



University of Kentucky
UKnowledge

Theses and Dissertations--Educational, School,
and Counseling Psychology

Educational, School, and Counseling
Psychology

2015

Saving Our Sisters: Effects of a Computer-Based Version of SISTA on the HIV-Related Behaviors of African American Women

Krystal Frieson

University of Kentucky, krystal.frieson@gmail.com

[Right click to open a feedback form in a new tab to let us know how this document benefits you.](#)

Recommended Citation

Frieson, Krystal, "Saving Our Sisters: Effects of a Computer-Based Version of SISTA on the HIV-Related Behaviors of African American Women" (2015). *Theses and Dissertations--Educational, School, and Counseling Psychology*. 29.
https://uknowledge.uky.edu/edp_etds/29

This Doctoral Dissertation is brought to you for free and open access by the Educational, School, and Counseling Psychology at UKnowledge. It has been accepted for inclusion in Theses and Dissertations--Educational, School, and Counseling Psychology by an authorized administrator of UKnowledge. For more information, please contact UKnowledge@lsv.uky.edu.

STUDENT AGREEMENT:

I represent that my thesis or dissertation and abstract are my original work. Proper attribution has been given to all outside sources. I understand that I am solely responsible for obtaining any needed copyright permissions. I have obtained needed written permission statement(s) from the owner(s) of each third-party copyrighted matter to be included in my work, allowing electronic distribution (if such use is not permitted by the fair use doctrine) which will be submitted to UKnowledge as Additional File.

I hereby grant to The University of Kentucky and its agents the irrevocable, non-exclusive, and royalty-free license to archive and make accessible my work in whole or in part in all forms of media, now or hereafter known. I agree that the document mentioned above may be made available immediately for worldwide access unless an embargo applies.

I retain all other ownership rights to the copyright of my work. I also retain the right to use in future works (such as articles or books) all or part of my work. I understand that I am free to register the copyright to my work.

REVIEW, APPROVAL AND ACCEPTANCE

The document mentioned above has been reviewed and accepted by the student's advisor, on behalf of the advisory committee, and by the Director of Graduate Studies (DGS), on behalf of the program; we verify that this is the final, approved version of the student's thesis including all changes required by the advisory committee. The undersigned agree to abide by the statements above.

Krystal Frieson, Student

Dr. Pamela Remer, Major Professor

Dr. Kenneth Tyler, Director of Graduate Studies

SAVING OUR SISTERS: EFFECTS OF A COMPUTER-BASED VERSION OF SISTA
ON THE HIV-RELATED BEHAVIORS OF AFRICAN AMERICAN WOMEN

DISSERTATION

A dissertation submitted in partial fulfillment of the
requirements for the degree of Doctor of Philosophy in the
College of Education
at the University of Kentucky

By

Krystal S. Frieson

Lexington, Kentucky

Chair: Dr. Pamela Remer, Ph.D., Associate Professor of Counseling Psychology

Lexington, Kentucky

2014

Copyright © Krystal Frieson 2014

ABSTRACT OF DISSERTATION

SAVING OUR SISTERS: EFFECTS OF A COMPUTER-BASED VERSION OF SISTA ON THE HIV-RELATED BEHAVIORS OF AFRICAN AMERICAN WOMEN

Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) are infectious diseases wreaking irreparable havoc on the lives of millions all around the world. Of those infected and affected by HIV in the United States, African Americans disproportionately bear the burden of this disease, which has resulted in a major crisis within the African American community. In 2010, African Americans accounted for approximately 44% of all new HIV infections among adolescents, 13 years of age and older, and adults [Centers for Disease Control and Prevention [CDC], 2012]. These statistics become even more dismal when both race and gender enter the equation. In regards to global HIV/AIDS, the leading cause of death among women of reproductive age is AIDS-related illnesses (Joint United Nations Programme on HIV/AIDS [UNAIDS], 2012). According to the CDC (2012), 64% of estimated new HIV infections in women in the United States in 2010 were in African Americans.

This study examined the effectiveness of increasing protective HIV behaviors through the use of the SAHARA program, a computer-based, gender-specific and culturally appropriate HIV behavioral intervention program. More specifically, the SAHARA intervention was created to encourage consistent condom use during penetrative vaginal sex through mediating components of the intervention such as HIV knowledge, condom use self-efficacy, barriers to condom use, and frequency of partner communication for a population of African American women living in areas of Kentucky and Georgia. Convenience sampling was used to recruit participants from college campuses and community areas. Fifty-two African American female study participants completed surveys through the use of a quasi-experimental non-randomized pretest-posttest design.

Significant group differences were observed for scores on STD/HIV Risk Behavior Knowledge and Condom Barrier Scale. Results suggest that the SAHARA

prevention intervention produced clinically significant changes in STD/HIV knowledge and perception of condom barriers in the SAHARA group compared to the control group.

Keywords: HIV/AIDS, African American women, HIV prevention, SAHARA, Condom Use

Krystal S. Frieson
Student's Signature

December 17, 2014
Date

SAVING OUR SISTERS: EFFECTS OF A COMPUTER-BASED VERSION OF SISTA
ON THE HIV-RELATED BEHAVIORS OF AFRICAN AMERICAN WOMEN

By

Krystal S. Frieson

Dr. Pamela Remer
Chair of Dissertation

Dr. Kenneth Tyler
Director of Graduate Studies

December 17, 2014
Date

ACKNOWLEDGEMENTS

First and foremost, I would like to thank God for leading me on this journey and always showing me the way. I would like to express my appreciation and gratitude to my committee chair, Dr. Pam Remer. You have been with me on this journey from the start and I cannot thank you enough for encouraging me and seeing me through to the end. I would like to thank my committee members, Dr. Kenneth Tyler, Dr. Sonja Feist-Price, Dr. Jeff Reese, and Dr. Keisha Love for agreeing to serve as my committee team, pushing me to think outside of the box, and driving me to follow my passion.

In addition, I would like to express my gratefulness to those who helped me complete this work, Ms. Angel Clark, Ms. MiKeiya Morrow, Ms. Tia Williams, Ms. Shanice Anderson, Dr. Tahirah Abdullah, Dr. Timothy Crawford, Dr. Andrea Rehmert, and Dr. Charles Ward. This research would not have been possible without the support of the University of Kentucky's Department of Education, School, and Counseling Psychology, the Surgeon General C. Everett Koop HIV/AIDS Research Grant, the Association of Black Psychologists Black Ribbon Research Award, and the Division 17 Society of Counseling Psychology Prevention Section Research Award.

I would also like to offer my admiration and indebtedness to my family, loved ones, and friends for their support. I would not be the person I am if it were not for each and every one of you. To my parents, there is no way I could have made it this far if it were not for your love, care, and ceaseless encouragement. As the first member of my family to pursue a Ph.D., my success is our success. I have survived another challenging year in graduate school to move closer to my goal of earning a Ph.D. It is because of all of you that I am able to excel.

TABLE OF CONTENTS

Acknowledgements.....	iii
List of Tables	vi
List of Figures.....	vii
Chapter One: Introduction	8
Statement of the Problem.....	8
Purpose of the Current Study.....	9
Background.....	13
Chapter Two: Literature Review	16
Epidemiological Data.....	16
Theoretical Frameworks	19
Social cognitive theory.....	21
Theory of gender and power.....	25
HIV-related Risk Exposures and Risk Factors	28
Individual factors.....	29
<i>Demographics</i>	30
<i>HIV knowledge and education</i>	30
<i>Biological factors</i>	31
<i>Psychological factors</i>	32
<i>Behavioral factors</i>	32
Relational factors.....	33
<i>Family relations</i>	34
<i>Friendships</i>	34
<i>Intimate partners</i>	35
Institutional and organizational factors.....	36
<i>Schools</i>	36
<i>Workplaces</i>	37
<i>The Black church</i>	38
Community factors.....	39
<i>African American culture</i>	39
<i>History of medical and governmental trauma</i>	42
<i>Tuskegee and Katrina</i>	42
<i>Conspiracy theories</i>	43
<i>Community structural factors</i>	44
<i>Rural communities</i>	44
Policy and societal system factors.....	45
Risk Reduction Strategies.....	46
Assessment of Current Interventions.....	51
The Compendium.....	51
DEBI and HIP programs.....	51
Computer-based programs.....	53
SAHARA Program	57
History of SISTA.....	57

Traditional SISTA intervention overview	59
SAHARA intervention overview.....	60
Rationale for SAHARA Selection	61
Research Questions.....	63
Chapter Three: Methodology	67
Recruitment and Sampling Techniques	67
Study Participants	68
Sample Size.....	69
Study Setting.....	70
Study Design.....	71
Procedures and Materials.....	72
Measures	74
Independent variable.....	75
Dependent variables.....	75
<i>STD/HIV risk behavior knowledge.</i>	76
<i>Condom barrier scale.</i>	76
<i>Condom use self-efficacy.</i>	77
<i>Partner communication frequency.</i>	77
<i>Condom use consistency.</i>	78
Data Collection Procedures.....	78
Research Hypotheses	79
Conceptual Definitions	80
Operational Definitions.....	82
STD/HIV risk behavior knowledge (SHRBK)	82
Condom barrier scale (CBS).....	82
Condom use self-efficacy (CSE).....	83
Partner communication frequency (PCF).....	83
Consistent condom use (CCU).....	83
Statistical Analysis.....	83
Primary analysis.....	84
Chapter Four: Results	88
Demographics of Participants.....	88
Accuracy and Data Checks	89
Sample Characteristics.....	90
Analyses.....	92
Chapter Five: Discussion	110
Interpretation of Findings	110
Implications.....	117
Limitations	123
Recommendations.....	127
Conclusions.....	128
Appendices.....	130
References.....	181
Vita.....	214

LIST OF TABLES

Table 1, Hypothesis Testing for SHRBK, CBS, CSE, PCF, and CCU	85
Table 2, Demographic Characteristics of Participants that Completed Posttest and/or Follow-up Assessment	97
Table 3, Demographic Characteristics of Non-completers versus Completers	98
Table 4, Descriptive Statistics for Dependent Variables	99
Table 5, Multivariate Tests in ANOVA with Repeated Measures Analysis of SHRBK	100
Table 6, Bonferonni Post Hoc Tests of Time Main Effects for SHRBK.....	101
Table 7, Multivariate Tests in ANOVA with Repeated Measures Analysis of CBS	103
Table 8, Multivariate Tests in ANOVA with Repeated Measures Analysis of CSE.....	105
Table 9, Bonferonni Post Hoc Tests of Time Main Effects for CSE.....	106
Table 10, Multivariate Tests in ANOVA with Repeated Measures Analysis of PCF	108

LIST OF FIGURES

Figure 1, A framework for the socioecological model of contextual factors and determinants of HIV vulnerability.....	66
Figure 2, Sampling and allocation of subjects through the study.....	96
Figure 3, Comparison of changes in the marginal means for intervention groups over time for SHRBK.....	102
Figure 4, Comparison of changes in marginal means for intervention groups over time for CBS.....	104
Figure 5, Comparison of changes in marginal means for intervention groups over time for CSE.....	107
Figure 6, Comparison of changes in marginal means for intervention groups over time for PCF.....	109

Chapter One: Introduction

This quantitative research study tested the effectiveness of a computer-based behavioral prevention intervention for HIV-related risk behaviors called Sistas Accessing HIV/AIDS Resources At a click (SAHARA). This study is based upon the analysis of resulting data from administration of the SAHARA computer-based behavioral prevention intervention program to a group of African American women residing in urban and rural areas of Kentucky and Georgia. The first chapter of this dissertation states the problem, reveals the purpose of the study, introduces the background and context of the issue, and presents the need for this research.

Statement of the Problem

Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) are infectious diseases wreaking irreparable havoc on the lives of millions all around the world. While this deleterious and pervasive pandemic has reached almost every area of the globe, its damaging effects are distributed unequally amongst those considered to be the poorest and severely marginalized. Global HIV/AIDS statistics indicate that 97% of those living with HIV are Africans living in sub-Saharan Africa. Similar health disparities and inequities for persons of African descent are also found in developed nations like the United States as well. Of those infected with HIV in the U.S., African Americans disproportionately bear the burden of this disease, resulting in a major crisis within the African American community. In 2010, African Americans accounted for approximately 44% of new HIV infections among adults and adolescents (Centers for Disease Control and Prevention [CDC], 2012). These statistics become even more dismal when both race and gender enter into the equation. In 2010, African

American women accounted for 64% of women diagnosed with HIV/AIDS (CDC, 2012). For African American women, the rate of new HIV infections is 20 times higher compared to that of White women, and five times higher than that of Hispanic women (CDC, 2012). This means that 1 in 32 African American women will receive an HIV diagnosis at some point in their lifetime (CDC, 2013a). One of the essential pieces to fighting the HIV/AIDS epidemic is reducing the rate of new HIV infections through prevention.

Research in HIV prevention is strongly encouraged and supported by the various fields of science and the national government as evidenced by the creation of the United States 2010 National HIV/AIDS Strategy (NHAS). The NHAS underscores the importance of enlisting a combination method to HIV prevention that includes the provision of scientifically proven biomedical and behavioral approaches (U.S. Department of Health and Human Services [DHHS], 2010). The Prevention Research Synthesis (PRS) Project, a component within the CDC's Division of HIV/AIDS Prevention (DHAP) and Preventative Research Branch, reviewed and summarized HIV behavioral prevention research literature in order to identify evidence-based interventions (EBI) and best practices for HIV prevention. Evidence-based behavioral interventions created to address HIV-related behavioral risks demonstrate the ability to dramatically reduce HIV-risks and promote healthier alternatives among targeted high-risk populations (AIDS Community Demonstration Project [ACDP], 1999; DiClemente & Wingood, 1995; Kalichman, Hudd, & DiBerto, 2001).

Purpose of the Current Study

This research study examined the effectiveness of the Sistas Accessing HIV/AIDS Resources At a click (SAHARA) computer-based, behavioral prevention intervention with a population of African American women residing in both rural and suburban areas in Kentucky and Georgia. Through videos, vignettes, and interactive games, this intervention stresses ethnic and gender pride, risk-reduction skills, HIV and STD education, proper condom use, and sexual partner communication and negotiation techniques. SAHARA is an adapted and computerized version of Sisters Informing Sisters about Topics on AIDS (SISTA). SISTA was a CDC approved and supported group-level HIV intervention project widely disseminated through the Diffusion of Effective Behavioral Interventions (DEBI) project in a mission to stop the spread of HIV in African American women.

In 2011, in an attempt to coordinate with and advance the prevention goals set by the 2010 National HIV/AIDS Strategy (NHAS), the CDC adopted a High-Impact Prevention approach and DEBI became the High Impact HIV/AIDS Prevention (HIP) project (Danya International Inc., 2012). The High-Impact Prevention (HIP) approach seeks to reduce new HIV infections by investing federal funding towards identifying, combining, and implementing prevention strategies and tools for the populations and areas most affected by the HIV epidemic in the most efficient and cost saving ways (CDC, 2013c). The aim of the HIP project is to focus on cost-effective, scalable, behavioral intervention programs with the greatest prevention benefit. Although SISTA was considered an evidence-based intervention, the CDC no longer offers training or capacity building assistance for this program. SISTA paved the way for the more cost-

effective and computerized version known as Sistas Accessing HIV/AIDS Resources At a click (SAHARA).

SISTAs Accessing HIV/AIDS Resources At a click (SAHARA) is an interactive, computer-based behavioral HIV prevention intervention that is both culturally-, and gender-specific to African American women. SAHARA is designated for implementation in clinical and/or community-based settings for the purpose of reducing HIV sexual risk-taking behavior by increasing condom use among African American women (Wingood et al., 2011). SAHARA provides social skills training intended to reduce HIV sexual risk-taking behavior among African American women. The computer-based intervention was delivered in one interactive session that emphasized ethnic and gender pride, HIV/STD risk-reduction education, proper condom use, sexual negotiation skills, and the development of partner communication norms that encourage consistent condom use.

SAHARA is based on the theoretical foundations of Social Cognitive Theory and the Theory of Gender and Power. By determining the effectiveness of this computer-based HIV intervention for promoting safer sex practices among African American women via a quasi-experimental design, this research provides additional data regarding the generalizability of this intervention for African American women residing geographically in the southeastern United States. More specifically, the SAHARA intervention was assessed for its effectiveness of increasing consistent condom use during penetrative vaginal sex and influencing change in the outcome variables of STD/HIV risk behavior knowledge, condom use self-efficacy, barriers to condom use, and frequency of

partner communication for a population of African American women living in various areas of Kentucky and Georgia.

Prior efficacy studies of the SAHARA intervention program were conducted with inner city, African American women residing in metropolitan Atlanta, Georgia (Card, Kuhn, Solomon, Benner, Wingood, & DiClemente, 2011; Wingood et al., 2011).

Generalizability is of importance considering that SAHARA was originally used with a group of African American women residing in a large, urban epicenter and variations in its effectiveness may occur for populations of different geographic locations and urbanicity. W. Allen Martin (2004) coined the term urbanicity to mean the degree to which a geographical area is considered urban. Areas such as New York City, New York; Los Angeles, California, and Atlanta, Georgia are urban metropolises in contrast to cities outside of the classification of major cities such as Greensboro, North Carolina; St. Petersburg, Florida, and Lexington, Kentucky, and even more rural areas such as Frankfort, Kentucky, and Cedartown, Georgia.

The White House Office of Management and Budget (OMB) and the CDC use Metropolitan Statistical Areas (MSAs) to characterize urban and nonurban or rural areas. The OMB designates areas with a population $\geq 50,000$ as urban and areas with populations $< 50,000$ as rural (DHHS, n.d.). The U.S. Census Bureau uses similar standards to define an Urbanized Area (UA) as 50,000 or more people (DHHS, n.d.). These same definitions were used to distinguish between urban and rural areas for this research. Application of this prevention intervention with a population of African American women within different geographical regions and clinical settings provides additional data regarding the validity and appropriateness for the increased dissemination

of this computer-based intervention created from a CDC approved behavioral prevention intervention.

Background

Within the past few decades, researchers in the fields of psychology, education, and public health created numerous HIV and STD behavioral interventions. With the preponderance of these behavioral interventions came the difficult task of identifying which would prove to be the most scientifically efficacious in HIV prevention for the benefit of disseminating them on a national level. While establishing the clinical efficacy of an intervention is critical, the move from efficacious interventions to effective practice can be a daunting challenge. The effectiveness of an intervention is usually determined by the production of comparable results from the clinical realm to the real world. In order to address these concerns, researchers began performing meta-analyses and other systematic reviews to identify which behavioral interventions were most effective, or at least contained strategies of effectiveness for particular groups at risk such as African American women (Lyles et al., 2007; Mize, Robinson, Bockting, & Scheltema, 2002; Semaan et al., 2002; Weinhardt, Carey, Johnson, & Bickham, 1999).

Certain racial and ethnic groups, such as African Americans and Latinos, are at higher risk for contracting HIV. This is largely due to economic and social factors that contribute to the perpetuation of health disparities. Healthy People 2020 defines a health disparity as “a health difference closely linked to economic, social, and/or environmental disadvantage” (DHHS, 2008). Economic and social factors such as discrimination, stigma, poverty, and lack of access to care contribute to higher rates of HIV infection for people of color compared to Whites (CDC, 2014). Race in America is often constructed

as a contrast between “Blacks” and “Whites.” According to Celious and Oyserman (2001), the use of these racial terms appear to denote homogeneity amongst each group and comparing Blacks to Whites is commonplace in order to aid in making race a summarizing factor. However, while this simple construction of race is widely used, it does little to illustrate the heterogeneity or multiple experiences based upon gender, class, sexual orientation, and even geographic location of persons who identify as members of the aforementioned racial groups.

There is a dearth of research that explicitly examines the within-group heterogeneity of African Americans. While the term “African American” is common nomenclature used to describe an entire race of people with African ancestry associated with the African Diaspora, this population is again not a homogenous group as the label may infer. Many within-group differences exist among African Americans depending upon variables such as age, religion, socioeconomic status, and most notably geographic location. The heterogeneity among African Americans and the variety of subgroups cultivated by the various regions of the country, states, cities, and even neighborhoods in which African American communities reside can undeniably impact health statuses.

In regards to the geographic distribution of HIV, historically, the vast majority of cases occurred in urban, metropolitan cities and surrounding areas. Initially, cities like San Francisco, Baltimore, and New York were more notably impacted by the HIV/AIDS epidemic and still continue to receive an abundance of attention and funding in HIV prevention efforts. However, within the last 20 years, a geographic shift took place spreading the epidemic out from the big cities of the coasts and into the heartland of the southeastern United States. According to the CDC’s 2011 HIV Surveillance Report, the

highest estimated rates of HIV infection were predominantly located in the South (CDC, 2013b). The South is now considered the epicenter of HIV infection in the United States (Human Rights Watch, 2014). Given the disparate rates of HIV incidence and prevalence for women, particularly African American women, expanding the dissemination of efficacious behavioral interventions as preventative measures to reduce the transmission of HIV among this population is imperative.

In sum, HIV is listed as one of the ten leading causes of death for African American women ranging from age 15 to 64 (CDC/NCHS, 2011). It is essential to address this crisis through prevention research as well as through the process of delving deeper into the complex web of factors related to the incidence and prevalence of HIV/AIDS. HIV prevention research and practice continues to seek and address the consequences of morbidity and mortality among African American women attributed to this preventable disease. Given this information and the continued efforts to curb the impact of this global pandemic, this research is intended to provide a meaningful contribution to HIV prevention research through the translation of science to practice.

Chapter Two: Literature Review

Conceptually, every human is at risk of contracting HIV simply by biological standards because HIV is not a discriminating virus and willingly accepts any human body as its host. Conversely the reasons contributing to the spread of this pandemic are varied and complex. These factors contribute to the uneven distribution of this disease among the human population, particularly among African American women. The lives of millions of women are constantly being defined and affected by their health statuses. HIV underscores the ineptness of our current health system to address health disparities because it is a disease that spreads as a result of the interrelatedness and connection of multiple levels and sectors within the ecological web of our society. The means by which research attempts to make strides towards the goal of decreasing the rates of HIV infection among African American women requires a different approach that allows for the total examination of the myriad of forces that shape these women's HIV risks. In order to create viable solutions that can prevent the spread of HIV, an approach that not only examines the individual- and community-level risk factors related to HIV, but also incorporates a systems approach that considers environmental determinants of HIV is desperately needed (Frieson, 2011).

Epidemiological Data

According to the World Health Organization, there are an estimated 35.3 million people worldwide living with HIV with the approximate numbers falling somewhere between 32.2 and 38.8 million people (UNAIDS, 2013). This is a 17% increase compared to the 30.3 million people estimated in 2001. In 2013, there were approximately 2.1 million people who became newly infected with HIV worldwide

(UNAIDS, 2014a). Women account for over half of the total population of persons living with HIV (American Foundation for AIDS Research, [AMFAR], 2014). Globally HIV/AIDS is the leading cause of death for women between the ages of 15 to 49 (AMFAR, 2014). Of the aforementioned 35 million people living with HIV, approximately 24.7 million (70%) live in sub-Saharan Africa and 58% of those people were Black women. In 2012, HIV remained as one of the leading 10 causes of death in the world (WHO, 2014).

In the United States, there are approximately 1.1 million people living with HIV and almost 180,000 of those people are unaware of their status (CDC, 2013a). From the most recent HIV surveillance data for the United States gathered from the 50 states, the District of Columbia, and six dependent areas, there were an estimated 49,273 people newly diagnosed with HIV in 2011. African Americans experience the highest rates of HIV burden although they only represent approximately 14% of the U.S. population (AMFAR, 2014). In 2011, Blacks/African Americans accounted for 47% of new HIV infections (AMFAR, 2014). Regarding gender statistics, men comprise the largest group infected with HIV, but the numbers of women infected are steadily rising. Women account for 20% of new HIV infections and 24% of the population living with HIV in 2009 and 2010, respectively (CDC, 2013a). At 84%, heterosexual contact was the leading mode of HIV transmission for women and of women diagnosed with HIV/AIDS in 2011, 64% were African American (AMFAR, 2014). Emphasizing the disproportionate impact this disease has on Black women in the United States, the rate of new HIV infections for African American women is 20 times higher compared to that of White women. In 2011, African American women represented 64% of the women

diagnosed with HIV/AIDS (AMFAR, 2014). As noted earlier, HIV is one of the ten leading causes of death for African American women ranging between the ages of 15 to 64 (CDC/NCHS, 2011).

HIV/AIDS is not geographically restricted to existing only in large urban areas and metropolitan cities, but also reaches into smaller suburban areas and rural communities, particularly in the South. According to the Southern AIDS Coalition (SAC), the rates of HIV infection began to escalate at a rate much higher than that of the rest of the U.S. population prompting the creation of the organization (SAC, 2014). The SAC reported that while the South contains 37% of the U.S. population, 50% of new HIV diagnoses are represented within the southern states (SAC, 2012). The SAC contends that the South has the greatest numbers of people living with HIV and AIDS, the highest rates of sexually transmitted infections (STI), the greatest abundance of poverty, largest numbers of people without health insurance and the least access to health care, and the highest mortality rates for HIV/AIDS. The U.S. Census, the CDC, and the SAC identified the areas of focus at the heart of the HIV/AIDS epidemic in the South to include the District of Columbia and the following states: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia (SAC, 2014).

The states of Georgia and Kentucky are a part of the geographic region deemed as the new epicenter of HIV/AIDS in the U.S. In Georgia, there were 50,436 people living with HIV at the end of 2012 (Georgia Department of Public Health [DPH], 2013). In 2010, Georgia ranked sixth in highest total number of adults and adolescents with HIV (DPH, 2013). There were 2,911 newly diagnosed cases of HIV in Georgia in 2012 and

1,590 (55%) were among Blacks/African Americans (DPH, 2013). Of those 2,911 newly diagnosed cases of HIV, 645 (22%) were female (DPH, 2013). Black women accounted for 75% of women with HIV in Georgia in 2012 (DPH, 2014). HIV was one of the top five causes of death for Black Georgians from 2007-2013 (DPH, 2014).

The statistics for HIV/AIDS in Kentucky are on a smaller scale compared to Georgia but are still no less dismal. From 1982 to 2013, there were 8,904 reported cumulative cases of HIV infection in Kentucky (Kentucky Cabinet for Health and Family Services [KCHFS], 2013). In 2011, Kentucky ranked 31st in estimated HIV diagnosis rates per 100,000 (KCHFS, 2013). There were 313 newly diagnosed cases of HIV in Kentucky in 2012 and 113 (36%) were among Blacks/African Americans (Kentucky Department of Public Health [KDPH], 2013). Of those 313 newly diagnosed cases of HIV, 51 (16%) were female (KCHFS, 2013). Black women accounted for 48% of women with HIV in Kentucky in 2011 (KDPH, 2013). White, non-Hispanics comprise the majority of HIV cases in Kentucky. This is likely due to the greater percentage of White persons in the general population of Kentucky. Similar to U.S. statistics, persons of color are still disproportionately impacted by HIV in Kentucky. In 2011, Blacks and Hispanics accounted for 35% and 7% of new HIV cases although they only constituted 8% and 3% of the Kentucky's population, respectively (KCHFS, 2013).

Theoretical Frameworks

In order to gain a better understanding of how the SAHARA behavioral prevention intervention program influences the behaviors that place African American women at risk for acquiring or transmitting HIV, a brief review of the social and behavioral theories this intervention program is based upon is necessary. As previously

discussed in earlier works (Frieson, 2011), a theoretical framework or model is key to understanding sexual risk-taking behavior and all other health behaviors. Theories and models of health behavior attempt to explain behavior and inform methods of behavior change within health education and health promotion. There are numerous theories and models of risk-taking behavior due to the complexity of human behavior. These theories and models attempt to illuminate the many reasons why people engage in health-compromising and health-protective behavior. Theories of health behavior are crafted with influences from a variety of perspectives within the fields of biology, psychology, sociology, and environmental systems. While some rely solely on a one-dimensional focus from either of these perspectives, other theories incorporate an amalgamation of all of these views to provide insight into health behavior (Edberg, 2007). The SAHARA program is based on two of these theories: Social Cognitive Theory (SCT) and the Theory of Gender and Power (TGP).

Relative to sexual risk-taking behavior, certain theories are used more frequently to explicate HIV-related risk-taking behavior. SCT is one of the more widely used frameworks and serves as the foundation for many HIV behavioral interventions (Lyles et al., 2007). In 2007, Lyles and colleagues conducted a systematic review of the best evidence HIV behavioral interventions for high-risks populations in the United States from the years 2000 through 2004 as part of the CDC's Prevention Research Synthesis (PRS) Project (Lyles et al., 2007). The goal of the PRS Project is to interpret scientific evidence created from research literature into practical information and data that can be used by other prevention researchers, clinicians, and health departments for prevention activities.

According to Lyles et al. (2007), the PRS Project team created a cumulative database containing HIV/AIDS/STD prevention research literature by performing both automated and manual searches of four major electronic databases (EMBASE, PsychINFO, Medline, and SocioFile) and 32 specified journals. The PRS Project team also screened and examined reference lists, unpublished manuscripts, and HIV/AIDS email discussion lists. Based on the PRS Project team selection criteria, 100 studies were selected as appropriate for efficacy review. Of these studies, 18 behavioral interventions were deemed best evidence interventions. Best evidence was defined as having sufficient quality and strength of evidence to determine significant effect on the reduction of HIV risks (Lyles et al., 2007). Eleven of the 18 interventions were theoretically based on either Social Cognitive Theory or Social Learning Theory (SLT), the precursor to SCT.

The PRS Project was also integral to the creation of other critical resources in HIV prevention such as the Compendium of Evidence-Based Interventions (EBIs) and Best Practices for HIV Prevention. The “Compendium,” as it is also known as, is a listing of evidence-based interventions and best practices to help prevention proponents select the most appropriate interventions for their communities. The most recent edition of the Compendium contains a risk reduction chapter that includes a list of 84 behavioral EBIs (CDC, 2014a). Forty-four of the 84 behavioral EBIs (52%) are based on either SCT and/or SLT. In a review of published health behavior research between the years of 2000 and 2005, SCT (along with another popular model known as the Health Behavior Model) was again the most often used theory of health behavior (Painter, Borba, Hynes, Mays, & Glanz, 2008).

Social cognitive theory. As previously noted in earlier works (Frieson, 2011),

one of the more adequate and appropriate theories for exploring how to alter the sexual risk-taking behaviors of African American women is Social Cognitive Theory (SCT). SCT provides a bevy of concepts that can be utilized to better understand the complexities of African American female sexuality and to create interventions related to decreasing African American women's involvement in sexual risk-taking behavior. Albert Bandura (1998) viewed SCT as a psychosocial health behavior model that explained the cognitive and social factors that shape health promotion and disease prevention. SCT considers the interplay among the individual or group, behavior, and the environment, key to gaining a better understanding of African American women's relationships with sexual risk-taking behaviors. SCT acknowledges that sexual behavior does not occur in a vacuum and there are important moderating factors to consider when examining this particular health behavior (Bandura, 1994).

Albert Bandura originally created SCT's precursor, Social Learning Theory, as a means to explain the human learning process within a social context (Bandura, 1977). Bandura's theory was renamed after concepts of cognitive psychology were incorporated and a greater understanding of information processing, symbolic communication, and observation were achieved (Bandura, 1986). The theory eventually became known as Social Cognitive Theory (Bandura, 1986). SCT emphasizes an interrelated relationship between people, their behaviors, and the environment. This relationship is called reciprocal determinism because of the interplay between personal, behavioral, and environmental factors (Viswanath, 2008). Reciprocal determinism is defined as the continuous interaction between the person, the behavior, and the environment (Bandura, 1978). All three are interrelated and interdependent upon each other. Factors of the

environment influence the person, but in turn the person can also influence the environment (Bandura, 1978). Behavior is modified and regulated within both of these scenarios. The influence of each of these components varies depending on the situation, the person, and the endeavor (Bandura, 1986). Behavior is influenced by personal, social, and environmental factors. In essence, individuals and groups can influence their environments and adjust their own behaviors, and vice versa. Bandura (1998) asserted that the theory of SCT, as a whole, elucidated the factors responsible for the acquisition of knowledge essential to physical and emotional wellbeing along with those involved in the self-regulation of health behavior.

There are nine key concepts of SCT grouped within the following five categories: psychological determinants of behavior, observational learning, environmental determinants of behavior, self-regulation, and moral disengagement (McAlister, Perry, & Parcel, 2008). The psychological determinants of behavior are outcome expectations and self-efficacy. Outcome expectations refer to the beliefs and perceived values an individual holds in regards to performing a health behavior (McAlister et al., 2008). Self-efficacy is the most widely known concept of SCT and has been added to other theories. Self-efficacy is one's belief in his or her abilities to successfully complete a behavior that will produce a desired outcome (McAlister et al. 2008). Observational learning involves the modeling of the behavior of others using skills in attention, retention, production, and motivation (Bandura, 1986, 2002). The environmental determinants of behavior are incentive motivation and facilitation. Incentive motivation involves the utilization of rewards and punishment to produce behavior (McAlister et al., 2008). Facilitation is the ability of the environment to provide structures and resources that enhance the ease of

performing new behaviors (McAlister et al., 2008). The self-regulation category attends to the ability of humans to exhibit self-control through goal setting, monitoring, feedback, self-reward, self-instruction, and social support (McAlister et al., 2008). The last category of moral disengagement is the newest concept of SCT and involves the violation of moral standards created through thinking that results in disengagement with moral self-regulation (McAlister et al., 2008). In moral disengagement a person is able to separate internal moral control from that of detrimental conduct.

SCT is a well-supported and comprehensive theoretical framework for understanding the processes involved in learning and the factors that influence behavior. Research supports the application of several concepts of SCT to a multitude of HIV-related sexual risk behaviors from unprotected sexual intercourse to sex with multiple partners. O'Leary, Maibach, Ambrose, Jemmott, and Celentano (2000) discovered sexual behavior in regards to condom use could be predicted according to self-efficacy and outcome expectations. These researchers interviewed and provided small group health education sessions to 472 predominantly African American participants. They discovered self-efficacy predicted sexual behavior, expected partner reaction, and self-approval of condom use. These results supported a social cognitive theory approach to changing condom use behavior. SCT concepts such as observational learning have also been used to inform television and radio shows created to influence the sexual behaviors of various populations at high risk of contracting HIV and other STDs (Greenberg & Smith, 2002). Bandura (1994) explored and reported the invaluable resources SCT offers in regards to preventing the spread of HIV and increasing the sustainability of life for those already infected by HIV.

For African American women specifically, the influence of the triadic relationship can be examined in the relationship between family roles, cultural roles, and gender roles as they influence sexual relationships. Jarama, Belgrave, Bradford, Young, and Honnold (2007) explored such a relationship in a qualitative exploratory study of African American women with unidentified HIV statuses. Data for 51 African American women were gathered through extensive interviews and revealed additional understanding of how social and cultural factors such as family of origin and gender roles inform the context of HIV risks for African American women. Gender also plays a pivotal role in understanding African American women's HIV-related risks.

Theory of gender and power. Sexism is a system of oppression based on gender. Women's HIV-related risks as shaped by multiple influential factors cannot be thoroughly understood unless the context of gender roles at the societal or macro level is explored. Gender roles along with norms and cultural values circumscribe the behavior of men and women as well as the sexual behavior present within their interpersonal relationships (Amaro, 1995). The socialization of women functions on a basis of inequality in status and power compared to men. This inequality has a pervasive and powerful impact on the life experiences of women within the dynamics of male-female relationships (Miller, 1986). Wingood and DiClemente (2000) extensively examined the application of Connell's (1987) Theory of Gender and Power to explain women's HIV risk factors and exposures. According to their analysis, the sexual division of labor, the sexual division of power, and cathexis, which is the structure of social norms and affective attachment, generate exposures and risks that adversely inform women's health. For example, the sexual division of labor creates economic exposures for women, such as

living in poverty and being less educated, which result in HIV-related socioeconomic risk factors. Regarding cathexis, Wingood and DiClemente explain it best:

...cathexis emphasizes the affective and normative components and is referred to as the structure of affective attachments and social norms. At the societal level this structure dictates appropriate sexual behavior for women and is characterized by the emotional and sexual attachments that women have with men. This structure constrains the expectations that society has about women with regard to their sexuality and, as a consequence, shapes our perceptions of ourselves and others and limits our experiences of reality. This structure also describes how women's sexuality is attached to other social concerns, such as those related to impurity and immorality. At the institutional level, the structure of social norms and affective attachments is maintained by social mechanisms such as biases people have with regard to how women and men should express their sexuality. These biases produce cultural norms, the enforcement of strict gender roles, and stereotypical beliefs such as the belief that women should have sex only for procreation, creating taboos with regard to female sexuality (being labeled as a "bad girl" if you have premarital sex), restraining women's sexuality (being monogamous as opposed to having multiple partners---an accepted norm for men but not women), and believing the women should refrain from touching their own bodies. The inequities resulting from the social mechanisms occurring within the structure of social norms and affective attachments are manifested within

the field of public health as social exposures and are manifested in the psychosocial domain as personal risk factors [perception of invulnerability to HIV/AIDS, limited HIV prevention knowledge, etc.]. According to cathexis, women who are more accepting of conventional social norms and beliefs will be more likely to experience adverse health outcomes.” (Wingood & DiClemente, 2000, p.544)

Although African American females are usually socialized with more gender role flexibility and with an emphasis on egalitarian work division within African American families, they are not precluded from receiving sexist messages as evidenced by their engagement in adhering to traditional gender roles and relationship ideals within their intimate partner relationships. Additionally, the intersection between poverty, lack of formal education, gender, race, and other social determinants can place African American women at an increased likelihood of engaging in sexual risk-taking behavior.

Considering the commonalities and attention given to social, cultural, and environmental factors at multiple levels of influence accentuated by Social Cognitive Theory and the Theory of Gender and Power, it is no surprise that both of these theories complement each other in the exploration of HIV-related risks and African American women. SCT emphasizes the enactment of new behavior through learning new skills and the provision of an opportunity to practice these new skills. The Theory of Gender and Power attends to the cultural examination of gender implications and power dynamics. This theory can also inform researchers on important factors for consideration when creating culturally appropriate programs and interventions for women. In fact, as testament to the compatibility of these two theories, the theoretical framework of the

SISTA intervention is based upon them both. The skills training provided within SISTA and SAHARA (i.e., condom negotiation skills, proper condom application, condom use self-efficacy, etc.) are examined as additional outcome variables in this study. The use of a HIV behavioral intervention that explicitly addresses the relationship between gender and power is likely to create an environment conducive to increasing African American women's awareness and perception of their personal HIV risks. Validating women's experiences and increasing their skills and abilities to change sexual risk behaviors will empower them to become agents of change for their health.

HIV-related Risk Exposures and Risk Factors

Thirty years of research concludes there is no single cause for the current state of HIV among African Americans, but reveals that the resulting health disparity is due to a complex web of multiple interrelated social and contextual factors at varying levels of influence. The reality is that the spread of HIV among African American women is linked to a multitude of health determinants and risk exposures and factors relating to race, gender, and socioeconomic status that impact them, their communities, and society as a whole. The inequities and disparities that women experience along the multileveled and multiple determinants of health behavior result in the risk exposures and risk factors that leave African American women vulnerable to HIV. Wingood and DiClemente (2000) define exposures as acquired risks resulting from factors that increase the probability of a disease (i.e., HIV) developing later. Similarly, risk factors are variables that can increase one's risk of disease (Wingood, 2000).

In accordance with theories of health behavior such as social cognitive theory and ecological models, these levels of influence can be described as the biological,

behavioral, social, and environmental determinants of health. The environmental determinants can be expanded to include the physical, community, and organizational environments as well. These levels often coincide with the ecological systems theory made popular in the late 1970's by Dr. Urie Brofenbrenner, a developmental psychologist (Brofenbrenner, 1994). Individuals, interpersonal relationships, families, work groups, communities, and institutions are examples of the various types of settings in which the transmission of HIV can be perpetuated or diminished through the combination of social and contextual conditions and factors. Figure 1 highlights the factors and determinants that enhance HIV/AIDS vulnerability at multiple levels. Figure 1 is located at the end of this chapter. In order to have an impact on the state of HIV in the U.S., prevention programs must strive to make an impact on the social and contextual factors present at multiple levels. Social and contextual factors such as whether or not a person received comprehensive sex education in school, dates only persons within their racial/ethnic group, lives in an impoverished neighborhood, or has access to health services have the potential to create a situation that either increases or decreases one's risk exposure to HIV.

Individual factors. The individual sphere of influence in the social ecological model is centered on the basic unit of the individual. This is the foundational level and is based on the biological and personal history of the person. In relation to African American women and HIV, this level represents the internal determinants of behavior such as knowledge, attitude, beliefs, and other internal forces that increase the likelihood of an African American woman becoming HIV positive. Based on the current HIV/AIDS literature, research at the individual level consists of four major themes: HIV knowledge

and education, biological elements, psychological issues, and behavioral components. In accordance with SCT, these factors represent the personal components of the triadic relationship.

Demographics. Demographics or the physical characteristics of a population also shape behavioral risk factors of HIV infection. Race, gender, age, and socioeconomic status are a few of the demographic factors that have an effect on and maintain the social networks in which African American women engage in HIV-related behaviors and coexist with others who are HIV positive. The relationship between physical characteristics such as race and gender often influence one's socioeconomic demography and thus complicates or prohibits a singular exploration of many of these factors separately. The Theory of Gender and Power underscore the demographic variables and intersectionality between race and gender.

HIV knowledge and education. HIV/AIDS education pertains to the knowledge and information disseminated on the topic of HIV and AIDS. HIV/AIDS education usually focuses on how to stop the transmission of HIV, helping people utilize and apply HIV facts and skills to their own behavior, and encouraging the humane and equal treatment of those infected and affected by HIV/AIDS. Numerous researchers have performed multiple experiments with successful results involving the provision of a HIV educational program to female participants within their studies and several of these featured African American women as the target audience (Choi, Hoff, Gregorich, Grinstead, Gomez, & Hussey, 2008; DiClemente & Wingood, 1995; DiClemente, Wingood, Crosby et al., 2004; Kelly et al., 1994; Sterk, Theall, & Elifson, 2003). Within the framework of individual- and group-level theories of behavior, HIV education works

on the premise of creating awareness and providing education about HIV and AIDS in order to decrease the spread of the disease by encouraging health-promoting skills such as proper condom usage and condom negotiation. HIV knowledge is an integral component of many interventions geared towards changing HIV-related behaviors.

Biological factors. Other individual-level predictors of African American women's increased risk of HIV exposure are biological factors. Biological factors are comprised of agents or elements of human biology that contribute to the production of a particular result, in this case the acquisition of HIV. These biological factors can pertain to African American women and their heterosexual partners. STD history, tissue vulnerability, and viral loads are some examples of these biological components that interact to increase African American women's susceptibility to HIV. The presence of STDs in the body increases the risk of contracting HIV. Persons with STDs have a higher susceptibility to HIV because the surfaces of their genital tracts may be compromised which prevents these bodily safeguards from acting like a protective barrier. STDs also weaken the immune system and allow HIV transmission to occur more easily due to the presence of open sores and lesions (Logan, Cole, & Luekefeld, 2002). Females are naturally more vulnerable to the heterosexual transmission of STDs such as HIV due to being on the receiving end of sexual contact (Padian et al., 1987; Sobo, 1995) and because of the larger areas of exposed and sensitive skin available in the vagina and the anus compared to the penis. Viral load is another biological factor involved in women's HIV risk exposure. There are higher concentrations of HIV in blood and semen during the initial stages of the disease. Women who come into sexual

contact with a newly infected partner with HIV are at an increased risk of contracting the disease.

Psychological factors. Cognitions, feelings, and attitudes are examples of the psychological factors that influence HIV-related behavior. Factors such as beliefs about HIV, risk perceptions of HIV, and the psychological traits and states of people affect their engagement and participation in risk behavior. Beliefs and perceptions about HIV and AIDS play a role in the HIV seroprevalence among African Americans. African American women's perceived attitudes and beliefs influence whether or not they engage in behaviors that decrease or increase HIV risks. Wingood and DiClemente (1997) conducted a study of a community population of African American women which revealed that women who used condoms more consistently believed themselves to possess higher self-control over using condoms and have greater control over their partner's use of condoms compared to women who used condoms inconsistently. Conversely, beliefs and attitudes about the negative impact of condoms on sexual enjoyment (Cantania et al., 1997) or being perceived as unfaithful by male partners for asking to use condoms (Wingood & DiClemente, 1998b) can promote participation in HIV-related risk behaviors.

Behavioral factors. Behavioral factors receive a preponderance of research and intervention attention and are often considered the biggest contributing factors to HIV-related risks. Behaviors that increase one's chances of coming into contact with bodily fluids that carry HIV, such as sexually risky acts without condom use and intravenous drug use, are unquestionably linked to the transmission of HIV and other STDs but present a challenge to empirical investigation because these behaviors are usually private,

unobservable, and go undisclosed. The behavioral factors that incur HIV risks are sex without condoms, drug use, and a combination of both. Again, like most of the other correlating factors involved in African American women's HIV risks, these behavioral factors are influenced by a host of cultural, psychological, and societal factors.

Previous HIV prevention education and interventions have focused heavily on individual aspects of HIV risk behavior such as sexual risk-taking or drug usage. In the context of sexual behavior and risk-taking, the examination of sexual risk-taking behavior lends itself to the incorrect assumption that this type of health behavior is solely driven by the motivations and careless decisions of the individual. In fact, according to Martha Ward (1993) "Risk taking implies autonomy in the world" (p. 427). Narrow interpretations of this phrase ignore the role that power plays in the sexual relationships between women and men and whether women possess this autonomy within these relationships. Although the concept of power alone may not be considered a risk-taking behavior, it does inform the exhibition of certain behaviors that occur within the context of relational factors would increase one's HIV risks such as lack of condom use and physical abuse.

Relational factors. The relational sphere of influence in the social ecological model is based on the interpersonal processes that occur among the influential relationship groups within the formal and informal social networks and social support systems. These include family, friends and peers, work groups, intimate partners, and other groups of interpersonal contact. These groups have the ability to affect the choices and opportunities of the individual in relation to HIV-related risks. Based on the current HIV/AIDS literature, research at the relationship level consists of three major areas:

family, friends or peers, and intimate partners. As multifaceted as HIV is at the individual level, it is as varied on the relational level. HIV is communicable in that it is transferred between one agent or vector to another. African American women's relationships with the aforementioned interpersonal relationship groups shape the context through which the transmission of HIV can occur.

Family relations. The influence of familial relationships is garnering increased attention in relation to gaining a better understanding of its impact on HIV risks. Families can provide both protective factors and risk exposures to the sexual health of women. Additional research has been devoted to exploring the impact of familial relationships of African American women at risk of HIV. Gentry (2007) proposed through an in-depth analysis into the lives of inner-city, African American women at high risk for HIV that family of orientation, both those their born into and those created from shared affiliations, can offer strength and resilience to decrease HIV risks or can create stress and struggle that increase HIV risks. Women who have families with histories of domestic violence, sexual exploitation, and drug use create the potential for future HIV-related risks.

Friendships. Interpersonal relationships with peers are also important to the understanding of women's HIV risks. As maturing adolescents begin to distance themselves from their parents and families, peers influence becomes stronger and more prominent. Perceptions about the sexual behaviors of other peers are powerful motivational agents on the sexual behaviors of adolescents (DiClemente et al., 2008). Crosby et al. (2000) discovered this phenomenon in a study of adolescent, African American females and their incidents of unprotected vaginal sex. In this study, female

participants reported lower numbers of unprotected vaginal sex acts if they held the perception that their other female friends were using condoms. Social support is another aspect of interpersonal relationships that is crucial to the development of social identity. Social support provides important resources such as information, emotional support, access to other social contacts and connections, a sense of self-worth, a stress buffer, and assistance with fulfilling personal and social roles, obligations, and responsibilities (Cohen & Wills, 1985). In the case of general social support, a correlation was discovered between African American adolescents with low levels of social support and a likelihood of engaging in risky sexual behaviors (St. Lawrence, Brasfield, Jefferson, Allyene, and Shirley, 1994).

Intimate partners. More than half of the people in the world living with HIV are women (AMFAR, 2014; UNAIDS, 2014b). Heterosexual contact is the leading transmission route for HIV infection in women and they are at least twice as likely to become infected from men during sexual intercourse due to physiology (AMFAR, 2014). Considering that in order for heterosexual transmission of HIV to occur, the influence of sexual relationships between men and women must be explored. The characteristics and behaviors of the male sexual partners of women are extremely significant to a women's ability to protect herself against HIV-related risks. Because of the high transmission rate through heterosexual contact, behavioral risk factors related to the sexual behavior of women garner the focus of a majority of HIV research (Braithwaite & Thomas, 2001; Ellen, Aral, & Madger, 1998; Gupta & Weiss, 1993; Johnson, 1993; Kahn, Kaplowitz, Goodman, & Emans, 2002). Power inequalities between men and women are at the core of the increased risk of HIV for women within heterosexual relationships. Some of the

partner-influenced factors mediated by an imbalance of power are having an older sexual partner, having a sexually or physically abusive partner, having a high-risk steady partner, and having a partner that disapproves of practicing protected sex (Wingood & DiClemente, 2000).

Institutional and organizational factors. Institutions and organizations are the entities that allow for groups of multiple interpersonal associations and relationships to come together and usually function under common rules or policies. Examples of organizations and institutions include schools, workplaces, and other community organizations such as churches. According to McLeroy, Bibeau, Steckler, and Glanz (1988) most people spend at least one-third to one-half of their lives involved in these types of institutions and organizations since most of us attend some type of formal schooling and later enter the work force. Upon this consideration, it seems logical to examine the type of influence these environments have on the current state of HIV.

Schools. For many of us, school is our primary introduction into groupings of interpersonal relationships and organizational culture. Schools and other institutions like them provide the first lessons in socialization with others outside of our immediate families. Educational environments may serve as the first place where sex education is received which has definite implications for HIV risks. At some point during the formal educational process, some version of sex education will be encountered. Comprehensive sex education that discusses abstinence and contraception may still fall short for African Americans, especially African American females. According to Sobó (1995), if the education provided lacks realistic applicability to the population it is addressing then the information may be rejected or reinterpreted in order to meet the receiving audience's

beliefs and worldviews. Applicability and cultural sensitivity are important aspects within sex education that must be attended to in order to increase the efficacy of the intervention for African American women.

Other educational institutions such as historically Black colleges and universities (HBCU) also provide a venue through which HIV risks within the African American community can be addressed. There are 100 HBCUs in this country providing education to approximately 324,000 undergraduate and graduate students each year, the majority of which are African American (U.S. Department of Education, 2013). Because of the historic and contemporary roles of these institutions to advancing the lives of African Americans and others through a commitment to education and community service, they possess the ability to serve as a strategic partner in the mission to stop the spread of HIV.

Workplaces. HIV is also making its presence felt within the workplace. HIV and AIDS have both social and economic implications among America's workforce considering that both young and middle-aged adults during the peak of their work production and child-bearing years are acquiring HIV (International Finance Corporation, 2002). Like school, many people spend a large amount of their lives in the workplace. This has implications for the HIV-related risks of African American women in the workforce. Frieson (2011) examined these implications for African American women who are HIV negative as "a work environment that ignores the impact of HIV in the workforce, the community, and the world models and possibly perpetuates HIV risk denial among its employees" (p.47). For these women who are already HIV positive and either unemployed or underemployed, work organization may not provide health insurance. A lack of health insurance coverage increases health issues and costs. These

work environments may also promote a covert and pervasive tone towards HIV positive person who bear the burden of discrimination and stigma that accompany this diagnosis.

The Black church. Religion is a critically important aspect of life for many. For a majority of African Americans, the Black Church functions as an institution with both religious and political power towards influencing social change in the community. The Black Church is one of the few institutions that is built, controlled, and financed solely by Black people (Taylor, Thornton, & Chatters, 1987). Historically, these entities may in fact be considered the foundations that actually shape and mediate the manifestations of African American culture.

The Black Church has the potential to address the spiritual, physical, educational, and social needs of its congregation (Eng, Hatch, & Callan, 1985). In reference to the African American community, one may consider the Black Church or other organizations like HBCUS as more than just institutions that allow for interpersonal associations within the community. Although the Black Church has worked tirelessly to improve the conditions and social environments in which African Americans live in, it can also function to perpetuate an environment that increases HIV-related risks. An open dialogue about topics such as sexuality, drug use, and non-marital sex are taboo and may rarely occur within the church (Laurencin, Christensen, & Taylor, 2008). Alternatively when churches do decide to make a solid commitment to taking up arms against the HIV/AIDS epidemic, they become formidable allies in the fight. Translating HIV evidence-based behavioral interventions (EBI) into faith-based interventions with relevance to the church offers promising results in the African American community.

Community factors. A community is created from a network of interactions between individuals, groups, organization, and institutions. A community can be based upon a geographic location such as a neighborhood or could be the shared cultural history and experiences of a group such as the case for African Americans or Latinos. The African American community functions as a moderating structure in the HIV epidemic. McLeroy et al. (1988) explain that communities serve as moderating structures by influencing the values and norms of the larger community as well as informing the beliefs, attitudes, and health-related behaviors of the individuals that comprise these communities. In order for individuals to make and sustain changes in their health statuses the support and strong ties to community are essential. To gain a better understanding of the African American community-related factors involved in African American women's HIV risks, an examination of African American culture, the history of medical establishment distrust, and community structural factors must be explored.

African American culture. For the first time in 1995, the number of reported AIDS cases for African Americans was equal to that of Whites (CDC, 1995), which means that African Americans were significantly overrepresented considering that they are less than 13% of the population. Since that time, the numbers of cases of HIV and AIDS have continued to escalate in the African American community resulting in the present crisis. The collective identity of African American culture encompasses the history, beliefs, values, and norms that influence the survival and social interactions of this population. This ethos is based upon an Afrocentric worldview paradigm that emphasizes spirituality, collectivism, interdependence, and transformation (Cokley, 2005). Attention to ethnic identity and pride, spirituality, kinship bonds, and the

promotion of educational attainment are a few of these cultural stalwarts that promote wellbeing and adaptive functioning among African Americans.

Like other communities of color, the African American community experiences a host of challenges and barriers that can also contribute to the higher rates of HIV infection. A cultural worldview is considered the system of thoughts and beliefs that aid in understanding the world and provides the lives of individuals with meaning (Schmeichel & Martens, 2005). Religiosity contributes to shaping cultural worldviews and religious institutions are a central component in the lives of many Black Americans. In African American culture, religious expression has been used to provide existential meaning to suffering and death (Taylor, Chatters, & Levin, 2004) in addition to serving as a coping mechanism and a force to combat oppression. The belief in a divine power that is omnipresent and intervening in one's life is one aspect of the cultural worldview of African Americans (Mattis & Jagers, 2001). Conversely, there are three components of religiosity; optimistic bias, fatalism, and homophobia, which present a challenge to understanding and combating health issues such as HIV within the African American community.

Optimism bias is the underestimation of a person's vulnerability to negative consequences (Weinstein, 1998). Current research has identified optimism bias as a contributing factor to the status of HIV in African American communities (Kalichman & Cain, 2005; Sobo, 1995). The view of seeing HIV as a White gay man's disease contributes to optimistic bias and results in African Americans not recognizing their own risks. Optimism bias is cultivated among African American women through a tendency to compare themselves to others who are usually drastically different or worse off than

them in order to feel better about their own risk behaviors (Mays & Cochran, 1988; Sobo, 1995).

Fatalism is the belief that events have already been determined in advance and that a person has no control or ability to change them (Benghiac, 2013). Most traditional religions provide a connection to fatalism considering the integral belief of a higher power with complete authority and control. This is especially true of African American religiosity and health status. The combination of optimism bias and fatalism may function as coping mechanisms that contribute to the resiliency in African Americans but can also result in creating a climate of misperception and risk denial about HIV. Younge, Salem, and Bybee (2010) conducted a study of a sample of low-income African American women and found that cultural worldviews with high levels of fatalism predicted low levels of perceived HIV risks.

Homophobia and the stigma attached to sexuality outside of the parameters of heterosexuality are other contributing factors to the progression of HIV in the Black community. Religious beliefs and cultural community affiliations stigmatize being gay or bisexual as immoral and anti-Black (Fullilove, 2006). This prejudice, both external and internal, towards sexual minorities results in numbers of Black men who have sex with men (BMSM) to not identify as gay or bisexual nor disclose their sexual risk behaviors. According to Wyatt (2009) this can result in increased HIV-related risks for both the male and female partners of BMSMs through their secret engagement in male-to-male sexual contact while maintaining heterosexual relationships with women in public.

History of medical and governmental trauma. Another factor of important consideration at the community level is that African Americans have a storied history within the chronicles of research, medicine, and healthcare resulting in feelings of mistrust and concerns of deception that may ultimately color beliefs and perceptions about HIV/AIDS knowledge and risks. The relationship between the historical treatment of African Americans and American medicine is fraught with abuse and exploitation. This maltreatment has been well documented and continues to plague many communities of color to this day (Corbie-Smith, Thomas, Williams, & Moody-Ayers, 1999; Gamble, 1997; Brandon, Isaac, & LaVeist, 2005; White, 2005). A lack of access to healthcare and equitable treatment by healthcare practitioners continues to fuel African Americans' current state of medical mistrust (Institute of Medicine, 2003).

Tuskegee and Katrina. The American healthcare system is laden with infamous health scandals aimed at oppressed and marginalized groups. One of the most notable and horrendous is the Tuskegee Syphilis Study in which hundreds of African American men were not informed of or provided treatment for their syphilis infection in order to study the progression of the disease. After the Civil War and well into the 1950s and 1960s many African American women underwent forced sterilizations. From 1951 to 1974 inmates at the Holmesburg Prison in Philadelphia, a majority of who were Black, underwent secret medical testing by the U. S. Army, the Central Intelligence Agency (CIA), and several private companies under the coercion of receiving monetary compensation (Williams & Johnson, 2002). More recently, considering the government response to the devastation in New Orleans caused by Hurricane Katrina, J. Watson, a journalist for a Washington state newspaper indicated that 61% of African Americans

believed government response would have been quicker if more White people were in peril (as quoted in Sue & Sue, 2008). Considering the multiple atrocities many populations of color have endured under the guise of advancing the scientific and medical fields, it is understandable to imagine the amount of apprehension these groups, particularly African Americans, would have regarding certain health issues and medical research in the U.S. Thomas and Quinn (1991) postulated that the history of the Tuskegee Syphilis Study and the negative, although reasonable, impressions African Americans hold regarding the U.S. healthcare system negatively impact HIV prevention interventions. These negative feelings are also the results of some of the prominent beliefs within African American culture regarding the conspiracy theory of AIDS.

Conspiracy theories. The belief about government-led genocidal plots against African Americans still exists in the African American community. When African Americans were enslaved, the slave owners supported and encouraged increased reproduction in order to strengthen their labor force. Once Blacks were no longer slaves, the shift was made to curb and control the growth of the population of ‘undesirables.’ Taking note from these times and others when it seemed as if controlling Black fertility was at the focus of many governmental programs in America, it is reasonable for the African American community to see the AIDS epidemic as another attempt at extermination. These beliefs represent a major barrier to HIV prevention education and intervention efforts for African Americans. Bogart and Thorburn (2005) conducted a telephone study of a sample of 500 African Americans about their endorsement of HIV/AIDS conspiracy theories in relationship to attitudes about condoms and consistent condom use. The results showed a significant number of the participants supported

HIV/AIDS conspiracy theories and the strength of these endorsements were significantly associated with negative condom attitudes and inconsistent condom use. This ultimately impacts the health and HIV-related risks of African American women as they engage in intimate heterosexual relationships.

Community structural factors. Aside from the cultural characteristics found amongst the members of the African American community, there are also factors pertaining to the structural and environmental commonalities found amid these communities nationwide. Factors related to marginalized social status and stigma, poverty and segregation, lack of housing, unemployment, and incarceration are a few of the ills that directly and indirectly affect the health status of this community (Fullilove, 2006). These aforementioned issues have led to the structural decline of collaborative and health-supportive relationships among individuals, groups, and the multiple organizations and institutions within the African American community that provide protective properties against the spread of HIV. The culmination of these community variants increases experiences of distress and stress for all community members, especially for those who are female.

Rural communities. Another community structural component influencing the rate of HIV infection in the U.S. is living in rural areas. Limited access and availability of medical care, subpar education, unemployment and underemployment, lack of public transportation, and social stigma can create challenges for HIV prevention and care in rural communities (Rural Centers for AIDS/STD Prevention [RCAP], 2009). Rural communities are also influenced by discrimination and stigmatization of HIV and gay, lesbian, bisexual, and transgender (GLBT) sexuality. This stigma can lead to isolation,

social hostility, violence, and increased sexual risk-taking in rural areas. Crosby, Yarber, DiClemente, Wingood, & Meyerson (2002) revealed that in addition to these aforementioned challenges, low income African American women living in rural areas were more likely to report no use of condoms, no HIV counseling during pregnancy, no preferred method of HIV/STD protection, engagement in sex with a partner who has never been tested for HIV, and belief that partner is HIV negative regardless of HIV testing. Community-level variables inform not only the cultural specificity of the SAHARA intervention for African American women, but also influence how the program was applied and translated for application with African American women living in areas of Georgia and Kentucky.

Policy and societal system factors. Still, there are systems, policies, procedures, and laws that define and shape health status on a larger scale within society. This final sphere of influence emphasizes the role of societal and policy factors on health and wellbeing. Policy factors pertain to the regulations, ordinances, and laws enacted by government through various procedures for the purpose of achieving a specified goal. Health-related policies seek to reduce death and disease and improve overall health. Policies can directly and indirectly impact health by restricting behavior, manipulating access to care, and controlling the allocation of funds and resources. Societal factors pertain to the pervasive, persistent, and often power-based social systems that operate in the multiple arenas of our lives within society. Examples of these societal factors are racism, classism, sexism, and homophobia. Both policy and societal factors affect African American women's HIV-related risks. The Theory of Gender and Power

(Connell, 1987) is used as a framework to better understand the relationship that exists between sexism and HIV risks.

Risk Reduction Strategies

In order to address the HIV crisis among African American women it is important to examine the protective (risk reduction) factors that contribute to HIV risk reduction, particularly in terms of including these factors in HIV behavioral interventions. Pollard, Hawkins, and Arthur (1999) defined protective factors as “factors that mediate or moderate the effect of exposure to risk factors, resulting in reduced incidence of problem behavior” (p.145). Several prevention strategies aimed at addressing the individual, interpersonal, social, community, financial, and structural factors have been found effective at reducing the risk of contracting HIV. Prevention research has noted several proven risk reduction strategies, such as condom use (Davis & Weller, 1999; Weller & Davis-Beaty, 2002), condom access (Cohen et al., 1999), the provision of sterile syringes for drug use (Fuller, Ford, & Rudolph, 2009), education about HIV transmission, acquisition, and prevention during medical care of persons living with HIV/AIDS (PLWH) (CDC, 2001; 2003), STD screening and treatment (Baeten , Strick, & Lucchetti, 2008; Fleming & Wasserheit, 1999; Zuckerman et al., 2007), HIV testing and linkage to care (CDC, 2001; Cheever, 2007), and antiretroviral treatment for persons with HIV (Cohen et al., 2011; DHHS, 2014).

Proper and consistent condom usage is considered as major risk reduction strategy for HIV. A report by the U.S. National Institutes of Health based on a meta-analysis of several condom effectiveness studies concluded that consistent use of condoms can decrease an individual’s HIV transmission risk by 85% (DHHS, 2001). Using data from

the analysis of 25 published studies of serodiscordant heterosexual couples, Davis and Weller (1999) examined the overall estimate of condom effectiveness for HIV prevention. A serodiscordant couple is a relationship in which one partner is HIV+ and the other is not. The researchers gathered information on HIV serology and condom usage from the selected studies. Condom usage was defined as always (in 100% of penetrative acts of vaginal intercourse), sometimes (in 1-99%, 0-99%, and 1-100% of penetrative acts of vaginal intercourse), or never (in 0% of penetrative acts of vaginal intercourse) (Davis & Weller, 1999). Effectiveness was determined by calculating HIV transmission rates for cohorts of always-users and cohorts of never-users. Davis and Weller's (1999) results revealed the condom's effectiveness of preventing HIV transmission is an estimated 87%. Weller and Davis-Beaty (2002) reviewed the data again in order to provide a better estimate of condom effectiveness for reducing heterosexual HIV transmission. The selection criteria for inclusion of studies again required: (1) a longitudinal study design; (2) data from sexually active heterosexual, HIV serodiscordant couples; (3) HIV serology data; and (4) condom usage data for cohorts of always-users (100% of penetrative acts of vaginal intercourse) and never-users (0% of penetrative acts of vaginal intercourse) (Weller & Davis-Beaty, 2002). The results again confirmed that the effectiveness of condoms to reduce the transmission of HIV among heterosexual, HIV serodiscordant couples was approximately 80.2% (Weller & Davis-Beaty, 2002). Still, other researchers examining condom promotion and effectiveness have produced results estimating condom effectiveness as high as 90% (Hearst & Chen, 2003). In 2000, the National Institute of Allergy and Infectious Diseases (NIAID) hosted a workshop for the purpose of examining the scientific evidence of condom effectiveness

at preventing sexually transmitted diseases (AMFAR, 2005). Overall, summary findings from the workshop reported that male condoms, when used correctly and consistently, were 80-95% effective in reducing HIV infection risk (AMFAR, 2005).

The correct and consistent use of female condoms was also proven to reduce STD risk in women. French et al. (2003) randomly assigned 1,442 female participants to either a male condom or a female condom intervention group in order to compare STD rates between the groups. The results indicated that participants from the female condom intervention arm reported slightly lower rates of STDs over time compared to the male condom intervention participants (French et al., 2003). Comparative research on female and male condoms is limited, but the use of the female condom is lower than the more widely used male condom. While the adoption and continued use of female condom is high in developing countries (Fontanet et al., 1998; Musaba, Morrison, Sunkutu, & Wong, 1998), U.S. women's use of the female condom does not appear to be widespread. A few actual-use studies demonstrated short-term adoption of the female-controlled method (Kalichman, Williams, & Nachimson, 1999; Van Devanter et al., 2002). Some barriers to female condom acceptance point to difficulties with insertion and negotiating its use with a partner (Hoffman, Mantell, Exner, & Stein, 2004). Research and advocacy for this alternative barrier method continues to grow. Newer models of the female condom are being evaluated for their effectiveness at preventing pregnancy and STD transmission (AVERT, 2014). A study of over 1100 female clients from an STI clinic in Alabama revealed a significant increase in female condom-protected episodes of sex along with decreases in insertion difficulties due to practicing insertion with an anatomical model and guided self practice with a nurse (Artz et al., 2000).

Included in the aim to reduce risk of HIV transmission by way of engaging in safer sex practice through condom use are the contributory factors of condom use self-efficacy, condom barrier beliefs, and partner communication. Condom use self-efficacy is a central construct of consistent condom use. Forsythe and Carey (1998) defined condom use self-efficacy as the belief in one's ability to assert control over his or her motivations, behavior, and social environment to use condoms. The influence of various types of self-efficacy is specific to their intended behaviors. Baele, Dusseldorp, and Maes (2001) discovered that a global measure of self-efficacy along with a measure of some specific aspects of condom use self-efficacy, such as assertiveness and emotion control, were the strongest predictors of intended and actual condom use behaviors in a group of adolescents. Farmer and Meston (2006) discovered in a study of ethnically diverse university students that a multitude of factors (condom use barriers, condom attitude, sexual communication satisfaction, etc.) accounted for a large proportion of variance in condom use self-efficacy. Several correlational studies indicate a positive association between condom use self-efficacy and frequency of condom use (Bansen-Engquist & Parcel, 1992; Bansen-Engquist et al., 1999; Heinrich, 1993; Svenson, Ostergren, Merlo, & Rastam, 2002). O'Leary, Jemmott, and Jemmott (2008) purported that self-efficacy outweighed in importance the characteristics of male partners in improving condom use at last sexual act.

Researchers also found that positive attitudes toward condom use and confidence in the ability to use condoms correctly and consistently correlates with higher rates of consistent condom use (DiIorio et al., 2000; Lindberg, 2000). Sacco, Levine, Reed, and Thompson (1991) created a scale, the Condom Attitude Scale (CAS), which provided

evidence of the multidimensionality of condom attitudes along with their abilities to predict condom use. Larsen and Collins (1994) provided similar results in their creation of the UCLA Multidimensional Condom Attitudes Scale (MCAS). One study determined that teens with more favorable attitudes towards condom use had a higher likelihood of intended condom use (Small, Weinman, Buzi, & Smith, 2009). Rosenberg (1956, 1960) and Fishbein (1963) established in earlier works that the attitude toward an object is based on beliefs about the object. Prevention research showed consistent condom use was strongly predicted by a woman's perceived barriers to condom use (Reisen & Poppen, 1995). St. Lawrence and colleagues (1999) examined the multiple barriers that may prohibit a woman's use of condoms and created and psychometrically evaluated the Condom Barriers Scale. Several studies confirmed that majority of variance observed in condom use among women could be explained by perceived barriers to condom use (Wendt & Soloman, 1995; Wulfert & Wan, 1995).

As noted by the Theory of Gender and Power (Connell, 1987), power differentials that favor men create health risks for women. Social norms impede women's discussion on topics of partner sexual history, condom use, and STD/HIV prevention (DiClemente, Wingood, Harrington et al., 2004; DiClemente et al., 2009). Communication skill building, such as using assertive communication, negotiating safer sex and risk reduction strategies with sexual partners, and role-playing skills, serve as integral components of many of the most efficacious HIV interventions (Rotheram-Borus, Swendeman, & Flannery, 2009). Partner communication was also positively correlated with condom use. Sterk, Klein, and Elifson (2002) discovered that African American women who reported higher levels of communication with their partners reported higher condom use self-

efficacy. Sales et al. (2012) purported that frequency of partner communication was an integral component in increasing consistent condom use and proportion of condom-protected sex acts.

Assessment of Current Interventions

The CDC's Division of HIV/AIDS Prevention (DHAP) is the leading force in orchestrating the research, sponsorship, and dissemination of HIV behavioral interventions. DHAP's Prevention Research Synthesis Project (PRS) searches and reviews HIV, AIDS, and STD prevention research literature in order to create a cumulative database containing this information to better assist prevention partners. This database is regularly used to update the Compendium.

The Compendium. The CDC developed the Compendium of Evidence-Based HIV Behavioral Interventions to aid prevention service providers and others seeking science-based interventions for the prevention of HIV transmission. All of the included interventions were required to undergo experimental research designs that allowed for successful results to be attributed to the actual interventions. The Compendium consists of three chapters: (1) "Linkage to, Retention in, and Re-engagement in HIV Care (LRC)"; (2) "Medication Adherence (MA)"; and (3) "Risk Reduction (RR)." The "Risk Reduction" chapter contains information on the 84 behavioral EBIs. For an intervention to be included in the Compendium, it must meet rigorous and stringent efficacy criteria.

DEBI and HIP programs. In 1999, in conjunction with the initial release of the Compendium, a capacity-enhancing project was created. The Diffusion of Effective Behavioral Interventions (DEBI) project was designed as a national-level strategy in HIV/STD prevention. DEBI provided an additional medium for the translation and

adoption of a variety of science-based interventions into the repertoire of CBOs and local health agencies by offering training and technical assistance (Danya International Inc., 2012). DEBI was a critical component of the DHAP's Capacity Building Branch that coordinated and offered nationwide trainings to persons interested in implementing EBIs. This project was an essential resource for aiding communities in dire need of more prevention alternatives. DEBI was converted to the High Impact HIV/AIDS Prevention (HIP) Project in 2011 to comply with the 2010 National HIV/AIDS Strategy prevention goals set (Danya International Inc., 2012). HIP emphasized more focus on behavioral interventions that were deemed to be cost-effective, scalable, and beneficial. Historically SISTA was designated as one such intervention.

Darbes, Crepaz, Lyles, Kennedy and Rutherford (2008) conducted a meta-analytic review of HIV/STD behavioral interventions designed for heterosexual African Americans. The purpose of this review was to identify efficacious intervention characteristics common among most of the interventions and to determine the level of the efficacy for reducing the incidence of STDs and HIV risk behaviors overall. With this information, the researchers could also make recommendations for the use and continued research of empirically-driven and evidence-based interventions. Darbes and colleagues (2008) completed an extensive search of electronic databases, journals, reference lists, and contacted researchers and research organizations in order to identify randomized control trial (RCT) studies of HIV behavioral interventions conducted between 1988 and 2005. Thirty-eight randomized control trial studies containing a total of 14,983 African American participants were chosen using stringent selection criteria. Darbes and colleagues used the random effects model to compare the intervention effects along with

additional statistical analyses to determine whether features such as methodological quality and trial and sample characteristics impacted effect sizes. From this analysis, it was determined that efficacious intervention characteristics included cultural specificity, peer education, skills training, multiple sessions, and opportunities to practice newly learned skills (Darbes et al., 2008). In the past 25 years, numerous individual-level, group-level, and community-level behavioral interventions containing these same core components have been reviewed, analyzed, and deemed as efficacious and appropriate for dissemination (Albarracin et al., 2005; Lyles et al., 2007; Noar, 2008).

Similar characteristics were also found in efficacious HIV/STI behavioral interventions for African American females. Crepaz et al. (2009) conducted a meta-analysis of 37 published HIV/STI behavioral intervention studies for African American females. Crepaz and colleagues (2009) discovered behavioral interventions for African American females significantly impacted a reduction in HIV-risk sex behaviors when they were specifically directed to African American females and their culture, were delivered by females, and intended to empower women to seek equality in their intimate relationships by focusing on assertiveness, negotiation skills, and self-efficacy.

Computer-based programs. According to the Rural Centers for AIDS/STD Prevention (RCAP) (2009), computer technology-based interventions offer viable alternatives to the traditional behavioral interventions delivered by health professionals and laypersons. These computer technologies are advantageous because they include interactive and multimedia features that promote behavior change, they possess tailoring capabilities, they can be applied to a variety of clinical settings, intervention fidelity is preserved, and the cost of implementation is considered minimal when compared to the

traditional behavioral interventions (Noar, Black, & Pierce, 2009). Currently computer-based interventions have been tested on several at-risks populations such as men who have sex with men (MSM), heterosexual adolescents and adults, women, as well as MSMs and adolescents from rural areas (Bowen, Horvath, & Williams, 2007; Roberto et al., 2007). Noar, Black, and Pierce (2009) purported computer-based interventions are most efficacious when single gender populations are the target, there are multiple sessions, and individualized tailoring and stages of change models are used.

Although research was able to determine the core components of efficacious behavioral interventions, a more difficult challenge arose with the replication of these interventions in new communities or with different populations compared to the original communities and populations studied in the randomized control trial (RCT) experiments. This process of evaluating the move of research knowledge to the real-world application of health practice to serve the public is known as translation science (Sussman et al., 2006).

Unfortunately, the translation from science to service presents an obstacle towards adoption of these efficacious interventions in real-world settings and clinical practice. EBIs often need to undergo adaptation in order to better serve a target population or setting that differs from that of the research population and/or agency originally studied in the randomized control trial. The translation and dissemination of valuable interventions is often hindered by a plague of barriers and challenges that come with the territory of real-world, clinical application. Community and clinical settings often have inadequate numbers of available and suitably trained employees, encounter logistical issues, experience funding shortages, and have time and resource constraints (Jemmott,

Jemmott, Hutchinson, Cederbaum, & O' Leary, 2008; Rietmeijer, 2007; Ward, 2007). Additionally, interventions with multiple sessions formats require extensive time commitments from staff and participants, can be difficult to schedule, and are often labor intensive (Jemmott et al., 2008). There is also the issue of maintaining a high level of fidelity through delivery of the same activities and exercises in the same duration, format, and intensity with similar clients and cultural settings as established in the original trial of the intervention (Solomon, Card, & Marlow, 2006). One of the promising alternatives for addressing these issues is the utilization of computer-technology based HIV prevention interventions (RCAP, 2008).

According to Noar, Black, and Pierce (2009), computer-technology based interventions are those that use computer technology as either the primary or sole channel for delivery. Computer-based interventions offer a myriad of solutions to overcome the barriers mentioned earlier. These types of interventions require lower cost of implementation in both human and funding resources, they are usually brief and flexible, and can be employed in various settings such as clinics and CBOs. More importantly, fidelity is better maintained because the intervention content is standardized, although it can still be customized for individuals through interactive computer algorithms.

Lightfoot, Comulada, and Stover (2007) performed a study to discover the efficacy of a computerized intervention for reducing sexual risk behaviors in a group of high-risk adolescents. Delinquent youth, defined as youth involved in the juvenile justice system, are at increased risk of contracting HIV because of engagement in unprotected sex and because of the likelihood of substance use accompanying sexual activity. The researchers assigned 133 delinquent youth who were attending alternative school to either

the computerized intervention group; small interpersonal groups in which the intervention was delivered by a facilitator, or a control condition. Sexual behavior three months after the conclusion of the intervention was the dependent variable of interest. Results revealed youth in the computerized intervention were less likely to engage in sexual activity compared to the small-group participants, and smaller percentages of these youth reported continued engagement in unprotected sex.

Similar results were reported in another study of a computer-based intervention (Grimly and Hook, 2006). The researchers took a sample of 430 predominantly African American men and women seeking services at an urban STD clinic. The efficacy of a single, 15-minute computer-based multiple health risk assessment with an intervention message (intervention group) versus a 15-minute computer-based multiple health risk assessment without an intervention message (control group). Grimly and Hook (2006) also examined biological specimens from returning clients in each of the treatment conditions for presence of gonorrhea or Chlamydia. The outcome measures of interest were increases in condom use and lower rates of STD infection. The findings from this study revealed that after six months, 32% of the intervention group compared to 23% of the control group self-reported consistent condom usage. Regression analysis revealed that group assignment was the only statistically significant predictor of STD infection at follow-up (OR = 1.91, 95% confidence index = 1.09, 3.34; $p = 0.043$). Noar, Black, and Pierce (2009) performed a meta-analysis of unpublished and published studies of computer-based interventions. Twelve randomized control trials were included in this analysis and results revealed an effect size of $d=0.26$ (95% confidence interval = 0.20, 0.32; $z = 8.74$, $p < 0.001$; $N = 4639$) for condom use was comparable and favorable to

previously tested interventions delivered in-person by human facilitators. The preference for utilizing computer-based interventions for real-world application is growing exponentially for these very reasons.

SAHARA Program

Sistas Accessing HIV/AIDS Resources At-a-click (SAHARA) is a computer-based HIV prevention program designed to deliver an updated version of the SISTA program. The original SISTA intervention is one of the most widely utilized HIV prevention interventions. Since 1995, SISTA has been a valuable tool in the fight against HIV risk behaviors. Numerous health departments and CBOs across the nation have implemented this behavioral intervention in order to provide important prevention and education services within the community. Each year, hundreds of clinicians and laypersons undergo training through DEBI and other capacity building organizations in order to disseminate the use of this intervention. SISTA is one of the best behavioral interventions because it is theoretically based. This intervention incorporates the constructs and components of both SCT and the Theory of Gender and Power. The multiple curriculum components and the attention paid to the multifaceted lives of African American women also make this intervention a contemporary social ecological model. Despite the widespread implementation of the SISTA project, the effectiveness of its computerized version, SAHARA, has never been tested with African American women in Georgia and Kentucky.

History of SISTA. Drs. DiClemente and Wingood originally created a culturally-tailored, community-based, social skills, HIV prevention intervention for the purpose of increasing condom usage. The intervention later became known as Sisters Informing

Sisters on Topics of AIDS (SISTA). DiClemente and Wingood created a randomized control trial in order to evaluate the efficacy of the intervention (DiClemente & Wingood, 1995). The study was performed in a predominantly African American neighborhood in San Francisco, California named Bayview-Hunter's Point. The study sample included 128 sexually active, heterosexual African American women between 18 and 29 years of age. The participants were divided into three study conditions: a delayed HIV education control group, a HIV session group, and the social skills intervention group. The delayed HIV education control group and the one-session HIV group served as control arms.

The social skills intervention group participants attended education sessions that emphasized HIV-risk reduction information, increasing skills in sexual assertiveness and communication, proper condom usage, and sexual self-control, and creating partner norms that encouraged condom usage. Condom use was the primary outcome variable examined in the study. HIV risk behavior knowledge, sexual self-control, sexual communication, partner norms, and condom use skills were the secondary outcomes of the intervention. Results from the study revealed that women who received the social skills training demonstrated higher condom use, better communication skills, and higher self-efficacy compared to women in the delayed HIV education control group and the HIV session group. The differences in outcome variables between the delayed HIV education control group and the HIV session group were not statistically significant. Participants assigned to the social skills training groups reported higher rates of condom usage compared to the control groups at both the 6-month and one year follow-up interviews (DiClemente & Wingood, 1995). This social skills training group became SISTA.

Traditional SISTA intervention overview. Originally, SISTA was presented as a five-session peer workshop focusing on ethnic and gender pride, skills training, decision-making, and reducing sexual risk behaviors. Each of the five sessions lasted approximately two-hours and was based on an intensive curriculum that involved role-plays, open discussions, group exercises, and homework. There was a primary theme in each session. The first session emphasized Gender and Ethnic Pride. The second session focused on HIV/AIDS Education. The third session was dedicated to Self-Assertiveness Skills Training. The fourth and fifth sessions were relegated to Behavioral Self-Management and Coping, respectively. Appendix A provides a more detailed overview of each session.

One of the strongest elements of the SISTA program is that it was created with cultural specificity for African American women. Vinh-Thomas, Bunch, and Card (2003) created a singular yet amalgamated explanation of cultural competence that encompassed the widely varied definitions of the construct. Cultural competence was defined as:

a set of congruent behaviors, attitudes, and policies—including a consideration for linguistic, socioeconomic, and functional concerns that influence behavior (Like, Steiner, & Rubel, 1996) that come together in a system, agency, or among professionals, thus (1) enabling that system, agency, or those professionals to work effectively with the target population (Cross et al., 1989), and (2) resulting in services that are accepted by the target population (Dana, Behn, & Gonwa, 1992). (Vinh-Thomas et al., 2003)

The original SISTA intervention subscribes to this definition in several ways including, using African American female facilitators, engaging in small group discussions with culturally-matched peers, examining the experiences of being an African American woman within sessions, using gender and culture appropriate materials (African American themed images, poetry written by African American women), and focusing on barriers and facilitators of condom use that are specific to African American women's HIV risks.

The success of SISTA was based on its adherence to seven core elements. These elements were as follows: small-group sessions, skilled facilitators, cultural and gender appropriate materials, sexual assertions skills training, tutorial in proper condom application and usage, acknowledgement of cultural and gender triggers that challenge safer sex negotiation, and an emphasis on partner involvement. Each of these elements was fundamental to the effectiveness of the intervention's curriculum, exercises, and activities (SISTA Evaluation Field Guide, 2008).

SAHARA intervention overview. The original SISTA intervention was translated into a computer technology-based program called SAHARA. The traditional procedure for conducting SAHARA involved completing the program in two, one-hour sessions accompanied by a 15-minute wrap-up session with a health educator held on two consecutive days in a week. In order to make the standard HIV education control and the SAHARA interventions more comparable in this study, the two sessions of the SAHARA program were combined into one, two-hour session and there were no 15-minute group wrap-up sessions with a health educator provided. The core components of SISTA are maintained in the computer-based version. For example, video clips of a small group of

African American female friends called the SISTAS are used to represent the small group sessions in SISTA (Card et al., 2011). SAHARA also contains many of the interactive features of the original SISTA program through the use of video clips, interactive exercises, games, quizzes, and simulated role-plays (Card et al., 2011). Each session contains two, 8-minute modules that include full narration, at least one video clip, and allow the user to pause and play at her own discretion. These modules can be made available to the user as part of the interactive program or simply as a stand-alone exercise that allows for repetition of material and self-paced learning. A letter was mailed to the SAHARA intervention creator requesting permission to use the program along with its evaluative measures. A copy of this letter can be found in Appendix B. The program was purchased and Appendix C includes an overview of the actual content of the SAHARA intervention.

Rationale for SAHARA Selection

Based on the research of DiClemente and Wingood (2006) and Darbes, Crepaz, Lyles, Kennedy and Rutherford (2008), an effective culturally sensitive educational prevention intervention is based on sound theoretical frameworks and includes skills training components. This provided the rationale for selecting and evaluating the SAHARA prevention intervention's effectiveness at increasing condom use for a sample of African American women living in Kentucky and Georgia. SAHARA was theoretically based on Social Cognitive Theory and the Theory of Gender and Power. The combination of these two theories provided an emphasis on ethnic and gender pride through promotion of African American women's attributes and accomplishments along with delivering opportunities to learn and role-play communication, relationship, and

condom use skills. African American women's ability to incorporate protective and health-promoting behaviors is increased when multiple levels of influence and context are addressed within prevention interventions. Also a computer-based intervention can be employed in various settings, requires less time, provides flexibility, and fidelity is better maintained (Noar, Black, & Pierce, 2009).

Another reason that SAHARA was selected for study was because its prevention intervention predecessor, SISTA, was designated as one of the interventions that would no longer be supported by the Division of HIV/AIDS Prevention (DHAP) (Cleveland, J. C. & Purcell, D. W., 2013, Cleveland & Purcell to Prevention Partners, August 26, 2013). DHAP underwent an exhaustive review of all interventions diffused by the DEBI project in order to determine which interventions were the least costly, were the most effective, and focused on target populations with the highest HIV incidence rates. According to this data-driven selection formula, SISTA was eliminated from DHAP's prevention portfolio and the CDC would no longer offer trainings or capacity building assistance for this evidence-based intervention. Although SISTA was a popular and widely disseminated prevention intervention used for African American women, it was time-intensive and costly. According to a sample budget provided by DHAP's Effective Interventions website, an annual budget for eight cycles (five sessions and two booster sessions) of SISTA could cost a CBO at least \$70,000 (Danya International Inc., 2012). Compared to SISTA, SAHARA is much less costly and time-intensive.

SAHARA was primarily selected for use in this research because preliminary efficacy was previously established for the use of this computer-based HIV prevention intervention with a group of African American women living in Atlanta, Georgia.

Wingood et al. (2011) examined the use of the SAHARA HIV intervention program in a randomized control trial with 135 African American women. The research revealed that compared to the control participants, SAHARA participants were more likely to report consistent condom use for vaginal and oral sex, were more knowledgeable about HIV/STD prevention, and reported higher condom self-efficacy scores (Wingood et al., 2011). These findings inspired an interest to examine the potential effectiveness of enhancing the HIV protective behaviors through the SAHARA program with a group of African American women living in urban and rural areas.

Research Questions

The goal of this study was to assess whether behavior change in HIV-related behaviors among a sample of African American women located in areas of Kentucky and Georgia were evidenced as a result of participation in the SAHARA intervention program compared to that of the control program, a group-delivered standard HIV education intervention.

The study addresses the following research questions:

1. To what extent does SAHARA change STD/HIV Risk Behavior Knowledge scores among African American women living in Georgia and Kentucky compared to a standard HIV education?
2. To what extent does SAHARA affect perceived Condom Use Self-Efficacy scores among African American women living in Georgia and Kentucky compared to a standard HIV education?

3. To what extent does SAHARA impact perceived Condom Barrier Beliefs scores among African American women living in Georgia and Kentucky compared to a standard HIV education?
4. To what extent does SAHARA impact Partner Communication Frequency rates about sexual topics among African American women living in Georgia and Kentucky compared to a standard HIV education?
5. To what extent does SAHARA change the number of acts of Consistent Condom Use during penetrative vaginal intercourse among African American women living in Georgia and Kentucky compared to a standard HIV education?

These research questions are important because they aimed to discover if measurable behavior change resulted from the implementation of a computer-based version of an efficacious behavioral intervention created to decrease African American women's HIV-related behaviors as applied to a sample of African American women living in Georgia and Kentucky. These aforementioned research queries provided the direction for an examination of a relationship between the application of the SAHARA intervention and engagement in HIV-related protective behaviors among a sample of African American women in areas of Georgia and Kentucky. Data were gathered from self-report surveys administered before the intervention and again 14 days and 30 days after the intervention. These data were statistically analyzed for differences between pretest and posttest scores or follow-up scores.

As community-based organizations and health departments are being required to implement evidence-based interventions in order to secure federal, state, and local funding in the fight against HIV/AIDS, evaluation of such behavioral interventions is desperately needed and encouraged. Applying this HIV/STD intervention within a new setting among a different target population provided essential details about the adaptability and generalizability of the program.

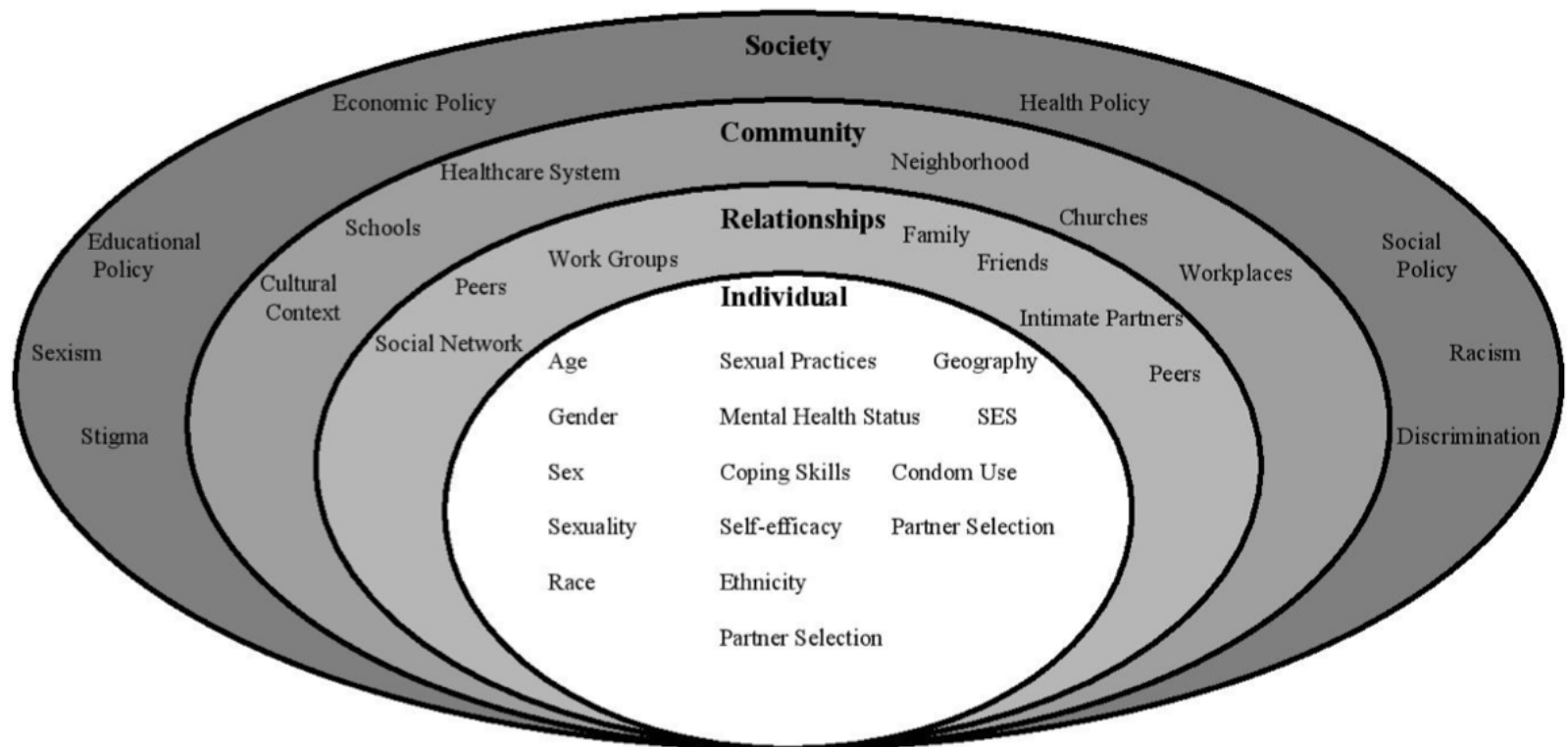


Figure 1. A framework for the socioecological model of contextual factors and determinants of HIV vulnerability.

Chapter Three: Methodology

This section describes the methodology used in this research and contains the recruiting techniques, study design, procedures and materials, as well as an overview of the statistical analysis that were used to examine the data. The data gathered were statistically analyzed using analysis of variance with repeated measures in order to detect differences between the control and SAHARA groups after implementation of the interventions.

SISTAs Accessing HIV/AIDS Resources At a click (SAHARA) is an interactive, computer-based behavioral HIV prevention intervention that is both culturally-, and gender-specific to African American women. SAHARA is designated for implementation in clinical and/or community-based settings for the purpose of reducing HIV sexual risk-taking behavior by increasing condom use among African American women (Wingood et al., 2011). Pretest and posttest surveys assessing consistent condom use, HIV and STD education, condom use self efficacy, condom use barriers, and amount of partner communication were provided to all study participants.

Recruitment and Sampling Techniques

Funding awards and grants for graduate student research provided the funding needed to produce advertisement materials such as institutional review board (IRB) approved posters, flyers, and print ads to advertise the research opportunity to the general public. The researcher posted these recruitment materials to her personal profile pages on social media sites such as Facebook and Twitter. Participants for the study were solicited from places where African American women congregated. These places include, but were not limited to, universities and student centers, churches, food courts, local health

clinics, community health organizations, beauty salons, social groups, sororities, and businesses that predominantly cater to African American patrons. Electronic posting and email announcements were also posted to electronic mailing lists that primarily catered to African American females such as Black sororities and Black student organizations. Please see a list of facilities where advertisements were placed in Appendix D.

With the permission of these aforementioned facilities, an African American female research team member actively approached and recruited each potential participant while they were within the outreach venues such as health fairs, church services, and community festivals. The potential participants were provided a brief description of the study, assessed for eligibility to participate, and asked for verbal consent to join the study. Each potential participant was invited to engage in a health education program and to complete three online surveys regarding questions about condoms, condom use, attitudes and confidence in using condoms correctly, communication skills, and HIV knowledge. Each participant was then asked to provide her name and email address in order to have a research team member email the online pretest survey to her. The same method was used with participants that contacted the research members via email or telephone. A copy of the solicitation script is included in Appendix C. Recruited females who declined participation were thanked for their consideration and time.

Study Participants

Participants were recruited from throughout Lexington, Kentucky, Frankfort, Kentucky, Cedartown, Georgia; and surrounding areas. The participants were females who were at least 18 years old, identified racially as Black/African American, and had

either engaged in or planned to engage in heterosexual sex. For the purpose of this study, heterosexual sex was defined as penetrative vaginal sex with a male. Thus, participants that identified as a sexual orientation other than heterosexual were not excluded from engaging in the study because of the fact that some Black/African American women may consider themselves to be lesbian or bisexual and still engage in sexual intercourse with men for reasons such as sex work or transactional sex in order to secure needed resources. DiClemente and Wingood's (1995) initial randomized control trial was tested on a group of participants that ranged in ages from 18- to 29-years old. For the purpose of this research, the age range was expanded to include all ages 18 years and older because HIV is one of the ten leading causes of death for African American women ranging between 15 to 64 years of age (CDC/NCHS, 2011). HIV status was also irrelevant to participation in this research because some women may not know their HIV status and others who may be HIV+ could still benefit from the intervention by gaining education and learning skills that would decrease their risks of spreading HIV to others. If participants were neither female nor Black/African American, they were allowed to participate in the research but their data were excluded from analyses.

Sample Size

An online statistical calculator program determined that with an alpha set at 0.5, a desired statistical power level of 0.80, and an estimated large effect size (Cohen's *d*) of 0.5 calculated that at least 50 participants would be needed in each condition group (Soper, 2014). This would result in 50 women for the standard HIV education control condition and 50 women in the SAHARA condition. A time sampling method was used during recruitment resulting in the first 50 participants being assigned to the control

group and the remaining recruited participants assigned to the SAHARA condition. Most of the standard HIV education participants were undergraduate students who were conveniently selected from intact psychology courses at two universities in Kentucky. Through convenience sampling, a non-equivalent control group was formed from this intact group of students.

Study Setting

Kentucky and Georgia are located in the southeastern area of the United States and are designated by the CDC as two of the states belonging within the geographic region called the South. In 2008, the highest rates of people living with HIV resided in the South and Northeast (CDC, 2013b). Kentucky has a total population of 4.3 million. Lexington is based in Fayette County and is one of Kentucky's major cities with a population of approximately 300,000 people. African Americans comprise 8.2% of Kentucky's population and 13.4% of the population of Lexington, Kentucky (U.S. Census Bureau, 2013). At the end of 2010, 687 people in Fayette County were living with an HIV or AIDS diagnosis (Emory University, 2014). Frankfort is the city capitol of Kentucky and has a population of 27,453 and African Americans comprise 16.5% of the population of the city (U.S. Census Bureau, 2013). Frankfort is a part of Franklin County and 49 people in this county were HIV+ in 2010 (Emory University, 2014). Georgia has a population total of approximately 9.9 million and African Americans comprise 30.5% of the population (U.S. Census Bureau, 2013). Cedartown is a small town in northwest Georgia with a population total of 9,782 with African Americans accounting for 18.8% of this population. Cedartown is within Polk County and 22 people in this county had a HIV diagnosis at the end of 2010 (Emory University, 2014).

For participants living in Kentucky, the study took place within classrooms, computer labs, and offices equipped with computer access on the campuses of two universities located in either Lexington or Frankfort, Kentucky. All of the standard HIV education participants came from Kentucky while the SAHARA participants were from both Kentucky and Georgia. The self-selected participants from Kentucky were assigned to the control group and received the standard HIV education presentation as a group in a classroom. Because the SAHARA prevention intervention is a computer program, Kentucky participants assigned to the SAHARA group received the intervention in either a computer lab or an office with computer access. All participants living in Georgia were assigned to the SAHARA group. In Georgia, the research setting was a meeting area in the local public library or a home or work office. These participants were either supplied with a laptop or allowed to use their personal laptops and/or home computers to undergo the SAHARA prevention intervention.

Study Design

The study design for this prevention intervention was a quasi-experimental non-randomized pretest-posttest design. It included a standard HIV education control group and a SAHARA prevention intervention group. The SAHARA group received the computerized SAHARA prevention intervention via a desk computer or a laptop and the control group received a two-hour general sexual health information session with a focus on HIV/AIDS prevention. Appendix E provides a copy of the PowerPoint slides shown to the control group in the HIV/AIDS education session. A trained African American, female, health education facilitator from a local HIV prevention community-based organization facilitated the session to the control group. All participants received a 30-

minute break along with a meal as part of the research participation incentives. This research modified the traditional SAHARA intervention design from two, 60-minute sessions that concluded with a 15-minute small group session to one, 120-180 minute session (individual completion times varied) without the inclusion of a 15-minute small group. This change allowed the SAHARA intervention group participants to receive the prevention intervention in one session and was more accommodating at times when there were not enough participants to form a group. The researcher facilitated the SAHARA intervention group and was available to answer any questions regarding the SAHARA intervention material during and after the session. The effectiveness of the computer-based behavioral intervention to change protective behaviors against HIV was determined by comparing pre-, post-, and follow-up differences between the SAHARA and control group. The IRBs at the University of Kentucky and Kentucky State University approved the study prior to implementation.

Procedures and Materials

Participants completed informed consent and baseline assessments online once they received an email containing a hyperlink to the survey. The option to randomize participants into either the standard HIV education control or the SAHARA groups was limited due to the use of both time and convenience sampling. The pretest, posttest, and follow-up surveys took approximately 30-45 minutes each to complete. Both groups received the pretest surveys prior to undergoing either the standard HIV education control or the SAHARA prevention intervention. The pretest survey was given to all participants in order to provide baseline data before being assigned to the control and SAHARA groups.

The standard HIV education program that the control group participants received was information on basic HIV prevention. The standard HIV education control program was delivered to a group of 15-20 participants via lecture and PowerPoint presentation by a trained female, African American health educator. A total of 52 participants were eligible for participation and placed in treatment groups. For the standard HIV education control group, 39 participants were self-selected for the standard HIV education control group with 14 of the 39 completing either posttest or follow-up data. In order to accommodate for 39 standard HIV education participants and the limited size of the classroom, the participants were divided into two groups that underwent the study on two separate days during the same week. The standard HIV education control intervention consisted of educational information on topics that included a description of HIV, how it is transmitted, how to protect against HIV transmission, and testing options for detecting the disease. The group also watched the health facilitator execute a condom application demonstration. At the end of the presentation, the health facilitator allowed the research participants to ask any questions about the educational information and materials provided. The standard HIV education control intervention lasted up to two and a half hours and included a 30-minute break.

The SAHARA group participants received the prevention intervention in a computer lab, an office with computer access, or a meeting area in the local public library. The SAHARA prevention intervention program was accessed via the use of a flash drive and was self-guided. Each participant was also provided with a set of earphones to listen to the audio portions of the SAHARA program. Sixty-four percent of the SAHARA group participants completed the prevention intervention individually in

the presence of a research team member. The research team member was available to answer questions and help the participant navigate the computerized program, if needed. The SAHARA intervention emphasized ethnic and gender pride through an emphasis on the accomplishments and attributes of African American women. Through the use of video vignettes and interactive games, the SAHARA prevention intervention program provided HIV/STD education, HIV risk-reduction information and skills training to improve condom use, relationship advice, and communication skills for modeling and role-playing.

The two and a half hour sessions for both the standard HIV education control and the SAHARA intervention participants consisted of undergoing the first portion of the program during the first hour, followed by a 30-minute break for food, and ended with completing the remaining portion of the interventions in the final hour. Participants in the standard HIV education control and the SAHARA intervention arms of the study completed all surveys online and underwent the interventions at the aforementioned designated settings. The study lasted at least six months in order to allow for all participants to complete the 30-day follow-up survey to determine any possible lasting intervention effects. All participants received email notifications containing the hyperlinks to each survey for completion.

Measures

The study used a cross sectional approach for gathering data through the administration of a baseline pretest, a posttest 14 days after intervention, and a follow-up survey 30 days after intervention. A copy of the original pretest and posttest used in the original randomized control trial was granted for use in this research (Appendix G). The

surveys consisted of 176 questions that gathered information about demographic characteristics, condom use, relationship status, HIV/STV knowledge, sexual history, alcohol and drug use, intimate partner violence, and beliefs about African American women. The surveys included several scales assessing for HIV knowledge, communication frequency, condom-use self-efficacy, and barriers to use of condoms that have been previously validated for use with African American women.

Independent variable. The independent variable was group assignment across time; the SAHARA prevention intervention group or the standard HIV education control group.

Dependent variables. The primary outcome dependent variables were STD/HIV risk behavior knowledge (SHRBK), condom barriers, condom use self-efficacy (CSE), partner communication frequency (PCF), and condom consistency along with proportion of condom-protected acts. DiClemente and Wingood (1995) and Wingood et al. (2011) conducted research assessing these same dependent variables in the original SISTA study and the SAHARA preliminary study, respectively. The surveys contained several subscales that measured the dependent variables. These subscales were the STD/HIV risk behavior knowledge (SHRBK) subscale, the Condom Barrier Scale (CBS) (Sacco, Levine, Reed, & Thompson, 1991), the Condom Use Self-efficacy (CSE) subscale, and the Partner Communication Frequency (PCF) scale. Again, these were the same scales and items used in the previous research conducted by Wingood et al. (2011) on the preliminary efficacy of SAHARA. Dr. Wingood was contacted regarding the reliability and validity data of the original scales and measures used in the preliminary research of SAHARA, however this information was unavailable. Therefore, information on the

reliability and validity measures originally reported by Wingood et al. (2011) was used for this research.

STD/HIV risk behavior knowledge. The STD/HIV risk behavior knowledge (SHRBK) subscale for African American women ($\alpha = .70$) was numbered as items Q77 through Q86 on each online survey. The scale contained ten items with true or false responses in which correct answers were scored '1' and incorrect answers were scored '0'. Total scores potentially ranged from 0 to 10. Drs. DiClemente and Wingood (1995) created this scale and higher scale scores indicated greater HIV knowledge. An example item is 'Having an STD increases a person's risk of getting HIV'.

Condom barrier scale. The CBS is a subscale of the Condom Attitude Scale (Sacco, Levine Reed, & Thompson, 1991). The original Condom Barrier Scale ($\alpha = .86$) was previously evaluated for validity and reliability among African American women by St. Lawrence et al. (1999) and started with 42 items but was eventually reduced to 29 items. The 29-item version of the CBS was found to have a reliability estimate of $\alpha = .94$ with subscale coefficients ranging from .78 to .90 (St. Lawrence et al., 1999). The version of the CBS included in this research was comprised of eight items with responses that ranged on a Likert-type scale from 1 to 5, where '1' represents 'Strongly Agree' and '5' represents 'Strongly Disagree'. These items were numbered as Q88 through Q95 on each online survey and the scale's total scores potentially ranged from 8 to 40. Lower scales scores are indicative of greater perceived beliefs that using condoms would be a barrier to the engagement of sexual intercourse. This scoring assignment differs from prior research work with this measure. Earlier research-related use of this scale reflected reverse scoring on a Likert-type scale from 1 to 5, where '1' represented 'Strongly

Disagree' and '5' represented 'Strongly Agree'. Therefore, higher scores reflected greater perceived barrier beliefs about condom use in the engagement of sexual intercourse. This difference in scoring assignment created results that appeared to contradict that of previous research findings in the literature. An example item for this scale is 'Condoms don't feel good.'

Condom use self-efficacy. There were also nine items included in the Condom Use Self-Efficacy (CSE) scale that were utilized with the original sample of African American women from the SISTA study (Wingood & DiClemente, 1998a) ($\alpha = .89$). This scale contains responses ranging on a Likert-like scale of 1 to 5, where '1' represents 'A lot' and '5' represents 'None.' These items were numbered as Q107 through Q115 on each online survey and the scale's total scores potentially ranged from 9 to 45. Higher scale scores represented a greater level of condom use self-efficacy. An example item from this scale is 'How much of a problem would it be for you to use a lubricant with a condom?'

Partner communication frequency. The frequency of communication with male sex partners about topics of sex was assessed through a tabulation of the numbers of times each participant reported engaging in such discussions. The subscale contained 12 items each asking the participant to report the number of times she asked her partner specific sex-related questions. These items were numbered as Q117 through Q128 on each online survey and the scale's total scores potentially ranged from 0 to 999. An example item from this scale is 'How many times did you ask your male partner about getting tested for STDs?' A lower frequency score represented participants communicated less about sexual topics.

Condom use consistency. Consistent Condom Use (CCU) was defined as condom use during penetrative vaginal intercourse in the past 90 days, 100% of the time with a main partner. A person with whom one has a committed sexual relationship with was defined as a current main partner. This variable was calculated for every use of condom during every episode of vaginal intercourse. Consistent condom use was chosen in the original study because of its use as a primary outcome variable in multiple CDC-defined and disseminated evidence-based interventions for African American women (DiClemente & Wingood, 1995; DiClemente, Wingood, & Harrington, 2004).

Proportion of condom-protected acts of vaginal intercourse in the past 90 days at baseline and in the past 14 days at posttest and follow-up was measured through self-reported surveys administered through Qualtrics (2013), a type of online survey software. This proportion was calculated through the use of two questions. The first question, which was designated as Q32, asked participants ‘In the past 90 days (changed to 14 days or two weeks for posttest and follow-up surveys), how many times did you have vaginal sex with a man?’ The resulting answer was used as the denominator in the calculation. The second question, Q33, asked, ‘In the past 90 days (14 days or two weeks on the posttest and follow-up surveys), when you had vaginal sex with a man how many of these times was a condom used?’ The answer to this question served as the numerator for the calculation.

Data Collection Procedures

The pretest, posttest, and follow-up surveys (see Appendix G) were administered online via Qualtrics. In order to insure confidentiality, numeric codes, such as the last four digits of the participant’s cell phone number, were used for identification purposes

instead of names. After completing either the standard HIV education control or the SAHARA prevention intervention, participants were reassessed with the same survey, at the 14-day and 30-day time point. The pretest, posttest, and follow-up surveys completed by the study participants produced the data for analysis. All data collected were transferred and maintained on a password-protected, secure computer that was kept in a locked and secure office location. A copy of the online consent form can be found in Appendix F.

Research Hypotheses

Each of the following hypotheses were tested through a series of four, 2 (interventions: standard HIV education or SAHARA) by 3 (time: pretest, posttest, and follow-up) analysis of variance (ANOVA) with repeated measures to determine the effects of the treatment conditions on each of the four outcome measures (SHRBK, CBS, CSE, and PCF) at 14-day posttest and 30-day follow-up while examining main and interaction effects:

1. There is a statistically significant increase in mean scores over time (as assessed by the differences in sampling mean variance between the pretest, posttest, and follow-up) in self-reported STD/HIV Risk Behavior Knowledge (SHRBK) among SAHARA participants compared to the standard HIV education control participants.
2. There is a statistically significant in mean scores over time (as assessed by the differences in sampling mean variance between the pretest, posttest, and follow-up) in Condom Barrier Scale (CBS)

among SAHARA participants compared to the standard HIV education control participants.

3. There is a statistically significant increase in mean scores over time (as assessed by the differences in sampling mean variance between the pretest, posttest, and follow-up) in self-reported Condom Use Self-Efficacy (CSE) among SAHARA participants compared to the standard HIV education control participants.
4. There is a statistically significant increase in mean scores over time (as assessed by the differences in sampling mean variance between the pretest, posttest, and follow-up) in Partner Communication Frequency (PCF) of sexual topics among SAHARA participants compared to the standard HIV education control participants.
5. There is a statistically significant increase in mean scores over time (as assessed by the differences in sampling mean variance between the pretest, posttest, and follow-up) in self-reported Consistent Condom Use (CCU) during penetrative vaginal intercourse among SAHARA participants compared to the standard HIV education control participants.

Conceptual Definitions

This study examined self-reported consistent condom use amongst African American women during penetrative vaginal sex. Several well-researched concepts previously examined in the field of HIV behavioral prevention intervention research are included in this study as well. The curriculum was created to be both culture- and

gender-specific for African American women and is based upon the theoretical frameworks of social cognitive theory and the theory of gender and power. For the purpose of this study the following conceptual definitions were used:

- *African American/Black*: Anyone whose race is of African descent (Stewart, 2007).
- *Attitudes*: Feelings towards a certain behavior (Wingood & DiClemente, 2006).
- *Condom Use*: The use of the male or female condom (Wingood & DiClemente, 2006).
- *Self-efficacy*: People's beliefs that they can exert control over their motivation and behavior and over their emotional environment (Bandura, 1990).
- *Culture*: Persons that are grouped together usually by their ethnicity. It defines how individuals live day to day, their values and beliefs (Wilson & Miller, 2003).
- *Heterosexual*: A person who is exclusively sexually, romantically, emotionally, and psychologically attracted to another person of the opposite biological sex and is having or had sexual intercourse involving vaginal penetration with a penis, specifically females having sex with males.
- *HIV Education*: Education relating to a variety of topics about HIV/AIDS (Wingood & DiClemente, 2006).
- *STD/HIV Risk Behavior Knowledge*: Knowing the facts relating to STD and HIV transmission (Wingood & DiClemente, 2006).
- *Sexually active*: Engaging in, having engaged, or planning to engage in penetrative vaginal intercourse (Soet, Dudley, & Dilorio, 1999).
- *SAHARA (SISTAs Accessing HIV/AIDS Resources At a click)*: Computer-based

HIV intervention created from the SISTA behavioral intervention.

- *SISTA (Sisters Informing Sisters about Topics on AIDS)*: HIV intervention curriculum created for African American women (Wingood & DiClemente, 2006).

Operational Definitions

This study examined consistent condom use during penetrative vaginal sex as well as other outcome variables such as STD/HIV risk behavior knowledge, condom use self-efficacy, barriers to condom use beliefs, and frequency of partner communication among African American women living in and around urban and rural areas of Georgia and Kentucky. The study was designed using a computer-based version of the SISTA curriculum created by Drs. Ralph DiClemente and Gina Wingood. For the purpose of this study, the following definitions are used:

STD/HIV risk behavior knowledge (SHRBK). The SHRBK score was constructed from the summation of self-reported correct responses to 10 statements each containing three response choices (true, false, or I don't know) included on the pretest, posttest, and follow-up surveys. Higher SHRBK scores are indicative of greater knowledge of STD/HIV risk reduction behaviors.

Condom barrier scale (CBS). The CBS score was constructed from the summation of self-reported responses to eight statements each containing five Likert-type response choices (strongly agree, agree, neither agree or disagree, disagree, or strongly disagree) included on the pretest, posttest, and follow-up surveys. This scale was reverse scored and higher CBS scores are indicative of a lesser number of perceived barrier beliefs in the use of condoms during sexual intercourse.

Condom use self-efficacy (CSE). The CSE score was constructed from the summation of self-reported responses to nine questions each containing five Likert-type response choices (a lot, some, a little, not much, or none) included on the pretest, posttest, and follow-up surveys. Higher CSE scores are indicative of greater belief in condom-use self-efficacy.

Partner communication frequency (PCF). The PCF score was constructed from the summation of the self-reported number of times the respondents endorsed the 12 statements on sexual topics included on the pretest, posttest, and follow-up surveys. Higher frequency scores of partner communication are indicative of participants communicating more frequently with their partners about sexual topics.

Consistent condom use (CCU). Consistent condom use was the primary outcome variable of this study and was defined as condom use during every episode of vaginal intercourse with a partner in the after undergoing the interventions. The CCU score was determined from the summation of the self-reported number of times the respondents indicated use of condoms during vaginal intercourse on four questions included on the pretest, posttest, and follow-up surveys.

Statistical Analysis

All statistical analyses were computed using the Statistical Package for the Social Sciences [(SPSS), Version 21] (IBM Corporation) software to examine and manipulate the data in order to determine if any statistically significant results were present. The data were analyzed in order to provide descriptive statistics such as means, standard deviations, skewness, kurtosis, etc. for sociodemographic variables, sexual behaviors, primary outcome variables, and moderating variables for each measure between the

groups. Demographic differences between the two groups were assessed in order to determine if any demographic variables operated as potential confounding variables.

Primary analysis. Analysis was performed only on the aforementioned hypotheses. Table 1 provides an overview of the statistical analyses used for testing each hypothesis. Baseline differences in sociodemographic variables such as, age, education, income, etc., between the two condition groups was assessed through the use of t-test comparisons for all continuous data and Chi-square tests were used for the analysis of categorical variables. For each of the following hypotheses, hypothesis testing was performed in order to discover statistically significant differences ($p < 0.05$) between the study groups. Analysis of variance (ANOVA) procedures were used to detect group differences.

Table 1

Hypothesis Testing for SHRBK, CBS, CSE, PCF, and CCU

Research Hypotheses	Statistical Hypotheses	Instrumentation	Analyses	Results
1. Mean scores over time for the STD/HIV Risk Behavior Knowledge Scale (SHRBK) for the SAHARA group (S) will be significantly higher than the scores for the standard HIV education control (C) group	$H_1: \mu_S > \mu_C$ ($H_0: \mu_S = \mu_C$)	Total score on the STD/HIV Risk Behavior Knowledge (SHRBK) Scale = 10 items, true/false-type scale of STD/HIV facts 0 = <i>Incorrect Response</i> , 1 = <i>Correct Response</i> , 0 = <i>Don't Know</i> , and 8 = <i>Decline to Respond</i>	1. Analysis of Variance IV = Treatment Conditions over Time DV = Posttest and Follow-up SHRBK scores	Hypothesis Supported
2. Mean scores over time for the Condom Barrier Scale (CBS) for the SAHARA group (S) will be higher than the scores for the standard HIV education control (C) group	$H_1: \mu_S > \mu_C$ ($H_0: \mu_S = \mu_C$)	Total score on the Condom Barrier Scale (CBS) = 8 items with 5-likert type responses on statements about condoms 1 = <i>Strongly Agree</i> , 2 = <i>Agree</i> , 3 = <i>Neither Agree or Disagree</i> , 4 = <i>Disagree</i> , or 5 = <i>Strongly Disagree</i>	2. Analysis of Variance IV = Treatment Conditions over Time DV = Posttest and Follow-up CBS scores	Hypothesis Supported

Table 1 (continued)

Hypothesis Testing for SHRBK, CBS, CSE, PCF, and CCU

Research Hypotheses	Statistical Hypotheses	Instrumentation	Analyses	Results
3. Mean scores over time for Condom Use Self-efficacy (CSE) for the SAHARA group (S) will be higher than the scores for the standard HIV education control (C) group	$H_1: \mu_S > \mu_C$ $(H_0: \mu_S = \mu_C)$	Total score on the Condom Use Self-efficacy (CSE) = 9 items with 5-likert type responses options about condoms use skills 1 = A lot, 2 = <i>Some</i> , 3 = <i>Little</i> , or 4 = <i>Not much</i> , 5 = <i>None</i>	3. Analysis of Variance IV = Treatment Conditions over Time DV = Posttest and Follow-up CSE scores	Hypothesis Unsupported
4. Mean scores over time for the Partner Communication Frequency Scale (PCF) for the SAHARA group (S) will be significantly higher than the scores for the standard HIV education control (C) group	$H_1: \mu_S > \mu_C$ $(H_0: \mu_S = \mu_C)$	Total score on the Partner Communication Frequency Scale (PCF) = 12 items that ask respondents to record the number of times they engaged their partners in conversation on sexual topics	4. Analysis of Variance IV = Treatment Conditions over Time DV = Posttest and Follow-up PCF scores	Hypothesis Unsupported

Table 1 (continued)

Hypothesis Testing for SHRBK, CBS, CSE, PCF, and CCU.

Research Hypotheses	Statistical Hypotheses	Instrumentation	Analyses	Results
5. Mean scores over time for Consistent Condom Use for the SAHARA group (S) will be significantly higher than the scores for the standard HIV education control (C) group	$H_1: \mu_S > \mu_C$ $(H_0: \mu_S = \mu_C)$	Total score on the Consistent Condom Use Scale (CCU) = four items that ask respondents to record the number of times they engaged in vaginal sex and the use of condoms during vaginal sex	5. Analysis of Variance IV = Treatment Conditions over Time DV = Posttest and Follow-up CCU scores	No Analysis Conducted

Chapter Four: Results

This chapter presents the results of all data analyses conducted to answer the aforementioned research hypotheses. The chapter begins with detailing the demographics data of the study participants along with the data analysis of the intervention and control group. Presented are the dependent variables, which include STD/HIV risk behavior knowledge (SHRBK), condom self-efficacy (CSE), condom barriers (CBS), partner communication frequency (PCF), and consistent condom use (CCU). The results from the repeated measures analysis of variances (ANOVA) follow. Missing data were imputed, outliers were examined, and interactional effects were analyzed. This chapter concludes with an interpretation of the study findings as applied to the research questions and hypotheses.

Demographics of Participants

During the multiple data collection time periods, attrition resulted in smaller numbers of survey completers. Initially, pre-treatment data for a total of 57 participants were collected. As expected, participants were all female (100%) and mostly African American (93%). Participants who did not self-identify as African American were excluded from further analysis resulting in 53 participants remaining. Additionally another participant did not provide answers to any of the survey questions; therefore, this case was also excluded from analysis resulting in 52 remaining cases. The sample participants were between the ages of 18 and 58 ($M = 24.31$, $SD = 7.84$) years, with 43 (82.7%) of the women having at least attended college. More than half ($n = 33$, 63.5%) of the women were employed. With regard to relationship status, 27 (52.9%) participants endorsed having a main partner.

A quasi-experimental design was employed. Of the 52 participants within the sample who self-identified as female and African American, 40 females were assigned to the control group and 12 females were assigned to the SAHARA group. The imbalanced distribution in sample size was a result of the time sampling method used during recruitment. The control group consisted primarily of undergraduate students who were conveniently selected from intact psychology courses at local universities in Kentucky. Through convenience sampling, a non-equivalent control group was formed from this intact group of students. Those participants comprising the SAHARA group were not a part of any intact group or lived in Georgia.

Although a total of 52 women provided pretest data, only the data for 23 participants were included for statistical analyses within the study. Specifically, 13 (25%) participants were allocated to the computer-based HIV intervention and 39 (75%) participants were assigned to the standard HIV education control condition. Of the 13 participants allocated to the computer-based HIV intervention, nine (69%) completed the post-treatment assessment, the follow-up assessment, or both. Of the 39 participants allocated to the standard HIV education control condition, 14 (36%) completed the post-treatment assessment, the follow-up assessment, or both. The 14 completers from the control group and the nine completers from the SAHARA group resulted in a total of 23 participants for the sample statistical analyses. Figure 2 provides details regarding the allocation and attrition of the participants. Figure 2 is located at the end of this chapter.

Accuracy and Data Checks

Reviews were conducted to assess and confirm accuracy of coding of collected data and data analysis. A licensed clinical psychologist with notable experience in

research and statistical analysis, who served as Chief of Psychology at the Tuscaloosa Veterans Affairs Medical Center (TVAMC) and held an academic appointment at the University of Alabama, provided assistance with this process. I reviewed the data in order to confirm that all analyses and coding were accurate.

Sample Characteristics

The initial eight questions of the research surveys collected demographic information of each participant such as age, education level, employment status, and income. A chi-square test and Fisher's exact test were used to detect if there were any statistical differences between the control and SAHARA group's ages, education, employment status, and urbanicity. The Fisher's exact test was preferred because the sample numbers were small. Small sample size was defined as expected number less than five (<5) (McDonald, 2014). Nine of the participants from the SAHARA condition and 14 control condition participants completed the pre-test assessment and the post-test assessment or the follow-up evaluation (or both). Analyses were conducted on these 23 individuals only, because neither post-test nor follow-up data was obtained for the other 29 cases. See Table 2 for additional demographic data of these 23 participants by groups. Table 3 provides a comparison of the demographic data between the 23 completers and the 29 non-completers. Referenced tables and figures are located at the end of this chapter.

Because the research was originally geared toward women between the ages of 18-29, age was examined as a categorical variable; 18-29 and 30-60. Nineteen of the participants were classified in the 18-29 age group and the remaining four participants were in the 30-60 age group. There were no significant differences found between the

two groups' ages: $X^2(1, N = 23) = 2.616, p = 0.260$. Among females in the control group, 92.9% were age 18-29 and 7.1% were aged 30-60. Among females in the SAHARA group, 66.7% were age 18-29 and 33.3% were age 30-60. There were no significant differences found between the control and SAHARA groups' employment statuses: $X^2(1, N = 23) = 0.483, p = 0.657$. The majority of women were employed at the time of the study. Within the control group, 50% of the women were employed. Within the SAHARA group, 66.7% of the women were employed.

Significant differences were found between the two groups' education levels, urbanicity, and residency statuses. The analysis showed that there was a relationship between group assignment and educational attainment: $X^2(1, N = 23) = 12.627, p = 0.001$. Among the women in the control group, 100% had received some college. Among the females in the SAHARA group, 33.3% had received some college and the remaining 66.7% had received a 4-year college degree and/or advanced degree. Thus, the participants from the SAHARA group appeared to have acquired more years of formal education than the participants of the control group. Another statistically significant difference between the control and SAHARA group was found for urbanicity: $X^2(1, N = 23) = 6.626, p = 0.023$. A majority of the women in the control group (85.7%) resided in rural areas. Six of the nine women (66.7%) within the SAHARA group lived in urban areas. Significant differences were also detected between the two groups for residency status: $X^2(1, N = 23) = 12.924, p = 0.015$. One-third (33.3%) of the women in the SAHARA group were living alone, living with a parent, or living with children, whereas at least 50% of the women in the control group lived with roommates.

Compared to the baseline data for participants from the original preliminary efficacy study conducted by Wingood et al. (2011), the participants were comparable across several variables. Both studies contained participants with similar rates of employment and baseline SHRBK scores. Study participants from Wingood et al. (2011) were younger, were in more relationships with a main partner for shorter lengths of time, and scored higher in CSE scores. Due to the modification of the scoring for CBS scores in the current study, a comparison could not be made between these participants and the Wingood et al. (2011) participants. Baseline data for PCF score were also not provided in the research of Wingood and colleagues.

Analyses

Pre-test data for SHRBK, CSE, CBS, and PCF were collected for 39 participants in the standard HIV education control condition and 13 participants in the SAHARA condition. Of these 52 cases, nine participants from the SAHARA condition and 14 standard HIV education control participants completed the post-test assessment or the follow-up evaluation (or both) for a total of 23 participants. Analyses were conducted on these 23 individuals only, because neither post-test nor follow-up data were obtained for the other 29 cases.

For the 23 cases that were retained, three of the 14 individuals in the standard HIV education control condition failed to complete post-test, and three (not the same participants) were not available for follow-up. Two participants in the SAHARA condition did not complete the post-test evaluation, and another individual in SAHARA group did not complete the follow-up. Thus, nine of the 23 remaining participants had missing data for either post-test or follow-up. In order to analyze these 23 cases, missing

data (either posttest or follow-up) were replaced by imputation using the expectation maximization (EM) algorithm in PRELIS 8.54 (Jöreskog & Sörbom, 1996) software.

The most straightforward and illuminating statistical approach was mixed analysis of variance (ANOVA) with repeated measures, but analyses of interaction effects also included multivariate and univariate simple effects. Because the assumption of sphericity was violated in these analyses, the univariate approach to repeated measures, as described by O'Brien & Kaiser (1985), was applied for each outcome measure as implemented in the general linear model (GLM) procedures in the SPSS software. This approach is more appropriate when the Mauchly's test of Sphericity is significant because it makes fewer assumptions about the data (Brace, Kemp, & Snelgar, 2006).

The pretest, posttest, and follow-up self-reported data for SHRBK, CBS, CSE, and PCF were analyzed in four, 2x3 mixed ANOVAs with repeated measures. Group assignment served as the between-subjects factor and pretest, posttest, and follow-up times were the within-subject factors. Summary data (Means and SDs) for these analyses are presented in Table 4.

Table 5 displays the results from the repeated measures ANOVA for SHRBK. There was a statistically significant two-way interaction effect between group assignment and time, $F(2, 20) = 4.821, p = .020$, partial eta squared = .325, thus Hypothesis 1 was supported. Although the SAHARA group and the standard HIV education group had similar scores at pretest, the SAHARA group had higher means at posttest and follow-up. Means over time are plotted in Figure 3.

The SAHARA group had higher mean scores at posttest ($M = 9.778$) and follow-up ($M = 9.667$) compared to the standard HIV education group at posttest ($M = 8.571$)

and follow-up ($M = 8.857$). A Bonferonni post hoc test (see Table 6) was conducted to determine where the significant differences existed over time. There was also a significant main effect for time, $F(2, 20) = 7.981, p = .003$, partial eta squared = .444. The post hoc test revealed that for both groups there were significant differences in SHRBK scores between pretest and posttest ($p = .002$) and between pretest and follow-up ($p = .002$). The post hoc test also indicated there were no significant differences between the posttest and follow-up scores ($p = 1.000$). In addition, there were no significant differences between the groups' scores SHRBK scores.

Results for the CBS variable are displayed in Table 7. A repeated measures ANOVA of the data produced a significant interaction, $F(2, 20) = 4.013, p = .034$, partial eta squared = .286. Thus Hypothesis 2 was supported. The interaction effect is displayed in Figure 4. As can be seen in Table 7, the main effect of time was not significant, $F(2, 20) = 2.300, p = .126$, partial eta squared = .187, and the between-subjects main effect for group was also not significant, $F(1, 21) = 0.026, p = .874$, partial eta squared = .001. The scores for CBS changed for each group over time. Initially the pretest scores for the SAHARA group ($M = 28.667$) and the standard HIV education group ($M = 28.929$) were similar. At posttest, mean scores for the SAHARA group ($M = 30.778$) increased whereas the mean scores for the standard HIV education group dipped slightly ($M = 28.571$). At follow-up, there was a decrease in CBS mean scores for the SAHARA group ($M = 26.222$) and only a slight increase in the standard HIV education group ($M = 29.214$).

Results for the CSE are displayed in Table 8. A repeated measures ANOVA revealed no significant interaction effect, $F(2, 20) = 2.308, p = .125$, partial eta squared =

.188. Thus Hypothesis 3 was not supported. There was however a significant main effect for time, $F(2, 20) = 5.33, p = .014$, partial eta squared = .348. A Bonferonni post-hoc test was employed to examine the differences in the time main effect. Over time the combined mean scores for both groups on CSE trended higher at follow-up compared to pretest. As indicated in Table 9, statistically significant differences were found between the follow-up CSE mean score and the pretest CSE score ($p = .013$). Figure 5 illustrates scores for both groups in condom self-efficacy improving over time.

The findings for the PCF are provided in Table 10. The 2x3 repeated measures ANOVA for this variable did not produce any statistically significant interaction effects between group and time, $F(2, 20) = 2.428, p = .114$, partial eta squared = .195. Thus Hypothesis 4 was not supported. There were also no statistically significant main effects for time, $F(2, 20) = 1.830, p = .186$, partial eta squared = .155, nor group, $F(1, 19.430) = 0.358, p = .556$, partial eta squared = .017. Figure 6 provides a visual representation of the mean differences between the HIV education control group and the SAHARA group at the three different time points of pretest, posttest, and follow-up.

Data were insufficient or inadequate to permit analyses for consistent condom use (CCU) in the standard HIV education control and SAHARA intervention groups. For CCU, data were available for only six participants in the SAHARA intervention group, and values were the same in pre-test, post-test, and follow-up for all six cases. Data were available from 26 participants in the standard HIV education control group, but variability occurred in only four of those cases. Consequently, no analyses were conducted on the CCU data.

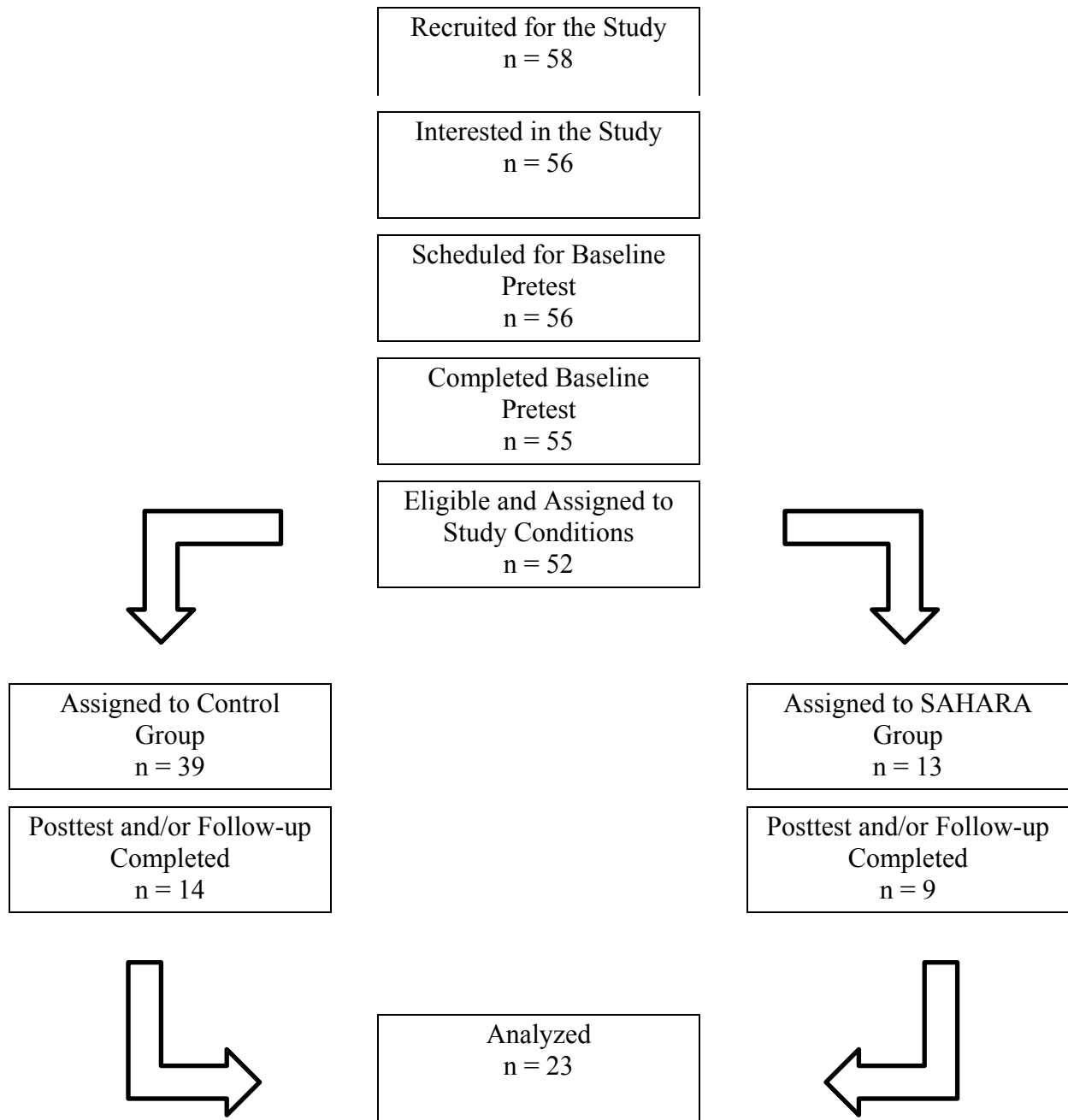


Figure 2. Sampling and allocation of subjects through the study.

Table 2

Demographic Characteristics of Participants that Completed Posttest and/or Follow-up Assessment

Participants	HIV Education Group (<i>n</i> = 14)		SAHARA Group (<i>n</i> = 9)		<i>p</i>
	<i>M</i> (<i>SD</i>)	Percent (<i>n</i>)	<i>M</i> (<i>SD</i>)	Percent (<i>n</i>)	
Age	22.5 (2.8)		32.0 (11.1)		.260
18-29		92.9% (13)		66.7% (6)	
30-60		7.1% (1)		33.3% (3)	
Education					.001
Some College and/or 2-year Degree		100% (14)		33.3% (3)	
4-year College and/or Advanced Degree		---		66.7% (6)	
Employment					.657
Unemployed		35.7% (5)		22.2% (2)	
Employed		64.3% (9)		77.8% (7)	
Urbanicity					.023
Rural		85.7% (12)		33.3% (3)	
Urban		14.3% (2)		66.7% (6)	
Residency					.015
Alone		14.3% (2)		33.3% (3)	
With Boyfriend		7.1% (1)		---	
With a Parent		14.3% (2)		33.3% (3)	
With Children				33.3% (3)	
With Another Relative		7.1% (1)		---	
With a Roommate		50.0% (7)		---	
With Others		7.1% (1)		---	
Relationship					1.00
Yes		42.9% (6)		44.4% (4)	
No		57.1% (8)		55.6% (5)	
Length (in months)	35.8 (24.2)		28.5 (11.2)		.411

Table 3

Demographic Characteristics of Non-completers versus Completers

Participants	Treatment Condition		<i>M (SD)</i>	Percent (<i>n</i>)	<i>p</i>
	Non-completers (<i>n</i> = 29)	Completers (<i>n</i> = 23)			
Age	23.7 (6.9)		26.2 (8.5)		.246
18-29		89.7% (26)		82.6% (19)	
30-60		10.3% (3)		17.4% (4)	
Education					.161
HS/GED/ or less		24.1% (7)		8.7% (2)	
Some College and/or 2-year Degree		65.5% (19)		65.2% (15)	
4-year College and/or Advanced Degree		33.3% (3)		66.7% (6)	
Employment					.416
Unemployed		41.4% (12)		30.4% (7)	
Employed		58.6% (17)		69.6% (16)	
Urbanicity					.914
Rural		66.7% (18)		65.2% (15)	
Urban		33.3% (9)		34.8% (8)	
Residency					.723
Alone		34.5% (10)		21.7% (5)	
With Boyfriend		6.9% (2)		4.3% (1)	
With a Parent		27.6% (8)		21.7% (5)	
With Children		6.9% (2)		13.0% (3)	
With Another Relative		---		4.3% (1)	
With a Roommate		24.1% (7)		30.4% (7)	
With Others		---		4.3% (1)	
Relationship					.220
Yes		60.7% (17)		43.5% (10)	
No		39.3% (11)		56.5% (13)	
Length (in months)	39.7 (55.28)		32.9 (46.27)		.411

Table 4

Descriptive Statistics for Dependent Variables

Variables	Treatment Group					
	Standard HIV Education Control (<i>n</i> = 14)			SAHARA (<i>n</i> = 9)		
	Mean (<i>SD</i>)	Skewness	Kurtosis	Mean (<i>SD</i>)	Skewness	Kurtosis
SHRBK Pretest	8.36 (1.22)	-.21	-.47	8.11(.93)	-1.47	3.28
SHRBK Posttest	8.57 (1.02)	-.48	-.74	9.78 (.44)	-1.62	.74
SHRBK Follow-up	8.86 (1.29)	-.692	-1.31	9.67 (.71)	-2.12	4.00
CBS Pretest	28.93 (5.61)	.30	.51	28.67 (7.58)	-.46	-.01
CBS Posttest	26.27 (3.99)	.05	-.70	30.78 (5.49)	.15	-.48
CBS Follow- up	29.21 (4.10)	.80	1.00	26.22 (7.71)	.15	-.92
CSE Pretest	33.00 (6.26)	-.19	-1.32	36.89(10.94)	-2.53	6.90
CSE Posttest	34.64 (8.58)	-.25	-1.02	36.89(10.71)	-1.50	1.61
CSE Follow- up	37.57 (6.71)	-.21	-1.84	37.78 (7.41)	-1.95	4.69
PCF Pretest	6.36 (9.74)	2.25	5.56	5.33 (7.87)	1.96	4.16
PCF Posttest	3.29 (3.60)	.60	-1.29	.89 (2.32)	2.89	8.47
PCF Follow- up	2.29 (3.83)	2.07	4.14	2.44 (4.19)	2.45	6.39

Note. SHRBK = STD/HIV risk behavior knowledge; CBS = Condom barrier scale; CSE = Condom self-efficacy; PCF = Partner communication frequency

Table 5

Multivariate Tests in ANOVA with Repeated Measures Analysis of SHRBK

Effect	<i>F</i>	<i>df</i>	<i>Error df</i>	<i>p</i>
Time	7.981 ^b	2	20	.003
Group	5.720	2.718	21	.114
Time * Group	4.821 ^b	2	20	.020

Note. SHRBK = STD/HIV risk behavior knowledge

^a Design: Intercept + tx Within Subjects Design: Time

^b Exact statistic

Table 6

Bonferonni Post Hoc Tests of Time Main Effects for SHRBK

(I) Time	(J) Time	Mean	p^a	95% CI for Difference ^a	
		Difference (I-J)		LL	UL
1	2	-.940*	.002	-1.563	-.318
	3	-1.028*	.002	-1.711	-.345
2	1	.940*	.002	.318	1.563
	3	-.087	1.000	-.466	.291
3	1	1.028*	.002	.345	1.711
	2	.087	1.000	-.291	.466

Note. SHRBK = STD/HIV risk behavior knowledge; CI = confidence interval, LL = lower limit; UL = upper limit.

* The mean difference is significant at $p < .05$

a. Adjustment for multiple comparisons: Bonferonni.

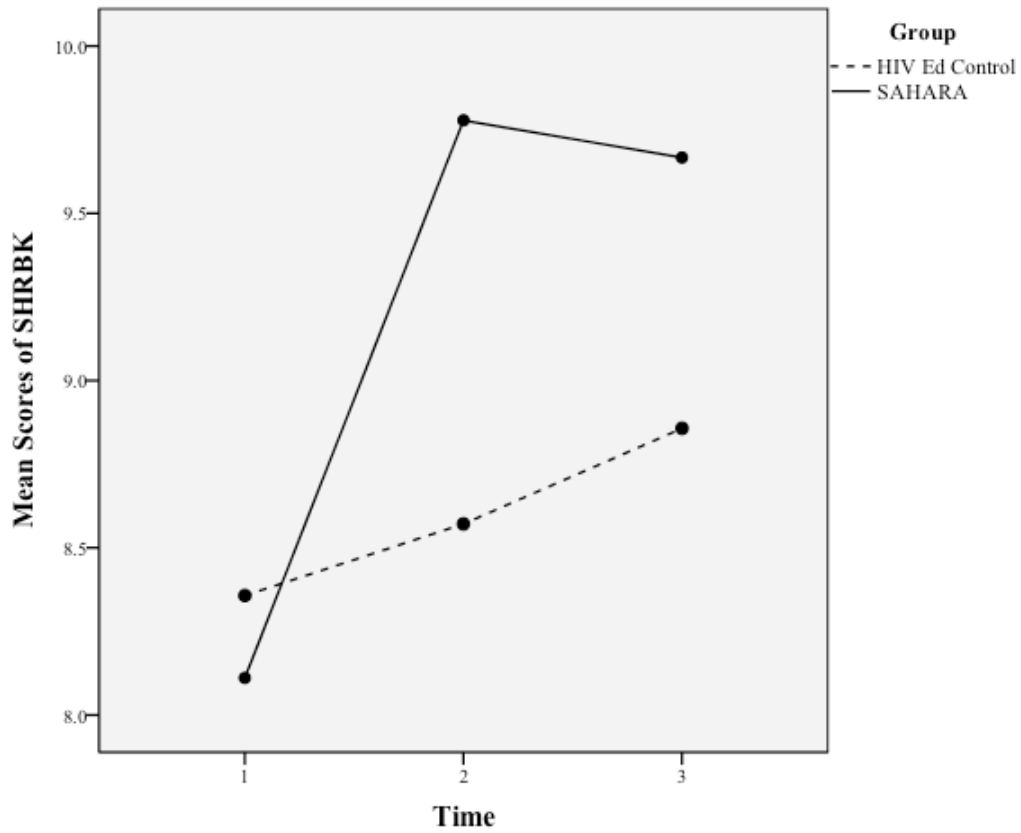


Figure 3. Comparison of changes in the marginal means for intervention groups over time for SHRBK. Numbers 1, 2, 3 on the x-axis represent times at pretest, posttest, and follow-up, respectively.

Table 7

Multivariate Tests in ANOVA with Repeated Measures Analysis of CBS

Effect	<i>F</i>	<i>df</i>	<i>Error df</i>	<i>p</i>
Time	2.300 ^b	2	20	.126
Group	.026	1	21	.874
Time * Group	4.013 ^b	2	20	.034

Note. CBS = Condom barrier scale

^a Design: Intercept + tx Within Subjects Design: Time

^b Exact statistic

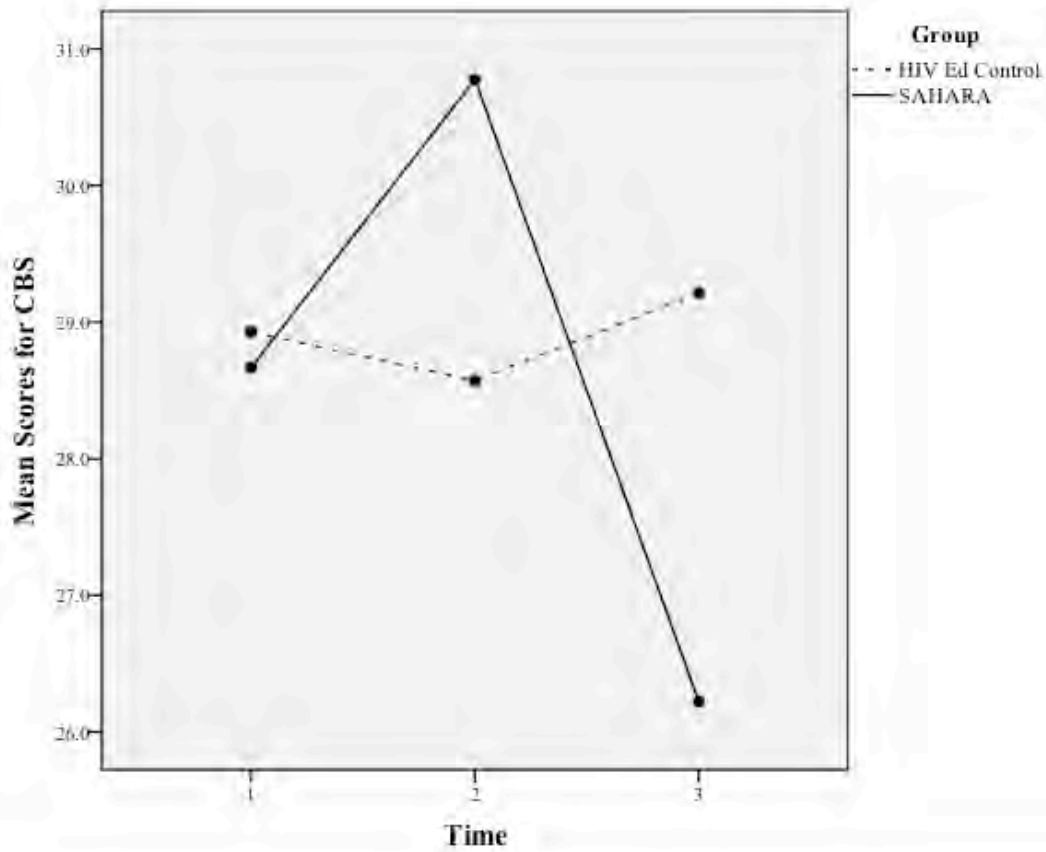


Figure 4. Comparison of changes in marginal means for intervention groups over time for CBS. Numbers 1, 2, 3 on the x-axis represent times at pretest, posttest, and follow-up, respectively.

Table 8

Multivariate Tests in ANOVA with Repeated Measures Analysis of CSE

Effect	<i>F</i>	<i>df</i>	<i>Error df</i>	<i>p</i>
Time	5.334	2	20	.014
Group	.414	1	21	.527
Time * Group	2.308 ^b	2	20	.125

Note. CSE = Condom self-efficacy

^a Design: Intercept + tx Within Subjects Design: Time

^b Exact statistic

Table 9

Bonferonni Post Hoc Tests of Time Main Effects for CSE

(I) Time	(J) Time	Mean	p^a	95% CI for Difference ^a	
		Difference (I-J)		LL	UL
1	2	-.821	1.000	-4.409	2.766
	3	-2.730*	.013	-4.954	-.506
2	1	.821	1.000	-2.766	4.409
	3	-1.909	.416	-5.135	1.318
3	1	2.730*	.013	.506	4.954
	2	1.909	.416	-1.318	5.135

Note. CSE = Condom self-efficacy; CI = confidence interval, LL = lower limit; UL = upper limit.

* The mean difference is significant at $p < .05$

a. Adjustment for multiple comparisons: Bonferonni.

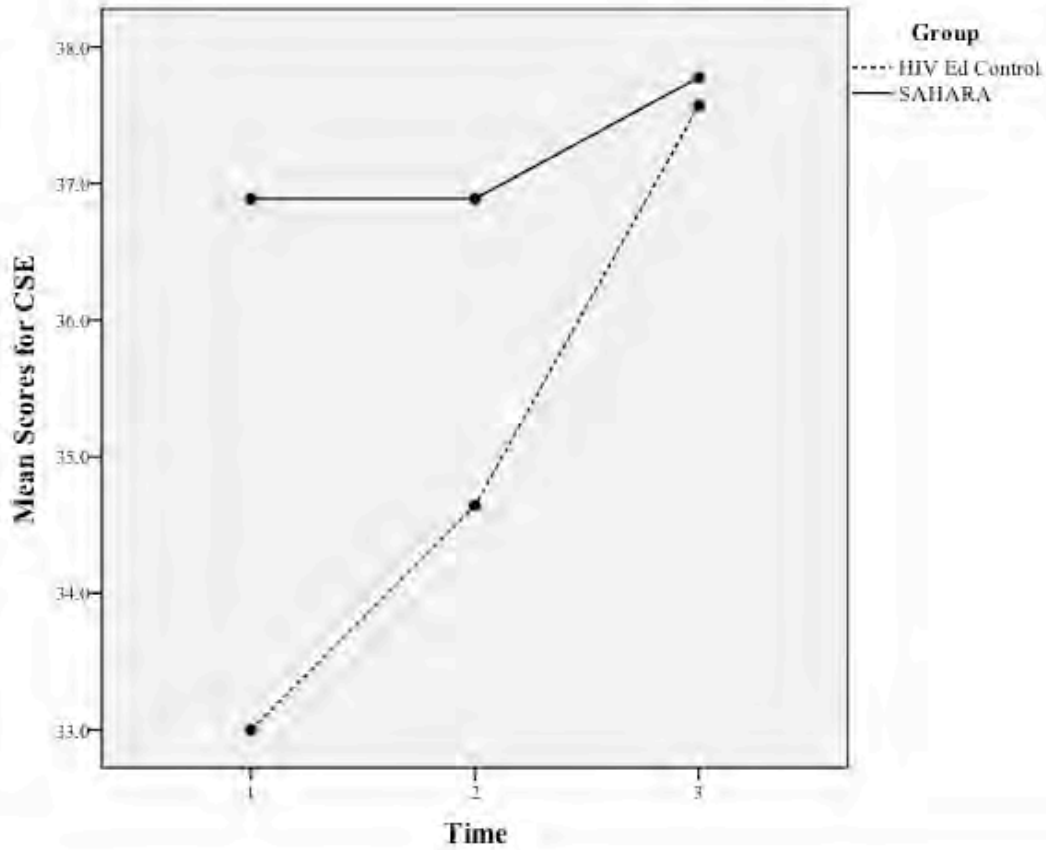


Figure 5. Comparison of changes in marginal means for intervention groups over time for CSE. Numbers 1, 2, 3 on the x-axis represent times at pretest, posttest, and follow-up, respectively.

Table 10

Multivariate Tests in ANOVA with Repeated Measures Analysis of PCF

Effect	<i>F</i>	<i>df</i>	<i>Error df</i>	<i>p</i>
Time	1.830 ^b	2	20	.186
Group	1	19.430	.358	.556
Time * Group	2.428 ^b	2	20	.114

Note. PCF = Partner communication frequency

^a Design: Intercept + tx Within Subjects Design: Time

^b Exact statistic

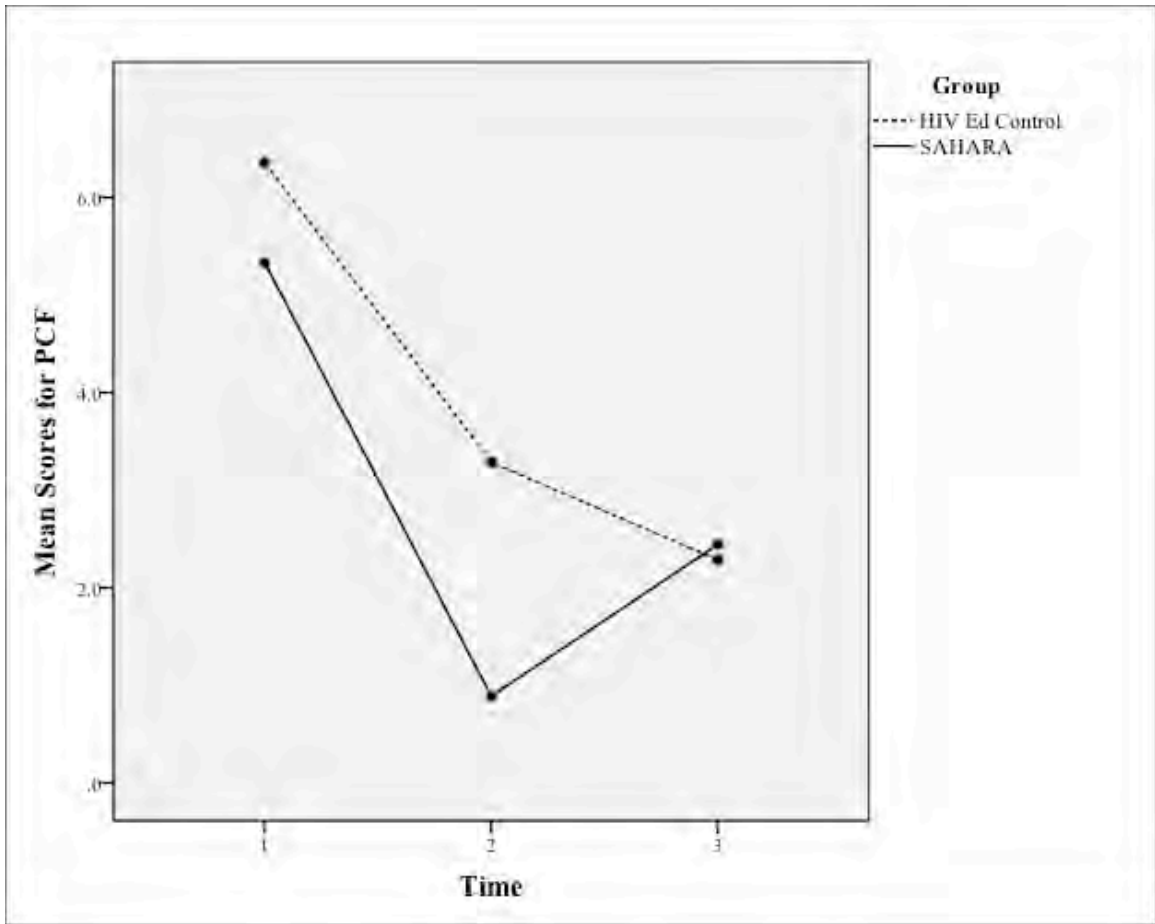


Figure 6. Comparison of changes in marginal means for intervention groups over time for PCF. Numbers 1, 2, 3 on the x-axis represent times at pretest, posttest, and follow-up, respectively.

Chapter Five: Discussion

The purpose of this study was to determine the effectiveness of the SAHARA program compared to a standard HIV education session at enhancing HIV-protective sexual behaviors (examined through STD and HIV knowledge, condom barrier beliefs, condom use self-efficacy, partner communication frequency, and consistent condom usage at last incidents of vaginal intercourse) among a sample of African American women living in areas of Kentucky and Georgia within a month of completing the treatments. Participants in the SAHARA condition reported statistically significant changes in STD and HIV Risk Behavior Knowledge (SHRBK) and Condom Barrier Scale (CBS) scores, as indicated by interaction effects of statistical significance between group and time. Condom Self-efficacy (CSE) scores for participants in the SAHARA group also exhibited statistical significance for the main effect of time. These results are further interpreted in accordance with corresponding hypotheses. Implications for prevention and practice, potential limitations, and recommendations for future research are explored in this final chapter.

Interpretation of Findings

Each of the following research hypotheses were examined through the analyses of pretest, posttest, and/or follow-up data for statistically significant changes with a mixed 2x3 analysis of variance (ANOVA) with repeated measures in SPSS.

Hypothesis #1: There will be a significant increase in mean scores over time (as assessed by the differences in sampling mean variance between the pretest, posttest, and follow-up) in self-reported STD/HIV Risk Behavior Knowledge (SHRBK) scores among SAHARA participants compared to the HIV education control participants.

According to the results of the ANOVA performed for SHRBK (see Table 5), there was a significant interaction between group assignment and time. Thus, Hypothesis #1 was supported. There were statistically significant increases in SHRBK mean scores indicating increased HIV/STD-related knowledge. Although the hypothesis was supported as indicated by the SAHARA group attaining higher SHRBK mean scores compared to the standard HIV education control group, the SHRBK mean scores for both groups increased from pretest to posttest and from pretest to follow-up. These results are comparable to the outcomes discovered during the preliminary efficacy research of SAHARA conducted by Wingood et al. (2011) indicating that participants in the computer-based HIV intervention were more knowledgeable about HIV/STD prevention as evidenced by higher scores ($M = 9.45$, $SD = 0.09$) versus the control group ($M = 8.99$, $SD = 0.09$); $p < 0.001$. These data are also consistent with the literature supporting the behavior changing capabilities through HIV and STD education with computer-based interventions.

Current research evaluating the use and effectiveness of computer-based prevention interventions indicate significant positive impacts in knowledge-based outcomes, particularly for HIV and STD education (Bailey et al., 2010; Guse et al., 2012; Noar et al., 2009; Noar et al., 2010; Wingood et al., 2011). It has been shown that effective HIV/AIDS education not only can prevent the spread of new HIV infections by increasing one's knowledge base about the transmission of this disease but education can also provide the tools necessary to protect against becoming infected (Introduction to HIV and AIDS education, n.d.).

Hypothesis #2: There will be a significant increase in mean scores over time (as assessed by the differences in sampling mean variance between the pretest, posttest, and follow-up) of the Condom Barrier Scale (CBS) among SAHARA participants compared to the standard HIV control participants.

According to the results of the ANOVA performed for CBS scores (see Table 7), there was a significant interaction between group assignment and time. Thus, Hypothesis #2 was supported. As mentioned earlier, increased scores in CBS indicate a perception of fewer barriers to condom use. These results are consistent with the literature on condom barrier beliefs within prevention interventions. These results differ from the data found in the preliminary report by Wingood et al. (2011) that did not provide any indication of statistically significant data regarding condom barrier changes between the computer-based HIV intervention and the general health control condition.

Elridge, St. Lawrence, Little, Shelby, and Brasfield (1995) found that African American women perceived few personal barriers to use of a male condom but acknowledged that having an uncooperative male partner would hinder the use of it. Thus providing the SAHARA treatment only to the female partner is less helpful. Perhaps prevention interventions need to be provided to African American couples instead of only the females in the dyad. Considering that many of the questions on the CBS referred to the female partner's ability to use a male condom with her male partner, this underscores the importance of having a prevention intervention that is geared towards the male that actually wears the condom. Some couples and relationship-based HIV/STD prevention programs have demonstrated efficacy at increasing safety behaviors

associated with decrease HIV risk such as condom use (El-Bassel, Gilbert, Wu, Go, & Hill, 2003).

Hypothesis #3: There will be a significant increase in mean scores over time (as assessed by the differences in sampling mean variance between the pretest, posttest, and follow-up) of Condom Use Self-Efficacy (CSE) among SAHARA participants compared to the standard HIV control participants.

According to the results of the ANOVA performed for CSE scores (see Table 8), there was no significant interaction between group assignment and time. Thus, Hypothesis #3 was not supported. However, there was a statistically significant main effect for time in CSE scores for both groups. The Bonferonni post hoc test was performed and indicated a statistically significant difference between pretest and follow-up for both the SAHARA group and the standard HIV education group. The original SAHARA study conducted by Wingood et al. (2011) revealed higher scores of condom use self-efficacy reported by the computer-based HIV intervention participants ($M = 30.81$, $SD = 0.52$) versus the control group ($M = 29.86$, $SD = 0.51$); $p < 0.012$.

The commonality in components shared between the two interventions may explain the increased scores for both groups. Both of the interventions included HIV/STD education and skills training in condom application. The improvements in both groups seem to align with the literature on general prevention intervention correlates of increased condom use self-efficacy and engagement in condom use. Factors associated with condom use self-efficacy include perceived benefits of condom use, access to condoms, undergoing sex education, and peer-related norms for condom use (American Academy of Pediatrics, 2001).

Several of the prevention interventions included in the Compendium employ demonstrations and skill-building exercises in condom use. According to a meta-analysis conducted by Portnoy, Scott-Sheldon, Johnson, and Carrey (2008), 89% of prevention interventions included a skills training component, either through actual demonstration or education. One explanation for the main effect of time for CSE could be attributed to the inclusion of condom application demonstrations. The standard HIV education group watched the health facilitator properly apply and remove a male condom to an anatomical model. The SAHARA group watched a video demonstration of male condom application and worked with an interactive vignette to identify a female model correctly using a condom on a dildo. Condom demonstration is an example of a skill-building exercise integral to SCT and its inclusion within both interventions may have influenced these scores.

According to the 2013 fiscal year state profiles of the Sexuality Information and Education Council of the United States (SIECUS) (2013b), Kentucky does not have a state law on sex education but follows the Kentucky Core Academic Standards and students learn “how decision making relates to responsible sexual behavior (e.g. abstinence, preventing pregnancy, preventing sexually transmitted diseases [STDs] and HIV) and impacts the physical, mental, and social well being of an individual” (State Level Sexuality Education Law and Policy Overview section, para. 1). According to SIECUS (2013a), the Georgia Board of Education has minimal guidelines for sexuality education programs but requires instruction to “emphasize abstinence from sexual activity until marriage and fidelity in marriage as important personal goals” (State Level Sexuality Education Law and Policy Overview section, para. 1). With this in

consideration, it is unlikely that condom demonstrations or references to contraceptive options outside of abstinence education were offered in public school sex education programs. The condom demonstrations offered in both of these interventions may have offered novel educational experiences to the study participants.

Hypothesis #4: There will be a significant increase in mean scores over time (as assessed by the differences in sampling mean variance between the pretest, posttest, and follow-up) in Partner Communication Frequency (PCF) of sexual topics among SAHARA participants compared to the standard HIV control participants.

According to the results of the ANOVA performed for PCF scores (see Table 10), there was no significant interaction effect. Thus, Hypothesis #4 was not supported. These results did not appear contradictory to data reported by Wingood et al. (2011) from the preliminary study of SAHARA. Although PCF was initially examined as a mediator on condom use comparison between the computer-based HIV intervention participants and the control group participants, there were no statistically significant results reported at the conclusion of the study.

However, upon examination of the data reported in Figure 6 of this study, it does appear to reflect a trend of decreasing PCF mean scores indicating fewer instances of communication between the participants and their partners on topics of sexual health for both groups. The results on PCF were unexpected considering that it was assumed that conversations regarding sexual health with a partner would increase as a result of engaging in an intervention aimed at illustrating and encouraging assertive communication skills. There was no apparent reason to suspect that a variable within the treatment groups would cause partner communication to decline. Another reason for

these findings could have been the impact of spurious data included in the analysis from one participant. The participant reported partner communication frequency at a number that made it an extreme outlier outside of the normal curve.

Because this is again another variable that requires the participation of a partner, some of the lowered means may actually reflect the lack of change in PCF because participants were not involved in a serious, committed relationship, which would require a discussion with one's mate. Previous research indicated several factors associated with decreased sexual communication such as infrequent communication with parents on topics of sex, lack of condom negotiation skill, and strong endorsement of partner-related barriers to condom use (Crosby, DiClemente et al., 2002).

Hypothesis #5: There will be a significant increase in mean scores over time (as assessed by the differences in sampling mean variance between the pretest, posttest, and follow-up) in self-reported Consistent Condom Use (CCU) during penetrative vaginal intercourse among SAHARA participants compared to the standard HIV education control participants.

Due to the inadequacy of data gathered for CCU, no analyses were conducted for this measure. Condom use in African American women lags behind their White counterparts. According to Daniels, Daugherty, and Jones (2014), 61.7% of approximately 61 million women between the ages of 15-44 in the U.S. used some form of contraception. Only 57.9% of non-Hispanic Black women used contraception (Daniels et al., 2014). The condom was the third most commonly used form of contraception behind the oral contraceptive pill and female sterilization, respectively (Daniels et al., 2014). CCU data was only varied for a total of four participants in both

the SAHARA intervention and the standard HIV control group combined. I postulate that the brief length of time between the intervention, the posttest, and the follow-up may have been a factor in discovering any measureable differences in consistent condom use. Additionally, if participants were not currently partnered or dating, there may have been limited opportunity to engage in vaginal intercourse. With most of the standard HIV education group consisting of undergraduate students, relationships status for this population can be better described as transient and less committed. Again the recruitment and sampling procedures used to acquire participants for this research may have possessed an unintended bias towards sampling from areas more frequented by women without main partners. The same could be said for women involved in more long-term and committed relationships. Studies have shown that these types of serious relationships can also serve as a barrier for women attempting to utilize HIV-related safer sex practices (Wingood & DiClemente, 1998b). Interestingly, previous research has demonstrated a strong positive correlation between partner communication and use of a condom at last incident of vaginal sex with a partner (Milhausen et al., 2007). The lack of data regarding consistent condom use (CCU) may also be a function of decreasing PCF score trends indicating a lack of communication with partners about sexual health topics.

Implications

The findings from this research have important and valuable implications for HIV prevention theory, research, and practice with African American women. In regards to theory and research, results from Darbes et al. (2008) highlight that effective behavioral interventions include cultural specificity, peer education, skills training, and multiple sessions. Williams, Ramamurthi, Manago, and Harawa (2009) identified successful

interventions included consistent core elements such as gender specificity, theoretical foundation, distinct target population, cultural and historical congruence, skill building, and well-defined goals. SAHARA proved as an intervention with these identified intervention elements that was able to be adapted into another medium in order to enhance its relevancy for other African American populations. The combination of SCT and the Theory of Gender and Power as a theoretical framework for HIV prevention notes a slight shift in reliance on models considered to be the most popular and long-standing. The focus on culture in SAHARA paves the way to allow other non-traditional theories that incorporate the social construct of culture into the future of HIV intervention.

These findings also underscore insight into advancing research methodology for HIV prevention. This examination of SAHARA allowed for an equivalent amount of exposure for both the SAHARA intervention and the standard HIV education control program. Noar et al.'s (2009) meta-analysis of computer-based interventions indicated that a majority of the peer-reviewed published trials included a usual care control or comparison control group that did not include an equivalent amount of exposure to the computer-based intervention. This SAHARA intervention and the standard HIV education intervention were both completed within the same timeframe, therefore refuting the notion of SAHARA participants exhibiting more HIV-protective behaviors due to having more contact time. Additionally, this research was geared towards addressing some of the limitations underlined by Wingood et al. (2011). One such limitation involved the use of the 15-minute group component. Including the group session as a part of SAHARA would likely decrease the feasibility of distributing this

intervention in some medical and primary care settings because of needing additional staff to facilitate this portion of the intervention. The current study with SAHARA was conducted without the use of the 15-minute group in order to allow for the examination of the effectiveness of the intervention without this component.

Recruitment of African Americans for HIV prevention research will need to take a novel, non-traditional approach in order to reach this target population. A history of racism, discrimination, and prejudice within the medical system resulted in feelings of distrust among African Americans and created barriers to participation in scientific research. Systematic reviews of minority research participation revealed numerous barriers for not only participants but for researchers as well (George, Duran, & Norris, 2014). George et al. (2014) underscored how recruitment, enrollment, and retention in research can be negatively impacted by researchers due to cultural incompetence, cultural insensitivity, and a lack of knowledge about cultural and linguistic differences. For participants, the barriers included schedule conflicts, lack of transportation, poor access to medical care, restriction of normal behaviors, and psychosocial influences such as racism, distrust, and fear (Corbie-Smith et al., 1999). More specific to HIV prevention, fear of infection or declining health are major factors linked to the current status of nonparticipation in HIV prevention and clinical research by African Americans. This is likely attributable to the history of the Tuskegee Syphilis Study and AIDS conspiracy theories. This will require a shift towards expanding recruitment interventions to include a combination of social marketing, community outreach, and health system interventions in order to successfully enroll persons of color into clinical research. Allowing for research and HIV prevention services to take place in community-centered organizations

and institutions, like churches and community centers, may prove to be a more viable option. This current research participated in community outreach to local churches, events, and businesses that catered primarily to African Americans in the hopes of enlisting their help with this research and recruiting. Considering that interventions like SAHARA are portable and accessible through the Internet, participants can complete the research in the comforts of their own homes.

Clinical application and practice in HIV prevention, comprehensive sex education, and family planning that solely discusses abstinence and contraception may still fall short for African Americans, especially African American females. According to Sobo (1995), if the education provided lacks realistic applicability to the population it is addressing then the information may be rejected or reinterpreted in order to meet the receiving audience's beliefs and worldviews. Applicability and cultural sensitivity are important aspects within sex education that must be attended to in order to increase the efficacy of the intervention for African American women. Mays and Cochran (1988) highlight how sex education that encourages women to talk with their partners during sex assumes that a commensurate relationship exists and this may not be the reality for many urban African American couples living in poverty.

SAHARA produced significant differences in STD/HIV knowledge and condom barrier beliefs but had little impact on condom self-efficacy and partner communication frequency. These results place emphasis on how this intervention may have greater ability to affect change in HIV prevention areas that pertain to individual factors versus those that are relational factors and/or involve an intimate partner. Whereas STD/ HIV knowledge and condom barrier perceptions are two vital components of risk-reduction

for African American women, they are also factors that are based on aspects of the individual, primarily knowledge acquisition and negative beliefs about condoms. Factors that actually require an interaction between the African American woman and her sex partner did not appear to be impacted by the SAHARA intervention. Condom use self-efficacy not only requires having confidence in one's ability to execute the use of a condom correctly, but it unintentionally supports a notion of possessing the ability to exert control over the actions and capacity of another (i.e., the male partner wearing the condom). As previously mentioned, condom use self-efficacy includes perceived benefits of condom use, access to condoms, undergoing sex education, and peer-related norms for condom use (American Academy of Pediatrics, 2001). Most of these aspects of condom use require an engagement in a relationship with another person. Partner communication frequency presents with a similar quandary considering that communication occurs as an exchange between people. An African American woman can choose to initiate a conversation related to sexual health but she will need the compliance of her partner to engage in the act with her. Although neither partner communication frequency nor condom use self-efficacy were found to increase as an effect of the SAHARA intervention, both of these variables may have approached significance if greater attention were paid to the inclusion of communication skills building and role-playing for couples instead of only focusing on the female. Practice should aim to incorporate culture-specific intervention strategies for couples and families as opposed to individuals only. Research has demonstrated that African American couples respond well to these types of interventions and believe they are effective at enhancing interpersonal communication, decision-making, and problem solving (NIMH Multislice HIV/STD

Prevention Trial for African American Couples Group, 2008). SAHARA could be more effective if it provided an alternative and complementary version for the male partners in the relationships with the female participants.

In practice, counseling psychology has a unique and fitting commitment to prevention work that is essential to HIV intervention work. The use of computer-based HIV interventions has important implications for shaping the health of African American women. SAHARA was shown to increase STD/HIV risk behavior knowledge and to lessen perceptions of condom barriers for study participants across time in samples of rural and urban African American women living in Kentucky and Georgia. This is especially important considering that rural populations of African American women may mistakenly consider themselves to be at less risk for HIV because of a false sense of security of being protected from this epidemic (Crosby, Yarber, DiClemente, Wingood, & Meyerson, 2002). The SAHARA prevention intervention provides education in an interactive and tailored platform that is relatable to African American women and allows for active engagement in the intervention. It is thought that the educational component of SAHARA could be improved by customizing the intervention to include HIV-related statistics and information specific to the geographic area in which the program user resides. This would be especially helpful for increasing the HIV risk awareness of rural women and others that live outside of a major urban epicenter. Skills building demonstrations of male and female condom application through video on SAHARA along with condom negotiation role-plays also supported decreased condom barrier perceptions.

Additionally, the quality and accessibility to prevention services within a nontraditional settings provided data regarding the translational capabilities of this evidence-based intervention in real-world settings. Unlike traditional HIV prevention interventions, SAHARA is more cost-effective and easier to deliver because it only requires the use of a computer. Because of SAHARA's ease of use and audio capabilities, it could be provided to patients on tablets or laptops while patients wait to meet with their physicians or incorporated as a tutorial on a patient portal website. If the intervention is given to the participant prior to the appointment with the provider, it may prompt patients to ask their medical providers HIV/STD-related health questions.

Until the eradication of HIV or the creation of an effective HIV/AIDS vaccine is manufactured, behavioral interventions are both critical and crucial to reducing HIV infection rates. Current research directions are underscoring the importance of disseminating and utilizing effective behavioral interventions, particularly those that are culturally tailored for oppressed and marginalized populations such as African American women. Culturally relevant interventions aim to acknowledge and address the multiple levels of social and contextual factors that contribute to the detrimental health behaviors and poor health outcomes experienced by these underserved groups. An essential component involved in curbing the spread of and leading to the eventual elimination of HIV and its deleterious consequences within communities of color will involve addressing the macro-level sociopolitical factors that perpetuate its population-level effects.

Limitations

Although this research aspired to contribute new knowledge to the academy of HIV research, it is not without its limitations. Some of the most critical limitations of this study involved the lack of randomization to group assignment, small sample sizes, short durations of time between interventions and follow-up, restructured scale scoring, and the use of self-report measures. The lack of randomized assignment to intervention groups was a major limitation. The use of a convenience sample created non-probability samples that potentially limited the ability to make valid inferences about the population of African American women (i.e., generalizability). As confirmed by the preliminary analyses of the two samples, there were indeed some inequalities in demographic variables between the standard HIV education control group and the SAHARA group. The use of non-randomized assignment in this research resulted in the standard HIV education participants consisting primarily of currently enrolled undergraduate students, while the majority of SAHARA participants consisted of those who had earned more years of formal education and were no longer enrolled in college. The use of college students in research is convenient and more cost effective, but likely led to a lack of equivalency between the standard HIV education control group and the SAHARA group. These differences may also have contributed to the poor response rates of survey completion.

Another limitation was the differential mortality between the two treatment groups, which was likely a factor of the non-probability samples. Unintentional bias was introduced into this research because the two comparison groups were different as a result of the recruitment and sampling techniques used. Within this study, the undergraduate students exhibited higher rates of attrition. The differences in attrition

rates impacted the amount of available data collected and analyzed. Additionally, convenience sampling resulted in many of the SAHARA participants residing in more urban areas of Kentucky and Georgia compared to the standard HIV education group, which lived in more rural areas. Considering that more urban areas have the resources to address HIV prevention through education, outreach, and medical services, rural areas are at a disadvantage (National Rural Health Association, 2004). Additionally rural populations, especially rural African American women, underestimate their risks of exposure to HIV or other STDs (Crosby, Yarber et al., 2002). Some of the standard HIV education participants may have been lost to follow-up because of a misconception of low risk in regards to HIV exposure.

The small sample size and low response rate limited the amount of data gathered to allow for a more substantial analysis. In addition to these external validity issues, this sample of African American women may not be comparable to other African American women within the same geographic areas or sociodemographic dimensions. In future research, recruitment aimed at gathering more participants than required for a minimum sample size, will help to retain a suitable numbers of participants after attrition while still providing an adequate level of power. The study should have also been repeated in numerous trials in order to gather enough data for analysis.

Restructured scale scoring was also a contributory limitation within this research. As noted earlier, the scoring assignment for the Condom Self-efficacy scale was changed and allowed lower scales scores to represent greater perceived beliefs that using condoms would be a barrier to sexual intercourse engagement. This scoring assignment differs from prior research work with this measure. The research of Wingood et al. (2011) used

this scale with reverse scoring on a Likert-type scale from 1 to 5, where ‘1’ represented ‘Strongly Disagree’ and ‘5’ represented ‘Strongly Agree’. With the use of reverse scoring, higher scores reflected greater perceived barrier beliefs about condom use in the engagement of sexual intercourse. This difference in scoring assignment may create confusion and results that appeared to contradict that of previous research findings in the literature. Additionally, PCF-related questions allowed respondents to estimate the exact number of times they communicated with their partner through the use of a fill-in-the-blank question as opposed to a multiple choice question. The difference in the question type may have allowed participants to arbitrarily select a number instead of choosing a more accurate measurement.

Considering that most prevention research requires longer periods of time for follow-up ranging from three months to one year, this study was limited in its deviation from the use of a longer time frame for follow-up. The allotted time of one month for follow-up was likely too short and decreased the ability to determine long-term effects of the interventions. The use of an online survey could have also negatively impacted response rates. Although online surveys offer several benefits including low cost, ease of design and implementation, and streamlined data management, they produce low response rates (Archer, 2008; Wiseman, 2003). Online surveys also can create obstacles for participants without access to the Internet or a computer. Additionally, the primary measurement tool was a survey that relied on the participants to provide self-report information. Self-reporting can result in decreased reliability because of recall bias from issues such as memory-related difficulties or under- or over-reporting for the purpose of appearing more or less desirable as a participant. Another limitation of this self-report

survey is intention to assess the private and personal subject matter of sexual behavior. Answering these questions at several different time points may have posed difficult and uncomfortable for some participants. Also the length of the survey possibly created some challenge to completing all surveys. A reduction in the number of questions on this survey might increase the likelihood of survey completion.

Recommendations

Initial recommendations for future directions in this research are to address the aforementioned limitations of small sample size, reliance on self-report data, and the brevity of time between follow-up highlighted in this scholarly work. The statistically significant findings discovered lend favorable support for study replication with larger sample sizes with the expectation of increasing data robustness.

With the use of multimedia electronics and hi-tech gadgets becoming a staple of society, it will be essential for HIV prevention methods to keep up with the latest trends in order to be impactful. Translating SAHARA into a mobile application for smart phones could prove cutting edge for the next step in HIV intervention dissemination. Conducting similar studies with larger samples and more rural populations will be needed and will also require additional funding to provide financial incentives for participation. Many studies of sexual behavior and prevention offer monetary resources in exchange for study involvement. If participants were paid for each survey completed, there would likely be an improvement in study retention and completion. Making self-report surveys shorter in length and time required for completion may also be less aversive to study participants. Completing in-person interviews or user-friendly surveys for smart phones and tablets may be more feasible for future research.

Several of the results found within this study invite the possibility of a qualitative exploration of SAHARA's impact on African American women's HIV-risk related behaviors. For example, the rebound effect that occurred between posttest and follow-up scores for perceptions of condom barriers was unexpected. Qualitative research would provide additional narrative and theme-related information that could elucidate why this phenomenon may have occurred. Additionally a qualitative examination of the challenges and barriers of partner communication would unveil some profoundly insightful data lending to a better understanding of the impact of SAHARA but would also deliver evidence for the enhancement of communication components within other HIV interventions. The option to gather qualitative data on all of the dependent variables as well as a program evaluation of SAHARA by the participants would offer richer data for exploration.

Conclusions

This study set out to examine the effectiveness of a computer-based behavioral prevention intervention on HIV-related risk behaviors for a sample of African American women living in urban and rural areas of Kentucky and Georgia. This research is significant because it added to the dearth of prevention intervention geared toward a vulnerable population. African American women represent the largest group of HIV+ women and account for the majority of HIV diagnoses in major areas of the U.S. such as the South, the Midwest, and the Northeast (CDC, 2011). It is essential to delve deeper into the complex web of factors related to the incidence and prevalence of HIV/AIDS in order to address the consequences of sickness and death these illnesses cause among African American women.

Regardless of the aforementioned limitations, it is believed that this study did produce some data of notable contribution and worth to the realm of HIV prevention research. This study ventured to examine the use of computer-based HIV interventions with vulnerable populations and engaged in the recruitment and involvement of African Americans in clinical research. This research experience also created an opportunity for an African American female scientist and practitioner with tremendous interest, fervor, and an enduring commitment to HIV prevention and service for African Americans to develop and hone her research skills. This study irrevocably impacted the lives of 52 women who agreed to participate in the HIV prevention interventions as it helped to bring awareness of the continued crisis of HIV infection in the U.S. among African Americans.

This research contributed to expanding the knowledge base regarding research on African Americans, as well as general HIV prevention research. Through the application of SAHARA with a group of African American women living in urban and rural areas of Georgia and Kentucky, the intervention was disseminated to a different subpopulation of African American women. It served to provide information and insight into the inner workings of a subset of the African American community while concurrently exposing the diversity that exists within this cultural group. Additionally this scientific work played a part in the immerging literature regarding the adoption of computer-based, evidence-based interventions (EBI) within HIV prevention research.

Appendix A

SISTA Sessions (SISTA Project Training, 2008)

The SISTA Project consists of five weekly two hours sessions. The goals and activities of the sessions are as follows:

Session 1-Ethnic/Gender Pride

Goal: Generate a discussion about being African-American and female, having pride in oneself, and valuing oneself.

Session 1 Activities:

- Read Opening Poem
- Greetings and Introduction
- Ground Rules and Expectations
- Facilitate Gender/Ethnic Pride Discussion
- Homework
- Session 1 Evaluation
- Read Closing Poem and Recite SISTA Motto

Session 2-HIV/AIDS Education

Goal: Provide factual and statistical information on HIV/AIDS and other sexually transmitted diseases (STDs), correct misconceptions about HIV/AIDS, and discuss the importance of protecting oneself.

Session 2 Activities:

- Read Opening Poem
- Review Ground Rules and Expectations
- Review Session 1 Key Concepts
- Distribute HIV/AIDS Informational Materials and Initiate Discussion
- HIV/AIDS Educational Activity
- Video Presentation and Discussion
- Homework
- Session 2 Evaluation
- Read Closing Poem and Recite SISTA Motto.

Session 3-Assertiveness Skills Training

Goal: Teach the distinction among assertive, aggressive and non-assertive behaviors and teach skills to initiate assertive qualities.

Session 3 Activities:

- Read Opening Poem
- Review Session 2 Key Concepts and Review Homework
- Facilitate a discussion on Assertion and Aggression
- Review Situational Vignettes and Discuss Steps in Decision Making
- Homework
- Session 3 Evaluation
- Read Closing Poem and Recite SISTA Motto.

Appendix A (continued)

SISTA Sessions (SISTA Project Training, 2008)

Session 4-Behavioral Self-Management

Goal: Decrease participants' anxiety about condom use, demonstrate and role-play how to use condoms and discuss reasons that women do not insist upon using condoms.

Session 4 Activities:

- Read Opening Poem
- Review Session 3 Key Concepts
- Discussion on Condom Use and Overcoming Barriers to their Use
- Distribute condom packets and lubricant
- Condom Demonstration and Assessment of Participants' Knowledge
- Role Play Negotiation Exercises
- Homework
- Session 4 Evaluation
- Read Closing Poem and Recite SISTA Motto

Session 5-Coping Skills

Goal: Initiate discussion about coping with life experiences --including the link between alcohol and AIDS, coping with alcohol and sex, and coping with negative responses. This session also serves as a review of the previous sessions.

Session 5 Activities:

- Read Opening Poem
- Review Session 4 Key Concepts and Homework
- Review Session Handouts
- Discussion of Coping Skills and its Relationship to Alcohol Consumption
- Distribute Coping Handout
- Purpose of Booster Sessions
- Final Evaluation
- Read Closing Poem and Recite SISTA Motto

Appendix B

Letter to Dr. Gina Wingood

September 28, 2011

Dr. Gina A. Wingood, Ph.D.

Dear Dr. Wingood,

My name is Krystal Frieson and I am a doctoral student in counseling psychology and a master's student in public health student at the University of Kentucky. I am very interested in your research with the computer-based intervention, SAHARA. I am very interested in doing my dissertation on the application of your program with a population of African American women in Lexington, KY.

I would be very honored if you would grant me permission to utilize your program along with the evaluation tools your research team used to evaluate the program during your preliminary efficacy study. Your assistance would be greatly appreciated and would provide me an opportunity to contribute to the scholarly advancement of research in the fields of psychology and public health.

If you have any questions or concerns, please feel free to contact me. Thank you very much for your time.

Sincerely,

Krystal S. Frieson, M.S., Ed.S.

Appendix C

SAHARA Program Contents

Table of Contents for SAHARA	
Session 1	
Title	Content
Welcome to SAHARA Sista!	Introductory presentation about the program including the name and purpose. Recitation of a poem about racial pride by an African American poet.
Optional Computer Tutorial	Demonstrates the basic navigational functions of the program and provides opportunity for learning to use a mouse.
What Does It Mean to Be a Black Woman?	Short video segments of a group of Sistas with each Sista stating what it means to her to be a Black woman, followed by a segment in which the user is asked to think about what it means to her to be a Black woman.
Who is a Strong Black Woman in Your Life?	Video segment of each Sista sharing a description of a strong Black woman in her life. The user is asked to think about and identify a strong Black woman in her life.
What's Most Important?	Multimedia presentation explaining the concept of personal values, an interactive exercise in which the user selects and ranks the values most important to her, two "think about it" segments in which the user thinks about why it is difficult to identify values important to her and the importance of knowing her values, and a video segment of the Sistas discussing what is important to them.
My Body, My Spirit	Multimedia presentation on the value of the body followed by video segments of each Sista describing how she honors her "temple."
What's All This About HIV and AIDS?	Multimedia presentation that defines HIV and AIDS and describes their impact on African American women.

Appendix C (continued)

SAHARA Program Contents

Table of Contents for SAHARA	
Session 1 (continued)	
Title	Content
How Can I Protect Myself?	Multimedia presentation about the levels of HIV risk for specific activities followed by a game that allows the user to evaluate her comprehension of the material and reinforces the information.
Other Infections...Curable? Or Not?	Short multimedia introduction to STIs. The user controls an interactive STI selection mechanism to view in-depth information about specific STIs.
Risk Factors and My Life	Multimedia presentation about what puts young African American women at risk, reviewing the relationship of personal choices to risk. This section includes a short interactive game in game show format on the risks of douching, a multimedia presentation on the influence of the media in the user's life, and a video segment of the group of Sistas discussing risk factors in their lives.
Men! (The Dating Game)	Multimedia segment about the decisions women make when choosing a sexual partner, reviews the concept of identifying desirable characteristics in the men they date. The user is presented with an interactive "dating game" in which she selects men to date based solely on appearance. She is given the opportunity to think about her choices and the usefulness of selecting partners based on superficial characteristics. The user is then presented with a series of potential partners and is asked to decide if she would date that person. The positive and negative characteristics of each partner are discussed by the Sistas in video segments.
AMOUR: 5 Options	Multimedia segment about 5 safe/safer sex options. Includes a video wrap up of Session 1 by a health educator.

Appendix C (continued)

SAHARA Program Contents

Table of Contents for SAHARA	
Session 2	
Title	Content
Welcome Back! Let's Talk Sex	Video segment with a health educator welcoming the user to Session 2 and briefly reviewing concepts from Session 1.
Passive, Aggressive, or Assertive?	Multimedia segments describing each of the communication types followed by video segments demonstrating each communication type followed by a multimedia segment on using assertive communication techniques with a partner.
Diggin' on James	User is presented with a scenario in which she must make a decision about whether to participate in a high-risk sexual activity. After making a decision she is asked to think about how the scenario and decisions would have been different if a condom had been available.
Condoms: Putting ARMOUR to Work	Detailed multimedia segment describing 5 safe/safer sex options. Includes a video segment of a couple modeling a condom use negotiation.
Condoms: His Excuses, Your Comebacks	Condom use negotiation simulation requiring the user to select an appropriate comeback to a series of excuses put forth by a prospective sexual partner.
Condoms: Hands On!	Video segments of a health educator demonstrating how to use a male condom and a female condom, followed by a video segment of the Sistas practicing putting condoms on a proxy to further demonstrate and reinforce the concepts.
Ask Sista Shanika: What Advice Would You Give?	User views a series of questions/answers about sex and HIV from an advice columnist. The user is presented with a letter requesting advice and asked to think about what advice she would give to the author.

Appendix C (continued)

SAHARA Program Contents

Table of Contents for SAHARA	
Session 2 (continued)	
Title	Content
Thinking About Relationships: Healthy and Unhealthy	Multimedia presentation overview of healthy and unhealthy relationships. The user is presented with an interactive game where she determines whether common elements of relationships are healthy or unhealthy.
Warning Signs: Relationship Violence	Multimedia presentation about physical and emotional abuse in relationships, early warning signs of relationship violence, and the dangers to be aware of when breaking off an abusive relationship.
Healthy Relationships	Multimedia presentation about what puts young African American women at risk, reviewing the relationship of personal choices to risk. A short interactive game in game show format on the risks of douching. A multimedia presentation on the influence of the media in the user's life. Video segment of the group of Sistas discussing risk factors in their lives.
Stay Strong, Sista!	Video segment with the SAHARA health educator providing encouragement to implement the information from the program and congratulations on completing the program.

Appendix D

Participant Solicitation Script

Hello,

My name is Krystal Frieson and I am a student at the University of Kentucky conducting research on the application of a health education course specifically designed for African American women. Would you be interested in hearing more about this opportunity in hopes of volunteering to participate? If you're interested in participating, please give me your name and email address. If you would like a printed copy of the consent form, I have one available. Thank you very much for your time and consideration.

Possible Locations for Participant Solicitation

University of Kentucky: National Pan-Hellenic Council, Black Student Union, Women of Color Support Group

Bracktown Baptist Church

Consolidated Baptist Church

The SHARE Center

Devassas's Bar and Bistro

Bar Lexington

Lexington-Fayette County Public Health Department

Appendix E

Standard HIV Education Control Intervention PowerPoint Slides

HIV 101: A Health Education Program
Angel Clark
Health Educator
AVOL, Inc. Prevention Program Director

THE GOOD NEWS FIRST!

- You are privileged because you have access to HIV/AIDS education
- You are privileged because you have access to FREE condoms and FREE HIV screenings

THE BAD NEWS?

- An estimated 34 MILLION people are infected worldwide! Why?
 - Lack of access to HIV/AIDS education
 - Lack of access to prevention materials and testing
 - Lack of access to HIV treatment
 - SEVERAL other issues

There is no cure.

BUT!
With early treatment & prevention we can slow the progression of the virus and stop the spread.

Objectives

- Gain epidemiological information and prevention education about HIV/AIDS
- Understand and describe methods of transmission and prevention of HIV/AIDS
- Identify available services and resources related to HIV prevention

WHAT IS HIV?

- Human Immunodeficiency Virus
 - HIV is a retrovirus that attacks the immune system by destroying white blood cells. White blood cells that fight infection and this leaves your body more susceptible to illness.
 - HIV causes and can lead to AIDS.

WHAT IS AIDS?


- AIDS = Acquired Immune Deficiency Syndrome
 - A serious illness that makes the body unable to fight infection.
 - A person with AIDS is susceptible to certain infections and cancers.
 - When a person with AIDS cannot fight off infections this person becomes ill. These infections are life-threatening.

HIV & AIDS: WHAT'S THE DIFFERENCE?

- HIV is the virus that causes AIDS
- AIDS is diagnosed in one of two ways:
 - HIV positive AND
 - White blood cell (helper T-cells) count drops below 200
 - OR
 - Presence of opportunistic infection

How Do Viruses Work?

- Viruses are considered non-living because they do not use energy to grow or to respond to their surroundings.
- Viruses are little more than genetic information wrapped in a protective outer coating.



How Do Viruses Work? (cont'd)

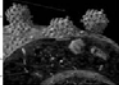
- Viruses don't serve any purpose but to exist and make more viruses, however...
 - they cannot actually reproduce on their own.
 - their genetic information takes control over other cells.
 - viruses infect and retoul cells to make copies of the virus.
 - they exist by using cells to replicate (duplicate) them.
 - this process damages or even destroys the host cell.

Appendix E (continued)

Standard HIV Education Control Intervention PowerPoint Slides

HIV "Life" Cycle


- The virus attaches to cell surface (p 130 on CD4)
- Virus enters cell
- Viral RNA is converted to DNA (reverse transcriptase called "reverse transcription")
- Viral DNA enters cell nucleus and combines with host cell's DNA
- RNA copies are made, infect-
more the nucleus



HIV Relationship with Cells

- HIV targets the "CD4+" cells and these cells are the potential hosts to HIV.
- What is a CD4 cell or T-cell?
 - CD4 cells or T-cells are the "generals" of the human immune system. These are the cells that send signals to activate your body's immune response when they detect "intruders," like viruses or bacteria.
 - Because of the important role these cells play in how your body fights off infections, it's important to keep their numbers up in the normal ranges.

HOW T-CELLS WORK IN YOUR IMMUNE SYSTEM



CD4 & T-CELL: WHAT'S THE DIFFERENCE?

- You may have noticed that the terms "T-cell" and "CD4 cell" are used interchangeably.
 - When talking in terms of HIV, these two names mean the same thing.
 - They both refer to the same type of cell.
 - While there are many different types of T-cells, these particular cells have a specific receptor site on their surface called the CD4 receptor site.
 - HIV uses this particular receptor to latch on to the T-cell, making it a prime target for infection.

HIV RELATIONSHIP WITH CELLS

- Since target cells for HIV infection are not commonly found in most body fluids, HIV transmission is fairly limited.
- Fortunately, HIV's host cells are not found in sweat, tears, urine, feces, sputum, non-blooded saliva, vomit, or nasal secretions.
- These fluids are barren environments for HIV. Likewise, these fluids do not transmit HIV.

HIV RELATIONSHIP WITH CELLS(cont'd)

- Once in full gear, HIV replicates at a rate of over 10 billion viral particles a day.
- Within two weeks of infection 250 billion cells are infected.
- The "life" span of a free floating viral particle is only about six hours. HIV is relatively fragile and highly dependent upon CD4+ cells.
- Once a newly produced viral particle has infected its host cell, it takes about 2.5 days for it to begin replicating itself.
- After HIV replication begins, the CD4+ cell lives about 1.6 days.

LATEST HIV STATS

- About 50,000 people get infected with HIV each year. In 2010, there were around 47,500 new HIV infections in the United States.
- About 1.1 million people in the United States were living with HIV at the end of 2009. Of those people, about 18% do not know they are infected.
- MMM account for 61% of new HIV infections, and 45% of all new HIV infections are in African-Americans

AFRICAN AMERICANS & HIV

- African Americans have the most severe burden of HIV of all racial/ethnic groups in the U.S.
- Compared with other races and ethnicities, African Americans account for a higher proportion of HIV infections at all stages of disease - from new infections to deaths.
- Young African American gay, bisexual, and other men who have sex with men are especially at risk of HIV infection.
- The estimated rate of new HIV infections for black women (18.1/100,000 population) was 20 times as high as the rate for white women, and about five times as high as that of Latinos.

National Black HIV/AIDS AWARENESS DAY


Black Americans continue to experience the most serious burden of HIV compared with other racial/ethnic groups.

Prevalent HIV Infection

At the end of 2009, the largest percentage of Americans living with an HIV infection...

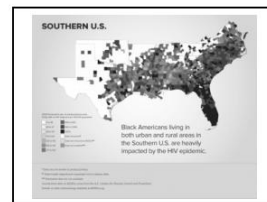
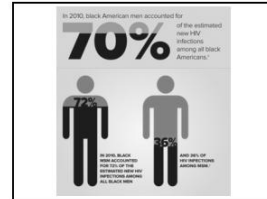
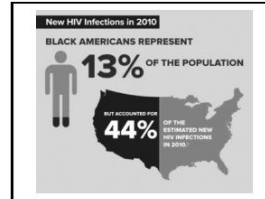
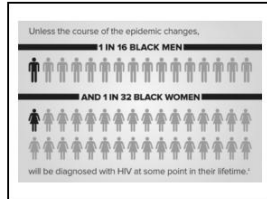
43%

...was that among Black Americans.



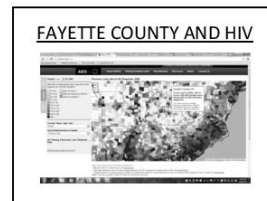
Appendix E (continued)

Standard HIV Education Control Intervention PowerPoint Slides



KENTUCKY & HIV/AIDS

- 1 person is diagnosed with HIV every day in Kentucky
- 32% of people in Kentucky with HIV are infected before age 30
- AIDS is tied as the 2nd leading cause of death among Hispanic women in KY, the 3rd leading cause of death for black men, and 8th for black women and white men
- Confirmed, there were more than 4,494 Kentuckians living with HIV as of 2009



Appendix E (continued)

Standard HIV Education Control Intervention PowerPoint Slides

JEFFERSON COUNTY AND HIV

WOMEN AND HIV/AIDS

- For females with HIV/AIDS in Kentucky:
 - Heterosexual exposure and injection drug use are the most common modes of transmission of HIV
- Most HIV infections among black women are attributed to heterosexual sex.
- All pregnant women should have blood test to check for HIV infection.
 - Mothers can pass HIV to their babies during pregnancy, labor and delivery, and by the child ingesting infected breast milk.

HOW DO YOU GET HIV/AIDS?

- HIV can be transmitted through...
 - Sexual Contact
 - Pregnancy, Childbirth, and Breast Feeding
 - Injection Drug Use
 - Occupational Exposure
 - and rarely by Blood Transfusion/Organ Transplant

HIV TRANSMISSION

HIV is found in specific human body fluids:

- Blood
- Semen (including pre-ejaculate)
- Vaginal fluids
- Breast milk
- Rectal (anal) mucous

When any of these **five infected** fluids enter the **bloodstream** of a **non-infected** person, HIV is transmitted.

MYTH BUSTER BRAK!

I can get HIV just by being around people who are HIV-positive.

Myth

Fact: The evidence shows that HIV is not spread through touch, tears, sweat, or saliva.

You cannot catch HIV by:

- Breathing the same air as someone who is HIV-positive
- Touching a toilet seat or doorknob handle after an HIV-positive person
- Drinking from a water fountain
- Hugging, kissing, or shaking hands with someone who is HIV-positive
- Sharing eating utensils with an HIV-positive person
- Using exercise equipment at a gym

You **can** only get it from infected blood, semen, vaginal fluid, mother's milk, or anal mucous.

MYTH BUSTER BRAK!

You can avoid STDs by having oral or anal sex.

Myth

Fact: Where there's sex (oral, anal, vaginal, or even just sexual contact), there can be STDs.

- The viruses or bacteria that cause STDs can enter the body through tiny cuts or tears in the mouth and anus, as well as the genitalia.
- Some STDs, like herpes or genital warts, can spread just through skin-to-skin contact with an infected area or sore.

What can you do?

- Use a condom or a dental dam every time you have oral or anal sex. If the taste of latex isn't your thing, there are flavored condoms made specifically for oral sex.

HOW DO I REDUCE MY RISK?

Sex-related:

- Using a barrier consistently and correctly
 - Male and female condoms
 - Dental dams
 - Finger cots

Drug-related:

- Flushing needles with bleach and water three times

HIV IS NOT TRANSMITTED THROUGH CASUAL CONTACT

GUY/GIRL

- Vaginal sex is "safer" than anal sex
 - The vaginal walls are stronger than rectal lining
- Don't forget... condoms prevent STDs and pregnancy
 - More reason to use a condom and not swap fluids during sex
 - Periodically check to make sure the condom is intact
- Experiment with safety!
 - Lubes can enhance pleasure, and condoms come in every shape/size/color/flavor
 - Use different toys (but don't share bare ones!)

GIRL/GIRL

- Lesbians are at risk, too!
 - Keep up-to-date with your routine tests at your gynecologists... Early detection saves lives!
- No hangnails! They can tear the skin
 - Make sure hands are washed and nails are trimmed
 - Use finger cots (condoms for your fingers)
- Brushing and flossing before/after oral sex creates microtears and could cause bleeding... not good when trying to prevent HIV transmission!
- Always use a barrier
 - Dental dams
 - Plastic wrap works just as well

Appendix E (continued)

Standard HIV Education Control Intervention PowerPoint Slides

MYTH BUSTER BREAK!

Once you've had an STD, there's no chance of getting it again.

Myth
Fact: You can get some STDs more than just once.

- Some STDs are yours for life, like herpes and HIV. Others, like Chlamydia and Gonorrhea, can be treated, but you may get infected again if you have sexual contact with someone who has them.

What can you do?

- Protect yourself with condoms, of course! And if you're having sex, let your doctor know so you can get tested regularly.
- If you do get diagnosed with an STD, your partner should be treated at the same time you are. That way your partner will avoid future problems — and avoid re-infecting you.

MYTH BUSTER BREAK!

If you get checked and you're STD free, your partner doesn't need to get checked as well.

Myth
Fact: Your partner could have an STD and not know it.

- Who wants to make the effort to get tested, find out they're clean, and then end up catching an STD from a partner anyway?

What can you do?

- Get tested together. It may not be your most romantic date, but nothing says "I care" like trying to protect a boyfriend or girlfriend from illness.

STDs: WHAT'S THE BIG DEAL?

- STDs can cause more than just embarrassment. They're a serious health problem. If left untreated, some STDs can cause permanent damage, such as infertility and even death.
- There are tons of myths out there about sex and STDs — the ones above are just a few of them. Luckily, you only need to remember these essential truths:
 - The only way to 100% avoid STDs (and pregnancy) is not to have sex.
 - If you do have sex, use a condom every time.
 - If you have had sex, get tested for STDs.

SCREENINGS: WHEN / HOW?

- Should be performed **90 days after** possible exposure, and then **once a year** for sexually active people
- 2 types of tests
 - Anonymous: no names, no ID required (AVOL)
 - Confidential: HIPAA trained staff knows limited information
- Oral Swab (screens for antibodies, not HIV itself)
- OraSure or Blood Draw (confirms the antibody test)

WHY SHOULD I BE TESTED?

- **If you've never been tested**, you should be tested at least once
- **If you do or have done** any of the following:
 - Injecting drugs or steroids with used equipment
 - Having sex with someone who has HIV or any STD
 - Having more than one sex partner since your last HIV test
 - Having sex for money, resources, and/or drugs
 - Having unprotected sex or sex with someone who has had unprotected sex
 - Having sex with injecting drug users
 - Had a blood transfusion between 1978 and 1985
 - Pregnant women or women desiring to become pregnant

WHAT CAN YOU DO?

- KNOW YOUR STATUS!
- PROTECT YOURSELF AND OTHERS!
- EDUCATE YOURSELF AND OTHERS!

UNSAFE SEX OR SAFER SEX

What is unsafe sex?

- Vaginal, anal, or oral sex without using a condom or dental dam
- Sharing sex toys
- Contact with HIV infected blood, semen, vaginal fluids, or anal mucus

What is "safer" sex?

- Abstinence (not having sex of any kind)
- Sex only with a person who does not have HIV, does not practice unsafe sex, or inject drugs
- Using either a male or female condom or dental dam (for oral sex)

HOW TO USE A CONDOM

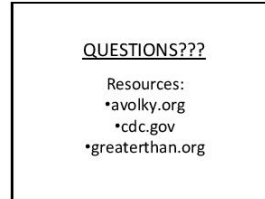
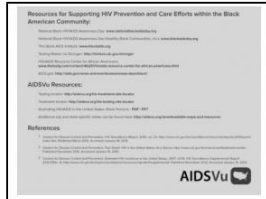
1. Use a new latex condom every time you have sex.
2. Roll the condom onto an erect (hard) penis, pinching ½ inch at the tip of the condom to hold the ejaculation (semen) fluid. Smooth out the air bubbles.
3. Use plenty of WATER-BASED lubricants such as K-Y Jelly, including a few drops in the condom, before and during intercourse.
4. After ejaculating, withdraw the penis holding the condom at the base so it will not slip off.
5. Throw away the used condom into a garbage can and wash your hands.

ULTIMATELY...

- Communication is key
 - Don't rely on someone else to protect you... keep your own safe-sex materials handy
 - If you don't like something, speak up! The best safe sex is the kind that both partners can enjoy
- Get tested at least every 6 months (every 3 months if you're having unprotected sex)
 - Get screened at AVOL or at the local health department
 - Encourage your partner to do the same
- One or two orgasms are not worth your health
 - Always try to make decisions you would be comfortable with the next day

Appendix E (continued)

Standard HIV Education Control Intervention PowerPoint Slides



Appendix F

Consent to Participate in a Research Study

SAHARA/Health Education Program for African American Women

WHY ARE YOU BEING INVITED TO TAKE PART IN THIS RESEARCH?

This program will provide you with an educational course related to encouraging health promoting behaviors in your personal life. I, Krystal Frieson (Principal Investigator), a doctoral candidate at the University of Kentucky, under the advisement of Dr. Keisha Love in the Department of Educational, School, and Counseling and her research team at the University of Kentucky, would like to you to participate in a health education program and assessment surveys for research purposes. You are being invited to take part in this research study because you are an African American woman living in Lexington, Kentucky. If you volunteer, you will be one of about 100 people to do so in the central Kentucky area.

WHAT IS THE PURPOSE OF THIS STUDY?

By doing this study, we hope to learn how a HIV education program affects the behaviors of African American women. Specifically, we want to know if your participation in this program decreased your behavioral HIV risks and improved your health-promoting behaviors.

ARE THERE REASONS WHY YOU SHOULD NOT TAKE PART IN THIS STUDY?

If you are under the age of 18 and/or are not of African descent, you may not participate in the study.

WHERE IS THE STUDY GOING TO TAKE PLACE AND HOW LONG WILL IT LAST?

The research setting will be located at the AIDS Volunteers, Inc. (AVOL) offices in Lexington, Kentucky from January 1, 2012 to August 31, 2012. To receive services from this interactive health education program and/or participate in the research study, you will need to come to the AVOL offices. Each session with your health education facilitator will last up to 75 minutes and you will have a maximum of four sessions.

WHAT WILL YOU BE ASKED TO DO?

If you agree to participate in this study, you will undergo a 75-minute health education course and be asked to respond to a series of questions regarding condoms, condom use, attitudes and confidence in using condoms correctly, communication skills, and HIV knowledge.

WHAT ARE THE POSSIBLE RISKS AND DISCOMFORTS?

To the best of our knowledge, working with a health educator should present no more risk of harm than you would experience in everyday life. You may find that talking about

Appendix F (continued)

Consent to Participate in a Research Study

certain health topics or experiences are stressful or upsetting, particularly if you had negative experiences. However, your health educator is a trained facilitator and will provide you with referrals for a mental health clinician, who will be able to assist you with these feelings.

WILL YOU BENEFIT FROM TAKING PART IN THIS STUDY?

We hope that you will ultimately improve your health behavior and psychological wellbeing. In addition, you will help us develop interventions and strategies in the future that may assist other individuals in similar situations.

DO YOU HAVE TO TAKE PART IN THE STUDY?

By participating in the research study, you will participate in a health education program and share parts of your information, namely your responses to 40-item questionnaires, with other professionals. You can still receive any of the free education and testing services offered at AVOL even if you decide not to participate in the research study. You will receive the same services as those who participate in the study and will not be penalized in any way.

WHAT WILL IT COST YOU TO PARTICIPATE?

It is free to participate in the health education program.

WHO WILL SEE THE INFORMATION THAT YOU GIVE?

We will make every effort to keep private all research records that identify you to the extent allowed by law. Your information will be combined with information from other people taking part in the study. When we write about the study or share it with others through presentations or publications, we will write about the combined information we have gathered. You will not be personally identified. However, there are some cases in which we may have to show your information to other people. For example, the law requires us to tell authorities if you report information about a child being abused, if you pose a danger to yourself or someone else, or if a court order is issued for your information. Also, we may be required to show information which identifies you to people who need to be sure we have done the research correctly; these would be people from such organizations as the University of Kentucky and AVOL.

CAN YOUR TAKING PART IN THE STUDY END EARLY?

If you decide to take part in the study, you still have the right to change your mind at any time and stop participating. You will not be treated differently if you decide to stop taking part in the study. You should also know that the individuals conducting the study may need to withdraw you from the study if you are not able to follow the directions, if they find that your being in the study is more of a risk than a benefit, or if the agency funding the study decides to stop the study early for a variety of scientific reasons.

Appendix F (continued)

Consent to Participate in a Research Study

WHAT IF YOU HAVE QUESTIONS, SUGGESTIONS, CONCERNS, OR COMPLAINTS?

Before you decide whether to take part in the study, please ask any questions that might come to mind now. Later, if you have questions, suggestions, concerns, or complaints about the study, you can contact the principal investigator, Krystal Frieson at 859-257-9082 or krystal.frieson@uky.edu. Her faculty advisor is Dr. Keisha Love and she may be contacted at 859-257-8253 or Keisha.love@uky.edu. If you have any questions about your rights as a volunteer in this research, contact the staff in the Office of Research Integrity at the University of Kentucky at 859-257-9428 or toll free at 1-866-400-9428. We will give you a signed copy of this consent form to take with you.

WHAT IF NEW INFORMATION IS LEARNED DURING THE STUDY THAT MIGHT AFFECT YOUR DECISION TO PARTICIPATE?

If the researcher learns of new information in regards to this study, and it might change your willingness to stay in this study, the information will be provided to you. You may be asked to sign a new informed consent form if the information is provided to you after you have joined the study.

Signature of person agreeing to take part in the study

Date

Printed name of person agreeing to take part in the study

Name of [authorized] person obtaining informed consent

Date

Background Information: The purpose of this study is to examine the effects of a HIV education program on the behaviors of African American women.

Procedures: If you agree to participate in this study, you will be asked to respond to a series of questions regarding condoms, condom use, attitudes and confidence in using condoms correctly, communication skills, and HIV knowledge.

Appendix G

PRETEST AND POSTTEST (SISTA Project Training, 2008)

SAHARA QUESTIONNAIRE

- Q1. Consent
- Q2. Please enter the respondent's Identification Number. _____
- Q3. Please enter the participant's year of birth. _____ yyyy
- Q4. What survey are you completing today? (Choose one)
- ___ Pretest
 - ___ 14-day Posttest
 - ___ 30-day Follow-up
- Q5. Please enter today's date. ____ / ____ / _____ mm / dd / yyyy
- Q6. Please enter the time now. ____ : ____ hh : mm AM or PM
- Q7. Welcome to **SAHARA!**

You are being asked to complete a survey about your feelings, beliefs, behaviors, and relationships with people. The reason we are doing this survey is to help us make better health programs for young women.

Some of the questions are very personal, but to learn about what young women like yourself REALLY think and feel we need you to answer these questions honestly. There are NO right or wrong answers, we simply want your opinion. ***Remember your answers will NOT be linked to your name and all of your answers will be kept completely confidential.***

Before we start, please enter today's date and the interview start time. If you need help, please raise your hand, and an assistant will come and help you.

Appendix G (continued)

- Q8. The first set of questions will ask about your background information like your educational experience, housing situation, and income.
- Q9. How old are you? _____ years old
- Q10. Which of the following groups best describes your race/ethnicity? (Check all that apply)
- African American/Black
 - White
 - Hispanic/Latina
 - Native American
 - Asian
 - Native Hawaiian/Pacific Islander
 - Other _____ (describe)
 - Decline to Respond
- Q11. What is the last grade that you completed in school? (Choose one)
- 8th grade or less
 - Some high school
 - Graduated high school
 - Some college or university
 - Graduated from college or university
 - Completed a Master's degree and/or PhD
 - Other _____ (describe)
 - Decline to Respond

Appendix G (continued)

Q12. Who do you live with? (Choose all that apply) (Check all that apply)

- I live with my boyfriend some of the time
- I live with my boyfriend all of the time
- With my father
- With my mother
- With another relative
- With a roommate
- With my child(ren)
- I live alone
- Other _____(describe)
- Decline to Respond

Q13. What is your zip code? _ _ _ _ _

Q14. In the past 12 months, did you or anyone you live with receive any money or services from any of the following? (Check all items that apply)

- Welfare (including TANF,SSI, etc.)
- Food Stamps
- WIC
- Section 8 housing (housing subsidies)
- None of the above
- Decline to Respond

Appendix G (continued)

- Q15. Do you have a job for which you are paid? Yes
 No (*Skip to Q19*)
 Decline to Respond
- Q16. How many hours per week do you usually work at a paid job? hours per week
- Q17. How much do you make per hour? (Please ask for assistance if you need help changing an annual or weekly salary to an hourly salary) \$ per hour
- Q18. Where do you get most of your spending money? (Choose one)
 Job (employment)
 Allowance from parent(s)
 Welfare or public assistance (including WIC, SSI)
 Boyfriend
 School financial aid
 Other _____ (describe)
 Decline to Respond
- Q19. The next few questions are about the men you have sex with. We realize that some of these questions are very personal; however, please keep in mind that all of your answers are kept completely confidential and your name is not on this survey. Please be honest in answering these questions. There are no wrong or right answers.

When thinking about the men you have sex with, we would like for you to categorize them into one of two types of sex partners for the purposes of this survey:

(1) We use the term MAIN PARTNER to describe a person that you have sex with and are in a **special or committed** relationship with (such as a boyfriend).

(2) We use the term CASUAL PARTNER to describe someone you have had sex with and are **NOT** in a committed relationship with.

Appendix G (continued)

- Q20. Do you have a main partner? Yes
 No (*skip to instruction before Q29*)
 Decline to Respond
- Q21. How old is your main partner? years old
- Q22. How many months have you been in this relationship? (Please ask for assistance if you need help calculating the number of months for a relationship longer than 1 year. If you have been in a relationship for just 3 months or less please write down 1). months
- Q23. Does your main partner work? Yes
 No (*skip to Q26*)
- Q24. Does your main partner make \$3000 or more dollars than you per year?
 Yes
 No
- Q25. In the past 3 months (2 weeks on pretest/follow-up), how much on average has your main partner paid for YOUR housing expenses (rent, food, electricity, phone, and all other living expenses)? (Choose one)
- Partner pays all or almost all of the expenses
 - Partner pays for more than half of the expenses
 - Partner pays about half of the expenses
 - Partner pays less than half of the expenses
 - Partner pays none or almost none of the expenses
- Q26. In the past 3 months (2 weeks on pretest/follow-up), do you think your main partner has had sex with other women?
 Yes
 No (*skip to instruction before Q30*)

Appendix G (continued)

- Q27. If yes, how many other women has your main partner had sex with in the past 3 months? _____
- Q28. The next questions will ask you about having sex. For these questions include ALL of your sexual partners (MAIN and CASUAL).
- Q29. In the past 3 months (2 weeks on pretest/follow-up), how many men have you had vaginal sex with? When I say vaginal sex, I mean when a man puts his penis in your vagina. _____ men
- Q30. In general, how old are the people you have sex with, are they . . . ? (Choose one)
- ___ Much younger than you (5 or more years)
 - ___ Younger than you (2-4 years)
 - ___ About the same age
 - ___ Older than you (2-4 years)
 - ___ Much older than you (5 or more years)
 - ___ Decline to Respond
- Q31. Now I am going to ask about the number of times that you have had vaginal sex recently. It is often hard to remember what has happened over a month ago so if you are having difficulty remembering, you can give your best guess using the number of times you have had vaginal sex in the past 30 days (1 month). For example, let's pretend that:

In the past 30 days (1 month) you had sex 8 times.

Then you would estimate that:

In the past 90 days (3 months) you had sex 24 times (had sex 8 times a month for 3 months)

Please use this method to help you in answering the following set of questions. Remember to use your calendar if you need to jog your memory.

Appendix G (continued)

- Q32. In the past 90 days (3 months) (question omitted on pretest/follow-up), how many times have you had vaginal sex with a man?
_____ times *(If Q32 is equal to 0, then skip to Q36)*
- Q33. In the past 90 days (3 months) (question omitted on pretest/follow-up), of the [Response to Q32] times that you had vaginal sex with a man how many times did you use a condom? ___ ___ ___ Times
- Q34. In the past 30 days (2 weeks on pretest/follow-up), how many times have you had vaginal sex with a man?
_____ times *(If Q34 is equal to 0, then skip to Q36)*
- Q35. In the past 30 days (2 weeks on pretest/follow-up), of the [Response to Q33] times that you had vaginal sex with a man, how many times did you use a condom? ___ ___ ___ Times
- Q36. The LAST time you had vaginal sex with a man, did you use a condom?
_____ Yes
_____ No
_____ Decline to Respond
- Q37. When you use a condom during vaginal sex with a man, how often do YOU put the condom on your sex partner? (Choose one) ___ Every time
_____ Most of the time
_____ Half of the time
_____ Once in a while
_____ Never
_____ I don't use condoms during vaginal sex
_____ Decline to Respond
- Q38. The next questions ask about having oral sex with a man. Oral sex is when you put your mouth on your partner's penis or when your partner puts his mouth on your vagina.

Appendix G (continued)

- Q39. In the past 90 days (3 months) (2 weeks on pretest/follow-up), how many times have you given a man a "blow job" (put your mouth on his penis)? _____ times (*If Q39 is equal to 0, then skip to instruction before Q43*)
- Q40. In the past 90 days (3 months) (2 weeks on pretest/follow-up), of the [Response to Q39] times that you gave a man a blow job how many times did you use a condom? _____ Times
- Q41. In the past 30 days (2 weeks on pretest/follow-up), how many times have you given a man a "blow job"(put your mouth on his penis)? _____Times (*If Q41 is equal to 0, then skip to Q43*)
- Q42. In the past 30 days (2 weeks on pretest/follow-up), of the [Response to Q41] times that you that you gave a man a blow job, how many times did you use a condom? _____Times
- Q43. The next 2 questions ask about stimulating yourself sexually (or masturbating).
- Q44. In the past 90 days (3 months) (2 weeks on pretest/follow-up), how many times have you stimulated yourself sexually (i.e. masturbated) to have an orgasm? _____Times (*If Q44 is equal to 0, then skip to Q46*)
- Q45. In the past 30 days (2 weeks on pretest/follow-up), how many times have you stimulated yourself sexually (masturbated) to have an orgasm? _____Times
- Q46. The next questions ask about using condoms when you have sex with a man. Even if the situation has not happened to you, try to imagine how you would handle it if it ever happened.

Appendix G (continued)

Q47. How much control do you have over...

refusing sex if your male sex partner does not want to use a condom during vaginal sex? (Choose one)

- No control
- A little control
- Some control
- Total control
- Decline to Respond

Q48. How much control do you have over...

refusing sex if your male sex partner does not want to use a condom during oral sex (in other words when you give him a blow job)? (Choose one)

- No control
- A little control
- Some control
- Total control
- Decline to Respond

Q49. How much control do you have over...

whether or not your male sex partner uses a condom when you give him a blow job? (Choose one)

- No control
- A little control
- Some control
- Total control
- Decline to respond

Q50. How much control do you have over...

giving your male sex partner a hand job? (Choose one)

- No control
- A little control
- Some control
- Total control
- Decline to Respond

Appendix G (continued)

Q51. How much control do you have over...

telling your male sex partner that a condom must be used when you have sex?
(Choose one)

- No control
- A little control
- Some control
- Total control
- Decline to Respond

Q52. How much control do you have over...

whether or not your male sex partner gets tested for STDs? (Choose one)

- No control
- A little control
- Some control
- Total control
- Decline to Respond

Q53. How much control do you have over...

not having sex until you know that your male sex partner does not have an STD?
(Choose one)

- No control
- A little control
- Some control
- Total control
- Decline to Respond

Q54. The following statements are about what you think other African-American women 18-29 years old who are in a sexual relationship are doing about condoms and sex. For each statement, say how many women out of 10 you think are...

Example: Out of 10 African-American women my age I think, 8 women like ice cream.

Appendix G (continued)

- Q55. Out of 10 African-American women my age I think, ____ women have given their male sex partner a blow job in the past month. ____ # of women
- Q56. Out of 10 African-American women my age I think, ____ women have given their male sex partner a hand job in the past month. ____ # of women
- Q57. Out of 10 African-American women my age I think, ____ women have asked their male partner to use a condom in the past month. ____ # of women
- Q58. Out of 10 African-American women my age I think, ____ women have asked their male sex partner to get tested for STDs. ____ # of women
- Q59. Out of 10 African-American women my age I think, ____ women have put a condom on their male sex partner. ____ # of women
- Q60. Out of 10 African-American women my age I think, ____ women feel comfortable stimulating themselves sexually (masturbating) to have an orgasm. ____ # of women
- Q61. Out of 10 African-American women my age I think, ____ women feel comfortable touching their vagina. ____ # of women
- Q62. Out of 10 African-American women my age I think, ____ women would feel comfortable saying NO to a male sex partner who did not want to use a condom during sex. ____ # of women
- Q63. Out of 10 African-American women my age I think, ____ women would not want to have sex with their partner until they knew that their partner did not have an STD. ____ # of women
- Q64. The next questions are about your decisions for NOT starting a sexual relationship with a potential Black male partner.

Appendix G (continued)

Q65. In the past 3 months (2 weeks on pretest/follow-up), have you wanted to start a sexual relationship with a Black man?

- Yes
- No (*skip to instructions before Q77*)
- Decline to Respond

Q66. In the past 3 months (2 weeks on pretest/follow-up), did you ever decide NOT to start a sexual relationship with a Black man because you thought (or knew) he:

had a history of drug use?

- Yes
- No
- Decline to Respond

Q67. In the past 3 months (2 weeks on pretest/follow-up), did you ever decide NOT to start a sexual relationship with a Black man because you thought (or knew) he:

had a history of being in jail, prison or a detention center?

- Yes
- No
- Decline to Respond

Q68. In the past 3 months (2 weeks on pretest/follow-up), did you ever decide NOT to start a sexual relationship with a Black man because you thought (or knew) he:

was attracted to men?

- Yes
- No
- Decline to Respond

Appendix G (continued)

Q69. In the past 3 months (2 weeks on pretest/follow-up), did you ever decide NOT to start a sexual relationship with a Black man because you thought (or knew) he:

would hit, swear, yell, or physically hurt you?

- Yes
- No
- Decline to Respond

Q70. In the past 3 months (2 weeks on pretest/follow-up), did you ever decide NOT to start a sexual relationship with a Black man because you thought (or knew) he:

would not be faithful to you?

- Yes
- No
- Decline to Respond

Q71. In the past 3 months (2 weeks on pretest/follow-up), did you ever decide NOT to start a sexual relationship with a Black man because you thought (or knew) he:

wanted to have children in the very near future?

- Yes
- No
- Decline to Respond

Q72. In the past 3 months (2 weeks on pretest/follow-up), did you ever decide NOT to start a sexual relationship with a Black man because you thought (or knew) he:

did not have plans to further his education?

- Yes
- No
- Decline to Respond

Appendix G (continued)

Q73. In the past 3 months (2 weeks on pretest/follow-up), did you ever decide NOT to start a sexual relationship with a Black man because you thought (or knew) he:

did not plan to get a "real job"?

- Yes
- No
- Decline to Respond

Q74. In the past 3 months (2 weeks on pretest/follow-up), did you ever decide NOT to start a sexual relationship with a Black man because you thought (or knew) he:

was unemployed?

- Yes
- No
- Decline to Respond

Q75. In the past 3 months (2 weeks on pretest/follow-up), did you ever decide NOT to start a sexual relationship with a Black man because you thought (or knew) he:

did not make enough money?

- Yes
- No
- Decline to Respond

Q76. Congratulations, you are about half way finished. Please feel free to take a quick break. We would like you to be as comfortable as possible when answering the survey. Please continue when you are ready.

The following statements are about sexually transmitted diseases or STDs. Please tell me if you think that they are true, false, or you don't know.

Appendix G (continued)

Q77. African-American women, 18-29 living in your state rarely get STDs. (Choose one)

- True
- False
- Don't Know
- Decline to Respond

Q78. If your partner has an STD and you have sex with him without a condom, it is very likely that you will get the STD. (Choose one)

- True
- False
- Don't Know
- Decline to Respond

Q79. Most of the time when a woman has an STD she can tell. (Choose one)

- True
- False
- Don't Know
- Decline to Respond

Q80. Having an STD can increase a person's risk of getting HIV. (Choose one)

- True
- False
- Don't Know
- Decline to Respond

Appendix G (continued)

Q81. Only uneducated Black women are at risk of getting an STD. (Choose one)

- True
- False
- Don't Know
- Decline to Respond

Q82. One type of STD, Human Papilloma Virus (HPV), can increase a woman's risk of cervical cancer. (Choose one)

- True
- False
- Don't Know
- Decline to Respond

Q83. STDs can cause infertility, spontaneous abortions and still births. (Choose one)

- True
- False
- Don't Know
- Decline to Respond

Q84. If a man pulls out before cumming, condoms don't need to be used to protect a woman from STDs. (Choose one)

- True
- False
- Don't Know
- Decline to Respond

Appendix G (continued)

Q85. You can always tell when your male partner has an STD. (Choose one)

- True
- False
- Don't Know
- Decline to Respond

Q86. Douching increases a woman's chance of getting an STD. (Choose one)

- True
- False
- Don't Know
- Decline to Respond

Q87. The following statements are about condoms. Choose one of the answer options to indicate how much you agree or disagree with each statement.

Q88. If I ask my partner to use a condom, he might think I don't trust him. (Choose one)

- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree

Q89. If I ask my partner to use a condom, he might get angry. (Choose one)

- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree

Appendix G (continued)

- Q90. If I ask my partner to use a condom, he might think I'm putting him down or insulting him. (Choose one)
- Strongly Agree
 - Agree
 - Neither Agree nor Disagree
 - Disagree
 - Strongly Disagree
- Q91. If I ask my partner to use a condom, he might get turned off or lose his erection/hard on. (Choose one)
- Strongly Agree
 - Agree
 - Neither Agree nor Disagree
 - Disagree
 - Strongly Disagree
- Q92. Condoms feel unnatural. (Choose one)
- Strongly Agree
 - Agree
 - Neither Agree nor Disagree
 - Disagree
 - Strongly Disagree
- Q93. Condoms interrupt the mood. (Choose one)
- Strongly Agree
 - Agree
 - Neither Agree nor Disagree
 - Disagree
 - Strongly Disagree
- Q94. Condoms don't feel good. (Choose one)
- Strongly Agree
 - Agree
 - Neither Agree nor Disagree
 - Disagree
 - Strongly Disagree

Appendix G (continued)

- Q95. Condoms change the climax or orgasm. (Choose one)
- Strongly Agree
 - Agree
 - Neither Agree nor Disagree
 - Disagree
 - Strongly Disagree
- Q96. The following statements are about masturbation. Choose one of the answer options to indicate how much you agree or disagree with each statement.
- Q97. Masturbating is not natural for women to do. (Choose one)
- Strongly Agree
 - Agree
 - Neither Agree nor Disagree
 - Disagree
 - Strongly Disagree
- Q98. Women who masturbate are dirty. (Choose one)
- Strongly Agree
 - Agree
 - Neither Agree nor Disagree
 - Disagree
 - Strongly Disagree
- Q99. Most African-American women don't masturbate. (Choose one)
- Strongly Agree
 - Agree
 - Neither Agree nor Disagree
 - Disagree
 - Strongly Disagree

Appendix G (continued)

Q100. Masturbating oneself can be very pleasing. (Choose one)

- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree

Q101. The following statements are about STD testing. Choose one of the answer options to indicate how much you agree or disagree with each statement.

Q102. If I ask my partner to get tested for STDs he might think that I gave him an STD. (Choose one)

- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree

Q103. If I ask my partner to get tested for STDs, he may think that I cheated on him. (Choose one)

- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree

Appendix G (continued)

Q104. If I ask my partner to get tested for STDs he may think that I believe he gave me an STD. (Choose one)

- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree

Q105. If I ask my partner to get tested for STDs he may think that I believe that I am too "dirty" to be intimate with. (Choose one)

- Strongly Agree
- Agree
- Neither Agree nor Disagree
- Disagree
- Strongly Disagree

Q106. The next few questions are about using condoms. Even if you have never used condoms, think about how much of a problem it would be for you to do the following.

Q107. How much of a problem would it be for you to put a condom on a hard penis? (Choose one)

- A lot
- Some
- Little
- Not much
- None

Appendix G (continued)

Q108. How much of a problem would it be for you to unroll a condom down correctly on the first try? (Choose one)

- A lot
- Some
- Little
- Not much
- None

Q109. How much of a problem would it be for you to start over using a new condom if you placed it on the wrong way? (Choose one)

- A lot
- Some
- Little
- Not much
- None

Q110. How much of a problem would it be for you to unroll a condom fully to the base of a penis? (Choose one)

- A lot
- Some
- Little
- Not much
- None

Appendix G (continued)

Q111. How much of a problem would it be for you to squeeze air from the tip of a condom? (Choose one)

- A lot
- Some
- Little
- Not much
- None

Q112. How much of a problem would it be for you to take a condom off without spilling the semen? (Choose one)

- A lot
- Some
- Little
- Not much
- None

Q113. How much of a problem would it be for you to take a condom off before your partner loses his erection? (Choose one)

- A lot
- Some
- Little
- Not much
- None

Appendix G (continued)

Q114. How much of a problem would it be for you to dispose of a used condom?
(Choose one)

- A lot
- Some
- Little
- Not much
- None

Q115. How much of a problem would it be for you to use a lubricant with a condom?
(Choose one)

- A lot
- Some
- Little
- Not much
- None

Q116. The next set of questions ask about how you communicate about sex with your male sex partner.

Q117. During the past 3 months (2 weeks on pretest/follow-up), how many times did you ask your male sex partner about getting tested for STDs? ___ Times

Q118. During the past 3 months (2 weeks on pretest/follow-up), how many times did you ask your male sex partner to use a condom when he pressured you to not use a condom? ___ Times

Appendix G (continued)

- Q119. During the past 3 months (2 weeks on pretest/follow-up), how many times did you ask your male sex partner to use a condom immediately before you had sex?
__ __ Times
- Q120. During the past 3 months (2 weeks on pretest/follow-up), how many times did you ask your main partner if you should put the condom on him? __ __ Times
- Q121. During the past 3 months (2 weeks on pretest/follow-up), how many times did you ask your main partner if he would like to have oral sex (blow job)? __
__ Times
- Q122. During the past 3 months (2 weeks on pretest/follow-up), how many times did you ask your main partner if he would use a condom during oral sex (a blow job)?
__ __ Times
- Q123. During the past 3 months (2 weeks on pretest/follow-up), how many times did you ask your main partner if he would like to have a hand job? __ __ Times
- Q124. During the past 3 months (2 weeks on pretest/follow-up), how many times did you ask your main partner if he was being faithful to you? __ __ Times
- Q125. During the past 3 months (2 weeks on pretest/follow-up), how many times did you ask your main partner if he would perform oral sex on you (in other words, go down on you)? __ __ Times
- Q126. During the past 3 months (2 weeks on pretest/follow-up), how many times did you say NO to having sex with a partner who wanted to have unsafe sex?
__ __ Times
- Q127. During the past 3 months (2 weeks on pretest/follow-up), how many times did you say NO to having sex with a partner who was pressuring you to have sex?
__ __ Times

Appendix G (continued)

Q128. During the past 3 months (2 weeks on pretest/follow-up), how many times did you say NO to having sex with a partner who refused to wear a condom?

__ __ Times

Q129. The next set of questions asks about whether or not you have had more than one sex partner within the same time frame.

Q130. Thinking now about all the people you have **ever** had sex with, have you ever had sex with one person while involved in any kind of sexual relationship with another person?

Yes

No (*skip to instruction before Q136*)

Decline to Respond

Q131. In the past 3 months (2 weeks on pretest/follow-up), have you had sex with one person while involved in any kind of sexual relationship with another person?

Yes

No (*skip to instruction before Q136*)

Decline to Respond

Q132. Of the times in the past 3 months (2 weeks on pretest/follow-up) that you have had sex with one person while involved in a sexual relationship with another person, how often would you say that you used condoms? (Choose one)

Never (*skip to instruction before Q136*)

A few times

About half of the time

Most of the time

Always

Decline to Respond

Appendix G (continued)

Q133. Of the times in the past 3 months (2 weeks on pretest/follow-up) that you have had sex with one person while involved in a sexual relationship with another person, did you use condoms with one partner, but not the other(s)?

- Yes
- No (*skip to instruction before Q136*)
- Decline to Respond

Q134. If you used condoms with one partner, but not the other(s) when you had sex in the past 3 months (2 weeks on pretest/follow-up), was the person that you used condoms with someone that you considered to be a main partner (in a committed or special relationship) or someone that you considered to be a casual partner? (Choose one)

- Main partner
- Casual partner
- Decline to Respond

Q135. We know that women sometimes know quite a lot about their sex partners; other times, even if the relationship is very close, they might know less. Sometimes, we know things about our partners with great certainty; other times, we have to guess. Please say whether you think the answer to each of the following questions about the men you have had sex with is yes or no.

Q136. In the past 3 months (2 weeks on pretest/follow-up), have you had vaginal sex with a guy who you thought or suspected had ever spent more than 24 hours in jail, prison, or a detention center?

- Yes
- No
- Decline to Respond

Q137. In the past 3 months (2 weeks on pretest/follow-up), have you had vaginal sex with a guy who you thought or suspected had an STD?

- Yes
- No
- Decline to Respond

Appendix G

Q138. In the past 3 months (2 weeks on pretest/follow-up), have you had sex with someone you thought or suspected has ever injected any illegal drug?

- Yes
- No
- Decline to Respond

Q139. In the past 3 months (2 weeks on pretest/follow-up), have you had sex with a man that you thought or suspected was having sex with other men?

- Yes
- No
- Decline to Respond

Q140. In the past 3 months (2 weeks on pretest/follow-up), have you had sex with a man that you thought or suspected was having sex with other women?

- Yes
- No
- Decline to Respond

Q141. The next few questions are about drug and alcohol use.

Q142. How many times did you use marijuana in the past 30 (2 weeks on pretest/follow-up) days? ___ times

Q143. How many times did you use amphetamines (speed) in the past 30 days(2 weeks on pretest/follow-up)? ___ times

Appendix G

Q144. How many times did you use methamphetamines (crystal meth) in the past 30 days (2 weeks on pretest/follow-up)?
___ __ times

Q145. How many times did you use heroin in the past 30 days (2 weeks on pretest/follow-up)?
___ __ times

Q146. How many times did you use cocaine in the past 30 days (2 weeks on pretest/follow-up)?
___ __ times

Q147. How many times did you use crack in the past 30 days(2 weeks on pretest/follow-up)?
___ __ times

Q148. How many times did you use alcohol (beer, wine, or liquor) in the past 30 days (2 weeks on pretest/follow-up)?
___ __ times *(If Q133 is equal to 0, then skip to instruction before Q150)*

Q149. How many alcoholic drinks do you usually have at one time? A drink is equal to a shot of liquor, a 12 oz. bottle of beer, or a 5 oz. glass of wine. ___ __ drinks

Q150. The next few questions are about how you may have been treated in the past by your sexual partners.

Q151. Has a male sexual partner ever . . .

threatened you, called you names, swore at you?

- ___ Yes
- ___ No
- ___ Decline to Respond

Appendix G (continued)

Q152. Has a male sexual partner ever . . .

hit, punched, kicked, slapped, pushed, yanked your hair, or physically hurt you?

- Yes
- No
- Decline to Respond

Q153. Has a male sexual partner ever . . .

made you have vaginal sex when you didn't want to?

- Yes
- No
- Decline to Respond

Q154. Has a male sexual partner ever . . .

made you have anal sex when you didn't want to?

- Yes
- No
- Decline to Respond

Q155. The next few questions are about how you are being treated right now by your current sexual partner(s).

Appendix G (continued)

Q156. In the past 3 months has your current sexual partner ever . . .
threatened you, called you names, swore at you?

- Yes
- No
- Decline to Respond

Q157. In the past 3 months (2 weeks on pretest/follow-up)has your current sexual
partner ever . . .

hit, punched, kicked, slapped, yanked your hair or physically hurt you?

- Yes
- No
- Decline to Respond

Q158. In the past 3 months (2 weeks on pretest/follow-up) has your current sexual
partner ever . . .

made you have vaginal sex when you didn't want to?

- Yes
- No
- Decline to Respond

Q159. In the past 3 months (2 weeks on pretest/follow-up)has your current sexual
partner ever . . .

made you have anal sex when you didn't want to?

- Yes
- No
- Decline to Respond

Appendix G (continued)

Q160. Great job! You are almost done with the survey, please do not rush. If you are getting tired take a short break, rest your eyes and mind.

Thank you again for providing honest answers.

The following statements are about how you feel about yourself.

Q161. I feel that I'm a person of worth. (Choose one)

- Always
- Often
- Sometimes
- Never

Q162. I feel that I have a number of good qualities. (Choose one)

- Always
- Often
- Sometimes
- Never

Q163. I take a positive attitude towards myself as an African-American woman.
(Choose one)

- Always
- Often
- Sometimes
- Never

Appendix G (continued)

Q164. I feel that I do NOT have much to be proud of. (Choose one)

- Always
- Often
- Sometimes
- Never

Q165. I love being an African American woman. (Choose one)

- Always
- Often
- Sometimes
- Never

Q166. On the whole, I am satisfied with myself. (Choose one)

- Always
- Often
- Sometimes
- Never

Q167. I certainly feel useless at times. (Choose one)

- Always
- Often
- Sometimes
- Never

Q168. I wish I could have more respect for myself as an African American woman.
(Choose one)

- Always
- Often
- Sometimes
- Never

Appendix G (continued)

Q169. I am able to do things as well as most other people. (Choose one)

- Always
- Often
- Sometimes
- Never

Q170. I am a beautiful African American woman on the inside and out. (Choose one)

- Always
- Often
- Sometimes
- Never

Q171. Have you ever participated in.....? (Check all that apply)

- An HIV prevention survey?
- An HIV prevention education class
- Decline to Respond

Q172. In order to complete the intervention portion of the research, please indicate which days and time you are available in the upcoming future. The intervention will take approximately 3 hours and food will be provided.

Q173. What days of the week are best for you?

Q174. What times of the day are best for you?

Q175. Please enter the time now.

___ : ___ hh : mm AM or PM

Q176. You have reached the end of the SAHARA Survey. Thank you for your participation!

References

- AIDS Community Demonstration Projects. (1999). Community-level HIV intervention in 5 cities: Final outcome data from the CDC AIDS community demonstration projects. *American Journal of Public Health, 89*, 336-345.
- Albarracin, D., Gillette, J.C., Earl, A. N., Glasman, L. R., Durantini, M. R., & Ho, M. H. (2005). A test of major assumptions about behavior change: A comprehensive look at the effects of passive and active HIV-prevention interventions since the beginning of the epidemic. *Psychological Bulletin, 131*, 856-897.
- Amaro, H. (1995). Love, sex, and power: Considering women's realities in HIV prevention. *American Psychologist, 50*, 437-447.
- American Academy of Pediatrics. Committee on Adolescence. (2001). Condom use by adolescents. *Pediatrics, 107*, 1463-1469. doi: 10.1542/peds.107.6.1463
- Archer, T. M. (2008). Response rates to expect from web-based surveys and what to do about it. *Journal of Extension [Online], 46*, Article 3RIB3. Retrieved on November 26, 2014 from <http://www.joe.org/joe/2008june/rb3.php>
- Artz, L., Macaluso, M., Brill, I., Kelaghan, J., Austin, H., Fleenor, M., ...Hook, E. W. (2000). Effectiveness of an intervention promoting the female condom to patients at sexually transmitted to disease clinics. *American Journal of Public Health, 90*, 237-244.
- AVERT. (2014). Female condom. Retrieved on September 29, 2014 from <http://www.avert.org/female-condom.htm>
- Baele, J., Dusseldorp, E., & Maes, S. (2001). Condom use self-efficacy: Effect on intended and actual condom use in adolescents. *The Journal of Adolescent*

Health, 28, 421-431.

Baeten J. M., Strick L. B., Lucchetti, A., Whittington, W. L., Sanchez, J., Coombs, R. W., ... Cellum, C. (2008). Herpes simplex virus (HSV)-suppressive therapy decreases plasma and genital HIV-1 levels in HSV-2/HIV-1 coinfecting women: A randomized, placebo-controlled, cross-over trial. *Journal of Infectious Disease*, 198(12), 1804-1808.

Bailey, J. V., Murray, E., Rait, G., Mercer, C. H., Morris, R. W. Peacock, R., ... Nazareth, I. (2010). *Interactive computer-based interventions for sexual health promotion* (CD006483). Retrieved from Cochrane Database of Systematic Reviews website:

http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=2&ved=0CCYQFjAB&url=http%3A%2F%2Fwww.researchgate.net%2Fpublication%2F46171554_Interactive_computerbased_interventions_for_sexual_health_promotion%2Flinks%2F0fcfd500e73239e6b9000000&ei=qrp_VPjWLoShNtCKgOgN&usq=AFQjCNFdeu1uXAwnvJNRPoXq5ulam7BoYw&sig2=1csb0nOG4QiCN4ycZ8GrdQ&bvm=bv.80642063,d.eXY

Bandura, A. (1977). *Social learning theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1978). The self-system in reciprocal determinism. *American Psychologist*, 33(4), 344-358. Retrieved from

<http://www.uky.edu/~eushe2/Bandura/Bandura1978AP.pdf>

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1990). Perceived self-efficacy in the exercise of control over AIDS

- infection. *Evaluation & Program Planning*, 13, 9-17. Retrieved on August 6, 2010 from <http://www.des.emory.edu/mfp/Bandura1990EPP>
- Bandura, A. (1994). Social cognitive theory and exercise of control over HIV infection. In R. J. & J. L. Peterson (Eds.), *Preventing AIDS: Theories and methods of behavioral interventions* (pp. 25-59). New York, NY: Plenum.
- Bandura, A. (1998). Health promotion from the perspective of social cognitive theory. *Psychology and Health*, 13, 623-649. Retrieved on January 21, 2015 from <http://www.uky.edu/~eushe2/Bandura/Bandura1998PH.pdf>
- Bandura, A. (2002). Social cognitive theory and mass communication. In J. Bryant & D. Zillman (Eds.), *Media effects: Advances in theory and research* (pp. 121-153). Hillsdale, NJ: Lawrence Erlbaum. Retrieved from <http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCMQFjAA&url=http%3A%2F%2Fwww.uky.edu%2F~eushe2%2FBandura%2FBandura2001.pdf&ei=kiQKVeHNIYKfgwSuoIK4Ag&usg=AFQjCNFql6lFDs4mvtAbTtorVSNm-pwzNQ&sig2=lOcsiZhvl60XG5dIBPUPMQ>
- Bansen-Engquist, K., & Parcel, G. S. (1992). Attitudes, norms, and self-efficacy: A model of adolescents' HIV-related sexual behavior. *Health Education Quarterly*, 19, 263-277.
- Benghiac, A. G. (2013). Fatalism. In S. Loue (Ed.), *Mental health practitioner's guide to HIV/AIDS* (pp. 217-218). New York, NY: Springer Science & Business Media.
- Bogart, L. M., & Thorburn, S. (2005). Are HIV/AIDS conspiracy beliefs a barrier to HIV prevention among African Americans? *Journal of Acquired Immune Deficiency Syndrome*, 38, 213-218. doi: 0.1097/00126334-200502010-00014

- Bowen, A. M., Horvath, K., Williams, M. L. (2007). A randomized control trial of Internet-delivered HIV prevention targeting rural MSM. *Health Education Research, 22*, 120-127.
- Brace, N., Kemp, R., & Snelgar, R. (2006). *SPSS for psychologists: A guide to data analysis using SPSS for windows (Version 12 and 13)*. (3rd ed.). New York: Taylor & Francis.
- Braithwaite, K., & Thomas, V. G. (2001). HIV/AIDS knowledge, attitudes, and risk-behaviors among African American and Caribbean college women. *International Journal for the Advancement of Counselling, 23*, 115-129.
- Brandon, D. T., Isaac, L. A., & LaVeist, T. A. (2005). The legacy of Tuskegee and trust in medical care: Is Tuskegee responsible for race differences in mistrust of medical care. *Journal of the National Medical Association, 97*, 951-956.
- Brofenbrenner, U. (1994). Ecological models of human development. In *International encyclopedia of education* (2nd ed., Vol. 3). Retrieved from www.psy.cmu.edu/~siegler/35bronfenbrenner94.pdf
- Card, J. J., Kuhn, T., Solomon, J., Benner, T. A., Wingood, G. M., & DiClemente, R. J. (2011). Translating an effective group-based HIV prevention program to a program delivered primarily by computer: Methods and outcomes. *AIDS Education and Prevention, 23*, 159-174. doi: 10.1521/aeap.2011.23.2.159
- Cantania, J. A., Coates, T. J., Kegeles, S., Fullilove, M. T., Peterson, J., Marin, B., Siegel, D., & Hulley, S. (1992). Condom use in multi-ethnic neighborhoods of San Francisco: The population-based AMEN (AIDS in multi-ethnic neighborhoods)

study. *American Journal of Public Health*, 82, 284-287.

doi:10.2105/AJPH.82.2.284

Celious, A., & Oyserman, D. (2001). Race from inside: An emerging heterogeneous race model. *Journal of Social Issues*, 57, 149-165. Retrieved on June 11, 2014 from <http://www.ross.mayfirst.org/files/celious-aaron-race-from-inside.pdf>

Centers for Disease Control and Prevention. (1995). *HIV/AIDS surveillance report*, 7, 1995. Atlanta, GA: Department of Health and Human Services. Retrieved on January 11, 2009 from

<http://www.cdc.gov/hiv/topics/surveillance/resources/reports/pdf/hivsur72.pdf>

Centers for Disease Control and Prevention. (2001). Revised guidelines for HIV counseling, testing, and referral and Revised recommendations for HIV screening of pregnant women. *Mortality and Morbidity Weekly Report 2001*; (Report No. 50[RR-19]). Retrieved on November 12, 2014 from

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5019a1.htm>.

Centers for Disease Control and Prevention. (2003). Incorporating HIV prevention into the medical care of persons living with HIV: recommendations of CDC, the Health Resources and Services Administration, the National Institutes of Health, and the HIV Medicine Association of the Infectious Diseases Society of America. *Mortality and Morbidity Weekly Report 2003*; (Report No. 52[RR-12]). Retrieved on November 12, 2014 from

<http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5212a1.htm>.

- Centers for Disease Control and Prevention. (2011). HIV among women. Division of HIV/AIDS Prevention, Viral Hepatitis, STD, and TB Prevention. Retrieved on September 9, 2011 from <http://www.cdc.gov/hiv/topics/women/index.htm>
- Centers for Disease Control and Prevention. (2012). Estimated HIV incidence among adults and adolescents in the United States, 2007-2010. *HIV Surveillance Supplemental Report*, 17, (No.4). Retrieved from <http://www.cdc.gov/hiv/topics/surveillance/resources/reports/#supplemental>
- Centers for Disease Control and Prevention. (2013a). Diagnoses of HIV infection and AIDS in the United States and dependent areas, 2011. *HIV Surveillance Report*, 23. Retrieved from http://www.cdc.gov/hiv/pdf/statistics_2011_HIV_Surveillance_Report_vol_23.pdf
- Centers for Disease Control and Prevention. (2013b). HIV and AIDS in the United States by geographic distribution. Retrieved on October 11, 2014 from <http://www.cdc.gov/hiv/statistics/basics/geographicdistribution.html#sub1>
- Centers for Disease Control and Prevention. (2013c). The future of HIV prevention. Retrieved on November 9, 2014 from <http://www.cdc.gov/nchhstp/newsroom/hivfactsheets/future/high-impact-prevention.htm>.
- Centers for Disease Control and Prevention. (March 2014). HIV among women fact sheet. Retrieved from http://www.cdc.gov/hiv/pdf/risk_women.pdf
- Centers for Disease Control and Prevention/National Center for Health Statistics. (2011). Deaths, percent of total deaths, and death rates for the 15 leading causes of death

- in 5-year age groups, by race and sex: United States, 2011. Retrieved from http://www.cdc.gov/nchs/data/dvs/LCWK1_2011.pdf
- Cheever, L. W. (2007). Engaging HIV-infected patients in care: Their lives depend on it. *Clinical Infections Diseases*, *44*, 1500-1502. doi: 10.1086/517534
- Choi, K. H., Hoff, C., Gregorich, S. E., Grinstead, O., Gomez, C., & Hussey, W. (2008). The efficacy of female condom skills training in HIV risk reduction among women: A randomized controlled trial. *American Journal of Public Health*, *98*, 1841-1848. doi: [10.2105/AJPH.2007.113050](https://doi.org/10.2105/AJPH.2007.113050)
- Cleveland, J. C. & Purcell, D. W. (August 26, 2013). [Letter to Prevention Partners]. Retrieved from https://www.effectiveinterventions.org/docs/default-source/general-docs/EBI_DPP_Letter_Final_3_8_23_13.pdf?sfvrsn=0
- Cohen, D. A., Farley, T. A., Bedimo-Etame, J.R., Scribner, R. , Ward, W., Kendall, C., Rice, J. (1999). Implementation of condom social marketing in Louisiana, 1993 to 1996. *American Journal of Public Health*, *89*, 204-208.
- Cohen, M. S., Chen, Y. Q., McCauley, M., Gamble, T., Hosseinipour, M. C., Kumarasamy, N., ...HPTN 052 Study Team. (2011). Prevention of HIV-1 infection with early antiretroviral therapy. *The New England Journal of Medicine*, *365*(6), 493-505. doi: 10.1056/NEJMoa1105243
- Cohen, S., & Wills, T. A. (1985). Stress, social support, and the buffering hypothesis. *Psychological Bulletin*, *98*, 310-357. doi: 10.1037//0033-2909.98.2.310
- Cokley, K. O. (2005). Racial(ized) identity, ethnic identity, and Afrocentric values: Conceptual and methodological challenges in understanding African American

identity. *Journal of Counseling Psychology*, 52, 517-526. doi: 10.1037/0022-0167.52.4.517

Connell, R. W. (1987). *Gender and power*. Stanford, CA: Stanford University Press.

Corbie-Smith, G., Thomas, S. B., Williams, M. V., & Moody-Ayers, S. (1999).

Attitudes and beliefs of African Americans toward participation in medical research. *Journal of General Internal Medicine*, 14, 537-546. doi:

[10.1046/j.1525-1497.1999.07048.x](https://doi.org/10.1046/j.1525-1497.1999.07048.x)

Crepaz, N., Marshall, K. J., Aupont, L. W., Jacobs, E.D., Mizuno, Y., Kay, L.S.,

...O'Leary, A. (2009). The efficacy of HIV/STI behavioral interventions for African American females in the United States: A meta-analysis. *American Journal of Public Health*, 99, 2069-2078. doi: 10.2105/AJPH.2008.139519.

Crosby, R. A., DiClemente, R. J., Wingood, G. M., Cobb, B. K., Harrington, K., Davies, S. L., Hook, E. W., Kim, O. M. (2002). Condom use and correlates of African American adolescent females' infrequent communication with sex partners about preventing sexually transmitted diseases and pregnancy. *Health Education & Behavior*, 29, 219-231. doi: 10.1177/109019810202900207

Crosby, R. A., DiClemente, R. J., Wingood, G. M., Sionean, C., Cobb, B. K., & Harrington, K. (2000). Correlates of unprotected vaginal sex among African American female adolescents: The importance of relationship dynamics. *Archives of Pediatric and Adolescent Medicine*, 154, 893-899.

doi:10.1001/archpedi.154.9.893

Crosby, R. A., Yarber, W. L., DiClemente, R. J., Wingood, G. M., & Meyerson, B. (2002). HIV-associated histories, perceptions, practices among low-income

- African American women: Does rural residence matter? *American Journal of Public Health*, 92, 655-659. doi: 10.2105/AJPH.92.4.655
- Cross, T. L., Bazron, B. J., Dennis, K. W., & Isaacs, M. R. (1989). Toward a culturally competent system of care: A monograph on effective services for minority children who are severely emotionally disturbed. Washington, DC: CASSP Technical Assistance Center, Georgetown University Child Development Center.
- Dana, R. H., Behn, J. D., & Gonwa, T. (1992). A checklist for the examination of cultural competence in social service agencies. *Research on Social Work Practice*, 2, 220-233. doi: [10.1177/104973159200200208](https://doi.org/10.1177/104973159200200208)
- Daniels, K., Daugherty, J., & Jones, J. (2014). *Current contraceptive status among women aged 15-44: United States, 2011-2013*. (NCHS Data Brief No. 173). Retrieved on January 7, 2015 from <http://www.cdc.gov/nchs/data/databriefs/db173.pdf>
- Danya International, Inc. (2012). *Effective interventions: HIV prevention that works*. Retrieved on September 9, 2014 from <https://www.effectiveinterventions.org/AboutDebi.aspx>
- Darbes, L., Crepaz, N., Lyles, C., Kennedy, G., and Rutherford, G. (2008). The efficacy of behavioral interventions in reducing HIV risk behaviors and incident sexually transmitted diseases in heterosexual African Americans. *AIDS*, 22(10), 1177-1194. doi: 10.1097/QAD.0b013e3282ff624e
- Davis, K. R., & Weller, S. C. (1999). The effectiveness of condoms in reducing heterosexual transmission of HIV. *Family Planning Perspectives*, 31(6), 272-279.

- DiClemente, R. J., Crittenden, C. P., Rose, E., Sales, J. M., Wingood, G. M., ...Salazar, L. F. (2008). Psychosocial predictors of HIV-associated sexual behaviors and the efficacy of prevention intervention in adolescents at-risk for HIV infection: What works and what doesn't work? *Psychosomatic Medicine*, *70*, 598-605. doi: 10.1097/PSY.0b013e3181775edb
- DiClemente, R. J., & Wingood, G. M. (1995). A randomized controlled trial of an HIV sexual risk-reduction intervention for young African American women. *Journal of the American Medical Association*, *274*, 1271-1276.
- DiClemente, R. J., & Wingood, G. M. (2006). Enhancing adoption of evidence-based HIV interventions: Promotion of a suite of HIV prevention interventions for African American women. *AIDS Education and Prevention*, *18*, 161-170.
- DiClemente, R. J., Wingood, G. M., Crosby, R. A., Rose, E., Lang, D., ...Faushy, C. (2004). A descriptive analysis of STD prevalence among urban pregnant African American teens: Data from a pilot study. *Journal of Adolescent Health*, *34*, 376-383. doi:10.1016/j.jadohealth.2003.08.010
- DiClemente, R. J., Wingood, G. M., Harrington, K. F., Lang, D. L., Davies, S. L., Hook, E. W., ...Robilliard, A. (2004). Efficacy of an HIV intervention for African American adolescent girls: a randomized controlled trial. *Journal of the American Medical Association*, *292*, 171-179. doi: 10.1001/jama.292.2.171
- DiClemente, R. J., Wingood, G. M., Rose, E. S., Sales, J. M., Lang, D. L., Caliendo, A. M., ... Crosby, R. A. (2009). Efficacy of sexually transmitted disease/human immunodeficiency virus sexual risk-reduction intervention for African American adolescent females seeking sexual health services: a randomized controlled trial.

- Archives of Pediatrics and Adolescent Medicine*, 163 (12), 112-121. doi: 10.1001/archpediatrics.2009.205.
- DiIorio, C., Dudley, W. N., Lehr, S., Soet, E. (2000). Correlates of safer sex communication among college students. *Journal of Advanced Nursing*, 32, 658-665. doi: 10.1046/j.1365-2648.2000.01525.x
- Edberg, M. C. (2007). *Essentials of health behavior: Social and behavioral theory in public health*. Sudbury, Massachusetts: Jones & Bartlett.
- El-Bassel, N., Gilbert, L., Wu, E., Go, H., & Hill, J. (2005). Relationship between drug abuse and intimate partner violence: A longitudinal study among women receiving methadone. *American Journal of Public Health*, 95, 465–470. doi:10.2105/AJPH.2003.023200
- Ellen, J. M., Aral, S. O., & Madger, L. S. (1998). Do differences in sexual behavior account for racial/ethnic differences in adolescents' self-reported history of a sexual transmitted disease? *Sexually Transmitted Diseases*, 25, 125-129.
- Elridge, G. D., St. Lawrence, J. S., Little, C. E., Shelby, M. C., & Brasfield, T. L. (1995). Barriers to condom use and barrier method preferences among low-income African American women. *Women and Health*, 23, 73-89.
- Emory University, Rollins School of Public Health. (2014). AIDSVu County Map: Persons Living with an HIV or AIDS Diagnosis, 2010. Retrieved November 16, 2014, from <http://www.aidsvu.org>
- Eng, E., Hatch, J., & Callan, A. (1985). Institutionalizing social support through the church and into the community. *Health Education Quarterly*, 12, 81-92.

- Farmer, M.A. & Meston, C.A. (2006). Predictors of condom use self-efficacy in an ethnically diverse university sample. *Archives of Sexual Behavior*, 35, 313-326. doi: 10.1007/s10508-006-9027-5
- Fishbein, M. (1963). An investigation of the relationship between beliefs about an object and the attitude toward that object. *Human Relations*, 16, 233-240.
- Fleming, D. T. & Wasserheit, J. N. (1999). From epidemiological synergy to public health policy and practice: The contribution of other sexually transmitted disease to sexual transmission of HIV infection. *Sexually Transmitted Infections*, 75, 3-17.
- Fontanet, A. L., Saba, J., Chandelying, V., Sakondhavat, C., Bhiraleus, P., Rudpao, S., ...Rojanapithayakorn, W. (1998). Protection against sexually transmitted diseases by granting sex workers in Thailand the choice of using the male or female condom: Results from a randomized controlled trial. *AIDS*, 12, 1851-1890.
- Forsythe, A. D., & Carey, M.P. (1998). Measuring self-efficacy in the context of HIV risk reduction: Research challenges and recommendations. *Health Psychology*, 17, 559-568. doi: <http://dx.doi.org/10.1037/0278-6133.17.6.559>
- The Foundation for AIDS Research. (2005, January). *The effectiveness of condoms in preventing HIV transmission* (Issue Brief No. 1). Washington, DC: Author.
- Retrieved on March 12, 2014 from http://www.amfar.org/uploadedfiles/in_the_community/publications/condombrief.pdf

- The Foundation for AIDS Research. (2014). Statistics: Women and HIV/AIDS.
Retrieved on June 6, 2014 from
<http://www.amfar.org/about/hiv/article.aspx?id=3594>
- French, P., Latka, M., Gollub, E., Rogers, C., Hoover, D., & Stein, Z. (2003). Use-effectiveness of the female versus male condom in preventing sexually transmitted disease in women. *Sexually Transmitted Diseases, 30*, 433-439.
- Frieson, K. S. (2011). *Enhancement paper: Correlates of HIV-related risk exposures and risk factors among African American women*. Unpublished manuscript, Department of Educational, School, and Counseling Psychology, University of Kentucky, Lexington, Kentucky.
- Fuller C. M., Ford C., & Rudolph, A. (2009). Injection drug use and HIV: past and future considerations for HIV prevention and interventions. In K. H. Mayer & H. F. Pizer (Eds.), *HIV prevention: A comprehensive approach* (pp. 305-339). London: Academic Press/Elsevier.
- Fullilove, R. E. (2006). African Americans, health disparities and HIV/AIDS: Recommendations for confronting the epidemic in Black America. Washington, DC: National Minority AIDS Council. Retrieved on November 17, 2009 from www.nmac.org/.../cms-filessystem-action?.../african%20americans,%20health%20disparities%20and%20hiv/aids
- Gamble, V. N. (1997). Under the shadow of Tuskegee: African Americans and health care. *American Journal of Public Health, 87*, 1773-1778.
- Gentry, Q. M. (2007). *Black women's risk for HIV: Rough living*. New York, NY: Haworth Press.

- George, S., Duran, N., & Norris, K. (2014). A systematic review of barriers and facilitators to minority research participation among African Americans, Latinos, Asian Americans, and Pacific Islanders. *American Journal of Public Health, 104*, e16-e31. doi: [10.2105/AJPH.2013.301706](https://doi.org/10.2105/AJPH.2013.301706)
- Georgia Department of Public Health. (2013). HIV surveillance fact sheet, Georgia, 2012. Retrieved on September 11, 2014 from <http://dph.georgia.gov/data-fact-sheet-summaries>
- Georgia Department of Public Health. (2014). HIV infection among blacks fact sheet, Georgia, 2013. Retrieved on September 11, 2014 from <http://dph.georgia.gov/sites/dph.georgia.gov/files/HIV%20Among%20Blacks%20GA%202012%20Fact%20Sheet.pdf>
- Greenberg, B. S., & Smith, S. W. (2002). Daytime talk shows: Up close and in your face. In J. D. Brown, J. R. Steele, & K. Walsh-Childers (Eds.), *Sexual teens, sexual media* (pp.79-93). Retrieved from http://www.sagepub.com/upm-data/23151_Chapter_6.pdf
- Grimly, D. M., & Hook III, E. W. (2006). A 15-minute interactive, computerized condom use intervention with biological endpoints. *Sexually Transmitted Diseases, 36*, 73-78. doi: 10.1097/OLQ.0b013e31818eea81
- Gupta, G. R., & Weiss, E. (1993). Women's lives and sex: Implications for AIDS prevention. *Culture, Medicine and Psychiatry, 17*, 399-412.
- Guse, K., Levine, D., Martin, S., Lira, A., Gaarde, J., Westmorland, W., & Gilliam, M. (2012). Interventions using new digital media to improve adolescent sexual

- health: A systematic review. *The Journal of Adolescent Health*, 51, 535-543.
doi: 10.1016/j.jadohealth.2012.03.014
- Heinrich, L. B. (1993). Contraceptive self-efficacy in college women. *Journal of Adolescent Health*, 14, 269-276.
- Hoffman, S., Mantell, J., Exner, T., & Stein, Z. (2004). The future of the female condom. *International Family Planning Perspectives*, 30, 139-145. doi: 10.1363/3612004
- Human Rights Watch. (2014). *Southern exposure: Human rights and HIV in the Southern United States, November 2010*. Retrieved on July 17, 2014 from http://www.hrw.org/sites/default/files/related_material/2010_US_BPapersouth_1.pdf
- IBM Corp. (Released 2013). IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp.
- Institute of Medicine, Committee on Understanding and Eliminating Racial and Ethnic Disparities in Health Care. (2003). *Unequal treatment: Confronting racial and ethnic disparities in health care*.
- International Council of AIDS Service Organizations. (2009). Barriers to condoms: Implementing and documenting advocacy strategies. Canada: Author.
- International Finance Corporation, World Bank Group. (2002). Good practice note: HIV/AIDS in the workplace. Retrieved on October 11, 2010 from www.ifc.org/ifcext/enviro.nsf/.../p_hiveng/.../HIVAIDSEng.pdf
- Introduction to HIV and AIDS Education. (n.d.). Retrieved November 21, 2014, from <http://www.avert.org/introduction-hiv-and-aids-education.htm>

Jarama, S. L., Belgrave, F. Z., Bradford, J., Young, M., & Honnold, J. A. (2007).

Family, cultural and gender role aspects in the context of HIV risk among African American women of unidentified HIV status: An exploratory qualitative study. *AIDS Care, 19*, 307-317. doi: 10.1080/09540120600790285

Jemmott, J. B., Jemmott, J. B., Hutchinson, M. K., Cederbaum, J. A., & O' Leary, A.

(2008). Sexually transmitted infection/HIV risk reduction interventions in clinical practice settings. *Journal of Obstetric, Gynecologic, and Neonatal Nursing, 37*, 137-145. doi: 10.1111/j.1552-6909.2008.00221.x

Johnson, E. H. (1993). *Risky sexual behaviors among African Americans*. Westport, CT: Praeger Publishers.

Joint United Nations Programme on HIV/AIDS. (2012). *Women out loud: How women living with HIV will help the world end AIDS* (Issue Brief No. JC2416E).

Retrieved on August 10, 2014 from

http://www.unaids.org/sites/default/files/en/media/unaids/contentassets/documents/unaidspublication/2012/20121211_Women_Out_Loud_en.pdf

Joint United Nations Programme on HIV/AIDS. (2013). *AIDS by the numbers* (Issue

Brief No. JC2571/1/E). Geneva, Switzerland: Author. Retrieved on August 10, 2014 from

http://www.unaids.org/sites/default/files/media_asset/JC2571_AIDS_by_the_numbers_en_1.pdf

Joint United Nations Programme on HIV/AIDS. (2014a). *Fact sheet 2014: Global*

statistics. Retrieved on August 10, 2014 from

http://www.unaids.org/sites/default/files/en/media/unaids/contentassets/documents/factsheet/2014/20140716_FactSheet_en.pdf

Joint United Nations Programme on HIV/AIDS. (2014b). *The gap report 2014*.

Retrieved on August 10, 2014 from

http://www.unaids.org/sites/default/files/media_asset/UNAIDS_Gap_report_en.pdf

Jöreskog, K. G., & Sörbom, D. (1996). *PRELIS 8: User's reference guide*. Chicago: Scientific Software International, Inc.

Kahn, J. A., Kaplowitz, R. A., Goodman, E., & Emans, S. J. (2002). The association between impulsiveness and sexual risk behaviors in adolescent and young adult women. *Journal of Adolescent Health, 30*, 229-232. doi: 10.1016/S1054-139X(01)00391-3

Kalichman, S. C., & Cain, D. (2005). Perceptions of local HIV/AIDS prevalence and risks for HIV/AIDS and other sexually transmitted infections: Preliminary study of intuitive epidemiology. *Annals of Behavioral Medicine, 29*, 100-105. doi: 10.1207/s15324796abm2902_4

Kalichman, S. C., Hudd, K., & DiBerto, G. (2001). Operational fidelity to an evidence-based HIV prevention intervention for people living with HIV/AIDS. *The Journal of Primary Prevention, 31*, 235-245. doi: [10.1007/s10935-010-0217-5](https://doi.org/10.1007/s10935-010-0217-5)

Kalichman, S. C., Williams, E., & Nachimson, D. (1999). Brief behavioural skills building intervention for female controlled methods of STD-HIV prevention: Outcomes of randomized clinical field trial. *International Journal of STD and AIDS, 10*, 174-181. doi: 10.1258/0956462991913844

- Kelly, J. A., Murphy, D. A., Washington, C. D., Wilson, T. S., Koob, J. J., Davis, D. R., Ledezma, G., & Davantes, B. (1994). *American Journal of Public Health*, 84, 1918-1922.
- Kentucky Cabinet for Health and Family Services, Department for Public Health, HIV/AIDS Branch. (2013). *HIV/AIDS surveillance report, June 2013*. (Volume 13, No.1). Retrieved from http://chfs.ky.gov/NR/rdonlyres/F597E129-83C0-4F34-8168-1BD7ADB32B66/0/AnnualReport_2013.pdf
- Kentucky Department of Public Health. (2013). HIV disease among blacks in Kentucky, December, 2013. Retrieved on September 11, 2014 from http://chfs.ky.gov/NR/rdonlyres/DCA6365C-E736-4C75-862E-CD1970CCBB71/0/HIV_Disease_Blacks_Factsheet_FINAL.pdf
- Lapsley, D. K., Aalsma, M. C., & Halpern-Felsher, B. L. (2005, April). *Invulnerability and risk behavior in early adolescence*. Paper presented at the meeting of the Society for Research in Child Development, Atlanta.
- Larsen, M., & Collins, B. E. (1994). The UCLA multidimensional condom attitude scale: Documenting the complex determinants of condom use in college students. *Health Psychology*, 13, 224-237. Retrieved from <http://nclc203seminarf.pbworks.com/w/file/fetch/36497255/TheUCLAMultidimensional-Condoms-Attitude-Scale.pdf>
- Laurencin, C. T., Christensen, D. M., & Taylor, E. D. (2008). HIV/AIDS and the African-American community: A state of emergency. *Journal of the National Medical Association*, 100, 35-43. Retrieved on April 11, 2011 from [http://www.northstarnews.com/userimages/references/HIV%20AIDS_National%](http://www.northstarnews.com/userimages/references/HIV%20AIDS_National%20)

20Medical%20Association%20Journal.pdf

- Lightfoot, M., Comulada, W. S., Stover, G. (2007). Computerized HIV preventive intervention for adolescents: Indications of efficacy. *American Journal of Public Health, 97*, 1027-1030. doi: [10.2105/AJPH.2005.072652](https://doi.org/10.2105/AJPH.2005.072652)
- Like, R. C., Steiner, R. P., Rubel, A. J. (). Society of teachers of family medicine core curriculum guidelines: Recommended core curriculum guidelines on culturally sensitive and competent health. *Family medicine, 28*, 291-297. Retrieved from <https://www.stfm.org/Groups/GroupPagesandDiscussionForums/MinorityandMulticulturalHealth/CoreCurriculumGuidelines>
- Lindberg, C. E. (2000). Knowledge, self-efficacy, coping, and condom use among urban women. *Journal of the Association of Nurses in AIDS Care, 11*, 80-90.
- Logan, T. K., Cole, J., & Luekefeld, C. (2002). Women, sex, and HIV: Social and contextual factors, meta-analysis of published interventions, and implications for practice and research. *Psychological Bulletin, 128*, 851-885. doi:10.1037//0033-2909.128.6.851
- Lyles, C. M., Kay, L. S., Crepaz, N., Herbst, J. H., Passin, W. F., Kim, A. S., . . . Mullins, M. M. (2007). Best-evidence interventions: Findings from a systematic review of HIV behavioral interventions for U.S. populations at high risk, 2000-2004. *American Journal of Public Health, 97*, 133-143.
- Martin, W. Allen. (2004). Urbanicity. *The term and concept - urbanicity*. Retrieved from <http://www.urbanicity.us/Urbanicity.html>
- Mattis, J. S., & Jagers, R. J. (2001). A relational framework for the study of religiosity and spirituality in the lives of African Americans. *Journal of Community*

Psychology, 29, 519-539. doi: 10.1002/jcop.1034

Mays, V. M., & Cochran, S. D. (1988). Issues in the perception of AIDS risk and risk reduction activities by Black and Hispanic/Latina women. *American*

Psychologist, 43, 949-957. doi: 10.1037//0003-066X.43.11.949

Milhausen, R. R., Sales, J. M., Wingood, G. M., DiClemente, R. J., Salazar, L. F., & Crosby, R. A. (2007). Validation of a partner sexual communication scale for use in HIV/AIDS prevention interventions. *Journal of HIV/AIDS Prevention in Children & Youth*, 8, 11-33. doi: 10.1300/J499v08n01_02

Miller, J. (1986). *Pathways in the workplace: The effects of gender and race on access to organizational resources*. London: Cambridge University Press.

Mize, S. J., Robinson, B. E., Bockting, W. O., & Scheltema, K. E. (2002). Meta-analysis of the effectiveness of HIV prevention in interventions for women. *AIDS Care*, 14(163-180).

Musaba, E., Morrison, C. S., Sunkutu, M. R., & Wong, E. L. (1998). Long-term use of the female condom among couples at high risk of human immunodeficiency virus infection in Zambia. *Sexually Transmitted Diseases*, 25(5), 260-264. Retrieved from http://journals.lww.com/stdjournal/Fulltext/1998/05000/Long_Term_Use_of_the_Female_Condom_Among_Couples.8.aspx

McAlister, A. L., Perry, C. L., & Parcel, G. S. (2008). How individuals, environments, and health behaviors interact. In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behavior and health education: Theory, research, and practice* (4th ed., pp. 169-188). San Francisco, CA: Jossey-Bass. Retrieved from

http://www.google.com/url?sa=t&rct=j&q=&esrc=s&source=web&cd=9&ved=0CEkQFjAI&url=http%3A%2F%2Fwww.sanjeshp.ir%2Fphd%2Fphd_91%2FPages%2FReferences%2Fhealth%2520education%2520and%2520promotion%2F%5BKaren_Glanz%2C_Barbara_K._Rimer%2C_K._Viswanath%5D_Heal%2528BookFi.or.pdf&ei=RB8KVaHHFc_egwSm6oHIDA&usg=AFQjCNFGfi8iZNY02HLX5byC7B4PNN2kXw&sig2=cVKiOxqJSjkjLX-SBoP8Fg

McDonald, J. H. (2014). *Handbook of biological statistics* (3rd ed.). Retrieved from <http://www.biostathandbook.com/small.html>

McLeroy, K. R., Bibeau, D., Steckler, A., & Glanz, K. (1988). An ecological perspective on health promotion programs. *Health Education & Behavior, 15*, 351-377. doi: 10.1177/109019818801500401

National Rural Health Association. (2004, July). *HIV/AIDS in rural America disproportionate impact on minority and multicultural populations, 2004*. Retrieved on November 26, 2014 from <http://www.ruralhealthweb.org/index.cfm?objectid=B0F91076-3048-651A-FEC84AA22E5C0498>

NIMH Multislice HIV/STD Prevention Trial for African American Couples Group. (2008). Project Eban: An HIV/STD intervention for African American couples. *Journal of Acquired Immune Deficiency Syndromes, 49*(Suppl 1), S15–S27. doi:10.1097/QAI.0b013e318184255d

Noar, S. M. (2008). Behavioral interventions to reduce HIV-related sexual risk behavior: review and synthesis of meta-analytic evidence. *AIDS and Behavior, 12*, 335-353. doi:10.1007/s10461-007-9313-9

- Noar, S. M., Black, H. G., & Pierce, L. B. (2009). Efficacy of computer technology-based HIV prevention interventions: a meta-analysis. *AIDS*, *23*, 107-115. doi: 10.1097/QAD.0b013e32831c5500
- Noar, S. M., Pierce, L. B., & Black, H. G. (2010). Can computer-mediated interventions change theoretical mediators of safer sex? a meta-analysis. *Human Communication Research*, *36*, 261-297. doi: 10.1111/j.1468-2958.2010.01376.x
- O'Brien, R. G., & Kaiser, M. K. (1985). MANOVA method for analyzing repeated measures designs: An extensive primer. *Psychological Bulletin*, *97*, 316-333. doi: <http://dx.doi.org/10.1037/0033-2909.97.2.316>
- O'Leary, A., Jemmott, L. S., & Jemmott, J. B. (2008). Mediation analysis of an effective sexual risk-reduction intervention for women: The importance of self-efficacy [Supplemental]. *Health Psychology*, *27*(2), S180-184. doi: 10.1037/0278-6133.27.2(Suppl.).S180.
- O'Leary, A., Maibach, E., Ambrose, T. K., Jemmott, J. B., III, and Celentano, D. D. (2000). Social cognitive predictors of sexual risk behavior change among STD clinic patients. *AIDS and Behavior*, *4*, 309-316. doi: 10.1023/A:1026474804172
- Padian, N., Marquis, L., Francis, D. P., Anderson, A. R. M., Rutherford, G. W., & O'Malley, P. M. (1987). Male-to-female transmission of human immunodeficiency virus. *Journal of American Medical Association*, *258*, 788-790. doi:10.1001/jama.258.6.788
- Painter, J. E., Borba, C. P., Hynes, M., Mays, D., & Glanz, K. (2008). The use of theory in health behavior research from 2000 to 2005: a systematic review. *Annals of Behavioral Medicine*, *35*, 358-362. doi: 10.1007/s12160-008-9042-y.

- Pollard, J. A., Hawkins, J. D., & Arthur, M. W. (1999). Risk and protection: Are both necessary to understand diverse behavioral outcomes in adolescence?. *Social Work Research, 23*, 145-148. doi: 10.1093/swr/23.3.145
- Portnoy, D. B., Scott-Sheldon, L. A., Johnson, B. T., Carey, M. P. (2008). Computer-delivered interventions for health promotion and behavioral risk reduction: A meta-analysis of 75 randomized controlled trials, 1998-2007. *Preventive Medicine, 47*, 3-16. doi:10.1016/j.ypmed.2008.02.014
- Qualtrics (Version 61,604) [Computer software]. Provo, UT: Qualtrics Research Suite.
- Reisen, C. A., & Poppen, P. J. (1995). College women and condom use: Importance of partner relationship. *Journal of Applied Social Psychology, 25*, 1485-1498.
- Rietmeijer, C. A. (2007). Risk reduction counselling for prevention of sexually transmitted infections: How it works and how to make it work. *Sexually Transmitted Infections, 83*, 2-9.
- Roberto, A. J., Zimmerman, R. S., Carlyle, K. E., & Abner, E. L. (2007). A computer-based approach to preventing pregnancy, STD, and HIV in rural adolescents. *Journal of Health Communication, 12*, 53-76.
- Rosenberg, M. J. (1956). Cognitive structure and attitudinal affect. *The Journal of Abnormal and Social Psychology, 53*, 367-372.
- Rosenberg, M. J. (1960). An analysis of affective-cognitive consistency. In M. J. Rosenberg, C. I. Hovland, W. J. McGuire, R. P. Abelson & J. W. Brehm (Eds.), *Attitude organization and change*. Yale University Press.

- Rotheram-Borus, M. J., Swendeman, D., & Flannery, D. (2009). Evidence-based family wellness interventions, still not HIV prevention: reply to Collins. *AIDS and Behavior, 13*, 420-423.
- Rural Centers for AIDS/STD Prevention (2008). Fact sheet Computer technology-based HIV prevention interventions (No. 22). Retrieved on May 18, 2014 from http://www.indiana.edu/~aids/factsheets/RCAPFact_Sheet_22r3lr.pdf
- Rural Centers for AIDS/STD Prevention (2009). Fact sheet HIV/AIDS in rural America: Challenges and promising strategies. (No. 23). Retrieved on May 18, 2014 from <http://www.indiana.edu/~aids/factsheets/factsheet23.pdf>
- Sacco, W. P., Levine, B., Reed, D.L., & Thompson, K. (1991). Attitudes about condom use as an AIDS-relevant behavior: Their factor structure and relation to condom use. *Psychological Assessment, 3*, 265-272. doi: 10.1037//1040-3590.3.2.265
- Sales, J. M., Lang, D. L., DiClemente, R. J., Latham, T. P., Wingood, G. M., Hardin, J. W., & Rose, E. S. (2012). The mediating role of partner communication frequency on condom use among African-American adolescent females participating in an HIV prevention intervention. *Health Psychology, 31*, 63-69.
- Schmeichel, B. J., & Martens, A. (2005). Self-affirmation and mortality salience: Affirming values reduce worldview defense and death-thought accessibility. *Personality and Social Psychology Bulletin, 31*, 658-667. doi: 10.1177/0146167204271567
- Semaan, S., Des Jarlais, D. C., Sogolow, E., Johnson, W. D., Hedges, L. V., Ramirez, G., . . . Needle, R. (2002). A meta-analysis of the effect of HIV prevention

interventions on the sex behaviors of drug users in the United States. *Journal of Acquired Immune Deficiency Syndromes*, 30(Supplement 1), S73-S93.

Sexuality Information and Education Council of the United States. (2013a). State profile: Georgia. Retrieved on November 12, 2014 from <http://siecus.org/document/docWindow.cfm?fuseaction=document.viewDocument&documentid=373&documentFormatId=436>

Sexuality Information and Education Council of the United States. (2013b). State profile: Kentucky. Retrieved on November 12, 2014 from <http://siecus.org/document/docWindow.cfm?fuseaction=document.viewDocument&documentid=380&documentFormatId=443>

SISTA Evaluation Field Guide. (2008). Retrieved on May 2, 2011 from http://effectiveinterventions.org/Files/SISTA_Evaluation_Field_Guide.pdf

Small, E., Weinman, M. L., Buzi, R. S., & Smith, P. B. (2009). Risk factors, knowledge, and attitudes as predictors of intent to use condoms among minority females attending family planning clinics. *Journal of HIV/AIDS & Social Services*, 8, 251-268. doi: 10.1080/15381500903130504

Sobo, E. J. (1995). *Choosing unsafe sex: AIDS-risk denial among disadvantaged women*. Philadelphia, PA: University of Pennsylvania Press.

Soet, J. E., Dudley, W. N., & Dilorio, C. (1999). The effects of ethnicity and perceived power on women's sexual behavior. *Psychology of Women Quarterly*, 23, 707-723. doi: 10.1111/j.1471-6402.1999.tb00393.x

- Solomon, J., Card, J. J., & Marlow, R. M. (2006). Adapting efficacious intervention: Advancing translational research in HIV prevention. *Evaluation & the Health Professions, 29*, 162-194. doi: 10.1177/0163278706287344
- Soper, D. S. (2014). A-priori Sample Size Calculator for Student t-Tests [Software]. Retrieved from <http://www.danielsoper.com/statcalc>
- Southern AIDS Coalition, Inc. (2012). *Southern states manifesto: Update 2012 policy brief and recommendations*. Retrieved from Southern AIDS Coalition, Inc. website: <http://southernaidscoalition.org/wp-content/uploads/2013/11/Southern-States-Manifesto-Update-2012.pdf>
- Southern AIDS Coalition, Inc. (2014). Welcome to southern AIDS coalition. Retrieved on October 2, 2014 from <http://southernaidscoalition.org/>
- Sterk, C. E., Klein, H., & Elifson, K. W. (2008). Young adult ecstasy users and multiple sexual partners: understanding the factors underlying this HIV risk practice. *Journal of Psychoactive Drugs, 40*, 237-244. doi: 10.1080/02791072.2008.10400638
- Sterk, C. E., Theall, K. P., & Elifson, K. W. (2003). Effectiveness of a risk reduction intervention among African American women who use crack cocaine. *AIDS Education and Prevention, 15*, 15-32. doi: 10.1521/aeap.15.1.15.23843
- Stewart, P. (2007). Who is kin? Family definition and African American families. *Journal of Human Behavior in the Social Environment, 15*, 163-181. doi: 10.1300/J137v15n02_10
- St. Lawrence, J. S., Brasfield, T. L., Jefferson, K. W., Allyene, E., & Shirley, A. (1994). Social support as a factor in African-American adolescents' sexual risk behavior.

- Journal of Adolescent Research*, 9, 292-310. doi: doi:10.1177/074355489493002
- St. Lawrence, J. S., Chapdelaine, A. P., Devieux, J. G., O'Bannon III, R. E., Brasfield, T. L., & Eldridge, G. D. (1999). Measuring perceived barriers to condom use: Evaluation of the condom barriers scale. *Assessment*, 6, 391-400. doi: 10.1177/107319119900600409
- Sue, D. W., & Sue, D. (2008). *Counseling the culturally diverse: Theory and practice* (5th ed.). Hoboken, NJ: John Wiley & Sons, Inc.
- Sussman, S., Valente, T. W., Rohrbach, L. A., Skara, S., Pentz, M. A. (2006). Translation in the health professions: Converting science into action. *Evaluation & the Health Professions*, 29(7), 7-32. doi: 10.1177/0163278705284441
- Svenson, G. R., Ostergren, P. O., Merlo, J., & Rastam, L. (2002). Action control and situational risks in the prevention of HIV and STIs: Individual, dyadic, and social influences on consistent condom use in a university population. *AIDS Education and Prevention*, 14, 515-531. doi: 10.1521/aeap.14.8.515.24111
- Taylor, R. J., Chatters, L. M., & Levin, J. (2004). *Religion in the lives of African Americans: Social, psychological, and health perspectives*. Thousand Oaks, CA: Sage Publications.
- Thomas, S. B., & Quinn, S. C. (1991). The Tuskegee syphilis study, 1932-1972: Implications for HIV education and AIDS risk education programs in the Black community. *American Journal of Public Health*, 81, 1498-1504. doi: 10.2105/AJPH.81.11.1498
- U. S. Census Bureau (2013a). State & county quickfacts: Georgia. Retrieved from <http://quickfacts.census.gov/qfd/states/13000.html>

- U. S. Census Bureau (2013b). State & county quickfacts: Kentucky. Retrieved from <http://quickfacts.census.gov/qfd/states/21000.html>
- U. S. Department of Education, Institute of Education Sciences, National Center for Education Statistics (2013). *Fast facts: Historically black colleges and universities*. Retrieved on January 22, 2015 from <http://nces.ed.gov/fastfacts/display.asp?id=667>
- U. S. Department of Health and Human Services, Health Resources and Services Administration, HIV/AIDS Bureau. (2011). Guide for HIV/AIDS clinical care. Retrieved on November 13, 2014 from <http://hab.hrsa.gov/deliverhivaidscore/clinicalguide11/>
- U.S. Department of Health and Human Services, National Institute of Allergy and Infectious Diseases. (2001). *Workshop summary: Scientific evidence on condom effectiveness for sexually transmitted disease (STD) prevention*. Retrieved on October 3, 2014 from <http://www.niaid.nih.gov/about/organization/dmid/documents/condomreport.pdf>
- U.S. Department of Health and Human Services, Panel on Antiretroviral Guidelines for Adults and Adolescents. (2014). Guidelines for the use of antiretroviral agents in HIV-1-infected adults and adolescents. Retrieved on October 3, 2014 from <http://aidsinfo.nih.gov/guidelines/html/1/adult-and-adolescent-treatment-guidelines/0>
- U. S. Department of Health and Human Services, Health Resources and Services Administration, Rural Health. (n.d.). Defining the rural population. Retrieved on

January 11, 2015 from

http://www.hrsa.gov/ruralhealth/policy/definition_of_rural.html

U.S. Department of Health and Human Services, The Secretary's Advisory Committee on National Health Promotion and Disease Prevention Objectives for 2020. (2008).

Phase I report: Recommendations for the framework and format of Healthy People 2020. Section IV. Advisory committee findings and recommendations.

Retrieved on December 2, 2014 from

http://www.healthypeople.gov/hp2020/advisory/PhaseI/sec4.htm#_Toc21194291

7.

U.S. Department of Health and Human Services, The White House Office of National AIDS Policy. (2010). *National HIV/AIDS strategy for the United States*.

Retrieved on June 11, 2014 from

<http://www.whitehouse.gov/sites/default/files/uploads/NHAS.pdf>

Van Devanter, N., Gonzales, V., Merzel, C., Parikh, N. S., Celantano, D., Greenberg, J.

(2002). Effects of an STD/HIV behavioral intervention on women's use of the female condom. *American Journal of Public Health*, 92(1), 109-115. Retrieved from <http://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.92.1.109>

Vinh-Thomas, P., Bunch, M. M., & Card, J. J. (2003). A research-based tool for identifying and strengthening culturally competent and evaluation-ready

HIV/AIDS prevention programs. *AIDS Education and Prevention*, 15(6), 481-498. doi: 10.1521/aeap.15.7.481.24050

Viswanath, K. (2008). How individuals, environments, and health behaviors interact.

In K. Glanz, B. K. Rimer, & K. Viswanath (Eds.), *Health behavior and health*

- education: Theory, research, and practice* (4th ed., pp. 169-188). San Francisco, CA: Jossey-Bass.
- Ward, H. (2007). One-to-one counselling for STI prevention: Not so much whether as how. *Sexually Transmitted Infections*, 83, 1.
- Ward, M. C. (1993). A different disease: HIV/AIDS and health care for women in poverty. *Culture, Medicine, and Psychiatry*, 17, 413-430. doi: 10.1007/BF01379308
- Weinhardt, L. S., Carey, M. P., Johnson, B. T., & Bickham, N. L. (1999). Effects of HIV counseling and testing on sexual risk behavior: A meta-analytic review of published research, 1985-1997. *American Journal of Public Health*, 89, 1397-1405.
- Weinstein, N. D. (1998). Optimistic biases about personal risks. *Science*, 246, 1232-1233.
- Wendt, S. J., & Soloman, L. J. (1995). Barriers to condom use among heterosexual male and female college students. *Journal of American College Health*, 44(3), 105-110. doi: 10.1080/07448481.1995.9939102
- Weller, S. C., & Davis-Beaty, K. (2001). Condom effectiveness at reducing heterosexual HIV transmission. *Cochrane Database of Systemic Reviews* 2001, (3) (Article No. CD003255). doi: 10.1002/14651858.CD003255.
- White, R. M. (2005). Misinformation and misbeliefs in the Tuskegee study of untreated syphilis fuel mistrust in the healthcare system. *Journal of the National Medical Association*, 97, 1566-1573.
- Williams, J. K., Ramamurthi, H. C., Manago, C., & Harawa, N. T. (2009). Learning

from successful interventions: A culturally congruent HIV risk-reduction intervention for African American men who have sex with men and women.

American Journal of Public Health, 99, 1008-1012. doi:

[10.2105/AJPH.2008.140558](https://doi.org/10.2105/AJPH.2008.140558)

Williams, K., & Johnson, V. W. (2002). Eliminating African-American health disparity via history-based policy. *Harvard Health Policy Review*, 3, 1-4.

Wilson, B. D., & Miller, R. L. (2003). Examining strategies of culturally grounded HIV prevention: A review. *AIDS Education and Prevention*, 15, 184-202.

Wingood, G. M., & DiClemente, R. J. (1997). The effects of an abusive primary partner on the condom use and sexual negotiation practices of African-American women.

American Journal of Public Health, 87, 1016-1018. doi:

10.2105/AJPH.87.6.1016

Wingood, G. M., & DiClemente, R. J. (1998a). Gender related correlates and predictors of consistent condom use among African American women: A prospective analysis. *International Journal of STD and AIDS*, 9, 139-145.

Wingood, G. M., & DiClemente, R. J. (1998b). Partner influences and gender-related factors associated with noncondom use among young adult African American

women. *American Journal of Community Psychology*, 26, 29-51. doi:

10.1023/A:1021830023545

Wingood, G. M., & DiClemente, R. J. (2000). Application of the theory of gender and power to examine HIV-related exposures, risk factors, and effective interventions

for women. *Health Education & Behavior*, 27, 539-565. doi:

10.1177/109019810002700502

- Wingood, G. M., & DiClemente, R. J. (2006). Enhancing adoption of evidence based HIV interventions: Promotion of a suite of HIV prevention interventions for African American women. *AIDS Education and Prevention, 18*, 161-170. doi: 10.1521/aeap.2006.18.supp.161
- Wingood, G. M., Card, J. J., Er, D., Solomon, J., Braxton, N., Lang, D., ... & DiClemente, R.J. (2011). Preliminary efficacy of a computer-based HIV intervention for African American women. *Psychology and Health, 26*, 223-234. doi: 10.1080/08870446.2011.531576
- Wiseman, F. (2003). On the reporting of response rates in extension research. *Journal of Extension [Online], 41*(3) Article 3COM1. Retrieved on November 26, 2014 from <http://www.joe.org/joe/2003june/comm1.php>
- World Health Organization. (2014, July). Global update on the health sector response to HIV, 2014. (WHO Reference No. WHO/HIV/2014.15). WHO: Author. Retrieved September 12, 2014 from http://apps.who.int/iris/bitstream/10665/128196/1/WHO_HIV_2014.15_eng.pdf?ua=1
- Wulfert, E., & Wan, C. K. (1995). Condom use: A self-efficacy model. *Journal of Health Psychology, 12*, 346–353. doi 10.1037//0278-6133.12.5.346
- Wyatt, G. E. (2009). Enhancing cultural and contextual intervention strategies to reduce HIV/AIDS among African Americans. *American Journal of Public Health, 99*, 1941-1945. doi: 10.2105/AJPH.2008.152181
- Younge, S. N., Salem, D., & Bybee, D. (2010). Risk revisited: The perception of HIV risk in a community sample of low-income African American women. *Journal of*

Black Psychology, 36, 49-74. doi: 0.1177/0095798408320633

Zuckerman, R. A., Lucchetti, A., Whittington, W. L., Sanchez, J., Coombs, R. W., Zuniga, R. ...Celum, C. (2007). Herpes simplex virus (HSV) suppression with valacyclovir reduces rectal and blood plasma HIV-1 levels in HIV-1/HSV-2-seropositive men: A randomized, double-blind, placebo-controlled crossover trial. *Journal of Infectious Diseases*, 196, 1500-1508. doi: 10.1086/522523

VITA

KRYSTAL S. FRIESON, M.S., Ed.S.

Education and Affiliation:

M.P.H. Candidate, Health Behavior Specialty

University of Kentucky, Lexington, Kentucky

College of Public Health

Anticipated Graduation Date: December 2015

Capstone Title: *Saving Our Sisters: Patient-Centered Utilization of SAHARA at Home*

Ed.S. Counseling Psychology, 2009

University of Kentucky, Lexington, Kentucky

M.S. Counseling Psychology, 2008

University of Kentucky, Lexington, Kentucky

B.S. Psychology, 2001

University of Georgia, Athens, GA

Honors:

2013—National Psychologist Trainee Register Credentialing Scholarship

2013—AIDS Volunteers, Inc. 2013 Distinguished Service Award Recipient

2013—Association of Black Psychologists Black Ribbon Scholarship Graduate Student Research Award

2013—Surgeon General C. Everett Koop HIV/AIDS Research Grant, Rural Center for AIDS/STD Prevention at Indiana University

2013—Kentucky Psychological Association Foundation Multicultural Professional Development Award

2012—American Psychological Association, Society of Counseling Psychology Division 17, Prevention Section Research Award

2012—American Psychological Association Minority Fellowship Program Psychology Summer Institute Participant

2008—University of Kentucky McClintock Book Scholarship Recipient

2007—Doris Nowak and William E. Stilwell, III Graduate Fellowship in Educational and Counseling Psychology

2007—7th Annual National Sexuality Resource Center Summer Institute on Sexuality, Education, and Politics Participant

2006—2009 University of Kentucky Lyman T. Johnson Fellowship Recipient

1997—2001 University of Georgia Hope Scholar, Honor Society, Dean's List, and Presidential Scholar

Professional and Clinical Interests:

Combining counseling psychology with public health science to address the overall health and wellbeing of individuals, groups, communities, and populations. Specialty focus in the psychological, physical, sexual, and behavioral health issues of oppressed, marginalized, and underserved populations along with an emphasis in health behavior and treatment, education, and prevention of chronic health issues.

Clinical Experiences:

Postdoctoral Fellowship in Professional Psychology

October 2014 – Present

Emory University School of Medicine, Pediatrics Department, Infectious Diseases Division Atlanta, GA

Postdoctoral Fellow

Training Director: Nadine Kaslow, Ph.D., ABPP

Supervisors: Chanda Graves, Ph.D. and Eugene Farber, Ph.D.

APA Accredited Predoctoral Internship

August 2013 – August 2014

Tuscaloosa Veterans Affairs Medical Center (TVAMC), Tuscaloosa, AL

Doctoral Intern

Training Director: Kim Dixon, Ph.D.

Supervisors: Tony Cross, Ph.D.; Kim Dixon, Ph.D.; Michelle Hilgeman, Ph.D.; Vincent Intoccia, Psy.D.; David MacVicar, Ph.D.; Samuel Popkin, Ph.D.; and Adriana Yon, Ph.D.

Formal Practica Training

August 2011 – May 2013

University of Kentucky Counseling Center (UKCC), Lexington, KY

On-Call Counselor for Residence Life

Supervisor: Jamie Hopkins, Ph.D.

September 2011 – November 2012

Bluegrass Care Clinic (BCC), University of Kentucky Clinic, Lexington, KY

Behavioral Health Services Psychology Intern

Supervisors: Keith Haas, M.S.W., L.C.S.W.; Pam Remer, Ph.D.

January 2011 – May 2012

Bluegrass Rape Crisis Center (BRCC), Lexington, KY

Crisis Line Volunteer and Medical Advocate

Supervisors: Beth McRoberts, M.S.W., C.S.W.; Rory Remer, Ph.D.

April 2011 – August 2011

University of Kentucky Counseling Center (UKCC), Lexington, KY
Temporary Staff Counselor
Supervisors: Mary Chandler Bolin, Ph.D.; Federico Aldarondo, Ph.D.

July 2009 – July 2010

Eastern State Hospital, Lexington, KY
Doctoral Psychology Intern - Paid Position
Supervisors: David Susman, Ph.D., Mary Barber, Ph.D., Mindy Isaacs, Ph.D., David Crowe, Ph.D.

August 2008 – July 2009

University of Kentucky Counseling Center (UKCC), Lexington, KY
Practicum Student
Supervisors: Jamie Hopkins, Ph.D., Susan Mathews, Ph.D.

August 2008 – December 2008

University of Kentucky Counseling Psychology Master's Program, Lexington, KY
EDP 649 Group Counseling Experiential Supervisor
Supervisor: Rory Remer, Ph.D.

May 2008 – July 2008

University of Kentucky Counseling and Center (UKCC), Lexington, KY
Process Observer
Supervisor: Susan Mathews, Ph.D.

August 2007 – May 2008

Center for Women, Children, and Families – The Nest, Lexington, KY
Counselor/Group Leader
Supervisors: Marcia Partin, L.C.T., Jeff Reese, Ph.D.

August 2007 – December 2007

UK 100 Leadership Course, Gatton College of Business and Economics, University of Kentucky, Lexington, KY
Group Leader
Supervisor: Pam Remer, Ph.D.

Research Experience:

August 2009 – July 2013

University of Kentucky Department of Federal Relations, Lexington, KY
Graduate Research Assistant
Supervisor: Bill Schweri, Ed.D.

May 2010 – May 2011

Bluegrass Care Clinic (BCC)/Kentucky AIDS Education Training Center (KYAETC)

University of Kentucky Clinic, Lexington, KY

Public Health Field Practicum Intern

Supervisor: Jennifer Edwards, M.P.H.

August 2008 – December 2008

University of Kentucky Department of Educational, School, and Counseling Psychology Project P.E.C.O.T. - Promoting Enhanced Career Opportunities for Teens, Bryan Station High School, Lexington, KY

Graduate Research Assistant

Supervisors: Keisha Love, Ph.D. & Jeff Reese, Ph.D.

February 2005 – November 2005

Emory Mood and Anxiety Program (EMAP), Department of Psychiatry and Behavioral Sciences, Emory University School of Medicine, Atlanta, GA

Senior Research Interviewer

Supervisor: Bettina Knight, R.N., B.S.N., C.R.C.C.

September 1997 – September 1999

Howard Hughes Undergraduate Apprenticeship Program, University of Georgia School of Veterinary Medicine Pathology Department, Athens, GA

Laboratory Assistant/Histotechnician

Supervisor: Jaroslava Halper, M.D., Ph.D., D.A.B.P.

Teaching Experience:

August 2012—May 2013

Kentucky State University, Frankfort, KY, Division of Behavioral and Social Sciences
Adjunct Professor

August 2008—May 2009

University of Kentucky, Department of Educational, School, and Counseling Psychology, Lexington, KY
Primary Instructor

August 2006 – August 2008

University of Kentucky, Lexington, KY, Department of Educational, School, and Counseling Psychology
Graduate/Teaching Assistant

Volunteer Experience:

September 2011 – June 2013

SHARE Center, Lexington, KY
General Educational Development (GED) Tutor and Counselor
Supervisor: Tahirah Abdullah, M.S.

May 2008 – July 2013

AIDS Volunteers, Inc. (AVOL), Lexington, KY
HIV Testing Counselor
Supervisor: Angel Clark

July 2012

Association of Black Psychologists (ABPsi) Annual International Conference, Los Angeles, CA
Graduate Student Volunteer

November 2010

Kentucky Psychological Association (KPA) Annual Convention, Lexington, KY
Graduate Student Volunteer
Supervisor: Sarah Burress

November 2009

Kentucky Psychological Association (KPA) Annual Convention, Lexington, KY
Graduate Student Volunteer
Supervisor: Sarah Burress

January 2007—December 2009

University of Kentucky OUTsource, Lexington, KY
Volunteer

August 2005—August 2006

AID Atlanta, Atlanta, GA
Volunteer

August 2005 – August 2006

Grady Nia Project at Grady Memorial Hospital, Atlanta, GA
Volunteer
Supervisor: Nadine Kaslow, Ph.D.

August 2005 – August 2006

Planned Parenthood of Georgia, Cobb Health Center, Marietta, GA
Volunteer

Publications:

Book Chapters

Miller, T.W., Reese, R.J., & **Frieson, K. S.** (2008). Telehealth technology applications with underserved conduct disorder child and adolescent populations. In Lucia Martinez and Carla Gomez (Eds.), *Telemedicine in the 21st century* (pp. 1-22). Hauppauge, NY: Nova Science Publishers, Inc.

Peer-Reviewed Journal Articles

Frieson, K. S. (2013). Saving our sisters: Effects of a computer-based version of SISTA. *Prevention in Counseling Psychology: Theory, Research, Practice and Training*, 6, 27.

Unpublished Manuscripts

Frieson, K. S. (2011). *Correlates of HIV-related risk exposures and risk factors among African American women*. Unpublished manuscript, University of Kentucky.

Presentations and Speaking Engagements:

Presentations

Abdullah, T., & **Frieson, K. S.** (July 2012). *Sources, effects, and perceptions of mental illness stigma and anti-stigma options*. Presentation to given at the Association of Black Psychologists 44th Annual International Conference, Los Angeles, CA.

Frieson, K. S. (July 2010). *Mental health and HIV: Information and resources to assist individuals working with persons infected and affected by HIV/AIDS*. Presentation given at the Kentucky Conference on HIV/AIDS and Viral Hepatitis, Lexington, KY.

Peer-Reviewed Poster Presentations

Frieson, K. S. (July 2012). *Saving our sisters: Effects of a computer-based version of SISTA on the HIV-related behaviors of African American women*. Poster session presented at the American Psychological Association Minority Fellowship Program (MFP) Psychology Summer Institute (PSI), Washington, DC.

Speaking Engagements

University of Kentucky College of Medicine, Health Center Student Diversity and Enrichment Services, World Café Speaker, March 2011

United Way of the Bluegrass Get On Board Program, Graduation Address Speaker, Fall 2008

Certifications:

June 2009—Present
Certified HIV Prevention Counselor

March 2009—Present
Certified in Cardiopulmonary Resuscitation (CPR)

February 2005—Present
Collaborative Institutional Training Initiative (CITI) Certified

Editorial Activities:

April 2007—May 2008
Co-Editor, University of Kentucky Wildcat Escape, a UK Department of Educational, School, and Counseling Psychology newsletter.

Professional Affiliations and Service Involvements:

National

American Psychological Association of Graduate Students (APAGS)
Association of Black Psychologists (ABPsi)
Division 17 Society of Counseling Psychology Student Affiliate
Division 17 Section on Ethnic and Racial Diversity Student Member
Division 35 Society for the Psychology of Women
Division 35 Section One: The Psychology of Black Women
National Association for the Advancement of Colored People (NAACP)
National Scholars Honor Society
Society for the Scientific Study of Sexuality (SSSS)

University

Member, Black Graduate and Professional Student Association
Member, University of Kentucky Student Public Health Association (UKSPHA)
Member, Gay Straight Alliance
Graduate Senator, University of Kentucky Student Government
Member, University of Kentucky Student Health Advisory Council (SHAC) Treasurer,
Black Graduate and Professional Students Association
Participant, Humanities Academy, University of Kentucky Training and Development

Member, OUTsource

Community

Vice President of Board, AIDS Volunteers, Inc. (AVOL), Lexington, KY
Ad Hoc Outreach Chairman, AIDS Volunteers, Inc. (AVOL), Lexington, KY
Secretary of Board, AIDS Volunteers, Inc. (AVOL), Lexington, KY
Board Member, AIDS Volunteers, Inc. (AVOL), Lexington, KY
Eastern Kentucky University Fall Doctoral Symposium Participant
United Way of the Bluegrass Get On Board Program