REDUCING THE RISK OF HIV INFECTION IN AFRICAN AMERICAN ADOLESCENTS IN THE MIDWEST: A LOOK AT SELF-EFFICACY AND CONDOM USE IN A ADOLESCENT POPULATION

A Dissertation by Michelle L. Redmond

M.S., Emporia State University, 2001

B.S., Fisk University, 1996

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I have examined the final copy of this Dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy with a major in Psychology.

_____________________________
Rhonda K. Lewis, Committee Chair

We have read this dissertation and recommend its acceptance:

_____________________________
Gregory J. Meissen, Committee Member

_____________________________
Louis J. Medvene, Committee Member

_____________________________
Barbara S. Chaparro, Committee Member

_____________________________
Mark A. Glaser, Committee Member

Accepted for the College of Liberal Arts and Sciences

_____________________________
William Bischoff, Dean

Accepted for the Graduate School

_____________________________
Susan Kovar, Dean
DEDICATION

To my parents, Jimmie and Ila Redmond for their continued

love and encouragement

in pursuing all of my goals
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ABSTRACT

Human immunodeficiency Virus/Acquired Immune Deficiency Syndrome (HIV/AIDS) is a major health concern in the United States, as well as globally (CDC, 2001). Certain ethnic groups in the United States have more reported HIV/AIDS cases then others. In particular, African American adults and adolescents are disproportionately affected by HIV/AIDS. For that reason, there is a great need for prevention/intervention work within this population to decrease the growing number of HIV/AIDS cases. One prevention effort is the Youth Empowerment Project, which is an HIV/AIDS prevention program targeted to reduce risky behaviors in a Midwest African American adolescent population. A total of three hundred and ninety-four youth between the ages of 12-17 participated in this program over the course of three years. Participants were exposed to safer sex skill building, condom use negotiation with a partner, self-efficacy skills, and general refusal skills.

This study examined the differences in self-efficacy of the participants and investigated the relationships found between self-efficacy and reported condom use. Participants were randomly assigned to either an HIV/AIDS safer sex class or a health promotion class. No significant differences in self-efficacy were found between the two groups. However, female participants were found to have higher self-efficacy than male participants. Reported sexual activity was low for this population, so no significant findings were discovered between self-efficacy and condom use.
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CHAPTER 1
Introduction

The purpose of this project was to investigate the role of self-efficacy in reducing risky behaviors that lead to the contraction of HIV. Risky behaviors can range from a lack of using condoms to the failure of using negotiation skills when dealing with your sexual partner. These issues will be examined in terms of how self-efficacy can play a role in HIV prevention with an Adolescent population.

HIV/AIDS

Acquired Immune Deficiency syndrome (AIDS) is a devastating disease that has reached pandemic proportions. Since the beginning of this disease 60 million HIV cases have been reported, along with a staggering 20 million AIDS-related deaths (Stover, 2002).

The global numbers of HIV/AIDS infections and death are numerous; however, this disease is also affecting the United States at alarming rates (Fitzpatrick, McCray, & Smith, 2004). Since 1981 the virus that causes AIDS, Human Immunodeficiency Virus has affected many communities, families, and individuals. HIV has caused devastation in the United States and worldwide since it’s emergence in 1981. The number of persons diagnosed with AIDS by the year 2000 was 774,467. According to the Center for Disease Control (2001) 448,060 of the 700,000 have already died from AIDS and of the remaining 322,865, 79% were men, and 61% were either African American or Hispanic. Death resulting from AIDS has slightly declined since the 1980s due to medications such as antiretroviral therapy and medical treatment (Center for Disease Control [CDC], 2004). The combination of medical treatments for AIDS-related illnesses and the regimen of medications are helping delay the onset of full blown AIDS (CDC, 2004).
As of 2002, there were at least 800,000 individuals who were currently living with the HIV virus (CDC, 2003). Every year at least 40,000 new HIV cases occur in the U.S. population. HIV is still related to significant illness and opportunistic infections. Lifetime treatment for a person diagnosed with HIV is around $155,000 (CDC, 2002). With the insurmountable number of new cases each year and the cost of this illness socially, mentally and economically, there is ample reason to provide prevention and intervention programs, particularly for high risk populations.

There are several recent trends with the HIV/AIDS epidemic in the United States. The number of people dying of AIDS has actually declined. More people today live with the virus that causes AIDS. Although HIV/AIDS is present in all communities and ethnic populations, over recent years this virus has disproportionately affected populations of color, particularly African Americans at an alarming rate (CDC, 2002).

*African Americans and HIV/AIDS*

In the past, HIV was considered to be a virus that primarily affected gay men (Jemmott, Jemmott, & Hutchinson, 1992). Now, HIV/AIDS is affecting more African Americans, particularly those between the ages of 25-44. For other groups in the United States the general numbers of new HIV infection have decreased. While African Americans only make up 12.3% of the entire United States population, they have a larger percentage of AIDS cases. Since the beginning of the AIDS epidemic, approximately 39% of all reported AIDS cases were individuals of African American descent (CDC, 2003).

African Americans are also disproportionately represented in HIV cases (CDC, 2003; Colon, Wiatrek, & Evans, 2000). In 2002 over half of all newly acquired HIV cases were African Americans. In addition, 62% of all infants born with HIV are African American. HIV
has reached a crisis mode for African Americans regardless of sexual orientation or age (CDC, 2002).

**HIV/AIDS and Adolescents**

The incidence of HIV is increasing among adolescents. It is reported that half of all new HIV cases occur among young adults 25 and under (CDC, 1998; CDC, 2002). In 1999, HIV was considered to be the fifth leading cause of death among young adults between the ages of 25-44. In 2000, 1,688 people between the ages of 13-24 had AIDS. Now, the total number in this age group is 31,293. The Center for Disease Control (2002) also reported that for young adults ages 20-24, 64% were men, 36% were women, and 53% were African American. Many of those in this age bracket are believed to have contracted the virus during their adolescent years.

Based on surveillance data from 32 areas reported by the Centers for Disease Control and Prevention (2002) of the young people diagnosed with HIV, African American adolescents and young adults account for 56% of the total cases. While this data is sobering, HIV/AIDS is a preventable disease and there are ways to protect against HIV infection. By being aware of the current risk and protective factors individuals can reduce their chances of becoming infected with the disease.

**Risk and Protective Factors**

There are several risk factors that exist for HIV transmission and infection. Risk factors are behaviors or attitudes that put people at certain risk for HIV infection. Having unprotected sex is an important risk factor, particularly if there are multiple partners involved. One of the most risky behaviors for adolescents is having unprotected sex, and the failure of using a male latex condom (Department of Health and Human Services [DHHS], 2005; Miller, Boyer &
Cotton, 2004). This further translates into inconsistent condom use or lack of condom use as a risky sexual behavior. Another risk factor is engaging in alcohol and intravenous drug use. Alcohol can lower the chance of youth protecting themselves by lowering their inhibitions and making them more vulnerable to higher risk behaviors (Messina, 1993). With lowered inhibitions and lack of confidence in using refusal skills, adolescents become more vulnerable to HIV/AIDS infection (Goggin, et al., 2002). Sharing unclean needles and other drug paraphernalia can also put one at-risk for HIV infection. Having a general lack of knowledge on how HIV is transmitted from one person to another can put anyone at-risk for infection. Displaying an attitude of this cannot happen to me is also a risk factor, particularly for adolescents (Messina, 1993). Some researchers suggest that interpersonal and biological factors can particularly put adolescents at-risk for infection. There are indications that if a youth suffers from low self-esteem, or a poor self-image, they might put themselves in more vulnerable situations which could lead to HIV risk (Salazar et al., 2004; National Association of Social Workers, 2002). Some studies have documented certain predictors that tend to lead to high and low risk behaviors. Boyer, Tschann, and Shafer (1999) conducted a study on factors that predict risk for sexually transmitted diseases, including HIV. Their study explored such issues as alcohol and drugs, social support, peer affiliation, and perceptions of self-efficacy and knowledge of HIV risk behaviors. Boyer, Tschann, and Shafer found alcohol and drug use to be a good predictor of high risk HIV behaviors. They also discovered that psychosocial factors are the best predictors of those who engage in low-risk behaviors such as using condoms. Participants who had high perceptions of their self-efficacy and perceived peer support engaged in lower risk behaviors. Additionally, there are ways for youth and adults to protect against HIV infection, through the enhancement of protective factors.
Protective factors are defined as those behaviors or attitudes that protect people from HIV infection. These include: (1) One is abstinence (Jemmott, Jemmott & Fong, 1998). (2) Arming adolescents with correct information about HIV infection and prevention. (3) Using latex condoms consistently and correctly (CDC, 2002). (4) Prevention programs that teach youth and young adults how to correctly use condoms and helps build their negotiation skills with their sexual partner (St. Lawrence, et al., 1995; Morris & Ulmer, 2003). Zak-Place and Stern (2004) conducted a study on health belief factors and predictors of STD and HIV preventative behaviors and they found that perceived self-efficacy was a strong predictor for intended condom use. In a cross-sectional study conducted by Colon, Wiatrek and Evans (2000) they found that sexual self-efficacy was a strong predictor of condom use intention among an African American adolescent male population. This gives some credence to the fact that self-efficacy may be a strong predictor in helping adolescents lower risk behaviors. Effective prevention programs must also be grounded in a solid theoretical foundation.

*Theories involved in HIV interventions*

There are several theories that are used in HIV prevention and intervention work such as the health belief model, social cognitive model, transtheoretical model and those specifically tied to AIDS research such as the AIDS reduction model and the information-motivation-behavioral skills model (Kalichman, 1998). These theories, mostly behavioral cognitive theories are successful in helping evaluate and understand human behavior in terms of HIV prevention and other health related behaviors (Fisher, 1997). Another important theory that was used by the Jemmotts’ is the Theory of Reasoned Action and its extension the Theory of Planned Behavior.
Theory of Reasoned Action

The theory of reasoned action and planned behavior are commonly used to help understand behaviors and human action (Ajzen, 2002). With the Theory of Reasoned Action, one tries to predict behaviors that might occur based on a person’s intentions, which are tied to their attitudes about the behavior or act and to any injunctive subjective norms, such as what do their family and close friends think about such intentions (Ajzen & Fishbein, 1980). Injunctive subjective norms are tied to an individual’s attempt to gain approval for certain behaviors or including behaviors sanctioned by important others (Sheeran & Taylor, 1999).

The theory of reasoned action and planned behavior has been used in predicting health behaviors such as smoking cessation, alcohol intake, and condom use intention (Ajzen & Fishbein, 1980; Conner et al., 1999; Sheeran & Taylor, 1999). The theory of reasoned action (TRA) works well for predicting behaviors that are under a person’s volitional control. However, Ajzen and Madden (1986) discovered some limitations to the TRA. They found that if a behavior is not under a person’s volitional control, meaning that they have actual willful control of whether to perform the behavior or not, then there can be difficulty in performing the intended behavioral goal. The theory of reasoned action is based on the ability to predict intentions from attitudes and subjective norms, nevertheless, sometimes our intentions or our goals are not fully under one’s control which leads to perceived behavioral control and the addition of the theory of planned behavior (Ajzen & Madden, 1986).

Theory of Planned Behavior

The theory of planned behavior (TPB) takes the original theory of reasoned action a step further. The theory of planned behavior introduces the concept of perceived behavioral control. Perceived behavioral control is not totally within the volitional control of the individual. This
particular type of control takes into account that there are internal and external factors that tend to influence many situations in which individuals strive to seek control (Ajzen & Madden, 1986). For instance, a person’s intention to exercise three days a week may not necessarily be under their volitional control. There can be circumstances such as weather, illness or injury that interfere with their intentions. Perceived behavioral control examines how easy or difficult a person views their intended goal or behavioral outcome. The overall outcome from combining these two theories is taking into account the attitudes a person has about their intentions, connecting that to any subjective norms that exist and finally considering any perceived behavioral control a person has in performing a particular behavior. Therefore, behavioral intentions should be formed and acted upon based on perceived behavioral control (Ajzen, 2002).

Ajzen and Madden (1986) indicate that there are two possible outcomes from the theory of planned behavior. One is that a person perceives their behavioral control over a particular goal to be easy or within reach, therefore the intention and behavior are carried out. However, if they perceive their control with difficulty then the intention and behavior will not be carried out (Ajzen & Madden). The theory states that an individual is more likely to carry out a behavior if they believe there will be positive outcomes from performing that behavior. Having resources to carry out the behavior is also important to successful behavioral outcomes (Conner et al., 1999). Perceived behavioral control is quite similar to self-efficacy, because it requires one to believe they can carry out the behavior. When you combine these two theories, an additional dimension emerges, one of self-efficacy where a person must also believe that they will be successful in the behavior they see themselves performing.
Self-Efficacy

Self-efficacy is the capacity to believe in the ability to overcome obstacles, challenges, and adversities in one’s life (Creer & Wiget, 1993). Self-efficacy can give a person certain beliefs that they can accomplish certain behaviors and that they have control of certain situations in their environment (Bandura, 2001).

Albert Bandura is credited with creating the theory of self-efficacy. Bandura (1993) created self-efficacy theory to see how people perceive their work or obstacles. According to Bandura self-efficacy can influence people in terms of how they feel, what motivates them, and the kind of behaviors they display. The concept of self-efficacy is actually part of our self-system. Self-efficacy can regulate behavior in three distinct ways. First it can affect cognition, if a person has high self-efficacy they are more likely to have higher aspirations, take on more challenging task and feel confident in completing those tasks. Secondly, self-efficacy affects motivation. With a moderate to high self-efficacy people can become motivated in believing they can accomplish certain goals. Self-efficacy can directly influence the type of goals that a person sets based on what they believe they can accomplish and the amount of effort they believe they will have to put forth (Bandura, 1997). Third, self-efficacy can have some effect on a person’s mood or affect. Self-efficacy can relate to a person’s coping ability. When encountered with stress or difficult situations a person with high self-efficacy will be able to handle the risk and the stress by making their environment less threatening. Those with low self-efficacy may have trouble managing the stressful situations because of their lack of belief in their ability to control what is going on around them (Bandura, 1997).
Self-efficacy and HIV prevention

Self-efficacy can be influential in the kinds of thought patterns or attitudes that are displayed. Literature has shown that adolescents are influenced by their peers and social environments. For example, Halpern-Felsher, Kropp, Boyer, Tschann, & Ellen (2004) were investigating social self-efficacy and how it relates to risky behaviors in adolescents. Halpern-Felsher et al. were able to demonstrate that greater social self-efficacy (more communication with peers and parents) was linked to a commitment to use condoms by adolescent participants. Research is demonstrating that self-efficacy can help play a pivotal role in HIV prevention (Jemmott, Jemmott, Spears, Hewitt & Collins, 1992). In particular, researchers have demonstrated with a group of urban African American adolescents the potential link between HIV prevention and self-efficacy. The HIV Risk Reduction project was designed to examine the effects of safer sex practices and abstinence with an African American adolescent population. Jemmott, Jemmott, Fong and McCaffree (1999) described a research program that was aimed at African American adolescents where 496 participants were randomly assigned to one of two groups: HIV-risk reduction intervention or the general health promotion intervention. The interventions were led by adult facilitators. The intervention took place over a 6-month period where participants attended the baseline session (which consisted of two Saturday sessions) and then came back for the 3 and 6-month follow-up sessions. The sessions involved brainstorming, videos, games and skill building. This intervention also followed the Be Proud Be Responsible curriculum. The HIV-intervention groups emphasized safe-sex practices and condom use, multiple partners and abstinence. The general health promotion group emphasized the risk of behaviors that were linked with serious health issues such as high blood pressure, heart disease, stroke and certain cancers. The health group did not cover any information about HIV or AIDS. Jemmott et al. (1999) was able to show that the HIV-intervention group consistently had a higher
self-efficacy to use condoms in comparison with the general health group over the 6-month intervention period.

Other community-based interventions have used structured interviews to follow participants and predict the things that motivate them to use condoms. DiClemente et al. (1996) conducted a study in a San Francisco housing development that primarily involved African American adolescents age 12-21. The researchers initially interviewed 116 sexually active youth. There were two data time points, the baseline interview and then a six-month follow-up interview. The structured interviews consisted of questions that dealt with knowledge of HIV, consistent condom use, HIV-preventive self-efficacy, perceived norms about condom use, communication with parents about condoms, and condom use difficulty. The interviews were also culturally oriented and were based on the social cognitive theory. From the results of the structured interviews, DiClemente et al. discovered that this target population was sexually active and were involved in risky behaviors that could lead to HIV infection. However, a significant portion of participants did report consistent condom use from the baseline interview to the 6-month follow-up. In this group, DiClemente et al., was able to determine that participants who reported consistent condom use also had high assertive self-efficacy (they felt capable of convincing their partners to use condoms). In another study conducted to test the effects of self-efficacy on HIV risk behaviors, Goh, et al.(1996) found self-efficacy to be significantly related to HIV-preventive behaviors such as condom use. Goh, et al. surveyed 152 New York City youth on risk behavior items associated with HIV. These items dealt with preventive behaviors such as condom use, abstaining from sex and avoiding substance use. The researchers also asked these particular questions to examine their self-efficacy in terms of how much control they believed they had to protect themselves from getting HIV. Although there are
some limitations to this piece of research such as a lack of control group and the lack of a pure intervention the results are worth noting. The results from this study provide additional information that there is a relationship between perceived self-efficacy and HIV preventive behaviors. The researchers were able to demonstrate that self-efficacy had a strong correlation with intentional behaviors such as abstaining from sex, using condoms, and avoiding drug use.

In another examination of how self-efficacy relates to HIV prevention, Kang, Deren, Andia, Colon, and Robles (2004) conducted a study on Puerto Rican drug injectors and crack users in East Harlem New York and Bayamon, Puerto Rico. Kang et al. surveyed two different groups over two time points. They surveyed the participants on such issues as HIV risk, self-efficacy and sociodemographic characteristics. Both groups were interviewed at baseline and then again at six months. The study was designed to examine the level of self-efficacy in this population in trying to see if this would decrease any HIV risk behaviors. Kang et al., (2004) found that those with lower reported levels of self-efficacy at baseline and follow-up actually reported more risk HIV behaviors, such as sharing needles.

Some differences with this particular program is that it involved adults and drug users. However, it shows the power of self-efficacy in helping people control behaviors that can led to HIV infection. When looking at self-efficacy and HIV prevention in adolescents, researchers found that self-efficacy was related to HIV prevention behaviors (Goh, et al., 1996; Rotheram-Borus, Gwadz, Fernandez, & Srinivasa, 1998). As mentioned earlier, self-efficacy can have an effect on our cognitive processes, by influencing intentions and possible behaviors.
Background and Context

There are several different types of HIV/AIDS prevention programs that exist. Some are more effective than others and the purpose and target populations are obviously different. Some programs are targeted specifically to certain high risk populations such as adolescent minority populations, drug users, and female population (Jemmott, Jemmott, & Fong, 1998; Bowleg, Belgrave & Reisen, 2000; Kang et al., 2004). However, there does seem to be one general goal of all prevention programs, which is to get participants to reduce risk behaviors or delay the onset of certain behaviors that can put them at-risk for HIV infection. There are also different types of prevention programs for adolescents that range from peer-lead, school-based and community based interventions. The HIV prevention program that will be discussed in this paper is the Youth Empowerment Project which was a replication of an earlier risk reducing program created by Drs. John and Loretta Sweet-Jemmott. This program was a community-based program and was not conducted in the schools. Thus, school-based, peer-lead programs are not included in this manuscript. What follows is a description of the Youth Empowerment project that was implemented in Wichita, Kansas.

Youth Empowerment Project

Since 1983, there have been 2,453 reported AIDS cases in Kansas (Kansas Department of Health and Environment, 2004). The number of African Americans in Kansas affected by HIV is at a disproportionate level which calls for early intervention efforts to help prevent further HIV infection. African Americans make-up 6% of the state population, however, they account for 25% of the total AIDS cases in the state of Kansas (KDHE, 2004). This is why it was important to develop prevention strategies such as the Youth Empowerment Project to help educate this population and provide ways for youth to protect themselves from HIV. The Youth
Empowerment project (YEP) is a risk reducing prevention program that was tailored for African American adolescents living in the Midwest. The Jemmotts (1992) original risk reduction program was geared toward African American male adolescents who resided in an urban east coast city. Their program was based on the social cognitive theory, and the theory of reasoned action along with its extension, the theory of planned behavior. In this study the researchers followed a randomized controlled design where the male participants were randomly selected to either the AIDS risk-reduction condition or the Career-opportunities condition. Both conditions consisted of 5-hour sessions that used video tapes, role-playing, small-group discussions, and games. The results were favorable for this project in that the AIDS risk-reduction intervention was successful in reducing certain behavioral risk for HIV infection. The study was able to demonstrate at the 3-month follow-up that the intervention group reported less sexual activity, greater use of condoms and fewer sexual partners compared to the career control group.

In Kansas, the Youth Empowerment project (YEP) replicated the Jemmott’s original Risk Reduction project, with a few additional modifications. For instance, the YEP program was open to both male and female African American adolescents, a substance abuse component added to the sessions, the comparison group was centered on health education instead of career development, and the youths’ parents also participated in the program. The YEP program attempted to reduce any behavior risk to contracting HIV, such as substance abuse and early sexual activity. The program also tried to enhance protective factors that can protect against HIV and other sexually related diseases by providing participants with certain behavioral skills that they can use to protect themselves from HIV infection. For example, condom negotiation skills, refusal skills and increased self-efficacy, can serve as protective factors for youth (Jemmott et. al., 1998).
The YEP project was a unique community collaboration because it brought together a University partner (Wichita State University), a community health partner (Center for Health and Wellness), an African American substance abuse center partner (Knox Center), and a youth serving organization (Boys and Girls Club of South Central Kansas). The university partner, Wichita State University, was central to the program because it allowed researchers to work within the community, linking many agencies together which on their own may have remained separate in trying to address HIV and substance abuse in this population. The Center for Health and Wellness was vital in providing the program with needed health educators that were able to act as facilitators to the adults in the program. The Knox Center was also vital in providing trained adult facilitators for the youth intervention. The Boys and Girls Club was helpful in assisting in the recruitment of youth for the project. This collaborative partnership was vital in helping deliver the Youth Empowerment Project to this community.

Summary

As demonstrated throughout this literature review, HIV/AIDS is a serious problem that must be addressed. Current research efforts are geared toward creating prevention programs that can help reduce the risk of contracting HIV. Building refusal skills and promoting safer sex practices among youth are factors related to reducing their risk for HIV infection. Helping to enhance protective factors such as self-efficacy may be a vital component in combating this disease. This study will examine whether self-efficacy is beneficial in increasing condom use and acting as a protective factor for risky behaviors.
Hypotheses

1. Participants in the intervention group will have higher self-efficacy scores at pre-test, 3-month, 6-month and 12-month follow-ups compared to the comparison group.

1a. Sexually active participants in the intervention group will have higher self-efficacy scores than sexually active participants in the comparison group from pre-test to 12-month follow-up.

2. Sexually active participants in the intervention group will show a positive correlation between self-efficacy scores and condom use at 3-month, 6-month and 12-month follow-ups.

3. Sexually active participants with high self-efficacy scores will use condoms more often than sexually active participants who report lower self-efficacy scores.

4. Self-efficacy of female participants in the intervention group will increase from pre-test to 12-month follow-up compared to the female participants in the comparison group.

4a. There will be a differential effect on self-efficacy between male and female participants from baseline to 12-month follow-up.
Participants

After accounting for missing data, 394 African American adolescents age 12-17 were recruited from Wichita, Kansas and the surrounding area to participate in this year long HIV/AIDS and substance abuse prevention program. Parents of the youth were also recruited; however they will not be discussed in this manuscript. Participants learned about the Youth Empowerment project through paid advertisements (local radio and newspaper slots) that reached the entire city and surrounding areas. Over the entire three years of the Youth Empowerment project 196 males and 266 females were recruited for the program. The mean age of participants was 14 and over 93% were enrolled in school at the time of the study. The YEP (Youth Empowerment Program) is a prevention program that strives to teach HIV/AIDS safer sex practices, substance abuse prevention and health knowledge. At baseline, 60% of the participants reported no previous HIV or substance abuse classes in the past year.

Procedure

This study was approved by the Institutional Review Board at Wichita State University. All initial training sessions took place on Saturdays on the campus of Wichita State University. The training sessions included a pre-test survey, a five hour training session with a lunch break, and then a post-test survey at the end of the day. Adolescents and their parents were given informed consent papers to sign along with information about the Youth Empowerment program. All participants were informed that they could withdraw from the program at any time for any reason.
After completing the consent forms, youth participants were also given a behavioral contract to sign before completing the baseline survey. The behavioral contract explained that the material collected from the survey would remain confidential and that the study needed them to answer the questions as honestly as possible.

After completing the baseline survey, participants were randomly assigned to either the intervention group: a) HIV/AIDS/Substance Abuse prevention or b) the comparison group: a broad health education class which covered general health statistics. In the HIV/AIDS intervention group, youths learned about refusal skills, procedural skills as to how to properly put on a condom, they learned about risk factors associated with unprotected sex and facts about HIV and sexually transmitted diseases and drugs. Participants in the intervention group were also taught the importance of using condoms correctly and consistently. The participants watched videos, engaged in role-play and different exercises that would help build their refusal skill and their self-efficacy. The intervention group also learned about the dangers of substance use and its connection to HIV. The health education class learned about health issues that continue to plague African Americans including HIV, as well as the importance of eating healthy and exercising regularly. The comparison group also watched videos and participated in classroom exercises. All materials used in this curriculum were culturally appropriate for this group.

The classroom sessions were lead by trained adult facilitators recruited through the program’s community partnerships. The facilitators used the SMART Leaders and Be Proud Be Responsible curriculum in their training sessions with the youth. Once participants completed their class sessions they were given the post-survey. The survey was given twice in order to establish baseline knowledge of some material asked in the survey. At the end of the day youth
participants received a $40.00 stipend. During subsequent follow-ups youth received $40, totaling $160 for participating in the program. After the initial Saturday training session, the youth were then invited back for 3, 6, and 12-month follow-up sessions. During the follow-up sessions youths received a 1 hour booster session from their facilitators and then completed the YEP survey before leaving.

Measures
This project used the survey developed by Drs. John and Loretta Jemmott. The Youth Empowerment survey consisted of 274 questions that address health behaviors, self-efficacy, sexual behavior, sexual attitudes, HIV/AIDS knowledge, background information, educational information, parent’s occupation and marital status. For example, the self-efficacy scale consisted of six questions which asked participants how hard it would be to perform a certain behavior. Participants were then given a likert scale to answer these questions from “very easy” to “very difficult” (see Table 1). This survey also included questions on substance abuse and use based on illegal drugs, alcohol and tobacco. There were separate versions of the survey given to males and females because of some gender specific questions at the end of the survey. The following chapter will discuss the results of this project.
CHAPTER 3

Results

Characteristics of the Population Study

The average age of study participants was 14 years with a range of 12-17. There were 226 female and 168 male adolescent participants. Attrition rates over time remained relatively stable with larger drops in attrition at six and 12-month follow-ups. The numbers for attrition are as follows: pre-test 100% (n=394), three-month 85% (n=338), six-month 75% (n=310) and 12-month 73% (n=289) (See Table 2 for additional attrition rates). The study’s population was relatively young, with most participants retained between 13-15 years of age. Of those involved in the study 36% (n=143) reported being sexually active at pre-test, 34% (n=115) were sexually active at three-month follow-up, 33% (n=106) were sexually active at six-month follow-up and 41% (n=122) were sexually active at 12-month follow-up. At least 57% of the study’s participants did not receive any HIV/AIDS training or participant in an HIV/AIDS class over the past 12 months before joining the program. The analyses conducted on questions of self-efficacy were only ran on those participants who completed the self-efficacy scale at all four administrations (pre-test, 3-month, 6-month, and 12-month) which resulted in 208 respondents.

Analysis of Group Differences

This study examined self-efficacy across time (pre-test, three-month, six-month, and 12-month follow-up) by looking at differences between groups (intervention/comparison) and genders. Self-efficacy scores were examined using a mixed model repeated measures design. Condom use was also examined to determine what effects self-efficacy had on reported condom use by looking at linear relationships between the questions on the self-efficacy scale and reported consistent condom use. Questions on self-efficacy were taken from the self-efficacy
subscale from the Youth Empowerment Project Questionnaire (See Table 1). The scale consists of four questions that are based on a Likert scale from one to five with higher scores indicating greater levels of self-efficacy. For purposes of analysis, the overall mean scores from the self-efficacy scale for each time point were used for analyzing any change in self-efficacy (Jemmott, Jemmott, & Fong, 1992). Analysis on reported condom use was based on consistent condom use of sexually active participants. Consistent condom use was defined as always using a male latex condom during every occurrence of sexual intercourse. This variable was calculated by dividing the total number of episodes of sexual intercourse by the total number of times a condom was used. A score of 1 was considered to be consistent condom use.

By studying sexual self-efficacy and condom use YEP focuses on understanding the participants’ self-efficacy and how it changed across the intervention. Looking at how self-efficacy affected reported condom use and if having greater self-efficacy increased condom use. In order to answer these questions four hypotheses were examined. This section of the results will look at each hypothesis and the results from the analysis conducted.

_Hypothesis 1_

Hypothesis one states that the intervention group will have higher self-efficacy scores versus the comparison group from baseline to 12-month follow-up. In order to answer this question a mixed-design ANOVA was used to observe the differences in self-efficacy scores between the two groups across time. The main effect of time was significant, $F(3, 575)=4.17; p<.05$. The overall means indicated that self-efficacy increased overtime from pre-test to the 12-month follow-up (See Table 5). The main effect of group was not significant, $F(1, 206)=0.83; p>.05$. The interaction between Group x Time was also not significant, $F (3,575) = 0.28; p>.05$ (See Table 7). The intervention group did not achieve greater means of self-efficacy
than the comparison group. The means of both groups were very similar. Therefore, there were no significant differences across time.

The second part of Hypothesis one addresses the differences between sexually active participants across the intervention in terms of the intervention group having higher self-efficacy scores than the comparison group. A 2 x (4) mixed-design ANOVA was used to calculate the effects of group (sexually active intervention vs. comparison) and time (pre-test, 3, 6, and 12-month) on self-efficacy scores. The main effect of time was significant, F(3,198)=5.29; p<.05 partial eta squared=0.074. Self-efficacy increased from pre-test to 12-month follow-up. The main effect for group was not significant, F(1,66 )=1.55, p>.05. The differences in the means of self-efficacy for the groups are relatively similar (See Table 5). There was no significant interaction between Group x Time, F(3,198)=1.78; p>.05 (See Table 8). No significant differences existed between sexually active participants in the intervention and comparison group in terms of their self-efficacy across the intervention.

Hypothesis 2

Hypothesis 2 states that sexually active participants will have a positive relationship between self-efficacy scale scores and reported consistent condom use from 3-month to 12-month follow-up. A Pearson’s correlation was used to analyze the relationship between self-efficacy scale questions and consistent condom use. No significant linear relationships were found for these two variables. Extremely weak linear relationships were discovered; indicating no relationship between the four questions and reported condom use (See Table 9). Only sexually active participants were included in the correlation analyses, hence the condom use question.
Hypothesis 3

Hypothesis three, examined whether sexually active participants with high self-efficacy scores reported greater condom use than those with low self-efficacy scores. A range was created to determine the high scorers and low scorers. Participants’ scores of 2.5 or lower were considered to be a low scorer and those with a score of 4.0 or higher were high scorers. These groups were assigned into two groups; group one for the low scorers and group two for the high scorers. Because there was no linear relationship between the self-efficacy questions and condom use, a chi square test of independence was used to analyze the frequency of condom use for high and low scorers on the self-efficacy scale. No significant relationship was found between those designated as high self-efficacy scorers and low self-efficacy scorers in terms of their report condom use, $\chi^2(2, N=208) = 0.57, p>.05$. Level of scores on the self-efficacy score appear to be independent of condom use.

Hypothesis 4

Hypothesis 4 states that there will be a difference between female participants in the intervention versus the comparison group across time with regards to self-efficacy. Hypothesis 4a states that there will be a differential effect on male and females with regards to self-efficacy across the intervention. To analyze both of these hypotheses, repeated measures ANOVA was used. With the first part of Hypothesis 4, a 2 x 4 mixed design ANOVA was used to calculate the effects of group (intervention and comparison) and time (pre-test, 3, 6, and 12-month) on self-efficacy scores. No significant main effects or interactions were found. The main effect of time, $F(3,375)=2.13; p>.05$; the main effect of group, $F(1,125)=.014; p>.05$ and the Group x Time interaction, $F(3,375)=.147;p>.05$ were all not significant. Self-efficacy scores were not influenced by either time or group (See Table 10).
The second part of Hypothesis four addresses the differential effect of males and females regardless of group membership across the intervention. A repeated measures mixed design ANOVA was used to calculate differences. The main effect of time was significant, $F(3,575)=4.17; p<05$, it increased over time. The main effect of gender was also significant, $F(1,206)=10.64; p<.05$. The interaction between Gender x Time was not significant, $F (3,575)=.517; p>.05$ (See Table 11). There were differences in self-efficacy for the genders. Females tended to have higher mean scores on self-efficacy compared to their male counterparts (See Table 4). A discussion of these findings, implications of the results and future research directions will be discussed in the next chapter.
Table 1:

Self-Efficacy Scale

<table>
<thead>
<tr>
<th>1-very hard</th>
<th>2-hard</th>
<th>3-in the middle</th>
<th>4-easy</th>
<th>5-very easy</th>
</tr>
</thead>
</table>
1. How easy or hard would it be to get your sexual partner to not have sex with you, even if your partner wanted to?  
2. How easy or hard would it be for you to get your sexual partner to talk to you about preventing sexually transmitted disease (STDs) even if your partner did not want to?  
3. How easy or hard would it be for you to get your sexual partner to talk to you about ways you could prevent AIDS, even if your partner did not want to?  
4. How easy or hard would it be for you to use condoms when you have sex?
<table>
<thead>
<tr>
<th></th>
<th>Intervention</th>
<th></th>
<th>Comparison</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Baseline</td>
<td>220</td>
<td>56</td>
<td>174</td>
<td>44</td>
</tr>
<tr>
<td>3-Month</td>
<td>185</td>
<td>47</td>
<td>153</td>
<td>38</td>
</tr>
<tr>
<td>6-Month</td>
<td>171</td>
<td>43</td>
<td>138</td>
<td>35</td>
</tr>
<tr>
<td>12-Month</td>
<td>151</td>
<td>38</td>
<td>138</td>
<td>35</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th></th>
<th>Female</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Baseline</td>
<td>168</td>
<td>43</td>
<td>226</td>
<td>57</td>
</tr>
<tr>
<td>3-Month</td>
<td>141</td>
<td>36</td>
<td>197</td>
<td>50</td>
</tr>
<tr>
<td>6-Month</td>
<td>132</td>
<td>34</td>
<td>181</td>
<td>45</td>
</tr>
<tr>
<td>12-Month</td>
<td>125</td>
<td>32</td>
<td>168</td>
<td>42</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Sexually Active</th>
<th></th>
<th>Non-sexually Active</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>N</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Baseline</td>
<td>143</td>
<td>36</td>
<td>249</td>
<td>63</td>
</tr>
<tr>
<td>3-Month</td>
<td>115</td>
<td>29</td>
<td>222</td>
<td>56</td>
</tr>
<tr>
<td>6-Month</td>
<td>106</td>
<td>27</td>
<td>207</td>
<td>52</td>
</tr>
<tr>
<td>12-Month</td>
<td>122</td>
<td>43</td>
<td>170</td>
<td>31</td>
</tr>
</tbody>
</table>
Table 3

Mean differences in Self-efficacy for intervention and comparison groups (n=208)

<table>
<thead>
<tr>
<th></th>
<th>Intervention</th>
<th></th>
<th>Comparison</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Efficacy (pretest)</td>
<td>3.27</td>
<td>0.98</td>
<td>3.33</td>
<td>1.15</td>
</tr>
<tr>
<td>Efficacy (3-month follow-up)</td>
<td>3.51</td>
<td>0.95</td>
<td>3.54</td>
<td>0.95</td>
</tr>
<tr>
<td>Efficacy (6month follow-up)</td>
<td>3.40</td>
<td>0.94</td>
<td>3.56</td>
<td>1.06</td>
</tr>
<tr>
<td>Efficacy (12-month follow-up)</td>
<td>3.49</td>
<td>0.98</td>
<td>3.54</td>
<td>0.99</td>
</tr>
</tbody>
</table>

Table 4

Mean differences in Self-efficacy for males and females (n=208)

<table>
<thead>
<tr>
<th></th>
<th>Male</th>
<th></th>
<th>Female</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Efficacy (pretest)</td>
<td>3.01</td>
<td>1.09</td>
<td>3.48</td>
<td>0.99</td>
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<tr>
<td>Efficacy (3-month follow-up)</td>
<td>3.35</td>
<td>0.90</td>
<td>3.64</td>
<td>0.97</td>
</tr>
<tr>
<td>Efficacy (6month follow-up)</td>
<td>3.27</td>
<td>1.02</td>
<td>3.59</td>
<td>0.96</td>
</tr>
<tr>
<td>Efficacy (12-month follow-up)</td>
<td>3.30</td>
<td>1.03</td>
<td>3.69</td>
<td>0.94</td>
</tr>
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</table>
Table 5
Mean differences in Self-efficacy for sexually active participants (n=68)

<table>
<thead>
<tr>
<th></th>
<th>Intervention</th>
<th></th>
<th></th>
<th>Comparison</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td></td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Efficacy (pretest)</td>
<td>3.25</td>
<td>.78</td>
<td></td>
<td>3.31</td>
<td>1.09</td>
</tr>
<tr>
<td>Efficacy (3-month follow-up)</td>
<td>3.64</td>
<td>.93</td>
<td></td>
<td>3.68</td>
<td>1.07</td>
</tr>
<tr>
<td>Efficacy (6month follow-up)</td>
<td>3.41</td>
<td>.85</td>
<td></td>
<td>3.91</td>
<td>.91</td>
</tr>
<tr>
<td>Efficacy (12-month follow-up)</td>
<td>3.53</td>
<td>.82</td>
<td></td>
<td>3.79</td>
<td>.88</td>
</tr>
</tbody>
</table>

Table 6
Total mean differences in Self-efficacy from pre-test to 12-month follow-up (n=208)

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficacy (pre-test)</td>
<td>3.30</td>
<td>1.05</td>
</tr>
<tr>
<td>Efficacy (3-month)</td>
<td>3.53</td>
<td>0.95</td>
</tr>
<tr>
<td>Efficacy (6-month)</td>
<td>3.47</td>
<td>0.99</td>
</tr>
<tr>
<td>Efficacy (12-month)</td>
<td>3.54</td>
<td>1.00</td>
</tr>
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</table>
Table 7  
Analysis of Variance for Hypothesis 1: Differences between intervention and comparison groups across time

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
<th>η^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>3</td>
<td>4.71</td>
<td>.004*</td>
<td>.023</td>
</tr>
<tr>
<td>Group</td>
<td>1</td>
<td>.83</td>
<td>.36</td>
<td>.004</td>
</tr>
<tr>
<td>Time x Group</td>
<td>3</td>
<td>.280</td>
<td>.82</td>
<td>.001</td>
</tr>
</tbody>
</table>

P<0.05*

Table 8  
Analysis of Variance for Hypothesis 1a: Differences between Sexually active participants in the intervention and comparison groups across time

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
<th>η^2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>3</td>
<td>5.29</td>
<td>.002*</td>
<td>.074</td>
</tr>
<tr>
<td>Group</td>
<td>1</td>
<td>1.55</td>
<td>.217</td>
<td>.023</td>
</tr>
<tr>
<td>Time x Group</td>
<td>3</td>
<td>1.78</td>
<td>.150</td>
<td>.026</td>
</tr>
</tbody>
</table>

Significant at p<0.05*
Table 9

Intercorrelations Between Sexually Active Participants on Self-efficacy scale and condom use

<table>
<thead>
<tr>
<th>Subscale</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>(n=208)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Efficacy scores (baseline)</td>
<td>__</td>
<td>.38**</td>
<td>.39**</td>
<td>.35**</td>
<td>-.04</td>
</tr>
<tr>
<td>2. Efficacy scores (3-month)</td>
<td>___</td>
<td>.55**</td>
<td>.41**</td>
<td>.19</td>
<td></td>
</tr>
<tr>
<td>3. Efficacy scores (6-month)</td>
<td>___</td>
<td>.58**</td>
<td></td>
<td>.04</td>
<td></td>
</tr>
<tr>
<td>4. Efficacy scores (12-month)</td>
<td>___</td>
<td></td>
<td>.08</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Times a condom was used</td>
<td>___</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**. Correlation is significant at the .01 level
Table 10
Analysis of Variance for Hypothesis 4: Differences between female participants in the intervention and comparison group on self-efficacy across the program

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>3</td>
<td>2.13</td>
<td>.10</td>
<td>0.01</td>
</tr>
<tr>
<td>Group</td>
<td>1</td>
<td>0.014</td>
<td>.90</td>
<td>0.00</td>
</tr>
<tr>
<td>Time x Group</td>
<td>3</td>
<td>.147</td>
<td>.91</td>
<td>0.00</td>
</tr>
</tbody>
</table>

P<0.05*

Table 11
Analysis of Variance for Hypothesis 4a: Differences between male and female participants

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
<th>$\eta^2$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>3</td>
<td>4.71</td>
<td>0.00*</td>
<td>0.023</td>
</tr>
<tr>
<td>Gender</td>
<td>1</td>
<td>10.64</td>
<td>0.001*</td>
<td>0.050</td>
</tr>
<tr>
<td>Time x Gender</td>
<td>3</td>
<td>.517</td>
<td>.658</td>
<td>0.003</td>
</tr>
</tbody>
</table>

Significant at p<0.05*
CHAPTER 4
Discussion

Overall, the results from this study indicate that there were no significant differences between intervention and comparison groups regarding self-efficacy and condom use. However, there were significant increases in self-efficacy scores across the intervention. Participants’ responses to the self-efficacy scale were examined across time, gender and groups. Based on past literature, self-efficacy was expected to increase over time. HIV/AIDS prevention research has shown that self-efficacy can serve as a protective factor against risky behaviors for adolescents who participate in prevention programs (Baele, Dusseldorp, & Maes, 2001). Many programs are successful in raising the level of self-efficacy for their program participants (DiClemente, Lodico, Grinstead, Harper, et. al, 1995; Rotheram-Borus, Gwadz, & Fernandez, 1998; Jemmott, Jemmott, Fong, & McCaffree, 1999; DiClemente, Wingood, Harrington, Lang, et. la., 2004). Self-efficacy has also helped improved condom use negotiation skills amongst sexual partners (Goh, Primavera, & Bartalini, 1996).

The intent of this study was to determine how successful the Youth Empowerment Project (YEP) was in raising the level of self-efficacy for participants in the intervention group, particularly those who were sexually active. This study also examined how condom use might be influenced by self-efficacy. In order to achieve these goals four hypotheses were tested. A brief discussion of research findings regarding each hypothesis will be followed by comparisons with the Jemmott study, study implications, limitations and future research ideas.

Hypothesis 1. Hypothesis one states that significant differences will exist between the intervention and comparison groups on self-efficacy across the intervention (pre-test to 12-month follow-up). The data from this study does not support this hypothesis. It was expected that the
intervention group would display greater means of self-efficacy than the comparison group. However, the intervention and comparison group had relatively the same mean scores from the self-efficacy scale. Preferably, the intervention group should have increased their self-efficacy after participating in a yearlong skill-building program geared towards reducing risky behaviors. The YEP program was designed to decrease risky behaviors and enhance safer sex protective behaviors such as consistent condom use, negotiation of condom use, refusal skills, self-efficacy and knowledge about HIV/AIDS. By going through this program the intent was for participants to feel more confident in carrying out these protective behaviors. Therefore, it was probable that as a mediating variable, self-efficacy would increase over time as the participants received the training. Data from this analysis does show a significant increase in self-efficacy across time. Self-efficacy significantly increased from pre-test to 12-month follow-up. Participants scores mostly remained “in the middle” (3.0 to 3.9) but they did increase within this range from their pre-test scores. Ideally, self-efficacy would increase to a level where participants felt it was easy (4) or very easy (5) to perform the task suggested on the scale; nevertheless these results are pointing in the right direction. Past literature has documented that safer sex skill-building in adolescents can reduce risky behaviors and increase self-efficacy; similar results were anticipated for this target population (Jemmott, Jemmott & Fong, 1992).

For the second part of Hypothesis one, it was hypothesized that sexually active participants in the intervention group would have a greater increase in their level of self-efficacy then participants in the comparison group. There was no difference in self-efficacy between sexually active participants in the intervention or comparison group. Both groups showed a slight increase in self-efficacy from pre-test to the 12-month follow-up. One point that might have affected the outcome of these results was that the majority of participants were not sexually
active. This could have affected their responses to the self-efficacy scale which was geared toward those who are sexually active. Larger numbers of sexually active participants could have helped in the analysis.

**Hypothesis 2.** In Hypothesis two, a linear relationship was examined between self-efficacy and reported condom use. Hypothesis two was not supported by the data. Among the sexually active participants no linear relationships were found between self-efficacy and reported condom use. Perhaps there wasn’t enough power with the low number of sexually active participants in the project to really get at the relationship between these variables. The number of sexually active participants was a relatively small sample from the beginning of the intervention \((n=143)\), and the YEP self-efficacy scale dealt specifically with sexual behavior between partners. Another important factor is how specific was the type of self-efficacy that was being measured. According to Baele, Dusseldorp and Maes (2001) condom use self-efficacy needs to be global and specific to see what effect it has on intended and actual condom use in an adolescent population. In order to find a stronger association in this study, different questions on self-efficacy should have been utilized. A different type of scale may have worked better at uncovering condom use self-efficacy for this population, such as a global/specific scale.

**Hypothesis 3.** Hypothesis three states that those who have a high score on the self-efficacy scale will report greater condom use then those with a low score. This hypothesis was not proven true by the data. There were very little differences in condom use between the high and low scores on the self-efficacy scale. It was hypothesized that sexually active participants who had high self-efficacy scores would also report greater condom use. Past research has shown that self-efficacy can be a positive predictor for condom use among adolescents and even adults (Burns & Dillon, 2005; Jemmott, Jemmott, Fong & McCaffree, 1999). What resulted was
that both high and low scorers on the scale reported the same amount of low sexual activity. As stated earlier, most participants reported using a condom only once, no matter where their scores fell on the self-efficacy scale. The results of hypothesis three are most likely due to the low number of sexually active participants, which translates into low condom use. Additionally, the number of participants who scored a four or higher on the scale was minimal. A score of four or better was considered to be a “high” score with participant confidently believing they could accomplish the stated task.

**Hypothesis 4.** Hypothesis four states that female participants in the intervention group will have greater self-efficacy from baseline to 12-month follow-up compared to the comparison group. This hypothesis was not supported by the data. Even though, female participants in the intervention group were exposed to an HIV/AIDS skill building training which has the possibility to increase self-efficacy, no differences were found between the groups. One explanation for a lack of difference between the groups may be that both groups were young and their level of sexual experience was quite similar. The self-efficacy scale for the YEP project was more specific and possibly not completely relevant to this group.

The second part of hypothesis four deals with differences between males and females. This part of hypothesis four states that there will be differences in self-efficacy between male and female participants from baseline to 12-month. The results were unexpected, females were found to have greater means on the self-efficacy scale. This could be due to a number of reasons. All program staff and facilitators were female and African American, maybe this had a tangential effect on the female participants level of confidence when filling out the survey and going through the program. Although some literature shows that the race and gender of facilitators did not influence the performance of the participants in HIV/AIDS programs, they did
not look at self-efficacy and perhaps this target population was different (Jemmott, Jemmott, Fong, & McCaffree, 1999). One explanation might be sexual experience. Perhaps female adolescents in this study were more sexually experienced then males, being cognizant however that 74 males reported that they were sexually active compared to 69 females. Another factor is peer norms. There is the possibility that females in this study have stronger peer/social norms that are promoting safer sex beliefs, which is definitely worth further exploration. When examining gender differences in HIV/AIDS prevention with adolescents, males tend to have less favorable attitudes towards HIV/AIDS prevention and their opinions about condoms are different then their female counterparts (Newman & Zimmerman, 2000). Females tend to view condoms as ineffective and have less favorable intentions about their use, particularly as they become more sexually experienced (Newman & Zimmerman, 2000; Nahom, Wells, Gillmore, & Rogers, 2001). The information on how male and female adolescents report on self-efficacy is sparse. While females had higher self-efficacy it is worthwhile to further investigate their attitudes about safer sex practices and to closer examine the actual behaviors they reported in comparison to their self-efficacy. Nevertheless, greater self-efficacy for females is an important finding.

Comparison to Jemmott Studies

There were stark differences in the Youth Empowerment Project study compared to the Jemmott study. In the original Jemmott study, African American male adolescents reported greater condom use and more sexual activity. In other Jemmott risk reduction studies, they also saw an increase in self-efficacy over time. However, the Jemmotts only measured specific condom use self-efficacy by taking one or two questions from the entire survey which dealt with intention and actual use of condoms. In the Youth Empowerment Project, the questions that were asked about condom use and self-efficacy did not produce statistically significant results.
While self-efficacy did increase across the intervention there was no significant association with condom use. It was not possible to predict greater or even lesser condom use based on participant’s self-efficacy.

There may be several explanations for the differences between the two studies. The Youth Empowerment Project had younger participants and only 36% were sexually active. The Jemmotts had slightly older participants who reported greater sexual activity. The populations were vastly different which makes for an interesting argument in replicating prevention programs. The Jemmotts were able to retain at least 90% of their original participants, while the Youth Empowerment Project had a retention rate of approximately 70%. Participants in the YEP program reported lower risky behaviors compared to the risky behaviors reported by the Jemmotts participants. The YEP program participants were not from an HIV/AIDS epicenter or a large urban city, perhaps their view of their level of risk was different. The magnitude of HIV may not have been as evident as it was for the original Jemmott adolescent participants. Therefore, the context was different in the replicated Youth Empowerment Project.

**Implications**

One major implication that can be derived from this study is that self-efficacy is a multidimensional construct. While this study was able to increase the overall level of self-efficacy for participants, the intervention group did not show significant differences from the comparison group. It is important for self-efficacy to be measured in its proper context. Literature has shown that the type of self-efficacy being measured is important particularly in reference to the group you are investigating (Marin, Tschann, Gomez, & Gregorich, 1998).
Limitations

There were several factors which might have influenced the results of this study. The population in the Youth Empowerment Project had a relatively low base rate of sexual behavior compared to the national average of 50% of adolescents who report they are sexually active (CDC, 2003). This may have contributed to the similarity between the groups, explaining why the intervention and comparison group had similar results. Therefore, when non-sexually active participants were reading the self-efficacy scale, they may have felt that these questions did not apply to them, influencing the results that were generated from the program. The rate of attrition could have also contributed to the results. The number of returning participants remained about 70%; however, it would have been more beneficial to maintain at least an 80% return across the intervention. With the overall attrition the number of sexually active participants actually declined which could have affected the type of self-efficacy measured.

The delivery of the program’s curriculum is another possible limitation. The teaching style of the facilitators could have caused variation in how the program was delivered to the youth. All facilitators received the HIV/AIDS training from a certified American Red Cross instructor. However, the comparison group may have received too much information on HIV/AIDS. Each facilitator had different teaching styles and some were stronger than others in their presentation style and ability to convey the themes of the program to the participants. This could have affected the outcome of the results.

The length of the YEP survey was another possible limitation. The Youth Empowerment Project survey used in this study was a replica of the survey the Jemmotts used in their original work. The YEP survey was a self-report measure which can be a concern. Nevertheless, the measurement was statically sound with a good reliability score ($\alpha = .84$);
however it was probably too long for our target population. The survey was 10 pages long which included an assessment of drug and alcohol use at the beginning. The issue of fatigue is the main problem, participants did complain about the length, especially after filling it out after a class session. There might be the issue of them working through the survey as fast as they could just to “get it done.” The self-efficacy scale was actually located in the middle of the survey, so fatigue may not have affected them; however, they still knew they had at least 4-5 pages left before they were finished. The issue of literacy is also a factor with the survey. Some students did have problems completing the survey because of reading difficulties; however they did receive assistance when requested.

In addition, the sensitive nature of the survey questions was also an issue. Participants could have felt tempted to give socially desirable answers or less truthful answers because of the nature of the information. To alleviate this problem the research team had all participants fill out a behavioral contract at the beginning of the project which informed them why certain questions needed to be asked and who would get the information. This was a similar technique that was used by the Jemmotts to ensure adolescents of their confidentiality. Having the facilitators in the room as monitors could have made some participants uncomfortable. The facilitators did help in collecting the surveys and answering questions when youth were uncertain about wording or meaning of a survey questions. This could have posed a problem if they were uneasy with the facilitator seeing their surveys. Steps were taken to minimize the amount of interaction the facilitators had with participants during the survey part of the intervention. Eventually the facilitators were instructed only to pick-up finished surveys and hand them to the program’s research assistants to check the completeness of surveys. One of the final limitations of this
study deals with selection bias. Perhaps those adolescents most at-risk for HIV infection were not participating in the program.

*Future Research*

Future research with this population or a similar one could go in three directions. It should focus on how peer norms affect self-efficacy, consider the differences in gender when tailoring HIV prevention to different groups, and explore the multidimensionality of self-efficacy.

First, prevention research with adolescent populations should consider the influence of an adolescent’s social networks (peer, family community organizations, etc.) on their behaviors, particularly potential risky behaviors. Past research has documented that peer and social norms play a role in condom use and risky behaviors (Belgrave, Marian, & Chambers, 2000). Adolescents can be influenced by the decisions their peers make and how they interpret their parent’s attitudes and behaviors about safer sex practices (Crosby et al., 2001). Other social networks such as community organizations also influence risk behaviors in some adolescents. Crosby, DiClemente, Wingood, Harrington, et. al (2002) found that African American female adolescents who participated in community organizations were less likely to engage in risky behaviors related to HIV infection. Because we know that self-efficacy is a mediator for HIV preventive behaviors, perhaps there is a link between how they view their family and friend’s behavior/attitudes towards HIV preventive behaviors and their self-efficacy. Do positive peer and familial norms give youth the added confidence and ultimately increase self-efficacy to maintain HIV preventive behaviors? This is worth investigating.

Second, further examining the gender differences that exists can help in tailoring programs for adolescents to reduce the risk of HIV in the future. Because African American
females are disproportionately affected by HIV, a study that helps to better understand female self-efficacy in this domain is tremendously beneficial (Wingood & DiClemente, 1992). It is also important to continue to examine the differences between male and female adolescents. In many instances they have different views on risky behaviors that lead to the contraction of HIV and the importance of condom use (Wingood & DiClemente, 1992; Nahom, et al., 2001). Understanding the different belief systems that adolescents hold about HIV and risky behaviors is essential to effective prevention strategies.

Finally, the multidimensional view of self-efficacy must be considered when creating prevention strategies. If you want to see how self-efficacious adolescents are in certain areas, the right measures must be used. Particularly when trying to understand the self-efficacy of sexually and non-sexually active youth. When it comes to self-efficacy, it is important to determine what HIV prevention programs should look like for youth with different levels of sexual experience. Some researchers believe that global self-efficacy is better for non-sexually active, while others say global/specific would be better for sexually active youth. Further research with this population can help add to the knowledge of how to reach those who are non-sexually active participants, but still need to be armed with the tools and skills to protect themselves from HIV infection and risky behaviors. Therefore, should HIV/AIDS prevention look different for non-sexually active youth? Would the results of this study turn out differently if more youth were sexually active and therefore the self-efficacy scale more relevant? These are important questions to ask in the field of HIV/AIDS prevention research. Another important consideration is the level of risk of program participants. Adolescent sexual experience can be a complicated dichotomy to understand. It is possible to have participants who have sexual experience, but they are not sexually active. This adds another dimension to the type of self-efficacy being
measured. It also shows the importance of assessing risk level of program participants (Miller, Boyer & Cotton, 2004).

Conclusion

In general, the data in this study did not support some of the hypotheses. There were two important significant findings, the increase in self-efficacy scores across time and differences in genders. Self-efficacy scores did increase from the initial pre-test administration which is beneficial because it shows that as a group, participants were approaching more self-efficacious attitudes about their sexual self-efficacy. Female participants displayed slightly higher scores on the self-efficacy scale, especially on the question concerning condom use. This finding is important in today’s arena of HIV prevention research. African American women are one of the fastest growing populations contracting HIV (CDC, 2006). If adolescent females in this target population feel confident enough in their ability to use condoms, then this program added a great benefit to their lives. Additionally, HIV/AIDS literature documents the importance of reaching younger adolescents before they become sexually active and engaged in potentially risk behaviors. There are clinical implications that can be taken away from this study. Over 200 non-sexually active youth were exposed to safer sex skills training that can benefit them in the future by knowing how to prevent the contraction of HIV/AIDS. Furthermore, the youth in the comparison group were exposed to overall health training and the importance of maintaining a healthy lifestyle. This program also has tangential benefits for the non-sexually active youth, especially those in the intervention group. They will be able to take what they learned from the YEP project and apply it to their future relationships in protecting themselves from HIV/AIDS and other sexually transmitted diseases. DiClemente et al. (2004) found in their study that
younger youth who started out using condoms were more likely to continue through adolescence compared to those who where already sexually active and then started to use condoms.

This study is also beneficial because it opened up a door of communication for youth and parents to have potential discussions about sex, drugs and preventing the spread of HIV/AIDS. The Youth Empowerment Project may have helped take away some of the stigma of HIV/AIDS that seems to be connected with the African American community. While these speculations are not generalizable to other populations, it has possible benefits to this Midwest African American community.

There is a lot more to uncover about self-efficacy and how it affects behaviors and decisions. Perceived self-efficacy whether global or specific is seen as a moderating factor in HIV/AIDS prevention. The link between self-efficacy and actual behavior change has yet to be proven in HIV/AIDS research (Stanton, Xiannian, Ricardo, Galbraith, Feigelman & Kaljee, 1996). Self-efficacy is an important psychosocial factor that is part of a larger equation in reducing HIV/AIDS in adolescents. What self-efficacy is providing is the confidence in carrying out prevention skills and other protective behaviors that are taught in prevention programs (Ajzen, 2002). Even with this said there is still the possibility of a disconnect between what a person’s self-efficacy might be and the behaviors they display (Riaml, 2001). Understanding how self-efficacy grows or diminishes over time with respect to HIV/AIDS preventive behaviors is important for future prevention strategies.

In closing, HIV/AIDS prevention is vitally important to adolescent populations. Particularly for adolescents who are of African American decent. Tailoring programs that reach youth where they are and attempt to build up their self-efficacy, safer sex negotiation skills, and
other protective behaviors, should be the aim of reducing HIV/AIDS in this adolescent populations.
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