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Contextual Factors and Direct Exposure to HIV: Influences on Youth Sexual Intention

Hadiza Ladidi Osuji
Walden University

Walden University

College of Health Sciences

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Hadiza Osuji

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Review Committee
Dr. Jennifer Oliphant, Committee Chairperson, Public Health Faculty
Dr. Cheri Langley, Committee Member, Public Health Faculty
Dr. James Rohrer, University Reviewer, Public Health Faculty

Chief Academic Officer
Eric Riedel, Ph.D.

Walden University
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Abstract

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MPA, Columbia University, 2006

BSc, University of Ilorin, 1995

Dissertation Submitted in Partial Fulfillment

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Abstract

Youth are having sexual intercourse at an early age and as such, are engaging in risky behaviors that are associated with adverse health outcomes, including HIV infection. Little research has been undertaken to examine the influence of contextual factors on youth intentions to delay sexual involvement. To address that gap, this study aimed to examine the influence of age, gender, race, immigration status, HIV knowledge, HIV-related stigma, concern about HIV, direct exposure to HIV/AIDS, peer pressure, and religious influence on youth intentions to delay sexual involvement. Delayed sexual involvement was conceptualized as youth attitudes towards abstaining from sex, their knowledge of the consequences of sexual involvement, and perceived parent or peer disapproval of the behavior. The theory of reasoned action was used as a framework to guide the study. The cross-sectional study involved secondary data analysis of baseline data pooled from a program evaluation. The sample included 536 urban low-income African American and Latino youth aged 11 to 16 years at high risk of HIV/AIDS. Multiple linear regression analyses revealed that the weighed combination of the predictor variables, age, gender, race, immigration status, HIV knowledge, direct exposure to HIV/AIDS, peer pressure, and religious influence explained the greatest variance of intention to delay sexual involvement ($R^2 = .246$, $p < .05$). Also observed was a significant relationship between age, gender, and sexual intentions across the regression models. These findings can enhance HIV prevention and social change initiatives because of the potential to impact youth early sexual debut, reduce risky sexual behavior, and consequently decrease the rates of HIV infection among youth.

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Dedication

I dedicate this study to my loving husband Joseph U. Osuji. Your never ending support, encouragement and sacrifices gave me the strength to keep going. I love you and yes, we did it! To my dear mom Salamatu Ali Musa (Mumze), who believed in me, and always encouraged and cheered me on. This study is dedicated to you too. Thank you both so much.

Acknowledgments

First of all, I give thanks with a grateful heart to Almighty God for his grace upon and seeing me through from the beginning to the end of this journey.

I am indebted to you Joseph U. Osuji my darling, for your support and unflinching love and above all, the sacrifices you made throughout this journey with me. You complete me, thank you so much. To my lovely children Obinna, Nneneya, Chinemerem, Kelechi, IfeanyiChukwu and Chinyere words cannot adequately express the joy of a grateful mother for your patience, love and support. I will always love you. My gratitude also goes to my siblings Rakiya, Mohmoh, Mariam, Adamu, Fati, Rabi, Moh'd, Aminu, Abubakar, and Jameel. I thank you for your prayers, words of encouragement and for cheering me on over the years. Special thanks to Dr. Mary McKay, your support, encouragement, guidance and mentorship have made an immeasurable impact on my life. You are one in a million.

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Chapter 1: Introduction to the Study

According to Healthy People (2020), the adolescent stage is generally a time of healthy life. However, significant public health and social problems such as exposure to sexually transmitted infections, including HIV, can become important health threats. This issue is especially the case when youth engage in early sexual initiation (Kaestle, Halpern, Miller, Ford, & 2005). The youth of African American and Hispanic descent should form the future economic bedrock in their immediate communities and the wider U.S. society. However, many are less likely to fulfill their potential because they are mired in the debilitating effects of HIV/AIDS, compounded by stigmatization, and to a lesser degree social ostracism. This situation then reduces their chances or excludes them from opportunities necessary to fulfilled life. As such, if not adequately arrested, this problem may result in a vicious circle, whereby a subculture of behavioral patterns such as engaging in sexual intercourse at an early age leads to HIV infection. As a result, acts as an additional stressor to compound the challenges of an already impoverished environment.

U.S. adolescents' early sexual debut began to increase in the 1980s when HIV was at its peak. However, despite recent reports indicating that the proportion of youth engaging in sex is becoming stable, the age of sexual initiation, especially among low-income African American and Latino youth has continued to decline. This trend is particularly worrisome because of its related health consequences and its contribution to ongoing health disparities (O'Donnell, O'Donnell, & Stueve, 2001). Although the rates of HIV infection are generally on the decline, the rate among young people is high and continues to increase (Jemmott, Jemmott, Braverman, & Fong, 2005; Rangel, Gavin, Reed, Fowler, & Lee, 2006). In spite of the prevalence of HIV infection among youth and the declining age of

sexual onset, surprisingly, there is little information regarding the impact of contextually relevant factors on youth intention to delay early sexual involvement.

Social Change Implications

In the United States today, Inner-city low-income African American and Latino youth are growing up at a stage where HIV is perceived to be a treatable disease (American Foundation for AIDS Research [amFAR], 2010). This misperception is fueled by the fact that youth have not witnessed the devastating effects of and death caused by AIDS the way it occurred in earlier decades (amFAR, 2010). Many are still less concerned about this issue and unmindful of their risk of contracting HIV (O'Sullivan, Udell, & Patel, 2006). According to the U.S. Census (2010), U.S. youth ages 10–19 make up about 14% of the total population (see also Centers for Disease Control and Prevention [CDC], 2010). In New York State alone, youth make up 13% of the state's total population, and these numbers continue to grow (U.S. Census, 2010). Early sexual involvement and the consequent HIV risk behaviors among youth are not just an individual, family, or community problem; they are a public health issue of great concern.

Research findings suggest that, compared to youth who delay sexual involvement, youth who engage in early sexual activities are more likely to continue with this form of behavior that places them at higher risk of HIV infection (Di Noia & Schinke, 2008; O'Donnell et al., 2001). Therefore, increasing knowledge regarding youth intention to delay sex is crucial to informing prevention efforts that can meet the needs of very high-risk youth with different sexual expectations and experiences (Whitaker, Miller, & Clark, 2000). Koo et al. (2011) mentioned that interventions are failing to affect youth behaviors and attitudes in the face of overwhelming contextual influences. Koo et al. endorsed redoubling of efforts and development of comprehensive interventions, especially at the

community level, to help youth avoid sexual involvement at an early age in order to improve their futures. In addition, the CDC (2010) pointed out that there is a need to reach this new generation of youth with effective HIV prevention programs and messages. The CDC further stressed that "we just cannot afford to lose the next generation to this potentially deadly, but preventable disease" (CDC Fact Sheet. 2014; p.1).

The current study addressed this concern empirically by focusing on the sexual intentions of youth. First, this research involved poverty-impacted youth at highest risk for STD and HIV infection. This study also identified key protective factors with the greatest impact on youth sexual intentions, providing knowledge that can inform HIV prevention programs and ultimately delay youth sexual involvement. The ultimate goal of this research is to decrease the prevalence of risky sexual behaviors, potentially helping to ameliorate the spread of HIV infection among youth. In addition, this study aims to provide hope that subsequent infusion of new knowledge into risk reduction and HIV programs will yield significant success in delaying youth sexual involvement. According to amFAR (2010), youth are exposed to multiple contextually-relevant influences that increase their risk for HIV infection. Therefore, a multifaceted, innovative, and comprehensive approach to HIV prevention or risk reduction is required to address this long time public health issue.

In this chapter, the major sections include the background of the study, problem statement, the purpose of the study, research questions and the hypothesis. Also included in this chapter are the theoretical framework guiding the study, the nature of the research, definitions, assumptions, scope and delimitations, limitations, and significance of the study.

Background

Adolescence is a period of transition from childhood to young adulthood. The term is often used interchangeably with *teens*, *youth*, or *minors*, but *minors* is used specifically

for those youth, who by law, cannot give consent (National Prevention Information Network, 2009). According to Healthy People (2020), adolescence is a critical transitional period for youth. Youth go through biological changes of puberty and the need to adapt to social, emotional, and cognitive changes, as well as negotiating increasing independence and normative experimentation. Therefore, it becomes imperative to pay attention to adolescent health. Adolescence is also marked by a period of heightened vulnerability to risky sexual behavior because subpopulations of adolescents live in high seroprevalence inner-city environments. This unfavorable environmental condition put them at higher than average risk for HIV, especially when they engage in sexual intercourse at an early age. Annually, nearly half of the 19 million new cases of STDs diagnosed in the United States occur among young people age 15 to 24 (Healthy People, 2020; National Prevention Information Network, 2011).

Although a large number of studies have focused on identifying the sociodemographic and family characteristics of youth sexual behaviors, what is not well understood is the impact of contextual factors on youth intention to delay sexual involvement (Lammers, Ireland, Resnick, & Blum, 2000). In addition, researchers often develop interventions that focus on HIV or sexual risk prevention interventions that provide many adolescents with the sexual health knowledge, skills and services they need. However, many of these youth still lack the motivation to delay sexual involvement (Di Noia & Schinke, 2008). Consequently, gaps in effective prevention efforts continue to exist and call for widespread prevention efforts that focus on multilevel, contextually relevant factors to successfully reach this target population with a view to arresting the spread of HIV/AIDS within the group.

The consequences of early and high-risk sexual behavior for urban minority youth have been and continue to be a big concern. STDs including HIV infection continue to rise among young people, with the youth of color, particularly African Americans and Latino youth, bearing the greatest risk (Advocates for Youth, 2012). Therefore, programs designed specifically for these youth are critically needed. This study is essential because it provides substantial knowledge regarding the necessary ingredients needed to create intervention programs focused on reducing risky behavior, preventing HIV infection, and thereby promoting youth health.

Problem Statement

One of the six areas identified by the CDC (2012, 2013) as the leading causes of mortality and morbidity among youths and all age-groups is sexual risk behavior (see also Fairbrother et al., 2005; Hearn, O'Sullivan, & Dudley, 2003). According to CDC [Youth Risk Behavior Survey], (2011), U.S. adolescents are engaging in sexual activities at an early age, which puts them at high risk of contracting STDs including HIV. The CDC (2013) reported that in 2011, 47% of high school students had engaged in sexual intercourse, and 7.4% of them had their first sexual intercourse before the age of 13. Of the 34% who had sexual intercourse during previous three months, 40% did not use a condom, and 15% had had sex with four or more partners during their lives. Additionally, 1 in 4 new HIV infections were reported to occur in youth between the ages of 13 to 24 years. About 60% of all youth infected with HIV do not know they are infected and are therefore not getting treated. As such, they are likely to propagate the virus unknowingly to others, placing their partners at risk and thereby creating a cycle of infection.

HIV infection continues to be an incurable health threat for young people, particularly youth of color living in high seroprevalence communities (amFAR, 2010;

CDC, 2007; Cubbin, Santelli, Brindis, & Braveman, 2005). African Americans share a greater burden of the disease compared to other racial or ethnic groups in the United States. African American and Latino youth living in communities with high rates of HIV are more likely to contract HIV and other infectious diseases compared to those who exhibit similar sexual risk behaviors but live in communities with low rates of HIV (Adimora, Schoenbach, & Floris-Moore, 2009; Hallfors, Iritani, Miller, & Bauer, 2007). Now, decades into the HIV epidemic, urban communities of color are still disproportionately impacted by this life threatening disease. African American adolescents accounted for nearly 69% of all newly reported HIV infections in 2010, and Latino accounted for about 20% (CDC, 2013; Kaiser Family Foundation, 2014). Also, African American and Latino young adults are disparately being diagnosed in their 20s, suggesting probable infection during adolescence (New York City Department of Health, 2010). The consequences of early sexual involvement can have a troubling effect on populations, economies, and even governments, if not adequately addressed. There is need to focus maximally on ameliorating this public health issue (Shafii & Burstein, 2009; Wisnieski, Sieving, & Garwick, 2013).

Substantial research has been undertaken to increase knowledge about HIV/AIDS and behavioral skills to help youth reduce their risky sexual behaviors (Coates, Richter, & Caceres, 2008; Jemmott, Jemmott, & Fong, 1992; Kirby, Laris, & Rolleri, 2006). Researchers have also focused on the correlates and risk factors for early sexual behaviors in adolescents (Rijsdijk et al., 2012; Sandfort et al., 2008). Additionally, evidence-based interventions on cognitive and behavioral skills have had a lasting impact on condom use (Jemmott, Jemmott, & Fong, 1998; Carvajal et al., 1999). However, little research has been done examining the intersection between contextual factors and intentions delay to delay sex.

Obin et al. (2004) reviewed adolescent sexual risk-reduction programs that were evaluated in the 1990s using quasi-experimental or experimental methods. Their findings suggested the need to develop and rigorously evaluate programs that can consistently delay the initiation of intercourse. Following exhaustive reviews of existing research conducted by Advocates for Youth, who also compiled a list of programs that were suggestive of efficacy in the prevention of HIV and sexually transmitted diseases (STDs), only 15 of such programs were found to be statistically significant in delaying the timing of first sex among the target youth, relative to control youth (Advocates for Youth, 2012). Therefore, researchers have paid little attention to the intersection of contextual issues and personal experiences on youth intention to delay sexual involvement (Dorswell, 2002; O'Sullivan & Brooks-Gunn, 2005; O'Sullivan, Mantsun, Harris, & Brooks-Gunn, 2007; Sieving, Eisenberg, Pettingell, & Skay, 2006). Wisnieski, Sieving, and Garwick (2013) also posited that individual-level and social contextual influences on young adolescents' sexual behaviors are outcomes that are rarely assessed.

Purpose of the Study

Therefore, this quantitative study aimed at examining the relationship between contextual factors, direct exposure to HIV/AIDS, and intentions to delay sexual involvement among youth ages 11–16 in the Bronx, New York. To achieve this aim, I examined baseline data pooled from a program evaluation of a NIMH funded study.

More specifically, I examined the relationship between multilevel factors and intentions to delay sexual involvement among low-income, at-risk, urban youth in the following order:

- Step 1: The association between demographic factors and youth intentions to delay sexual involvement,

- Step 2: The relationship between HIV knowledge, HIV-related stigma, concern about HIV and direct exposure to HIV/AIDS combined with the demographic factors and youth intentions to delay sexual involvement, and
- Step 3: The association between peer pressure and religious influence together with demographic factors and the second group level variables (HIV knowledge, concern about HIV and direct exposure to HIV/AIDS) and youth intention to delay sexual involvement (see Figure 1).

Therefore, the independent variables are age, gender, race, immigration status, HIV knowledge, HIV-related stigma, concern about HIV, direct exposure to HIV/AIDS (knowing someone who has HIV or died of HIV/AIDS), peer pressure situations, and religious influence. The dependent variable is the intention to delay sexual involvement. The current research adds to the conceptual understanding of factors that impact youth sexual intentions. Further, this study provides valuable information regarding the necessary ingredients to create and sustain interventions or programs focused on promoting youth health and preventing sexual health risk.

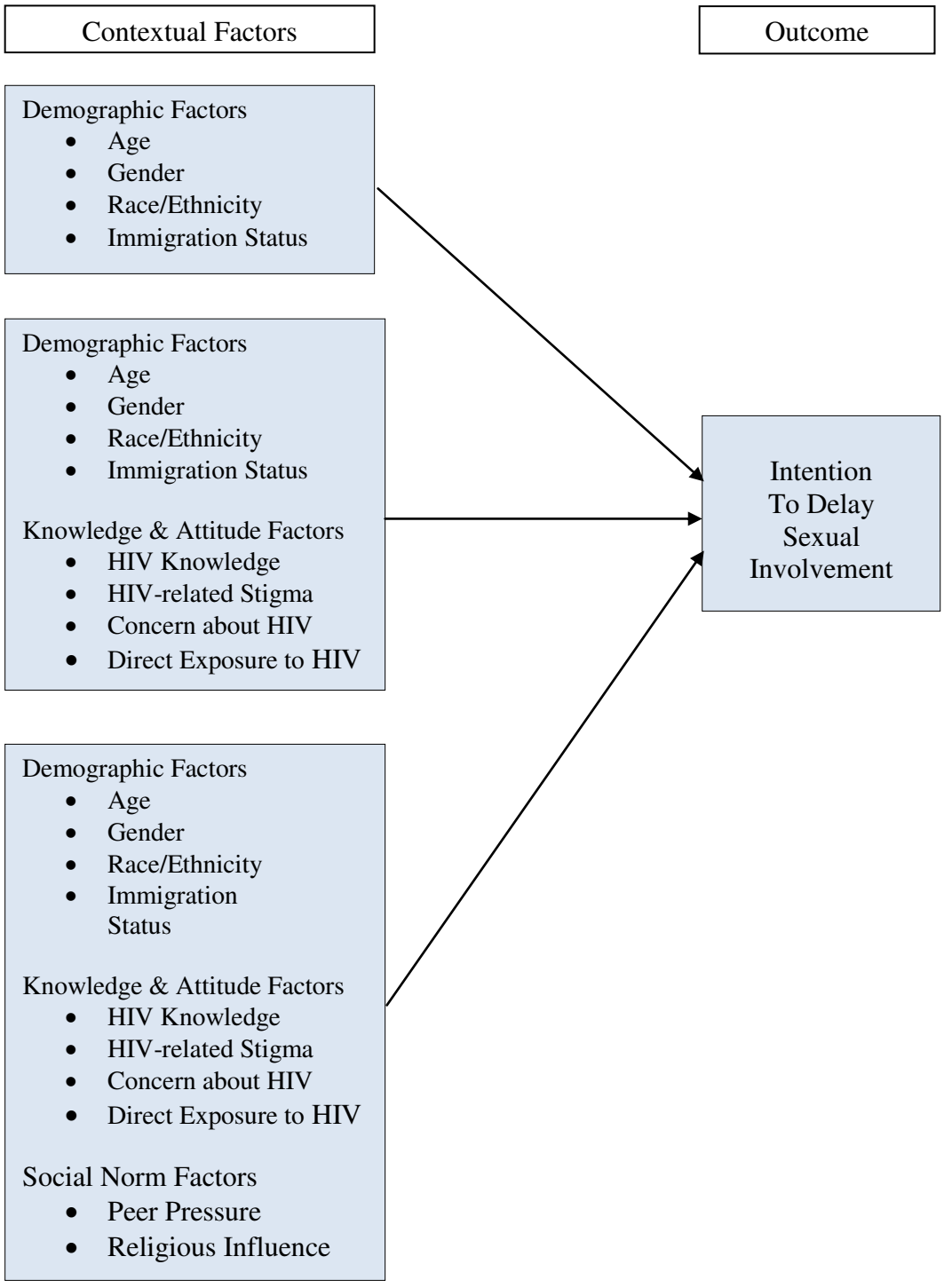

*Figure 1***.** Research model.

Research Questions and Hypotheses

1. Is there a relationship between age and youth intention to delay sexual involvement?
    i. Hypothesis 1: Sexual intentions are related to and vary with age.
    ii. Null Hypothesis 1: Sexual intentions are not related to age, and there is no variation by age.
2. Is there a relationship between gender and youth intention to delay sexual involvement, when gender is added to age?
    iii. Hypothesis 2: Sexual intentions are related to and vary by gender and age.
    iv. Null Hypothesis 2: Sexual intentions are not related to gender and age, and there is no variation by gender and age.
3. Is there a relationship between race/ethnicity and youth intention to delay sexual involvement, when gender and age are added to race/ethnicity?
    v. Hypothesis 3: Sexual intentions are related to and vary by race/ethnicity, gender, and age.
    vi. Null Hypothesis 3: Sexual intentions are not related to race/ethnicity, gender, and age, and there is no variation by race/ethnicity, gender, and age.
4. Is there a relationship between immigration status and youth intention to delay sexual involvement when race/ethnicity, gender, and age are added to immigration status?
    vii. Hypothesis 4: Sexual intentions are related to and vary by immigration status, race/ethnicity, gender, and age.
    Viii. Null Hypothesis 4: Sexual intentions are not related to immigration status, race/ethnicity, gender and age and there is no variation by immigration status, race/ethnicity, gender, and age.

5. Is there a relationship between HIV knowledge and youth intentions to delay sexual involvement when HIV knowledge is added to demographic variables (age, gender, race/ethnicity and immigration status)?

    ix. Hypothesis 5: HIV knowledge when added to demographic variables (age, gender, race/ethnicity and immigration status) will be more significantly related to youth intention to delay sexual involvement than the impact demographic variables alone will have on youth sexual intentions.

    x. Null Hypothesis 5: HIV knowledge, when added to demographic variables, will not be more significantly related to youth intention to delay sexual involvement than the impact demographic variables alone will have on youth sexual intentions.

6. Is there a relationship between HIV-related stigma and youth intentions to delay sexual involvement when HIV-related stigma is added to HIV Knowledge and demographic variables?

    xi. Hypothesis 6: HIV-related stigma when added to HIV knowledge and demographic variables will be more significantly related to youth intentions to delay sexual involvement than the impact HIV Knowledge and demographic variables alone will have on youth sexual intentions.

    xii. Null Hypothesis 6: HIV-related stigma when added to HIV knowledge and demographic variables will not be more significantly related to youth intentions to delay sexual involvement than the impact HIV knowledge and demographic variables alone will have on youth sexual intentions.

7. Is there a relationship between concern about HIV and youth intentions to delay sexual involvement when concern about HIV is added to HIV-related stigma, HIV knowledge, and demographic variables?

    xiii. Hypothesis 7: Concern about HIV when added to HIV-related stigma, HIV knowledge and demographic variables will be more significantly related to youth intention to delay sexual involvement than the impact HIV-related stigma, HIV knowledge and demographic variables alone will have on youth sexual intentions.

    xiv. Null Hypothesis 7: Concern about HIV when added to HIV-related stigma, HIV knowledge and demographic variables will not be more significantly related to youth intention to delay sexual involvement than the impact HIV-related stigma, HIV knowledge and demographic variables alone will have on youth sexual intentions.

8. Is there a relationship between direct exposure to HIV/AIDS and youth intentions to delay sexual involvement when direct exposure to HIV/AIDS is added to concern about HIV, HIV-related stigma, HIV knowledge, and demographic variables?

    xv. Hypothesis 8: Direct exposure to HIV/AIDS when added to concern about HIV, HIV-related stigma, HIV knowledge and demographic variables will be more significantly related to youth intention to delay sexual involvement than the impact concern about HIV, HIV-related stigma, HIV knowledge and demographic variables alone will have on youth sexual intentions.

    xvi. Null Hypothesis 8: Direct exposure to HIV/AIDS when added to concern about HIV, HIV-related stigma, HIV knowledge and demographic variables will not be more significantly related to youth intention to delay sexual

involvement than the impact concern about HIV, HIV-related stigma, HIV knowledge and demographic factors alone will have on youth sexual intentions.

9. When peer pressure is added to direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV knowledge, and demographic variables, what is the relationship between peer pressure and youth intentions to delay sexual involvement?

    xvii Hypothesis 9: Peer pressure when added to direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV knowledge and demographic variables will be most significantly related to youth intention to delay sexual involvement than the impact direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV knowledge and demographic variables alone will have on youth sexual intentions.

    xviii Null Hypothesis 9: Peer pressure when added to direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV knowledge and demographic variables will not be most significantly related to youth intention to delay sexual involvement relative to the impact direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV knowledge and demographic variables alone will have on youth sexual intentions.

10. When religious influence is added to peer pressure, direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV knowledge and demographic variables, is there a relationship between religious influence and youth intentions to delay sexual involvement?

    xix Hypothesis 10: Religious influence when added to peer pressure, direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV

knowledge and demographic variables, will be most significantly related to youth intention to delay sexual involvement than the impact peer pressure, direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV knowledge and demographic variables alone will have on youth sexual intentions.

xx. Null Hypothesis 10: Religious influence when added to peer pressure, direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV knowledge and demographic variables, will not be most significantly related to youth intention to delay sexual involvement relative to the impact peer pressure, direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV knowledge and demographic variables alone will have on youth sexual intentions.

Complex behaviors including sexual intentions, particularly among youth, occur in context. As such, the addition of correlates could substantially improve the overall model prediction.

Theoretical Framework for the Study

The theoretical framework guiding this study was the theory of reasoned action proposed by Ajzen and Fishbein (1975; see Figure 2). The theory of reasoned action (TRA) posits that an individual is motivated to perform a behavior based on his/her *beliefs* towards the behavior. In turn, beliefs, are influenced by the individual's *attitude* towards the behavior and the *subjective norms.*

Attitudes are the beliefs about the *outcome* of the behavior (i.e., is the outcome likely or unlikely?) and the *evaluation* of the potential outcome (i.e. is the outcome good or bad?). Subjective norms (perception of social norms) are the beliefs of significant others that are in the individual's social environment and how this person perceives or values their opinion (Yzer, 2012). Subjective norms are characterized by *injunctive* and *descriptive*

norms. Injunctive norms are the extent to which the person expects important social networks to be supportive of performing the behavior. Descriptive norms, on the other hand, are the extent to which members of those important social networks perform the behavior themselves (Yzer, 2012).

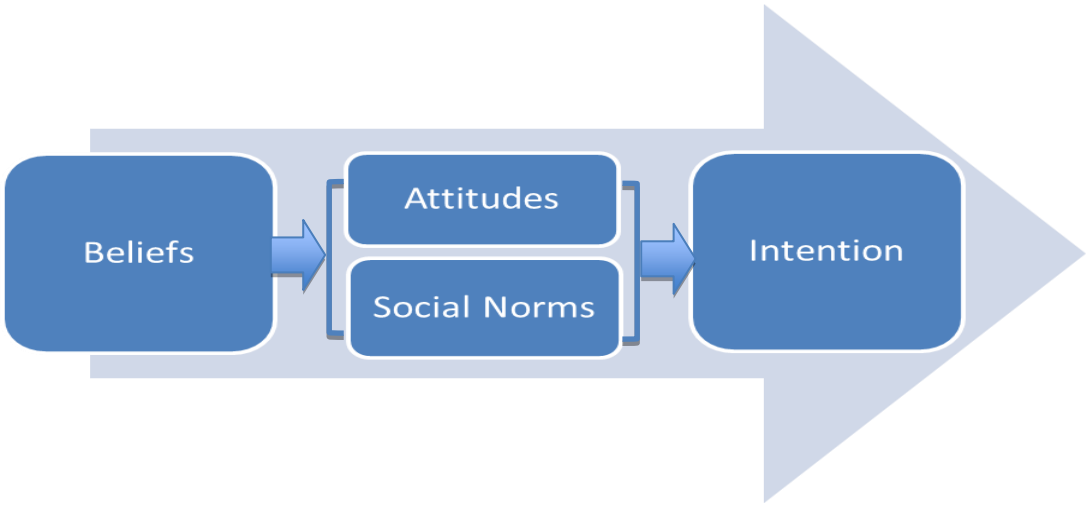

Figure 2. Theory of Reasoned Action.

For example, if an individual believes that delaying early sexual involvement is important because it will prevent risky behavior, and also evaluates the outcome of such decision to be favorable in preventing HIV infection and, in addition to these, the individual perceives that significant others around him or her whose views he or she holds strongly favor the performance of the behavior. Then the individual is more likely than not motivated to perform the behavior (Miller, 2005; Yzer, 2012). Therefore, to understand youth intentions to delay sexual involvement, their attitudes towards sexual risk behaviors as well as the subjective norms with regards to peer and religious influences should be considered (Bartholomew, Parcel, Kok, Gottlieb, & Fernandez, 2011, p. 72). As researchers increase their understanding of attitudes and social norms that increase youth behavioral intent, better interventions can be designed to influence healthier behavior. This study

examined these correlates closely as potential motivators of youth intention to delay sexual involvement.

Nature of the Study

This quantitative, cross-sectional study involved secondary data analysis of baseline data pooled from a program evaluation. The program was a National Institute of Mental Health (NIMH) funded study called "Community Partnerships to Prevent Urban Youth Health Risks (CHAMPions – CHAMP In Our NeighborhoodS)." The research design was selected based on the purpose of the study, the nature of the health issue being addressed, and the target audience. Quantitative research designs are either descriptive (observational) or experimental. A descriptive study establishes only associations between variables while an experimental study establishes cause and effect. Therefore, since the aim of the research was to determine the relationship between the independent variables and the dependent variable in a population of interest at a single point in time, a cross-sectional study was most appropriate.

Study Setting

The setting for this study was the south and central section of the Bronx, New York. The Bronx is reported to be the most populous city of New York State with a total population estimate of 1,408,473 (U.S. Census Bureau, 2014). Persons under 18 years old consisted 26.8% of the population (U.S. Census Bureau, 2014). The Bronx also displayed a high level of growth which was nearly double in 2010–2012 compared to the earlier period 2000–2010 (NYCDP, 2014; U.S. Census Bureau, 2014). This rapid growth rate is mainly due to migration from foreign countries and Puerto Rico (NYCDP, 2014). The Bronx is also racially diverse with a majority of the inhabitants being Hispanic/Latino (54.3%). African Americans are the second largest race making up 43.4% of the

population. Whites make up only 10.8%, Asians make up 4.2%, two or more races are 3.3%, and other races constitute 3.4% of the population (U.S. Census, 2014). The Bronx is also reported to be one of the poorest counties in New York State. The median income level per household in 2008–2012 was $34,300; 37.4% of the population lives below the poverty level (U.S. Census, 2014). As of the end of 2008, about 28% of reported HIV cases were found among Bronx community members compared to 23% in 2002 (Sweeny, 2010).

Methodology

In the CHAMPions study, quantitative data were collected from youth participants at baseline using self-report surveys (McKay, 2008). To encourage truthful responses, participants were assured that their answers would be kept confidential. Also, the investigative team explained the security system in place that would prevent linking their names to their questionnaires. Youth completed the surveys in small groups of 6–8 participants. Standardized instruments were used to assess the constructs over time. In the current study, I accessed baseline data and analyzed the data as described under data analysis in Chapter 3.

Definitions

Immigration status: First-generation Latino/Hispanic youth (the children themselves are foreign-born). The survey question asked, “Were you born in the United States?” This question is followed by a dichotomous scale coded as 1 = *yes;* 0 = *no*.

HIV knowledge: HIV knowledge definition is under two categories: (a) general knowledge about the disease and (b) knowledge regarding transmission routes (Fraim, 2012). The survey questions asked participants whether certain activities such as, “Being

bitten by mosquitos or other insects" are *safe*, *unsafe* or *not sure*, coded as 3 = *safe*; 2 = *unsafe*; 1 = *not sure*.

HIV-related stigma: The definition of HIV-related stigma is "prejudice, discounting, discrediting, and discrimination directed at people perceived to have HIV/AIDS" (Lindley, Coleman, & White, 2010; p.13). For example, "I would be willing to eat lunch sitting next to a student who has HIV/AIDS." The statement was followed by a Likert scale coded as 4 = *strongly agree*; 3 = *somewhat agree*; 2 = *somewhat disagree*, and 1 = *strongly disagree*.

Concern about HIV/AIDS: The definition of concern about HIV/AIDS is worried about getting infected with HIV. For example, "I am worried that I could get AIDS." Followed by a 5-point Likert scale coded as 5 = *strongly agree*; 4 = *agree*; 3 = *in the middle*; 2 = *agree*; and 1 = *strongly disagree*.

Direct exposure to HIV/AIDS: Direct exposure to HIV/AIDS is defined as knowing someone who is infected with HIV or has died of AIDS. Example: "Do you know anyone who has HIV/AIDS?" Followed by a binomial scale coded as 1 = *yes*; 0 = *no*.

Peer pressure situations: Peer group is defined as a small group (2–12 or an average of 5–6) of individuals sharing certain similarities such as age, background, educational level, and social status (Ryan et al., 2009). Peer pressure is defined as the influence that a peer group exerts that encourages an individual or others to change their attitudes or decisions to conform to group norms (The American Heritage, 2005). Example: "Say your boyfriend or girlfriend tries to convince you to have sex, but you are not sure about it. You feel that if you continue to refuse sex, your boyfriend or girlfriend might end the relationship. What will you do?" The question assesses an individual's susceptibility to peer pressure by asking participants to respond to hypothetical dilemmas whereby the participants were presented with seven causes of action. The actions include: *agree to have*

sex in order to keep the relationship; explain to your partner how you felt and insist that you would have sex only when you felt ready; not say anything; tell his/her parents; tell your parents; not sure what you will do or other. With recode, the respondents who said *agree to have sex in order to keep the relationship* with the respondents who said *not say anything* and those who said *not sure what to do* were all put into a new category called *yield to peer pressure*. Similarly, respondents who said *explain to your partner how you felt and insist that you would have sex only when you felt ready*, with those who said *tell his/her parents,* as well as those who said *tell your parents*, were put in another category called *resist peer pressure.*

Religious influence: The definition of religious influence is, an individual phenomenon characterized by the adherence of an individual to specific beliefs and practices (Basu-Zarku, 2011; Miller & Thorensen, 2003). Example: "how often do you go to church, worship services, or other religious activities?" Followed by a 5-point Likert-type scale coded as 5 = *once a week*; 4 = *about two to three times a month*; 3 = *about once a month*; 2 = *a few times a year*; 1 = *never*.

Behavioral intention: The Behavioral intention is defined as an individual's perceived likelihood of performing the behavior (Glanz, Rimer, & Viswanath, 2008, p. 67). It is a function of both attitudes and subjective norms towards a behavior that predicts the desired behavior will occur (Ajzen, 1996; Ajzen & Fishbein, 1980; Bandura, 1997). Example: "I will be proud of myself if I remain a virgin during my teen years." The survey items ranks responses on a scale: 5 = *strongly agree*; 4 = *agree*; 3= *in the middle*; 2 = *agree*; 1 = *strongly disagree*.

Attitude: A person's positive or negative feelings about the performance of the behavior (Glanz et al., 2008, p. 67).

Behavioral belief: A person's belief that the performance of the behavior is associated with certain attributes or outcomes (Glanz et al., 2008, p. 67).

Evaluation: Is the value attached to the outcome of the behavior. For example, "if I delay sex and not engage in risky behaviors, that is a good thing because it will increase my chances of not getting infected with HIV" (Glanz et al., 2008, p. 67).

Normative beliefs: A person's beliefs about what important people or groups will think about (approve or disapprove) the performance of the behavior. For example, my parents and friends think delaying sexual involvement is important and approve the performance of the behavior (Glanz et al., 2008, p. 67).

Assumptions

The assumptions in this study include: (a) Participants in the CHAMPions study provided honest responses to the survey questions. There may be a concern about whether self-administered questionnaires yield as truthful responses as computer-assisted methods since the study used self-administered questionnaires for data collection. This concern was minimized because there is evidence to suggest that when respondents are assured confidentiality and do not have to provide face-to-face responses, the differences between the two methods of assessment are minimal (Fishbein et al., 2000). Also, in the original study, the surveys were completed in small groups of 6–8 students. As such, students were located a considerable distance from each other in classrooms or other school space (e.g., auditoriums) to ensure privacy. Furthermore, participants were assured that their answers would be kept confidential, and the investigative team explained the security system in place that would prevent linking their names to their questionnaire. (b) The survey instruments and testing procedures were valid and reliable. In the CHAMPions study, standardized instruments including those used in prior studies and validated were adapted

and employed. (c) The data collected from survey respondents were entered accurately into the database, coded, and categorized.

Scope and Delimitations

The current study examined the relationship between contextual factors and direct exposure to HIV/AIDS and youth intention to delay sexual involvement. The particular aspects of the research problem that are addressed in this study include youth participation in sexual activities at an early age, and low income, inner city African American and Latino youth at high risk of HIV infection and disproportionately affected by HIV/AIDS.

The research design employed in this study was a cross-sectional approach involving secondary data analysis of baseline data as such, causality was not established. The determination of cause and effect can take place if the research involves a randomized control trial whereby the study environment is manipulated and then assessed to see if the outcome observed is due to the intervention. Also, for this same reason (does not establish causality); descriptive research may not be seen as a statistically robust inquiry. However, whether descriptive or randomized trial, both designs seek to explain the subject matter from different perspectives and are both valid ways to evaluate a phenomenon in the proper context (Creswell, 2003).

In addition, a cross-sectional study is beneficial because it provides a good description of the variables which allows the researcher to demonstrate the associations or relationship of the variables under investigation (Creswell, 2003). Further, a relatively large sample size was used in the main study, and the subjects were assigned randomly to the study. Therefore, this study can be extrapolated to make predictions about the entire population. Consequently, the current study potentially offers a model for addressing more widely defined and diverse populations in future investigations.

Limitations

The limitations of this study include: (a) Causality cannot be established. The study was conducted to investigate the associations between contextual factors and youth sexual intentions at a single point in time (without manipulating the study environment). Therefore, the study does not consider what happens before or after this single point in time. Consequently, the study does not indicate whether the variables of interest caused the outcome observed. (b) Also, the findings may be different if the study was done at another time point. (c) In the CHAMPions study, the questionnaires used for data collection may have introduced Neyman bias. As such, the respondents may not have accurately answered questions based on past activities that may minimize or magnify the effects of the variables of interest and consequently affect the results of the study. (d) This study involved secondary data analysis; therefore, I had no control over the type or method of data collection. I assumed data were collected and entered accurately.

Significance

HIV rates among youth of color in the United States, particularly in a low resource urban center such as New York, are still disproportionately high (CDC, 2012, 2013). In 2010, African Americans represented 12% of the U.S. population but accounted for 44% of new HIV infections and represented about 44% of the people living with AIDS (PLWA). In 2011, they accounted for 49% of new AIDS diagnoses (CDC, 2013; Kaiser Family Foundation, 2014). Although the rate of new HIV infections per 100,000 among African Americans was relatively stable in 2010, the rate among African Americans was eight times that of Whites. The rate also doubled that of Hispanic/Latinos (Hall et al., 2008; Kaiser Family Foundation, 2014). New York, in particular, had the largest numbers of African Americans living with an HIV diagnosis (CDC, 2012).

Analogous to African Americans, Hispanic/Latinos are also impacted by higher rates of new HIV infections and PLWA than their white counterparts (CDC, 2012; 2013; Kaiser Family Foundation, 2014). In 2010, Hispanic/Latinos were reported to represent 16% of the U.S. population but accounted for 21% of new HIV infections and 19% of PLWA. In 2011, Hispanic/Latino constituted 21% of the new AIDS diagnoses (CDC, 2013; Kaiser Family Foundation, 2014). Hispanic/Latino are also the fastest growing ethnic minority group in the United States. As such, focusing on not only African Americans but Hispanic/Latinos as well is necessary for increasing efforts to address this health issue.

In 2013, approximately 47% of all high school students reported ever having sexual intercourse. Although this percentage declined slightly from 54% in 1991, it is still considerably high (CDC, 2014). Additionally, African Americans and Hispanic/Latino high school students are more likely to initiate sex before age 13 compared to their white counterparts (Kaiser Family Foundation, 2014). African American high school students are the ones most likely to have had sexual intercourse (60%), followed by Hispanic (49%) then White high school students. White high school students are least likely to have had sexual intercourse (CDC, 2014; Kaiser Family Foundation, 2014). Further, nearly 34% of high school students are reported to be sexually active. That is; they have had sexual intercourse with at least one person in the past three months (CDC, 2014; Kaiser Family Foundation, 2014).

The challenges that contribute to the HIV epidemic among African American youth include higher rates of sexually transmitted diseases including HIV, inadequate HIV knowledge, lack of awareness of HIV status, and HIV-related stigma (CDC, 2014; Kaiser Family Foundation, 2014). In 2013, although 85% of high school students reported being taught about HIV/AIDS in school, gaps in knowledge about HIV/AIDS still exist (CDC,

2014; Kaiser Family Foundation, 2014). One-third of youth aged 12–17 years do not know that HIV is a sexually transmitted disease, and 88% do not know they are at risk of HIV infection (MAC AIDS Fund, 2014). Low-income inner-city African American and Latino youth have limited access to accurate and adequate HIV prevention information mostly due to social, economic, and cultural barriers. Economically disadvantaged minorities living in poor communities are more likely to be uninsured and consequently, have less access to healthcare (Abernathy, Webster, & Vermeulen, 2002; DeNavas-Walt, Proctor, & Smith, 2007). As a result, their access to HIV information from healthcare providers and other health educators may be restricted.

Nearly 40% of the U.S. adolescent population lives in families with low incomes. Out of this percentage, 18% (1 in 5 U.S. adolescents) are estimated to be living below the federal poverty level (Mulye et al., 2009). In addition, African American and Latino youth are overrepresented among poverty-impacted youth. The association of poverty with risky sexual behaviors makes youth more vulnerable to HIV infection. Consequently, youth who are sexually active are potentially at greater risk of HIV infection because of the high rates of HIV/AIDS prevalence in poverty-impacted neighborhoods, little access to health care, and HIV information. Data from HIV seroprevalence areas showed that HIV prevalence was higher among those with less education and lower incomes (CDC, 2011, 2013). Approximately 1 in 5 U.S. adolescents live in poverty (Mulye et al., 2009; U.S. Census Bureau, 2010), suggesting that early sexual involvement places these adolescents at greater risk of HIV infection (DiClemente et al., 2008).

Today, although the response to the HIV epidemic in the United States has yielded considerable successes (advent of antiretroviral therapies and people living longer with the disease), the fight against this incurable, life-threatening disease is far from over. As a

significant number of youth are still getting infected by this disease (CDC, 2013; Demmer, 2002; Siegal & Lukas, 2002). This potentially deadly but preventable disease remains a public health burden. Therefore, understanding the context of behavioral intentions, as well as the individual and the social influences, provides significant insight for effective health interventions particularly among these disadvantaged youth.

Summary

The main points of this chapter include the potential adverse health consequences that are outcomes to youth early sexual involvement; and explanation on why it continues to be a public health issue; some background information on early sexual involvement and the resultant HIV infection; the research design employed; as well as the theory of reasoned action which serves as the theoretical framework guiding the study. In additon to these, the research questions and hypotheses, the variables under investigation, assumptions of the study, scope, and limitations of the study were identified. Finally, the rationale behind the study, how the research problem impacts others, and the potential benefits of the research were described as well.

The next chapter focuses on literature review of the variables under investigation and the outcome of interest. I presented current peer-reviewed literature on youth sexual intentions, gender and race, immigration status, HIV knowledge, HIV-related stigma, youth concern about HIV, direct exposure to HIV/AIDS, peer pressure, and religious influence. Also included in this chapter are the literature search strategy and an explanation of the theoretical foundation.

Chapter 2: Literature Review

Introduction

Briefly, the aim of this study was to examine the relationship between contextual factors and direct exposure to HIV on youth intentions to delay sexual involvement. Despite the successes in combating the spread of HIV/AIDS, major challenges remain in addressing this health issue. Specifically, among African American and Latino youth living in vulnerable communities (OAH, 2012). This population continues to be disproportionately impacted by this disease (Kaiser Family Foundation, 2014). African American and Latino youth have been reported to have a higher rate of new HIV infection diagnosis and people living with HIV disease compared to their white counterparts (CDC, 2012, 2013). Also, undiagnosed HIV cases are believed to be highest among African American, and Latino group, 1 in 5 of the estimated 1.2 million people living with HIV do not know their status.

Nearly 1 in 5 deaths among people diagnosed with HIV in 2010 were Latinos (CDC, 2013). Youth risky behaviors and the disproportionate impact of HIV/AIDS on African American and Latino youth underscore the need for continued focus on addressing HIV in the United States. Additionally, elucidating the key factors that can be employed to develop better interventions that can adequately address the HIV epidemic is a relevant and much needed undertaking.

According to the CDC (2012), the risk of HIV infection during adolescence begins with the initiation of sexual behavior, especially at an early age. The level of risk is enhanced because they are not yet emotionally developed for intimate relationships. In addition, the prevalence of HIV among potential sex partners, the percentage of HIV-infected youth who are unaware of their status, and the frequency of risky sexual behaviors

contribute to their vulnerability (Prado, Lightfoot, & Brown, 2013). Further, based on the survey conducted in the United States by the Kaiser Family Foundation, the CDC (2014) reported that a majority of young people aged 15–24 years reported not being concerned about the risk of HIV infection. Therefore, they are unlikely to take appropriate or adequate measures to protect their health. Similarly, Mac AIDS Fund (2014) reported that nearly 88% of American teens aged 12–17 years do not perceive themselves to be at risk of HIV infection at some point in their lives.

In the following sections of this chapter, I will discuss peer-reviewed research on selected contextual factors as well as youth sexual intentions. Additionally, I will provide a description of the theoretical foundation, the assumptions, and rationale for its use.

Literature Search Strategy

The databases and search engines used to access the literature reviewed consisted of Walden University Library's health sciences research databases: MEDLINE, CINAHL, Nursing & Allied Health Source, PubMed, and ScienceDirect. Additionally, I used New York University's research databases such as JSTOR and PsychInfo. I also used web sources and the search engine Google Scholar. The key search terms were *HIV/AIDS*, *contextual factors*, *intentions to delay sex*, *early sexual debut*, and *adolescent sexual risk*. The literature reviewed represent a cross-section of disciplines ranging from psychology/social science, health education, health promotion, public health, and nursing research publications. The scope of the literature reviewed range from 2000–2013.

Theoretical Foundation

The theory of reasoned action (Ajzen & Fishbein, 1980; Fishbein & Ajzen, 1975) forms the basis for the framework used to understand the behavioral intention. The development of the theory started in early 1862 when social scientists began to develop

theories to show the impact of attitude on behavior. Two of these scientists known as Thomas and Znaniecki (1918) were the first to suggest that attitude could be used to predict behavior. In the early 1960s, more social scientists including Ajzen & Fishbein (1970) attempted to explore ways to predict behaviors. In their quest, the scientists reviewed all the studies available in order to develop a theory that could predict and understand behavior and behavioral intentions. Ajzen & Fishbein then developed a theory known as the theory of reasoned action (TRA) which focuses on behavioral intentions as a proximate determinant of behavior. The theory is based on the assumption that people often act rationally, make use of the information available to them and consider the consequences of their actions before deciding to perform or not perform a certain behavior (Ajzen & Fishbein, 1980; p.5).

The theory was developed in 1967, revised and expanded in the early 1970s and 1980, it was used to study human behavior and for planning interventions. The core variable of the model is the determinant of an individual's willingness, or decision to enact a behavior and consists of two major factors: 1) Attitude towards performing the behavior determined through the individual's behavioral beliefs and assessment of the behavioral outcomes 2) Subjective norms determined by whether the individual perceive that significant or relevant others around him/her approve or disapprove the behavior and the motivation to comply.

The limitation of the TRA is that the behavior may not be under an individual's volitional control. That is to say, the intention will lead to behavior when there are no constraints (requirement of resources or skills) hindering the performance of the behavior. However, when the behavior requires resources or skills (e.g. unconscious habits, money, time, abilities, information, stress or environmental factors) which may be lacking,

performance of the behavior may not be under the individual's volitional control. Therefore, required resources or skills may hinder the enactment of the behavior (Armitage & Connor, 2001). Accordingly, even though attitude and subjective norms influence intention to perform a behavior, the individual eventually, may not perform the behavior due to intervening internal or external conditions (Armitage & Connor, 2001). Notwithstanding, the TRA has done a very good job in predicting health behavior because a plethora of studies have shown that when people form strong intentions to perform a particular behavior, they tend to follow through with their intentions (Albarracin, Johnson, Fishbein, & Muellereile, 2001; Armitage & Conner, 2001; Conner & Sparks, 2005; Haeften, Fishbein, Kaspryzk & Montano, 2000, Hagger, Chatzisarantis, & Biddle, 2002; Sheeran, 2002; Sheeran & Orbell, 1998). For example, Montano (2000) conducted a study to explore whether people can always act to use condoms for vaginal sex based on their intentions. The researcher suggested when people fail to engage in protective health behavior; the reason is likely that intentions to engage in the behavior have not been formed. The result of their study showed that over 80% of the women in their sample had formed strong intentions always to use condoms for vaginal sex with their casual partner. More importantly, those who had formed such positive intentions were able to get their partners to use condoms.

The TRA is one of a group of psychosocial theories of human social behavior which has behavioral intention as its focal antecedent. Most if not all health behavior theories include some construct of behavioral intention as a proximate determinant of behavior. Buhi & Godson (2007) conducted a systematic literature review to understand better why adolescents initiate sexual activities at early ages. The researchers used eight key elements outlined in an integrative theoretical framework that included the TRA to guide the review.

They summarized a decade of literature regarding these key elements' predictive ability when applied to adolescent sexual behavior or intentions. Of the 8 studies reviewed, all found that intention was significantly associated with sexual intercourse or sex initiation (Gillmore, Archibald, Morrison, Wilsden, Wells, et. al., 2002; Kinsman, Romer, Furstenberg & Schwartz, 1998; Nahom, Wells, Gillmore, Hoppe, Morrison, et al., 2001; Sieverding, Adler, Witt, & Ellen, 2005; Villarruel, Jemmott, Jemmott & Ronis, 2004). Also, the studies found that sexual intentions was associated with participation in the sexual behavior (Miller, Norton, Fan, & Christopherson, 1998; Stanton, Li, Black, & Ricardo, 1996).

Furthermore, most researchers have focused on increasing safe sex attitudes and norms, improving self-efficacy and/or other variables identified by the theories of behavioral prediction and change as critical (Ajzen & Fishbein, 1980; Fishbein, 1979; Ajzen, 1991, Bandura, 1994; Becker, 1974; Rosenstock et al., 1994). However, relatively little research has aimed at understanding the influece of contextual factors on intentions to delay sexual involvement. None the less, the TRA is considered an essential model or framework to use for guiding this study because of its ability to understand and predict intentions.

Literature Review Related to Key Variables

Sexual Intentions

The definition of *intention* is behavioral plans that enable the attainment of proximal goals; the stronger the intention, the more likely it is to perform the behavior (Ajzen, 1996; Ajzen, Fishbein, 1980; Bandura, 1997). An individual who intends to perform a behavior is more likely to enact the behavior than if the individual has no intention of performing the behavior (Bearman and Bruckner, 2001; Kirby, Lepore et al., 2005). According to Kirby,

Coyle, Alton, Rolleri & Robin (2011), young people make their decisions concerning sexual behavior and whether or not to use protection. As such, for programs or sexual risk interventions to be effective, it is necessary to target risk and heighten protective factors that can influence decision making about sexual behavior and then develop programs focusing on these factors. In addition, the authors identified intentions as one of the internal cognitive factors that have a large impact on sexual decision-making and behavior (see also Kirby & Lepore, 2007). Mathews and colleagues conducted a study to examine the predictors of young adolescent's transition to early coital debut in Cape Town, South Africa (2009). They found a significant relationship between intentions to have sexual intercourse and the transition to first sexual intercourse.

Further, empirical applications have demonstrated that behavioral intention is a proximate determinant of behavior (Ajzen & Fishbein, 1980; Ajzen, 2002b; Wilson, Mathews, & Harvey, 1975; Fishbein, 1983; Ryan & Bonfield, 1980). Furthermore, correlational and experimental data have supported the link between intention and behavior (Ajzen & Fishbein, 1970, 1974; Bonfield 1974; Bowman and Fishbein 1978; Jaccard, Knox, & Brinberg 1979; King 1975; Pomazal & Jaccard, 1976; Ryan & Bonfield, 1980; Songer-Nocks, 1976). Therefore, given the critical role of intention as a theoretical construct, as well as useful correlational variable, intention is considered an important variable to strengthen.

Many factors affect an individual's sexual intentions (Kirby & Lepore, 2007). Addressing these determinants is key to reducing health disparities and improving the health of all American adolescents. The contextual influences examined in this study include demographic factors (age, gender, race/ethnicity and immigration), knowledge and attitude factors (HIV knowledge, HIV-related stigma, concern about HIV, know someone

with HIV/AIDS and direct exposure to HIV/AIDS) as well as social factors (peer pressure and religiosity). Contextual factors play an important role in the complex nature of adolescent sexual behavior therefore, could provide the basis for a strategy that supports youth intention to delay sexual involvement (Lammers, Ireland, Resnick, & Blum, 2000).

Age & Gender

Biological factors play an important role in influencing youth sexual intentions. As youth transition from childhood into adolescence, they experience physical and hormonal changes with some maturing early and looking older than their age (Kirby, Lepore, & Ryan, 2005). Those who transition through puberty at a younger age are more likely to initiate sexual intercourse at an early age (Brown and Warne 2006; Christianson 2006). Puberty related changes may lead to sexual attractiveness and consequently influence their sexual intention. Researchers have shown that the male perception of risk and their sexual behavior (in this case motivation) differs from the females (Akwara et al. 2003; ; Harrison et al. 2001; Macintyre et al. 2004; Varga 2003).

Wilson and Daly's (1985) sociobiological model suggests that gender differences are likely not found in all contexts, but when gender differences do occur, the male is more likely to take risks than the female. Pawlowski, & Atwal (2008) conducted a study to explore whether boys are more likely to take risks than girls by adjusting their arrival times at a bus stop so as to minimize waiting time. Their findings showed that even in everyday situations that are relatively unlikely to incur life-threatening costs, males are more likely to take risks than females. Therefore, boys are more likely to engage in early sexual activities compared to the girls. However, girls are more likely to contract STDs, including HIV (Halpern, Hallfors, Bauer, Iritani, Waller, et al., 2004; Kirby, Lepore, & Ryan, 2005).

Halpern et al. (2004) suggests that adolescents' risk behavior patterns vary by race and gender and do not necessarily correlate with the prevalence of STDs.

Also, at early ages, the male pattern of sexual behaviors differs from the female. Boys are more likely to initiate sex at early ages for different reasons compared to the girls (Forste & Haas, 2002; Rucibwa, Modeste, Mongtomery, & Fox, 2003; YRBS, 2011). In 2011, data from CDC's high school Youth Behavioral Risk Survey revealed that nationally, about 67% of African American and 53% of Hispanic male high school students have ever had sex. On the other hand, 54% African American and 44% Hispanic female high school students were estimated to have had sex (CDC, 2011). Locally, specifically the Bronx, approximately 54% of African American and 54% of Hispanic male high school students have ever had sex. Whereas 35% African American and 40% Hispanic female high school students were estimated to have had sex (CDC, 2011). Although age and gender are fixed factors, these variables may play an important role in pinpointing youth at risk of early sexual involvement.

Race/Ethnicity and Immigration Status

Race/ethnicity and immigration status have important health consequences in adolescent health because the measures of risk behavior differ significantly by race and ethnicity, as well as by immigration status. Immigration status is defined as "first generation" Latino/Hispanic youth (the children themselves are foreign-born versus "third generation" Latino/Hispanic youth (U.S.-born children of U.S.-born parents). Compared to their White counterparts, African Americans and Hispanic youth in grades 9 to 12 are more likely to engage in early sexual intercourse. They are also less likely to use protection during sexual intercourse (amFAR, 2010; CDC, 2004; Kuehnel, 2009; Ramos, et al., 2005). According to YRBS (2011), 60% of African Americans and 49% of Hispanic high school

youth have ever had sexual intercourse, compared with 44% of White high school youth. In addition, the adolescent population in the U.S. is increasingly becoming diverse (U.S. Census, 2010). This diversity was observed in the racial distribution that for the past 20 years has changed considerably. Currently, the population of Hispanic adolescents has surpassed that of the African American population, and this trend (Hispanic surpassing African Americans) is expected to continue in the near and distant future (Passel, 2011). This large proportion of Hispanics in the U.S. is due to the massive inflow of immigrants and high rates of fertility (Passel, 2011). Fertility rates are reported to be relatively high for Latinos, moderate for African Americans and low for Whites (Passel, 2011). Given the relatively low fertility rates of the U.S. born white and average fertility rates of the U.S. born African American populations, the immigrant youth potentially will shape many aspects of U.S. society. Especially as these youth move from childhood into adulthood and are being assimilated into mainstream American values and health risk related attitudes and behaviors. Further, approximately 28% of foreign-born children were reported to be living below the poverty level in 2012 relative to 20% of the native-born children (Child Trends 2013; Mendoza & Festa, 2013).

Race and ethnic differences may also be due to strong relationships with religious organizations that can serve as protective factors reducing rates of early sexual involvement (Resnik, 2000). Therefore, recognizing and considering the diversity such as, race/ethnicity, gender, immigration status apparent in this population of interest and how these variables influence their sexual intentions will pinpoint youth at risk and support effective planning of health promotion programs.

HIV Knowledge and HIV-related Stigma

HIV knowledge also plays an important role in reducing the perpetuation of misconceptions about HIV transmission or related consequences. The Henry J. Kaiser Family Foundation (2003) conducted a national survey of adolescents and young adults' sexual health, knowledge, attitudes, and experiences. Their findings show that, many young people have serious misperceptions about STDs and HIV, and a surprisingly high number of these youth were misinformed about safer sex. Consequently, the misconceptions about HIV transmission and how these fallacies contribute to stigma prompted the expansion of HIV Knowledge to include stigma as a correlate of information. The models of health behavior, such as the IMB model, suggest that HIV knowledge is a modifiable contributing factor to reducing risky sexual behaviors (St. Lawrence, 1993; Swenson, Rizzo, Brown, et al., 2010). As result, the IMB model was expanded to include HIV-related stigma as a correlate of information and motivation (Kalichman, Simbayi, Cain, Jooste, Skinner et al., 2006; Varni, Miller, & Solomon, 2012).

So far, little is known as to what extent HIV knowledge impacts sexual intentions, or behavior of this at-risk population and research findings have shown inconsistent results. Researchers have suggested that greater HIV knowledge is associated with more consistent condom use and greater likelihood of HIV/AIDS testing (Bruine de Bruin, Downs, Fischhoff & Palmgren, 2007; Swenson, Rizzo, Brown, et al., 2010). Other studies were either unsuccessful replicating this relationship or found that more HIV knowledge was associated with greater risk-taking (Boyer, Shafer, Wibbelsman, Seeberg, Teitle, et al., 2000; Dudley, O'Sullivan, Moreau, 2002; Fisher, Williams, Fisher, Malloy, 1999). Furthermore, compared to white adolescents, Latinos and African American adolescents are less likely to report being taught about HIV/AIDS in school (CDC, 1997; 2004; Ramos et

al., 2005). Youth living in high seroprevalence and poverty impacted communities are less likely to be aware of their HIV status (CDC, 2014). Similarly, they are less likely to have adequate access to healthcare due to lack of health insurance (DHHS, 2011; Henry J Kaiser Family Foundation, 2010; Shi, 2000). They are also more likely to attend poor schools, experience more absences, and higher dropout rates which may impact HIV knowledge (Gutman, Sameroff & Eccles, 2002).

Therefore, despite the importance and levels of HIV knowledge, significant gaps remain, particularly among African American and Latino youth (Swenson, Rizzo, Brown, Vanable, Carey, et al., 2010; Osborn, Paasche-Orlow, Davis & Wolf, 2007). Increasing HIV knowledge among African Americans and Latino youth is essential given the disparity in the burden of the disease (CDC, 2009). Consequently, accurate and adequate information about HIV may benefit or affect youth intention to delay the onset of sexual activities and may be an important component of successful risk reduction interventions.

Besides HIV knowledge, HIV-related stigmatizing attitudes have severe impacts on people living with HIV (PLWHA) because of their role in discrediting and reducing PLWHA to a discounted state. Lindley, Coleman & White (2010) defined HIV-related stigma as "prejudice, discounting, discrediting, and discrimination directed at people perceived to have HIV/AIDS." HIV-related stigma can also be a significant barrier to the optimal execution of HIV prevention efforts because stigmatized people are likely to not get tested for HIV. They are also less likely to disclose their HIV serostatus to potential sex partners and are easily discouraged from seeking health care (Lindley, Coleman & White, 2010; Mahajan, Sayles, Patel, Remien, Sawires, et al., 2008). Stigmatized PLWHA tend to exhibit these reactions due to the rejection they face and the awareness that they are not entirely socially accepted (Swendeman, Rotheram-Borum, Comulada, Weiss & Ramos,

2006). Lack of HIV knowledge and misconceptions about HIV transmission have been shown to contribute to stigma (Sutton, Hardnett, Wright, Wahi, Pathak, et al., 2011; Swenson, Rizzo, Brown, Vanable, Carey, et al. 2010). Stigma, on the other hand, was associated with risky behavior (Stock Gibbons, Peterson & Gerrard, 2013). A considerable number of people still believe that HIV can be transmitted through public toilets, casual contact or mosquitoes (Lindley, Coleman & White, 2010). Therefore, an increased HIV knowledge and less HIV-related stigma may be associated with youth intention to delay sexual involvement.

Direct Exposure/Knowing Someone Who Has HIV/AIDS

Direct exposure to HIV/AIDS plays a role in influencing youth sexual intentions. Contact theory, for instance, provides a considerable reason to suggest that youth intention to delay sexual involvement will be different based on contact with or knowing someone who has HIV/AIDS. Contact theory also suggests that contact with somebody helps to reduce stigma towards that person (Allport, 1954; Hughes, 2000; Schiff & McKay, 2003). Therefore, youth who know someone who has HIV or died of AIDS are more likely to have less stigmatizing reactions towards infected persons. They may also be more concerned about HIV infection. These reactions and concerns may positively influence their intention to delay sexual involvement. Youth who do not have prior exposure to HIV/AIDS, on the other hand, may have misconceptions towards HIV infection and may be less concerned about HIV infection that may negatively influence their sexual intentions. The effect of knowing someone with HIV/AIDS on HIV preventive/risk behaviors has become increasingly relevant, however; researchers have also produced conflicting results.

Several studies have suggested that knowing someone with HIV/AIDS may be a vital predictor of decreased risk behavior (Cederbaum, Marcus, Hutchinson, 2008; Ijumba,

Gamieldien, Myer, Morroni, 2004; Prati, Mazzoni & Zani, 2014). However, when Carol, Camlin, Chiweni & Chibwete (2003) examined the association of condom use with personal knowledge of someone with HIV or who has died of the disease. Contrary to these studies, their findings showed no associations between risky behavior, such as condom use and knowing someone with HIV/AIDS. Similarly, Simon & Forste's (2011) research findings showed no association between direct exposure to HIV/AIDS and self-assessment of the risk of HIV infection and condom use. None the less, the Health Believe Model theorized that, youth who recognize they are at high risk of contracting HIV/AIDS are more likely to delay sexual intercourse compared to those who perceive they are at low risk of contracting the disease. These effects are even more impactful when variables such as HIV knowledge and knowing someone who has or died of HIV/AIDS are put together. Knowledge about HIV/AIDS provides a form of self-empowerment that may influence risk perception and stimulates the decision to delay sexual involvement. In addition, Macintyre et al. (2001) reported that those who know someone who has HIV or died of AIDS are more likely to be aware of the consequences of engaging in early sexual intercourse. As such, they are more likely to delay or practice safer sex. Therefore, youth who know someone who has or has died of HIV/AIDS are more likely to have a greater perceived risk of contracting HIV and be motivated to delay sexual involvement.

Concern about HIV

Many young people are less concerned about HIV infection. They continue to engage in unsafe sexual practices despite relatively high levels of awareness about the risk of contracting the disease (Kaiser Family Foundation, 2000; O'Sullivan, Udell & Patel, 2006). Youth who know someone who has HIV or died of AIDS tend to be more knowledgeable about the disease because of their familiarity with the infection pathways

(Hereck, Widaman & Capitano, 2005). As a result, are likely to have a high perception of risk that makes them more motivated to delay sexual involvement (Brooks, Lee, Stover, & Barkley, 2009). Recent advances in HIV/AIDS treatment such as, the availability of anti-retroviral therapies and the fact that people are now living longer with the disease may also have an impact on youth's concern about and perceptions of HIV risk (CDC, 2013). If youth perception of risk is low, they may be less motivated to delay sexual involvement and therefore their vulnerability to HIV infection tends to increase (Eaton, Kann, Kinchen, Shanklin, Ross et al., 2008). Approximately, 1.1 million people are HIV infected in the U.S. and out of this number nearly a quarter of these people are youth aged 13-24 years (amFAR, 2013; CDC, 2013). African Americans and Latinos are significantly affected by this disease and live in communities with high rates of HIV/AIDS (CDC, 2013). Therefore, they are potentially directly exposed to the disease that may increase their perception of risk and motivation to delay early sexual involvement.

Peer Pressure

Peer group is defined as a small group (2-12 or an average of 5-6) of individuals sharing certain similarities such as age, background, educational level and social status etc (Ryan, Wentzel, Baker, Brown, Davidson & LaFontana, 2009). In an attempt to develop a group identity, youth tend to seek out new friends and form peer groups. Peer groups offer a sense of well-being and help to form a sense of identity amongst members. Peers are likely to influence each other's attitudes because youth tend to spend more time with their peers than with the adults. In addition, their communication preference shifts towards their peers instead of the adults and are more likely to talk about their sexual intentions and interpersonal relationships with their peers (Laurence, 2010). Peer influence is so powerful that youth will tend to gravitate towards social norms of those who share similar behavior

patterns (Papalia, Olds, & Feldman, 2001). If youth perceive that their peers are engaging in activities such as early sexual involvement, their perception may influence their sexual intentions and are more likely to be drawn towards similar paths (Hampton et al., 2005; Laurence, 2010). A peer pressure situation, for example, includes youth spending time alone with a boy or girl they like with no adult around or having a boyfriend/girlfriend. Spending time alone with a boy or girl they like with no adult around may motivate youth to engage in sexual activity at an early age (Bruckner & Bearman, 2003; Cooksey, Mott & Nuebauer, 2002; Manning & Giordano, 2001). In light of this possibility and given that youth spend more time with their peers than with their parents or other adults, (Ryan et al., 2009; Steinberg & Laurence, 2010) underscores the need to examine more closely the influence of this variable on youth sexual intentions.

Religious Influence

According to Koenig, King & Carson (2012), "*religion* involves beliefs, practices, and rituals related to the *transcendent*, where the transcendent is God, Allah, HaShem, or a higher power in Western religious traditions, or to Brahman, manifestations of Brahman, Buddha, Dao, or ultimate truth/reality in Eastern traditions. Religion often involves the mystical or supernatural and has specific beliefs about life after death as well as rules concerning conduct within a social group. Religion is a multidimensional construct that includes beliefs, behaviors, rituals, and ceremonies held or practiced in private or public settings. However, there religions that are derived from established traditions in some communities. Religion is also an organized system of beliefs, practices, and symbols designed (a) to facilitate closeness to the transcendent, and (b) to foster an understanding of one's relationship and responsibility to others living together in a community (see also Chatters 2000; Hatcher, Burley & Lee-Ouga, 2008; Hawes & Berkley-Patton 2003;

Musgrave, Allen & Allen, 2002). Spirituality is similar to religiosity and usually denotes an acknowledgment of a greater being other than oneself (Musgrave, Allen & Allen, 2002; Hill & Pargament 2003; Koenig, King & Carson, 2012). However, for this research, religiosity is the primary focus.

Religious influence is an important factor to consider in relation to its influence on youth intention to delay sexual involvement because of its impact on health within African American and Latino youth population. Strong relationships with religious organizations, for instance, can serve as protective factors. Thus, play a role in reducing the rates of early sexual involvement (Levin, Chatters & Tailor, 2005; Resnik, 2000). According to Kirby, Lepore, & Ryan (2005), youth who are more religious attend religious services more frequently, and those who have a stronger religious affiliation are more likely to delay the initiation of sexual activity. Especially if the faith communities that the teens are involved with have conservative values about sexuality. On the other hand, youth who intend to engage in sexual activities particularly at early ages may be less likely to attend religious services; hence they may not be easily influenced by conservative values about sexuality.

According to Tenkorang, Rajulton & Maticka-Tyndale (2007), the soaring rates of HIV infections and diagnoses have been interpreted as a sign of moral decadence. Advancing adherence to religion may be considered as an effective means of fighting AIDS (see also Adogame 2007; Trinitapolis & Regenerus, 2006). Several research studies have also shown the protective impact of religion on health particularly within at-risk populations (Ball, Armistead, Austin, 2003; Hardy and Raffaclli 2003; McCree, Wingwood, DiClemente, Davies & Harrington, 2003; Villarruel, Jemmott, Jemmott & Ronis, 2007) . Rostosky, Regerus & Wright (2003) tested whether adolescent religiosity and sexual attitudes predict later coital debut and whether these predictive relationships

vary by gender. Their findings suggested that beyond demographic factors and number of romantic partners, religiosity reduced the likelihood of coital debut for both males and females. Other studies, however revealed mixed results (McKoy & Petersen 2006; Jarama, Belgrave, Bradford, Young & Honnold, 2007). None the less, this study explored the influence of this variable on youth sexual intentions.

These reviews show that these contextual variables are important to consider. Understanding the nfluence of these main factors on youth intention to delay sexual involvement allows researchers and educators to develop more effective interventions focusing on these motivators. As a result, the nterventions can have a robust impact on reducing adolescent sexual risk-taking behavior. Youth constitute a population seen as being at risk, whose sexual behavior, almost by definition is regarded as immature or ill-timed often. This study aims to contribute to scientific knowledge about young people and sexual health.

As mentioned earlier a considerable number of studies have examined knowledge, attitudes, sexual practices and behaviors among youth. Each of these had particular strengths ‘and contributed to assessing the magnitude of the problem. The primary weakness, however was their lack of or need for, deeper understandings of the intersection between contextual factors (knowledge, attitudes and social factor) and youth intention to delay sexual involvement. The reviews also provide indications of a growing concern for contextual and cultural issues. This study, therefore, attempts to make its mark in relation to this broad concern.

Critique of Methods

The reviewed articles represent a cross-section of disciplines ranging from psychology or social science, the journal of adolescent health, health education, health promotion, public health and nursing research publications.

Study designs:

The studies employed reasonably reliable experimental (randomized control trials) with well-matched intervention and comparison groups or quasi-experimental designs as well as both pretest and posttest data collection. In general, the studies explored the theoretical causes and effects of the independent versus the dependent variables, conceptualized and defined the variables or examined the relationship between the variables of interest. Studies that used randomized trials provided a useful source of evidence of effectiveness and the potential to extrapolate the results to other population. However, the generalizability of the results may be limited depending on the sample size because a small subpopulation within a larger population may not be represented in the random sample adequately. Other information such as participants' characteristics may be needed to establish generalizability. Studies that used cluster-randomized trials reported sufficient number of units to ensure even distribution of potential confounders among groups.

Sample Sizes:

Overall, the studies utilized relatively large samples (at least 100) and the participants were either recruited as convenience sample in which case, the degree of generalizability is questionable or used a random sampling procedure. In any case, a sample should not be so big that the process of sampling becomes time-consuming tedious and uneconomical. Thus, not all the studies reviewed provided findings that can be

generalizable to the rest of the population. Additionally, the use of large sample sizes reduced the sampling error and increased the chances of determining cause and effect.

Statistical Method:

The studies mainly applied interview or survey methodology for data collection and performed conventional descriptive statistics to assess the characteristics of the study participants. Univariate (i.e., chi-square tests, t-tests, analysis of variance), bivariate, multi-linear and/or multivariate statistical analysis as appropriate for answering their research questions or determining causality was also performed. In most of the studies reviewed that focused on sexual intentions, logistic, linear/multilinear or stepwise hierarchical regression analysis were commonly used to analyze variations in sexual intentions (Anderson, Beutel & Maughan-Brown, 2007; Farmer, & Meston, 2006; Kinsman, Romer, Furstenberg, & Schwartz, 1998; Murphy, Herbeck, Marelich, & Schuster, 2010; Nahom, Wells, Gillmore, et al., 2001; Rosengard, Clarke, DaSilva, Hebert, Rose et al., 2005; Sieverding, Adler, Witt & Ellen, 2005; Santelli, Kaiser, Hirsch, Radosh, Simkin, et al., 2004). The choice of the statistical tests was largely based on the research question snd whether the relationship between the predictor variables and outcome of interest is a linear function or not. Additionally, the choice of the statistical test depends on whether the outcome variable is a continuous or categorical variable. For example, the study by L'Engle, Brown & Kenneavy (2006) compared influences from the mass media on adolescents' sexual intentions and behaviors to other socializing contexts. Intentions to have sex were assessed with two items and the responses measured on a Likert scale from 1= *very unlikely* to 4 = *very likely*. The impact of each of the contexts (family, religion, school, peers, and media) on sexual intentions was analyzed using multiple linear regression analysis. Forehand, Gound, Kotchick, Armistead, Long, et al. (2005) on the other hand, examined the association of

risk and adaptive behaviors with sexual intentions. The possible responses to the sexual intentions measure ranged from 1= *I'm sure I won't have sex in the next year* to 5= *I'm sure I will have sex in the next year*. However, they interpreted the responses in terms of intention and used two series of logistic regressions to determine the unique contribution of the outcome of interest. In other studies, such as the one conducted by Cummings and Mayes (2007), they compared survival and emergency department (ED) length-of-stay between patients cared for by surgeons, emergency physicians (EPs) on call for trauma cases and EPs on shift in the ED. The first outcome of interest is a continuous variable; therefore the authors used multivariate linear regression analysis to determine the impact of the predictor variables on the dependent variable. Additionally, they used logistic regression analysis to assess whether the same predictor variables had any effect on survival, a categorical variable.

Measures Employed:

Different instruments such as self-report questionnaire were employed to measure the variables of interest. As such, the truthfulness of participants' responses may be questioned particularly since the questions required sensitive sexual responses. However, the precautionary steps taken such as assuring participants that their responses would be strictly confidential may help to increase participants' willingness to provide honest answers. A few of the studies did not report on the reliability or validity of the measures used. However, provided useful examples and explanations of the measures employed. Those that described the reliability and validity of the measures used reported reliability as high as $\alpha = 0.94$. The measures used for example, include those from existing adolescent risk behavior surveys (Coyle et al., 1999), the National Youth Risk Behavior Survey (CDC, 2007), or the National Longitudinal Study of Adolescent Health (Udry, 1997).

Summary & Conclusions

Although existing HIV preventive strategies for ethnic minority youth have been efficacious, they have not significantly reduced the impact of the epidemic in this population (Marston & King, 2006). Consequently, health disparities that exist among ethnic minority youth in the United States call for a shift to developing interventions that integrate multilevel perspectives on HIV prevention. The studies reviewed indicate that a broad range of factors including biological, individual, interpersonal, and social determinants influence youth sexual involvement. Each of these influencing factors provides valuable opportunities for prevention. Marston & King (2006) reviewed 268 qualitative studies of young people's sexual behavior published between 1990 and 2004 using a method of comparative thematic analysis. They found that a considerable overlap existed between current studies indicating the need to broaden the scope of future work. However, HIV preventive interventions for young people have primarily focused on motivation to reduce risky behaviors, self-efficacy and behavioral skills (e.g., Bandura, 1977; Fishbein & Ajzen, 1975; Fisher & Fisher, 1992; Koniak-Griffin et al., 2003, 2008). Few interventions have focused on broader contextual factors that can impact youth motivation to delay sexual involvement. The current study therefore proposes an expansion of HIV preventive approaches to include a focus on contextual influences of youth intention to delay early sexual debut. The ultimate goal is to reduce the incidence and prevalence of HIV among young people especially those disproportionately impacted.

The study was based on a strong theoretical framework and sought to build on earlier research by developing a unique portrait of key demographic, individual and social factors associated with youth motivation to delay sexual debut. Discerning the principal

factors of early sexual debut will provide important directions for future prevention programs.

Chapter 3: Research Method

Introduction

As previously stated, the aim of this research was to examine the relationship between contextual factors and direct exposure to HIV on youth intentions to delay sexual involvement. The study was based on cross-sectional data and involved secondary data analysis of baseline data pooled from a program evaluation of an NIMH-funded study. The major sections of this chapter include the research design and methods, the population under investigation, the sampling procedure, and data collection. In addition, the validity and reliability of the data are addressed and ethical considerations with respect to the study are discussed.

Research Design and Rationale

The independent variables include age, gender, race/ethnicity, immigration status (demographic characteristics); HIV knowledge, HIV-related stigma, concern about HIV, direct exposure to HIV/AIDS (knowledge and attitude); peer pressure and religious influence (subjective norms). The dependent variable is intention to delay sexual involvement. The research design employed was quantitative, observational approach specifically, a cross-sectional study to investigate how contextual factors and direct exposure to HIV/AIDS influence youth intentions to delay sexual involvement. This research was quantitative because hypothesis was generated to be proved or disproved using statistical means. Also, this study was observational (cross-sectional) because it conforms to the characteristics of observational research. Therefore, since the study was observational and not analytical (e.g. randomized control trial) cause and effect cannot be established. Nonetheless, the observational study provides a good description of the variables. As such, allowed me to demonstrate the associations or relationship of the

variables of interest in the proper context (Cresswell, 2003). Also, I could make inferences about possible relationships to support further research and investigation (Levine, 2006). Cross-sectional studies take a "snapshot of a group of people or sample, and it is most appropriate for screening hypotheses (Carlson, & Morrison, 2009) which is the goal of this study. However, cross-sectional studies like any other research method have its challenges. These challenges include validity and reliability of data, and since this study involved secondary data analysis, the threats to validity and reliability of secondary data were considered.

Threats to Validity and Reliability

Validity is the ability of the instrument to measure adequately the construct it is supposed to measure. Worthen, Borg & White (1993) define validity as "the degree to which they accomplish the purpose for which they are being used." Validity shows the effectiveness of the instrument used for measurement in determining the results. The validity of secondary data can be threatened by a variety of errors and bias unless they are removed or minimized. Also, a researcher's knowledge of their existence and taking them into account will help establish some level of confidence in drawing informed conclusions from the results of the analysis. The potential errors and bias in secondary data include selection bias/sampling errors, non- sampling errors, errors that invalidate data, require data reformation and reduce reliability (Rabianski, 2006, p.49; Tasic & Feruh, 2012).

Selection bias may occur if participants did not have an equal chance of participating in the study (Frankfort-Nachmias & Nachmias, 2008, p177; Daniel, Moore & Starnes, 2008). As such, the sample may not be an accurate representation of the population of interest. The variance between individual results within this sample may not be an indicator of variance in the overall population and, therefore accuracy of results may not

easily be estimated. However, the random selection of participants in the CHAMPions study allowed the data to have strong internal validity. Therefore eliminating prior group differences and minimizing the threat (McKenzie, Neiger, & Thackeray, 2009).

The non-sampling error is a more serious threat to the validity of the research results than sampling error because they can arise in all aspects of the survey process and are difficult to measure. According to Tasic & Feruh (2012), the major types of non-sampling errors that could occur include frame errors, response errors, sequence bias, interviewer bias and non-response bias (Mazzocchi, 2008, p.48). Frame errors may occur because the research analyst omitted, duplicated or wrongfully included certain individuals whose opinions, attitudes or characteristics are supposed to be represented in the sample. This threat is also minimized because of random sampling. Response bias occurs if respondents give information that is not true or give information they think the interviewer wants to see or hear. If respondents are aware of the expected outcome of the research, they may provide answers or information to suit the purpose. These errors may also be due to inefficiencies of the questionnaires provided. Therefore, the amount of information given to the study participants must be restricted to minimize this type of errors. Sequence bias occurs when the order of the questions on the survey instrument or the interview questions are misleading or leads the respondents to give answers that are desirable for achieving the outcome of interest. However, the use of standardized questionnaires reduces this potential threat. Interviewer bias may arise because the interviewer can influence how a respondent answers the survey questions especially in face to face interviews. If the study participant is familiar with the interviewer for example, he/she might be prompted to give answers that are favorable or pleasing to the interviewer rather than truthful answers. However, the interviewers in the main study were highly trained in facilitating groups. Therefore, they

are more likely to remain neutral throughout the interview process and mindful of the way they conducted the interviews hence minimizing this potential error.

Non-response errors may occur due to attrition from the study or because the participants fail to answer a significant portion of the questions which can distort the results. In the CHAMPions study for example, this type of errors are minimized because the investigative team has experience obtaining complete data, recruiting and tracking participants within the target population.

Errors that can invalidate data include those that are caused by manipulation of the data and inappropriateness. The person collecting the data could manipulate or reorganize the data to suit the research goals. Errors due to inappropriateness can arise as a result of the collection process or the data assembly or synthesis procedures that were used. Also, it could be that the person collecting the data does not know how to collect data and may not care about the quality and validity the data. Any inappropriateness, confusion or carelessness towards the handling of the data renders it invalid and cannot be used. Concept errors may also invalidate the data due to the difference between the concept to be measured and the indicator. Also, the error maybe because an indicator variable does not show the complexity of the concept variable (Dehmater & Hanckok, 2001, p.108). This type of error can also invalidate data, but the data can still be useful if the analyst is aware of the threat and understands the nature of the error.

Errors that require data reformulation may arise either due to a change that affects a data series but is not readily apparent in that data series or the original categories do not reflect the need to handle the task at hand (Biemer, Groves, Lyberg, et. al., 2004, p.431). It may also be because the data is not readily available for the intervening periods. Thus, a reformulation of the data may be necessary otherwise the results become distorted.

Errors that reduce the reliability of the data can occur when data is inaccurately collected. The data may be flawed by procedural and measurement errors. This type of errors can be minimized by displaying the data in an easily comprehensible manner such as a scatter plot to easily detect outliers. In addition, when using secondary data that has been corrected, it must be checked against newest versions of the data set so as to reduce potential threats.

Reliability, on the other hand determines if the set of questions used in a questionnaire is consistent in measuring the same concept (Frankfort-Nachmias & Nachmias, 2008, p.152). Worthen, Borg & White (1993) also defines reliability as "The measure of how stable, dependable, trustworthy, and consistent a test is in measuring the same thing each time." Standardized instruments were adapted and then used for data collection in the main study. Also, the main study investigative team had tested the adapted versions in prior studies and verified the tools to be reliable. The use of standardized instruments validates the reliability of the data. Using instruments that are valid and reliable is an essential component of research quality.

Methodology

Population

The population includes inner city low-income African American and Latino youth aged 11-16 years living in a neighborhood with high rates of HIV infection. Youth are eligible for involvement in the study if they: a) live in the Morris Heights community of the Bronx, New York; b) are 12-16 years old; c) have parents willing to provide informed consent; and d) agree to provide assent to participate in the study.

Recruitment, Sampling and Participation

In the CHAMPions study, the youth were invited to participate from the pool of all eligible 7th, 8th and 9th graders in twelve middle/early high schools. Active consent was obtained from all caregivers/parents who attended classroom presentations. Additionally, consent was sought from parents who were available at informational booths, at open school nights and school events hosted by the research team to answer questions about the project. After parental consent and youth assent had been obtained, the study sample were randomly selected and included 536 African American and Latino youth aged 11-16 years drawn from a low-income urban setting with high HIV infection rates. Therefore, the ethnic or cultural characteristics of the youth involved in the study reflect the demographic characteristics of the target community. Specifically, the South and Central sections of the Bronx, New York where the study was located. Then the students were invited to complete baseline assessment at a scheduled date. They were assigned a classroom or community site to go to after school where they completed baseline assessment to measure the constructs under investigation. Youth were excluded from the study if the parents are not capable of giving consent for the child to participate in the study. Youth were also excluded from participation if there was any evidence of mental health or substance abuse difficulties during the consent process that can interfere with understanding of program content or informed consent process. In this case, the research staff would discuss with the potential participants about the concerns and provide referrals to community-based resources if appropriate.

Power Analysis

The sample size analysis for this study was based on G*Power version 3.0.10 sample size computations (A-Priori) for regression analysis (see Faul, Erdfelder, Buchner

& Lang, 2009). The recommended sample size was 400 at *P* = .02; Power = .95 and Low Effect Size of *f* squared = .02. A Low Effect Size *f* squared = .02; *P* = .02 and Power = .95 was used because the High Effect Size *f* squared = 0.35; Medium High Effect Size *f* squared = 0.25 and Medium Low Effect Size *f* squared = 0.15 generated very small sample sizes.

Data Collection

This study involved secondary analysis of de-identified data. However, data collection procedure associated with the main study (CHAMPions Study) included self-administered questionnaires to assess core constructs over time. Although, there has been argument whether self-administered questionnaires yield as truthful responses as computer assisted methods, evidence suggest that the differences in the methods of assessment are minimal if respondents do not provide face-to-face answers and are assured confidentiality of the data (Fishbein et al., 2000). Also, Confidentiality Certificate was issued by the National Institutes of Health (NIH) pursuant to Section 301 (d) of the Public Health Services Act (42 U.S.C. Section 241(d)). The certificate provided special privacy protection to the research subjects as well as allowed the Principal Investigator and research staff to avoid compelled involuntary disclosure of identifying information about the research participants. However, the certificate did not prevent voluntary disclosures that protect the subject or others from serious harm. Also, the research staff may not rely on the certificate to withhold data if the subject consents to the disclosure. Further, the participants of the study were informed about the protection afforded by the certificate and any exceptions to the protection. Basic language was used in the disclosure because the participants varied widely in their cultural and educational backgrounds. Privacy protection, for example meant that the subject will not be identified as a participant in the study unless he/she

consent to it. Confidentiality statement was also provided in the informed consent document that was given to participants prior to their involvement in the research. Further, the research staff completed the human subjects training and signed a confidentiality statement that specified the procedure to follow if they breached the confidentiality agreement. The confidentiality statement stressed that divulging confidential information (e.g. telephone numbers) may result in demotion or termination.

The Principal Investigator of the main study reviews all requests to use the data and ensures that the datasets were stripped of identifiers before making the data available to other individuals.

Instrumentation and Operationalization of Constructs

In the main study, standardized instruments appropriate for measuring the variables of interest were used for data collection. Therefore, since standardized instruments have gone through vigorous research or were used in previous studies and established to be reliable and valid (see also Sauro & Lewis, 2009), the instruments used in the main study are considered valid and reliable. In addition, the items generated in the measures were within the content domain of the subject matter. The measures described were in terms of the purpose of the research and content of the subject matter. For this study, specific questions were selected that address the variables and outcome of interest. The constructs used are discussed further in this section. Table 1 below describes the scaling of each measure.

HIV/AIDS Knowledge and Attitudes

Participants' knowledge and attitudes regarding HIV/AIDS were measured using a series of questionnaires adapted from the Youth AIDS Prevention Project and the Aban Aya Project (Levy, Lampman, Handler, Flay & Weeks, 1993; Paikoff, 1995). This measure

consists of 18 items that address the extent to which respondents are tolerant of interacting with persons with HIV/AIDS, their understanding, cause and transmission of HIV, as well as their comfort in discussing HIV/AIDS and sexuality with others. For example "*A child with AIDS should have the right to go to my school*;" *I would be willing to eat lunch sitting next to a student who has AIDS.*" The attitude items were scored based on a 4-point scale (from *strongly disagree* to *strongly agree*). The knowledge items for example "*Sharing needles or syringes with an infected person*;" "*Having unprotected sex with an infected person*" are scored on a 3-point scale (as *safe, not safe*, and *not sure*).

HIV-related Stigma

HIV-related stigma was assessed using questionnaires adapted from Cultural Beliefs about AIDS Test (CBAT) developed by Stevenson, Davis, Weber, Wieman, & Abdul Kabir (1995). This tool is an eight-item scale that measures the level of belief in myths about the origin, transmission and contraction of HIV/AIDS. The CHAMPIONS Study adapted Stevenson et al., (1995) scale that consists of 3 items for example, "*A child with AIDS should have the right to go to my school.*" These items are assessed on a 5-point Likert scale from *strongly disagree* to *strongly agree* and worded in the same direction.

Peer Pressure

Relationship maintenance was assessed using Paikoff and Holmbeck (1993) scale. This scale measures youth's likely response to a social pressure situation (e.g., engage in unprotected intercourse) and the perceived likelihood of encountering such pressure with friends and romantic partners named in the friendship/relationship support interview. The items are assessed on a 4-point scale from *would break off the relationship* to *would smoke cigarettes to stay in the relationship.*

Demographics

Demographic information was also collected and includes family composition and structure, educational level of parent figures, parental employment history, residential moves and changes in child's educational placement.

Sexual Intentions

Measures previously validated with the target population were used to assess youth intentions to engage in sexual activity with members of the opposite sex. For example, "*I will be proud of myself if I remain a virgin during my teen years*;" "*I am likely to get AIDS if I have sex*." Measures were selected based on their prior use with samples similar to the population in this study (African American and Latino youth ages 11-16 years). As such, the reliability, validity, sensitivity, age appropriateness of the measures is maximized. The items are scored on a 5-point Likert scale from *strongly disagree* to *strongly agree* and worded in the same direction.

Table 1. Constructs, Instruments, and Measurement Scale

Construct	Instrument	Scale
HIV Knowledge and Attitudes	Youth AIDS Prevention Project and the Aban Aya Project	Knowledge Items: 3-point scale (as *true, false*, and *not sure*); Valued Attitude: 4-point scale (from *strongly disagree* to *strongly agree*
HIV-related Stigma	Cultural Beliefs about AIDS Test (CBAT)	5-point Likert scale from *strongly disagree* to *strongly agree*
Worried/Concern about HIV	CHAMP High-Risk Interview (previously validated with the target population)	4-point scale *very likely* to *not likely at all*
Direct Exposure to HIV/AIDS	Adapted from those of Rotheram-Borus et al. (Meyer-Bahlburg et al., 1990; Rotheram-Borus, Mahler & Rosario, 1995)	Nominal Scale: *Yes/No*
Peer Pressure	Relationship maintenance inventory	Nominal Scale: *Resist or Yield to peer pressure*
Religious Influence	CHAMP Demographics	*Never* to *Once a week or more*
Sexual Intentions	Adapted from CHAMP High-Risk Interview (previously validated with the target population)	5-point Likert scale from *strongly disagree* to *strongly agree*
Demographics	CHAMP Demographics	Nominal Scale: *Male* or *Female, Black, White, Hispanic or Other*

Data Analysis

De-identified baseline data set of the CHAMPions study was used to perform the analysis for this study. Only relevant subset of the whole data was analyzed using IBM SPSS 21.0 for Windows. The data was screened for missing values that may have occurred

as a result of participants forgetting to respond to certain items, answering items incorrectly or due to entry errors. Descriptive statistics was performed to identify missing values or mis-entered scores in the data. A series of Mean was used to replace the missing values using the replace missing value function in SPSS. Also, items that needed to be reverse coded were identified and recoded as necessary. Content analysis was used to redefine the values so that the data is ready for analysis. Data transformation involved rescaling variables to become categorical, and then the dummy-coded category indicator variables were used in the regression analyses as necessary.

The study aimed to examine: 1) the relationship between demographic factors (gender, age, race and immigration status) and youth intention to delay sexual involvement; 2) the relationship between knowledge and attitudes factors (HIV knowledge, HIV-related stigma, concern about HIV and direct exposure to HIV/AIDS) and youth intentions to delay sexual involvement when gender, age, race/ethnicity and immigration status are added to this model; 3) the relationship between peer pressure and religious influence (third group variables) and youth intentions to delay sexual involvement when HIV knowledge, HIV-related stigma, concern about HIV and direct exposure to HIV (the second group variables) as well gender, age, race/ethnicity and immigration status (first group variables) are added to this model. The research questions and hypothesis as stated in Chapter 1 are as follows:

1. Is there a relationship between age and youth intention to delay sexual involvement?
    viii. Hypothesis 1: Sexual intentions are related to and vary with age.
    ix. Null Hypothesis 1: Sexual intentions are not related to age, and there is no variation by age.
2. Is there a relationship between gender and youth intention to delay sexual involvement, when gender is added to age?

x. Hypothesis 2: Sexual intentions are related to and vary by age and gender.

xi. Null Hypothesis 2: Sexual intentions are not related to age and gender, and there is no variation by age and gender.

3. Is there a relationship between race/ethnicity and youth intention to delay sexual involvement, when age and gender are added to race/ethnicity?

xii. Hypothesis 3: Sexual intentions are related to and vary by race/ethnicity, gender, and age.

xiii. Null Hypothesis 3: Sexual intentions are not related to race/ethnicity, gender, and age, and there is no variation by race/ethnicity, gender and age.

4. Is there a relationship between immigration status and youth intention to delay sexual involvement when race/ethnicity, gender, and age are added to immigration status?

xiv. Hypothesis 4: Sexual intentions are related to and vary by immigration status, race/ethnicity, gender, and age.

Viii. Null Hypothesis 4: Sexual intentions are not related to immigration status, race/ethnicity, gender and age and there is no variation by immigration status, race/ethnicity, gender, and age.

5. Is there a relationship between HIV knowledge and youth intentions to delay sexual involvement when HIV knowledge is added to demographic variables (age, gender, race/ethnicity, immigration status)?

ix. Hypothesis 5: HIV knowledge when added to demographic variables (gender, age, race/ethnicity and immigration status) will be more significantly related to youth intention to delay sexual involvement than the impact demographic variables alone will have on youth sexual intentions.

x. Null Hypothesis 5: HIV knowledge, when added to demographic variables, will not be more significantly related to youth intention to delay sexual involvement than the impact demographic variables alone will have on youth sexual intentions.

6. Is there a relationship between HIV-related stigma and youth intentions to delay sexual involvement when HIV-related stigma is added to HIV Knowledge and demographic variables?

xi. Hypothesis 6: HIV-related stigma when added to HIV knowledge and demographic variables will be more significantly related to youth intentions to delay sexual involvement than the impact HIV Knowledge and demographic variables alone will have on youth sexual intentions.

xii. Null Hypothesis 6: HIV-related stigma when added to HIV knowledge and demographic variables will not be more significantly related to youth intentions to delay sexual involvement than the impact HIV knowledge and demographic variables alone will have on youth sexual intentions.

7. Is there a relationship between concern about HIV and youth intentions to delay sexual involvement when concern about HIV is added to HIV-related stigma, HIV knowledge, and demographic variables?

xiii. Hypothesis 7: Concern about HIV when added to HIV-related stigma, HIV knowledge and demographic variables will be more significantly related to youth intention to delay sexual involvement than the impact HIV-related stigma, HIV knowledge and demographic variables alone will have on youth sexual intentions.

xiv. Null Hypothesis 7: Concern about HIV when added to HIV-related stigma, HIV knowledge and demographic variables, will not be more significantly related to youth

intention to delay sexual involvement than the impact HIV-related stigma, HIV knowledge and demographic variables alone will have on youth sexual intentions.

8. Is there a relationship between direct exposure to HIV/AIDS and youth intentions to delay sexual involvement, when direct exposure to HIV/AIDS is added to concern about HIV, HIV-related stigma, HIV knowledge, and demographic variables?

xv. Hypothesis 8: Direct exposure to HIV/AIDS, when added to concern about HIV, HIV-related stigma, HIV knowledge and demographic variables will be more significantly related to youth intention to delay sexual involvement than the impact concern about HIV, HIV-related stigma, HIV knowledge and demographic variables alone will have on youth sexual intentions.

xvi. Null Hypothesis 8: Direct exposure to HIV/AIDS when added to concern about HIV, HIV-related stigma, HIV knowledge and demographic variables will not be more significantly related to youth intention to delay sexual involvement than the impact concern about HIV, HIV-related stigma, HIV knowledge and demographic variables alone will have on youth sexual intentions.

9. When peer pressure is added to direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV knowledge, and demographic variables, is there a relationship between peer pressure and youth intentions to delay sexual involvement?

xvii Hypothesis 9: Peer pressure, when added to direct exposure to HIV/AIDS, concern about HIV/AIDS, HIV-related stigma, HIV knowledge and demographic variables will be most significantly related to youth intention to delay sexual involvement than the impact direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV knowledge and demographic variables alone will have on youth sexual intentions.

xviii Null Hypothesis 9: Peer pressure, when added to direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV knowledge and demographic variables will not be most significantly related to youth intention to delay sexual involvement relative to the impact direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV knowledge and demographic variables alone will have on youth sexual intentions.

10. When religious influence is added to peer pressure, direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV knowledge and demographic variables, is there a relationship between, religious influence and youth intentions to delay sexual involvement?

xix Hypothesis 10: Religious influence, when added to peer pressure, direct exposure to HIV/AIDS concern about HIV, HIV-related stigma, HIV knowledge and demographic variables, will be most significantly related to youth intention to delay sexual involvement than the impact peer pressure, direct exposure to HIV/AIDS concern about HIV, HIV-related stigma, HIV knowledge and demographic variables alone will have on youth sexual intentions.

xx. Null Hypothesis 10: Religious influence, when added to peer pressure, Direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV knowledge and demographic variables, will not be most significantly related to youth intention to delay sexual involvement relative to the impact peer pressure, direct exposure to HIV/AIDS, concern about HIV, HIV-related stigma, HIV knowledge and demographic variables alone will have on youth sexual intentions.

Descriptive statistics, such as mean and standard deviations was computed to provide a description of the sample. Then, bivariate analyses was performed to determine if

there are significant differences between the independent variables (age, gender, race, immigration status, HIV knowledge, HIV-related stigma, concern about HIV, direct exposure to HIV, peer pressure and religious influence). Multiple linear regression analysis was performed to determine the relationship between the dependent variable and independent variables. Potential confounders including age, gender, race and immigration status were controlled during the regression analysis. The *p*-values were used to assess whether the effect of dependent and independent groups were statistically significant.

Threats to Validity of Results

Validity establishes whether the research findings meet all of the requirements of the scientific research methods and, therefore, is a fundamental cornerstone of research. Although the validity of experimental design is not relevant to the current research since it is a cross-sectional study involving secondary data, knowledge of the validity of research design is useful. Validity of research has two categories, internal and external validity.

Threats to internal validity compromise the research ability to establish causality and may be due to the following:

Selection threat: may occur because the participants in the sample do not represent the population of interest; a variable other than the intervention may be responsible for the observed change in outcome. However, randomization of participants helps to minimize this threat.

History threat: occurs when in the past, participants were exposed to the event or have prior knowledge of the event. As such, any changes observed at posttest maybe as a result of the prior knowledge and not as a result of the intervention.

Maturation threat: whether participants went through the program or not, the outcome would still be the same. As individuals grow from babies to children, from

children into adolescence and subsequently into adults, they progress from dependency to increasing autonomy (Kail, 2006). They undergo maturation and likewise their knowledge increases even though at varying levels (Patterson, 2008). Thus, the outcome observed could be as a result of the normal maturation of the participants and not as a result of the intervention.

Regression threat: Respondents with the lowest pretest scores cannot get any lower than their present knowledge level. So whether they pass through the program or not, they can only get better and not worse which may affect the outcome of the program.

Mortality threat: may be due to an increase in attrition rate particularly among participants who scored lowest on the pretest. Consequently, respondents with the low pretest scores will be included in the pretest and not the posttest that can result in an incorrect inflation of the posttest and subsequently the outcome of the program.

Testing threat: may be due to the likelihood of participants becoming primed after taking the pretest that it may affect how they take the post-test.

Instrumentation threat: occurs when there is a change in the instruments (forms, interviewers, observers) used during the research. The human observer, for instance, may either become better at the observations or become too bored over time. As such, the outcome might be as a result of the change in the instrument.

Design contamination: can occur if the control group was exposed to the experimental treatment. Threats to external validity compromise the research ability to generalize the findings of the study to other groups. Threats to external validity consist of: 1) Interaction of Selection and Experimental Variable. This threat occurs because some groups may be more affected by the treatment depending on the participants' characteristics or composition. For example, the selection process itself may have placed highly motivated

subjects in the experimental group and low motivated students in the control group. If the experimental group scores higher, one cannot say for sure that the outcome observed is due to the intervention and not some other variable. It is likely that the high motivation caused the high scores found. Randomization helps to minimize this threat. 2) Reactive or Interaction Effect of Testing may occur because a pretest may provide subjects with cues to the anticipated results of a study. As such, the participants may provide responses they believe they are expected give. Blinding participants to the study minimize this threat study (Lana, 1959; Willson & Putnam, 1982). 3) Multiple-Treatment Interference may occur due to the effects of earlier treatments given to the same subjects that are not erasable as such difficult to control. 4) Interaction of History and Treatment occurs when, for example, the research takes place on a historic day. The outcome of the study may be due to the events of that day, conducting the research under ordinary circumstances may yield a different outcome.

In the main study, these threats were minimized because of randomization of participants. Also, multiple treatments were not applied to the same group in the study, and the research was conducted under ordinary conditions.

Ethical Procedures

The Principal Investigator of the main study and I signed the data use agreement form. The purpose of the agreement was to grant me access to the de-identified data set for use in my research. The agreement is in accordance with HIPAA and FERPA regulation codified as Title 45 parts 160 through 164 of the United States Code of Federal Regulations, as amended from time to time.

Ethical consideration

In the main study (CHAMPions study), the investigative team followed ethical guidelines when conducting the research. To ensure that consent was freely given and that the rights and welfare of the participants are protected, all consent and assent materials were read aloud to parents and the youth. Each parent and child were also given a copy of the consent. In addition, the research staff was trained to ask questions so as to ensure that participants understood the materials and felt free to ask any questions they might have about the study. The consent forms provided a description of all aspects of the study and explained that confidentiality would be maintained unless there was concern about, for example suicidality or child abuse that warranted involving the authorities. The research staff also explained the risk of subsequently reporting to the state registry should any concern be reported to authorities. They assured parents that their participation was strictly voluntary, and they could decide to participate or not participate in the study.

The research team in the main study also ensured confidentiality of participants' data, by assigning random code numbers. All participants' information were given code numbers and the lists of participants' identifying information and code numbers were kept separately on computerized data sets. All hard copies of data were stored in locked cabinets and subsequently entered into password protected computers. The research team also developed a highly structured and intensive interviewer training that consisted of 30 hours of direct instruction and 10 hours of supplemental practice. The training covered in part, the research process, school setting, federal law regarding informed consent, the rights of research participants, basics of interviewing, specifics of the project interview schedule, coding interviews, and managing child discomfort during and after an interview. The subjects completed the surveys in small groups of 5-6 participants, and the youth were

positioned a considerable distance from each other in classrooms or other school space, such as auditoriums to ensure privacy and encourage truthful responses. The data was entered and stored into computerize database using SPSS version 20 and password protected.

In this current study, I contacted the Principal Investigator (PI) of the main study to request permission to use the CHAMPions de-identified data for my research. The Principal Investigator and I completed and signed the data use agreement form according to Walden University Institutional Review Board (IRB) guidelines (see form in Appendix B).

Ethical consideration is important in research due to history of heinous medical experimentation, discrimination, and unethical treatments meted to human subjects specifically, the minority population in research (Green, Maisiak, Wang, Britt & Ebeling, 1997; Gamble, 1993). Consequently, certain guidelines and standards were put in place such as The Nuremberg Code (The Nuremberg Code (1947) and the Declaration of Helsinki (World Medical Association Declaration of Helsinki, 1996) to safeguard the health and wellbeing of research participants. Most institutions have Institutional Review Board (IRB) which ensures that human subjects understand fully their involvement in research and provide informed consent before participation (Ethics in Medicine, 2010). These laws have also helped to reduce if not eliminate the distrustful views held by community members about participating in research studies. However, since this present study involves secondary data analysis of baseline data. Ethical consideration with regards to human subjects is not applicable. However, obtaining and using the research data was based on Walden University and Mount Sinai School of Medicine IRB guidelines for human subjects and data protection. Mount Sinai School of Medicine and Walden University adhere to all federal regulations pertaining to studies involving human subjects or use of secondary data.

The Institutional Review Boards oversees research compliance and regulations for individual investigators.

Summary

The research design employed in the current study is a cross-sectional approach and involved secondary data analysis. The methodology used in the main study includes self-administered questionnaires for data collection. Ethical procedures were followed to ensure the integrity of the data collected from participants and acquired for use in this study. Since the research design is a cross-sectional study, causality cannot be established rather the research focused on examining the relationship between the independent variables and the outcome of interest. However, since the sampling involved random selection of participants and the study utilized relatively large sample size, the findings can be generalized to the rest of the population of interest. The next chapter, which is chapter 4, focuses on the results of the analysis.

CHAPTER 4: Results

Introduction

The aim of the current study was to examine: 1) the relationship between demographic factors (gender, age, race and immigration status) and youth intention to delay sexual involvement; 2) the relationship between knowledge and attitudes factors (HIV knowledge, HIV-related stigma, concern about HIV and direct exposure to HIV/AIDS) and youth intentions to delay sexual involvement when age, gender, race/ethnicity and immigration status are added to this model and 3) the relationship between peer pressure and religious influence (third group variables) and youth intentions to delay sexual involvement when HIV knowledge, HIV-related stigma, concern about HIV and direct exposure to HIV/AIDS (the second group variables) as well gender, age, race/ethnicity and immigration status (first group variables) are added to this model. The following sections of this chapter (4) describe the findings of the study and provide a summary of the results.

Results

Sample Descriptive

A simple frequency distribution was conducted to determine the sample characteristics. There were 536 youth who completed the survey at baseline. The sample was 51% female, 46% African American, and 54% Latino/Hispanic. The youth age ranged between 11 and 16 years old, with an average age of 14 years. The majority of youth were born in the United States (88%). Christianity was the most represented religion comprising 53% of the youth. Thirty percent were either Atheist or did not know their religion, 12% identified as Born Again Christian, 4% identified as Muslims, and only 1% identified as Jewish. Demographic characteristics are summarized below in Table 2 below.

Table 2. Demographic Characteristics of Participants

Characteristic	N	Prevalence, %
Gender (n=506)		
Male	247	49
Female	259	51
Race/Ethnicity (n=534)		
Hispanic/Latino	288	54
African American	246	46
Youth Immigration Status (n=519)		
US Born	459	88
Non US Born	60	12
Religion (n=522)		
Christian	277	53
Born Again Christian	62	12
Muslim	20	4
Jewish	3	1
Unknown/Atheist	158	30
Characteristic	$\bar{x}$ (SD)	Range
Age (n=515)	14.06 (1.43)	11-16

Independent Variables and Dependent Variable Assessed

Table 3 summarizes the independent variables (HIV knowledge, HIV-related stigma, concern about HIV, direct exposure to HIV/AIDS, peer pressure, religious influence) and dependent variable (intentions to delay sexual involvement) assessed in this study.

Table 3. Distribution of Independent Variables and Dependent Variable Assessed

	Age	Gender	Race	Immigration Status	HIV Knowledge	HIV- related Stigma
N	515	506	534	519	510	536
Mean	14.06	.51	.47	.88	2.46	2.00
Median	14.00	1.00	.00	1.00	2.47	2.00
Std.	1.43	.50	.50	.32	.25	.94
Deviation	5.00	1.00	1.00	1	1.20	3.00
Range	11.00	.00	.00	0	1.73	1.00
Minimum Maximum	16.00	1.00	1.00	1	2.93	4.00

	Concern about HIV/AIDS	Direct Exposure to HIV/AIDS	Peer Pressure	Religious Influence	Intention to Delay Sex
N	531	533	465	531	489
Mean	2.79	.22	.78	2.70	3.22
Median	2.75	.00	.800	2.50	3.21
Std. Deviation	.73	.35	.24	1.14	0.63
Range	3.75	1.00	1.00	4.00	3.57
Minimum	1.00	.00	.00	1.00	1.29
Maximum	4.75	1.00	1.00	5.00	4.86

Bivariate Analysis

A bivariate analysis (t-test and chi-square tests) was performed to determine whether a significant difference or relationship existed between the independent variables. The assumptions of the t-test analyses include: 1) selection of a simple random sample from the population and; 2) a normally distributed population was used. The assumptions for the chi-square test are that 1) there are two or more categorical variables; 2) a random sample was used; 3) sample size was adequate; and 3) there was adequate cell count.

In the bivariate analyses, first, age differences by gender, race and immigration were examined. There was a significant difference between age and gender $t(484) = 3.93$, p

<.05. Compared to females (*M* = 13.90, *SD* = 1.43), males were older (*M* = 14.4, *SD* = 1.35). Age differences were also found between race groups, *t*(511) = 2.75, *p* <.05. Compared to Hispanic youth (*M* = 13.91, *SD* = 1.52), African American youth were older (*M* = 14.3, *SD* = 1.30). There was no significant difference between age and immigration status. Youth who were born in the US (US born) and those who were born outside of US (Non-US born) did not differ by age.

Next, gender characteristics by race, immigration status, HIV knowledge, HIV-related stigma, concern about HIV, direct exposure to HIV/AIDS, peer pressure, and religious influence were examined. No significant differences were found for gender by race, immigration status, HIV knowledge, direct exposure to HIV/AIDS, peer pressure, and religious influence. However, HIV-related stigma varied significantly by gender, females (*M* = 1.87, *SD* = 0.87) had less HIV- related stigma compared to males (*M* = 2.09, *SD* = 0.97); *t*(504) = 2.628, *p* <.05. However males were more concerned about HIV infection (*M* = 2.86, *SD* = 0.69) than females (*M* = 2.72, *SD* = 0.74); *t*(499) = 2.253, *p* <.05.

Then race differences by immigration status, HIV knowledge, HIV-related stigma, concern about HIV, direct exposure to HIV/AIDS, peer pressure and religious influence were examined with Chi-square test to find the difference at *p*-value < .05. A significant relationship existed between race and youth immigration status, $\chi 2(1) = 12.089$, p< .05. Race was not significantly related to HIV knowledge, HIV-related stigma, concern about HIV, direct exposure to HIV/AIDS, peer pressure, and religious influence.

Further, differences between immigration status and HIV knowledge, HIV-related stigma, concern about HIV, direct exposure to HIV/AIDS, peer pressure, and religious influence were also examined. The results showed a significant difference between immigration status and HIV knowledge *t* (492) = -2.940, *p*<.05. US born youth had a higher

HIV knowledge (*M* = 2.47, *SD* = 0.24) than non-US born, (*M* = 2.37, *SD* = 0.24). Likewise, a significant difference was found between immigration status and peer pressure, $X^2(5) = 12.4, p<.05$. Non-US born youth (*M* = 11.95, *SD* = 5.03) were found to be more religious than US born youth, (*M* = 10.62, *SD* = 4.57). Results did not show significant relationships between immigration status and HIV-related stigma, concern about HIV, direct exposure to HIV/AIDS or peer pressure.

A Pearson product moment correlation coefficient was conducted to evaluate the relationship between the independent variables and the dependent variable.

Age: A significant negative relationship was found between age (*M* = 14.06, *SD* = 1.43) and sexual intentions (*M* = 3.33, *SD* = .61), r (469) = -.23, *p* = .000. Lower levels of age are associated with higher levels of intention to delay sexual involvement.

Gender: A significant positive relationship was found between gender (*M* = .51, *SD* = .50) and sexual intentions (*M* = 3.33, *SD* = .61), r (458) = .38, *p* = .000. Compared to boys, girls have higher levels of intention to delay sexual involvement.

Race: There was no significant relationship between race (*M* = 0.46, *SD* = .50) and sexual intentions (*M* = 3.33, *SD* = .61), r (485) = -.06, $p > .05$. Indicating that race is not significantly associated with intention to delay sexual involvement.

Immigration Status: A significant relationship was not found between immigration status (*M* = 0.88, *SD* = .32) and sexual intentions (*M* = 3.33, *SD* = .61), r (472) = -.06, $p > .05$.

HIV Knowledge: Similarly, there was no significant relationship between HIV Knowledge (*M* = 2.46, *SD* = .24) and sexual intentions (*M* = 3.33, *SD* = .61), r (466) = .03, $p > .05$. Indicating that race is not significantly associated with intention to delay sexual involvement.

HIV-related Stigma: Also, no significant relationship was found between HIV-related Stigma (M = 2.46, SD = 0.24) and sexual intentions (M = 3.33, SD = .61), r (466) = .03, $p >$ .05. Indicating that race is not significantly associated with intention to delay sexual involvement.

Concern about HIV: There was no significant relationship between concern about HIV/AIDS (M = 2.79, SD = .72) and sexual intentions (M = 3.33, SD = .61), r (484) = .07, $p >$ .05.

Direct Exposure to HIV/AIDS: A significant negative relationship was found between direct exposure to HIV/AIDS (M = 0.22, SD = .35) and sexual intentions (M = 3.33, SD = .61), r (485) = -.12, $p <$ .01. Compared to youth who are not close to someone who has HIV/AIDS or died of the disease, youth who are close to someone who has HIV or died of AIDS have a lower intention to delay sexual involvement.

Peer Pressure: A significant positive relationship was found between peer pressure (M = 0.78, SD = .24) and sexual intentions (M = 3.33, SD = .61), r (427) = .23, p = .000. Compared to youth who experience peer pressure, youth who resist peer pressure have a higher intention to delay sexual involvement.

Religious Influence: A significant positive relationship was found between religious influence (M = 2.7, SD = 1.14) and sexual intentions (M = 3.33, SD = .61), r (484) = .18, p = .000.

Table 4. Bivariate Correlations (Independent variables and Dependent Variable)

	Intention	
Intention	Pearson Correlation	1
	Sig. (2-tailed)	
	N	489
Age	Pearson Correlation	-.228**
	Sig. (2-tailed)	.000
	N	471
Gender	Pearson Correlation	.378**
	Sig. (2-tailed)	.000
	N	460
Race	Pearson Correlation	-.061
	Sig. (2-tailed)	.181
	N	487
Immigration status	Pearson Correlation	-.055
	Sig. (2-tailed)	.229
	N	474
HIV knowledge	Pearson Correlation	.025
	Sig. (2-tailed)	.586
	N	468
HIV-related Stigma	Pearson Correlation	-.032
	Sig. (2-tailed)	.482
	N	489
Concern about HIV/AIDS	Pearson Correlation	.067
	Sig. (2-tailed)	.141
	N	486
Direct Exposure to HIV/AIDS	Pearson Correlation	-.119**
	Sig. (2-tailed)	.008
	N	487
Peer Pressure	Pearson Correlation	.226**
	Sig. (2-tailed)	.000
	N	429
Religious Influence	Pearson Correlation	.177**
	Sig. (2-tailed)	.000
	N	486

Multiple Linear Regression Analyses

The effect of the independent group level variables on the outcome of interest was examined using multiple linear regression analyses in SPSS. The analyses were based on the assumptions that: 1) the ratio of participants to independent variables was at least 20:1. There are 536 participants and nine independent variables which gives a ratio of twenty six participants to one variable. 2) The variables had a linear relationship with one another. A matrix scatter plot was used to look at the relationship between each variable. The normal P-P plot showed a clustering of all the residuals around a straight indicating that the variables had a linear relationship with one another thus, meeting this assumption (see figure 3). 3) The distribution of the values of the residuals are normal as observed by plotting the Histogram of the residuals. The distribution (as seen in figure 4) follows the shape of a normal curve satisfying this third assumption. 4) The independent variable are not highly correlated ($R^2 > 0.9$) or perfectly correlated ($R^2 = 1$). The output from multi-linear regression showed that the value of the Durbin Watson test was above the cutoff point of 1 (See Table 5, Durbin Watson value = 2.048) therefore, the residuals were assumed to be independent. 5) The variance of the variables was roughly equal (homoscedasticity). The variance was tested using a scatter plot which plots the standardized predictor value on the X-axis and standardized residuals on the Y-axis. The matrix scatter plots indicated that the residuals were contained within two straight lines which means that as the value of the predictor increases, the variance of the residuals remains constant (Figures 5-13). 6) No outliers. The leverage value was used to identify outliers. A basic calculation used to identify these values is two times the number of independent variables divided by the number of cases (2 x 9/358= 0.05). The maximum

score for the leverage value for this data is .083 which is greater than the critical value of 0.05. Therefore, outliers were not present

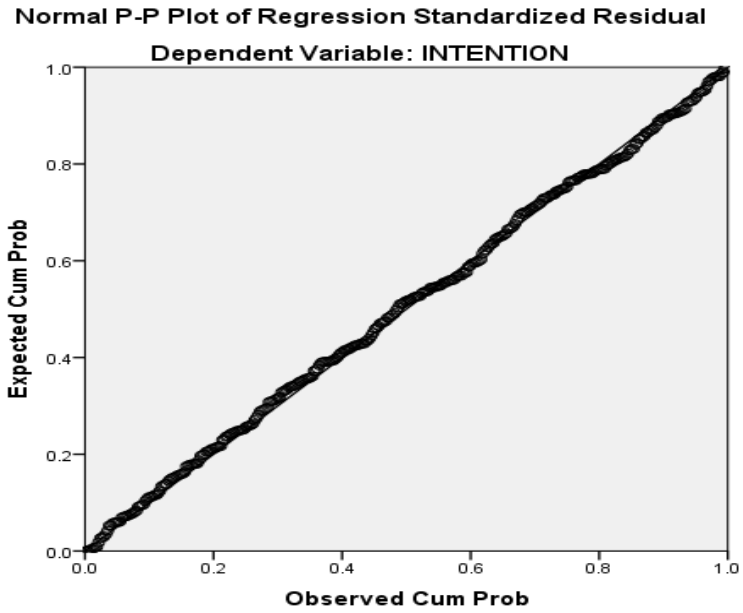

Figure 3. Normal P-P Plot of Regression Standardized Residual.

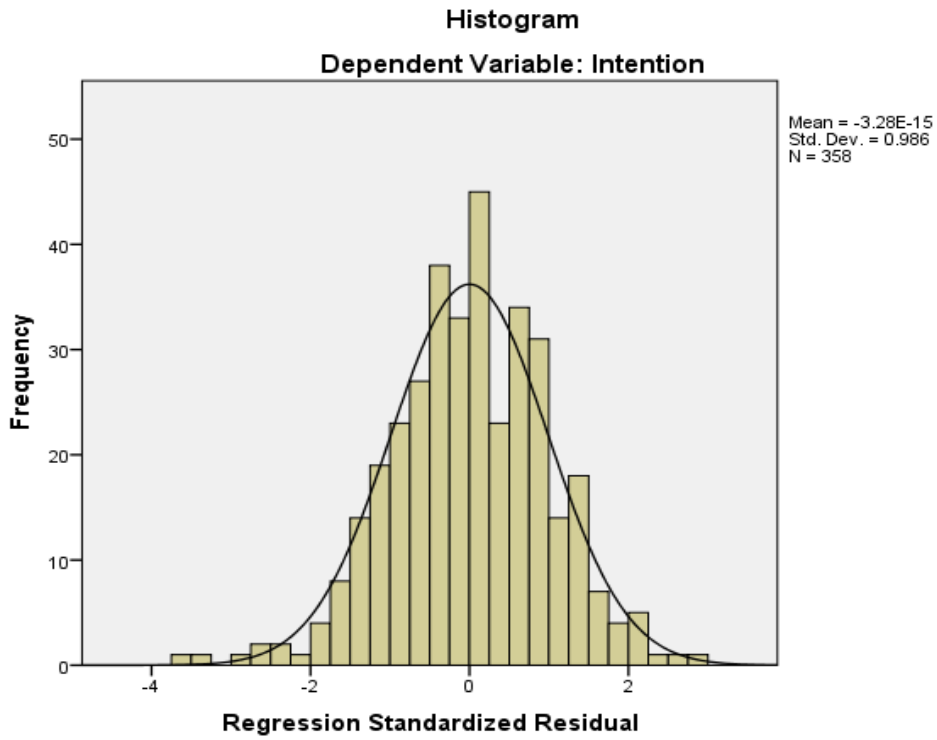

Figure 4. Histogram.

Table 5. Durbin Watson Test

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.498[a]	.248	.227	.55441	2.048

a. Predictors: (Constant), Age, Race, Gender, Immigration Status, HIV Knowledge, HIV-related Stigma, Concern about HIV/AIDS, Direct Exposure to HIV/AIDS, Peer pressure, Religious Influence.
b. Dependent Variable: Intention

Table 6: Centered Leverage Value

Residual Statistics

	Minimum	Maximum	Mean	Std. Deviation	N
Cook's Distance	.000	.081	.003	.007	358
Centered Leverage Value	.009	.083	.028	.012	358

Dependent Variable: Intention to delay sexual involvement

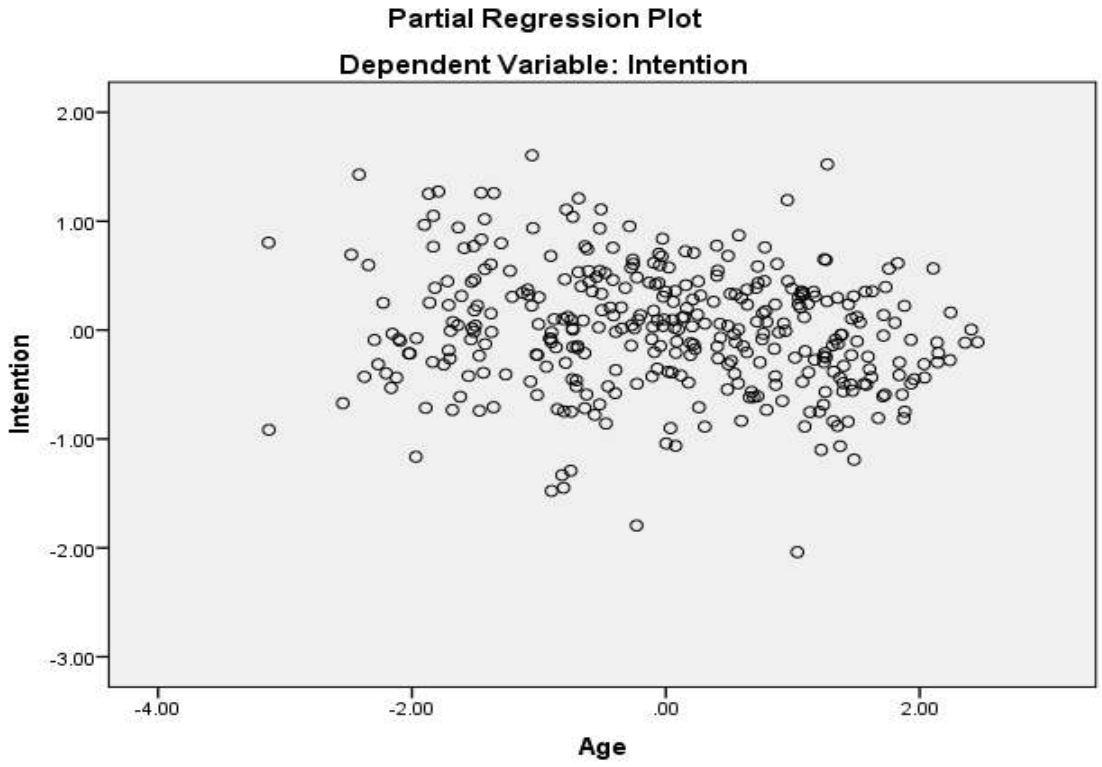

Figure 5: Scatter Plot (Age and Intention)

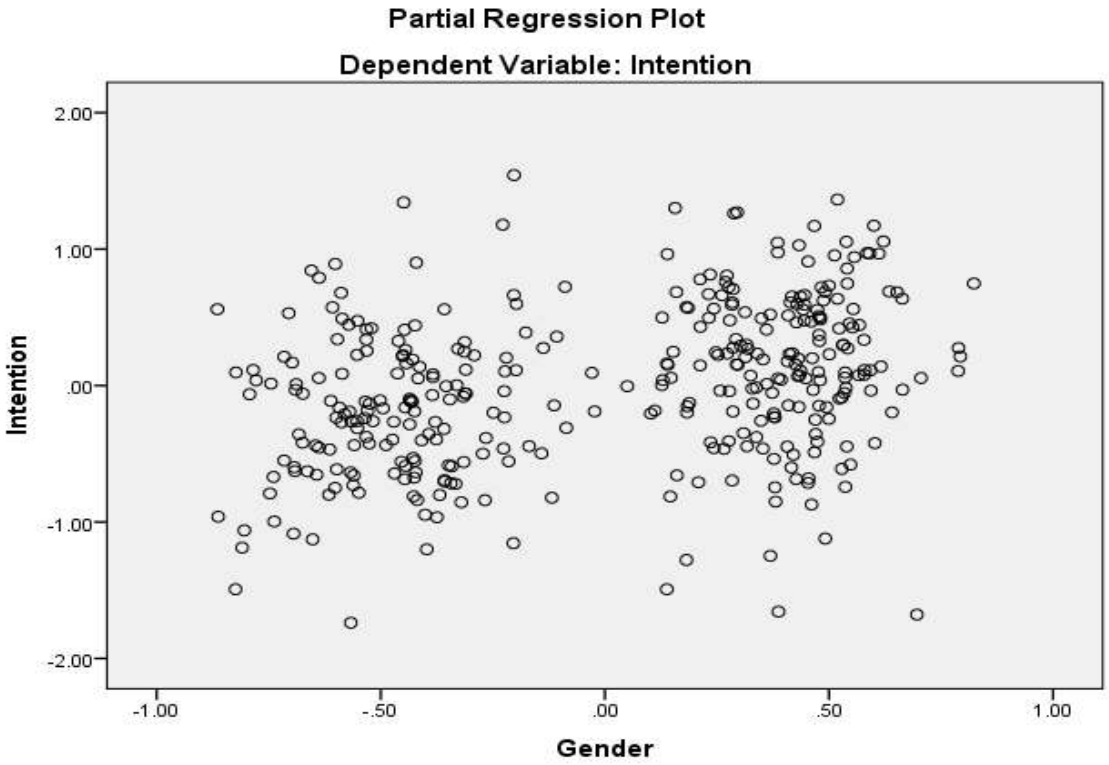

Figure 6: Scatter Plot (Gender and Intention)

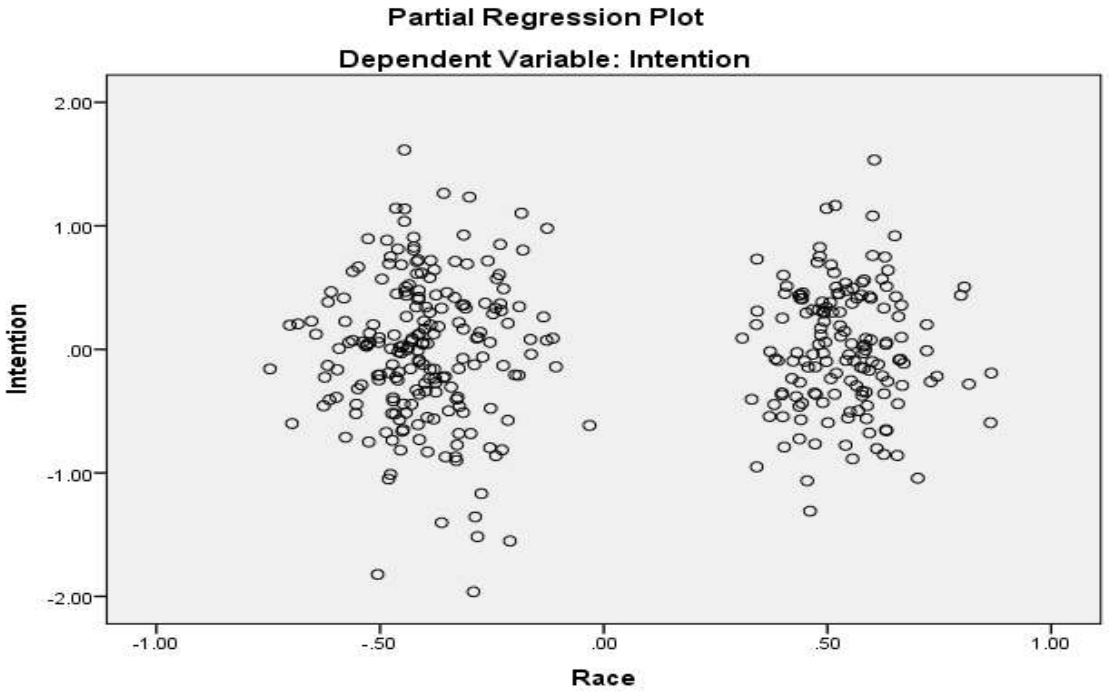

Figure 7: Scatter Plot (Race and Intention)

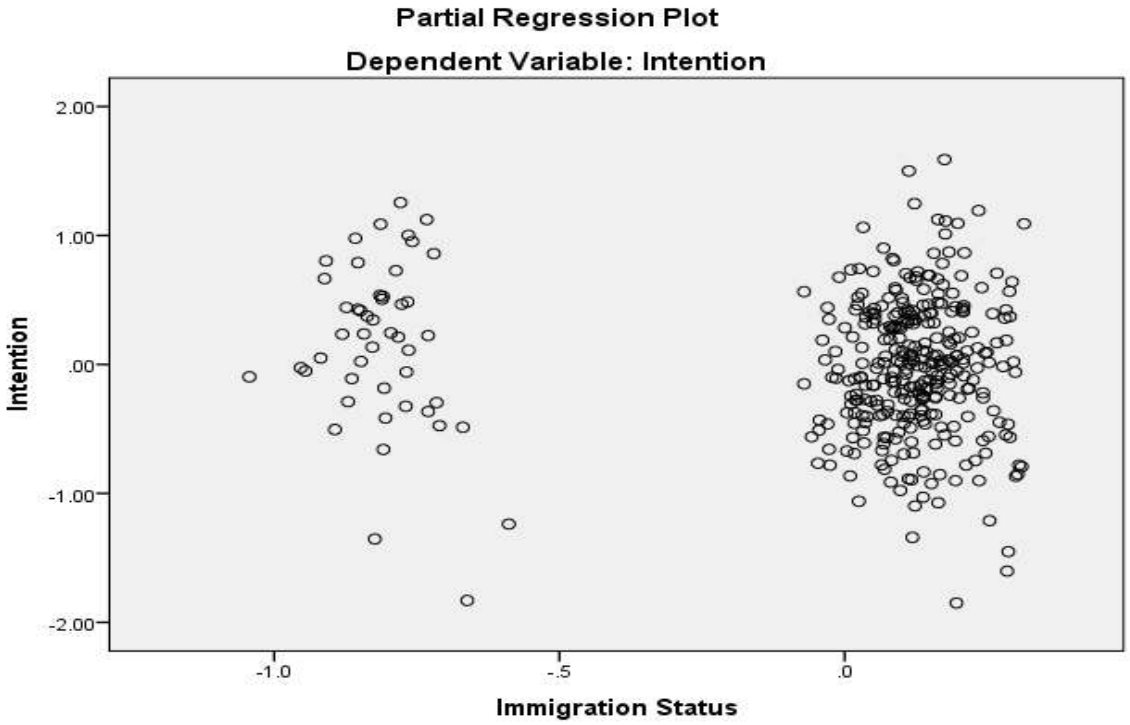

Figure 8: Scatter Plot (Immigration Status and Intention)

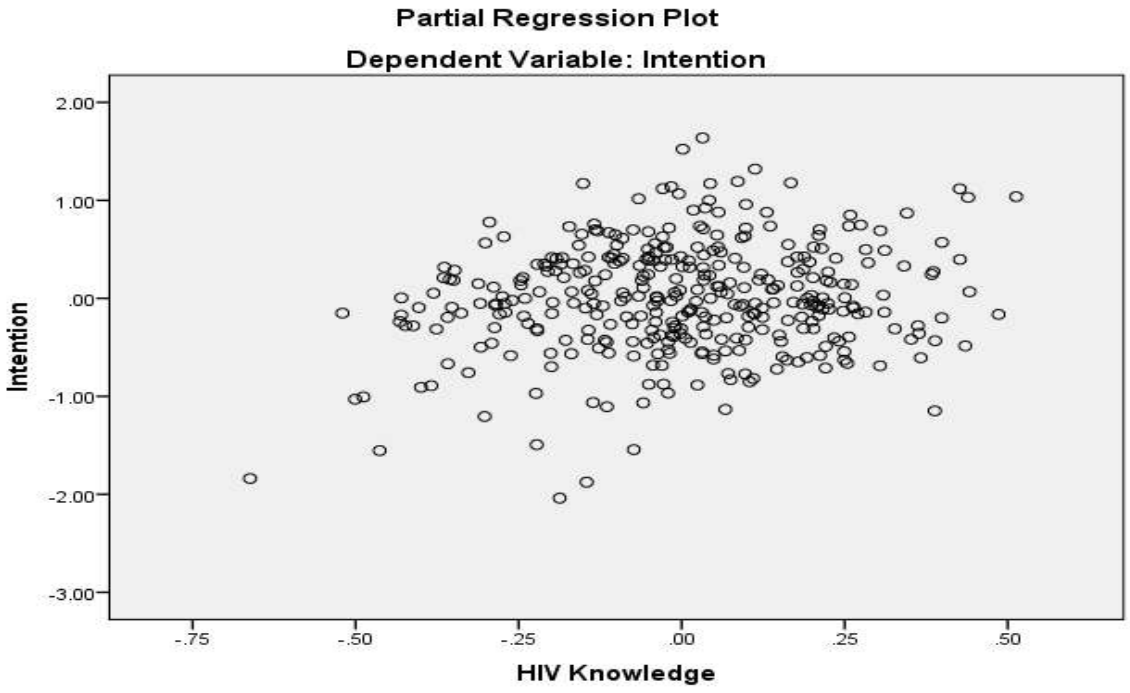

Figure 9: Scatter Plot (HIV Knowledge and Intention)

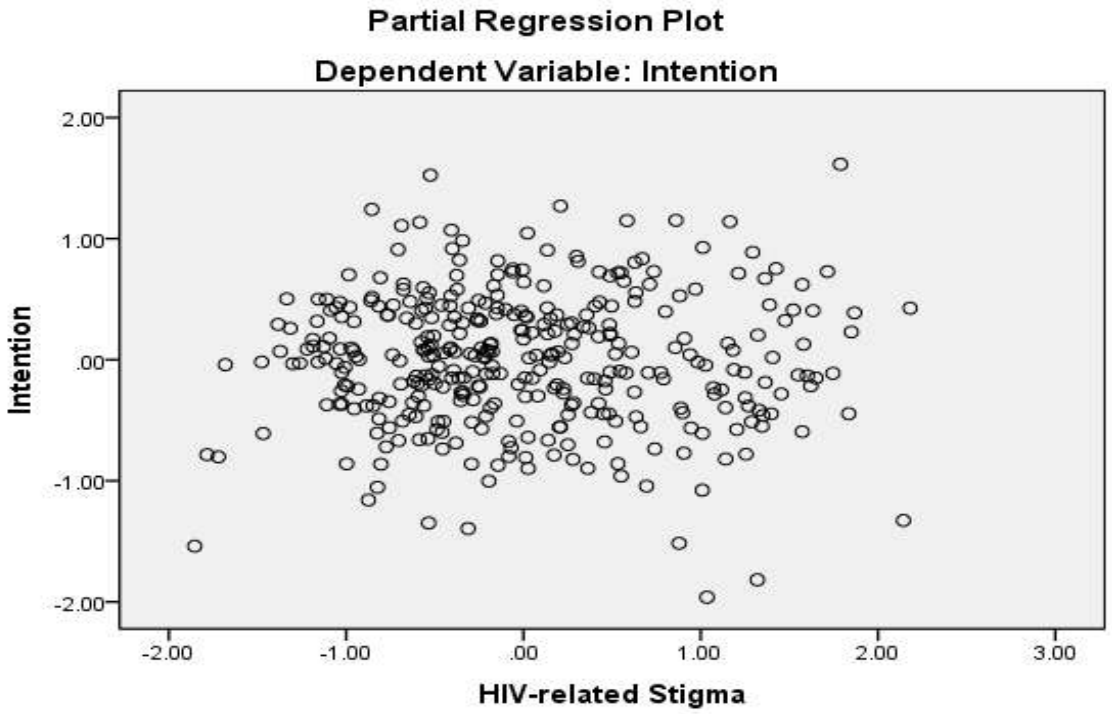

Figure 10: Scatter Plot (HIV-related Stigma and Intention)

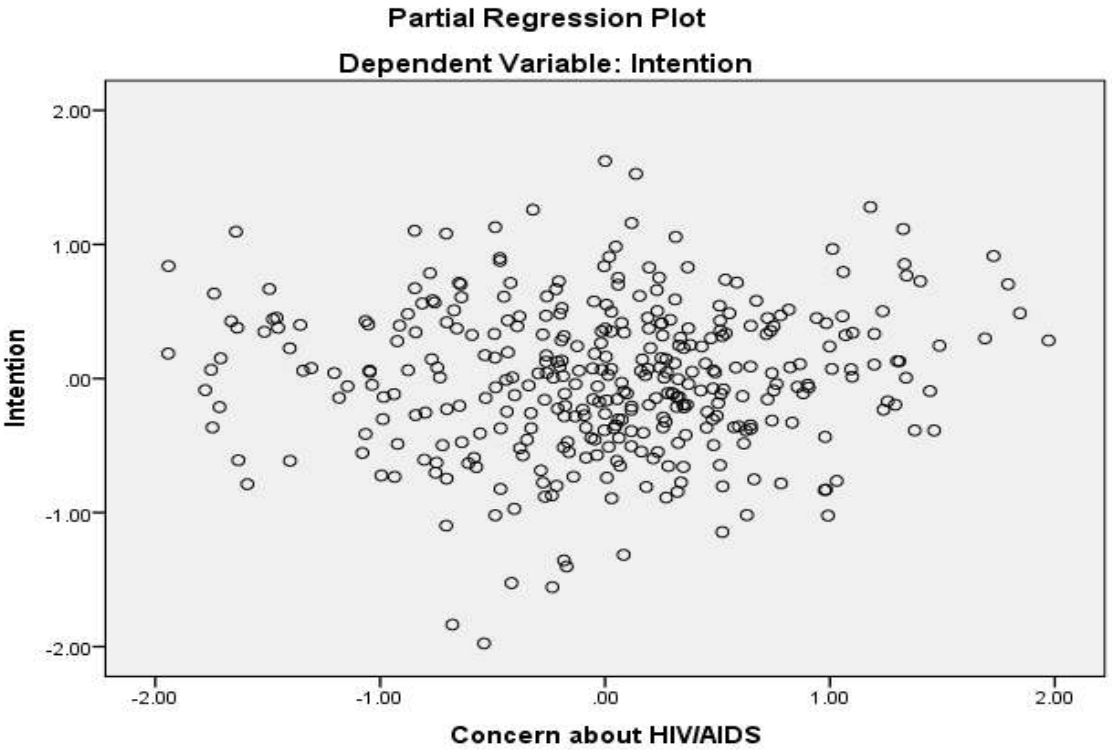

Figure 11: Scatter Plot (Concern about HIV/AIDS and Intention)

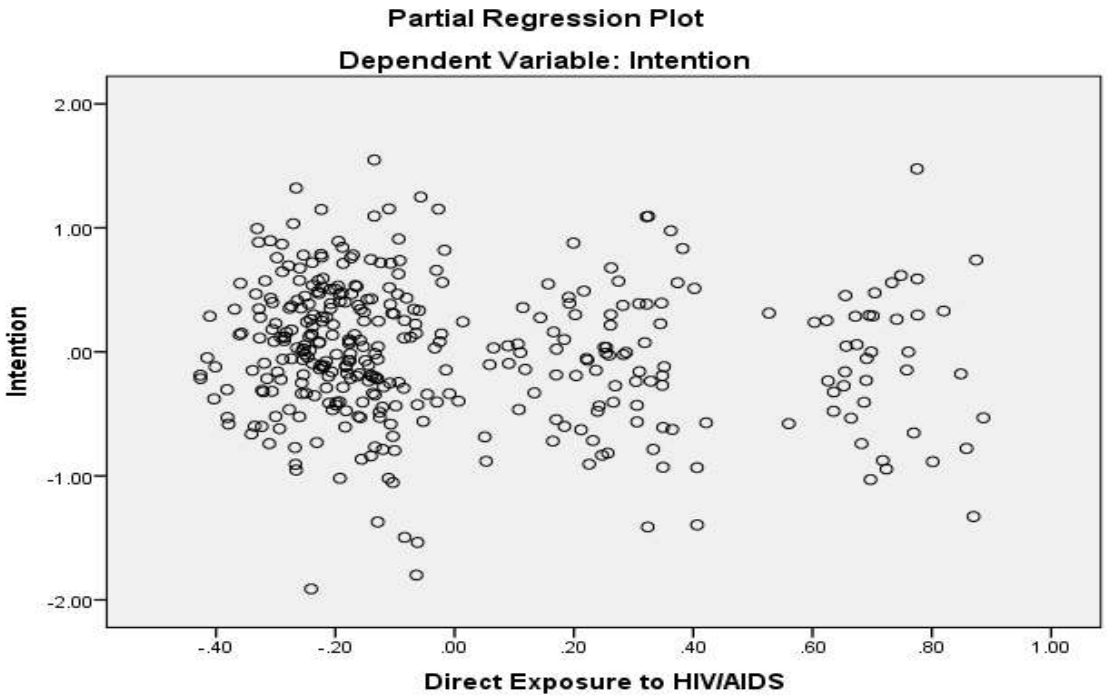

Figure 12: Scatter Plot (Direct Exposure to HIV/AIDS and Intention)

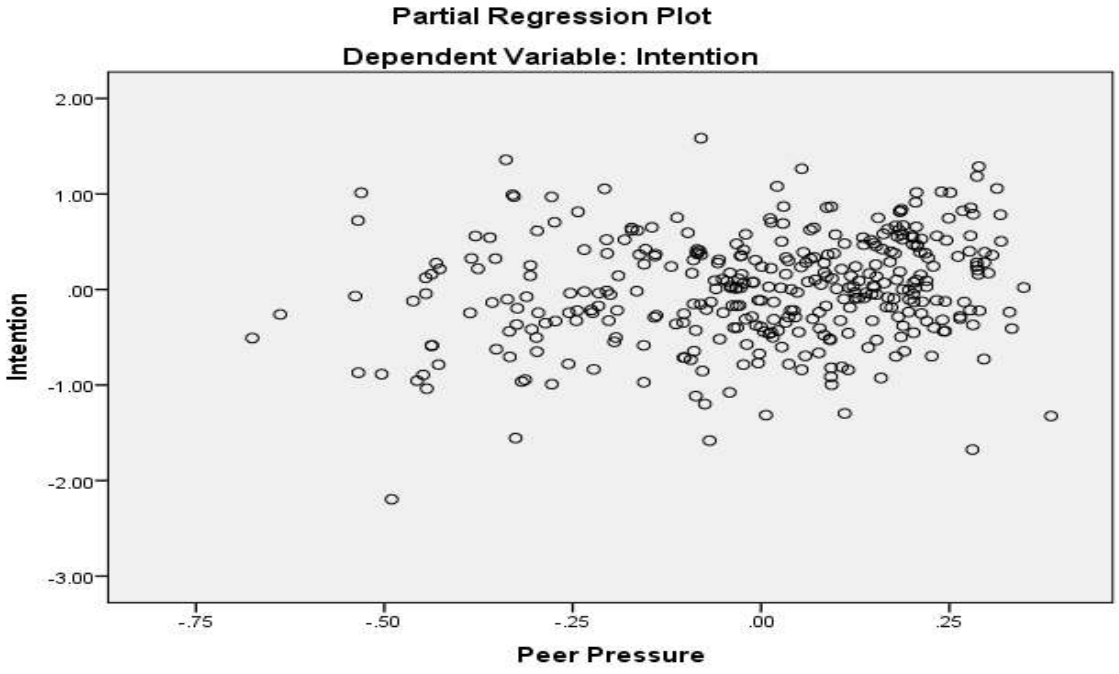

Figure 13: Scatter Plot (Peer Pressure and Intention)

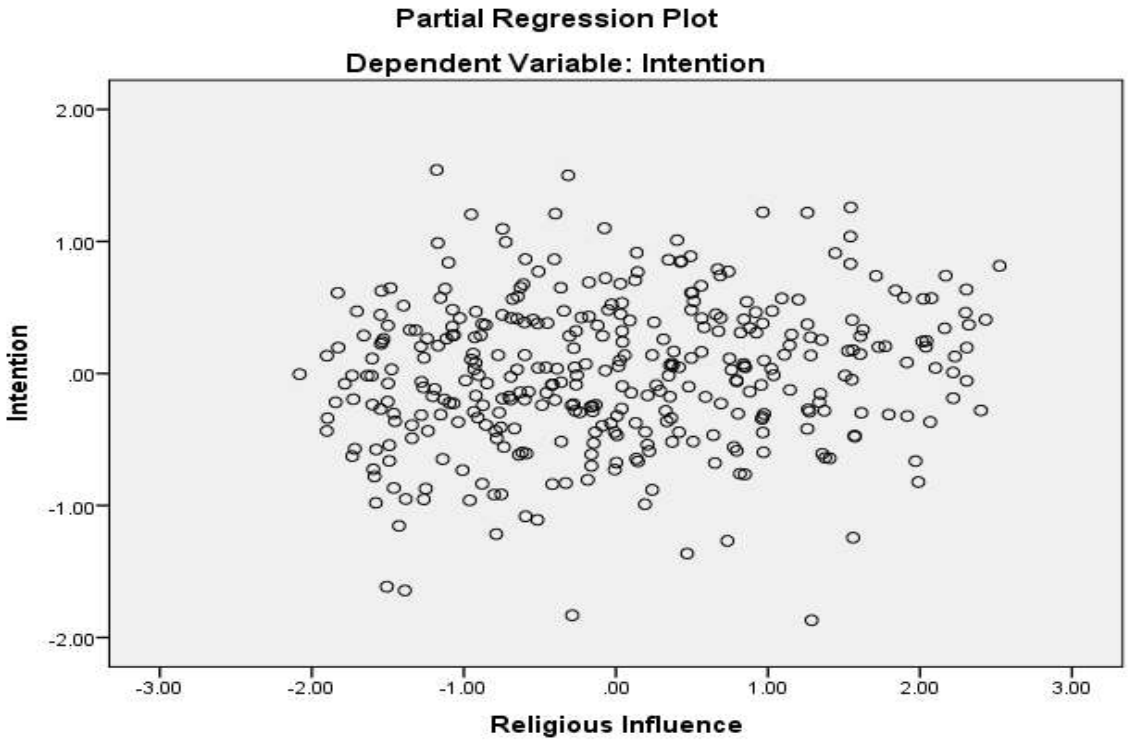

Figure 14: Scatter Plot (Religious Influence and Intention)

Model 1:

Age, gender, race, and immigration status were analysed using a standard regression analysis to predict intention to delay sexual involvement. Table 7 shows the correlations of the variables. Correlations for age and gender were statistically significant, but that of race and immigration status were not. The prediction model was statistically significant, F (4) = 21.96, $P < .05$, and accounted for approximately 17% of the variance of intention to delay sexual involvement ($R^2 = .172$, Adjusted $R^2 = .164$). Intentions to delay sexual involvement were negatively related to age decreasing by .07 points for every extra year of age. Compared to males, females scored .45 points higher on intention to delay sexual involvement. Therefore, only the effects of age (t *(428)* = -3.256, $p < .05$) and gender (t *(428)* = 7.860, $p < .05$) were significant. Table 7 shows the regression coefficients of the

predictors and their correlations with intention to delay sexual involvement. Gender received the strongest weight in the model followed by age.

Model 2:

HIV knowledge, HIV-related stigma, concern about HIV, and direct exposure to HIV/AIDS were added to gender, age, race, and immigration status in the regression analysis to predict intention to delay sexual involvement (Table 8). Correlations for age, gender, HIV knowledge and direct exposure to HIV/AIDS were statistically significant controlling for demographic characteristics. The prediction model was statistically significant, F (8) = 11.95, $P < .05$, and accounted for approximately 19% of the variance of intention to delay sexual involvement ($R^2 = 0.193$, Adjusted $R^2 = 0.177$). The regression was a better fit ($R_{2adj} = 19\%$) in comparison to model 1 ($R_{2adj} = 17\%$).

Intentions to delay sexual involvement scores were negatively related to age, decreasing by .074 for every extra year of age. Compared to males, females scored .451 points higher on intention to delay sexual involvement. Compared to youth who are not close to someone who has HIV/AIDS, youth who are close to someone who has HIV scored .223 points lower on intentions to delay sexual involvement. Intentions to delay sexual involvement scores were positively related to HIV knowledge, increasing by .362 for every unit increase in HIV knowledge. Therefore, only the effects of age (t (409) = -3.128, $p < .05$), gender (t (409) = 7.452, $p < .05$), HIV knowledge (t (409) = 2.643, $p < .05$) and direct exposure to HIV/AIDS (t (409) = -2.648, $p < .05$) were significant. Table 8 shows the regression coefficients of the predictors and their correlations with intention to delay sexual involvement. Gender received the strongest weight in the model followed by age, then direct exposure to HIV/IDS and then HIV knowledge.

Model 3:

Peer pressure and religious influence were added to HIV knowledge, HIV-related stigma, concern about HIV, direct exposure to HIV/AIDS, gender, age, race, and immigration status in the regression analysis to predict intention to delay sexual involvement. The correlations of the variables are shown in Table 9. Correlations for age, gender, immigration status, direct exposure to HIV, peer pressure as well as religious influence and youth intentions to delay sexual involvement were statistically significant. The prediction model was statistically significant, F (10) = 11.464, $P < .05$, and accounted for approximately 25% of the variance of intention to delay sexual involvement (R^2 = 0.248, Adjusted R^2 = 0.227). The regression was the best fit (R_{2adj} = 25%) in comparison to model 1 (R_{2adj} = 17%) and model 2 (R_{2adj} = 18%).

Intention to delay sexual involvement had a negative relation with age decreasing by .079 for every extra year of age. Compared to males, females scored .401 points higher on intention to delay sexual involvement. Compared to youth who were born outside of U.S., youth who were born in the U.S. scored .192 points lower on intention to delay sexual involvement. Also, compared to youth who are not close to someone who has HIV/AIDS, youth who are close to someone who has HIV/AIDS scored .190 points lower on intentions to delay sexual involvement. For every additional point on HIV knowledge and religious influence, a gain of .438 and .069 points respectively is predicted on intentions to delay sexual involvement. Further, compared to youth who experience peer pressure; youth who resist peer pressure scored .486 points higher on intention to delay sexual involvement. Therefore, the effects of age (t (358) = -3.249, $p < .05$), gender (t (358) = 6.358, $p < .05$), youth immigration status (t (358) = -2.161, $p < .05$), HIV knowledge (t (358) = 3.079, $p < .05$), direct exposure to HIV/AIDS (t (358) = -2.125, $p < .05$), peer pressure (t (358) =

3.548, $p < .05$) and religious influence (t (358) = 2.598, $p < .05$) respectively were found to be significant. The regression coefficients of the predictors and their correlations with intention to delay sexual involvement are shown in Table 9. Gender and peer pressure received the strongest weight in the model followed by age, HIV knowledge, religious influence, immigration status and direct exposure respectively.

Table 7. Model 1: Demographic Factors (Age, Gender, Race, Immigration Status)

	Coefficient	SE	*p*-Value	95% Confidence Intervals Lower Bound	95% Confidence Intervals Upper Bound	Key Findings at Baseline
Intercept	4.058	0.308	0.000	3.453	4.663	
Age	-0.068	0.021	0.001	-.110	-.027	For every one year in a child's age, intentions to delay sex decreases by 0.068 points.
Gender	0.449	0.057	0.000	.337	.561	Compared to males, females scored 0.449 points higher on intention to delay sexual involvement.
Race	-0.026	0.057	0.649	-.138	.086	*NS*
Immigration Status	-0.109	0.088	0.214	-.282	.064	*NS*

Dependent variable was intentions to delay sexual insolvent. $R^2 = 0.172$, Adjusted $R^2 = 0.164$.
*p-values are statistically significant at p<.05.
**NS – non-significant*

Table 8. Model 2: Demographics & HIV Knowledge, HIV-related Stigma, Concern about HIV, Direct Exposure to HIV/AIDS

	Coefficient	SE	p-Value	95% Confidence Interval Lower Bound	95% Confidence Interval Upper Bound	Key Findings at Baseline
Intercept	3.162	0.467	0.000	2.243	4.080	
Age	-0.074	0.024	0.002	-.120	-.027	For every one year in a child's age, intentions to delay sex decreases by 0.074 points.
Gender	0.451	0.061	0.000	.332	.570	Compared to males, females scored 0.451 points higher on intention to delay sexual involvement.
Race	-0.012	0.059	0.841	-.127	.103	*NS*
Immigration Status	-0.159	0.089	0.074	-.334	.015	*NS*
HIV Knowledge	0.362	0.137	0.009	.093	.632	For every unit increase in HIV knowledge, intentions to delay sex increases by 0.362 points.
HIV-related Stigma	0.006	0.035	0.870	-.064	.075	*NS*
Concern about HIV	0.054	0.039	0.170	-.023	.131	*NS*
Direct Exposure to HIV	-0.223	0.585	0.008	-.388	-.057	Compared to youth who are not close to someone who has HIV/AIDS, youth who are close to someone who has HIV/AIDS scored 0.223 points lower on intention to delay sexual involvement.

Dependent variable was Intentions to delay sexual insolvent. $R^2 = 0.193$, Adjusted $R^2 = 0.177$.

*p-values are statistically significant at p<.05.
**NS – non-significant*

Table 9. Model 3: Demographics & HIV Knowledge, HIV-related Stigma, Concern about HIV, Direct Exposure to HIV/AIDS, Peer Pressure, and Religious Influence

	Coefficient	SE	p-Value	Lower Bound	Upper Bound	Key Findings at Baseline
Intercept	2.608	0.482	0.000	1.659	3.557	
Age	-0.079	0.024	0.001	-.126	-.031	For every one year in a child's age, intentions to delay sex decreases by 0.079 points.
Gender	0.401	0.063	0.000	.277	.525	Compared to males, females scored 0.401 points higher on intention to delay sexual involvement.
Race	0.019	0.061	0.756	-.101	.139	*NS*
Immigration Status	-0.192	0.089	0.031	-.367	-.017	Compared to non-US born youth, youth who were born in the US scored 0.192 points lower on intention to delay sexual involvement.
HIV Knowledge	0.438	0.142	0.002	.158	.718	For every unit increase in HIV knowledge, intentions to delay sex increases by 0.438 points.
HIV-related Stigma	-0.004	0.036	0.902	-.076	.067	*NS*
Concern about HIV	0.034	0.039	0.382	-.043	.112	*NS*
Direct Exposure to HIV	-0.190	0.089	0.034	-.366	-.014	Compared to youth who are not close to someone who has HIV/AIDS, youth

						who are close to someone who has HIV scored 1.24 points lower on intention to delay sexual involvement.
Peer Pressure	0.486	0.137	0.000	.217	.755	Compared to youth who experience peer pressure, youth who resist peer pressure scored 1.24 points higher on intention to delay sexual involvement.
Religious Influence	0.069	0.026	0.010	.017	.121	For every additional point on youth religious influence, a gain of 0.27 points is predicted on intention to delay sexual involvement.

Dependent variable was Intentions to delay sexual insolvent. $R^2 = 0.248$, Adjusted $R^2 = 0.227$.
*p-values are statistically significant at $p<.05$.
**NS – non-significant*

Summary of Research Findings

These findings are based on the analysis done in reference to the research hypotheses.

Univariate analyses showed that the population is comprised largely of Hispanics and the majority of the respondents were female. Predominantly, the youth were born in the US, and the majority of the youth are Christians. A summary of the demographic characteristics of the research participants is provided in Table 2.

Bivariate analysis revealed that age was significantly different from gender and race. Males were older than the females, and African Americans were older than the Hispanics. A significant relationship was also found between race and immigration status

(US born/non-US born) and between peer pressure and immigration status. Non-US born youth were more likely to resist peer pressure compared to US-born youth. In addition, males also had a higher HIV-related stigma than the females but males were more concerned about HIV infection than the females. Further, youth who were born in the United States had a higher HIV knowledge than youth who were born outside the United States. However, youth who were born outside the United States were more religious than youth who were born in the United States.

The multiple linear regression model created for intentions to delay sexual involvement indicated that when demographic variables (age, gender, race and immigration status) alone were tested in the model without the other group variables, there was a statistically significant predictive impact of age and gender on youth intention to delay sexual involvement but race and immigration status were not statistically significant. The multiple regression analysis generated an R-square of 0.172, indicating that the control variables accounted for 17% of the variability in intentions to delay sexual involvement. Since there is a relationship between age, gender and intentions to delay sexual involvement, as well as variation by age and gender, the null hypothesis 1 through 4 is rejected.

Controlling for demographic characteristics and adding the second group level variables (HIV knowledge, HIV-related stigma, concern about HIV and direct exposure to HIV/AIDS) revealed a statistically significant predictive impact of age, gender, HIV knowledge and direct exposure to HIV/AIDS on youth sexual intentions. Race, immigration status, HIV-related stigma and concern about HIV/AIDS were not statistically significant. The multiple regression analysis of this second model resulted in higher value R-square of 0.193, indicating that the second group level variables accounted for 19% of

the variability in intentions to delay sexual involvement. Even though the contribution of this model is relatively small, the analysis showed a statistically significant impact on age, gender, HIV knowledge and direct exposure to HIV/AIDS. Therefore, the null hypothesis 8 is rejected.

Finally, controlling for demographic characteristics, the third group level variables (peer pressure and religious influence) were added to the second group level variables (HIV knowledge, HIV-related stigma, concern about HIV and direct exposure to HIV/AIDS) and the first group level variables (age, gender, race and immigration status). The result showed a statistically significant predictive impact of age, gender, immigration status, HIV knowledge, direct exposure to HIV/AIDS, peer pressure and religious influence on sexual intentions. Race, HIV-related stigma and concern about HIV/AIDS were not statistically significant. The multiple regression analysis for this third model resulted in even higher values R-square of 0.248, indicating that the group level variables accounted for 25% of the variability in intentions to delay sexual involvement. The findings show that the third model is most impactful, therefore rejecting the null hypothesis 9 and 10.

Chapter 5: Interpretations of the findings, Limitations, Recommendations, Implications and Conclusion

The purpose of the study was to examine the extent to which contextual factors and direct exposure to HIV influence youth intentions to delay sexual involvement. The research design was quantitative, specifically a cross-sectional study, and involved secondary data analysis of baseline data. Over the years, public health has achieved considerable success in the fight against HIV/AIDS. In most part due to the advent of antiretroviral therapy (ART) which has helped to increase the lifespan of people with HIV (Miller & Hodder, 2014; Samji, Cescon, Hogg, Modur, Althoff et al., 2013; Wada, Jacobson, Cohen, French, Phair & Muñoz, 2014). However, as clearly pointed out in CDC's 2013 program update, the gains CDC has made are impressive but the work is not yet complete. Efforts must be made to prevent losing ground and to continue to aggressively scale-up effective prevention interventions so as to halt the spread of HIV.

This study was conducted because of the following concerns: 1) The rates of HIV infection among youth are still significantly high; 2) Youth are engaging in sexual intercourse at early ages; 3) African Americans and Latino youth continue to be disproportionately infected by HIV/AIDS, and 4) The concentration of new HIV diagnosis is primarily in urban low resourced areas. Also, as mentioned earlier, substantial research has been undertaken that increase knowledge about HIV/AIDS and behavioral skills. Prior research has also focused on the correlates and risk factors for early sexual behaviors in adolescents. Other studies have had a lasting impact on condom use. However, very little research has been done on the influence of contextual factors on youth intention to delay sexual involvement.

The key findings from this study showed that the third group level variables (peer pressure and religious influence), when added to HIV knowledge and attitude factors (HIV knowledge, HIV-related stigma, concern about HIV and direct exposure to HIV/AIDS) and demographic factors (age, gender, race/ethnicity and immigration status), accounted for approximately 25% of the variability in intentions to delay sexual involvement. This variability was higher than that of the second model (19%) when HIV knowledge and attitude factors were added to demographic factors as well as when demographic factors alone were entered in the model (17%). Therefore, the findings support the hypothesis (number 9 and 10) and showed that the third model is the best model fit for predicting youth intentions to delay sexual involvement.

Interpretation of the Findings

Intention to delay sexual involvement was found to be significantly associated with and varied by age, gender and immigration status. Younger teens were more likely to be motivated to delay sexual involvement than the older teens. Girls were more likely to be motivated to delay sexual involvement than the boys, and youth who were born outside the United States were more likely to be motivated to delay sexual involvement than those born in the United States. These findings confirm the knowledge from peer-reviewed literature showing that age and gender are very important biological factors that have a significant effect on youth sexual behavior. As youth get older, they are less likely motivated to delay sexual involvement and consequently more likely to have sex (Forste & Haas, 2002; Guilamo-Ramos, Jaccard & Dittus et al., 2008; Harvey & Spigner, 1995; Kann et al., 1995; Kirby & Lapore, 2007; Miller et al., 2000; Rucibwa, Modeste, Mongtomery, & Fox, 2003; YRBS, 2011). This result is also supported by CDC (2010) data which indicated that the percentage of high school students that ever had sex increased with grade level [31.6% of

9th graders vs. 62.3% of 12th graders] (see also CDC, 2011). Some effects of getting older such as increased sexual maturity and higher testosterone levels, as well as peer pressure to have sex and perceived norm about sexual behavior may lead to heightened desire for intimacy (Kirby & Lapore, 2007).

Current study findings are also consistent with Wilson and Daly's (1985) sociobiological model who argued that risk taking is attributable to masculine ideology. Male are more likely to have sex or engage is risky sexual behaviors than the females to gain their positions of power in the society. As such, the males are less motivated to delay sexual involvement (see also Halpern, Hallfors, Bauer, Iritani, Waller, et al., 2004; Kirby, Lepore, & Ryan, 2005). Data from CDC's National Youth Risk Behavior Survey (YRBS), a nationally representative biennial survey of students in grades 9–12 also showed that the percentage of male students who ever had sexual intercourse in 2013 was higher (49%) than that of females (45%). The percentage of boys who have multiple sexual partners is 17% while that of girls is 13% (CDC Fact Sheet, 2014). Similarly, Albert, Brown, and Flanigan (2003) found that boys had a higher intention to engage in sexual behavior compared to girls. The variation in gender could also be due to male perception of risk, which may be different from the females. Males are more likely to initiate sex at early ages for different reasons compared to females (Forste & Haas, 2002; Rucibwa, Modeste, Mongtomery, & Fox, 2003; YRBS, 2011). Further, the variation may also be due to societal roles whereby males are encouraged to have sex. As a result, express lower behavioral intentions for safe sex practices while females are encouraged to delay sex as such exhibit higher behavioral intentions for safe sex (Archibald, Gillmore, Graham, Hoppe & Morrison, 2001).

Concerning immigration status, immigrant youth (non-US born) were found to have higher levels of intention to delay sexual involvement than the US-born youth. Consistent with this finding, several studies have documented that youth who were less acculturated to mainstream U.S. culture (considered in the current study as non-US born) were more likely to delay sexual intercourse and had fewer lifetime sexual partners compared to more acculturated youth [US born] (Aneshensel, Becerra, Fielder & Schuler, 1990; Ebin, Sneed, Morisky, Rotheram-Borus, Magnusson et al., 2001; Goldstein & Davis-Kean, 2005; Torres & Villarruel, 1995). However, once they initiated sex, non-US born youth were more likely to get pregnant and the risk of childbearing persisted with longer US residency (Aneshensel, Becerra, Fielder & Schuler, 1990; Darabi & Ortiz, 1987). An explanation for the differences between US-born and Non-US born youth's intention to delay sexual intercourse is cultural norms. Among the Latinos born outside the US (non-US born), the concept of machismo for example, in a way fosters family ties, a sense of taking care of and family and parent-youth relationship, which is positive (Morales, 2013). Especially as a number of studies have also found acculturation to U.S. cultural practices to be positively related to sexual risk behaviors (Blake, Ledsky, Goodenow, & O'Donnell, 2001; Forhand & Kotchick, 2000; Withaker & Miller, 2000). In addition, the big emphasis on familism values and stronger parent-youth relationship among non-US born youth (Hardway & Fuligni, 2006; Knight, Gonzales et al., 2010) place them at increased likelihood of being motivated to delay sexual involvement (Caputo, 2009; Whitaker, & Miller, 2000). Further, although youth born outside the United States may be less likely to discuss sexual activities with their parents (Blake, Ledsky, Goodenow, & O'Donnell, 2001), when they do, the discussion tends to focus on delaying or avoiding sex (Biggs, Ralph, Minnis, Arons, Marchi et al., 2010; Raffaelli & Ontai, 2001).

Contrary to expectation, race was not found to be significantly related to intention to delay sexual involvement. However in prior studies, although race was found to be associated with adolescent sexual activity, it was difficult to draw reliable conclusions concerning differences in intentions to delay sexual involvement. Studies that found significant differences often were based on the racial groups being compared and the risk behavior considered. For example, the studies compared African Americans and Latino adolescents with their White adolescent counterpart based on their sexual activity or behavior. As such, these studies found sexual activity to be higher for minority youth than for White youth (Advocates for Youth, 2010; Kann, Warren, Harris, Collins & Douglas et al., 1995; Koniak-Griffin & Brecht, 1995). However, based on the data analyzed for the present study, a significant relationship was not found between African Americans and Hispanic/Latinos regarding their intention to delay sexual intercourse. A possible explanation for this is acculturation. Hispanic/Latina youth are more likely to adopt the norms and practices of the prevailing U.S. culture, and therefore dissociate from their culturally held values as regards to sexuality (Advocates for Youth, 2003; Villarruel, 1998).

Of the knowledge and attitude variables examined, direct exposure to HIV/AIDS (knowing someone who has or died of HIV/AIDS) and HIV knowledge was found to be significantly associated with intentions to delay sexual involvement. Youth who do not have prior exposure to HIV/AIDS, may have misconceptions about the disease and, therefore, have low perception of risk of infection. Consequently, they are more likely to have positive sexual intentions. Macintyre et al. (2001) supported this premise by showing that those who know someone who has HIV or died of AIDS are more likely to be aware of the consequences of early sexual intercourse and therefore may delay sex or practice safe

sex. Nonetheless, it is worth noting that based on the analysis of data from the 1998 South Africa Demographic and Health Survey (DHS) of women, Camlin and Chimbwete (2003) revealed that knowing someone with HIV/AIDS or who died of AIDS was not associated with HIV-preventive behaviors such as condom use. Camlin et al.'s (2003) explanation for this inconsistent finding was that the impact of the HIV/AIDS epidemic in South Africa at the time the study was not a huge concern. Also, it is necessary to point out that the researchers focused on primarily adult women, whose attitudes towards sex are likely different from that of the youth. Despite this outcome, many studies have consistently hypothesized that youth who have been directly exposed to HIV/AIDS are more likely to perceive the risk of HIV infection as serious (Brooks, et al., 2009; Macintyre et al., 2001). As such, tend to delay sexual involvement compared to those who are not directly exposed to HIV/AIDS in which case perceive they have a low risk of contracting the disease (Macintyre, Rutenberg, Brown, & Karim, 2004; Rosenstock, 1974). Correspondingly, theoretical models such as the Health Belief Model (HBM) confirm that people will evaluate the cost of getting infected with HIV and living with the disease against the benefit of prevention such as delaying sexual involvement in making decisions. If they weigh the benefit of delaying sex favorably, then they are more likely to be motivated to delay sexual involvement. Therefore, youth who know someone who has HIV/AIDS or died of the disease are likely to perceive that they are at risk and know that delaying sexual intercourse would help to reduce their risk of infection. Therefore, exposing youth to PLWA who they know or may not know can influence their sexual intentions.

HIV Knowledge was found to be significantly related to intentions to delay sexual involvement. This finding was supported by several other studies including theoretical models such as the IMB theory that suggest that HIV knowledge has a beneficial effect on

motivation and self-efficacy for safer sex practices. For example, Swenson, Rizzo, Brown, Vanable, Carey, et al., (2010) conducted a study to examine whether knowledge impacts sexual behavior and health over and above associated factors. As expected, they found an association between greater HIV knowledge and a number of salient sexual health-related cognitions and attitudes. Reasonably, they assumed that youth who possess more accurate knowledge about HIV transmission and prevention are less likely to have stigmatizing attitudes towards people with HIV. Also, they are more likely to have a better understanding of the risk factors and increased perception of self-efficacy towards reducing their risk for contracting HIV. In addition, models of health behavior, such as the IMB model suggest that HIV knowledge is a modifiable contributing factor to reducing risky sexual behaviors (St. Lawrence, 1993; Swenson, Rizzo, Brown, et al., 2010) and plays an important role in reducing the perpetuation of misconceptions about HIV transmission or related consequences. Although, other studies have revealed inconsistent results as to what extent HIV knowledge impacts sexual intentions or behavior, many more studies have suggested that greater HIV knowledge is associated with more consistent condom use and greater likelihood of HIV testing (Bruine de Bruin, Downs, Fischhoff & Palmgren, 2007; St. Lawrence, 1993; Swenson, Rizzo, Brown, et al., 2010). The Henry J. Kaiser Family Foundation (2003) survey of adolescents and young adults' sexual health, knowledge, attitudes and experiences showed that, many young people have serious misperceptions about STDs and HIV. Surprisingly, a high number of these youth are misinformed about safe sex practices. Therefore, comprehensive sex education that improves adolescents' HIV/AIDS literacy may also have a beneficial effect on motivation and self-efficacy that in turn is associated with preventive behaviors (Fisher, Fisher, Bryan, & Misovich, 2002; Lemieux, Fsher, Pratto, 2008). Therefore, despite the importance and levels of knowledge

about HIV increasing knowledge about HIV among African Americans and Latino youth is essential given the disparity in the burden of the disease (CDC, 2009). Consequently, accurate and adequate information about HIV is beneficial and can influence youth intention to delay the onset of sexual activities. As such, HIV knowledge is an essential component of successful risk reduction interventions.

Contrary to expectation, HIV-related stigma and concern about HIV/AIDS were not found to be significantly associated with youth intentions to delay sexual involvement. Regarding HIV-related stigma, the lack of association between stigma and youth intention to delay sexual involvement is not surprising because over time, attitudes can change in response to prior risk behavior (Katz, 1960). Individuals change their attitude if it is no longer rewarding to them that is; it no longer helps them achieve their basic goals and the individual feels frustrated (Katz, 1960). Additionally, studies that have been carried out that focus on examining the relationship between HIV-related stigma and youth intention to delay sexual involvement are limited. Although presaged as playing important roles in facilitating the HIV epidemic, over the years, the discomfort and blame directed at PLWAs, as well as the fear of infection, have waned. Especially, now that there are antiretroviral therapies, new sources of information, exposure to new ways of thinking and greater social-networking. Further, Herek (2000) in his study found that a shrinking percentage of Americans still hold stigmatizing attitudes towards people with AIDS. However, the researcher noted that those who do hold more stigmatizing attitudes were more likely to engage in high-risk behavior (see also Chen, Choe, Chen, Zhang, 2005; Stock Gibbons, Peterson & Gerrard, 2013; Liu, Hu, Li, Stanton, Naar-King, et al., 2006).

Peer relationships have been documented to play an important role in the social lives of youth (Brown & Larson, 2002). In this study, peer pressure and religious influence

remained significantly associated with youth intentions to delay sexual involvement. Similar to age and gender, peer pressure and religious influence are part of the model that demonstrates strong predictive impact on youth sexual intentions. This finding is supported by the results of a plethora of other studies that have shown that peer behavior and attitude toward sex may influence youth intention to delay or initiate sexual intercourse (DiNoia & Schinke, 2008; Henrich, Brookmeyer, Shrier, & Shahar, 2006; Jaccard, Blanton & Dodge, 2005; O'Donnell et al., 2006; Papalia, Olds, & Feldman, 2001; Santelli, Kaiser, Hirsch, Radosh, 2004). Youth who believe that most of their peers have engaged in sexual intercourse are more likely to be motivated to engage in sexual activity at an early age (Collazo, 2004; Flores, Tschann & Marin, 2002; Gillmore et al., 2002; Marin, Coyle, Gomez, Carvajal, & Kirby, 2000; Sieverding Adler, WittS & Ellen, 2005). Similarly, youth who do not endorse peer norms delaying or abstaining from sex, initiate sex more frequently than those who support these attitudes (Santelli, Kaiser, Hirsch & Radosh, 2004). Youth who have peers that have never engaged in sex or that have less approving attitudes toward early sexual activity are more likely to delay sexual involvement than youth whose peers have permissive values about early sexual involvement (Fasula & Miller, 2006; Maxwell, 2002; O'Donnell et al., 2006; VanOss Marin, Kirby, Hudes, & Gomez, 2006). Wallace, Miller & Forehand (2008) for example, examined the role of perceived peer dating and sexual norms in predicting youth attitudes toward dating and sex. Additionally they examined the role of perceived peer dating and sexual norms in predicting youth intentions to engage in precoital and sexual behavior. The sample included African American adolescents aged 9-12. Their findings suggest that peers have an influence in shaping the sexual attitudes and behavior of youth. Therefore, as youth transition to having more independence and interaction with peers, they may be swayed by

the involvement of their peers in shaping the process. Youth social influences clearly affect their likelihood of engaging in early sexual activities since having peers who are sexually active enhances one's risk of becoming sexually active.

The positive relationship between religious influence and youth intentions to delay sexual involvement is supported by a number of studies. These studies have suggested that compared to adolescents who attend religious services on regular basis; those who never or hardly ever attend are inclined to early sexual debut (Dryfoos, 1990; Kirby, Lapore & Ryan, 2005; McLean, 1993; Moore et al., 1995a). Attachment to faith-based communities has been found to influence youth early sexual involvement. Hence, strong relationships with religious organizations can serve as protective factors, thus influencing early sexual involvement (Ball, Armistead, & Austin, 2003; Hardy & Raffaclli, 2003; Levin, Chatters & Tailor, 2005; McCree, Wingwood, DiClemente, Davies & Harrington, 2003; Resnik, 2000; Villarruel, Jemmott, Jemmott & Ronis, 2007). Martinez, Copen, and Abma (2011) revealed that the most common reason sexually inexperienced youth gave for not engaging in sex was the fact that it was against religion or morals. Therefore, youth who do not have a strong religious affiliation were less likely to delay sex.

In the context of the TRA framework, direct exposure to HIV/AIDS (attitude variable) as well as peer and religious influences (social norm variables) were part of the model that accounted for the largest proportion of the variance in intentions to delay sexual involvement. In the multi-linear regressions, age was entered initially; followed by gender, then race and immigration status. However, in line with the proposed hypothesis 9 and 10, demographic factors alone accounted for a small proportion of the variance in youth intention to delay sexual involvement($R^2 = .174$, $p < .05$). After the entry of demographic factors, the addition of HIV knowledge, HIV-related stigma, concern about HIV and direct

exposure to HIV/AIDS, accounted for a slightly bigger proportion of the variance in sexual intentions (R^2 = .193, p < .05). However, when peer pressure and religious influence was added to HIV knowledge, HIV-related stigma, concern about HIV and direct exposure to HIV/AIDS and the demographic variables, this third model accounted for the biggest proportion of the variance in sexual intentions (R^2 = .246, p < .05). As such, these variables showed the strongest association with intention to delay sexual intercourse. Thus, underscores the strong influence of social norms in addition to attitude on predicting youth sexual intentions consistent with the theoretical model. Therefore, as predicted, paths from norms and attitudes to intentions were significant.

These findings support the TRA as a model underlying youth decisions to delay sex. In light of this theory, attitudes toward intention to delay sex such as the level of HIV knowledge and direct exposure to HIV/AIDS were significantly related to sexual intentions. Subjective norms concerning intention to delay sexual involvement such as the perceptions of peers wishes and motivation to comply with these wishes, as well as religious influence were significantly related to sexual intentions. Further, intention to delay sexual involvement was found to be more highly related to social norms than attitude factors. This finding is consistent with the result obtained from Gilmore & Archibald (2002) study. The researchers examined the utility of the TRA for predicting sexual intercourse among teenagers and determined whether it holds for both genders and sexual experiences. Their findings showed that norm had somewhat greater weight than attitude. However, the third model which includes age, gender, immigration status, HIV knowledge, direct exposure to HIV/AIDS, peer pressure and religious influence partially meets the assumption that the model is the best fit model for predicting intentions to delay sexual involvement. Since of the entire demographic factors, race and of the entire HIV knowledge and attitude factors,

HIV-related stigma and concern about HIV/AIDS did not contribute significantly to predicting sexual intentions. As such, it should be noted that the prediction of the third model is far from perfect. Further research may be needed to have a predictive model that will have a bigger effect in predicting youth sexual intentions.

Limitations of the Study

The study focused on African American and Latino youth residing in a low-resource urban community with high rates of HIV/AIDS. As such, the conclusions drawn from this study are limited to this group only. Also, the respondents are students. Hence, the results may differ for those who do not attend school as they may be more vulnerable to early sexual debut and riskier sexual behaviors. Therefore, caution should be exercised while interpreting the results and before generalizing the findings to other local regions and racial group. Another limitation is the social desirability bias that may have occurred because the data was self-reported. In other words, participants chose responses that they believe are more socially desirable rather than providing answers that are reflective of their true thoughts (Grim, 2010). However, reassuring subjects about the confidentiality of their responses in the main study could have helped minimize the bias. In addition, the findings are based on a cross-sectional study. Therefore, the data are correlational and as such causality remains to be determined. The models highlighted are predictive tools for maximizing the identification of the correlates of intentions to delay sexual involvement. Future studies using a longitudinal research approach are needed to establish the causal processes. Although, HIV knowledge, direct exposure to HIV/AIDS, peer pressure, and religious influence were found to have stronger predictive effect on youth sexual intentions, future research may be required to identify other factors that may improve the predictive ability of the overall model. Further, the study focused on theoretically driven and

empirically supported personal and social variables, nonetheless, other factors may play important roles in influencing youth intentions to delay sexual involvement.

Recommendations

There is a need to scale up programs targeting African American and Latino youth by focusing on their behavioral intentions. These programs should take into consideration contextual factors such as age, gender, HIV knowledge, direct exposure to HIV/AIDS, peers and religious influence that have the biggest predictive impact on youth intentions to delay sex. Age and gender differences, as well as immigration status, were found to be predictive of sexual intentions and therefore, offer the opportunity for adapting intervention programs to different groups of youth. Consequently, immigration status, age, and gender-blind HIV prevention/risk reduction intervention programs are likely to have a minimal effect on youth. Accordingly, it would be wise to develop and deliver interventions to adolescents before they start experimenting with sexual intercourse. This contention is reinforced by previous research that demonstrated it is easier to promote actual safe sex practices among adolescents who are not yet sexually active than among those who are sexually active (Pedlow & Carey, 2004). Moreover, HIV knowledge was explored in the current study with the hopes that the variable together with other attitudinal variables (HIV-related stigma, concern about HIV and direct exposure to HIV), may influence youth sexual intentions. However, in addition to HIV knowledge, only direct exposure (knowing someone who has HIV/AIDS or died of AIDS) was found to be predictive of sexual intentions. Thus, this finding warrants further research before making recommendations with confidence. Further, normative variables together with HIV knowledge and attitudinal factors as well as demographic factors were explored. HIV knowledge, direct exposure to HIV/AIDS, peer pressure, and religious influence in addition to age, gender and

immigration status were a part of the model that predicted the highest proportion of variance in intentions to delay sexual involvement. Therefore, this model was found to have the strongest predictive effect on youth intentions to delay sexual involvement. Accordingly, comprehensive HIV/risk prevention programs geared towards youth should take into consideration the significant predictors found in this study. For example, programs should address social norms such as peer pressure and religious influence to delay sexual intercourse. This can be achieved using adequately trained peer educators as role models (Mellanby, Rees & Tripp, 2000) as they are considered to be credible sources of information (Stakic, Zielony, Bodiroza & Kimzeke, 2003). They are also more likely to understand the target youth's situation and can support them in making healthy decisions about sex (Mellanby, Rees & Tripp, 2000; Walker & Avis, 1999).

Implications

Positive Social Change

The potential impact of positive social change at the individual level is that the study targets low-income, inner city, African American and Latino youth at high risk of HIV infection and disproportionately affected by HIV/AIDS. As such, this study attempts to improve the health and wellbeing of these youth. Also, there is the potential for identifying contextual factors in breaking the cycle of early sexual involvement and risky sexual behaviors among minority youth. In addition, interventions informed by this study may potentially result in positive outcomes at the societal level. As the study provides additional knowledge useful for program developers, and researchers who are searching for direction in reducing youth sexual risk behaviors, preventing HIV infection and improving their overall health and development. Long-term results would potentially include fewer adverse health outcomes such as unplanned pregnancies, reduced numbers of sexually

transmitted infections and more importantly HIV infection rates. At the policy level, the study could pave the way for obtaining valuable information that could inform policy decisions regarding the allocation of scarce resources towards programs that would have the most effective impact. In addition, the study could lead to the development of policies regarding intervention strategies most effective for HIV prevention and sexual risk behaviors among ethnically diverse, poverty-impacted school-aged children.

Methodological implications

The choice and strength of a design depend on the questions being addressed. Experimental designs, specifically randomized control trials are often referred to as the "gold standard" experiments because they determine causality. However, they are not appropriate for answering associational questions. Since this study is a cross-sectional study with the aim of answering associational questions, the research design employed is appropriate. The study can compare different population groups at a single point in time and as such allow researchers to compare many different variables at the same time as reflected in this study. The participants in the original study were randomly selected from a frame that closely matches the population of interest. Therefore, the results of the current study can be generalized to the rest of the population. Also, in the original study, data was collected using standardized instruments. Therefore, the measures have credible evidence of reliability and validity. Also, the data was subjected to further computer edits and then analyzed using SPSS. Hence, the integrity of the data collected is preserved.

Theoretical implications

Theory is an essential component in research which relates the theoretical aspects and practical elements of the phenomenon under investigation. The theoretical model employed in this study helps to provide a better understanding of the predictors of youth

sexual intentions (Fishbein, 2000). In addition, the model guides the research in identifying the underlying principles behind how and why individuals modify their behavioral intentions (Family Health International, 2002). The theory also plays an important role in generalizing as well as operationalizing the key determinants of individuals' decisions. In so doing, the framework provides a solid foundation for program development and evaluation. The strength of theory lies in generalizing and simplifying the complexity of the variables explored. Consequently, using this theoretical model in the current study provided a strong framework for guiding the research.

Implications for practice

The findings from this study have important implications for researchers and public health professionals who are developing and implementing HIV/sexual risk prevention programs. Given the strength of the associations between age, gender and immigration status and intentions to delay sexual involvement, prevention programs should be initiated early. Also, these programs should take gender, as well as immigration status of the youth, into consideration. Moreover, programs developed to enhance youth motivation to delay sexual involvement should focus on incorporating multiple protective factors such as HIV knowledge, direct exposure to HIV, peer pressure, and religious influence. So as to enhance the effectiveness of prevention efforts. Nonetheless, caution should be taken in interpreting these findings as future research is required to establish causality.

Furthermore, this study was based on a strong theoretical framework and sought to build on earlier research by discerning a unique portrait of key demographic, individual and social contextual factors associated with youth motivation to delay sexual involvement. So that researchers may be guided into making better-informed choices that can accelerate action to achieving effective intervention outcomes to HIV prevention.

Conclusion

The primary mode of HIV transmission among youth is sexual intercourse (Albert, Brown & Flanigan, 2003; Luber, 2005; Kaestle, Halpern, Miller & Ford, 2005; Manlove, Franzetta, McKinney, Papillo & Terry-Humen, 2004; Niccolai, Ethier, Kershaw, Lewis, Meade et al., 2004). Most HIV-positive adolescents acquire this disease through sexual risk behaviors such as having multiple sexual partners, engaging in frequent risky sexual intercourse and less consistent contraceptive use. Therefore, youth who engage in sexual intercourse at earlier ages are more likely to engage in risky sexual behavior and potentially, are at higher risk of HIV infection (Sandfort et al., 2008). In addition, African American and Latino youth who are the focus of this study live in poor resource, high HIV-risk settings, which increases their vulnerability to HIV infection. Particularly when they engage sexual intercourse at an early age. Existing literature (Kirby, Lepore, & Ryan, 2005; Kirby & Lapore, 2007) and robust theoretical models (Ajzen & Fishbein, 1980; Engel et al., 1978; Foxal, 1984; Howard, 1977; Verhallan & Pieters, 1984) have supported that intention is a proximal determinant of behavior. Therefore, this study provides useful information and improved understanding of influential drivers of youth intentions to delay sexual involvement. Additionally, the study has provided empirical evidence in support of the utility of the TRA model to understand and explain behavioral intentions.

Notable findings from the present study revealed an intricate interaction of demographic, Individual and social factors and their relationship with intentions to delay sexual involvement among youth. Together, three demographic (age, gender and immigration status), two individual (HIV knowledge and direct exposure to HIV/AIDS) and two social (peer pressure and religious influence) contextual variables significantly predicted 25% variance in intention to delay sexual activity. These variables notably had

the strongest association with intention to delay sexual involvement. Demographic factors (age, gender, race, and immigration status) combined with knowledge and attitude factors (HIV knowledge, HIV-related- stigma, concern about HIV and direct exposure to HIV/AIDS) together, were weaker predictors of youth intentions to delay sexual involvement. Subsequently, demographic factors (age, gender, race and immigration status) alone were found to be the weakest predictors of youth intentions to delay sexual involvement. These findings, therefore, highlight the critical role of these contextual factors in predicting youth intention to delay sexual involvement. Intervention development or programmatic activities geared towards youth that are context specific focusing on the third model in relation to behavioral intentions, therefore, are more likely to yield desirable effects. The decisions youth make about their sexual lives may determine the course of HIV infection rates in the future as well as their overall health outcomes.

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Appendix A:

Relevant parts of the CHAMPions (2008) Child Assessment questionnaire used

Code # _____ Interviewer _____ Date _____ PRE-TEST

Principal Investigator: Mary M. McKay Ph.D.

CHAMPIONS

CHILD PRE-ASSESSMENT

ID# _____
TEAM NAME _____
_____
_____
CHECKED BY _____
ENTERED BY _____

Version. 2006

Code # _____ Interviewer _____ Date _____ PRE-

TEST

In the following questions, we want you to tell us a little bit about yourself. Please try to answer as honestly as you can; also keep in mind that everything is private. Your answers are kept under code numbers without your name. Finally, remember that if any questions make you uncomfortable, you don't have to answer; you can stop at anytime without any bad consequences.

1. **What is your date of birth?** _____/_____/_____

2. **What is your gender?**

3. **Are you Hispanic/Latino?**

☐	☐
Yes	No

4. **If you are Hispanic/Latino, what is your background? <u>IF YOU ARE NOT HISPANIC/LATINO, SKIP TO QUESTION 5.</u>**

☐	☐	☐	☐	☐	☐
Puerto Rican	Dominican or Dominican American	Mexican or Mexican American	Cuban or Cuban American	Central American	South American

5. **Are you Black?**

☐	☐
Yes	No

6. **If you are Black, what is your ethnic background? <u>IF YOU ARE NOT BLACK SKIP TO QUESTION 7.</u>**

☐	☐	☐	☐	
African American	Caribbean	African	Other	**If other, please specify:** _____

7. **If you are not Hispanic/Latino, or Black, what is your racial/ethnic background?** _____

8. **Were you born in the United States?**

☐	☐

Yes No

Code # _____ Interviewer _____ Date _____ PRE-TEST

9. If you were not born in the United States, in what country were you born?

If you were born in the United States, skip to the next section on page 3.

_____

10. If you were not born in the United States, how many years have you lived in the United

States? If you were born in the United States, skip to the next section on page 3.

_____ years and _____ months.

The following questions are about what language you speak in different situations.

1. Where was your mother born? _____
2. Where was your father born? _____
3. What language(s) do you speak, other than English?
   _____
4. Thinking about the other language(s) you speak, in general, what language do you read and speak?

   1. Only the language I wrote down in Question 3
   2. The language I wrote down in Question 3 better than English
   3. Both equally
   4. English better than the language I wrote down in Question 3
   5. Only English

5. What language do you usually speak at home?

   1. Only the language I wrote down in Question 3
   2. The language I wrote down in Question 3 better than English
   3. Both equally
   4. English better than the language I wrote down in Question 3
   5. Only English

6. In which language do you usually think?

   1. Only the language I wrote down in Question 3
   2. The language I wrote down in Question 3 better than English
   3. Both equally

4. English better than the language I wrote down in Question 3
5. Only English

7. What language do you usually speak with your friends?

1. Only the language I wrote down in Question 3
2. The language I wrote down in Question 3 better than English
3. Both equally
4. English better than the language I wrote down in Question 3
5. Only English

The following questions are about your religion and your religious practices.

1. What is <u>your</u> religion? Circle the number:

1. Baptist
2. Protestant
3. Catholic
4. Jehovah's Witness
5. Jewish
6. Seventh Day Adventist
7. Muslim
8. Born Again Christian
9. None
10. Other (specify) _____

Please mark your answer with an "X" to tell us how often you do the following activities.

Statement	Never	A few times a year	About once a month	About 2-3 times a month	Once a week or more
2. How often do you go to church, worship services, or other religious activities?					
3. How often do you read the Bible or other religious works?					
4. How often do you say grace before you eat?					
5. How often do you pray before going to bed?					

Code # _____ Interviewer _____ Date _____ PRE-TEST

The following questions are about people with AIDS. Please mark your answer with an "X" to tell us how much you agree or disagree with each of the following statements.

Statement	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree
1. A child with AIDS should have the right to go to my school.				
2. I would be willing to eat lunch sitting next to a student who has AIDS.				
3. I would be willing to participate in team sports with a child who has AIDS.				

The next questions ask what you know about getting AIDS and STD's. Please mark your answer with an "X" to tell us whether you think the following activities are <u>safe</u> or <u>unsafe</u> for getting AIDS. If you are not sure, please put an "X" by not sure.

Statement	Safe	Unsafe	Not Sure
4. Being bitten by mosquitoes or other insects.			
5. Sharing needles or syringes with an infected person.			
6. Having unprotected sex with an infected person.			
7. Holding hands with an infected person.			
8. Touching toilet seats, bathtubs, spoons, makeup, cups or other objects after a person infected with the HIV virus (AIDS).			
9. Swimming in a public pool.			
10. Kissing a person who is infected with the HIV virus (AIDS).			

Code # _____ Interviewer _____ Date _____ PRE-TEST

Remember, for each of the following statements, please mark an "X" to tell us whether you think it is <u>true</u> or <u>false</u>. If you are not sure whether the statement is <u>true</u> or <u>false</u>, place an "X" to tell us <u>not sure</u>.

Statement	True	False	Not Sure
11. You can look at a person and tell if they are infected with the HIV virus (AIDS).			
12. A pregnant woman who has the HIV virus (AIDS) can give her unborn baby the virus.			
13. There is a cure for the HIV virus (AIDS).			
14. If a woman is using birth control pills, she is protected from the HIV virus (AIDS).			
15. There is a test to determine if a person has the HIV virus (AIDS).			
16. The HIV virus (AIDS) can be caught by anyone.			
17. A person can get STD's by having sex with another person.			
18. A person who gets an STD always has symptoms.			

These next questions ask about if you know anyone with HIV/AIDS. Mark your answer with an *"X"*. If you answer *"YES"* to any question fill out the shaded part of the chart.

			If Yes, how many people?	If Yes, how close were these people to you?			
Do you know:	**Yes**	**No**		**Very close**	**Pretty close**	**A little close**	**Not close at all**
1. Anyone who has HIV/AIDS?							
2. Anyone who has died from AIDS?							

Code # _____ Interviewer _____ Date _____ PRE-TEST

These next questions ask about how you would handle some situations. We're going to describe some situations that we heard about from kids your age. For each question, put a *"1"* on the line that answers how you would try to handle the situation first. Next, put a *"2"* on the line that answers what you would do if "1" didn't work. Finally, put a *"3"* on the line that answers what would be your last try if the other two didn't work. If you have any questions, ask the interviewer sitting with you. ***Remember to answer each question honestly!***

1a. The first situation involves kids picking on people and calling them names. Say there is a kid who picks on you a lot. What would you do if you wanted him or her to stop picking on you?

_____Ignore him/her.
_____Pick on him/her back.
_____Tell him/her to stop.
_____Tell your teacher/principal.
_____Tell your friend/sibling/cousin to beat him/her up.
_____Walk away.
_____Tell his/her parents.
_____ Fight him/her.
_____ Other

2a. O.K., the next situation is about being asked to do something you don't really want to do. Say someone who is your friend asks you to do something that you think is dangerous, like taking things from a store without paying or climbing onto railroad or subway tracks, and you don't want to do it. What would you do if you wanted him or her to stop asking you to do that?

_____ Tell him/her that you won't do it (Say "no").
_____Tell his/her parents.
_____Walk away.
_____ Say "don't do that it's too dangerous for you, you might get hurt."
_____Tell him/her to stop asking you.
_____Stop being his/her friend
_____Fight him/her.
_____ Other

Code # _____ Interviewer _____ Date _____ PRE-TEST

3a. O.K., here's another situation kids sometimes have to deal with. Say a girlfriend or boyfriend <u>ASKS TO TOUCH your body</u> and you don't want to be touched by this person in this way. What would you do?

_____ Not say anything.
_____Say no, you don't want to be touched.
_____ Hit him/her.
_____Tell his/her parents.
_____Scream.
_____Tell your parents.
_____ Run away.
_____ Tell the police.
_____ Other

4a. O.K., here's a situation that kids might have to deal with. Say a girlfriend or boyfriend <u>DOES TOUCH your body</u> and you don't want to be touched by this person in this way. What would you do?

_____ Not say anything.
_____Say no, you don't want to be touched.
_____ Hit him/her.
_____Tell his/her parents.
_____Scream.
_____Tell your parents.
_____ Run away.
_____ Tell the police.
_____ Other

5a. O.K., here's a situation that kids might have to deal with. Say your boyfriend or girlfriend tries to convince you to have sex, but you are not sure about it. You feel that if you continue to refuse sex, your boyfriend or girlfriend might end the relationship. What would you do?

_____Agree to have sex in order to keep the relationship.
_____Explain to your partner how you felt and insist that you would have sex only when you felt ready.
_____Not say anything.
_____Tell your parents.
_____Tell his/her parents.
_____Not sure what you would do.
_____ Other

Code # _____ Interviewer _____ Date _____ PRE-TEST

The following questions are about sex. Please mark your answer with an "X" to tell us how much you agree or disagree with each of the following statements.

Statement	Disagree Strongly	Disagree	In the Middle	Agree	Agree Strongly
1. I am too young to have sex.					
2. Being a virgin is a good thing.					
3. I will be proud of myself if I remain a virgin during my teen years.					
4. My parents will be proud of me if I remain a virgin during my teen years.					
5. I am likely to get pregnant, or get someone pregnant if I have sex during my teen years.					
6. I am likely to get AIDS if I have sex.					
7. If I have sex during my teen years, then I am less likely to graduate from high school.					
8. If I have sex during my teen years, then I am less likely to have the career that I am hoping for.					
9. If I have sex before I am married, then my God is likely to be angry at me.					
10. If I have sex during my teen years, then my parents will find out.					
11. If I have sex, and my parents find out, then they will be angry with me.					
12. If I do not have sex with my girlfriends/boyfriend, then she/he will break up with me.					
13. If I have sex, then I will be more popular with girls.					
14. If I have sex, then I will be more popular with boys.					

Code # _____ Interviewer _____ Date _____

The following questions are about your risk of getting AIDS. Please mark your answer with an "X" to tell us how much you agree or disagree with each of the following statements.

Statement	Disagree Strongly	Disagree	In the Middle	Agree	Agree Strongly
1. I am not the kind of person who can get AIDS.					
2. There is a good chance that some of my friends will eventually get AIDS.					
3. There is a good chance that I will eventually get AIDS.					
4. I am worried that I could get AIDS.					

Appendix B:

Data Use Agreement Form

DATA USE AGREEMENT

This Data Use Agreement ("Agreement"), effective as of 1/7/2015 ("Effective Date"), is entered into by and between Hadiza Osuji ("Data Recipient") and Mary McKay, Ph.D. ("Data Provider"). The purpose of this Agreement is to provide Data Recipient with access to a Limited Data Set ("LDS") for use in research in accord with the HIPAA and FERPA Regulations.

1. Definitions. Unless otherwise specified in this Agreement, all capitalized terms used in this Agreement not otherwise defined have the meaning established for purposes of the "HIPAA Regulations" codified at Title 45 parts 160 through 164 of the United States Code of Federal Regulations, as amended from time to time.

2. Preparation of the LDS. Data Provider shall prepare and furnish to Data Recipient a LDS in accord with any applicable HIPAA or FERPA Regulations.

3. Data Fields in the LDS. No direct identifiers such as names may be included in the Limited Data Set (LDS). In preparing the LDS, Data Provider shall include the **data fields specified as follows**, which are the minimum necessary to accomplish the research (list all data to be provided): CHAMPions Program Evaluation De-Identified Data.

4. Responsibilities of Data Recipient. Data Recipient agrees to:
   a. Use or disclose the LDS only as permitted by this Agreement or as required by law;

   b. Use appropriate safeguards to prevent use or disclosure of the LDS other than as permitted by this Agreement or required by law;

   c. Report to Data Provider any use or disclosure of the LDS of which it becomes aware that is not permitted by this Agreement or required by law;

   d. Require any of its subcontractors or agents that receive or have access to the LDS to agree to the same restrictions and conditions on the use and/or disclosure of the LDS that apply to Data Recipient under this Agreement; and

   e. Not use the information in the LDS to identify or contact the individuals who are data subjects.

5. Permitted Uses and Disclosures of the LDS. Data Recipient may use and/or disclose DS for its Research activities only.

6. Term and Termination.

a. Term. The term of this Agreement shall commence as of the Effective Date and shall continue for so long as Data Recipient retains the LDS, unless sooner terminated as set forth in this Agreement.

b. Termination by Data Recipient. Data Recipient may terminate this agreement at any time by notifying the Data Provider and returning or destroying the LDS.

c. Termination by Data Provider. Data Provider may terminate this agreement at any time by providing thirty (30) days prior written notice to Data Recipient.

d. For Breach. Data Provider shall provide written notice to Data Recipient within ten (10) days of any determination that Data Recipient has breached a material term of this Agreement. Data Provider shall afford Data Recipient an opportunity to cure said alleged material breach upon mutually agreeable terms. Failure to agree on mutually agreeable terms for cure within thirty (30) days shall be grounds for the immediate termination of this Agreement by Data Provider.

e. Effect of Termination. Sections 1, 4, 5, 6(e) and 7 of this Agreement shall survive any termination of this Agreement under subsections c or d.

7. Miscellaneous.

a. Change in Law. The parties agree to negotiate in good faith to amend this Agreement to comport with changes in federal law that materially alter either or both parties' obligations under this Agreement. Provided however, that if the parties are unable to agree to mutually acceptable amendment(s) by the compliance date of the change in applicable law or regulations, either Party may terminate this Agreement as provided in section 6.

b. Construction of Terms. The terms of this Agreement shall be construed to give effect to applicable federal interpretative guidance regarding the HIPAA Regulations.

c. No Third Party Beneficiaries. Nothing in this Agreement shall confer upon any person other than the parties and their respective successors or assigns, any rights, remedies, obligations, or liabilities whatsoever.

d. Counterparts. This Agreement may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute one and the same instrument.

e. Headings. The headings and other captions in this Agreement are for convenience and reference only and shall not be used in interpreting, construing or enforcing any of the provisions of this Agreement.

IN WITNESS WHEREOF, each of the undersigned has caused this Agreement to be duly executed in its name and on its behalf.

DATA PROVIDER	**DATA RECIPIENT**
Signed: _____	Signed:_____
Print Name: Mary McKay	Print Name: Hadiza Osuji
Print Title: Director	Print Title: Student