2004) asserted that a lack of perceived vulnerability is a risk factor for HIV/AIDS indicating a need for skill-building activities, such as proper condom usage and training among providers to address sexual risk among older women.

Research Question 4: Is there a statistically significant difference between those who received provider education on condom use and those who did not receive provider education on condom use after controlling for attitudes toward condom use and condom use self-efficacy, among unmarried heterosexually active AA women ages 50 and over living in or near Raleigh-Durham, NC? In this section attitudes toward condom use and condom use self-efficacy were treated as independent variables (or explanatory) for the dependent variable of condom use. Results of the analyses of the ANCOVA and multiple logistic regression models indicated that condom use self-efficacy did not appear to be related to actual condom use ( $p = 0.393$  from the ANCOVA analysis,  $p = 0.898$  from logistic regression analysis) whereas attitudes toward condom use did appear to be related to actual condom use ( $p = 0.821$ ). In both models, interaction terms for each covariate (condom use self-efficacy by condom provider education group and attitudes toward condom use by condom provider education group) were not statistically significant.

This finding may indicate a need to further clarify the term provider education, and a need to examine the constructs of self-efficacy and attitudes of the HBM using similar measurement variables (i.e., condom use self-efficacy or condom use negotiation

efficacy). Researchers Corneille et al. (2008) examined the effect of age on condom use attitudes and condom use self-efficacy while controlling for partner status, length of relationship, and level of education. They concluded that increased age was not associated with attitudes toward condom use. They also concluded that as age increased their perceived partner attitude toward condoms were less favorable. Moreover, increased age did not predict condom use efficacy, however partner status was associated with condom use efficacy. Results of their study indicated that it may be important to include partners in interventions to address building more positive attitudes toward condoms within the relationship (Corneille et al., 2008).

Although my results indicated findings were not statistically significant, these findings are congruent with previous research. My literature review of condom use attitudes and condom use self-efficacy as constructs of the HBM had mixed results among researchers Zhao et al. (2012), Corneille et al. (2008), and Winningham et al., (2004). The inconclusiveness among researchers suggests it is possible that the HBM was not the appropriate guiding theory for this study. The HBM is a framework that asserts that in order for an individual to make a commitment to changing behavior, the individual must first perceive himself or herself as being susceptible or vulnerable to a health threat (Winningham et al., 2004). A more appropriate theory may be the theory of planned behavior (TOPB). TOPB is framed upon the belief that behavior is determined by behavioral intention, subjective norms, and perceived behavioral control (PBC) (Munoz-Silva, Sanchez-Gracia, Nunes, & Martins, 2007). PBC is the perception that the subject has about the ease or difficulty of performing the behavior. Researcher Ajzen

(1986) asserted that the closer the reality is to the perception that subjects have about the possibility or difficulty in performing the behavior, the closer will be the perception of control to the real control, and consequently the prediction of the behavior will be better (Munoz-Silva et al., 2007).

Low socioeconomic status of older AA women living in the south possibly plays a role in choice of partner and perhaps the risk behavior of exchanging sex for something of value (Winningham et al., 2004). Although participants in this study were recruited from a variety of settings, most participants were low-income women. Both groups were virtually identical for median monthly income (\$935 per month received provider education group and \$934 per month did not receive provider education group) having an income significantly lower than the statewide average. My study did not examine the role of partner choice or if participants exchanged sex for something of value. However, future research should examine low economic status as a predictor of condom use among older unmarried heterosexually active AA women.

In addition to low socioeconomic status participants in the did not receive provider education on condom use had a higher rate of living with their partner (20.8% versus 14.3% among the received provider education group). As stated previously Morton et al. (2011) concluded that the ability for older women to negotiate condom use was a perceived barrier and Winningham et al. (2004) concluded that older AA women asserted comfort with partner approval of condom use and partner communication on condom use influenced their actual condom use. Findings of my study along with the findings of Morton et al. (2011) and Winningham et al. (2004) may indicate a need to

further examine partner related factors such as living with a partner as a predictor of condom use among older unmarried heterosexually active AA women.

### **Limitations of the Study**

This study was limited by the following elements: I limited this study to a use of nonprobability convenience sampling in which participants were recruited through social media, and advertising at various community-based facilities such as health clinics and senior living facilities located in Raleigh-Durham, NC.

The fact that participants provided self-reported responses to sensitive material in private and semi-private locations may have distorted responses. Although responses were anonymous and confidential participants may have been impacted by public display of the topic as stated on the recruitment flyer. The sensitive nature of this study may have also contributed to the large number of unusable surveys due to incompleteness or declined consent. This limitation may be indicative of a lack of trust among survey participants indicating that I should have considered use of a mixed method or qualitative approach. Use of either approach would have provided opportunity for focus group discussions providing more insight into the variables explored and building trust among study participants.

Another limitation was use of 4-survey items that were created to examine provider education on condom use. As discussed in Chapter 1 a definition for provider education on condom use was nonexistent in the literature and I elected to use the definition of PITC as the term most closely related to provider education on condom use. Use of four survey items not pilot tested, and use of a term not defined in the literature

posed a significant limitation on my study. Because pilot testing serves to examine the reliability and validity of a research instrument (Burns & Grove, 2011) this limitation may explain some of the counter intuitiveness of my results.

### **Recommendations**

Recommendations for further research that are grounded in the strengths and limitations of the current study as well as the literature review are as follows: further examination is needed to determine if healthcare providers demonstrate the skill(s) necessary to discuss sexual health with older AA women. Older women may not feel comfortable talking to their provider about sexual issues due to feelings of embarrassment or lack of understanding for their needs (Kennedy et al., 2013; Morton et al., 2011). Future studies may seek to examine if healthcare providers are best suited for educating older AA women on sexual health issues.

Future examinations should also include use of a mixed method approach. The current study was strictly quantitative limiting researcher participant collaboration, which may have revealed important insight into the variable(s) being studied. In addition was the inability to ensure reading, and comprehension for women with lower literacy levels. Finally, future research should seek to test the development of a provider education condom use tool that utilizes behavioral skill-building interventions tailored to the specific needs of older unmarried heterosexually active AA women.

### **Implications**

As previously stated the only statistically significant finding was Research Hypothesis 1, which indicated that women who received provider education on condom

use were actually less likely to use condoms. The overall conclusion of this study is that provider education on condom usage failed to show a benefit with regards to condom usage, condom use self-efficacy, and attitudes toward condom usage. However, supporting literature indicated that provider communication positively influenced condom use (Kennedy et al., 2013; Morton et al., 2011), and limited provider communication is a barrier to communicating sexual health needs among older women (Morton et al., 2011). The aim of this study was to promote positive social change by providing data that could reduce the transmission of HIV/AIDS, and other STDs among unmarried heterosexually active AA women ages 50 and older. Concerning the outcome of this study, I found that study participants in both groups perceived their partners to have positive attitudes toward condom use, indicating a lack of perceived vulnerability to HIV/AIDS, and other STDs (Winningham et al., 2004). Application of my findings to promote positive social change has implications for change among health care providers who care for heterosexually active AA women ages 50 and older. Knowledge gained from this study, combined with findings from previous research can assist health care providers to design an intervention model that specifically addresses the sexual health needs of sexually active AA women ages 50 and older. Results and limitations of this study can be used to guide future research to determine if a skill-building intervention model similar to Jemmott et al. (2014) is most appropriate for women in this population. Furthermore, the knowledge gained from this study in conjunction with previous research can also be used to emphasize the need for improved patient-provider communication for the purpose of improving individualized sexual health behaviors that contribute to



HIV/AIDS, and other STDs among AA women aged 50 and older. Creating sexual health prevention measures that extend across the life span has implications for healthier individuals, healthier families, and healthier communities.

### **Conclusion**

The purpose of this study was to determine if provider initiated condom use education influenced condom use among unmarried, heterosexually active, AA women ages 50, and over living in or near Raleigh-Durham, NC using the constructs of self-efficacy and attitudes of the HBM. Although, the current study failed to show a benefit of provider education on condom usage with regards to condom use self-efficacy and attitudes toward condom use I identified a statistically significant difference in condom use among the two groups. I also identified that members of both groups perceived their partners to have positive attitudes toward condom use which indicates a lack of perceived vulnerability contributing to their increased risk for HIV/AIDS (Winningham et al., 2004). Based on my study I also identified needs for future research that should include examining economic status and partner related factors such as living with a partner as predictors of condom use.

Healthcare providers are an integral component of the socioecological framework, a framework that recognizes the impact of environmental factors on human functioning in conjunction with psychodynamic factors and interpersonal factors as influential in changing behaviors (Jacobs, 2008). Several theories and intervention models have been tested and/or designed to address sexual behaviors of youth, at-risk populations, and middle-aged adults. However, theories or models of care specific to the needs of older

women, more specifically older AA women are scarce. Conversely, a substantial amount of literature and statistical reporting by the CDC exists and indicated an increasing prevalence of HIV/AIDS and other STDs among older AA women (CDC, 2013a, 2013b) but prevention and/or educational programs to address this problem could not be found.

Healthcare providers are influential in changing behaviors and need to acknowledge sexual health as a component of care that should be taught across the life span. Most important is addressing sexual health as a component of routine care among older heterosexually active AA women, a population who has disproportionately high rates of HIV/AIDS when compared to their White and Latino counterparts (CDC, 2013a). Lack of sexual health knowledge (Jacobs, & Thomlison, 2009), low- levels of risk perception (Jacobs, 2008), limited provider-communication (Morton et al., 2011), and social media (Jacobs, 2008) has contributed to the sexual health risks of older women. Findings of this study and the research of others validated that HIV/AIDS and other STDs is a problem that exist among older women, but it is most prominent among older heterosexually active AA women. Continued research on this topic without the development of intervention methods can be considered a social injustice to older AA women. Within this study, I identified a statistically significant difference in condom use between the two groups, and I identified that members of both groups perceived their partners to have positive attitudes toward condom use indicating a lack of perceived vulnerability contributing to their increased risk for HIV/AIDS. Findings of this study has implications for the development of age appropriate interventions that address the sexual health needs of unmarried, sexually active, AA women ages 50 and over.

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## Appendix A: SISTA Survey Tool

1. When were you born?  
Month \_\_\_\_\_ Year \_\_\_\_\_
2. In what COUNTY do you live?  
\_\_\_\_\_
3. What is your age? \_\_\_\_\_
4. Which best describes your race?  
(select all that apply)
  - American Indian/Alaska Native
  - Asian
  - Black/African American
  - Native Hawaiian/Pacific Islander
  - White
5. Are you currently?
  - Single
  - Married
  - Separated
  - Divorced
  - Widowed
5. Are you currently in a relationship with a male partner?
  - Yes
  - No
6. Are you currently in a relationship with a female partner?
  - Yes
  - No
7. How long have you been in this relationship?  
Months \_\_\_\_\_ Years \_\_\_\_\_
8. Are you living with your partner?
  - Yes
  - No
9. What is your total monthly income (not including your partner's income)?
  - I have no monthly income
  - My monthly income is  
\$ \_\_\_\_\_
10. Do you currently have medical insurance (i.e., Medicaid/Medicare)?
  - Yes
  - No

**A. For the following, if you do not know the answer to the question, please put your best guess.**

1. Have you had sexual intercourse (vaginal or anal sex) with a partner in the past 12 months?
  - Yes
  - No
  
2. How many sexual partners have you had in the past 12 months (if the question does not apply to you, write "0"): \_\_\_\_\_
  - a. Of these, how many were anonymous (i.e., you did not know his/her name; have no way to contact him/her again; etc.)? \_\_\_\_\_
  
  - b. How many did you *not know their HIV status*? \_\_\_\_\_
  
3. How many times have you had sex in the past 12 months (if the question does not apply to you, write "0"): \_\_\_\_\_
  
4. How many times have you had unprotected sex (i.e., sex without a condom) in the past 12 months (if the question does not apply to you, write "0"): \_\_\_\_\_

**A. The following few questions are about provider education on condom use.**

In the past twelve months has a doctor, nurse or other healthcare provider talked to you

Please place a check mark in the appropriate box	Yes	No
1. Preventing sexually transmitted disease(s) through condom use?		
2. How to correctly place a condom on a male penis?		
3. Condom use during oral sex with a male partner?		
4. How to use a female condom?		

about the following?

**B. The following statements are about your attitudes toward using condoms.**

**INSTRUCTIONS:** Please indicate how much you agree or disagree with each statement by putting a check mark (✓) under your choice.

	Strongly Disagree	Disagree	Agree	Strongly Agree
1. My main partner would get mad if I said we had to use a male condom.				
Male condoms ruin the mood.				
Sex doesn't feel as good when you use a condom.				
My main partner would think I was having sex with another person if I said we had to use a condom.				
Using male condoms would help build trust between my main partner and me.				
Sex with condoms doesn't feel natural.				
Using male condoms breaks up the rhythm of sex.				

- C. **The next questions ask about in which kinds of situations it is more difficult for you to use condoms when you have sex with your main partner. Even if the situation has not happened to you, try to imagine how you would handle it if it ever happened.**

**INSTRUCTIONS:** Place a check mark (✓) under your choice.

	Definitely No	Probably No	Probably Yes	Definitely Yes
1. Can you discuss condom use with your main partner?				
Can you insist on condom use if your main partner does not want to use one?				
Can you stop and look for condoms when you are sexually aroused?				
Can you insist on condom use every time you have sex even when you are under the influence of drugs?				
Can you insist on condom use every time you have sex even when your main partner is under the influence of drugs?				

Can you put a condom on your main partner without spoiling the mood?				
Can you insist on condom use every time you have sex even if you or your main partner uses another method to prevent pregnancy?				

**D. The next questions are about your confidence in using condoms with your main partner.**

**INSTRUCTIONS:** Place a check mark (✓) under your choice.

<b>Even if you've never used condoms before, how confident or sure are you that you could...</b>	<b>Not Confident or Sure</b>	<b>Somewhat Confident or Sure</b>	<b>Confident</b>	<b>Very Confident or Sure</b>
1. Put a condom on a hard penis.				
Unroll a condom down correctly on the first try.				
Start over with a new condom if you placed it on the wrong way.				
Unroll a condom fully to the base of the penis.				
Squeeze air from the tip of a condom.				
Take a male condom off without spilling the semen or cum.				
<b>Even if you've never used condoms before, how confident or sure are you that you could...</b>	<b>Not Confident or Sure</b>	<b>Somewhat Confident or Sure</b>	<b>Confident</b>	<b>Very Confident or Sure</b>
Take a male condom off before your partner loses their hard-on.				
Dispose of a used condom properly.				
Use lubricant with a condom.				

**E. The next 10 questions are about your knowledge of HIV.**

**INSTRUCTIONS:** Select true or false. Place a check mark (✓) under your choice.

	True	False
1. Condoms can help protect you from transmitting or becoming infected with HIV.		
Having sex with someone who has HIV is the only way of becoming infected with HIV.		
Female condoms are effective in preventing HIV infection.		
There is a cure for AIDS.		
A positive HIV antibody test means that you have AIDS.		
To know if you have HIV you have to take a test.		
Having unprotected anal sex increases a person's chance of getting HIV.		
HIV is passed most effectively in semen and blood.		
Women cannot pass HIV to men.		
The safest way to prevent getting HIV is to abstain from sex.		



## Appendix B: Consent Form

**Consent Form for Online Version**

You are invited to take part in a research study conducted by a researcher named Natasha Hall, who is a doctoral student at Walden University. This study consists of surveying African American women on the topic of provider initiated condom use education. The researcher is inviting unmarried African-American women ages 50 and older in heterosexually active relationships to be in the study.

**Background Information:**

The purpose of this study is to determine if provider initiated condom use education influences condom use among unmarried heterosexually active AA women ages 50 and over living in, or near Raleigh-Durham NC using constructs self-efficacy and attitudes of the HBM.

**Procedures:**

If you agree to be in this study, you will be asked to:  
Participate in a 10-15 minute online survey that includes answering survey questions.

Here are some sample questions:

In the past twelve months has a doctor, nurse or other healthcare provider talked to you about preventing sexually transmitted disease(s) through condom use?

Can you discuss condom use with your partner?

Can you insist on condom use if your main partner does not want to use one?

**Voluntary Nature of the Study and Confidentiality:**

Your participation is voluntary. You do not have to answer any questions you do not want to answer. If at any time you do not want to continue with the survey, you may decline.

To maintain the integrity of the survey responses, your only identification will be the county in which you reside. Otherwise, participant's identity and confidentiality will be concealed. The data collected will be presented as aggregate data with no revealing identification.

For legal purposes, data will be transcribed onto a portable data device stored in a secure area. The data will be disposed of after a period of five years. The researcher will also maintain a copy of the data on a password-protected computer. Excerpts from the survey may be included in a publication(s). However, under no circumstances will your name or identifying characteristics appear in these writings.

Your agreement and consent to this survey is acknowledged by proceeding to the next page.

**Risks and Benefits of Being in the Study:**

Being in this type of study involves some risk of minor discomforts that can be encountered in daily life, such as stress or becoming upset. Being in this study would not pose risk to your safety or wellbeing.

The potential benefit of this study is to increase provider-initiated education on condom among AA women ages 50 and older.

Thank you for participating, your time and involvement is profoundly appreciated.

Sincerely,

Natasha Hall RN, MSN  
Walden University Doctoral Student

## Appendix C: Consent Form

**Consent Form for Manual Version**

You are invited to take part in a research study conducted by a researcher named Natasha Hall, who is a doctoral student at Walden University. This study consists of surveying women on the topic of provider initiated condom use education. The researcher is inviting unmarried women ages 50 and older in heterosexually active relationships to be in the study.

**Background Information:**

The purpose of this study is to determine if provider initiated condom use education influences condom use among unmarried heterosexually active women ages 50 and over living in, or near Raleigh-Durham, NC using constructs self-efficacy and attitudes of the HBM.

**Procedures:**

If you agree to be in this study, you will be asked to:

- Participate in a 10-15 minute survey that includes answering survey questions.

Here are some sample questions:

- In the past twelve months has a doctor, nurse, or pharmacists talked to you about preventing sexually transmitted disease(s) through condom use?
- Can you discuss condom use with your partner?
- Can you stop and look for condoms when you are sexually aroused?
- How confident are in putting a condom on a hard penis?
- Can you put a condom on your partner without spoiling the mood?

**Voluntary Nature of the Study and Confidentiality:**

Your participation is voluntary. You do not have to answer any questions you do not want to answer. If at any time you do not want to continue with the survey, you may decline by returning the uncompleted survey to the researcher, or discarding at your own volition.

To maintain the integrity of the survey responses, your only identification will be the county in which you reside. Personal information such as address, social security number, and date of birth is not required for participation. The data collected will be presented as aggregate data with no revealing identification. For legal purposes data will be maintained in a locked file cabinet for a period of five years; after the five year time period data will be destroyed by shredding.

Excerpts from the survey may be included in a publication(s). However, under no circumstances will your name or identifying characteristics appear in these writings.

**Willingness to participate:**

Your willingness to participate is solely voluntary. Participating, withdrawing, or declining to participate is not a requirement for services or participation in any program, or activity offered by the clinical agency, or facility. At any time during the survey you may withdraw by returning the uncompleted survey to the researcher in the envelope provided, or discard at your own volition.

If you elect to complete this survey at a later time you may take the survey with you and return via mail in the postage paid envelope provided by the researcher. In addition this survey is also available online and can be taken at the participants own volition. Online survey can be accessed at <http://www.surveygizmo.com/s3/1795243/Influence-of-Provider-Education>.

**Risks and Benefits of Being in the Study:**

Being in this type of study involves some risk of minor discomforts that can be encountered in daily life, such as stress or becoming upset. Being in this study would not pose risk to your safety or wellbeing.

The potential benefit of this study is to increase provider initiated education on condom among AA women ages 50 and older.

**Voluntary Consent:**

Your consent to participate is acknowledged by returning the completed survey to the researcher in-person, via mail, or electronic submission of completed survey. A copy of this page will be provided to you by the researcher, or should be printed electronically and retained for your records.

**Compensation:**

Compensation is not provided for this survey.

Thank you for participating, your time and involvement is profoundly appreciated.

Sincerely,

Natasha Hall RN, MSN  
Walden University Doctoral Student

## Appendix D: Copyright

**Copyright Permission Statement**

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Zhao, J., Song, F., Ren, S., Wang, Y., Wang, L., et al. (2012). Predictors of Condom Use Behaviors Based on the Health Belief Model (HBM) among Female Sex Workers: A Cross-Sectional Study in Hubei Province, China. *Plos One*, 7(11), 1-6. doi:10.1371/journal.pone.0049542.