2015

African American Eighth Grade Students' Attitudes Toward HIV/AIDS in the District of Columbia

Enock Kolawole Adewuyi
Walden University

Walden University

College of Health Sciences

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Enock K. Adewuyi

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Review Committee
Dr. Jeanne Connors, Committee Chairperson, Health Services Faculty
Dr. Curt Sobolewski, Committee Member, Health Services Faculty
Dr. Joseph Robare, University Reviewer, Health Services Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
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Abstract

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MSHA, University of Maryland University College, 2011

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Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

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Health Services

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Abstract

The group most affected by HIV/AIDS, according to the Centers for Disease Control and Prevention (CDC), is African Americans. The purpose of this study was to explore the knowledge of HIV/AIDS held by African American children as a first step towards developing prevention strategies for these youths. In order to bridge the knowledge-behavior gap, this study sought to investigate the attitude towards HIV/AIDS of African American 8th grade students. The study involved secondary data from the 2012 District of Columbia (DC) Middle School Youth Risk Behavior Survey, obtained from the District of Columbia Office of Superintendent of Education (OSSE). Guided by the theory of reasoned action and social cognitive theory, descriptive survey data were analyzed using descriptive statistics, frequencies, Chi-square, and independent sample *t* test. Results of the study indicated that the students, especially the male students, were still engaging in behaviors that may expose them to HIV despite exposure to HIV/AIDS preventive programs in school. A Chi-square test indicated that the proportion of students who have had sexual intercourse were similar for students exposed to HIV education and those not exposed to such education, suggesting no association between attending an education program on HIV/AIDS and sexual intercourse. This study supports social change by guiding education administrators and policy makers in the formulation of science-based, age-appropriate, and culturally-relevant HIV prevention policies for DC public schools.

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Dedication

First of all, I dedicate all of my achievements in life to the Almighty God whose grace has been more than sufficient for me. He is the source of my life and the strength of all knowledge and wisdom. This achievement is another prove that His mercies endureth forever.

I gratefully dedicate my dissertation work to my family. A special feeling of gratitude to my beloved wife and best friend, Adenike Kola-Adewuyi whose support, words of encouragement and push for excellence ring in my ears.

I also dedicate this work and give special thanks to my great friends and children, Kolade, Lolade, and Bolade Kola-Adewuyi for being there for me througthout the entire doctorate program. The three of you have been my best cheerleaders.

I dedicate this work also to my uncle, Thomas Adelowo Tanimowo who has been a great mentor and contributor to my success in life. Finally, I dedicate this work to the memories of my Dad, Emmanuel Adewuyi Tanimowo and my mother, Janet Abike Adewuyi. May their souls rest in perfect peace.

Acknowledgement

I would like to express my deepest appreciation to my committee chair, Dr. Jeanne Connors, who has the attitude and the substance of a genius. Her continous support, motivation, patience, and immerse knowledge have been priceless. Without her guidiance this dissertation would not have been a reality.

I would also want to thank my committee member, Dr. Curt Sobolewski who teamed up with Dr. Connors to serve as oil to the the engine that produced this success. His support, expert guidance, and timely counsel were invaluable. I thank Dr. Connors and Dr. Sobolewski for sharing their knowledge and expertise generously. My sincere thanks also goes to Dr. Joseph Robare and Dr. Kelly Chermack for their priceless suggestions and coincise comments. I appreciate them for sharing their wealth of knowledge and their precious time with me on this study.

I also thank the District of Columbia Office of State Superintendent of Education (OSSE) for releasing the data for this study and enabling me to study this special group that needs special attention.

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Chapter 1: Introduction to the Study

Background

Since its recognition in the U.S. in 1981, HIV has continued to spread across states' boundaries, ethnicity/race, and age (Centers for Disease Control and Prevention [CDC], 2011). In addition to being a serious healthcare problem, HIV/AIDS has become a significant social and economic problem as it affects families, other sectors such as education, and specific population groups. HIV is now a threat to the attainment of the first goal of Healthy People 2020, a program assisting everyone in the United States to improve his or her quality of life and increase life expectancy. While New York, Florida, California, Texas, and New Jersey are the top five states that reported the highest number of new cases of AIDS in 2009, the District of Columbia (Washington, D.C.) has recorded the highest incidence per 100,000 people in the United States at 119 per 100,000 people in the same year.

The group most affected by HIV/AIDS, according to the CDC, are African Americans. Efforts by the federal, state, and local governments, as well as by nongovernmental organizations to curtail the spread of the virus have been frustrated by risky sexual behavior, alcohol and drug use, refusal to test for HIV, and the high cost of HIV medications (Broyles, 2008; Campbell, 2009; Fritz, Morojele, & Kalichman, 2010; Justice, Sullivan, & Fiellin, 2010). Augustine and Bridges (2008) identified history of oppression of African Americans that dates back to the time of slavery, and inequalities that continue till present time as major contributors to high HIV infection rate among

African Americans. The authors identify racism as a major reason why African Americans are disproportionately affected by the HIV/AIDS epidemic.

The rate of new HIV infection and diagnoses of infection classified as Stage 3 AIDS for African Americans decreased between 2008 and 2011, in the United Stated. The rate dropped from 65.5 in 2008 to 60.4 in 2011. For the same period, however, the rate of new HIV infection and diagnoses of infection classified as Stage 3 AIDS for African American adults and adolescents, in the District of Columbia, increased from 93.3 per 100,000 in 2008 to 177.9 per 100,000 in 2011 (CDC, 2013b). This implies that the District of Columbia (DC) has become the epicenter of new HIV infection in the U.S. There is, therefore, a need to pay attention to the African American population in DC, as this is the group most affected in the city. Both governmental and nongovernmental organizations have put up initiatives to address the pandemic nature of HIV/AIDS in DC. In this study, I explored the attitude of African American children towards HIV/AIDS as a first step towards developing prevention strategies for this youth.

Statement of the Problem

According to the CDC, African Americans represent 12.0% of the U.S. population in 2011. This group, however, accounted for an estimated 47.0% of new incidence of HIV in 2011 (CDC, 2013a). According to the same source, CDC (2013a), African Americans make up 17.0% of adolescence population of the United States. However, this group accounts for 67.0% of HIV positive youth ages 13 to 19 (CDC, 2013a). This fact, coupled with those earlier mentioned for African Americans in the

District of Columbia, make the rate of new infection for African Americans in DC alarming.

Most of the efforts aimed at eradicating the disease have been targeted at adults, as youth in the United States are more likely to encounter barrier to healthcare than their counterpart in other developed countries. According to The Foundation for AIDS Research, clinical services are not available in adolescent-friendly settings (The Foundation for AIDS Research, 2010). The same source further stated that about a third of all junior and senior high school in the United States lack health services and most school clinics are limited to providing first aid. Social cognitive theory suggests that it is the lack of knowledge that leads people to engage in risky sexual behavior (Adriana Baban, 2007).

According to the United Nations (UN), knowledge about HIV is the first step in avoiding its transmission, leading to the possible eradication of the disease (UN, 2010). The UN went further to state that HIV/AIDS can be eradicated in part by preventing new infections. One strategy to help eradicate the virus is by educating the children before they become sexually active. According to Kelly and Bain (2003) education plays a critical role in the eradication of HIV/AIDS as it promotes the development of personal value systems as well as attitudes. Education also increases individual's ability to digest and assimilate information and anticipate future benefits. Thirdly, education aids the dismantling of ignorance and poverty that make people vulnerable to contracting HIV.

Mahat and Scoloveno (2006) explored Nepalese adolescents' knowledge, attitudes and beliefs regarding HIV/AIDS in 2003, asserting that assessment of knowledge is the

first step in the prevention of HIV/AIDS. The authors revealed that Nepalese youths have moderate knowledge of HIV/AIDS but lack knowledge of the mode of transmission. However, only 16.7% of the youth surveyed believed they could contract the virus. How then could they prevent the disease if they do not know the mode of transmission? The authors concluded that there is need for multidisciplinary efforts to develop and implement educational programs on HIV/AIDS for the youths.

Likewise, in this study, I explored the knowledge of HIV/AIDS held by African American children as a first step towards developing prevention strategies for these youths. This research will fill the present knowledge gap by examining the attitude of African American children towards HIV/AIDS, specifically in terms of how 8th grade students' knowledge of HIV/AIDS has influenced their attitude towards the virus and the disease. This study focuses on African Americans because this group is most affected by the HIV epidemic in the District of Columbia (Kaiser Family Foundation, 2012).

Purpose of the Study

The main purpose of this quantitative method research was to investigate the attitude towards HIV/AIDS of African American 8th grade students. According to Kaiser Family Foundation (KFF, 2012) report, by the end of 2010, 14,464 people were living with HIV in DC, representing 2.7% of the population of the city. However, African Americans represent about 75.0% of this figure. The number of new HIV diagnoses in DC for that year was 835, while number of deaths among those with HIV was 207.

The impact of HIV in the District of Columbia also varies by age. Residents over age 40 are more heavily affected. However, KFF reported that there are some indications

that HIV/AIDS epidemic is starting to take a great toll on the younger residents in the city (KFF, 2012). DC and 22 states mandate sex education and HIV education (Guttmacher Institute, 2013).

In the District of Columbia HIV education is taught starting from the 5th grade in the public schools. It is, therefore, my expectation that eighth grade students in DC Public Schools would have some knowledge of HIV infection. The motive behind this study was to determine how the students' knowledge about HIV/AIDS has influenced their attitude towards the virus/disease. It is important to determine the level of knowledge of the pupils because what they know and understand about HIV will influence their sexual behavior when they become sexually active. The adults towards whom most intervention efforts have been directed are already sexually active and have developed sexual behavior. Targeting middle school students is a way to save future generation from HIV related epidemic.

Research Questions

The primary research question for this study was: What is the attitude of African American eighth grade students towards HIV/AIDS? In order to address this primary question, the following research questions were examined.

1. What is the attitude of eighth graders in the District of Columbia toward HIV/AIDS with regard to transmission and education about HIV/AIDS?
2. To what extent has HIV education in the District of Columbia Public Schools influence the health behaviors and attitudes toward HIV/AIDS of African American eighth grade students?

3. Are there any significant gender differences with regard to the attitude of African American eighth grade students towards HIV/AIDS?

Theoretical Framework

The two conceptual frameworks that guided this study were the theory of reasoned action developed by Martin Fishbein and Icek Ajzen as an improvement over the information integration theory (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) and the social cognitive theory, as described by Bandura (1986). Specifically, the theory of reasoned action provides a framework for linking behavioral intent to attitudes and subjective norms. According to Fisbein and Ajzen (1980), attitude is made up of evaluation and strength of belief while subjective norms also have two components; normative belief and motivation to comply. According to Morisky (2002) the health education implication of this theory allows policy makers to identify how and where to apply strategies for changing behavior such as sexually transmitted diseases. The theory of reasoned action, like information integration theory, provides several options for trying to persuade a person.

Related to the theory of reasoned action, social cognitive theory (Bandura, 1986) accepts the fact that people learn from different experiences including their own, and through their observation of others' behavior. Given this background, social cognitive theory becomes relevant to this study: Knowledge and attitude of African American 8th grade students in the District of Columbia towards HIV/AIDS. The theory may be used to explain how knowledge of HIV/AIDS may impact the sexual behavior of youths.

Nature of the Study

In this descriptive study, I examined 8th grade students' knowledge of and attitude towards HIV/AIDS, used quantitative method. I employed the survey strategy and using closed-ended questions. The goal was to examine the impact of HIV education in DC Public Schools on the attitude of African American eighth graders towards HIV/AIDS.

The study involved the collection of secondary data on health behavior of eighth grade students in the District of Columbia public Schools. The data that I used for this study were originally collected in 2012 using the District of Columbia Middle School Youth Risk Behavior Survey instrument. The District of Columbia Office of the State Superintendent for Education (OSSE) provided me with these data after an initial contact with the CDC. The survey instrument for this study was about health behavior. However, not all data collected using this instrument was used for this study. Specifically, I excluded variables related to safety, violence, bullying, attempted suicide, body weight, and physical activity was not analyzed for the purpose of this study.

It is the goal of every researcher to draw a sample that represents the population as much as possible (Frankfort-Nachmias & Nachmias, 2008). This study included all African American eighth grade students who participated in the 2012 District of Columbia Middle School Youth Risk Behavior Survey (YRBS). Seventy-four middle schools were qualified and invited to participate in the 2012 YRBS, of which 69 participated. There were 11,455 eighth grade students enrolled in all qualifying middle schools. Of the qualified students, 9,418 participated fully in the voluntary survey. Of those who participated in the survey, 1,933 were African American eighth grade students.

Operational Definitions

African American 8th grade students: Blacks Non-Hispanic American of African descent/ethnicity in 8th grade currently attending District of Columbia Public School.

Adolescence: Adolescence describes the teenage years from 13 to 19. It is usually considered to be the transitional stage from childhood to adulthood (Psychology today, n.d.).

AIDS: The short form for Acquired Immunodeficiency Syndrome, is HIV infection and diagnoses of infection classified as stage 3. It also refers to the most advances stage of HIV, which may take between 10 to 15 years (WHO, 2010).

Attitude: The degree to which an individual has a favorable or an unfavorable evaluation of a behavior of interest (Ajzen & Fishbein, 1980).

Behavior: The transmission of intension into action interest (Ajzen & Fishbein, 1980).

Behavior intensions: The willingness and intensity of effort of people towards performing a behavior. This is influenced by three factors; person's attitude towards exhibiting the behavior, the perceived social pressure, and perceived behavioral control (Ajzen & Fishbein, 1980).

Epidemic: The CDC official definition of epidemic is "The occurrence of more cases of disease than expected in a given area or among a specific group of people over a particular period of time" (CDC, 2011).

HIV: Human Immunodeficiency Virus (HIV) is a retrovirus that attack and destroy or impairing the functions of the cells of the immune system of a host organism.

Knowledge: The level of awareness and familiarity with HIV/AIDS. Its nature, how the virus can be contracted, its effects on the host, and how it can be prevented.

Pandemic: An epidemic occurring over a very wide area such as a countries, regions or continents and usually affecting a large population.

Risky behaviors: The behaviors and actions that African American 8th grade students in District of Columbia Public Schools may engage in that may increase their risk of contracting HIV.

Assumptions

This study is based on the following assumptions: I assumed that participants in the YRBS that produced the secondary data completed the survey by themselves. Also, I assumed that the sample was representative of the population.

Scope and Delimitations

Mahat and Scoloveno (2006) asserted that assessment of knowledge is the first step in the prevention of HIV/AIDS. Likewise, the issues studied in this study were; (a) the attitude of the eighth grade students towards HIV/AIDS, and (b) the extent to which HIV education has impacted the students' attitude towards the virus/disease.

All participants in this study were African American eighth grade students. I did not include, in this study, any individual from other race/ethnic group. Furthermore, the participants were selected from DC Public Schools. I did not include any participant from private schools or any other type of schools.

Limitations

I used secondary data which I obtained from OSSE for this study. However, OSSE collected the original data through survey research method. Therefore, the weaknesses of survey method could have affected the study. The schools and the students selected by OSSE to participate in the 2012 YRBS did so voluntarily. Also, private schools were not involved in the original survey that produced the data. The generalizability of the result of this study to other populations is, therefore, limited. In spite of these limitations, the study provided information upon which intervention may be developed and future researches built.

Significance of the Study

The high incidence of HIV per 100,000 people in the District of Columbia is a concern to the public and policy makers. Of greater concern is the fact that African Americans represent about 75.0% of this new infection. Many researchers including Broyles (2008) and Cerwonka et al. (2000), concluded that lack of knowledge about HIV/AIDS and risky sexual behavior are some of the major causes of the transmission HIV virus.

This was designed to assess the attitude towards HIV/AIDS among African American eighth grade students in the District of Columbia. This revelation served as the basis for recommendations to policy makers, school administrators, parents, and the general public as to where efforts are needed to increase the level of knowledge of the population under study about HIV/AIDS. More importantly, the study may assist policy makers in developing curriculum that will be used in training students on how to eliminate attitudes

and behaviors that runs counter to eliminating HIV/AIDS from the African American community in the District of Columbia. The study may also add to knowledge bank from which public can obtain data or information for knowledge and decision making. Finally, researchers may use the report of the study as the basis for further investigation on the issue of HIV education at middle school level.

Summary

The District of Columbia has recorded the highest incidence of HIV per 100,000 people in the U.S. for at least 4 years in a role. The rate was 119 per 100,000 people in 2010 (CDC, 2011. The same source reported that HIV/AIDS has continued to affect African Americans in a disproportional rate compared to other races/ethnic groups. Among the adolescence population, African American make up 17.0% of adolescence population of the U.S. but accounts for 67.0% of HIV positive youth ages 13 to 19.

Broyles (2008); Campbell (2009); Fritz, Morojele, and Kalichman (2010); and Justice, Sullivan, and Fiellin (2010) have attributed the high incidence of HIV/AIDS in the nation to risky sexual behavior, alcohol and drug use, refusal to test for HIV, and the high cost of HIV medications. Especially among African Americans, lack of knowledge about the virus/disease and risky sexual behavior have been identified as the reasons for the high rate of transmission. Augustine and Bridges (2008) asserted that racism has being the most significant contributor to the high incidence of HIV/AIDS among African Americans compared to other race/ethnic groups.

In this study, I used the quantitative approach. Secondary data from 2012 Middle School YRBS was obtained from the District of Columbia Office of the State

Superintendent for Education (OSSE). The results of this study provided useful information to policy makers, school administrators, parents, and the general public with which they can develop strategies to increase the level of knowledge of the population under study about HIV/AIDS. Chapter 2 includes the review of current literature that are relevant to the study.

Chapter 2: Literature Review

Introduction

The purpose of this quantitative research was to investigate the attitudes of HIV/AIDS of African American eighth grade students. The aim of the study is to determine whether this population has sufficient knowledge of the disease to practice preventative measures against infection and to determine which areas of knowledge are lacking, if any. Although HIV/AIDS is a global problem, the District of Columbia has become the epicenter for this disease. Furthermore, the rate of new HIV infection for African Americans in the District is the highest among all ethnic groups in the city. The KFF, 2012 reported that 14,464 people were living with HIV in Washington, DC in 2010, and 75% of those were African American. In 2011, although they represented only 12% of the U.S. population, African Americans accounted for an estimated 47% of new incidents of HIV (CDC, 2013a). As indicated earlier, the statistics for African American adolescents are even worse.

In order to present a better understanding of the problem under investigation, I performed a literature review on the topic of HIV/AIDS, including its history and epidemiology, attitudes and beliefs about the disease, education and health policies, and funding toward research and prevention. The Walden University library was widely consulted. Several databases were searched via library portals, including CINAHL/MEDLINE, PSYCINFO, Academic Search Complete, Expanded Academic ASAP, LEXIS/NEXIS Academic, Military and Government collections, Project MUSE

Proquest Central, SAGE Premier, and SOCINDEX. A general Internet search was also performed.

General knowledge about HIV/AIDS began to expand in 1981; however, the literature search was restricted to publications dated from 2000 to 2013 to provide the most up-to-date information. Key search terms included: *HIV, AIDS, or HIV/AIDS combined with child, children, eighth graders, or adolescents; plus aware, awareness, know, or knowledge and DC, District of Columbia, or Washington, DC.*" Publication types included books, dissertations, news publications, online publications (government and nongovernment), as well as seminar literature and current peer-reviewed literature.

This chapter is focused on with the review of current literature relating to the topic of the study. In this review of current literature, emphasis will be placed on (a) theoretical framework relevant to the topic, (b) the global perspective of HIV/AIDS, (c) HIV/AIDS in the U.S., (d) factors influencing HIV/AIDS transmission in the African Americans communities, (e) sociocultural factors and HIV/AIDS in the District of Columbia, (f) HIV/AIDS among adolescents, (g) HIV/AIDS prevention programs in the District of Columbia, (h) role of teachers in HIV/AIDS education, and (i) adolescent attitudes and perceived vulnerability to HIV infection. This literature review is so organized to explore issues relating to HIV/AIDS from the global level to the community level.

Theoretical Framework

The four most commonly applied concepts in HIV/AIDS prevention studies are the Health Belief model, the AIDS Risk Reduction model, the Stages of Change model,

and the Theory of Reasoned Action (Avant Garde Media, 2008). Three other concepts that are particularly relevant to HIV/AIDS programs are the extended parallel process model, communication for social change theory, and social cognitive theory (Krenn & Limaye, 2009). HIV prevention literature has documented the importance of theoretical frameworks in designing HIV prevention and intervention programs (Li, Zhang, Mao, Zhao, & Stanton, 2011). As indicated earlier, the theoretical framework for the proposed study was based largely on the theory of reasoned action and social cognitive theory.

The theory of reasoned action was developed by Icek Ajzen and Martin Fishbein in the mid-1960s and is based on the assumption that human beings are rational, make systematic use of information around them, and consider the likely consequences of their behavior (Ajzen, 1980). The theory suggests that, with experience and better information, individuals will make better decisions regarding risky health and sexual behaviors. Over time, it became necessary for the element of control to be added to the theory (Trafimow, Sheeran, Conner, & Finlay, 2002).

In some situations, a person may be willing to behave in a certain way but, if it is not within his or her control to do so, that behavior will not occur (Trafimow et al., 2002). For instance, if a male adolescent wishes to use condoms, but condoms are not available, then he may engage in risky sexual behaviors. Similarly, alcohol and drug use may make an individual lose control of his or her behavior. Thus, the theory of reasoned action allows for the willingness to make better decisions when better informed, but also recognizes the potential limits on behavior due to issues of control.

Ortega, Huang, and Prado (2012) argued that, in order to better understand the risk and protective factors that influence adolescents' decisions, it is necessary to consider both the motivational influences that shape individual behavior (theory of reasoned action) and the ecological system within which an individual resides (ecodevelopmental theory). Ecodevelopmental theory is relevant to monocultural environments, such as strictly Hispanic or African American communities. However, it is difficult to apply this theory to the issue of racial disparities in HIV infection rates in a city such as Washington, D.C., which is racially and culturally diverse. On the other hand, the theory of reasoned action could explain why some ethnic groups are well informed while others engage in risky health and sexual behaviors.

Social cognitive theory is related to the theory of reasoned action and posits that people learn from different experiences, including their own, and through observation of others' behavior (Bandura, 1986). Most HIV/AIDS studies fall into two categories: prevention of HIV transmission or mitigation of the effects of HIV infection (Fisher & Foreit, 2002). Social cognitive theory is applicable to both categories. For example, the design of Focus on Kids, a comprehensive HIV and sexually transmitted infections (STI) prevention program, was guided by preventive motivation theory, a derivative of social cognitive theory.

Boutin-Foster et al. (2010) used constructs from social cognitive theory and another theory, sexual scripts theory, to develop the Reducing HIV and AIDS through Prevention program. This program used hip-hop and rap music to create awareness

around HIV/AIDS. The fact that people learn from others' behavior helps with the development of such programs.

The current study seeks to identify a better means of creating awareness about HIV/AIDS for eighth grade students in Washington, D.C. The theoretical framework for the current study is based on the theory of reasoned action and social cognitive theory. According to the theory of reasoned action, people are more likely to have high desire to perform certain behavior if they reasoned the suggested behavior as positive (attitude) and their partners would like them to behave in such a manner (subjective norm) which results into higher intention (motivation). This is why some middle school student may engage in risky sexual behavior and others do not and studies have confirmed the high correlation between attitude and subjective norm to behavior intentions and subsequently to behavior (Azjen, 1985). The theory of reasoned action could be summarized thus, according to The Association for Educational Communications and Technology (AECT, 2001):

- Behavior is determined by the intention to engage in the behavior.
- Intention is determined by attitude toward the behavior and the subjective norm to which the attitude is related.
- Attitude is determined by behavioral beliefs and evaluation of the likely outcomes of a behavior.
- Subjective norms are determined by the normative beliefs of the person and the motivation to comply with the relevant actions.

The theory of reasoned action suggest that an individual who has positive attitude towards abstaining from sexual intercourse or practice safe sex and has social support to engage in such attitudes is more likely to engage in HIV preventive behavior. The theory of reasoned action considers not just the personal beliefs, it considers also the normative beliefs and the combination of attitudes and subjective norms.

HIV: A Global Issue

Scientists in the US reported the first clinical evidence of AIDS in June of 1981. Its cause was later identified to be HIV (United Nations, 2011). Since then, however, communities in every region of the word have been affected and impacted by the virus and the disease, thereby making HIV/AIDS a global issue. HIV is found in specific bodily fluids, including blood, semen, preseminal fluid, breast milk, vaginal fluids, and rectal (anal) mucus. If any of these fluids enter into a person's body, that person can become infected (UN, 2011). HIV can be transmitted through sexual contact or from mother to child during pregnancy, childbirth, or breast feeding. It can also be transmitted by injection drug use, occupational exposure, blood transfusion, or organ transplant. Other bodily fluids such as feces, nasal fluid, saliva, urine, and vomit do not contain enough HIV to cause infection unless mixed with blood and in direct contact with another person.

HIV/AIDS affects both developed and developing nations. However, 97% of people living with HIV are found in low and middle income countries, mostly in sub-Saharan Africa (AIDS.org, 2011). According to the KFF (2012), there were about 34 million people living with HIV/AIDS in 2011, up from 29.4 million in 2001. Also,

approximately 30 million people have died of AIDS worldwide since the virus was discovered in 1981. More relevant to the present study is the fact that about half of new infections occur in people under the age of 25. In 2011, among children, there were 3.3 million living with HIV/AIDS, 330,000 new infections, and 230,000 AIDS deaths (KFF, 2012).

According to the Australian Agency for International Development (AusAID, 2012) HIV/AIDS threatens to reverse decades of development in some countries. Besides attacking people at their most productive age, HIV/AIDS destroys communities, threatens food production, and places burdens on healthcare systems. That is why many nations seriously affected by the HIV/AIDS epidemic also suffer from other problems, including other infectious diseases and food insecurity (AusAID, 2012; Kaiser Family Foundation, 2012). According to KFF (2012) a total of 34 million people, worldwide, were living with HIV in 2011, of which 2.5 million were newly infected. Of the 34 million people living with HIV in 2011, 23.5 million (69%) were leaving in Sub-Saharan Africa and 4 million (12%) were leaving in South and Southeast Asia. The remaining 6.5 million (19%) leaved in other parts of the world.

Although efforts to combat HIV/AIDS have led to a reduction in new infections and AIDS-related deaths, the number of children with HIV continues to grow (Unicef, 2013). A report by Unicef (2013) stated that 1,000 children are newly infected with HIV each day and only 23% of children living with HIV/AIDS are receiving the required treatment.

HIV/AIDS in the United States

Scientists did not report the first clinical evidence of AIDS in the US until 1981. However, researchers have identified cases appearing to fit the description of HIV published as far back as the 1950s (Osmond, 2003). HIV began as an epidemic in a few coastal cities among young, middle-aged, Caucasian males engaging in sex with other males (Moore, 2012). Today, HIV/AIDS is a disease of greater demographic diversity, cutting across lines of age, race, ethnicity, gender, and geographical boundaries.

According to the Office of Population Affairs (OPA, 2012) approximately 1.7 million people have been infected with HIV since the virus was discovered in 1981, including approximately 619,000 people that have died as a result. The OPA also reported that over 1.1 million people in the United States were living with HIV in 2011 and that about one in every five were unaware of their infection. Overall, gay and bisexual males have the highest rates of HIV infection.

In terms of race, African Americans face the highest HIV/AIDS burden, followed by Hispanics, then Caucasians. Also, approximately half of all new infections in the United States occur in people under the age of 25 (Shiferaw, 2011). This is a shift from two to three decades ago, when HIV was most prevalent among middle aged individuals. Most young people with HIV are infected through sexual contact (KFF, 2013). It is no surprise researchers and policymakers are becoming interested in youths and risky sexual behavior.

A survey of high school students revealed that over 47% had had sexual intercourse, 33.7% of whom had done so within the last three months (CDC, 2011). Of

the latter group, 39.8% did not use a condom and 76.7% did not use birth control the last time they had intercourse. The CDC also reported that 15.3% of participants had engaged in sexual intercourse with four or more people during their lifetime. The CDC (2011) concluded that many youths engaged in risky sexual behaviors leading to unintended health outcomes, including HIV infection, other STIs, and unplanned pregnancy. It was suggested that in order to reduce risky sexual behavior among youth, educators and youth-serving organizations should encourage behaviors that lead to positive health outcomes (CDC, 2011).

Although HIV has been reported in all 50 states, the District of Columbia, and U.S. dependencies, its distribution is not uniform (KFF, 2013). In 2011, 10 states accounted for approximately 65.0% of HIV diagnoses, with 48.0% of diagnoses occurring in the South. In that same year, The District of Columbia had the highest HIV rate in the nation. Among young people, racial minorities have been greatly affected. In 2010, for instance, those aged 13 to 24 accounted for about 33.0% of newly infected African Americans, 24% of newly infected Hispanics, and 16.0% of newly infected Caucasians (KFF, 2013).

In terms of gender, 75.0% (828,000) of people living with HIV in the US in 2008 were male, while 25.0% (278,400) were female (Moore, 2011). With regard to new HIV infections, males and females represent 73.0% and 27.0%, respectively. However, the male-to-female ratio for new infections varies according to race. Among males, African Americans represent 42.0% of new HIV infections, followed by Caucasians at 30.0% and

Hispanics at 23.0%. Among females, however, African Americans represent 61.0% of new HIV infections, Caucasians represent 23.0%, and Hispanics represent 16.0%.

Factors Influencing HIV/AIDS Transmission among African Americans

In the past three decades, the proportion of new HIV diagnoses occurring in African Americans has grown significantly, from 25.0% in 1986 to 47.0% in 2011 (CDC, 2012). This number was as high as 51.0% between 2001 and 2004 (Laurencin, Christensen, & Taylor, 2008). Consequently, both medical and non-medical organizations have been saddled with the responsibility of caring for those infected and designing strategies to prevent new infections. Laurencin et al. (2008) also observed that while the number of HIV cases in Caucasian men declined over the years, for men and women in minority populations, especially African Americans, the rate has increased.

The CDC considers a 1.0% infection rate as the threshold for defining an HIV epidemic (Denning & DiNenno, 2013). With a 3.0% infection rate, the District of Columbia could be considered the epicenter of HIV infection in America. Dr. Shannon Hader, Director of the District of Columbia HIV/AIDS Administration, listed the three major factors responsible for the high rate of HIV infection in that region: heterosexual sex, men having sex with men, and injection drug use (Greenberg et al., 2009).

Broyles (2008) investigated the factors responsible for increasing HIV infection rates at the national level and identified alcohol and drug use as major factors. Broyles' study assessed knowledge and attitudes about HIV/AIDS in 45 adolescent Jamaicans in a church youth group. The findings showed that the adolescents had strong empathy and an overall supportive attitude for people living with HIV/AIDS. The study also revealed that

participants were under the misconception that HIV/AIDS in Jamaica was being spread mainly by homosexual encounters. The study concluded that Jamaican adolescents were knowledgeable about HIV/AIDS.

Aside from alcohol and drug use, there are other factors responsible for the high rate of HIV transmission among youths. Cerwonka, Isbell, and Hansen (2000) identified peer influence, perceived risk of exposure, age, alcohol and drug use, a history of infidelity, and low self-efficacy as some of the major risk factors for HIV transmission. Ndeki, Klepp, Seha, and Leshabari (1994) conducted a survey based on the World Health Organization's Knowledge Attitude Behavior Practices survey instrument for sixth and eighth grade students at a primary school in Northern Tanzania. The survey showed that overall knowledge of the risks associated with casual contact were low and that students were generally unaware that persons infected with HIV might not show any sign of the disease. The authors suggested that elementary schools be used as platforms to launch HIV/AIDS education in Tanzania; however, they failed to indicate which grades were to be included in such a program. In the proposed study, I seek to identify the appropriate grade levels for HIV/AIDS education.

The high incidence of new HIV diagnoses among African Americans has been attributed to risky behaviors related to drug use and sexual activity (Laurencin et al., 2008). However, it has recently been recognized that, in fact, African Americans report less risky sexual behaviors than their Caucasian counterparts. Furthermore, Laurencin et al. (2008) cited a recent study of female prisoners that revealed incidents of needle sharing were significantly higher among Caucasian prisoners than among African

American prisoners. In addition to sexual risk factors and substance use, Laurencin et al. (2008) identified incarceration, socioeconomic status, and access to healthcare as other major risk factors influencing HIV transmission among African Americans.

Laurencin et al. (2008) reported that the US prison and jail population has increased significantly in past decades, with African Americans disproportionately affected. In 2011, a total of 1,598,780 people were incarcerated in either federal or state prisons (Carson & Sabol, 2012). Of this total, 581,300 were African Americans, representing 36.4%. In other words, in 2011, 1.4% of the entire US population of African Americans were incarcerated. The situation is worse for African American men; in that same year, 3% of all African American men were incarcerated. While approximately one out of every 209 Caucasian males were incarcerated in 2011, for African American males it was approximately one out of every 33.

Owing to prison conditions and the activities therein, including unprotected sexual contact, non-sterile tattooing, drug use, and contact with blood and mucous membranes during incidents of violence, there have been concerns about the effects of incarceration on HIV transmission (Harawa & Adimora, 2008). Harawa and Adimora (2008) acknowledged that it has been difficult to document HIV transmission in jails, in part because, while only 20 states conduct mandatory pre-entry HIV testing in prisons, a far lower number, only three states, conduct HIV testing prior to release. Notwithstanding this lack of information, Harawa and Adimora (2008) indicated that the incidence of HIV among inmates is three to four times higher than in the general population.

High incarceration and re-incarceration rates have negatively impacted the African American community (Harawa & Adimora, 2008). Apart from being denied opportunities for education, economic advancement, and political participation, incarceration has altered social norms relating to marriage, sexual relationships, family life, monogamy, illegal substance use, and violence. Laurencin et al. (2008) concluded that high rates of incarceration among African Americans relative to Caucasians are one of the reasons why African Americans have been disproportionately affected by HIV/AIDS.

Studies have shown that limited access to high quality healthcare, housing, and HIV/AIDS prevention and education programs have directly and indirectly increased the risk of HIV infection among African Americans. According to Laurencin et al. (2008), limited access to high quality healthcare prevents early diagnosis of HIV infection, thereby increasing the chances of transmission within the African American community. Other factors identified by the authors were HIV serostatus awareness and community beliefs and perceptions.

Sociocultural Factors and HIV/AIDS in the District of Columbia

Greenberg et al. (2009) stated that the HIV/AIDS prevalence rate in the District of Columbia was comparable to that of the sub-Saharan African countries of Nigeria and Congo. The authors attributed this to sociocultural factors, including a high proportion of local residents who are at elevated risk of HIV infection, such as men having sex with men, injection drug users, and heterosexuals engaging in risky sexual behaviors. All of these groups have overlapping social and sexual networks. It has also been pointed out

that the District of Columbia has a relatively small population (600,000) compared to other cities with high rates of HIV infection, such as New York (8.3 million) or Los Angeles with a population of 3.8 million (McEnery, 2010). This has contributed to the high percentage of people with infection in the District of Columbia. Lastly, Greenberg et al. (2009) admitted that high levels of poverty and economic disparity may be linked to inadequate access to preventive care and health services in communities that are arguably most in need of such services.

Though concerted efforts have been made to address the HIV/AIDS epidemic in the District of Columbia, including testing, risk-awareness campaigns, promotion of condom use, targeting of services to high risk groups, and harm reduction programs, the efforts have not seen any appreciable positive results. Greenberg et al. (2009) observed that, in the District of Columbia, HIV/AIDS is not a disease of youth; however, the incidence of STIs other than HIV is high in youth, implying the presence of risky behavior. The authors warned that there is a need to build HIV/AIDS awareness and encourage protective behavior among youth, providing knowledge they can carry into adulthood, to ensure that current efforts to curtail HIV transmission are successful.

According to the National Coalition for the Homeless (NCH, 2007), homelessness has been linked to behavior that puts individuals at risk for chronic diseases. In other words, people who are homeless have higher rates of chronic disease than people who have accommodation. This is partly due to lifestyle factors, exposure to extreme weather conditions, exposure to violence, nutritional deficiency, and limited access to quality health care services (NCH, 2007). The national homelessness rate in 2012 was 20 per

10,000 people. In that year, the District of Columbia had the highest rate of homelessness in the nation at 133 per 10,000 people (National Alliance to End Homelessness [NAEH], 2013). This makes the District of Columbia highly prone to chronic diseases, including HIV/AIDS.

McEnery (2010) acknowledged that there is growing evidence that a generalized HIV epidemic has emerged among heterosexuals in poor, urban neighborhoods. According to the author, this epidemic is more evident in the District of Columbia than elsewhere in the nation and is a reflection of what is happening in many economically disadvantaged neighborhoods across the country. According to the National Priority Project (2012) the District of Columbia had a poverty rate of 18.7% in 2011and ranks among those states with the highest poverty rates in the nation. The aforementioned findings, corroborate Denning and DiNenno's (2013) report that HIV prevalence rates in the United States urban neighborhoods are inversely related to household income. In other words, the lower the household income, the higher the prevalence of HIV infection.

HIV/AIDS among adolescents

Despite the concerted efforts of nations around the globe that have resulted in a 15.0% reduction in new HIV infections and a 22.0% decline in AIDS-related deaths in the last 10 years, children are being left behind (Unicef, 2013). Unicef (2013) estimated that over 1,000 children are newly infected with HIV every day. Also, while about 50% of adults living with HIV/AIDS are receiving treatment, only 23.0% of children living with HIV/AIDS receive proper and adequate care (Unicef, 2013). The situation in the United States is no different. The CDC reported that between 2008 and 2011 the

estimated number and estimated rate of new HIV infections were generally stable. However, the rates for individuals in late adolescence and early adulthood increased during the same period (CDC, 2012). This indicates that adolescents are gradually becoming a high risk population for HIV infection in the United States.

According to Ben-Zur (2003), peers become the major source of information, support, and behavior for adolescents as relationship patterns and social context develops and the quest for freedom from parents becomes more important. There is, therefore, a need to inform and educate children about the dangers of HIV infection before they reach the age of adolescence. D'Angelo, Samples, Rogers, Peralta, and Friedman (2006) acknowledged the seriousness of HIV/AIDS infection among adolescents, arguing that those who were diagnosed with AIDS during the third decade of their life most likely acquired the virus during adolescence. The authors applauded the Society for Adolescent Medicine for endorsing community-based HIV prevention and education activities for adolescents and youth that are scientifically grounded and evidence-based, noting that such programs should take place in schools and youth-serving organizations.

The National Institute of Allergy and Infectious Diseases [NIAID] (2008) expressed a growing concern about the devastating effects of HIV/AIDS on adolescents and young adults. The organization noted that the number of children infected as infants and growing into adolescence is on the rise. The growing infection rate among adolescents and young adults may also be partly related to an attitude of invincibility that causes this group of peopleto engage in risky behaviors leading to infection. A report by Unicef (2009) suggested that effectively preventing HIV transmission among children

and young adults was difficult because HIV and drug use are sensitive subjects among this age group and it is, therefore, difficult to develop age-specific education and prevention programs.

According to the Youth Risk Behavioral Survey, as many as 47.0% of youth surveyed first had sexual intercourse during their high school years and 7.4% had sexual intercourse before the age of 13 (CDC, 2008). The CDC (2008) argued that, based on these findings, HIV/AIDS education programs should target younger individuals, before they begin to engage in risky sexual behaviors. The report also indicated that more African American children reported having had sexual intercourse before the age of 13 than those from any other racial group. It has been suggested that clear and early parent-child communication about sex and values could be an important step toward helping youth to delay sexual initiation and avoid risky behaviors that aid the transmission of HIV (CDC, 2008; Onifade & Dele-Osibanjo, 2013). Schools can also serve as valuable partners in educating youth before they establish risky behaviors (CDC, 2008).

HIV/AIDS Prevention Programs in the District of Columbia

Though HIV/AIDS is not highly prevalent among adolescents in the District of Columbia, the high rate of other STIs is indicative of risky sexual behaviors among this group (Greenberg et al., 2009). In 2005, the District of Columbia Department of Health's HIV/AIDS Administration, in conjunction with the HIV Prevention Community Planning Group, developed the District of Columbia HIV Prevention Plan (DOH, 2009). According to the Department of Health (DOH, 2009), the main purpose of the plan was to identify the HIV prevention needs of city residents, prioritize the populations that most

needed HIV prevention services, and design the most effective prevention and intervention strategies for the identified populations. The plan, which followed the CDC's 2003-2008 HIV Prevention Community Planning Guidelines (CDC, 2003), was designed to be implemented between 2006 and 2010. The plan was divided into four sections: community services assessment, HIV prevention, prioritization of populations, and recommended interventions. The goals of the plan were as follows:

1. Community planning supports broad-based community participation in HIV prevention planning.
2. Community planning identifies priority HIV prevention needs (a set of priority target populations and interventions for each identified target population) in each jurisdiction.
3. Community planning ensures that HIV prevention resources target priority populations and interventions set forth in the comprehensive HIV prevention plan.

Based on these guidelines, the District of Columbia identified the following prioritized population groups: people living with HIV/AIDS, injection drug users, heterosexual men who have sex with men, and special populations. Included in special populations were adolescents and young adults.

Data obtained from the Youth Risk Behavior Surveillance, a survey conducted with students in District of Columbia public schools, provided insight into the sexual activities, attitudes, and perceptions of adolescents (DOH, 2009). Participants in this survey included middle school students (Grades 6 to 8) and high school students (Grades

9 to 12) and most were African American. The survey revealed that most adolescents started sexual intercourse before high school early in life, and 25.1% of respondents had engaged in sexual intercourse with four or more partners (DOH, 2009). Despite the need for programs directed toward adolescents and young adults, this population can be difficult to access. For example, the majority of HIV preventive education in the District of Columbia is carried out in public schools (DOH, 2009). With high drop-out rates it is evident that the school system cannot reach all youth, particularly those most at risk of contracting HIV (DOH, 2009). National HIV prevention programs typically do not target out-of-school children, such as homeless or incarcerated youths. Furthermore, such programs focus only on heterosexual relationships at the expense of lesbian, gay, bisexual, and transgendered youths. There is a need, therefore, for the city to design a preventive education program that does not exclude adolescents and youths outside the public school system.

DOH (2011) reported that although HIV prevalence among youths aged 13 to 25 in the District of Columbia is still low compared to other age groups. The District has the highest rate of STIs among youth, including chlamydia and gonorrhea. According to the District of Columbia Department of Health, youth accounted for 68.3% of chlamydia cases and 55.2% of gonorrhea cases (DOH, 2008). The report argued that if such risky sexual behavior is not addressed in youths, they may carry their risky sexual behavior into adulthood where the rate of HIV infection is higher. The high risk behaviors identified by DOH (2009) include: unprotected sex, multiple concurrent partners, and drug use. The DOH created school-based screening programs for STIs that routinely test

high school students (Grade 9 to 12) for chlamydia and gonorrhea. Though the screening program is now established in all District public schools, in order for the program to be successful it must be extended to non-traditional settings, including juvenile detention, continuation schools, and community-based youth organizations (DOH, 2011).

The CDC has provided vital information regarding the importance of schools in HIV/AIDS awareness and prevention. According to a recent report (CDC, 2010), about 66.0% of adolescents had sex before they graduated from high school, and 40.0% of sexually active adolescents had unprotected sex the last time they had sexual intercourse. Of the latter group, 20.0% had used drugs or alcohol prior to the episode of unprotected sexual intercourse. Such high risk behaviors expose adolescents to HIV infection. It is not surprising, therefore, that 18.0% of all new cases of HIV infection are among adolescents and youths aged 13 to 24. Also, 30.0% of young women in the District of Columbia become pregnant before the age of 20, and adolescents and youths have the highest rate of STIs among all age groups (CDC, 2010). The CDC argued that, considering the fact that schools have direct contact with 56 million adolescents and youths, six hours a day for 13 vital years of their social, physical, and intellectual development, schools are important partners in helping this group of people develop health-enhancing attitudes and behaviors that could last a lifetime.

The District of Columbia has developed some unconventional strategies to deal with the HIV/AIDS epidemic. For instance, Greenberg et al. (2009) referred to results that emerged from the National HIV Behavioral Surveillance System and from social marketing surveys showing that, among at-risk heterosexual residents of the District of

Columbia, less than one third used condoms the last time they had sex, less than half knew their partner's HIV status, and almost 50.0% reported that their partner had had other partners in the previous 12 month period. Greenberg et al. (2009) suggested that in order to make better relationship decisions, partners must perform an accurate HIV risk assessment of each other. To do this, Greenberg et al. (2009) suggested that partners must ask three questions and have them answered satisfactorily before engaging in a sexual relationship. They are:

1. Do we know each other's HIV status?
2. Is it just the two of us?
3. Do we use a condom?

Accordingly, in an effort to encourage partners to make better relationship decisions, the District of Columbia DOH offers a unique service that allows couples to be tested for HIV and receive results together (DOH, 2011).

Another measure being taken by the District of Columbia to prevent HIV transmission is a free condom distribution program. The DOH has made condoms widely available to residents in all eight wards (DOH, 2011). Danya International (2012) reported that resources and tools provided by the DOH allowed residents to receive education about HIV/AIDS and STIs and also to receive safe sex resources. In addition to supplying free condoms and lubricants, DOH offers condom distribution fact sheets, lists of free condom locations, online condom order forms for organizations, and an online information center (The Rubber Revolution) where people can learn how to properly use condoms. The District of Columbia is also the first city to distribute free female condoms

(Fears, 2010). The DOH distributed over 500,000 male and female condoms in 2011 (Danya International, 2012).

The DOH is in agreement with Christensen and Taylor (2008) that limited access to high quality healthcare can prevent early diagnoses of HIV infection. Consequently, the DOH designed other large and structural interventions to prevent new HIV infections in the city. For example, through the DC Alliance, the District of Columbia provides access to free or low cost medical care for low income residents. As a result, approximately 93.0% of adults and 96.0% of children in the District of Columbia are covered by either public or private insurance (DOH, 2011). Furthermore, the District of Columbia is the second state to implement the Medicaid expansion program as defined by the new Affordable Care Act (GPO.gov, 2010). Recently, however, the DC Alliance program has been facing serious funding problems. Unlike the Medicaid program, which is partly funded by the federal government, the DC Alliance program is wholly funded by local sources. The District of Columbia Fiscal Policy Institute (DCFPI, 2012) reported a proposed $23 million cut to the DC Alliance program slated for 2013 that eventually led to the closure of most DC Alliance facilities, including clinics and pharmacies, were slated for closure in September, 2013. The impact of these closures could not be estimated at that time, but arrangements were made for DC Alliance members to receive care at other facilities.

Role of Teachers in HIV/AIDS Education

Many researchers and organizations have emphasized the important role of schools in global HIV prevention efforts (CDC, 2010; D'Angelo, Samples, Rogers,

Peralta, & Friedman, 2006; DOH, 2011; Ndeki, Klepp, Seha, & Leshabari, 1994; Schenker & Nyirenda, 2002). Schenker and Nyirenda (2002), however, indicated that the skills needed to teach HIV prevention are different from those needed for regular school courses. The authors stated that the responsibilities of schools in HIV education is to teach students how to avoid contracting the infection or transmitting it to others and also to be a reliable source of science-based information for HIV-related policies. To carry out these responsibilities effectively, Schenker and Nyirenda reasoned that teachers would need specialized training.

A study by Oshi and Nakalema (2005) in southeast Nigeria revealed that, while teachers were compassionate about the issue of HIV/AIDS among school children, they lacked the appropriate training to function effectively as sex education and HIV prevention instructors. According to the authors, appropriate training was needed to educate teachers about the facts surrounding HIV/AIDS. Such training would also enable the teachers to handle social, cultural, and religious issues relating to sex education and HIV prevention. According to Oshi and Nakalema (2005) the issue was not that teachers lacked knowledge about HIV, but they believed that instructing children how to prevent transmission of the virus through safe sex was tantamount to giving them permission to have sex as long as they used condoms. Hence, the teachers were reluctant to provide such information. Meanwhile, no published studies have been able to demonstrate that promoting abstinence is an effective method for HIV prevention.

Lisa Green, Coordinator of Instruction for the New Orleans School Board Office, suggested that most of the issues surrounding HIV/AIDS are not being addressed in the

classroom (Brotherton, 2002). Ms. Green was part of a 20-member panel of scholars, practitioners, and teacher education experts, funded by CDC and co-sponsored by the American Association of Colleges for Teacher Education and the American Association for the Advancement of Science, whose job was to determine what teachers needed to know to address the issue of HIV/AIDS in the classroom. The panel recommended that, in preparing future teachers to tackle issues relating to HIV/AIDS, policymakers must take into consideration the history of HIV/AIDS and the country's response to the disease; the social and political factors of HIV/AIDS, with an emphasis on race and economics; and how to provide teacher-education students with the skills to function not only as teachers but also as agents of change.

Participants at a forum organized by the United Nations Educational, Scientific, and Cultural Organization (UNESCO) and the Joint United Nations Programme on HIV/AIDS (UNAIDS) agreed that teachers have a crucial role to play in ensuring that children and young adults gain essential knowledge, skills, and attitudes to protect themselves from HIV infection (UNAIDS, 2009). However, forum participants also highlighted several challenges that have prevented teachers from achieving this purpose, including lack of essential teaching aids, cultural costs of teaching such a sensitive topic, need for parental consent, lack of funds, and the burden of having to teach an additional subject. It was argued at the forum that these challenges must be properly addressed in order for such programs to succeed. Research has shown that a well-designed and well implemented school-based prevention program is capable of significantly reducing adolescents' risky sexual behavior (CDC, 2013c), resulting in a delay of first sexual

intercourse, a decline in the number of sex partners, and an increase in condom or contraceptive use.

The CDC (2013c) recommended that HIV testing be made a routine part of health care for adolescents and adults aged 13 to 64 years. However, it may be difficult to get adolescents tested if such testing is not performed or initiated in schools. The CDC highlighted 5 ways in which schools can help to prevent HIV and STI infection: teaching students about HIV and other sexually transmitted infections; promoting communication between parents and adolescents; teaching students how to find HIV counseling and testing services; providing referrals to testing, counseling, and treatment services; and providing on-site testing for HIV and sexually transmitted infections.

Adolescent Attitudes and Perceived Vulnerability to HIV Infection

Fischhoff, Nightingale, and Iannotta (2001) noted that *a*dolescents often acted in a manner that was not in their best interests, even by their own definition. According to the authors, some adolescents are possibly drawn to risky behavior because of their perception of invulnerability, and some others take risks because they feel vulnerable to the point where they feel hopeless. In either case, the adolescent may be prompted to make bad decisions that can expose them to physical and psychological harm, negatively impacting their health and wellbeing. However, the authors warned that society should not over-generalize and assume that all adolescents engage in risky behavior. Instead, society should consider the full range of factors that create risk and resilience among this age group. The authors argued that adolescents differ in their needs, wants, and circumstances; some may be suffering from chronic disease, others may belong to

disadvantaged or disenfranchised groups, and still others may be dealing with psychological issues, all of which need societal attention and support. For these reasons, Fischhoff et al. (2001) emphasized the importance of research to identify factors that lead adolescents to engage in risky behaviors.

It has been suggested that adolescents join gangs in order to cope with social and psychological stressors (Brooks, Lee, Stover, & Barkley, 2009; Fischhoff, Nightingale, & Iannotta, 2001). These stressors include poor family relationships, poverty, discrimination, abuse, school problems, peer pressure, and the struggle for self-identity. Whatever the push may be, gang related activities expose adolescents to HIV (Brooks et al., 2009).

Glenn (2001) considered the situation of African American adolescents who, according to the CDC (1999), comprised 15% of the U.S. population but accounted for 60% of HIV cases among individuals aged 13 to 19. Glenn (2001) stressed the need to conduct research among adolescents to determine their knowledge about HIV/AIDS. By so doing, policy makers would be better able to formulate science-based, age-appropriate, and culturally relevant HIV prevention policies for schools. In a study of African American adolescents in a focus group setting, Glenn (2001) identified the following factors as conferring resilience to HIV infection: innocence, self-assuredness, healthy living and education. On the other hand, peer pressure, promiscuity, and drug culture were identified as factors contributing to susceptibility to HIV infection (Glenn, 2001).

Summary

The purpose of this study was to assess the knowledge and attitudes of African American eighth grade students in the District of Columbia regarding HIV/AIDS. The ultimate goal was to broaden knowledge about the disease, change attitudes, and prepare the students for positive sexual behavior when they become sexually active. This can be achieved through research-based health and education policies.

In this chapter, I identified the most commonly referenced theories in HIV/AIDS prevention literature. The issue of HIV/AIDS around the globe and the state of HIV/AIDS in the United States was reviewed. The reasons for high rates of HIV infection in the District of Columbia were also discussed. Most researchers had similar findings in that HIV rates in the District of Columbia are at epidemic levels and that school is one of the best avenues through which adolescents can receive education on HIV/AIDS and other STIs. Findings from the proposed study can be used to design age-appropriate and culturally sensitive HIV/AIDS prevention programs for elementary, middle, and high schools. In Chapter 3, I will elaborate on the research methodology and give a detailed description of the data collection techniques that I employed in this study.

Chapter 3: Methodology

Introduction

The main purpose of this quantitative research was to examine the attitude towards HIV/AIDS of African American 8th grade students. According to a Kaiser Family Foundation report, 14,464 people in the District of Columbia, or 2.7% of the city's population, were living with HIV at the end of 2010. Of those, approximately 75.0% were African American.

Rationale

While the national rate of new HIV infections among African Americans adults and adolescents decreased from 65.5 per 100,000 in 2008 to 60.4 per 100,000 in 2011, within the District of Columbia there was an increase from 93.3 per 100,000 to 177.9 per 100,000 over the same time period (CDC, 2013). Therefore, the focus of this study is important both to the residents of the District of Columbia and its policymakers. The findings from this study may assist with the development of programs and policies that promote positive attitudes and educate children and youth about the disease in order to reduce vulnerability to HIV infection.

Research Questions

The primary research question for this study was: What is the attitude of African American eighth grade students towards HIV/AIDS? In order to address this primary question, the following research questions were examined:

1. What is the attitude of eighth grade students in the District of Columbia toward HIV/AIDS with regard to transmission and education about HIV/AIDS?
2. To what extent has HIV education in the District of Columbia Public Schools influence the health behaviors and attitudes toward HIV/AIDS of African American eighth grade students?
3. Are there any significant gender differences with regard to the attitude of African American eighth grade students towards HIV/AIDS?

Research Design

In this study, I employed a descriptive quantitative method and utilized secondary data obtained from the District of Columbia Office of the Superintendent of Education. The secondary data used was the 2012 Youth Risky Behavior Survey data. In other words, I did not administer any questionnaire directly to the participants.

Permissions and Approvals

Before commencing with this investigation, I obtained permission from Walden University Internal Review Board (IRB). Following this, CDC was contacted to obtain the YRBS data. CDC stated that it does not have permission to release the District of Columbia data. However, CDC directed me to the District of Columbia Office of the State Superintendent for Education (OSSE), which happened to be the custodian of the 2012 YRBS data. I drafted a data sharing agreement and both myself and the OSSE signed it in agreement. Thereafter, the 2012 YRBS data was released,

Study Population

The CDC has reported that over 90% of HIV infection in 2011 was through sexual intercourse (CDC, 2012). To address HIV problems effectively therefore, the issue of safe sex needs to be addressed. Efforts by the governments and non-governmental organizations to curtail the spreading of the virus have been hampered by risky sexual behavior among other factors (Broyles, 2008; Campbell, 2009; Fritz, Morojele, & Kalichman, 2010; Justice, Sullivan, & Fiellin, 2010). Most of these efforts at eradicating HIV have been directed towards adults for a long time because the adults are considered to be sexually active. A study by the Iowa State University in 2009, however, revealed that low-income children reported first sexual intercourse at 12 years old. At this age, most kids would be in the sixth grade or the eighth grade.

In this study, I focused on the eighth grade students who were just starting or were about to start having sexual encounter. The eight grade students were chosen in order to obtain information about them that would serve as input to HIV related policies. These policies are expected to produce effective campaigns that could bring about behavior change, among African American students in DCPS. This will eventually lead to HIV prevention. Accordingly, the study population for this study will consist of African American eighth-grade students enrolled in District of Columbia public schools. Seventy-four Middle Schools were qualified and invited to participate in the YRBS, 69 participated. Also, of the 11,455 eighth grade students that were enrolled in a qualified Middle School in DCPS, 9,418 participated fully the 2012 YRBS. Of those that participated in the survey, 1933 were African Americans in the eighth grade.

Eligibility Criteria

For them to have been included in the study, students must have been: (a) African American, (b) registered in a District of Columbia public school, (c) in eighth grade, and (d) present at the school on the day of the survey.

Sampling Methods

I used secondary data. Prior to the commencement of this dissertation the 2012 District of Columbia Middle School YRBS data had been collected and entered into database by the District of Columbia Office of State Superintendent of Education. Thus, the procedure for collecting the data had been established and performed. This procedure is described below.

Before 2003, CDC was funding state and local education agencies coordinated school health programs or programs for HIV prevention. These agencies may decide to use a portion of these funds to conduct YRBS. Since 2003, however, separate funds have been made available to state and local agencies to conduct YRBS. Since 2008, both state education and state health agencies have been eligible for the funds, but each state must decide which of the two agencies would take on the responsibility to conduct YRBS. The District of Columbia has elected the Office of State Superintended of Education to conduct YRBS. The OSSE was created by the District of Columbia Public Education Reform Act of 2007 (DC Act 17 – 38; OSSE, 2010). Prior to this reform in 2007, functions performed by OSSE today were performed by the District of Columbia Public Schools (DCPS).

OSSE, like any other large urban school district YRBS, employs a two-stage, cluster sample design to produce a representative sample of middle school students to be included in the survey. Samples were selected using PCSample. In 2012, like in the years after 2006, the DCPS and Public Charter Schools (DCPCS) in its sampling frames. DCPCS were excluded from the surveys in the years prior to 2007. In the first sampling stage, for the DC Middle School YRBS, the probability of including a school in the sampling frame was based on enrollment size. In the second sampling stage, either intact classes of a subject of interest or intact classes during a given period are randomly selected.

Traditional and charter schools are both public educational institutions. However, there are some distinguishing characteristics between the two. The primary differences between traditional and charter schools are in the areas of innovation, funding, choice, accountability, and educational philosophy (Morgan, 2011). Charter schools were established with the intent that they will radically change the way children are educated. It was envisaged that the barriers faced by traditional schools will be eliminated. It was reported in 2009 that studies, including one lead by a Michigan State University Scholar, shows that students in charter schools graduate and attend colleges at much more higher rate than their counterparts at the traditional public schools (Michigan State University, 2009).

Public charter schools also enjoy better funding and management the kind that is not available at traditional schools. Unlike in traditional public schools where children are placed into schools within or close to their neighborhood, students and their parents

make the choice of which charter school to attend irrespective of where they live in the city. The management of charter schools may also choose who teaches there or not. Because they must show result in order to justify continue funding, charter schools are more accountable. Furthermore, because most charter schools are established for specific mission the school may have educational philosophy, including focus that is different from that of traditional schools. For these reasons, students in charter schools may have experiences and exposure that may affect their level of knowledge and influence their attitude towards HIV/AIDS in a way that may differ from traditional public school students. Both public and public charter schools were included in this study.

Seventy-four middle schools were selected to participate in the 2012 D.C. Middle Schools YRBS survey. Of this number 69 middle schools agreed to participate, yielding school level response rates of 93.0%. A total of 11,455 students were eligible to participate of which 9,654 students participated and 9,418 fully completed the survey. This yielded student response rate of 82.0%.

Confidentiality and Consent

According to OSSE, the recruitment plan for the 2012 Middle School YRB survey aimed to ensure that participants were able to provide answers to the survey questions without negatively affecting their well-being as suggested by (Teddlie & Tashakkori, 2009). Because the quantitative data involved eighth-grade students, who were legal minors and considered vulnerable, OSSE provided consent form. OSSE followed local parental permission procedures prior to survey administration. The District of Columbia uses the passive parental consent, where parents sent back a signed form

only if they want their children to be excluded from taking part in the survey. This is in contrast to active parental consent procedures where parents or guardians must send signed consent form if they want their children to participate. This consent form explained the purpose of the study and included provisions related to participants' rights to privacy, anonymity, and confidentiality. Furthermore, to ensure confidentiality, no personal information (e.g., name, date of birth, address) were collected.

Given the sensitive nature of the data, all information collected for this study were kept in secure, locked storage. During the data analysis phase, data were also stored electronically on a password-protected computer. All recommendations given by IRB and OSSE to assist in maintaining the confidentiality of respondents were followed.

Survey Procedure and Instrumentation

OSSE sent YRBS questionnaires to each participating school, and teachers for selected classes were instructed to administer the survey using a script and standardized administration protocol. Using this protocol, teachers read instructions aloud to participating students in the class and emphasized that the survey was both anonymous and voluntary. The teachers also informed the students that they may stop participating at any time during the survey. In some cases, specifically in Special Education classes, completion was facilitated with the teacher reading the questions and responses aloud.

The instrumentation used for the survey was the 2012 District of Columbia Middle School Youth Risk Behavior Survey. This instrument was originally developed by CDC in 1991. The Middle School Youth Risk Behavior Survey was part of the Youth Risk Behavior Surveillance System (YRBSS), which monitors priority health-risk

behaviors and the prevalence of obesity and asthma among youth and young adults (CDC, 2013b).This survey is used by the CDC; some states, territories, and districts; and by local education and health agencies. Although the Middle School Youth Risk Behavior Survey is a government publication available in the public domain, the raw data from the survey can be obtained only by permission. Hence permissions were sought both from CDC and OSSE to obtain it.

The 2012 Middle School Youth Risk Behavior Survey instrument was divided into 13 sections. To this study, however, only seven sections were relevant. These relevant sections, apart from social and demographic data, contain questions dealing with actions and behaviors that were likely to lead to exposure to HIV infection. These behaviors included tobacco use, alcohol consumption, drug use, and sexual intercourse.

Data Analysis

I obtained the data for this study from OSSE in Microsoft Excel file formats. I excluded data that were not relevant to the study. Thereafter, I exported the relevant data, including demographic into Statistical Program for Social Sciences (SPSS) software package where I performed all analyses.

The two major statistical analyses performed on the YRBS data were chi square and independent-sample *t* test. I employed chi-square to test whether or not there is a relationship between knowledge of HIV/AIDS and risky behaviors. On the other hand, I employed the independent sample t test to evaluate the difference between the means of two independent groups, male and female as regards their attitude towards HIV/AIDS.

Furthermore, frequency distribution was used to present the frequency and percentages for all variables in the study.

The quality of any research study is determined by the validity and reliability of the methods used. Reliability is a measure of consistency, whereas validity relates to whether a tool or method measures what it is supposed to measure (Creswell & Plano Clark, 2011). CDC knows that to obtain accurate information, the students must perceive the survey as very important to them and must be assured that there is a system in place to protect their privacy and allowed for anonymous participation (CDC, 2014a). To address the issue of reliability and validity, CDC has continue to conduct methodological studies to validate the data collected from YRBS. These studies include; test-retest reliability studies, assessment of the validity of self-reported information, assessment of the effect of changing race/ethnicity question, question wording, and study on varying mode and setting of survey administration among others (CDC, 2014a). All these studies and subsequent adjustment have increased the reliability and validity of the YRBS data.

Summary

In this chapter, I described the methodology that I used for this quantitative study. For the study, a sample of 74 middle schools were selected to participate, of which 69 agreed to participate. Of the 11,455 students that were enrolled in the classes selected to participate in the study 9,654 students participated and completed the survey. The survey instrument that the OSSE used was the Middle School Youth Risk Behavior Survey (YRBS). Also, data collection strategy and data analysis procedure for the study were

discussed in this chapter. Findings will be reported in Chapter 4, while Chapter 5, I will provide the discussion of the result.

Chapter 4: Findings

Introduction

The purpose of this study was to assess the knowledge and attitudes of African American eighth grade students in the District of Columbia regarding HIV/AIDS. To accomplish this objective, data from the 2012 District of Columbia Middle School Youth Risk Behavior Survey (YRBS) were obtained from the District of Columbia Office of State Superintendent of Education (OSSE), tabulated, and downloaded into SPSS statistical software for analysis. In order to address the study's primary purpose, the following research questions, which were based on previous researches and literature served as the basis for the data analysis:

1. What is the attitude of eighth grade students in the District of Columbia toward HIV/AIDS with regard to transmission and education about HIV/AIDS?
2. To what extent has HIV education in the District of Columbia Public Schools influence the health behaviors and attitudes toward HIV/AIDS of African American eighth grade students?
3. Are there any significant gender differences with regard to the attitude of African American eighth grade students towards HIV/AIDS?

I employed both descriptive and inferential analyses to answer the three research questions. The analyses of age at first intercourse, number of sex partners, and use of condoms during the last sexual encounter were restricted to those African American eighth grade students in Washington, D.C. who had ever had sexual intercourse. Students

who responded *not sure* to these questions were also not included in the analyses. The number of participants for each analysis differed as each variable had some missing data.

Chi-square is one of the most used member of the nonparametric family of statistical tests. For the purpose of this study, chi-square was used to test the differences between two groups. A chi-square test was used to compare the proportion across sub-groups. An independent t test was also used to compare mean number of sexual partners between two groups. Statistical significance was assessed at 95% confidence interval. For the purpose of this analyses the respondents were divided into the following groups:

1. Students that were taught AIDS and HIV infection in class and those that were not taught the subject in class.
2. Female students and male students.

Participants

Unlike in other states, where small samples of the population of interest were taken for investigation, the District of Columbia investigated nearly the whole population of students of interest. The sample is highly representative because the sample was a very high percentage of the total population. For this study, I obtained the 2012 data for eighth grade students in the District of Columbia Public Schools only. The office of State Superintendent of Education conducted the District of Columbia Middle School Youth Risky Behavior Survey (YRBS) between October 31, 2012 and January 28 2013. Of the 74 Middle Schools qualified and invited to participate in the YRBS, 69 participated. Furthermore, of the 11,455 eighth grade students that were enrolled in a qualified Middle School, 9,418 participated fully in the voluntary survey. This yielded an 82% response

rate. Of those that participated in the survey, 1933 were African American eighth grade students.

The 2012 District of Columbia Middle School YRBS is divided into 13 sections. For this study, however, only seven sections were relevant to answering the research questions, which were: general demographic, tobacco use, alcohol consumption, marijuana use, other drug usage, sexual intercourse, and other related topics. These sections were important to this study because, apart from section one, which summarizes the respondents' demography, the other sections deal specifically with risky youth behavior. A summary of the demographic data is presented in Tables 2 and 3.

The majority of the eighth grade students that completed the survey were 13 years old (1259 students representing 65.1%). Following 13 year old were 14 years old,(488 students representing 25.2%). 6.5% of the students were 12 years old (126 students) and 2.6% of the students were 15 years old (51 students). Two of the students were 10 years old or younger, and four students were 16 years old or older.

Table 1

Distribution of Age of Respondents

Age of students	Frequency	Percent	Valid percent	Cumulative percent
12 years old	128	6.6	6.6	6.6
13 years old	1259	65.1	65.2	71.9
14 years old	488	25.2	25.3	97.2
15 years old or older	55	2.8	2.8	100.0
Total	1930	99.8	100.0	
Missing	3	.2		
Total	1933	100.0		

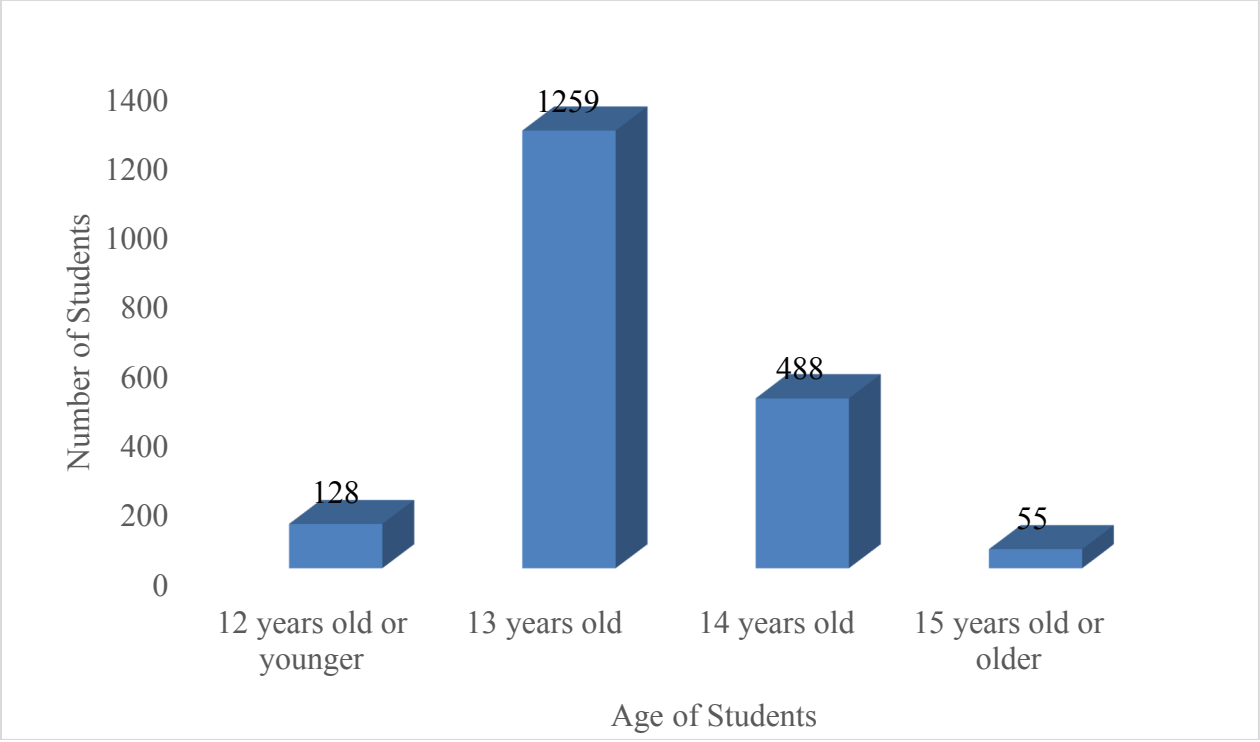

Figure 1. Bar chart showing the age distribution of students.

Table 2

Distribution of Students by Gender

Gender	Frequency	Percent	Valid percent	Cumulative percent
Female	1005	52.0	52.1	52.1
Male	923	47.7	47.9	100.0
Total	1928	99.7	100.0	
Missing	5	.3		
Total	1933	100.0		

It should be noted that not all students in the District of Columbia Public School were taught AIDS and HIV infection in class. The District of Columbia regulations mandate District public schools to provide comprehensive school health education, including instruction on human sexuality and reproduction. The instruction, which must include information on the human body, intercourse, contraception, HIV/AIDS, sexually transmitted diseases (STDs), pregnancy, abortion, among other topics, must be age-appropriate and taught in grades pre-kindergarten through 12 (Human Sexuality and Reproduction Act of 1979).

The regulations, however, allow parents or guardians to remove their children from sexuality education and/or STD/HIV education classes. This is referred to as an *opt-out* policy.

The data for the analyses were from the responses of African Americans eighth grade students only. No other ethnic group was included. Due to the sensitivity nature of the issues these questions addressed, I suppressed and removed from the data responses to Questions 6 and 43 that pertain to the students' sexual orientation and the number of

times they have been pregnant or gotten someone pregnant, respectively.

Research Question 1

The first research question was: What is the attitude of eighth grade students in the District of Columbia toward HIV/AIDS with regard to transmission of, and education on, HIV/AIDS? The purpose of this research question was to examine the behaviors of the eighth grade students that may expose them to HIV infection. It was also the purpose of this research question to determine the perception of the respondents about the level of risk taken for engaging in those behaviors. To answer this research question, questions 22 through 42 of the Youth Risk Behavior Survey were analyzed. Table 4 shows the distribution of the eighth grade students according to the age when they smoked a whole cigarette for the first time. The data indicated that 88.3% (1,663 respondents) had never smoked a whole cigarette.

- 11.8% of the eighth grade students have ever smoked a whole cigarette.
- 55 of the students (representing 24.9%) were 9 years or younger when they first smoked a whole cigarette for the first time.
- 6% (115 students) were actively smoking at the time of data collection (Table 4).
- The mean age for those who had smoked a whole cigarette is 10.98 years.
- 9.7% (186 students) were actively smoking cigars, cigarillos, or little cigars.

Table 3

Age When Student First Smoked a Whole Cigarette

Age	Frequency	Percent	Valid percent	Cumulative percent
9 years old or younger	55	24.9	24.9	24.9
10 to 12 years old	103	46.6	46.6	38.0
13 years or older	63	28.5	28.5	100.0
Total	221	100.0	100.0	

Table 4

Number of Days of Smoking in the Previous 30 Days

Number of days	Frequency	Percent	Valid percent	Cumulative percent
0 days	1804	93.3	94.0	94.0
1 or 2 days	61	3.2	3.2	97.2
More than 2 days	54	2.8	2.8	100.0
Total	1919	99.3	100.0	
Missing	14	.7		
Total	1933	100.0		

Table 5

Number of Days Students Smoked Cigars & Related Products in the Previous 30 Days

Number of days	Frequency	Percent	Valid percent	Cumulative percent
0 days	1729	89.4	90.3	90.3
1 or 2 days	81	4.2	4.2	94.5
More than 2 days	105	5.4	5.4	100.0
Total	1915	99.1	100.0	
Missing	18	.9		
Total	1933	100.0		

Alcohol consumption

Of the 1853 that responded to the question about when they had had their first drink of alcohol other than a few sips, 772 (39%) have had a drink of alcohol previously. 19.1% of these students who have had a drink of alcohol previously had it at eight years old or younger. The data also indicated that 323 students were actively drinking alcohol at the time of data collection. As shown in Table 9, 26.9% of the students think that people are at great risk of harming themselves (physically or in other ways) if they have five or more drinks of alcohol including beer, wine or alcohol once or twice a week. As shown in Table 9, 20.9% of the students think having five or more drinks once or twice a week puts people at no risk of harming themselves physically or in other ways.

Table 6

Age When Students had Their First Drink Other Than few Sips

	Frequency	Percent	Valid percent	Cumulative percent
I have never had a drink of alcohol other than a few sips	1131	58.5	61.0	61.0
9 years old or younger	187	9.6	10.1	71.1
10 years old	78	4.0	4.2	75.3
11 years old	126	6.5	6.8	82.1
12 years old	137	7.1	7.4	89.5
13 years or older	194	10.0	10.5	100.0
Total	1853	95.9	100.0	
Missing	80	4.1		
Total	1933	100.0		

Table 7

Number of Days With at Least one Drink of Alcohol in the Previous 30 Days

	Frequency	Percent	Valid percent	Cumulative percent
0 days	1570	81.2	82.9	82.9
1 or 2 days	210	10.9	11.1	94.0
More than 2 days	113	5.9	6.0	100.0
Total	1893	97.9	100.0	
Missing	40	2.1		
Total	1933	100.0		

Table 8

Students' Perception of Level of Risk of Harming Oneself if one has Five or More Drinks of Alcohol

	Frequency	Percent	Valid %	Cumulative %
No risk	392	20.3	20.9	20.9
Slight risk	409	21.2	21.8	42.6
Moderate risk	574	29.7	30.5	73.1
Great risk	505	26.1	26.9	100.0
Total	1880	97.3	100.0	
Missing	53	2.7		
Total	1933	100.0		

Marijuana use. With regards to marijuana use, 75.2% of the 1875 students that responded to the question indicated that they have never tried marijuana, while 24.8% have tried marijuana (see Table 9). Furthermore, 323 students, representing 17.2%, were actively using marijuana (see Table 10). The analysis of the data, as shown in Table 11, shows that 20.6% of the students think that people risk harming themselves greatly if

they use marijuana. However, 59.5% think people expose themselves to little or no risk of harming themselves.

Table 9

Age when students tried marijuana for the first time

	Frequency	Percent	Valid Percent	Cumulative Percent
I have never tried marijuana	1410	72.9	75.2	75.2
8 years old or younger	52	2.7	2.8	78.0
9 to 10 years old	71	3.7	3.8	81.8
11 years old	65	3.4	3.5	85.2
12 years old	148	7.7	7.9	93.1
13 years old	129	6.7	6.9	100.0
Total	1875	97.0	100.0	
Missing	58	3.0		
Total	1933	100.0		

Table 10

Number of Days Students Used Marijuana in the Previous 30 Days

	Frequency	Percent	Valid Percent	Cumulative Percent
0 days	1552	80.3	82.8	82.8
1 or 2 days	124	6.4	6.6	89.4
More than 2 days	199	10.3	10.6	100.0
Total	1875	97.0	100.0	
Missing	58	3.0		
Total	1933	100.0		

Table 11

Students' Perception of Level of Risk of Harming Oneself if one Uses Marijuana Once a Month

	Frequency	Percent	Valid Percent	Cumulative Percent
No risk	617	31.9	32.9	32.9
Slight risk	499	25.8	26.6	59.5
Moderate risk	378	19.6	20.1	79.6
Great risk	383	19.8	20.4	100.0
Total	1877	97.1	100.0	
Missing	56	2.9		
Total	1933	100.0		

Use of other drugs. As indicated in Table 12, no fewer than 280 students (14.9% of the respondents) were actively using synthetic marijuana (also called K2, Spice, RedXDawn, Fake weed, Skunk, Moon Rocks, or Hannah Montana). Also 79 students (4.2%) indicated that they have taken cocaine before, and 250 (13.3%) students have sniffed glue, breathed the contents of spray cans, or inhaled any paints or sprays to get high. Furthermore, 53 students (2.8%) have taken steroid pills or shots without a doctor's prescription, and 121 (6.5%) have taken prescription drugs such as Oxycontin, Percocet, Vicodin, codeine, Adderall, Ritalin, or Xanax without a doctor's prescription (see Table 13).

Table 12

Number of Times Students Have Used Synthetic Marijuana & Related Products in The Previous 30 days

	Frequency	Percent	Valid Percent	Cumulative Percent
0 days	1603	82.9	85.1	85.1
1 or 2 days	135	7.0	7.2	92.3
More than 2 days	145	7.5	7.7	100.0
Total	1883	97.4	100.0	
Missing	50	2.6		
Total	1933	100.0		

Table 13

Drugs Taken Without a Doctor's Prescription

Type of drug	Yes	%	No	%	Total
Cocaine	79	4.2	1796	95.8	1875
Glue, spray can, etc.	250	13.3	1624	85.7	1874
Steroid pills or shot w/o prescription	53	2.8	1808	97.2	1861
Controlled drug w/o prescription	121	6.5	1750	93.5	1871

Sexual Encounter. Of the 1700 eighth grade students that completed the YRB survey in 2012:

- 30.2% had ever had sexual intercourse.
- 51.3% of the 514 that have had sexual intercourse, had the sexual encounter before they got to middle school.
- 63.2% of the 514 have had sexual intercourse with more than one person.

- 19.2% of the 514 have had sexual intercourse with 6 or more people during their life.
- 21.9% of the 514 did not use a condom the last time they had sex.

Table 14

Have you Ever had Sexual Intercourse?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	514	26.6	30.2	30.2
No	1186	61.4	69.8	100.0
Total	1700	87.9	100.0	
Missing	233	12.1		
Total	1933	100.0		

Table 15

Age When Student had Sexual Intercourse for the First Time

	Frequency	Percent	Valid Percent	Cumulative Percent
I have never had sexual intercourse	1139	58.9	69.2	69.2
8 years old or younger	81	4.2	4.9	74.1
9 to 10 years old	99	5.1	6.0	80.1
11 years old	80	4.1	4.9	85.0
12 years old	108	5.6	6.6	91.6
13 years or older	139	7.2	8.4	100.0
Total	1646	85.2	100.0	
Missing	287	14.8		
Total	1933	100.0		

Table 16

Number of People With Whom Students Have Ever had Sexual Intercourse

	Frequency	Percent	Valid Percent	Cumulative Percent
I have never had sexual intercourse	1178	60.9	69.7	69.7
1 person	188	9.7	11.1	80.9
2 people	101	5.2	6.0	86.9
3 people	61	3.2	3.6	90.5
4 or 5 people	63	3.3	3.7	94.2
6 or more people	98	5.1	5.8	100.0
Total	1689	87.4	100.0	
Missing	244	12.6		
Total	1933	100.0		

Table 17

Did you use Condom the Last Time you had sexual intercourse?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	393	78.1	78.1	93.4
No	110	21.9	21.9	100.0
Total	503	86.8	100.0	

Table 18

Have you ever been taught about AIDS or HIV infection in school?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	1297	67.1	71.9	71.9
No	364	18.8	20.2	92.1
Not sure	143	7.4	7.9	100.0
Total	1804	93.3	100.0	
Missing	129	6.7		
Total	1933	100.0		

The students were also asked to indicate whether or not, in the previous 12 months, they have seen or heard any alcohol, tobacco, or other drug prevention messages from sources outside their school, such as on posters, flyers, the radio, the internet, or television. 60.3% have seen or heard these messages from sources outside their school. 25.6% have not heard any such prevention messages, and 14.2% are not sure whether or not they have heard such messages.

Table 19

Have you Observed Alcohol, Tobacco, or any Other Drug Prevention Messages From Sources Outside Their School in the Past 12 Months?

	Frequency	Percent	Valid Percent	Cumulative Percent
Yes	1068	55.3	60.3	60.3
No	453	23.4	25.6	85.8
Not sure	251	13.0	14.2	100.0
Total	1772	91.7	100.0	
Missing	161	8.3		
Total	1933	100.0		

Research Question 2

The second research question was: To what extent has HIV education in the District of Columbia Public Schools influence risky behaviors among African American students that place people at risk of becoming infected with HIV/AIDS?

The purpose of this research question was to investigate whether or not the HIV/AIDS prevention program in the District of Columbia Public Schools has produced the desired result of discouraging students from engaging in behaviors that may expose them to HIV infections.

Sexual encounter. Among students who had been taught about AIDS and HIV infection (1187), 30.4% (361) reported having had sexual intercourse, compared to 27.8% (88) of the 316 students who did not attend any such education program. (see Table 20). A Chi-square test indicated that the proportion of students who have had sexual intercourse were similar for both groups. $\chi^2_{(1)} = 0.67$, P = 0.414, suggesting no association between attending an education program on HIV/AIDS and sexual intercourse.

Table 20

Participants With and Without Education on HIV/AIDS Among Those who Have had Sexual Intercourse

Ever been taught about AIDS or HIV infection in school	Ever had sexual intercourse				
	Yes	%	No.	%	Total
Yes	361	30.4	826	69.6	1187
No	88	27.8	228	72.2	316
Total	449	29.9	1054	701	1503

Age at first sexual intercourse. The distribution of age at first intercourse among participants with and without education of HIV/AIDS is depicted in Table 21. The percentage distribution of age at first intercourse appears to be similar in the two groups, with more than 25% having their first intercourse at 13 years of age or more. A chi-square test indicated that the distribution of age at first intercourse was similar in the two groups, $\chi^2_{(5)} = 6.04$, P = 0.302. Thus, age at first intercourse was not affected by the education on HIV/AIDS.

Table 21

Age at First Intercourse Among Those With and Without Education on HIV/AIDS

Age in years at first inter-course	Ever been taught about AIDS or HIV infection in school	
	%Yes	%No
≤ 8	14.9	16.1
9 to 10	20.3	13.8
11	16.9	10.3
≥12	21.6	26.4
≥ 13	26.4	33.3
Total	100	100

Number of sex partners. The distribution of the number of sexual partners among those with and without education on HIV/AIDS is shown in Table 22. The proportion of students with multiple sex partners among those with and without classroom education on AIDS and HIV infection was 65.2% and 52%, respectively. The proportion of students with a single sexual partner among those with and without education on HIV/AIDS was 34.8% and 47.7%, respectively.

An independent *t*-test was conducted to determine if there was a difference in the mean number of sex partners for students that were educated on AIDS and HIV infection in class and students that were not taught the subject. There was a statistically significant difference between the mean number of sex partners of students with HIV/AIDS knowledge (N = 362, M = 2.30, SD = 0.954) and students without AIDS/HIV knowledge (N= 86, M = 2.05, SD = 1.005), $t_{123.97} = 2.16$, P = 0.033. The analysis indicated that students that were taught AIDS and HIV infection in class, on average, have more sex partners than students that were not.

Table 22

Number of sex Partners Among Eighth Grade Students With and Without Education on HIV/AIDS

No. of sex partners	Attended education program on HIV/AIDS	
	%Yes	%No
0	69.4	72.8
1	10.6	13
2 or more	20	14.2
Total	100	100

Use of condom during the last sexual encounter. The proportion of students who used a condom among those with and without education on HIV/AIDS was 78.2% and 79.5% respectively. A Chi-square test indicated that the proportion of eighth grade students in the two groups who used a condom was similar, $\chi^2_{(1)} = 0.01$, $P = 0.916$.

Table 23

Use of Condom Among Those With and Without Education on HIV/AIDS

Attended education program on HIV/AIDS	Use of condom	
	%Yes	%No
Yes	78.2	21.8
No	79.5	20.5
Total	78.5	21.5

Research Question 3

The third research question was: Are there any significant gender differences with regard to the attitude of African American eighth grade students towards HIV/AIDS?

The purpose of this research question is to determine whether one gender is receptive of the District of Columbia HIV/AIDS prevention program than the other. To answer this research question, analysis of data on sexual intercourse, age at first intercourse, number of sexual partners, and use of condom during the last sexual encounter was performed.

Sexual encounter. The proportion of male students reported ever having had sexual intercourse was 48.3% (375 of 777) as compared to 15.1% (139 of 922) of the female students. A Chi-square test indicated that the proportion was significantly higher in males, $\chi^2_{(1)} = 218.5$, $P < 0.001$. Odds ratio (OR) analysis revealed that the odds of sexual intercourse in males was 5.3 times higher as compared to that in females and the actual OR could be anywhere between 4.2 and 6.6, OR = 5.3, 95% CI: 4.2 – 6.6.

Table 24

Male and Female Students who Have had sex

Gender	Ever had sexual intercourse				
	Yes	%	No.	%	Total
Male	375	48.3	402	51.7	777
Female	139	15.1	783	84.9	922
Total	514	30.3	1185	69.7	1699

Age at first sexual encounter. The distribution of age at first intercourse is depicted in Table 25. Male students appear to have had sexual intercourse at a relatively younger age compared to their female counterparts. A Chi-square test indicated that the distribution of age at first intercourse was similar for both genders, $\chi^2_{(5)} = 39.4$, $P < 0.001$.

Table 25

Age at First Intercourse by Gender

Age in years at first inter-course	Gender	
	%Male	%Female
≤ 8	17.6	11.1
9 to 10	23.7	6.7
11	17.4	11.9
12	19.8	26.7
≥ 13	21.5	43.7
Total	100	100

Number of sex partners. The distribution of the number of sexual partners is shown in Table 26. An independent-samples t test was conducted to examine if there was any significant difference between male and female eight grade students surveyed who have had sexual intercourse in terms of the number of sexual partners they have had. The test was significant, $t_{313} = 3.43$, $P < 0.001$ and the proportions of male and female eighth grade students who have had sex with more than one partner were 67.7% and 51.1%, respectively. Male students had a mean number of 4.0 (SD 1.6) sexual partners, compared to 3.3 (SD 1.6) in females. In other words, the mean number of sexual partners of male students was significantly higher than that of female students.

Table 26

Number of Sexual Partners Among Students who Have had Sexual Intercourse

Number of sexual partners	Gender			
	Male	%	Female	%
1	120	32.3	68	48.9
2 or more	251	67.7	71	51.1
Total	371	100	139	100

Use of condom during the last sexual encounter. The proportion of male students who used a condom was 81.6% compared to 69.4% among female students. Condom usage among African American male and female eighth grade students was similar, $\chi^2_{(1)} = 7.8$, P = 0.005. Odds ratio analysis revealed that the odds of condom use was 1.95 times higher among male students than female students, and the actual OR could be anywhere between 1.24 and 3.07, OR = 1.95, 95% CI: 1.24 – 3.07.

Table 27

Use of Condom Among Students who Have had Sexual Intercourse.

Gender	Use of condom during the last sexual encounter	
	%Yes	%No
Male	81.6	18.4
Female	69.4	30.6
Total	78.3	21.7

Summary

This chapter has included the results from the analysis of data for African American eighth grade students taking the 2012 District of Columbia Middle School Youth Risk Behavior Survey. The following are the key findings:

1. Few students have been engaged in behavior that may expose people to HIV infections as early as when they were 8 years old or younger.
2. Up to 20.2% of the respondents were not taught about AIDS or HIV infection at school.
3. Most eighth grade students do not consider alcohol consumption, cigarette smoking, drug and marijuana use, and illegal prescription use as posing a great risk (physical or otherwise) to people.
4. Students who receive classroom instruction on AIDS and HIV infection have more sex partners than those that did not receive such instruction.
5. Male students seem to be more active in sexual activities. More of the male students had had sexual intercourse, started their first intercourse at relatively younger age, had a larger number of sexual partners and used a condom more often than the female students.

Chapter 5 includes the conclusion of the study, including summary of findings, recommendations for consideration by schools' administrators and education policies makers, recommendation for further researches, and social implications.

Chapter 5: Conclusions and Recommendations

Introduction

The purpose of this study was to assess the knowledge and attitudes of African American eighth grade students in the District of Columbia regarding HIV/AIDS. The study, therefore, employed a quantitative method and used inferential and descriptive analysis of the 2012 District of Columbia YRBS data for eighth grade students. Data was obtained from the District of Columbia OSSE. The study sought to determine if the education provided to the District of Columbia Public Schools' students on AIDS or HIV infection (knowledge) has any effect on the risk behaviors (attitude) that may increase the risk of exposure to HIV infection. The ultimate goal is to develop intervention strategies that would prevent students from engaging in behaviors that may expose people to HIV infection.

This study relied on secondary data obtained from OSSE. The secondary data was a product of a survey questionnaire administered by OSSE. A total of 1933 African American eighth grade students from 69 middle schools participated in the survey out of which 1928 completed the survey. Five students did not complete the survey. These students that completed the survey were made up of 1,005 female students and 923 male students, and at least 99.7% of the students that participated in the survey were between the ages of 11 and 15 years.

This chapter includes an interpretation and discussion of the results of the data analyses that I performed in Chapter 4 that relate to the research questions and literature reviewed in Chapter 2. The implications of the findings are discussed, recommendations

made and the social implication of the study is also highlighted in this final chapter. Furthermore, recommendations for further research based on the findings of this study are also discussed.

From the results of the data analysis that I discussed in Chapter 4, knowledge of HIV and AIDS did not seem to have any effect on the sexual behavior of African American eighth grade students in the District of Columbia. The study findings, however, indicated that male students seem to be more active in sexual activities than female students. More of the male students had sexual intercourse, had intercourse for the first time at a younger age, had more number of sexual partners, and used condoms more often than the females.

Summary of Findings

The results of the analyses of the 2012 YRBS data obtained from OSSE in the District of Columbia provide insight into the relationship between students' knowledge of HIV/AIDS (independent variable) and risky attitude (dependent variables). The analysis also revealed gender differences in attitude of the eighth grade students towards HIV/AIDS. The findings are discussed according to the research questions and in relation to the literature reviewed in Chapter 2.

Research Question 1

The first research question was: What is the attitude of eighth grade students in the District of Columbia toward HIV/AIDS with regard to transmission of, and education about, HIV/AIDS? The results of descriptive statistics, when taken within the context of the findings of Laurencin et al. (2008), Broyles (2008), and Cerwonka, Isbell, and Hansen

(2000), suggested that African American eighth grade students are engaged in risky behavior that may expose them to HIV infection. These authors attributed the high incidence of HIV infection in the United States to risky behaviors related to drug use, alcohol consumption, and sexual encounter.

These findings are also align with the observations of Greenberg et al. (2009). These authors observed that though HIV/AIDS is not a disease that is rampant among the youth in the District of Columbia, the incidence of STIs other than HIV is high in youth of the District of Columbia, implying the presence of risky behavior. Therefore, the authors warned that in order for the current efforts to curtail HIV transmission to succeed, there is a need to build HIV/AIDS awareness and encourage protective behavior among youth.

The results of the current study also indicated that many of the eighth grade students do not consider their behavior as being capable of exposing them to great risk of physical or other harm. In other words, many of them do not consider alcohol consumption, and marijuana and drug use as risky behaviors. These findings support the concerns raised by The National Institute of Allergy and Infectious Diseases (NIAID, 2008) and the observation of Fischhoff, Nightingale, and Iannotta (2001). NIAID (2008) suggested that the growing infection rate among adolescents and young adults may be partly related to an attitude of invincibility that causes them to engage in risky behaviors, thus leading to infection. Likewise, Fischhoff, Nightingale, and Iannotta (2001) noted that adolescents often acted in a manner that was not in their best interests. According to the authors, some adolescents are possibly drawn to risky behavior because of their

perception of invulnerability.

The National Youth Risk Behavioral Survey of 2008 showed that 7.4% had sexual intercourse before the age of 13 (CDC, 2008). In addition, the report indicated that more African American children reported having had sexual intercourse before the age of 13 than those from any other racial group. The findings of the current study, where 22.4% of the students had sexual intercourse before the age of 13, are consistent with those published by the CDC in 2008.

Research Question 2

The second research question was: To what extent has HIV education in the District of Columbia Public Schools influenced risky behaviors among African American students that place people at risk of becoming infected with HIV/AIDS?

Sexual intercourse and age at first sexual intercourse. The results of the Chi-square test suggested no association between attending education program on HIV/AIDS and having sexual intercourse or age at first intercourse ($\chi^2_{(1)} = 0.67$, $p = 0.414$). Similarly, the distribution of age at first intercourse was similar in the two groups, $\chi^2_{(5)} = 6.04$, $p= 0.302$. Thus, age at first intercourse was not affected by the students' class knowledge of AIDS and HIV infection. These findings contrast with the theory of reason action which is based on the assumption that human beings are rational and, not only would they make systematic use of information around them, they also consider the likely consequences of their behavior (Ajzen, 1980). The theory suggests that, with experience and better information, individuals will make better decisions regarding risky health and sexual behaviors. Based on this theory, one would expect that students who were taught

AIDS and HIV infection in class would have delayed having sexual intercourse. However, the results did not support this hypothesis.

Number of sex partners. Results of an independent t-test indicate a significant statistical difference between the mean number of sex partners of students who were taught AIDS and HIV infection in class (n= 362, M = 2.30, sd = 0.954) and students who were not taught the subject (n= 86, M = 2.05, sd = 1.005), $t_{123.97} = 2.16$, P = 0.033. The findings of this study indicate that the proportion of students with multiple sex partners among those with and without classroom education on AIDS and HIV infection were 65.2% and 52% respectively.

This result is particularly interesting in relation to the theory of reasoned action. Although there was a significant difference between the mean number of sex partners of students with and without classroom knowledge of HIV/AIDS, the difference was not the type suggested by the theory of reasoned action and social cognitive theory. The theory of reasoned action would suggest that students who were taught about AIDS and HIV infection in class would avoid risky sexual behavior. To the contrary, the result negates the theory of reasoned action.

Use of condom during the last sexual encounter. Result of a Chi-square test ($\chi^2_{(1)} = 0.01$, $p= 0.916$) failed to establish a significant statistical difference between the proportion of students who were taught AIDS and HIV infection in class that used condoms and proportion of those students that were not taught the subject using condoms. The proportion of eighth grade students in the two groups who used condoms were similar, The proportion of students who used a condom the last time they had sexual

intercourse, among those with and without education on HIV/AIDS, was 78.2% (277 of 354) and 79.5% (66 of 83), respectively. The similarity and high usage of condom by these students may not be unconnected to the various strategies, conventional and unconventional, adopted by the District of Columbia, to make condoms available to the residents of the city.

Research Question 3

The third research question was: Are there any significant gender differences with regard to the attitude of African American eighth grade students towards HIV/AIDS?

Sexual intercourse and age at first sexual intercourse. Results of a Chi-square test, $\chi^2_{(1)} = 218.5$, $p < 0.001$, indicated that there is a significant difference between the proportion of male students and female students that have engaged in sexual intercourse. According to the result, 48.3% of eighth grade students who are male have had sexual intercourse, compared to 15.1% of female students at the same grade. Similarly, male students appear to have become sexually active at a relatively younger age as compared to their female counterparts. These findings are consistent with a 2008 study which revealed that 75% of people living with HIV in the US in 2008 were male, and 25% were female (Moore, 2011). The results suggest that more eighth grade male students than female students, in the District of Columbia public schools, were engaging in risky behaviors that can expose them to HIV infection.

Number of sex partners. Results of the independent t-test indicated that the mean number of sex partners of male students was significantly higher than the mean number of sex partners of female students, $t_{313} = 3.43$, $p < 0.001$. This shows not only that

more eighth grade male students have had sexual intercourse, they had sexual intercourse at an earlier age than their female counterparts. The male eighth grade students have also had more sex partners than their female counterparts. This result also suggests that more male students than female students engaged in risky behavior that may expose them to HIV infection.

Use of condom. Results of a Chi-square test, $\chi^2_{(1)} = 7.8$, $p = 0.005$, establish a significant statistical difference between the proportion of male students and female students whose previous sexual intercourse involved the use of a condom. 81.6% male students compared to 69.4% female students used a condom the last time they had sexual intercourse. This result suggests that female students were not insisting that male partners use a condom during sexual encounter.

Implications for Positive Social Change

The devastating impact of HIV/AIDS is much more significant among African Americans than in any other ethnic group in the United States. Though they represented just 12% of the U.S. population in 2011, African Americans accounted for about 47% of new incidences of HIV in 2011. Furthermore, African Americans made up 17% of the adolescent population of the U.S. but accounted for 67% of HIV positive youth aged 13 to 19 in 2011 (CDC, 2013a). Though HIV/AIDS is not yet a serious among youth in D.C. Greenberg et al. (2009) warned that there is a need to increase the number of HIV/AIDS-educated youth who will avoid risky behaviors that may lead to the transmission of HIV in adulthood.

Ben-Zur (2003) observed that, as relationship patterns and social context develop and the quest for freedom from parents becomes more important, peers become the major source of information, support, and behavior for adolescents. The school environment becomes an ideal place where risky behaviors, including tobacco use, alcohol consumption, marijuana and other drug use, and unprotected sex are cultivated. In light of this environment of elevated HIV risky behaviors, the CDC argued that if such risky behavior is not addressed in youths, they may carry their risky behavior into adulthood where the rate of HIV infection is higher (CDC, 2010).

There is the need, therefore, to develop strategies to curtail the transmission of HIV in schools. The CDC (2010) argued that, because schools have direct contact with 56 million adolescents and youths, 6 hours a day, for 13 vital years of their social, physical, and intellectual development, they are important partners in helping this group of people develop health-enhancing attitudes and behaviors that could last a lifetime, and more importantly, can help to curtail the spread of HIV infection.

The epidemic nature of HIV infection among African Americans in the District of Columbia underscores the need for research to inform the development of strategies that will help school children become HIV/AIDS educated, and education that will lead to the development of health-enhanced attitudes needed as students move into adulthood where the HIV infection rate is high. Findings from this study have important implications for social change in terms of the efforts to reduce the spread of HIV infection, not only among the pre-teen students, but also in the general community, and support the need for revision of the curriculum on health/sex education in D.C. public schools.

The theory of reasoned action provides several options for behavior/attitude modification. The theory is based on the assumption that an individual has control over their behavior and that their behavior is based on considering the advantages and disadvantages of the intended behavior (Morisky, 2002). It is understandable, therefore, to believe that individuals would be able to better consider these advantages and disadvantages if they have a good knowledge of the consequences of the behavior. To this end, good understanding, through education, on HIV/AIDS would prevent pre-teens from engaging in behaviors that may expose them to HIV infection.

Consequently, this study supports the promotion of educational programs that would provide adequate information on HIV/AIDS, the nature of the virus and disease, how it could be transmitted, and the behaviors that could lead to the exposure to the virus. Unlike previous literature that focus on adults and low income African Americans in HIV/AIDS prevention strategies, this study supports programs that will adequately prepare kids to be able to avoid the virus as they move into adulthood where the rate of infection is very high, especially among African Americans in the District of Columbia.

Recommendations for Action

Human Immunodeficiency Virus (HIV) is a retrovirus that attacks and destroys or impairs the functions of the cells of a host organism's immune system. It is the virus that causes AIDS, the short form for Acquired Immunodeficiency Syndrome. HIV is a pandemic that is spreading around the world affecting about 35 million people the world over. The District of Columbia is one of the areas hardest hit by HIV in the United States, and it is considered an epidemic in the District of Columbia. As of 2012, the time of the

data collection for this study, 14,465 people were living with HIV in the District of Columbia, representing 2.7% of the population (Kaiser Family Foundation, 2013).

Both government and non-governmental agencies, including professionals, have made efforts, over the years, to mitigate the epidemic nature of HIV/AIDS in the District of Columbia. A new partner, the school, has been identified in these efforts (CDC, 2010). The school is considered to be vital in the fight against the spread of HIV owing to the number of people that go through it, the hours of the day spent there, the influence of the school environment, and the opportunity to influence the behavior of people that go through it.

Education has been identified as one of the most effective preventive approaches against HIV/AIDS. Through this medium, African American school age children, who have the lowest infection rate compared to other age groups among African Americans, can be armed with the right information. The information can help them stay clear of the virus and grow into adults free of the infection. Based on this study, I make the following recommendations for action to support increased education in order to mitigate the spread of HIV and prevent AIDS:

1. There is a need to review HIV/AIDS-related curriculum for elementary and middle schools to make sure that it is culturally sensitive in addition to being science based and age-appropriate. There must be a reason why only 71.9% of the eighth grade students who participated in the survey were ever taught about AIDS or HIV infection in school.

2. Owing to the fact that HIV/AIDS has reached an epidemic stage in the District of Columbia, HIV/AIDS related classes should not be treated as any other subject in which students and their parents or guardians make the choice to participate or not. It should be mandatory, and the only way this is possible is to ensure that HIV/AIDS prevention programs for elementary, middle, and high schools are science based, age-appropriate and culturally sensitive.
3. I also recommend that an alliance be formed with scholars and experts in HIV prevention to organize seminars in middle schools to emphasize the dangers associated with some risky behaviors in which the pre-teens engaged. This could be organized twice every academic year, a forum that should bring every student in a particular grade or grades together. Students should be allowed to ask questions in such forum.
4. Research has shown that when people for whom policies are made are involved in the policy formulation process, they often work for its success. To this end I recommend that parents and guardians be well informed and fully involved in the design of HIV/AIDS prevention programs for public schools. This may come in the form of bulletins, forums, bulk text messages, and parent/guardian suggestion lines.
5. To gain wider acceptability and increased student/parent participation, I recommend that HIV/AIDS prevention programs be separated from sex education. In this way, HIV prevention programs can concentrate on the

teaching of abstinence, delaying first sexual intercourse, reducing the number of sex partners, and the elimination of unprotected sex.

6. The results of this study indicated that the proportion of male students whose previous sexual intercourse involved the use of a condom was higher than female students. Considering that female condoms are not common and not as easy to wear as male condoms, it is necessary to educate female students to insist that male students use condoms in order for the female students to consent to having sexual intercourse with the male students. I, therefore, recommend that female students be taught by female counselors how to resist and avoid any sexual intercourse that does not involve the use of condoms.
7. For it to be successful, the fight against HIV/AIDS should include everybody. So far, only the public schools are involved in the District of Columbia Youth Risk Behavior (YRB) Survey. I recommend that the government of the District of Columbia make HIV/AIDS prevention program mandatory for private schools also. Furthermore, private school students should be made to take the YRB survey in order to access the effectiveness of the HIV/AIDS preventive program.

Recommendations for Future Research

The following are my recommendations for future research based on the findings of this study: the high rate of non-participation in HIV/AIDS prevention programs among the African American eighth grade students in the District of Columbia needs to be examined. While a quantitative study like this would answer the question of what is it? A

qualitative study would answer the question of why is it? A qualitative study to examine the reasons why one out every five students surveyed did not participate in the program is recommended.

Another recommendation I make for future research includes the assessment of the qualification and preparedness of school teachers to teach sex, health, and HIV/AIDS programs in elementary and middle schools. A qualitative assessment of teachers' view of the program in terms of its relevance, appropriateness, resource availability for the program, and their level of involvement in the program development if any is needed.

I also recommend that a qualitative study be carried out to investigate the reasons why, in spite of HIV/AIDS prevention programs, African American pre-teens were still engaging in risky behaviors that could expose them to HIV infection. Results of this study also indicated that students who receive classroom instruction on AIDS and HIV infection had more sex partners than those that did not receive such instruction. I, therefore, recommend that a study be carried out to examine why this is the case.

Conclusion

It is undisputable that HIV infection in the District of Columbia has reached an epidemic state. It is also a fact that the group most affected by this epidemic is the African American population. Furthermore, despite the efforts of both government and non-governmental organizations to prevent the spread of the infection, African Americans children are still engaged in risky behaviors that may put them at risk of contracting the virus. At the moment, HIV infection rate among African American youth is very low compared to adults. In order to protect the youth from the infection before

they move to adulthood where infection rate is high, various HIV/AIDS prevention programs have been designed and implemented. This quantitative study explored the attitude and behavior of African American eighth grade students in the District of Columbia towards HIV/AIDS in spite of their exposure to HIV/AIDS prevention programs.

Results of the study indicate that the students are still engaged in behaviors that may expose them to HIV despite exposure to HIV/AIDS preventive programs. There is no statistically significant differences between students who were exposed to preventive programs and those that were not. Findings from this study support the recommendations for the revision of the HIV/AIDS prevention programs for the District of Columbia public schools. For it to be effective, I also recommend that the revised HIV/AIDS prevention program be science based, age-appropriate, and culturally sensitive.

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