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LOYOLA UNIVERSITY CHICAGO

PERCEPTIONS, ATTITUDES, AND ACCEPTABILITY OF HIV TESTING
AMONG SUB-SAHARAN AFRICAN IMMIGRANTS IN CHICAGO

A DISSERTATION SUBMITTED TO
THE FACULTY OF THE GRADUATE SCHOOL
IN CANDIDACY FOR THE DEGREE OF
DOCTOR OF PHILOSOPHY

PROGRAM IN SOCIAL WORK

BY

RITA NDIDI AMADI

CHICAGO, IL

DECEMBER 2012

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HIV testing is the most important first step toward breaking the cycle of transmission.
Combined with the most effective prevention services, linkage to care and ongoing effective treatment, testing provides a gateway to the most effective prevention tools at our disposal.

Jonathan Mermin, M.D.
Director of CDC's Division of HIV/AIDS Prevention

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ABSTRACT

HIV testing is a primary strategy in HIV prevention and is associated with a myriad of benefits including positive behavior changes and enhanced access to HIV care services and support. However, African immigrants delay testing and are often diagnosed with late-stage HIV infection and symptoms suggestive of AIDS. Little attention has been devoted to understanding the barriers to testing among sub-Saharan African immigrants in the United States.

This cross-sectional survey, conducted in partnership with African community organizations in Chicago, used multistage sampling techniques to reach this hard-to-reach population. It attempted to elucidate the HIV testing behaviors of African immigrants and their perceptions and attitudes toward HIV infection.

Bivariate analyses revealed that the majority of participants have not had an HIV test in the previous year. HIV risk perception was associated with a recent HIV test. Significant gender and regional differences in HIV risk behavior were noted. Logistic regression analyses revealed that HIV risk perception of African immigrants predicts their recent HIV tests. The strongest independent predictors of future HIV testing intention were marital status and HIV risky behavior.

Interventions to increase awareness of risk and to expand HIV testing to meet the specific needs of African immigrants appear to be needed. Findings from this study will

foster the knowledge and advocacy skills of social workers working with African immigrants.

CHAPTER ONE

INTRODUCTION

In 2006 the Centers for Disease Control and Prevention (CDC) recommended universal HIV testing as part of a comprehensive human immunodeficiency virus (HIV) prevention strategy (CDC, 2006a). Finding out one's HIV serostatus has two major advantages: starting antiretroviral medications early prevents the progression of HIV infection along a continuum to HIV disease and acquired immunodeficiency syndrome (AIDS), and reduces risk of transmission of HIV infection from an infected person to an uninfected partner. Despite the CDC's recommendation and the obvious advantages of HIV testing, many individuals still do not obtain an HIV test. African immigrants delay HIV testing, are often diagnosed late with this infection, and are more likely to enter HIV care with advanced HIV infection compared to U.S.-born persons (Eteni & Wood, 2003; Page, Goldbaum, Kent, & Buskin, 2009). African immigrants delay HIV testing and are often unaware of their HIV serostatus because of long-held social and cultural norms and the stigma associated with a diagnosis of HIV infection (Rosenthal et al., 2003; Tompkins, Smith, Jones, & Swindells, 2006).

Researchers have observed increased HIV disease burden in sub-Saharan Africa (United Nations Agency for AIDS [UNAIDS], 2008) and increased HIV diagnosis among African-born immigrants residing in the United States (Akinsete, Sides, et al., 2007; Harawa, Bingham, Cochran, Greenland, & Cunningham, 2002). Despite this HIV

epidemiological dynamic in sub-Saharan Africa, little attention has been devoted to examining the perceptions of risk among African immigrants in the United States (Rosenthal et al., 2003). Africans have usually been treated in research as a homogeneous group; consequently, potentially essential subgroup differences are often masked or overlooked. Epidemiological characteristics of HIV disease in other national origin and ethnic groups, such as Hispanics, non-Hispanic Whites, African Americans, and Asians, have been extensively elucidated (Adefuye, Abiona, Balogun, & Lukabo–Durrell, 2009; CDC, 2005; Lapidus, Bertolli, McGowan, & Sullivan, 2006; Levy et al., 2007; Lopez–Quintero, Shtarkshall, & Neumark, 2005; Sena, Hammer, Wilson, Zeveloff, & Gamble, 2010; Takahashi, Johnson, & Bradley, 2005). However, the epidemiological features and dynamics of HIV in Africans living in the United States have been given relatively little attention (Akinsete, Hirigoyen et al., 2004; Akinsete, Sides et al. 2007; Sides et al., 2005).

African immigrants in the United States have also been under-studied in terms of HIV testing. Akinsete, Sides et al. (2007) and Page et al. (2009), in their studies of sub-Saharan African immigrants in the United States, found that this group comprises late testers who are often diagnosed with HIV after presenting with symptoms suggestive of HIV infection. Few studies have investigated the disproportionate HIV disease burden among Africans immigrants living in the United States (Akinsete, Sides et al., 2007; Eteni & Wood, 2003; Harawa et al., 2002; Kerani et al., 2008).

The efforts of the CDC to enhance HIV testing in the United States culminated in the 2006 Opt-Out Testing for HIV recommendation, which was geared toward increasing

HIV screening of patients in health care settings. Opt-Out Testing for HIV advised providers in health care settings to adopt a policy of routine HIV testing for everyone between the ages of 13 and 64 and all pregnant women, and to routinely provide tests unless a patient explicitly refuses. The Opt-Out policy also urged the elimination of requirements for pretest counseling, informed consent, and posttest counseling (CDC, 2009).

This recommendation was timely and could have been used to increase the rate of HIV testing for certain groups or individuals. However, Opt-Out testing is yet to be widely implemented and when implemented may not be culturally sensitive or tailored to the specific needs of African immigrants based on their unique characteristics and experiences. Patients view health service as culturally appropriate only when the services are suitable to patients' problems and productive in achieving patients' desired goals based on their belief system. The need to examine the HIV infection and testing dynamics of specific immigrant subpopulations cannot be overemphasized.

With the increasing number of African immigrants in the United States (see appendix), many of whom have distinct cultural and racial characteristics, there is a critical need to understand sub-Saharan African immigrants' perceptions, attitudes, and behaviors toward HIV infection and testing. This may be particularly useful in understanding their utilization of health care services.

The African immigrant population in the United States has also remained a relatively invisible population in terms of HIV surveillance. The current CDC HIV/AIDS Surveillance System guidelines do not mandate collecting data specific to immigrant

populations. U.S. HIV surveillance data do not regularly assess the rate of diagnosis occurring among African-born residents in the United States (Kerani et al., 2008; Satcher, Hu, & Dean, 2010). There are no national data on HIV/AIDS incidence of African immigrants in the United States (Brulliard, 2008). Many state health departments do not collect information on country of origin and do not differentiate between African Americans and Africans. CDC data lump African immigrants with African Americans under the racial category of Black/African American. This may obscure HIV transmission nuances as well as unique population characteristics (Satcher et al., 2010). There may also be implications for HIV prevention and AIDS care as funding is allocated based on epidemiological data. Errors and omissions in data collection may marginalize African immigrants and mask their needs for services. Further, this classification schema may artificially inflate the HIV infection rates of U.S.-born Blacks.

In the United States, Black Americans have the highest rates of HIV incidence, individuals living with HIV, AIDS diagnosis, and HIV-related mortality (CDC, 2011a, 2011b, 2011c; NCHS, 2010). In 2009 Blacks/African Americans accounted for 44% of all new HIV infections but made up only 14% of the U.S. population (CDC, 2011d). According to the Chicago Department of Public Health (CDPH), there are currently 20,391 people living with HIV in Chicago (CDPH, 2011b). Approximately 1,000 individuals in Chicago are diagnosed with HIV infection every year, and non-Hispanic Blacks (African Americans) constitute over 50% of new HIV infections annually. Non-Hispanic Blacks (Blacks/African Americans) have an HIV infection diagnosis rate that is three times greater than that of non-Hispanic Whites, an AIDS case rate four times

higher, and an HIV infection prevalence rate two times that of non-Hispanic Whites (CDPH, 2011b).

In contrast to other minority populations, African-born individuals have unique sociocultural, epidemiological, and clinical features that limit their access to preventive and treatment service, which may predispose them to HIV infection. Compared to other minority groups, African immigrants until recently (2006) had no indigenous national body to advocate or work to address the specific linguistic, cultural, and systemic barriers that prevent them from accessing effective HIV services in the United States. A group of committed health professionals came together in 2006 to form the National African HIV Initiative (NAHI). NAHI is a national coalition that works to address the growing HIV rates among African immigrants and refugees. In addition to NAHI's efforts, continued and intensified efforts are needed to address the issue of HIV/AIDS among African immigrants. The pertinent question is, Do sociocultural factors associated with HIV diagnosis affect an African immigrant's attitude, behavior and general predisposition toward HIV testing?

Significance of the Study

This study has implications for social workers, who by virtue of the core values of their profession, are committed to the principle of social justice. The disparity in the HIV/AIDS disease burden of sub-Saharan Africans is a social justice issue and should be of concern to all social workers regardless of their field of practice. Researching the HIV testing dynamics of African immigrants and the factors that influence their HIV testing decisions may reveal the barriers encountered by these groups of immigrants as they

relate to HIV testing. Understanding these barriers is necessary to increase participation in HIV testing and may assist in reducing the rate of HIV transmission among this vulnerable group in Chicago. It may also increase understanding of barriers to testing in other populations, thereby reducing the rate of transmission throughout the U.S. population. Findings from this study are expected to assist social workers and other HIV service providers by enhancing their knowledge and skills in advocating for and in working with African immigrants who are at risk for HIV infection. The knowledge of sociodemographic characteristics, attitudes, beliefs, sexual behaviors, and perceived HIV risk susceptibility among African-born immigrants in Chicago, especially how these variables relate to their patterns of HIV testing, will help target HIV prevention interventions to meet the specific needs of these African immigrants.

Purpose of the Study

The purposes of this study were to

1. Assess attitudes and behaviors toward HIV testing
2. Assess the acceptability of HIV testing among African immigrants in Chicago and the barriers that impede their HIV testing

This study used a cross-sectional design and multistage sampling. A cross-sectional survey collects data at a point in time from one sample selected to describe a specific larger population at that particular point in time (Babbie, 1990). It can be used to describe and determine the nature of relationships between variables at the time of the study. This research design is often used to document demographic differences between subpopulations and to examine and measure relationships between those differences and

specific variables. In this study, survey data were used to explore the relationships between sociodemographic, personal characteristics of sub-Saharan African immigrants and their HIV testing practices.

The use of a cross-sectional survey to explore similar questions is supported by the literature (CDC, 2004; Lopez–Quintero et al., 2005; Ostermann, Kumar, Peace, & Whetten, 2007; Takahashi et al., 2005). Moreover, the low cost and efficiency of a cross-sectional survey influenced the research design.

Research Questions

To investigate the perceptions, attitudes, beliefs, and behaviors of sub-Saharan African immigrants toward HIV testing and infection, two core research questions were addressed:

1. Do the perceptions, attitudes, and beliefs of sub-Saharan African immigrants about HIV infection affect their decision to take an HIV test?
2. What are the predictors of HIV testing among sub-Saharan African immigrants in Chicago?

This study therefore (a) assessed the perceived and actual risks of HIV infection among men and women from different groups of sub-Saharan African immigrants living in Chicago and how these factors affect HIV testing behaviors, (b) described HIV sexual and testing behaviors of sub-Saharan African male and female immigrants living in Chicago, and (c) identified factors that influence HIV testing among sub-Saharan immigrants living in Chicago. In this study, the following hypotheses were tested:

1. There is a relationship between HIV risk perception and HIV testing among sub-Saharan African immigrants in Chicago.
2. There is a relationship between engagement in HIV sexual risk behavior and HIV testing among sub-Saharan African immigrants in Chicago.
3. There is a gender difference in the HIV testing rates of sub-Saharan African immigrants in Chicago.
4. There is a gender difference in the HIV risk perception of sub-Saharan African immigrants in Chicago.
5. There is a gender difference in HIV risk behavior among sub-Saharan African immigrants in Chicago.
6. There is a difference in HIV risk perception among different groups of sub-Saharan African immigrants in Chicago.
7. There is a difference in HIV risk behavior among different groups of sub-Saharan African immigrants in Chicago.
8. There is a difference in HIV testing among different groups of sub-Saharan African immigrants in Chicago.
9. HIV risk perceptions of African immigrants predict their past HIV testing.
10. HIV risk perceptions of African immigrants predict their future intention to test for HIV.

CHAPTER TWO

REVIEW OF THE LITERATURE

Researchers have observed that the features and dynamics of HIV among Africans living in the United States have been given relatively little attention (Akinsete, Hirigoyen et al., 2004; Akinsete, Sides et al., 2007; Sides et al., 2005). Most U.S. studies on HIV and risk perception have focused attention on groups other than African immigrants (Adefuye et al., 2009; Sena et al., 2010; Takahashi et al., 2005) although a few local studies have focused on the epidemiology of HIV infection among African-born immigrants (Beyene, 2000; Kerani et al., 2008; Mitha, Yirsalign, Cherner, McCutchan, & Langford, 2009). This is particularly troublesome given the enormous HIV/AIDS disease burden in Africa (Dean-Gaitor et al., 1996; Patel-Larson, Espinoza, & Hu, 2007; Satcher et al., 2010).

This literature review identifies personal, socioeconomic, and cultural factors unique to African immigrants that may impede their acceptance of, access to, and use of HIV testing services. In addition, it attempts to explore some institutional and legal barriers that potentially affect their health care access and utilization. The current state of HIV testing is discussed in order to understand the context in which individuals are tested for HIV. Finally, the dynamics of HIV/AIDS in sub-Saharan Africa are discussed in order to understand the need for a culturally sensitive approach to HIV testing.

Studies on Perception, Attitudes, Beliefs, and HIV Infection and Testing in the United States

HIV prevention is one of the top priorities of the CDC and has been adopted by the CDPH. For every 100 people living with HIV in Chicago, 80% are aware of their HIV infection, 54% are linked to HIV care, 40% stay in HIV care, 34% get antiretroviral therapy (ART), and only 29% have a suppressed viral load (CDPH, 2012). This means that both locally and nationally, one in five (20%) people with HIV are unaware of their infection.

Individuals are most likely to partake in screening if they believe that they are prone to contracting a disease, have previously been screened for the disease, or have a strong intention to undergo testing (Fernandez, Perrino, Royal, Ghany, & Bowen, 2002; Janz, Champion, & Stretcher, 2002; Montano & Kasprzyk, 2002). The 1998 National Health Interview Survey found individual characteristics including age and level of education to be significantly associated with HIV testing (Inungu, 2002). The study used a representative sample of 32,440 noninstitutionalized U.S. civilians aged 18 or above. It also found that participants ages 18, 19, and 50 or above, or those who had less than a 12th-grade education, were significantly less likely to have ever had an HIV test when compared to others.

A study of predictors of HIV testing, conducted among 117 gay, lesbian, and bisexual youth who either visited a gay and lesbian community center or attended a conference for gay youth in 2000, found that age and risk behavior were positively and significantly related to HIV testing among the study population (Maguen, Armistead, &

Kalichanan, 2000). The study found that two cognitive factors derived from the Health Beliefs Model—perceived barriers to testing and perceived susceptibility to AIDS—were also significantly associated with HIV testing. This finding in essence means that individuals who perceived themselves as at greater risk for HIV and who had lower perceived barriers to HIV testing were more likely to have ever been tested for HIV.

In 2008 a cross-sectional population-based survey examined the HIV testing history and health care utilization pattern among young African American mothers residing in an urban neighborhood in the Midwest. This study assessed the following variables: sexual risk behaviors, HIV testing barriers, factors associated with HIV testing, preferences for HIV testing locations, and the acceptability of community settings. The study found that 76% had ever been tested for HIV, 52% had been tested in the past 12 months, and 70% had unprotected sex during the past 12 months. Of those reporting having had unprotected sex, 26% reported sex with two or more partners. In terms of health care utilization, about 72% of the study participants had a health care provider during the previous year. Those who had a primary doctor and those who had at least one health care provider visit during the past 12 months were more likely to have had an HIV test in the past 12 months (Petroll et al., 2008).

The strongest predictor of an HIV test ($OR = 7.35 [3.55, 15.34]$) among the study population was having a primary doctor who recommended HIV testing. History of sexually transmitted infection (STI) diagnosis or treatment was also associated with HIV testing ($OR = 1.83 [1.04, 3.21]$). Additionally, the study found that medical settings were the most commonly preferred testing venues. Community settings were identified as

acceptable alternatives. More than one-half of the participants (51%) reported having their HIV test at a doctor's office and having a regular doctor recommend HIV testing was strongly related with HIV testing (OR=7.38 [3.55, 15.34]). However, many of the study participants who saw a doctor were still not tested for HIV (Petroll et al., 2008).

An analysis of HIV testing rates and testing locations among White Americans, Hispanic Americans, and Black Americans found that out of the 252,117 study participants, 40% had been tested for HIV. The HIV testing rate differed significantly by racial/ethnic group: For young African American adults, the rate was 58%, while the rates for young White Americans and young Hispanics were 31% and 36%, respectively. This study used data from the 2005 Behavior Risk Factor Surveillance System (Rountree, Chen, Brown, & Pomeroy, 2009).

This finding has been confirmed by other researchers. Liddicoat, Losina, Kang, Freedberg, and Walensky (2006) examined HIV testing in an urgent care clinic and found that African Americans were more likely than White Americans to report a previous HIV test. Ebrahim, Anderson, Weidle, and Purcell (2001) also found that HIV testing rates were significantly higher for Hispanics and African Americans than for White Americans.

Fortenberry et al. (2002), in their face-to-face interviews of 847 men and 1126 women from clinic locations in seven U.S. cities, found among other things that age, use of health services, gonorrhea testing, enrollment site, and low level of stigma were independently associated with HIV testing in the past one year. The authors concluded

that STI/HIV-related care could be promoted through an enhanced understanding of factors including shame or stigma, which may act as barriers to screening.

Ostermann et al. (2007) conducted a pooled cross-sectional analysis of 146,868 participants using data from the 2000–2005 National Health Interview Survey (NHIS). The researchers examined longitudinal trends in HIV testing rates in the United States as well as differences between planned and actual testing among different demographic and risk groups. The study found that the rate of HIV testing remained relatively constant and low from 2000 to 2005, but varied significantly across gender and racial factors. HIV testing rates were also found to be substantially higher among individuals reporting higher risk of HIV infection. Surprisingly, the study found that even among individuals reporting higher or medium risk of HIV infection, less than 25% had been tested for HIV in the previous year. Those with a greater perceived risk had higher rates of both planned and actual testing, but at the same time exhibited the lowest ratio of actual testing relative to planned testing. The study concluded that HIV testing rates remain low in the United States, both nationally and among high-risk populations, and that the low rate may be contributing to the higher number of undiagnosed cases of HIV (Ostermann et al., 2007).

Studies on HIV risk and risk perception conducted so far in the United States have focused attention primarily on groups other than African immigrants (Adefuye et al., 2009; Sena et al., 2010; Takahashi et al., 2005). For instance, Adefuye et al. (2009), in their cross-sectional study of sexual high-risk behaviors and risk perception among 390 African American college students, found appreciation of high risk to be generally poor among the study participants. The findings indicated that approximately 58% of those

below age 20, 48% of those between 20–29, and 54% of individuals aged 30 years or older did not perceive themselves as having any chance of contracting HIV infections despite the fact that they engaged in HIV risk behaviors. Although these are important findings, the sample was drawn from a specialized population (students pursuing general education studies at the undergraduate level) and experienced challenges that weakened its randomization (Adefuye et al., 2009).

Takahashi et al. (2005), in their evaluation of HIV testing practices and perception of HIV risks in four U.S. states using secondary data from the CDC Behavioral Risk Factor Surveillance System (BRFSS) 2000 survey, found that 19% of the population reported engaging in sexual behaviors that put them at risk for HIV infection. Among these groups of at-risk individuals, only 49% had had an HIV test in the past one year. Among the at-risk individuals who reported no HIV test in the past one year (51%), a majority (84%) perceived themselves as having low or no risk. Younger age was independently associated with whether or not individuals at risk for HIV had a recent test for HIV. The study highlighted the need to increase early detection of HIV infection through an expanded HIV testing program and an increased awareness of HIV risk among the high school–aged population.

Researchers used the National AIDS Behavior Survey 1990–1991 to evaluate the HIV testing behaviors and HIV risk in different high-risk U.S. cities. The study found that about one-third of the heterosexuals at risk for HIV infection indicated ever having been tested for HIV (Berrios et al., 1993). In 2000 Anderson, Carey, and Taveras (2000) evaluated data from three different nationally representative surveys conducted between

1987 and 1996. Their findings indicated that generally, the rate of recent HIV testing increased overtime among individuals reporting HIV risk behaviors. However, testing rates among individuals at risk remained disproportionately low, ranging from 17% to 34% based on the particular HIV risk practice.

However, little information exists regarding sub-Saharan African-born immigrants residing in the United States. It is noteworthy that no national study has been conducted on African immigrants and HIV testing in the United States despite the enormous HIV/AIDS disease burden in Africa, the contributing factors of which are also often present in immigrants despite their emigration to the United States. A few national studies have examined the HIV infection features of the foreign-born Black population in the United States (Dean-Gaitor et al., 1996; Patel-Larson, Espinoza, & Hu, 2007; Satcher et al., 2010).

Satcher et al. (2010), conducted a national study on the epidemiological differences of HIV infection in foreign- and native-born Blacks in the United States. using data from the CDC National HIV Surveillance System. The researchers examined the differences in: annual rates of HIV diagnosis, distribution of demographic characteristics, HIV risk factors, and late diagnosis of HIV for native- and foreign-born Blacks in the United States.

Results indicated that of the 100,013 Black adults and adolescents diagnosed with HIV infection, 11.7% were foreign born. African and Caribbean adolescents constituted 40.5% and 54.1% of these diagnoses, respectively. A decrease in annual HIV diagnosis of 5.5% per year was observed for native-born Blacks. However, a smaller decrease

(1.3%) was observed for foreign-born Blacks. Foreign-born Blacks were more likely to be female, high-risk heterosexuals diagnosed late with HIV, with limited years of survival after an AIDS diagnosis.

In addition, these researchers observed that CDC surveillance data for foreign- and native-born Blacks are usually combined on surveillance reports and that the aggregate data obscures important nuances in the epidemiology of HIV among native- and foreign-born Blacks in the United States. The study concluded that the epidemiology of HIV infection for foreign-born Blacks differs from that of their native-born counterparts in the United States. Culturally appropriate and relevant HIV prevention was recommended as a way to increase HIV education and testing with these groups of Blacks in the United States.

Other local studies have focused on the epidemiology of HIV infection among African-born immigrants. For instance, Kerani et al. (2008) analyzed cumulative data on people diagnosed with HIV and reported to the HIV Surveillance System in selected states between 2003 and 2004. The analysis was conducted among eight districts (California; Georgia; Minnesota; Massachusetts; New York City; New Jersey; King County, Washington; and Virginia) in the United States, using their health authorities (health departments) as a framework. It was found that African-born immigrants in the United States have a disproportionately high HIV prevalence rate. They made up 0.6% of the study population but accounted for approximately 4% of HIV diagnoses. In one district, nearly 50% of HIV infections among “Blacks” were diagnosed among immigrants from Africa. This finding supports the assertion of Satcher et al. (2010) that

the current HIV surveillance data collection methodology does not allow appropriate targeting of prevention efforts. Kerani et al (2008) went a step further and asserted that current U.S. HIV/AIDS surveillance data is misleading, warning that misclassifying HIV diagnosis among foreign-born Blacks as occurring among African Americans significantly changes the epidemiological picture of HIV infection. The researchers concluded that there may well be a hidden epidemic of HIV/AIDS among African immigrants in the United States and recommended that data collection should consistently include country of birth in surveillance information.

A study conducted by Beyene (2000) of Ethiopian and Eritrean immigrants residing in California revealed that most of the respondents underestimated their risk for HIV infection and held HIV-related beliefs and attitudes similar to those reported in their native countries. Mitha et al. (2009) conducted a survey of 84 Ethiopian-born immigrants over age 18 living in San Diego, California. The study noted that although a significant proportion (84%) of the study participants believed that HIV infection could be fatal, 32% thought that HIV could be cured. The majority of the study participants (80%) believed themselves to be at low risk for HIV infection despite the fact that 40% reported inconsistent use of condoms during sexual intercourse. Only 1 study participant reported being HIV positive. Study limitations included a low participation rate (20%), predominance of male participants (73%), and a high rate of incomplete answers.

Rosenthal et al. (2003) conducted a survey of HIV knowledge, risk practices and perceptions, and access to health care among 309 Black African immigrants from about 20 countries residing in Houston, Texas. The participants were highly educated and

reported high levels of knowledge about the modes of HIV transmission; however 36% indicated that they had never used a condom, and the majority (79%) of the respondents reported low self-perceived risk for HIV infection. Although this study identified the dynamics of HIV knowledge, risk perceptions, HIV stigma, and health service utilization of African immigrants, it used a nonrandom sample of African immigrants with higher-than-average education and the reported perceptions may not be a true reflection of the entire African immigrant community.

HIV/AIDS in Sub-Saharan Africa

African immigrants' conceptualization of HIV infection and testing may be influenced by the dynamics of HIV/AIDS in their native countries. To understand their perceptions, it is important to understand the context of HIV/AIDS in Africa. UNAIDS (2011) found that although sub-Saharan Africa constitutes only about one-tenth of the world's population, about two-thirds (22.9 million) of all the people living with HIV in the world live within this region. In 2010 alone, there were 1.9 million new HIV infections in sub-Saharan Africa, and approximately 1.2 million people from this region died from AIDS-related deaths (UNAIDS, 2011). The impact of HIV/AIDS is more pronounced in sub-Saharan Africa than in any other region of the world. Globally, this region remains the region most affected by HIV, accounting for about 67% of all people living with HIV and 66% of AIDS-related deaths in 2010 (UNAIDS, 2011). The adult HIV prevalence rate in sub-Saharan Africa is 5%, and it is estimated that 14.8 million children have been orphaned as a result. Unlike the United States and other developed regions, there is still high prevalence of mother-to-child transmission of HIV; about

360,000 children in the sub-Saharan African region became infected with HIV in 2010 alone. In that same year, 2.3 million children from this region were estimated to be living with HIV/AIDS (UNAIDS, 2011).

In addition to this high HIV disease burden, many African countries have been affected by political, social, and economic factors that have increased emigration from this region to other countries. Although African-born immigrants make up a small percentage of the foreign-born immigrant population in the United States, there has been a significant increase in the number of African-born immigrants in the United States over the past two decades. According to the United Nations High Commission for Refugees in 2005, Africans constituted 2.7 million of the 8.4 million refugees worldwide. U.S. Census Bureau (2000) data indicated that African-born immigrants constituted about 3% of the total foreign-born population in the United States. However, between 1990 and 2000, the population of African-born people increased by 142%. In 2010, of the 38.6 million foreign-born persons living in the United States, African ancestry for about 1.4 million or 3.8% (U.S. Census Bureau, 2010). This number is likely to increase given the severe economic, health, and security conditions in many African countries.

Some of these new immigrants arrive in the United States with HIV seropositive status, and their conditions are further compounded by comorbidity with previous tuberculosis, latent tuberculosis, and parasitic diseases including filariasis, helminthes, and malaria (Lopez-Velez, Huerga, & Turrientes, 2003), which are prevalent in most African countries. They found that these diseases may be difficult to diagnose in the United States since most health care providers are not familiar with the symptoms and

appropriate screening tests. In addition, these diseases may reduce the cellular immunity that is necessary to prevent HIV infection and other infectious agents. As Simbiri (2006) pointed out, new immigrants who are already infected with HIV remain infected and may potentially transmit the disease within their community in the United States and to the general public.

Table 1. Estimated number of immigrants in the United States in 2010

Statistic	Figure
Number of people residing in the United States	303.9 million
Number of immigrants residing in the United States	38.6 million
Percentage of immigrants residing in the United States	12.7%
Total number of African immigrants in the United States	1.4 million
Ratio of African immigrants to the total population of immigrants living in the United States	3.8%
Number of immigrants residing in Chicago	570,543
Percentage of U.S. immigrants residing in Chicago	1.5%
Number of African immigrants residing in Chicago	20,826
Ratio of African immigrants to the total population of immigrants residing in Chicago	3.7%

Note. Adapted from “American Fact Finder,” by U.S. Census Bureau, 2010, retrieved from

<http://factfinder2.census.gov/faces/nav/jsf/pages/index.xhtml>

There is marked variation in HIV prevalence and mortality rates across countries in Africa, and regions of eastern and southern Africa have been most heavily affected. In 2009, of the total number of people living with HIV in the world, 34% lived in 10 countries in South Africa. In western and central Africa, HIV prevalence remains

relatively low, with the adult HIV prevalence rate estimated at 2.0 or less in 12 countries (Democratic Republic of the Congo, Benin, Burkina Faso, Sierra Leone, Gambia, Ghana, Niger, Senegal, Mali, Mauritania, Guinea, and Liberia). However, in the western and central African regions, HIV prevalence is highest in Cameroon (5.3%), Gabon (5.2%), Central African Republic (4.7%), Cote d'Ivoire / Ivory Coast (4.7%), and Nigeria (3.6%) (UNAIDS, 2010).

In countries such as Senegal and Somalia, the HIV prevalence rate is below 1% in the adult population; however in Zambia and South Africa the prevalence rate in the adult population ranges from 15% to 20% (UNAIDS & WHO, 2007). According to UNAIDS (2007), the countries most affected by high prevalence rates are Swaziland (33.4%), Botswana (24.1%), Lesotho (23%), and Zimbabwe (20.1%).

Mother-to-child transmission is still prevalent in sub-Saharan Africa. According to UNAIDS (2011), at the end of 2010, 2.3 million children in sub-Saharan Africa were living with HIV, which represents about 90% of children living with HIV globally. In Africa, social and economic disparities exist between men and women. Women encounter restricted access to health care, employment, education, inheritance, land, and credit. This unequal access to resources contributes to increased vulnerability of women to HIV infection and also makes them bear the brunt of the impact of HIV in Africa. In most African cultures, for instance, it is taboo, as well as a sign of promiscuity, for women to talk openly about the issue of sexuality and sexually transmitted diseases during their adolescent years. With cursory or inadequate discussion of these issues, African women may find themselves ill-equipped to deal with issues of sexuality as

adults. In some African societies, there is also the myth that women are the major vectors of HIV and other STIs. This myth, coupled with the low status of women, becomes the traditional ground for stigmatization and discrimination against women within the framework of HIV/AIDS.

One can see that the health-seeking behaviors, health beliefs, and attitudes toward HIV/AIDS of African immigrants may emanate from experiences in their home countries (Anderson & Doyal, 2004; Foley, 2005). In many African countries, HIV is still a death sentence; diagnosis occurs late in the disease course and access to HAART is limited. Many people die shortly after diagnosis. The risk is that this experience may color African immigrants' worldview about HIV infection and HIV testing. In the study conducted by Anderson and Doyal (2004), stigma was found to have a significant impact on the lives of HIV-positive African immigrant women, who placed a high premium on control over information about their HIV diagnosis. This high concern about privacy and confidentiality affected how these immigrant women access health services.

Immigrants and Barriers to Health Care Access

Socioeconomic and cultural factors are known to affect access to and use of health care services. This section discusses these factors among U.S. immigrants, focusing on African immigrant groups.

Personal and Sociocultural Issues

According to Ell and Castaneda (1998), the health care-seeking behavior of immigrants is mediated by three sets of personal and cultural factors: demographic and social-relational issues; cultural beliefs, perceptions, and expectations; and pathways to

care and decision-making processes. Kramer, Tracy, and Ivey (1999) underscored that linguistic, cultural, financial, systemic, and legal barriers are the major barriers faced by immigrants in accessing health care in the United States. Cultural differences and language gaps result in the underutilization of health services by some segments of the population (Association of State and Territorial Officials, 1992). In a study of sub-Saharan African immigrants in Western Europe and their HIV testing barriers, Fakoya, Reynolds, Caswell, and Shiripinda (2008) found that cultural, social, and structural factors influenced immigrants' decisions to be tested for HIV. The barriers identified in the study include fear of death and disease, fear of discrimination and stigma in the community, and limited access to testing and care. Additional barriers identified by these authors include restrictive immigration policies, lack of political will, and lack of African representation in decision-making schemes.

In 2009 Manirankukuda, Loos, Alou, Colebunders, and Nostlinger conducted a qualitative study among sub-Saharan African immigrants living in Belgium to examine the perceptions, needs, and barriers to HIV voluntary counseling and testing (VCT) of sub-Saharan African immigrants. Through eight focus group discussions conducted with participants, the following barriers to HIV testing were identified: fear of positive test results and the associated consequences (personal and social), lack of preventive health behavior, denial of HIV risk, lack of information, and missed opportunities. In addition, some subgroups including young people, recent immigrants, and asylum seekers identified limited financial resources as a concern. The researchers suggested increasing awareness through culturally sensitive education at the community level.

Cultural and language barriers have been described by a number of authors as negatively affecting migrants' access to health information (Jackson, Mitchell, & Wright, 1998; Rosenthal et al., 2003; Wolffers, Fernandez, Verghis, & Vink, 2002). This is more evident in terms of understanding health service messages (Rosenthal et al., 2003). People who lack proficiency in spoken and/or written English encounter many obstacles to health care access. These obstacles include getting an appointment, comprehending the directions to the facility, understanding parking instructions, navigating the facility's registration system and completing intake forms (Jackson et al., 1998). These obstacles take place before the immigrant can be seen by the health care provider, where linguistic differences may cause additional obstacles such as miscommunication, misunderstanding, wrong diagnosis and treatment, and difficulty adhering to treatment regimen. Language barriers also cause unnecessary delays in diagnosis and treatment. Language barriers, fear of deportation, and other conflicting priorities have been indicated as contributing to underutilization of health services (Akinsete, Sides et al., 2007; Fenton, Chinouya, Davidson, & Copas, 2002; Nakyonyi, 1993; Rosenthal et al., 2003; Worth, Denholm, & Bannister, 2003).

Immigrants who have low education and limited proficiency in English and who have resided in the United States for a limited period of time are less inclined to seek health care services (Amadi, 2009; Ell & Castaneda, 1998). In addition, knowledge of community health resources also plays a crucial role in health care access, since immigrants who are not familiar with health care organizations or with the U.S. health care system will not be able to access these resources. Acculturation is another variable

related to health care-seeking behaviors. Cultural beliefs that affect health care-seeking behaviors include knowledge and beliefs about the causes of illness (Ell & Castaneda, 1998). Immigrants who have strong traditional health beliefs about the causes of illness may be more inclined to delay medical care or to not seek care at all. Immigrants from various nations have multifaceted sociocultural and religious beliefs with respect to gender issues, sexuality, and knowledge of disease (Fenton et al., 2002; Halperin & Epstein, 2004; Rosenthal et al., 2003; Smith, de Visser, Adande, Rosenthal, & Moore, 1998; Worth et al., 2003).

Okonkwo, Reich, Alabi, Umeike, and Nachman (2007), in their cross-sectional study of 240 pregnant women in Nigeria, found that 87% of the women were willing to be tested for HIV if the results remained confidential, and 69% of those who refused VCT linked their refusal to the cultural and social stigma associated with HIV. More than 69% of the women in this study reported that they would encounter tremendous cultural and social discrimination if they were to test positive for HIV and that HIV is associated with moral fault. Okonkwo et al. found that about 39% of women who participated in their study believed that HIV is a punishment from God. The study suggested that sociocultural factors—especially the stigmatization of those infected with HIV—appears to be the main obstacle to increased acceptance of HIV counseling and testing in Nigeria. Other researchers (De Paoli, Manongi, & Klepp, 2004; Kowalczyk et al., 2005) have also recorded similar findings. Although participants in this study may not have shared the same immigration experience as African immigrants in the United States, they may share similar cultural beliefs.

African immigrants encounter various obstacles to their health and physical well-being in their host countries. Foley (2005) described HIV-positive African immigrants as doubly marginalized, as they face hostility in their host country due to their migrant status and within their African community due to the stigma associated with HIV seropositivity. The women in his study said that many African immigrant women in the United States lack knowledge about antiretroviral therapy for HIV and do not know that they can access this therapy. Foley also said that many women who test positive for HIV might be afraid to seek treatment because of the stigma associated with AIDS. Foley observed that one of the most pressing concerns of HIV-positive African women is discretion regarding their HIV status, as well as the imperative for absolute privacy. The author suggested that this concern for privacy and confidentiality is probably due to the possibility of social alienation, rejection, exclusion from other Africans, and fear related to immigration status.

Akinsete, Sides et al. (2007), in a retrospective survey of African-born persons diagnosed with HIV/AIDS in a Minnesota clinic, identified 237 HIV-positive African-born patients. These individuals made up 12% of the clinic population within the study period (1994–2005). Forty-two percent of these African-born individuals presented with AIDS as determined by CD4+ T-cell count of less than 200 cells per milliliter. Most of the HIV-positive patients in the study population were infected through heterosexual contact. One participant reported being infected through male-to-male sex. Only 4% had been diagnosed through routine HIV testing, while 45% were tested as part of immigration requirements. African immigrants in this study did not routinely test for HIV

and seemed to have accessed care at a late stage of HIV diagnosis compared to other patients in the clinic.

HIV/AIDS is a highly stigmatized disease among Africans. This stigmatization is probably due to the coupling of HIV with sexual promiscuity and death. HIV is seen both as a deadly physical contagious disease and as a moral problem that affects the entire family. Rejection of HIV-positive individuals by extended family members is not uncommon, although families are generally the primary caregivers and provide support to sick members. However, not all family members respond positively to individuals with HIV. The 2006 Henry J. Kaiser Family Foundation Survey revealed that many people still lack basic information about what puts them at risk, and what does not put them at risk, of getting HIV. This lack of knowledge is intrinsically linked to the fear and stigma that propel the discrimination that too often follows a positive diagnosis.

Social relationships and social life as observed by Foley (2005) are paramount in many African cultures, which is probably due to the existential and communal lifestyle that is inherent in African culture. Consequently, isolation from friends and family members is as frightening as contracting the HIV virus itself. The structural issues highlighted in this study also relate to the difficulties involved in providing medical services to undocumented immigrants, who often have restricted access to public services due to their immigration status. These structural issues include limited employment opportunities, lack of health insurance, and economic insecurity, which affect all immigrants regardless of their immigration status. It is common knowledge among agencies that African immigrant women are more affected by these issues, given their

position in the African sociocultural system, because they are less likely to have health insurance or formal employment than men.

Denial, stigma, and other negative responses to HIV/AIDS often reinforce the dominant discourse of good and bad with regard to sex and illness. Denial aggravates stigma by portraying individuals who are infected with HIV as abnormal beings. Self-stigmatization may be the pathway through which stigma leads to denial. When individuals have the ingrained belief that only bad people get HIV and they do not evaluate themselves as bad, they will not perceive themselves to be at risk for HIV infection no matter what. Stigmatization of HIV/AIDS among immigrants promotes avoidance and denial and makes them more susceptible to HIV infection.

Negative community-level responses to individuals with HIV can engender discrimination and stigma. Violence toward, and harassment of, individuals believed to be infected with HIV has been documented. The case of Gugu Dhlamini—a woman who, after confessing publicly on World AIDS Day about her HIV seropositivity, was stoned and beaten to death by her neighbors in South Africa in 1998—still resonates.

Generally, social stigma has played a crucial, global role in HIV testing and still remains one of the major hindrances to increased acceptability of HIV counseling and testing. At the end of 2007, all U.S. states that had not formally used a name-based system to record HIV cases (i.e., reporting HIV cases by name as opposed to reporting by unique coded identifiers) started recoding HIV by name. With the use of a name-based reporting system to track HIV cases, some immigrants may be more concerned about the

confidentiality of their information and may be worried that security breaches may lead to their HIV status being exposed.

Financial Barriers

Financial barriers to health care seeking constitute an obstacle to health care access. Barriers include an inability to pay for needed medical services or to reimburse medical providers for such services, which also discourages hospitals and physicians from treating patients with limited resources (Riedel, 1998). Total lack of or inadequate insurance and low socioeconomic status are the main financial obstacles to health care access for poor immigrants. African immigrants often experience unemployment and lack health insurance, impeding their access to services and also to basic health information and advice. While HIV testing is free in most public health departments, immigrants may not utilize these services, believing that payment is required for HIV tests.

According to Ell and Castaneda (1998), inadequate access to health care is defined by underutilization and delayed utilization of preventive and treatment services. The National Immigration Law Center (1999) found that in general, immigrants' level of utilization of public health care programs is low when compared to their eligibility for these programs. Studies have also consistently shown that racial and ethnic minorities underutilize and also delay utilization of health care services (Ell & Castaneda, 1998; U.S. Department of Health and Human Services, 1998; Yamashiro & Matsuoka, 1997). Compared to Whites, ethnic and racial minorities are more likely to reside in medically underserved communities and poor urban areas that may have a shortage of physicians (U.S. Department of Health and Human Services, 1998).

Institutional and Structural Issues

In addition to the general barriers encountered by low-income working families in obtaining access to health care, immigrants experience barriers related specifically to their legal status. These barriers are embedded in a variety of U.S. laws and regulations. According to Ku (2006), almost half of all immigrants are uninsured, a rate approximately three times higher than for native-born citizens. Lack of health insurance poses serious barriers for immigrants, especially those who are new and undocumented. In most states, undocumented immigrants are restricted to emergency services and to services that protect the public health such as immunization. Yet, many immigrants do not make use of even these limited services due to fear, confusion about service eligibility, and lack of linguistic and culturally competent services (California Immigrant Welfare Collaborative, 2002). As a result, many defer routine, preventive health care and seek medical services only when they have major symptoms that affect their functionality. As Ivey (1999) observed, by restricting access to nonemergency health care services such as preventive care, early detection, immunization, prenatal care, and treatment of infectious diseases, there is the tendency to overstretch safety net facilities, which are already struggling with financial crisis and staffing shortages.

Foley (2005), in his qualitative study of the experiences of African immigrant women in the United States, found that certain cultural and structural issues influence provider–patient relationships and adherence to HIV protocols. HIV providers interviewed in Foley’s study acknowledged the existence of a cultural gulf that tends to separate them from their African immigrant patients. These cultural issues included

language barriers, limited formal education, lack of familiarity with biomedicine, and lack of familiarity with and confidence in the American health care system. Women and men in this study reported some disrespect by their service providers, mistreatment in American health centers, and inferior quality of care. African men in this study particularly conveyed a mistrust of the health facilities, which was anchored on the erroneous perception that medical services are connected to the Department of Homeland Security. Others believed that one could not obtain HIV treatment without health insurance and therefore saw little value in getting treated or even knowing their HIV status.

The Immigration and Nationality Act of 1987

For approximately 22 years, the United States prohibited noncitizens with HIV infection from entering into the country without a special waiver (Goldberg, 1998). This effectively restricted travel and immigration to the United States of all persons who tested positive for HIV, including international scientists, professionals, and musicians. This policy was enacted under the Immigration and Nationality Act of 1987 (INA).¹ The law systematically prohibits noncitizens with HIV seropositive status from entering the United States or changing their status to lawful permanent residents if later determined to be HIV positive unless a special waiver is obtained.² Some persons, notably students, were not required to be tested but would be excluded if they honestly answered specific questions about communicable diseases as part of the visa process. Special waivers were

¹ Immigration and Nationality Act, 8 U.S.C. § 212 (a)(1)(A)(i) (1987).

² Immigration and Nationality Act, 8 U.S.C. § 212 (g) (1987).

often granted to refugees and asylees, especially those emigrating from countries where their HIV status would be grounds for persecution.

Amendments to the 1987 HIV immigration ban were appended to the National Institute of Health (NIH) Reauthorization Act of 1993. The act legally documents the exclusion of HIV-positive immigrants from the United States and grants the Immigration and Naturalization Service (INS) the authority to keep any noncitizen with an HIV diagnosis from entering the United States. It also removes the provision of a “suspension of deportation phrase,” which had protected resident noncitizens with HIV seropositive status. Before 1993, individuals who could provide evidence that they had resided in the United States consistently for 7 years and that they would experience severe hardship if sent back to their native country could be given a suspension without having to undergo any medical examination. The 1993 law requires evidence of exceptional and severe, unusual adversity to a family member (not the applicant) in order to remain in the United States. Few HIV infected individuals could prove such hardship to family members.

The 1987 Act and the 1993 amendments created great fear among immigrants residing in the United States. HIV-positive immigrants residing in the United States were unable to change their immigration status since doing so required an HIV test. Practical barriers to seeking care were erected and for many the act restricted their ability to work legally. Great jeopardy was attached to positive serostatus, forcing many immigrants to essentially become invisible in American society. Diagnosis often came with late-stage disease severe enough that one could no longer refuse care.

This ban met with widespread protest from the international and U.S. public health communities, including the World Health Organization and the American Public Health Association. In April 2007 President Bush announced on World AIDS Day that he would issue an executive order to permit HIV-positive temporary visitors to enter the United States. However, the U.S. Congress did not repeal the prior law. Ultimately, the 2008 reauthorization legislation of the President's Emergency Plan for AIDS Relief (PEPFAR),³ which directs millions of dollars in AIDS prevention and treatment support to nations affected by the AIDS epidemic, replaced the 1987 act and loosened the travel and immigration restrictions.

In October 2009 president Barack Obama signed the Ryan White Treatment Extension Act of 2009. This act was implemented on January 4, 2010, and removed the travel and immigration ban entirely. Many immigrants are not aware of these new guidelines and have continued to fail to access health services. In his study, Foley (2005) found that African immigrant women collectively experienced racism, discrimination (especially in medical settings), financial insecurity, and limited access to information on HIV prevention, counseling, testing, and treatment. The study also found that HIV providers had limited understanding of the dynamics and sociocultural context of HIV/AIDS epidemic in Africa. These issues, combined with the effect of the 22-year travel ban and immigration restriction, have informed African immigrants' attitudes toward HIV testing and treatment in the United States. This total picture has to be taken

³ Immigration and Nationality Act, 8 U.S.C. § 1182(a)(g) (2008).

into account to understand the attitudes and perceptions of HIV testing in the African immigrant community (see Figure 1).

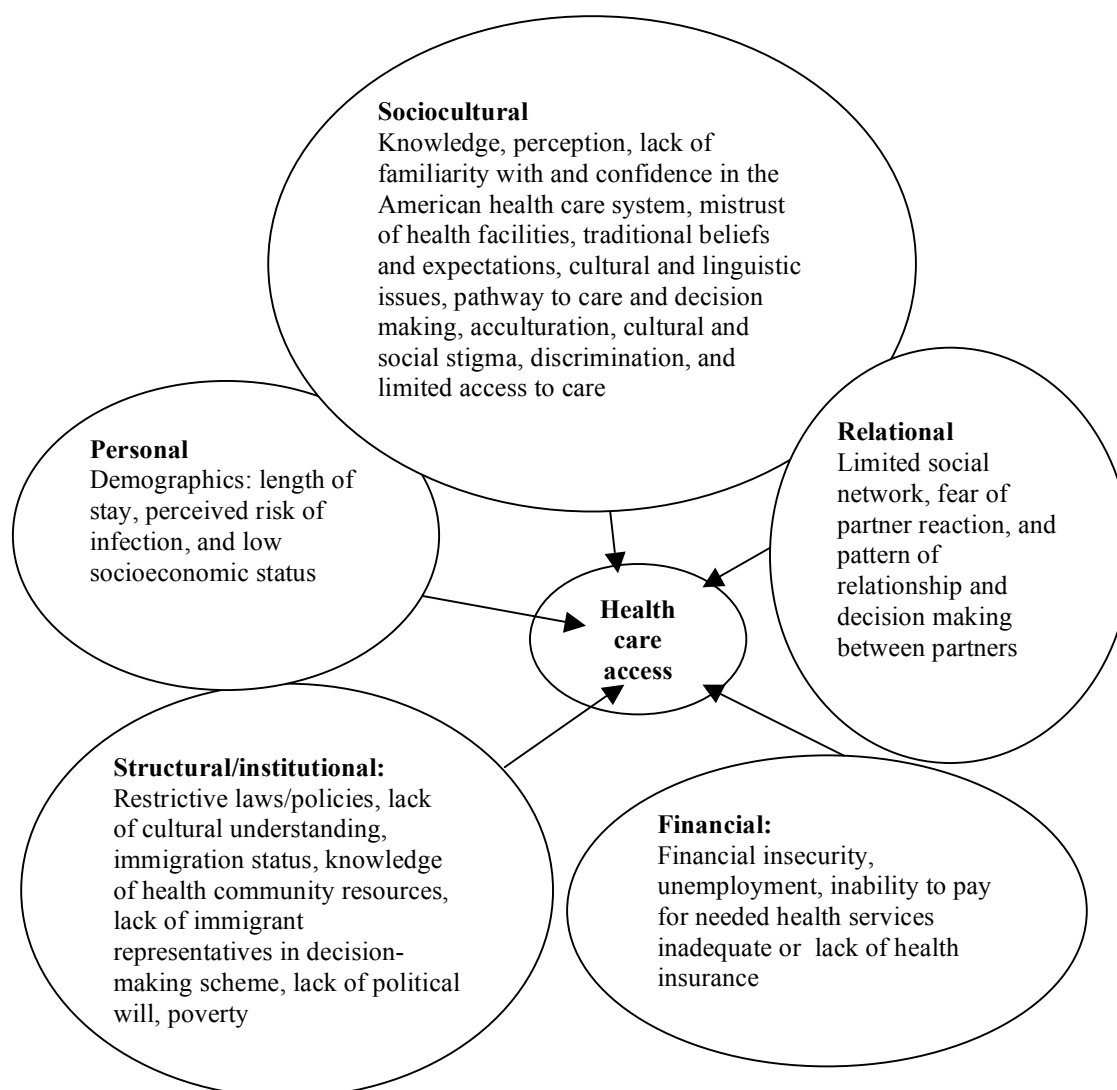


Figure 1. Factors influencing health care access in immigrant communities.

Personal Responsibility and Work Opportunity Reconciliation Act of 1996

Policies that connect health care eligibility to legal status are also major structural barriers to HIV testing and general health care access for immigrants. One such policy is the Personal Responsibility and Work Opportunity Reconciliation Act of 1996 (PRWORA). Under this policy some immigrants who came to the United States after August 21, 1996, are excluded from Medicaid and other means-tested, federal public benefits for their first 5 years in the United States. Undocumented immigrants are banned from Medicaid benefits regardless of their length of stay in the United States except for emergency medical services (Families USA, 1999).

PRWORA restricted immigrants' access to a wide variety of health benefits, including Medicaid. However, documented and undocumented immigrants remained eligible for non-Medicaid public health assistance including immunizations and for testing and treatment of communicable diseases such as tuberculosis, HIV/AIDS, and other sexually transmitted diseases (Schlosberg, 1998). Many immigrants fail to access these services due to fear that they might be reported to the Bureau of Citizenship and Immigration Services and subsequently deported. By law, only agencies responsible for the administration of Social Security Income (SSI), housing assistance and Temporary Assistance for Needy Families (TANF) programs are required to supply the Bureau of Citizenship and Immigration Services with the names and addresses of individuals whom the agency knows are undocumented, and government agencies that administer Medicaid are required to ascertain immigration status in order to determine Medicaid eligibility. Although non-Medicaid agencies are not required to verify applicants' immigration

status, many health programs ask for the applicant's social security number, something most undocumented immigrants do not have. This practice is tantamount to asking for their immigration status and causes fear (Potocky–Tripodi, 2002).

Legal immigrants, on the other hand, have their own unique fears, related to the “public charge” provisions of PRWORA. Under these provisions, persons who wish to immigrate to the United States to procure permanent residency or immigrants who wish to re-enter the United States after leaving the country for more than 6 months must prove that they are unlikely to depend on public benefits for their livelihood (i.e., become a public charge). Consequences of being determined to be a public charge include delay or denial of entry into the United States after traveling abroad, delay or denial of changes in immigration status, rejection of petitions to sponsor a relative who seeks to immigrate to the United States, and in rare cases deportation (Families USA, 1999). One factor used to ascertain whether a person may become a public charge is past receipt of public benefits. However, PRWORA language failed to define “public benefit,” leading to widespread unease. This clause has constituted a major obstacle to seeking health care for legal immigrants.

In 1999 the Immigration and Naturalization Service clarified that only the receipt of SSI, TANF, or other state and local cash assistance—or long-term institutionalization for medical care at public expense (e.g., for nursing home or mental health care)—would be considered public benefit. However, immigrants continued to be skeptical about using any or all public health benefits.

Benefits of HIV Testing

HIV testing is a priority strategy to control the spread of HIV infection, and increasing access to HIV testing and care is a pivotal goal especially within the context of the consistently changing epidemiological trend of the HIV/AIDS epidemic in the United States (CDC, 2001b; Fauci, 1999; Sabin, 2002). Studies have associated HIV testing with multifaceted benefits including positive behavioral change (Bassett, 2002; Sweat et al., 2000; Voluntary HIV-1 Counseling and Testing Efficacy Study Group, 2000), enhanced access to HIV services and associated benefits such as the prevention of mother-to-child transmission (Jackson et al., 2003), and fostering early access to cotrimoxazole prophylaxis (Grimwade & Swingler, 2006) as well as ART (Grimwade & Swingler, 2006; Ivers, Kendrick, & Doucette, 2005).

Early diagnosis and treatment of HIV infection is useful in preventing and delaying the onset of illnesses (Levine & Bayer, 1989; Redfield & Burke, 1988). A meta-analysis study of persons aware and unaware of their HIV infection found that knowledge of HIV infection resulted in a reported 57% reduction in unprotected sex (Marks, Crepaz, Senterfitt, & Janssen, 2005). Early diagnosis of HIV infection enables the patient to obtain optimal medical service from the earliest moment of the infection, which may help prevent complications. HIV screening is not only medically beneficial but also helps prevent the spread of HIV infection and can promote behavior change.

Despite the benefit of HIV testing to individuals and communities, the majority of adults in the United States have never been tested for HIV (Ebrahim, Anderson, Weidle, & Purcell, 2001; Inungu, 2002). Research conducted in the United States has found that

many individuals are diagnosed late for HIV infection (Althoff et al 2010; CDC, 2003; Mugavero, Castellano, Edelman, & Hicks, 2007; Schwarcz, Hsu, & Dilley, 2006; Silva & Benbow, 2011; Texas Department of State Health Services HIV/STD Program, 2009; Torrone, Thomas, Leone, & Hightow-Weidman, 2007; Yang et al. 2010).

The CDC (2008) estimates that about 21% of persons living with HIV do not know their HIV status. In 2012 the CDC estimated that 1.2 million people in the United States are living with HIV and that 20% (1 in 5) are unaware of their status. Among those tested for HIV infection, many fail to return for their results (Sullivan, Lansky, Drake, & HITS-2000 Investigators, 2004). Recent estimates of late HIV diagnosis revealed that among persons initially diagnosed with HIV in 2008, 33% (one-third) received an AIDS diagnosis within 12 months of their initial HIV diagnoses (CDC, 2011a), indicating late diagnosis. Late HIV diagnosis symbolizes missed opportunities for prevention and early access to care services.

Campsmith, Rhodes, Hall, and Green (2009) used an extended back calculation model—which calculates whether an individual received an AIDS diagnosis in the same year as an HIV diagnosis—and estimated calculative deaths in order to estimate prevalence and proportion of undiagnosed HIV infection among adults and adolescents with undiagnosed HIV disease in the United States at the end of 2006. They estimated that at the end of 2006, approximately 1.1 million adults and adolescents were living with HIV in the United States. A total of 21.0% were undiagnosed. Asians / Pacific Islanders had the highest percentage of undiagnosed cases (29.5%), followed by American Indians / Alaska Natives (25%), Black African Americans (22.2%), Hispanics/Latinos (21.6%),

and non-Hispanic Whites (18.8%). Individuals with injection drug use (IDU) as their risk factor had the lowest percentages of undiagnosed cases, with female IDUs at 13.7% and male IDUs at 14.5%.

In terms of exposure categories, men exposed through heterosexual sex had the highest (26.7%), while those exposed through male-to-male sexual contact had 23.5% undiagnosed HIV prevalence. The age group 13–24 years (the younger age group) had the highest estimated proportion (47.8%) of undiagnosed HIV. The study concluded that differences in undiagnosed HIV prevalence exist across differences of demographic and behavioral groups. The authors recommended implementation of effective HIV testing programs and early access to prevention and treatment services to decrease HIV prevalence and infection (Campsmith et al., 2009).

Immigrants' Vulnerability to HIV/AIDS

Studies conducted among Hispanic immigrants have focused attention on HIV infection and testing. Levy et al. (2007), in their study conducted in San Mateo County in Northern California, sought to determine if immigrants present late for care compared to other HIV-infected persons—and further to explain the determinants of late HIV presentation. Their study included 391 HIV-positive patients in a public AIDS program: 24% were immigrants and overwhelmingly Hispanic. The immigrants in the study presented with lower CD4+ counts at diagnosis compared to U.S.-born patients (287 cell/MM³ vs. 333 cells/MM³ $p = 0.143$). The immigrants were also more likely to be hospitalized at HIV diagnosis (20.2% vs. 12.5%, $p = 0.064$) and more likely to have an opportunistic infection at the time of HIV diagnosis (29.8% vs. 17.2%, $p = 0.0009$). The

study found immigrant status to be significantly and independently related to delayed HIV presentation.

African-born immigrants are particularly vulnerable to HIV infection and encounter specific barriers in their attempts to obtain access to health care services (Foley, 2005; Rosenthal et al., 2003). A study conducted among HIV-infected Black African immigrants living in King County, Washington, found that Black Africans were more likely to present with AIDS diagnosis (45%) compared to U.S.-born non-Blacks (25%) and U.S.-born Blacks (35%) (Page et al., 2009). The study did not find any significant independent relationships in rates of HIV disease progression between Black African immigrants and U.S.-born individuals. The study concluded that after initiating HIV care, African-born Black immigrants progressed to AIDS at the same rate as their U.S.-born counterparts. African-born immigrants, however, initiated care at a more advanced stage of HIV disease.

The researchers suggested implementing health interventions promoting HIV testing among these groups of African immigrants and pursuing efforts to decrease barriers to HIV testing. The limitations of this study include the use of a mean number of months between CD4 as a proxy for access to antiretroviral therapy and regular HIV care, missing or incomplete diagnosis histories for certain categories of individuals, use of confidential, name-based surveillance data that excluded anonymous tests, and failure to collect information on length of residence in the United States.

Socioeconomic and cultural factors unique to African-born immigrants, especially those from less-developed countries and communities, may impede their

access to and use of maintenance health services. For many immigrants, language difficulties, intense stigmatization and tendency to retain traditional health beliefs may contribute to their vulnerability to HIV infection (Rosenthal et al., 2003). Studies of African immigrants have also revealed that African immigrants with HIV differ from their HIV-infected White counterparts in terms of low income, inadequate or poor housing conditions, depression, lack of knowledge about antiretroviral treatment and interpersonal relationship issues (Weatherburn, Ssanyu-Sserum, Hickson, McLean, & Reid, 2003). Anderson and Doyal (2004), in their study of women from African living with HIV in London, also alluded to lack of basic needs as a central concern of these groups of women.

Thus, African-born immigrants are often considered to be more susceptible to HIV infection due to certain sociocultural factors and their immigrant status. Restrictive laws and policies may also affect HIV testing patterns and HIV vulnerability of sub-Saharan African immigrants. Additionally, as Gracey (2004) pointed out, immigration experiences are often traumatizing and may involve separation from family, loved ones, and cultural values, and being placed in a new sociocultural context with limited employment or legal security. Given this context and sometimes possessing limited skills and competencies, many immigrants often find it hard to integrate into U.S. society. Integration may even be more difficult for immigrants with distinct language and racial characteristics, such as African immigrants. This situation may lead to mental health problems such as depression, substance abuse, and family stress. Such stressors may contribute to the likelihood of engagement in risky sexual behaviors.

An exploration of the social and economic profiles of the foreign born designed by the U.S. Census Bureau in 2000 revealed that in general, compared to the total foreign-born population, African-born immigrants were less likely to be citizens, and 1 out of every 5 African-born immigrants lived in poverty (U.S. Census Bureau, 2000). However, almost 9 in every 10 had a high school degree or higher, and more than 2 in every 5 had a college degree. High educational status notwithstanding, there is need for data regarding their understanding and conceptualizations of HIV/AIDS, and good reason to believe that their circumstances put them at risk of HIV infection without access to adequate information and care.

African immigrants have unique sociodemographic and distinct HIV epidemiological features that make them worthy of specialized attention in HIV prevention and testing efforts. As Simbiri (2006) observed, the infection schema of African immigrants may be complicated by the predominance of the HIV-2 strain in African countries as opposed to the HIV-1 strain, which is common in developed countries, as well as the preponderance of drug-resistant TB, HIV-1, and HIV-2, which has recorded elevated mutation and recombination rates among its subtypes. Their conditions may be further compromised by comorbidity with previous tuberculosis, latent tuberculosis, and other parasitic diseases such as filariasis, helminthes, and malaria, which are prevalent in most African countries (Lopez-Velez et al., 2003). They observed that these diseases may be difficult to diagnose in the United States since most health care providers are not familiar with the symptoms and appropriate screening tests. In

addition, these diseases may reduce the cellular immunity necessary to prevent HIV infection and infection with other agents.

Efforts Made to Improve HIV Testing in the United States

An HIV test is the application of HIV antibody or antigen tests to individuals on a case-by-case basis. Testing for HIV has been complicated by the different types and subtypes of HIV and unavailability of a single assay to detect all these types and subtypes. Currently, a combination of assays can generally overcome these limitations. There are two types of HIV virus that infect humans: HIV-1 and HIV-2. HIV 1 is more prevalent worldwide (Buonaguro, Tornesello, & Buonaguro, 2007) and is categorized into three groups: M, N, and O (Roberts, Jackson, & Laney, 2000; Taylor, Sobieszczyk, McCutchan, & Hammer, 2008). HIV-2 accounts for less than 1% of HIV infection globally and is found mostly in West Africa (CDC, 2007). Most available HIV tests in the United States screen for both HIV-1 and HIV-2; specific testing for HIV-2 infection is recommended for individuals from regions where HIV-2 is prevalent.

HIV testing first became available in 1985, and its main goal was to protect the blood supply. Initially, there was no consensus regarding the benefits of HIV testing and the impact of a positive HIV test. In 1996 the U.S. Public Health Service (USPHS) introduced a guideline prioritizing HIV counseling and testing as a key prevention mechanism for individuals with high-risk sexual behaviors who were considered most at risk for HIV infection. The guideline recommended routine testing of all patients who presented for treatment irrespective of the health care setting (USPHS, 1996).

In 1993 the CDC expanded its recommendations for voluntary HIV counseling and testing to incorporate both inpatients and outpatients in acute health care settings, such as emergency departments (CDC, 1993). The next year, the CDC recommended client-centered counseling including the development of specific prevention goals and strategies for each individual with high-risk sexual behaviors (CDC, 1994). In 1995 the USPHS issued a recommendation stating that all pregnant women should be counseled for HIV and encouraged to partake in voluntary testing. This recommendation was precipitated by research demonstrating substantial reduction in prenatal HIV transmission through the administration of zidovudine to HIV-positive pregnant women and their neonates.

In 1998 the Institute of Medicine (IOM) recommended routine HIV testing of all pregnant women, a drastic shift from the requirement of consent to test, to affirmation of the right of refusal to test (Stoto, Almario, & McCormick, 1999). This was called Opt-Out testing. Thereafter, the American College of Obstetricians and Gynecologists and the American Academy of Pediatrics jointly recommended universal Opt-Out HIV screening for pregnant women. Their recommendation was altered in 2001 to underscore routinized screening in prenatal care. The counseling process was made flexible to accommodate different types of informed consent, and the testing process was simplified in such a way that requiring pretest counseling would not constitute a barrier (CDC, 2001b). In the same year, HIV testing in health care facilities was expanded to incorporate clinic locations in private and public health care settings. Health providers in these settings were encouraged to make the counseling process more flexible and testing more

accessible. In addition, the CDC (2001a) issued a recommendation that HIV testing be offered to all patients presenting in high HIV prevalence health care facilities. Targeted HIV screening based on risk screening was recommended for low HIV prevalence settings, where most of the patients are at minimal risk for HIV infection.

A new CDC initiative, Advancing HIV Prevention: New Strategies for a Changing Epidemic was introduced in 2003. The main tenets of this initiative included making HIV testing a routine part of health care on a voluntary basis, on par with other diagnostic and screening tests, and further reducing prenatal transmission of HIV through the universal testing of all pregnant women and by using rapid tests during labor and delivery or after delivery if no HIV screening was administered to the mother parentally (CDC, 2003). In recognition that prevention counseling might not be feasible or appropriate in all settings for all individuals at risk for HIV, and may even constitute a barrier in some, the CDC suggested other more streamlined methods.

In September 2006 the CDC revised its recommendations for HIV testing for adolescents, adults, and pregnant women in health care settings, thus adopting the IOM Opt-Out testing strategy. The purpose of this revision was to make HIV testing a routine part of health care and to expand the gains made in diagnosing HIV infection among pregnant women (CDC, 2006c). The CDC recommended Opt-Out testing as an integral part of routine clinical care in all health care settings, including urgent care clinics, emergency departments, STI clinics, inpatient services, community clinics, primary care settings, and correctional facilities (Bartlett, 2006). The Opt-Out testing recommendation is applicable only to individuals aged 13 to 64 years who reside in areas with an HIV

prevalence rate greater than 0.1%. In Opt-Out testing, there is no additional consent for HIV testing: the consent is integrated into the general informed consent to medical care. Nonclinical settings such as community-based organizations, mobile vans, and outreach settings, which are encouraged to do HIV testing, are excluded from the Opt-Out recommendations and are still expected to engage in pretest and posttest counseling.

Opt-Out recommendations were further clarified in 2006. Recommendations published in the CDC's *Mortality and Morbidity Reports* clarified that the goal of routine Opt-Out testing was to increase HIV screening of individuals in health care settings, enhance earlier detection of HIV infection, identify and counsel individuals with asymptomatic HIV infection, connect them to clinical and prevention services, and further decrease the prenatal transmission of HIV infection in the United States. Based on the Opt-Out testing recommendation, patients are informed that HIV testing is a routine part of their health care and are given the opportunity to opt out. Specific signed consent for HIV is no longer required, since this is incorporated into the general consent for medical care (Branson et al., 2006).

In 2007, in line with CDC (2006b) recommendations, Illinois enacted a new law that allows HIV tests to be conducted with just verbal consent as opposed to requiring written consent. This testing framework abolished pretest counseling but mandated providers to give pretest information about HIV infection and how to interpret positive HIV test results. Although the CDC Opt-Out Testing for HIV recommendation is yet to be widely implemented in primary health care facilities, there are questions as to the degree to which immigrants with distinct cultural issues, language barriers, and diverse

levels of acculturation will process and comprehend the pretest HIV information provided, as well as the extent to which they will understand the meaning of a negative HIV test result. Some immigrants, who have recently engaged in risky behaviors, may literally interpret a negative test result as being absolutely negative for HIV without considering the HIV incubation period. Others may view the negative test result as a “clean bill of health” that confirms their invulnerability to the virus, despite engagement in risky behavior. This perception allows them to continue engaging in risky practices.

In 2007 the CDPH adopted the Opt-Out testing model recommended by the CDC. The Chicago project targeted primarily African Americans in high HIV incidence areas. The testing venues were clinical and nonclinical settings, including emergency departments, STI clinics, correctional health facilities, community health centers, community-based organizations, and urgent care clinics. The Chicago Project offered referral services for all individuals who test positive for HIV; however it did not track linkages to care. CDPH has also successfully developed an expanded confidential HIV testing program—a prototype of routine Opt-Out testing in a medical setting—which does not target only high-risk populations for HIV testing. The Chicago project uses the rapid HIV test to maximize the number of individuals who receive the test. Additionally the project offers cultural competency training for project staff on appropriate interventions with specific at-risk groups.

In July 2010 President Obama launched the National HIV/AIDS Strategy (NHAS) with the following vision:

The United States will become a place where new HIV infections are rare and when they do occur, every person, regardless of age, gender, race/ethnicity, sexual

orientation, gender identity or socio-economic circumstance, will have unfettered access to high quality, life-extending care, free from stigma and discrimination. (White House Office of National AIDS Policy, 2010, p. vii)

The NHAS was developed with three main goals: reduce new HIV infections, increase access to care; improve health outcomes for people living with HIV/AIDS (PLWHA); and reduce HIV-related disparities and health inequalities. The first NHAS goal set a specific target to reduce new HIV infections. The main objective was to increase the number of HIV-infected individuals aware of their serostatus from 79% to 90% by 2015 (White House Office of National AIDS Policy, 2010). The NHAS called for a more coordinated and concerted response by all stakeholders to achieve its goals.

In September 2010 the CDC awarded its Enhanced Comprehensive HIV Prevention Plans (ECHPP) grant to the 12 jurisdictions with the highest AIDS burden to embark on intensive and improved HIV prevention planning in order to decrease incidence and risk in these communities. ECHPP grantees have been collaborating with the CDC to tailor HIV prevention strategies so as to have the greatest effect in their community. Each grantee's effort is geared toward intensifying prevention efforts for individuals at greatest risk for HIV, prioritizing prevention and linkage of care for individuals living with HIV, and channeling these intensified efforts to areas with the highest HIV infection rates. Through this project, the U.S. Department of Health and Human Services agencies and officers are challenged to better coordinate, plan, implement, deliver, and evaluate HIV/AIDS services in each of these 12 communities. Eventually, lessons learned from these 12 communities will be developed and applied to

federally funded programs in other jurisdictions and may lead to the development of statewide HIV/AIDS plans.

ECHPP is considered a demonstration project to show how the wide range of federally funded HIV prevention, care, and treatment programs can collaborate more effectively to better identify and respond to unmet needs and service gaps, and enhance activities that will have the utmost benefit toward the achievement of the goals of the NHAS. The 12 cities project incorporates many of the major precepts of the NHAS.

CDPH received an ECHPP grant from CDC and has since then been engaging in HIV-related activities aimed at advancing the goals of NHAS. These activities include routine opt-out HIV screening in clinical settings, HIV testing in nonclinical settings, condom distribution, linkages to and retention in HIV care, promotion of medication adherence, partner services for HIV-positive persons, behavior risk screening, and policy advocacy (CDPH, 2011a).

Cultural Competency in the HIV Context

Cultural competency is a fluid concept that has been conceptualized in many ways and viewed from different perspectives. Lum (1999) defined cultural competence as a compilation of knowledge and skills that social workers must develop in order to intervene effectively with multicultural clients. Fong (2001) argued, “to be culturally competent is to know the cultural values and indigenous interventions of the client system and use them in planning and implementing services” (p. 6). Fong proposed a conceptual shift toward multiculturalism. To Fong, culturally competent practice means that the social worker knows the various cultures the clients bring—their religion,

ethnicity, political system, and so forth—and recognizes how each of these has affected the clients' social functioning and behaviors.

In addressing the issue of cultural sensitivity in HIV service delivery, Scott and Mercer (1994), William and Campbell (1996), and Campbell and Mzaidume (2002) stressed the importance of meeting the client where he or she is. They emphasize that interventions need to be based on comprehension of the psychosocial environment of the intended individual or group.

CHAPTER THREE

DESIGN AND METHODOLOGY

This study used a cross-sectional design and a survey methodology. Under this model, the researcher gathered and analyzed quantitative information on the research issue. The rationale for the selection of this approach was based on a literature search of past studies that utilized similar methods and on cost efficiency. The weaknesses of the quantitative approach included inability to gather in-depth information about the research topic. This researcher believed that despite the weaknesses of the survey technique, it was still possible to ascertain valid and well-substantiated conclusions about the attitude and behavior of sub-Saharan African immigrants toward HIV testing. The challenges of this design lay in the fact that extensive knowledge of quantitative data analysis was required. This concern was addressed by including on the researcher's graduate committee other researchers who have expertise in quantitative analysis. The researcher was awarded a fellowship through the Advanced Doctoral Fellowship of the Loyola University, Chicago, which was used for the completion of the study.

A culturally sensitive empowerment model was used as the main framework for this study of African immigrants in the United States and aspects of their risk for HIV infection. This model was selected because the researcher believed that when an empowerment model is used in the design and implementation of a study of this type, the

resulting data are more likely to support the goals of the community of interest. In examining reasons why African immigrants struggle with HIV testing, cultural sensitivity in all aspects was considered essential to obtaining and reporting accurate data. Stages of the project that particularly required the researcher's cultural sensitivity and competence included designing the survey instrument and the consent process, approaching and engaging the community in the project, recruiting the respondents, and analyzing and reporting the data.

Philosophical Assumptions

This study was based upon the philosophical assumptions of pragmatism. Pragmatism, according to Creswell and Plano (2007), employs diverse ideas including practicality (whatever works), multiple approaches, and an appreciation of both objective and subjective knowledge. Pragmatism has been linked with mixed-methods research by several authors including Tashakkori and Teddlie (2003) because of its amenability to both quantitative and qualitative methods.

Pragmatism contends that truth is to be determined by its practical implications, not by its method of verification. If a set of assumptions has practical meaning or yields practical results, then that set of assumptions is proven to be true. Pragmatism places emphasis on the outcome of the research—that is, on the actions, situations, and consequences of the investigative inquiry—rather than on the methodologies or conditions of the research. Pragmatism focuses on practicality, applying the principle of “what works” as a solution to the problems under consideration. Pragmatists believe that

the paramount issue in research or investigative inquiry is the problem being studied and the corresponding questions asked about the problem.

Pragmatists challenge critical theorists' emphasis on peer debates. They believe that peer debate can be applauded only to the extent that it is accompanied by beneficial results. In other words, it is appropriate to the extent that it leads to action or to consequences that will benefit the research participants. The ontological assumption of pragmatism is that there is no single reality; rather there are multiple realities. It asserts that the relationship between the researcher and the research participants is not only transactional and subjective but also dialectical. It is aimed at empowering and transforming the research subjects or participants and is generally geared toward their benefit. The underlying epistemology in the pragmatists' approach often necessitates close interaction and extensive interpersonal contacts between researcher and research subjects; value is therefore inherent in the relationship. Hence, in such a close and interreliant relationship, it is incomprehensible to think of value-free or value-neutral procedures.

Baert (2005) asserted that research, or knowledge building, is an activity intended to assist with surviving in the face of life's demands. For the pragmatist, methodology is a matter of choice as long as it is based on these practical objectives. This pragmatist's philosophy about research methodology is amenable to the empowerment model and its underlying principles, which are in turn consistent with the concepts of cultural competency and social justice in social work.

In the context of this research, empowerment defines the ultimate goals of the research (i.e., to build the capacity of African immigrants and their self-efficacy in the realm of HIV testing and risk behavior changes). It is also used in a broader perspective to promote the community-based process of developing self-determination on the group level by identifying rights and working together to promote social change and social justice for the group in the political and broader social arena.

Empowerment Model

Empowerment has been conceptualized in many ways. The World Health Organization (1986) defined empowerment as the process of enabling people to enhance and to exercise more control over their health. Torre (1986) viewed empowerment as a process through which people become strong enough to partake in, share in the control of, and impact situations and institutions that affect their lives. Rappaport (1981) articulated the goal of empowerment as “to enhance the possibility for people to control their own lives” (p. 15).

Other conceptualizations of empowerment have placed emphasis on the fact that it must emanate from a group and that it is not truly empowerment when it is bestowed upon people by outsiders such as a public health department, social service agency, government department, or even well-intentioned social workers. For instance, Rappaport (1984) viewed empowerment as a process and as the strategy through which people, organizations, and communities achieve mastery over their lives. Arguing on the same point that empowerment should not be bestowed on people, Arai (1997) defined empowerment as a process of people’s transforming powerlessness and increasing control

over their lives. It is centered on decreasing professional dominance and enhancing individual choice and self-determination. According to him, empowerment starts with the identification of an individual's felt needs and aspirations and goes further to examine the capacity, development, support, and resources that are needed to attain these goals.

Corroborating this position, Robbins, Chatterjee, and Canda (1998) defined empowerment as the process by which individuals and groups gain power, access to resources, and control over their own lives. Through this process they gain the ability to achieve their highest personal and collective aspirations and goals. Robbins et al. identified three levels of empowerment: the intrapersonal or micro level, the interpersonal or mezzo level, and the community/societal or macro level of empowerment. The intrapersonal level of empowerment is the microfoundation upon which the other levels anchor. At this level, emphasis is placed on building personal consciousness, decreasing self-blame, increasing self-efficacy, and assuming personal responsibility. At the interpersonal or mezzo level, empowered individuals work collaboratively with others toward reducing oppression through group consciousness, which entails the recognition of shared feelings and experiences, for a wider impact. At the macro level, empowered individuals work to raise consciousness about oppression and inequality and to advocate and effect changes at the broadest levels of policy. Robbins et al. also identified four major roles of professionals who work to empower people: resource consultant, sensitizer, teacher, and trainer and cooperator. The first role entails linking clients to resources, the second means assisting clients to gain necessary knowledge to take action,

the third role entails educating people about the barriers they encounter, and the last role focuses on connecting people to others who share the same history and experiences.

The more recent definitions of empowerment have begun to reflect on the important distinction between psychological empowerment and community empowerment. Zimmerman and Rappaport (1988) defined psychological empowerment as the link between a sense of personal competence and an urge for, and a willingness to, partake in the public realm. Rissel (1994) defined psychological empowerment as a sense of increased control over one's life, which people experience through active membership in organizations or groups and which may occur with or without their participation in collective political action. Conversely, he defined community empowerment as an increased level of psychological empowerment among community members, which may include actual active participation by members and visible redistribution of resources and decision-making power in favor of the target community. These views of psychological empowerment bridge the view of empowerment of individuals seen in the discussions of self-efficacy and personal responsibility, with the individual empowerment experienced through participation in group endeavors.

Unlike culturally ethnocentric theories, the empowerment model fosters social justice by holding both the oppressor and the oppressed responsible in the change process. It is a strength-based approach that fosters individual and collective strengths. Collins (2005) viewed the empowerment model as a collaborative process that strives to empower communities to develop a broader agenda of social justice with other groups

with similar concerns. It also encourages a community to meet the needs of its members through deliberate actions aimed at altering the existing social order (Payne, 1997).

The empowerment model is suited to addressing the health care needs of sub-Saharan African immigrants because it acknowledges and respects their worldview (i.e., is grounded in and promotes culturally sensitive approaches), and tends to enhance social justice through its approach of holding both the oppressed and the oppressor responsible in the change process. An empowerment orientation focused on health care needs can support individuals to work with others in their community and can help communities to develop a sense of community responsibility. Through this process, sub-Saharan African immigrants can take a number of steps toward the overall goal of reducing the impact of the HIV/AIDS epidemic on their communities: They can effectively reevaluate the position they occupy in the global HIV/AIDS epidemic and their personal roles in the prevention of the spread of the HIV infection, and they can reinterpret political, economic, and traditional frameworks otherwise common in the international public health work to more adequately and appropriately reflect their personal history and lived experiences. These actions can enhance their self-efficacy skills and their ability to become agents of change, both as individuals and as a community. As empowerment relies upon shared responsibility, it emphasizes the importance of health care providers and service organizations in developing and utilizing culturally sensitive practices.

Although pragmatism denigrates research methodology and contends that truth is determined by its practical implications, the methodological framework of this study used objective measurement combined with a pragmatic data collection strategy. The study

design encompassed health education opportunities so as to increase participants' knowledge about HIV infection and to inform them of available testing resources. Data collection efforts were embedded in community organizations so as to enhance their participation. This approach to presentation and provision of resources aligns with the precepts of the pragmatic philosophy and the empowerment model, as it is aimed at capacity building of both the individual African immigrants and their communities.

Operational Definition of Key Variables

The major variables used for this study were past HIV testing and future intention to test for HIV (dependent variables), and demographic characteristics, HIV risk, and HIV risk perception / perceived susceptibility to HIV infection (independent variables). HIV testing is defined as having had an HIV test within the past 1 year, excluding incidental tests through blood donation. Future HIV testing is measured by an indication of intention to test for HIV within the next 12 months. The Brief HIV Screener, developed by Gerbert, Bronstone, McPhee, Pantilat, and Allerton (1998), measures HIV risk while the Perceived Susceptibility to HIV scale, formulated by Lux and Petosa (1994), was used to assess beliefs and attitudes of sub-Saharan African immigrants toward HIV infection.

Study Population

This study attempted to answer two questions: (a) Do the perceptions, attitudes and beliefs of sub-Saharan African immigrants about HIV infection affect their decision to take an HIV test? and (b) what are the factors that influence HIV testing among sub-Saharan African immigrants in Chicago? Only sub-Saharan African immigrants aged 18

or above who were fluent in written and spoken English and who lived in the city of Chicago were eligible to participate in this study. In this community-based study, community was defined geographically in terms of sub-Saharan immigrants who reside in Chicago. Nonresidents who may frequent the study area and participate in some of the participating organizations were not eligible for the study.

According to the American Fact Finder (U.S. Census Bureau, 2010), of the approximately 303.9 million people living in the United States, 38.6 million were immigrants, representing 12.7% of the total U.S. population. The African immigrant population grew by over 1 million from 2000 to 2010. Approximately 1.5 million (3.8%) of all immigrants in the United States were from Africa. Of the total number of immigrants residing in the United States, 570,543 (1.5%) lived in Chicago, and of all immigrants living in Chicago, about 20,826 (3.7%) were from Africa (U.S. Census Bureau, 2010). The majority of the African immigrants lived on the North Side of Chicago, a geographic area that has one of the highest HIV prevalence rates of any area in the city of Chicago (CDPH, 2005).

The population increase of African immigrants in Chicago propelled an increase in membership of existing social, cultural, and civic African immigrant organizations and the formation of new ones. According to U.S. Census (2000) data, there was a dramatic growth in the population of African-born immigrants over the past two decades. Immigrants born in West Africa constituted the majority of the increase, followed by those from eastern, northern, southern, and central Africa. As noted by the 2000 U.S. Census data, more than half of the African-born immigrants residing in the United States

arrived between 1990 and 2000, and Nigerians, Egyptians, and Ethiopians constituted the highest number of arrivals (U.S. Census Bureau, 2000).

There are five regions in Africa: eastern, central, southern, western, and northern. Sub-Saharan Africa is a geographical concept used to delineate the region of the African continent that lies south of the Sahara Desert and includes the eastern, central, southern, and western regions. The nations of sub-Saharan Africa at the time of this study totaled 57 (see appendix). Sub-Saharan Africa is often called Black Africa due to its predominantly Black population, in contrast to North Africa, which is mainly inhabited by Whites and is often seen as part of the Arabic region. Countries located in the North African region include Morocco, Sudan, Tunisia, Western Sahara, Libyan Arab Jamahiriya, Algeria, and Egypt, and persons emigrating from these countries were excluded from this study.

Sub-Saharan Africa consists mainly of the least-developed countries of the world. Yet it is not a monolithic region. It comprises many ethnic groups with different languages and dialects. With the exception of the Horn of Africa (regions in northeast Africa), sub-Saharan Africa is strongly dominated by Christianity. However, adherence to Christianity often overlaps with maintaining traditional religions and mythologies, and in many places, Islam is an important religion as well. Sub-Saharan Africa is relatively the poorest area in the world, with dramatically short life expectancy and high levels of infant mortality and malnutrition, and high HIV/AIDS rates.

Sampling Design and Recruitment of Sample

Sampling is a fundamental component of research methodology but has received limited attention in studies with populations at risk for HIV disease (Semaan, Lauby, & Liebman, 2002). Semaan et al. (2002), in their review of challenges involved in sampling HIV high-risk populations for behavior evaluation and social interventions, identified four distinct sampling techniques in the HIV intervention research literature for street and network sampling. In community-based studies, street and network sampling strategies are used to decrease the biases inherent in nonprobability samples and to select a more representative sample of individuals at risk for HIV infection.

The following sampling techniques are used for selecting representative samples when conventional probability sampling is not feasible: targeted, stratified, time–space, and respondent-driven sampling (Semaan et al., 2002). Populations at risk for HIV may be deemed “rare” and “hidden” because they represent a small fraction of the total population and are often difficult to find for surveys. They are also difficult to sample in a systematic random fashion because the true size of their population is hard to determine (Lepkowski, 1991). Kish (1991) described such populations as “elusive populations” because of the difficulty involved in constructing a sampling design that permits the utilization of a probability sample.

The above descriptions—“hidden,” “rare,” and “elusive”—characterize the sub-Saharan African immigrants in Chicago. The elusiveness of the African immigrant population chosen for this study may be related not to their “street life” or other activity but to their immigration status, in that many may be undocumented or unlawful residents

in the United States. Secondly, the nature of the topics under study might lead some to avoid participation in a research study. HIV infection and sexuality are sensitive and private topics, features that compound the challenges of selecting a traditional probability/representative sample. Although Semaan et al. (2002) acknowledged that alternative sampling strategies for selecting street and network samples of the HIV high-risk population are less than ideal from a theoretical standpoint, they concluded that such sampling strategies become necessary for selection of representative samples when the orthodox (random probability) sampling scheme is unlikely to achieve a successful outcome. Although street sampling is not a concept appropriate to the African immigrant communities in Chicago, “network” sampling could be appropriate in light of the affiliation activities this immigrant group pursues through its social organizations. It is also a concept consistent with the empowerment orientation of the project.

After examining these alternative sampling strategies, multistage stratified random sampling was chosen for this study. Anastas (1999) stated that more than one step is required to obtain a sample and that it is crucial to carefully evaluate each step in the sampling process. Anastas also validated the usefulness of multistage sampling, both in planning for comparisons across groups and for the incremental development of the sampling frame.

The appropriateness of this sampling method for this study was also supported by Babbie’s (1990) recommendations for when total enumeration and randomization may not be possible. The impossibility of total enumeration in the present study lies in the fact

that some members of this population are undocumented, impeding face accounting or accurate enumeration, without which randomization is not possible.

In a stratified random sampling model, the study population is first divided into “strata” or segments based on certain selected characteristics associated with the main variables being studied. The mechanics of a stratified random sample specify that the components of the sampling frame are initially divided into subpopulations or subgroups based on certain known characteristics prior to the execution of random sampling. Stratified random sampling is useful in comparing subgroups and ensuring adequate representation of each group (Anastas, 1999). The drawbacks of stratified random sampling lie in the high cost of implementation and in the difficulty involved in the selection of pertinent stratification variables. Accurate information about the population is required; otherwise, measurement error or selection bias may occur.

In summary, in the first step, sub-Saharan African countries were stratified into four regions. The survey utilized four strata: eastern, central, southern, and western Africa. Then, using a simple random sampling technique, two African countries from each region were selected. Next, using a comprehensive list of civic and professional organizations in Chicago that served African immigrants, one organization serving each selected country was randomly selected, for a total of eight organizations. Each selected organization served as a cluster in the sampling plan. Finally, the subjects for this study were selected using a nonprobability (nonrandom) convenience sampling technique, from the eight clusters (organizations) that had been chosen using a stratified random sampling method.

The stratification criterion was based on the African regions of origin of potential respondents. This criterion was chosen to ensure that all areas of sub-Saharan Africa had an equal chance of inclusion, to reduce systematic bias and sampling error, and to foster representativeness of the region's diverse populations. The study used a proportionately stratified random sample in that the same number of organizations was randomly selected from each stratum. Regionally defined subgroups were sampled in equal proportions to the region's subpopulations in the population of U.S. African immigrants. Stratified random sampling was appropriate due to the heterogeneity of sub-Saharan Africa. This approach enabled comparisons between population groups in the four different regions of sub-Saharan Africa. The decision to stratify the sample was an application of cultural competence at the level of design.

A community empowerment approach was used to develop the sampling frame. An exhaustive list of civic and professional organizations in sub-Saharan immigrant communities in Chicago was prepared using the 2009 work completed by the United African Organization (UAO) (see appendix for the revised list). The 2009 list was reviewed and expanded in consultation with community gatekeepers and other key informants. A gatekeeper, according to Creswell (2006), is a person who has membership or insider status with a cultural group. The gatekeeper is the first point of contact for researchers and typically guides them to other informants.

This sampling frame was used to randomly select one organization from each of the previously selected countries. In all a total of eight organizations were selected and served as a cluster in the survey design. Based on a calculation of an estimated HIV

testing rate of 50%, 95% CI, and a 0.05 precision, a sample size of 400 was determined to be necessary. The HIV testing rate of 50% was used because the rate for African immigrants is unknown and the recommendation in such cases is to use 50% (Henry J. Kaiser Family Foundation, n.d.).

Survey Procedure

Each participating organization was approached and asked to participate. Rapport and trust was built with organizational leaders and members through meetings, at which time the aims and objectives of the study were presented. Permission was sought to attend organizational activities during the spring and summer of 2011.

Upon agreement, the survey was distributed at scheduled events. Potential participants were approached, the survey was explained, and all questions were answered. In line with the empowerment and pragmatist paradigms, HIV prevention information and a list of HIV testing sites was distributed to all potential participants. For those who agreed to participate, informed consent was obtained. The consent script was distributed with the HIV educational information. It was read aloud to each potential participant. The voluntary nature of participation was emphasized and participants were told they could skip questions and/or stop filling out the survey at any time. Each person was individually told that consent was inferred by completing the questionnaire.

A private place was provided for completion of the survey. Upon completion, the participant placed the survey in a labeled box. This was done to enhance confidentiality and anonymity. Each person was asked to answer the questions honestly, and assistance was available to anyone who had difficulty with the survey instrument. The survey took

approximately 25 minutes to complete. Upon completion, the participant received a \$5.00 phone card as a token of appreciation.

The data collection process took place over a period of about 6 months at a variety of organizational functions. Data collection concluded when the sample was complete ($N = 400$). For an overview of the survey procedure, see Figure 2.

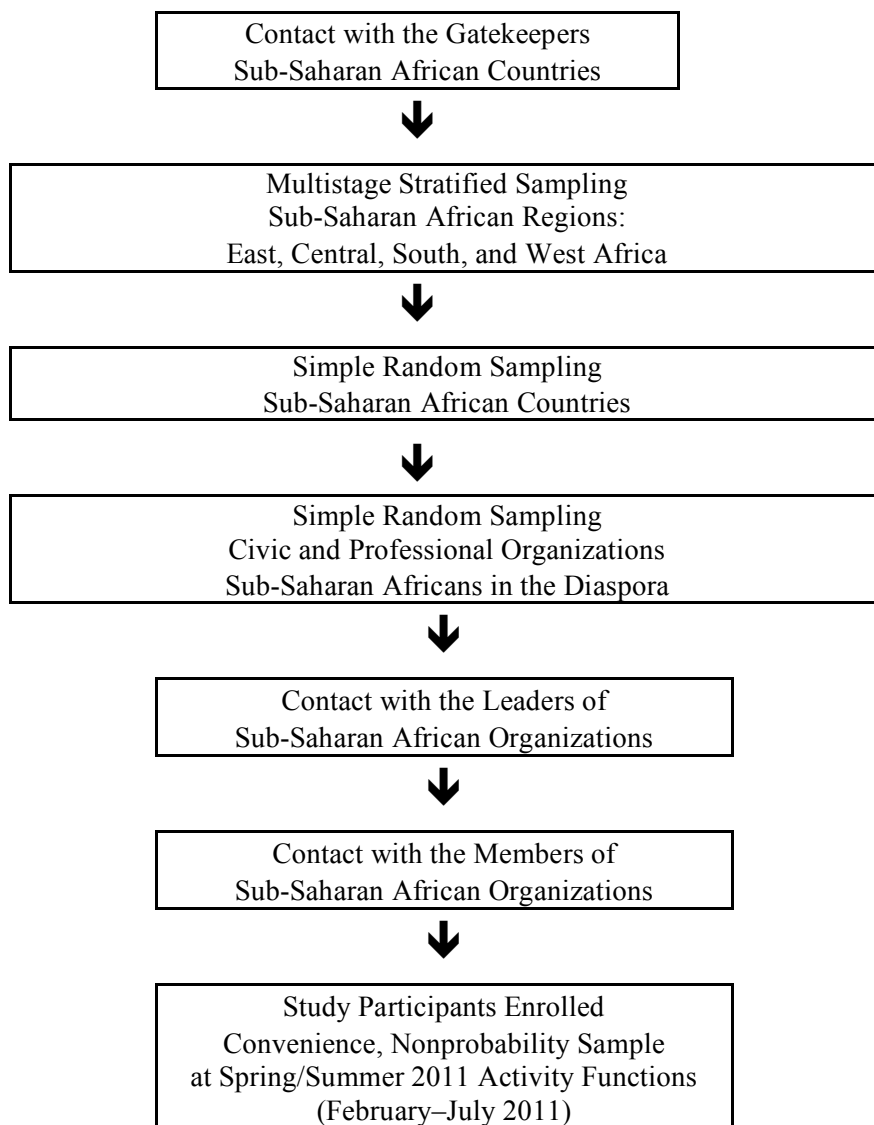


Figure 2. Quantitative data collection procedure.

Survey Instrument

A literature review conducted for this study identified no study of this size with similar goals or design that had been conducted in the U.S. African immigrant community. However, a few related large and validated studies conducted with other populations were identified. The survey instrument used available research questionnaires and modified the questions based on the research topic and discussions with local informants, HIV/AIDS professionals, and other stakeholders. The survey instrument included portions of questionnaires designed by CDC and other researchers pursuing similar inquiries.

The demographic section was adapted from one used by Simbiri (2006). In all a 64-item questionnaire, designed with the African immigrant population in mind, was produced and used for this study. The items in the questionnaire were divided into five categories: HIV attitudes and beliefs; HIV risk perception; brief screener of HIV risk behavior; HIV testing; and sexual status/identity and sociodemographic characteristics. Items 1–6 contained questions on perceived susceptibility to HIV developed by Lux and Petosa (1994), which had been used previously to assess perceived susceptibility of HIV infection among adolescents. The questions had also been used with incarcerated African American and White youths. The reliability of the scale was established for these populations. In terms of internal consistency, Cronbach's alpha was 0.72. The questions were deemed appropriate in assessing the attitudes and beliefs of sub-Saharan African immigrants in Chicago and were included in the survey instrument designed for this

study. Similar questions were used by other researchers for measuring attitudes and beliefs (Mahat & Scoloveno, 2006).

Items 7–10 contained questions on HIV risk perception and were developed for this study. Items 11–20 were based on the Brief HIV Screener developed by Gerbert et al. (1998) and contained questions on drug use history, history of sexually transmitted infection, history of exchange of sex for drugs or money, and so on. Other researchers measuring risk behavior have used similar questions (Lopez-Quintero et al., 2005).

Items 21–23 were developed for this study and assessed the level of commitment of the respondent to a yearly physical exam and/or visit to a health care provider. For analysis, these were used as a proxy for general attitudes toward health care to understand health care access and utilization. Items 24–36 contained parts of the CDC HIV Testing Questionnaire, as modified for this study. At the time this study was conducted, the CDC HIV Testing Questionnaire was being developed and evaluated by the CDC's HIV-STD Behavior Surveillance Working Group. The questionnaire had three core measures: HIV testing, drug-related HIV risk, and sexual behavior (CDC, 2001a). Questions 37–45 probed sexual status/identity and were developed for this study so as to be appropriate for sub-Saharan African immigrants.

Items 46–62 elicited information on demographic and personal characteristics including age, gender, education, employment, insurance, religion, and sexual partners. This section was customized for the study and based the work of Simbiri (2006). Question 63 was an open-ended question developed for this study to explore the perceived barriers to HIV testing among sub-Saharan immigrants in Chicago. The last

question, Item 64, was also adopted from Simbiri. This question was designed to assess how truthful the respondents were in responding to the questions in the survey. A copy of the survey instrument is available in the appendix.

Overall, the researcher endeavored to avoid having too few questions, which could have led to missing interesting markers about the research subjects, or too many questions, which could have overwhelmed respondents and thus impaired reliability and validity. The face and content validity of the customized portions of the questionnaire were assessed by HIV/AIDS professionals knowledgeable about the dynamics of the HIV/AIDS epidemic in Africa and by key informants in the diaspora. These experts assessed the readability, clarity, and specificity of the content of the questionnaire.

Pretest

The part of the questionnaire used for this study was pretested with members of the African immigrant community. The pretest was conducted with 10 African immigrants to test the clarity, readability, appropriateness, and validity of these questions. In order to establish face validity of the questions, the full questionnaire was then reviewed by professionals working in an HIV/AIDS public health program and others who were knowledgeable about the issue of HIV/AIDS in Africa. Only after a careful review of the vigorously constructed questionnaire was completed did the researcher conclude it was ready for use for the present study. Revisions were made at each stage of review.

Measures

In this research, HIV testing was defined as having had an HIV test within 1 year and was measured using the dichotomous question, Have you been tested for HIV in the past 1 year? Have you ever been tested for HIV? Those who responded yes to these questions were categorized using the phrases “HIV testing within 1 year” and “ever tested,” respectively. Future HIV testing intention was measured through responses generated from a Likert-scale question that inquired about participants’ intentions to be tested for HIV in the next 1 year following survey administration. The response options were *very likely*, *somewhat likely*, *somewhat unlikely*, and *very unlikely*. Responses generated from this question were then dichotomized into two categories: Those who indicated *very likely* or *somewhat likely* were categorized using “future intentions to be tested for HIV,” whereas those who indicated *very unlikely* or *somewhat unlikely* were categorized using “no future intentions to test for HIV.”

HIV risk perception was assessed through responses to the prompt, I am not at risk for HIV. Similar prompts have been used by Rimal et al. (2009) in assessing HIV risk perception. The response categories in the five-point Likert scale were *strongly agree*, *agree*, *not sure*, *disagree*, and *strongly disagree*. Thus, if a respondent agreed that he or she was not at risk of HIV, this was considered low risk perception. For the analysis, *agree* and *strongly agree* were scored as 1, or “low HIV risk perception,” and responses of *strongly disagree*, *disagree*, and *not sure* were scored as 0, and labeled “high risk perception.”

Attitudes and beliefs about HIV infection were assessed through responses to Items 1–6 of the survey: “People like me do not get HIV infection,” “I am very healthy; my body can fight off an HIV infection,” “I am too young to get an HIV infection,” “I am not worried that I might get an HIV infection,” “People my age are too young to get HIV infection,” and “People my age do not get HIV infection.” Similarly, these prompts used a five-point Likert scale for the following response categories: *strongly agree*, *agree*, *not sure*, *disagree*, and *strongly disagree*. For the analysis, responses of *strongly disagree*, *disagree*, and *not sure* were scored as 1 (positive attitude and beliefs), whereas *agree* and *strongly agree* were scored as 0 (poor attitude and beliefs). These dichotomous categories were then used for further analysis.

In terms of HIV risk behavior, participants were categorized as having risky behaviors if they responded yes to any of the nine questions listed in Items 11–19 under the health behavior section of the study questionnaire, or if they admitted to having unprotected anal sex in Question 20 (see appendix for study questionnaire). Otherwise, they were categorized as having no risky behaviors. Similar questions were used by Fernandez et al. (2002), Janz and Champion (2002), and Lopez-Quintero et al. (2005) in assessing risk status.

In an open-ended question (Item 63 of the survey questionnaire), participants were asked to state what they thought were barriers to HIV testing among members of the African immigrant community in Chicago. This question deliberately referenced the immigrant community rather than the individual respondent. The reason for the externalization of this question was to generate robust responses, so that respondents

would not feel pressured to divulge their personal barriers or immigration status. Multiple responses generated by this question were collated and summarized into themes used for later analysis. Responses to this qualitative question were categorized into themes based on word repetitions and frequency of similar responses, which were categorized as one theme. In all a total of 10 themes were generated and used for this analysis.

One dependent variable was examined in this research: having had an HIV test in the past 1 year (excluding tests related to blood donation). The independent variables examined included selected sociodemographic characteristics and measures of health care access and utilization such as health insurance status, last physical examination, and visit to health care provider in the past 1 year. Next, health behavior theories were incorporated into this study by examining the predictive strength of the independent variable—self-perceived HIV risk status (Fernandez et al., 2002). Other independent variables that were examined for their predictive power included “HIV test offered during last visit to provider,” “future intent toward HIV testing,” and “ever tested for HIV.” Given the small sample sizes for those who responded *do not know* or *prefer not to answer*, these groups were dropped from the analysis. Similarly, those who indicated their sex as transgender were also dropped from the analysis due to their small sample size ($n = 2$).

Despite the original plan to investigate the statistical influence of many independent variables on only one dependent variable—having had an HIV test within 1 year prior to the study (“HIV test in the past 1 year”)—the analysis plan was revised upon

viewing the initial findings to consider the influence of the independent variables on future intent to obtain an HIV test.

Ethical Considerations

The Loyola Institutional Review Board (IRB) reviewed and approved this study before subject recruitment and data collection commenced. Measures were instituted to ensure that research participants were not exposed to potential harm through participation in this study. Confidentiality of participants was protected; informed consent was obtained from participants prior to their participation in the study. Acknowledging that this research was being conducted in a community setting with a vulnerable population, special attention was given to ensure that participants understood the consent form and were aware that they could withdraw from the study at any time.

No identifying information was attached to the individual survey form. Participant confidentiality was further enhanced by storing completed surveys under lock and key and limiting access to designated research staff. Questionnaires were shredded at the end of the study. The deidentified electronic data are stored in a secure location and will be destroyed after 5 years.

CHAPTER FOUR

THE PRESENTATION OF THE FINDINGS

Chapter 4 presents the findings of the study. It is divided into sections, beginning with an overview of the data analysis. The following sections present the findings from the descriptive study and then the results of statistical analyses of associations are presented. Finally, the testing of hypotheses and results are presented in terms of the original hypotheses.

Introduction and Data Analysis

Raw data were collected on individual survey forms. In preparation for quantitative analysis, each response was given a numeric value. Data were entered into an analysis program, the Statistical Packages for Social Sciences (SPSS) version 20.0 for Windows (IBM, 2011), which was used to code, label and analyze the quantitative data. As part of the data-cleaning process, frequencies were tallied to check the information for errors in data entry and missing values and outliers. The research design included a comparison of the demographic and personal characteristics of the participants so as to assess differences in relationships to HIV testing. Measures of central tendency and variability were computed and used to highlight common reference points among these groups.

After generating descriptive data, bivariate analysis and multivariate analysis (logistic regression) were conducted to determine differences between variables and to predict the directionality of associations between the key sets of variables under investigation. The probability level of $p \leq 0.05$ was accepted as defining statistical significance for this study. This level of probability helped guard against both Type I and Type II errors.

Responses to questions on sociodemographic characteristics included age, gender, religion, marital status, education, employment, income, region, length of stay in the United States, and type of residence. Responses to questions on health care access and utilization included health insurance status, visits to a health care provider, and physical examination status. Responses to questions on HIV testing patterns and HIV-related characteristics included HIV testing history, current HIV testing status, place of last HIV test, reason for HIV test, reason for no HIV test, future HIV testing intention, and perceived barriers to HIV testing. Finally, the Brief HIV Screener model questions about the sexual behaviors of participants were further explored through questions on number of sex partners, type of sex, and frequency of condom use. Responses to questions on attitudes and beliefs regarding HIV allowed for consideration of the responses in relationship to the other variables.

Presentation of Descriptive Statistics

Interval Level Variables

The descriptive statistics for the interval-level variables can be found in Table 2. The average age was 35.44 years ($SD = 11.18$) and ranged from 18 to 67 years. The

Table 2. Descriptives for interval-level variables

Variable	<i>N</i>	Min.	Max.	Mean	<i>SD</i>	Kurtosis	Skewness
Current age in years	395	18	67	35.44	11.184	−0.260	0.601
Age at sexual debut	231	9	49	17.90	4.220	12.118	1.936
No. of sex partners in past 12 mos.	392	0	45	2.11	3.074	105.59	8.682
Condom use w/ main sex partner	311	0	100	29.58	39.172	−0.954	0.863
Condom use w/ casual sex partner	205	0	100	68.33	34.319	−0.797	−0.747
Length of stay in United States	395	1	40	9.16	8.433	1.839	1.461

average length of stay in the United States was 9.16 years ($SD = 8.43$) and ranged from 1 to 40 years. The mean age at sexual debut was 17.97 ($SD = 4.22$) and ranged from 9 to 49 years. The mean number of sex partners in the past 12 months (including both casual and main partners) was 2.11 ($SD = 3.07$) and ranged from 0 to 45. Average percentages of condom use for sex with main and casual sexual partners were 29.5% ($SD = 39.17$) and 68.3%, respectively, with a range of 0–100%.

Sociodemographic Characteristics

Selected sociodemographic characteristics of the total study population ($n = 395$) are presented in Table 3. There were slightly more female than male participants (51.1% versus 48.1%). Thirty-six percent of participants were younger than 30 years of age; the

Table 3. Selected demographic characteristics

Characteristic	Male		Female		Total	
	<i>N</i>	(%)	<i>N</i>	(%)	<i>N</i>	(%)
Overall	192	(48.9)	201	(51.1)	393	(100.0)
Age						
18–24	29	(15.1)	41	(20.4)	70	(17.8)
25–29	23	(12.0)	49	(24.4)	72	(18.3)
30–39	67	(34.9)	48	(23.9)	115	(29.3)
40–49	47	(24.5)	38	(18.9)	85	(21.6)
50 and above	26	(13.5)	25	(12.4)	51	(13.0)
Total	192	(48.9)	201	(51.1)	393	(100.0)
Length of stay in the United States						
5 years or less	92	(47.9)	92	(45.8)	184	(46.8)
More than 5 years	100	(52.1)	109	(54.2)	209	(53.2)
Total	192	(48.9)	201	(51.1)	393	(100.0)
Employment status						
Employed	153	(81.8)	144	(74.2)	297	(78.0)
Unemployed	34	(18.2)	50	(25.8)	84	(22.0)
Total	187	(49.1)	194	(50.9)	381	(100.0)
Type of residence						
Own your home	57	(30.0)	46	(23.5)	103	(26.7)
Rent a home or apartment	103	(54.2)	116	(59.2)	219	(56.7)
Live with friends or family	29	(15.3)	32	(16.3)	61	(15.8)
Homeless	1	(0.5)	2	(1.0)	3	(0.8)
Total	190	(49.2)	196	(50.8)	386	(100.0)
Religion						
None	9	(4.7)	7	(3.5)	16	(4.1)
Christianity	165	(86.8)	174	(44.7)	339	(87.0)
Islam	12	(6.3)	13	(6.5)	25	(6.4)
Hinduism	4	(2.1)	5	(2.5)	9	(2.3)
Total	190	(48.8)	199	(51.2)	389	(100.0)

Table 3 (continued)

Characteristic	Male		Female		Total	
	<i>N</i>	(%)	<i>N</i>	(%)	<i>N</i>	(%)
Marital status						
Married	99	(52.9)	77	(39.9)	176	(46.3)
Separated	9	(4.8)	8	(4.1)	17	(4.5)
Divorced	11	(5.9)	16	(8.3)	27	(7.1)
Widowed	3	(1.6)	3	(1.6)	6	(1.6)
Never married	65	(34.8)	89	(46.1)	154	(40.5)
Total	187	(49.2)	193	(50.8)	380	(100.0)
Highest level of education						
Less than high school	9	(4.8)	6	(3.0)	15	(3.9)
High school	23	(12.2)	28	(14.1)	51	(13.1)
Some college	63	(33.3)	75	(37.7)	138	(35.6)
College degree and above	94	(49.7)	90	(45.2)	184	(47.4)
Total	189	(48.7)	199	(51.3)	388	(100.0)
Annual household income						
\$0–\$4,999	25	(14.6)	19	(11.3)	44	(13.0)
\$5,000–\$9,999	12	(7.0)	7	(4.2)	19	(5.6)
\$10,000–\$14,999	9	(5.3)	13	(7.7)	22	(6.5)
\$15,000–\$19,999	10	(5.8)	7	(4.2)	17	(5.0)
\$20,000–\$29,999	15	(8.8)	28	(16.7)	43	(12.7)
\$30,000–\$39,999	23	(13.5)	16	(9.5)	39	(11.5)
\$40,000–\$49,999	28	(16.4)	24	(14.3)	52	(15.3)
\$50,000–\$74,999	24	(14.0)	31	(18.5)	55	(16.2)
\$75,000 or more	25	(14.6)	23	(13.7)	48	(12.2)
Total	171	(50.4)	168	(49.6)	339	(100.0)
Region						
Western	70	(36.5)	75	(37.3)	145	(36.7)
Central	49	(25.5)	48	(23.9)	97	(24.6)
Eastern	52	(27.1)	38	(18.9)	90	(23.3)
Southern	21	(10.9)	40	(19.9)	61	(15.4)
Total	192	(48.9)	201	(51.1)	393	(100.0)
Ever traveled to Africa						
No	71	(39.4)	75	(39.5)	146	(39.5)
Yes	109	(60.6)	115	(60.5)	224	(60.5)
Total	180	(48.6)	190	(51.4)	370	(100.0)

greatest proportion of participants in any age group was between ages 30 and 39 (29%). About one-third (31.3%) of females were aged 40 and above. Table 3 indicates that nearly half had been in the United States for less than 5 years (46.8%). Over three-quarters of participants reported they were employed (78%). Approximately 56% of participants reported they rented their home; more than one-quarter of participants were homeowners (27%). Almost half (47.4%) of participants reported having a college degree or higher; this was similar for males and females (males 49.7%, females 45.2%). Participants with less than a high school education (3.9%) were a minority, as were those who had completed a high school education (13.1%).

An overwhelming majority of participants (87%) reported they were Christian and 6.4% stated they were Muslim. Although most participants were married (46.3%), about 40% of study participants reported they had never married. There was a bimodal distribution in reported annual household income: 18.6% reported an annual household income of less than \$10,000 while 28.4% reported an annual household income greater than \$50,000. About one-half of participants (54.3%) reported an annual household income of less than \$40,000. More than 30% of participants fall below the poverty line with 13% having a household income below \$5,000. The proportion of male and female participants below the poverty line was 32.7% and 27.4%, respectively.

Participants came from four regions in sub-Saharan Africa: eastern (23.3%), western (36.7%), central (24.6%), and southern (15.4%). The largest group of participants was from the western region. Participants also varied in terms of their ethnicity, language, and country of origin. Study participants came from 22 different

countries in Africa and from 65 different ethnic or tribal groups of Africa. They spoke 60 different native languages or dialects (see Appendix I). Study participants' current residences covered many zip codes in Chicago (see Appendix H), and many lived in the Rogers Park, Uptown, or Edgewater community areas.

Regarding previous travel to Africa and potential plans to travel to Africa, more than three-fifths of participants (60.5%) reported they travel to Africa; of this group there was variability in the frequency of travel to Africa. Frequency of visits ranged from less than once a year, to once in 10 years or more. Previous travel to Africa most often occurred once every 2 years (28%), and more than three-fifths (65.3%) reported visiting Africa once in 2 years or less (data not shown).

Health Care Utilization, Sexual Risk Taking, and HIV Testing Patterns

Over half of participants reported having health insurance (56.2%). However, a large proportion of participants (43.8%) reported having no health insurance coverage. More males (52.6%) than females (47.4%) had no health insurance. The majority of participants (57.9%) reported having had a physical examination in the previous 12 months, and 75.7% reported they had seen a health care provider in that time frame. Over half (59.0%) denied being offered an HIV test during one of their health care visits. Regarding HIV testing, almost 3 out of 4 participants (74.4%) reported they had been tested at some time in the past for HIV; 34.2% reportedly had been tested in the previous 12 months. Four percent of participants reported ever having a positive HIV test result. The same proportion of participants reported that they had not obtained their last HIV test results (data not shown). In terms of intention to test for HIV in the next 12 months, more

than two-thirds of participants (66.1%) reported that they were somewhat likely or very likely to undertake an HIV test in the upcoming year (see Table 4). About 33% (33.9%) reported no intention to get tested for HIV in the 12 months following the survey.

Almost one-half (48.2%) of participants had more than one sex partner within the last 12 months. More males (33.0%) reported multiple sex partners than females (14.1%). The majority (77.4%) were sexually active and reported having sex within 6 months prior to the survey administration (data not shown). Consistent condom use with main and casual sex partners was reported by only 12.9% and 36.5% of respondents, respectively. The overwhelming proportion of participants (95.8%) denied sexual contact with people of same sex (see Table 4).

The answer options for questions on type of sex were mutually inclusive; consequently, this question generated a multiple-response set which was analyzed using multiple-response analyses. Analysis found that the majority (64.4%) of respondents indicated engagement in vaginal sex. Frequency of reported oral sex was 25%, while frequency of reported anal sex was 10.6% (data not shown).

Reasons for Testing or Not Testing and Place of Last HIV Test

The most common reason cited by participants for obtaining their most recent HIV test was for immigration purposes (20.1%), followed by pregnancy (14.1%). About 13% reported testing due to concerns about possible exposure to HIV. Cumulatively, 18% reported voluntary testing and 82% reported involuntary or semicoerced testing due to pregnancy; provider recommendations; or immigration, insurance, or job-related requirements (see Figure 3).

Table 4. HIV testing patterns and health care utilization

Indicator	Male	Female	Total
	<i>N</i> (%)	<i>N</i> (%)	<i>N</i> (%)
Overall	192 (48.9)	201 (51.1)	393 (100.0)
Health insurance			
No	90 (47.4)	81 (40.5)	171 (43.8)
Yes	100 (52.6)	119 (59.5)	219 (56.2)
Total	190 (48.7)	200 (51.3)	390 (100.0)
Last physical examination			
Never or >1 year	91 (47.6)	73 (36.7)	164 (42.1)
1 year ago or less	100 (52.4)	126 (63.3)	226 (57.9)
Total	191 (49.0)	199 (51.0)	390 (100.0)
Seen health care provider past 12 months			
No	53 (27.7)	41 (20.9)	94 (24.3)
Yes	138 (72.3)	155 (79.1)	293 (75.7)
Total	191 (25.4)	196 (27.7)	387 (100.0)
Offered an HIV test			
No	110 (58.8)	116 (59.2)	226 (59.0)
Yes	77 (41.2)	80 (40.8)	197 (41.0)
Total	187 (48.8)	196 (51.2)	383 (100.0)
Ever tested for HIV			
No	49 (25.7)	51 (25.5)	100 (25.6)
Yes	142 (74.3)	149 (74.5)	291 (74.4)
Total	191 (48.8)	200 (51.2)	391 (100.0)
HIV testing in past 1 year			
No	130 (68.1)	126 (63.6)	256 (65.8)
Yes	61 (31.9)	72 (36.4)	133 (34.2)
Total	191 (49.1)	198 (50.9)	389 (100.0)
Future HIV testing intention			
Somewhat unlikely / very unlikely	68 (36.2)	63 (31.7)	131 (33.9)
Somewhat likely / very likely	120 (63.8)	136 (68.3)	256 (66.1)
Total	188 (48.6)	199 (51.4)	387 (100.0)
Number of sex partners			
No sex partner	11 (5.8)	22 (11.1)	33 (8.5)
1 sex partner	70 (36.6)	99 (49.7)	169 (43.3)
Multiple sex partners	110 (57.6)	78 (39.2)	188 (48.2)
Total	191 (49.0)	199 (51.0)	390 (100.0)

Table 4 (continued)

Indicator	Male	Female	Total
	<i>N</i> (%)	<i>N</i> (%)	<i>N</i> (%)
Condom use, main sex partner			
Consistent condom use	20 (12.8)	20 (12.9)	40 (12.9)
Inconsistent condom use	136 (87.2)	135 (87.1)	271 (87.1)
Total	156 (50.2)	155 (49.8)	311 (100.0)
Condom use, casual sex partner			
Consistent condom use	45 (39.8)	29 (32.2)	74 (36.5)
Inconsistent condom use	68 (60.2)	61 (67.8)	129 (63.5)
Total	113 (55.7)	90 (44.3)	203 (100.0)
Homosexual contact			
No	179 (95.2)	189 (96.4)	368 (95.8)
Yes	9 (4.8)	7 (3.6)	16 (4.2)
Total	188 (49.0)	196 (51.0)	384 (100.0)

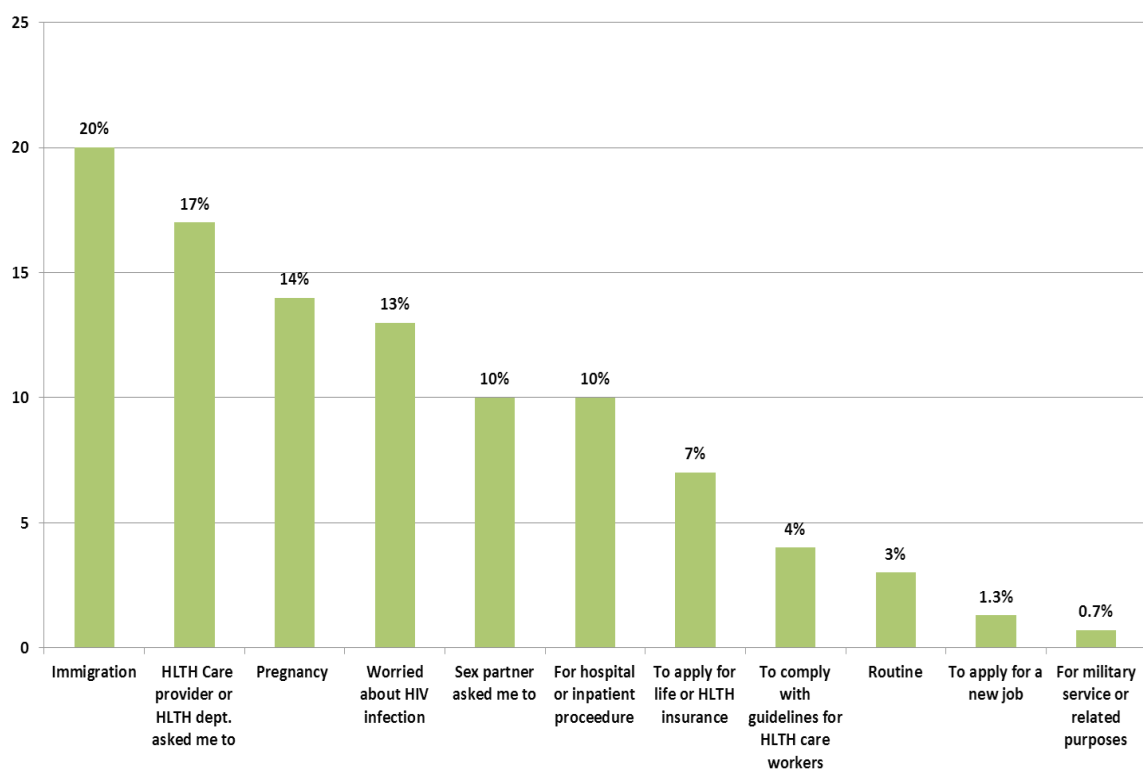


Figure 3. Reason for last HIV test.

The most frequently cited place of last HIV test was a private doctor or HMO (30.3%). Approximately 24% of participants reported that they received their last HIV test in a hospital inpatient setting or in an outpatient hospital emergency room. About 14% of participants reported being tested at a community or public health clinic. Correctional facilities, home-based HIV testing, and employer/military settings were infrequently cited by participants as places of last HIV test (see Figure 4).

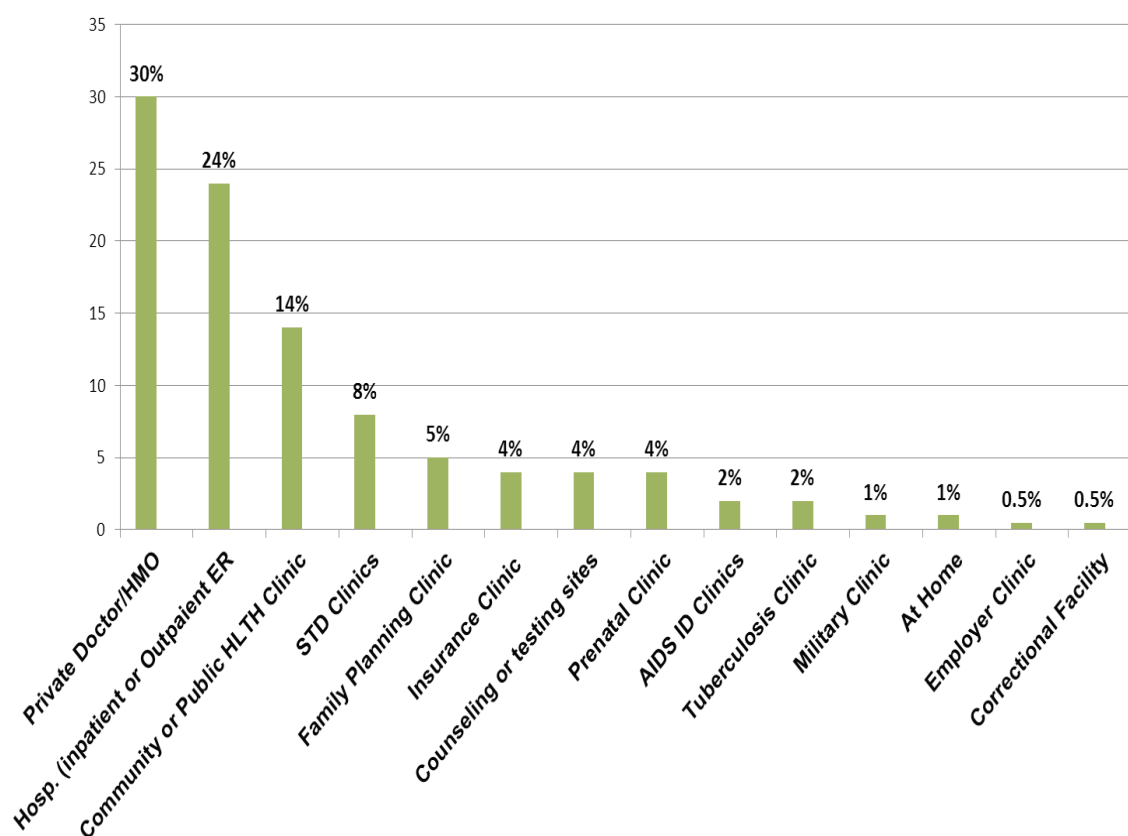


Figure 4. Place of last HIV test.

An overwhelming majority of respondents (59.9%) reported that they did not get tested within the past year because it is unlikely that they have been exposed to HIV. Almost 1 in 5 people (18.0%) cited fear of a positive test result as the main reason for not getting an HIV test. A significant proportion of respondents (10.9%) cited lack of knowledge of HIV testing sites as their main reason for not taking an HIV test (see Figure 5).

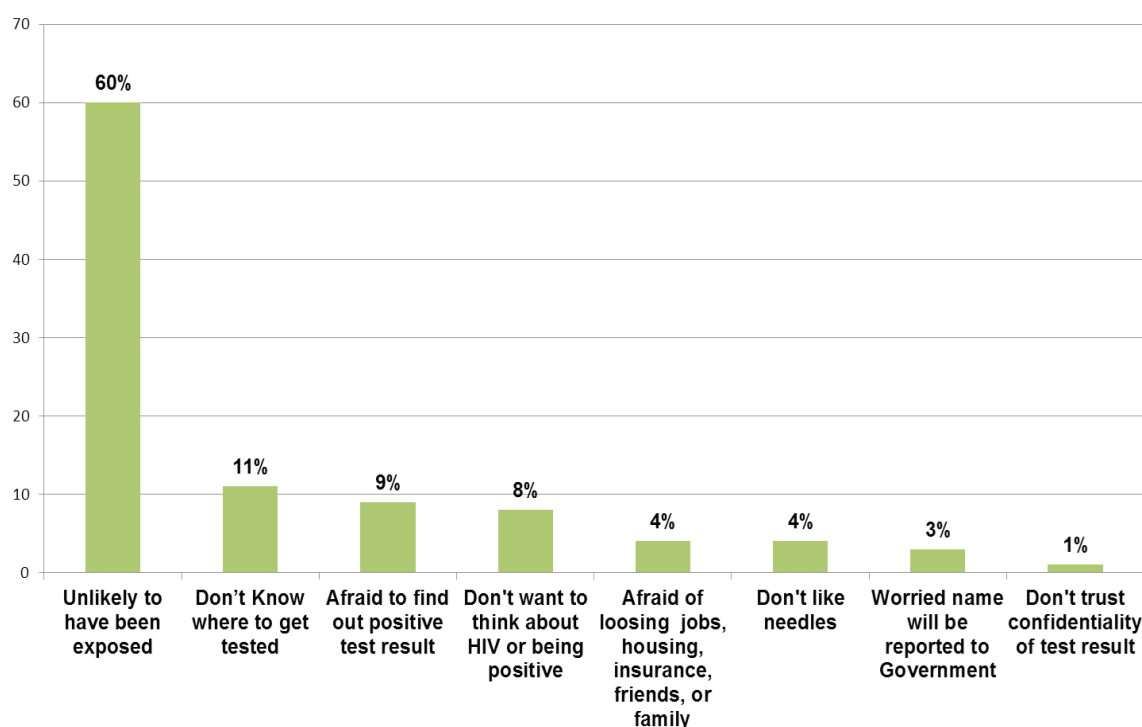


Figure 5. Reason for not HIV testing in the past 1 year.

Data generated from the analysis of the responses to the open-ended and externalized questions on perceived barriers to testing are displayed in Table 5. About fourteen percent (13.8%) of the responses indicated fear of negative consequences. This fear of negative consequences was centered around fear of a positive test result and fear of loss of relationship. Similarly, 13.1% highlighted shame and stigma associated with HIV as barriers to testing. The largest proportion of the responses (15.3%) alluded to lack of perception of HIV risk as being a barrier to HIV testing. Other common barriers were cost or limited time and resources (14.4%), ignorance about HIV or lack of knowledge of testing sites (14.7%), immigration (5.3%), cultural norms (8.8%), perceived mutual monogamy (4.2%), and confidentiality issues and other HIV testing logistics, including insensitivity of health providers (9.0%).

Bivariate Association of Selected Sociodemographic Variables and HIV Testing Within the Past Year

Table 6 presents the bivariate association between selected sociodemographic characteristics and HIV testing in the past 1 year. Results indicated that HIV testing by participants in the past year was significantly associated ($p \leq 0.05$) with the following sociodemographic variables: employment status ($\chi^2 = 5.18, p < 0.05$) and level of education ($\chi^2 = 12.38, p < 0.01$). Within these factors, the percentage of participants who reported no HIV test in the past 1 year ranged from 13.3% to 45.2%, whereas those who indicated having had an HIV test ranged from 54.8% to 86.7%.

Table 5. Perceived barriers to HIV test among African immigrant community in Chicago

Barrier to HIV testing	<i>N</i>	%	% of cases
Fear of negative consequences	167	13.8	45.0
Shame or stigma	158	13.1	42.6
No perception of HIV risk	186	15.3	50.1
Lack of anticipation of benefit from testing	17	1.4	4.6
Trust or perceived mutual monogamy	49	4.2	13.2
Cost or limited time and resources	173	14.4	46.6
Cultural norms	106	8.8	28.6
Ignorance about HIV or lack of knowledge of testing sites	177	14.7	47.7
Immigration	66	5.3	17.8
Confidentiality issues or distrust of the health care system or cultural insensitivity of providers or testing logistics	109	9.0	29.4
Total	1208	100.0	325.6

Table 6. Selected demographic characteristics and testing within past year

Characteristics	Total (%)	HIV testing in the past year		Test statistic
		Yes %	No %	χ^2 (df)
Gender				
Male	191 (49.1)	50.8	45.9	0.84(1)
Female	198 (50.9)	49.2	54.1	
Age				
18–24	71 (18.2)	69.0	31.0	1.62(4)
25–29	73 (18.7)	60.3	39.7	
30–39	113 (28.9)	68.1	31.9	
40–49	83 (21.2)	66.3	33.7	
50 and above	51 (13.0)	64.7	35.3	
Length of stay				
5 years or less	185 (47.3)	65.9	34.1	.01(1)
More than 5 years	206 (52.7)	66.0	34.0	
Employment status				
Employed	296 (77.9)	69.3	30.7	5.18(1)*
Unemployed	84 (22.1)	56.0	44.0	
Religion				
None	16 (4.1)	50.0	50.0	3.32(3)
Christianity	336 (86.8)	67.3	32.7	
Islam	25 (6.5)	60.0	40.0	
Hinduism	10 (2.6)	80.0	20.0	
Marital status				
Married	176 (46.6)	64.2	35.8	1.12(4)
Separated	16 (4.2)	68.8	31.2	
Divorced	28 (7.4)	64.3	35.7	
Widowed	6 (1.6)	83.3	16.7	
Never married	152 (40.2)	66.4	33.6	
Annual Household Income				
< \$20,000	103 (30.4)	68.0	32.0	0.40(1)
> \$20,000	236 (69.6)	64.4	35.6	
Highest Level of Education				
< High school	15 (3.9)	86.7	13.3	
High school	51(13.2)	72.5	27.5	

Table 6 (continued)

Characteristics	Total (%)	HIV testing in the past year		Test statistic χ^2 (df)
		Yes %	No %	
Some college	135 (35.0)	54.8	45.2	12.38(3)**
College degree or above	185 (47.9)	69.7	30.3	
Region				3.05 (3)
Western	143 (36.6)	60.8	39.2	
Central	96 (24.6)	67.7	32.3	
Eastern	91 (23.3)	71.4	28.6	
Southern	61 (15.6)	67.2	32.8	
Travel to Africa				1.09 (1)
No	146 (39.5)	61.6	38.4	
Yes	224 (60.5)	67.0	30.0	

Note. χ (df) = Chi-square (degree of freedom)

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

Health Care Utilization Patterns and HIV Testing Within the Past 1 Year

Table 7 shows the bivariate relationship between selected health care utilization indicators and HIV testing within the past year. HIV testing uptake by participants in the past year was significantly ($p \leq 0.05$) associated with the following utilization indicators: length of time since last physical examination ($\chi^2 = 11.67$, $p < 0.01$), having seen a health care provider in the past 12 months ($\chi^2 = 23.40$, $p < 0.001$), and having been offered an HIV test during last visit to a provider ($\chi^2 = 54.46$, $p < 0.001$). The proportion of participants reporting no HIV test in the past year varied from 13.8% to 56.1%, while those who indicated having had an HIV test ranged from 43.9% to 86.2%.

Table 7. Health care utilization and HIV testing within past year

Characteristic	Total (%)	HIV testing in the past year		Test statistics
		Yes %	No %	χ^2 (df)
Last physical exam				
Never or > 1 year	162 (41.8)	75.9	24.1	11.67(1)**
≤1 year ago	226 (58.2)	59.3	40.7	
Health insurance				
No	169 (43.4)	63.3	36.7	0.82(1)
Yes	220 (56.6)	67.7	32.3	
Seen Health care provider in past 12 months				
No	94 (24.4)	86.2	13.8	23.40(1)***
Yes	292 (75.6)	58.9	41.1	
Offered an HIV test				
No	225 (58.9)	80.4	19.6	54.46(1)***
Yes	157 (41.1)	43.9	56.1	

Note. χ (df) = Chi-square (degree of freedom)

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$

Other Testing Characteristics, HIV Risk Behaviors, and

HIV Testing in the Past One Year

Table 8 displays the bivariate association between HIV testing in the prior year, other selected HIV testing factors, and HIV risk behaviors. Results showed that the HIV testing status of participants in the past 1 year was significantly associated with ever having been tested for HIV ($\chi^2 = 34.76$, $p < 0.001$), HIV risk perception ($\chi^2 = 334.71$, $p < 0.001$), and future testing intentions ($\chi^2 = 25.34$, $p < 0.01$). The percentage of participants

Table 8. Other testing characteristics, HIV risk behaviors, and HIV testing in past 1 year

Characteristic	Total		HIV testing in past year		Test statistics χ^2 (df)
	N	(%)	No %	Yes %	
Future intention for HIV testing					
Somewhat/very unlikely	132	(34.3)	82.6	17.4	25.34(1)***
Somewhat/ very likely	253	(65.7)	56.9	43.1	
HIV risk behavior					
No risky behavior	123	(31.5)	70.7	29.3	1.80(1)
Risky behavior	268	(68.5)	63.8	36.2	
HIV risk perception (self-perceived)					
Low risk	251	(66.4)	97.6	2.4	334.71(1)***
High risk	127	(33.6)	3.1	96.9	
Ever tested for HIV					
No	100	(25.6)	90.0	10.0	34.76(1)***
Yes	290	(74.4)	57.6	42.4	

Note. χ (df) = Chi-square (degree of freedom)

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

within these factors reporting no HIV test in the past 1 year varied from 2.4% to 96.9%, while those who reported having had an HIV test ranged from 3.1% to 97.6%.

Selected Sociodemographic Characteristics and Future HIV Testing Intentions

Table 9 presents the bivariate association between certain sociodemographic variables and future HIV testing intentions. Future intentions for testing in the next 1 year were significantly associated with the following sociodemographic characteristics: age ($\chi^2 = 12.44$, $p < 0.05$), religion ($\chi^2 = 15.77$, $p < 0.01$) and marital status ($\chi^2 = 13.98$, $p <$

Table 9. Relationship between selected socio-demographic characteristics and future HIV testing intentions

Characteristic	Total		Future HIV testing intention		Test statistics
	<i>N</i>	(%)	No %	Yes %	χ^2 (<i>df</i>)
Gender					
Male	188	(48.6)	36.2	63.8	0.87(1)
Female	199	(51.4)	31.7	68.3	
Age					
18–24	71	(18.3)	46.5	53.5	12.44(4)*
25–29	71	(18.3)	25.4	74.6	
30–39	111	(28.5)	26.1	73.9	
40–49	85	(21.9)	36.5	21.1	
50 and above	51	(13.1)	36.5	63.5	
Length of stay					
5 years and below	183	(47.0)	31.1	68.9	1.42(1)
More than 5 years	206	(53.0)	36.9	63.1	
Employment status					
Employed	291	(77.2)	35.4	64.6	.47(1)
Unemployed	86	(22.8)	31.4	68.6	
Religion					
None	16	(4.1)	25.0	75.0	15.77(3)**
Christianity	334	(86.8)	32.6	67.4	
Islam	25	(6.5)	44.0	56.0	
Hinduism	10	(2.6)	90.0	10.0	
Marital status					
Married	173	(46.0)	35.8	64.2	13.98(4)*
Separated	16	(4.3)	25.0	75.0	
Divorced	29	(7.7)	37.9	62.1	
Widowed	6	(1.6)	100	0.0	
Never married	152	(40.4)	29.6	70.4	
Annual household income					

Table 9 (continued)

Table 3 (continued)

Characteristic	Total		Future HIV testing intention		Test statistics
	<i>N</i>	(%)	No %	Yes %	χ^2 (<i>df</i>)
< \$20,000	103	(30.7)	32.0	68.0	0.44(1)
≥ \$20,000 or above	232	(69.3)	35.8	64.2	
Highest level of education					
< High school	15	(3.9)	55.3	46.7	2.78(3)
High school	51	(13.3)	35.3	64.7	
Some college	138	(35.9)	34.1	65.9	
College degree and above	180	(46.9)	32.2	67.8	
Region					
Western	142	(36.5)	38.7	61.3	3.93(3)
Central	97	(24.9)	28.9	71.1	
Eastern	89	(22.9)	37.1	62.9	
Southern	61	(15.7)	27.9	72.1	
Travel to Africa					
No	145	(39.7)	34.4	42.4	2.15(1)
Yes	204	(60.3)	36.4	63.6	

Note. χ (*df*) = Chi-square (degree of freedom)

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

0.05). The proportion of participants reporting no future HIV testing intentions ranged from zero to 75%, while those who indicated future intentions ranged from 25%–100%.

Health Care Utilization Pattern and Future HIV Testing Intention

Table 10 displays the bivariate relationship between certain health care utilization indicators and future HIV testing intentions. Results showed that HIV testing intentions of participants in the next 1 year were significantly associated with the following health

Table 10. Health care utilization pattern and future HIV testing intention

Characteristic	Total		Future HIV testing intention		Test statistics χ^2 (df)
	N	(%)	No %	Yes %	
Last physical exam					
Never or > 1 year	165	(42.7)	40.6	59.4	5.71(1)*
≤ 1 year	221	(57.3)	29.0	71.0	
Health Insurance					
No	170	(44.0)	29.4	70.6	3.42(1)
Yes	216	(56.0)	38.4	61.6	
Seen healthcare provider in past 12 months					
No	95	(24.8)	45.3	54.7	6.86(1)**
Yes	288	(75.2)	30.6	39.4	
Offered HIV test					
No	225	(59.4)	41.3	58.7	13.13(1)***
Yes	154	(40.6)	23.4	76.6	
HIV risky behaviors					
No risky behaviors	120	(30.8)	42.5	57.5	5.32(1)*
Risky behaviors	269	(69.2)	30.5	69.5	
HIV risk perception					
Low risk, self-perceived	246	(65.4)	41.5	58.5	20.19(1)***
High risk, self-perceived	130	(34.6)	18.5	81.5	
Ever tested for HIV					
No	98	(25.3)	49.0	51.0	12.91(1)***
Yes	289	(74.7)	29.1	70.9	
Had HIV test in past year					
No	253	(65.7)	41.3	56.9	25.34(1)***
Yes	132	(34.3)	17.4	82.6	

Note. χ^2 (df) = Chi-square (degree of freedom)

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

care utilization indicators: last physical examination ($\chi^2 = 5.71, p < 0.05$), having seen a health care provider within the past 12 months ($\chi^2 = 6.86, p < 0.01$), and having been offered an HIV test during the last visit to a provider ($\chi^2 = 13.13, p < 0.001$). The percentage of participants within these factors who reported no future intentions of HIV testing ranged from 54.7% to 76.0%, whereas those who reported having future intentions to test for HIV varied from 23.4% to 45.3%.

Other Related Factors and Future HIV Testing Intentions / Risk Behaviors

Table 11 displays the bivariate associations between future HIV testing intentions and other HIV related factors / risk behaviors. Findings indicated that future HIV testing intentions of participants was significantly associated with HIV risk perception (self-perceived HIV risk) ($\chi^2 = 20.19, p < 0.001$), ever tested for HIV ($\chi^2 = 12.91, p < 0.001$), HIV testing in the past year ($\chi^2 = 25.34, p < 0.001$) and HIV risk behaviors ($\chi^2 = 5.32, p < 0.05$). The proportion of participants within these categories who reported no future HIV testing intentions ranged from 51.0% to 82.6%, while those who reported having future HIV testing intentions ranged from 17.4% to 49.0%.

Table 11 also shows the bivariate association between HIV testing in the past 1 year and selected attitude and belief questions. Results showed that HIV testing was significantly ($p \leq 0.05$) associated with all of the attitudes and beliefs items: “people like me do not get HIV” ($\chi^2 = 264.89, p < 0.001$); “very healthy, body can fight off HIV” ($\chi^2 = 234.81, p < 0.001$), “too young to get an HIV infection” ($\chi^2 = 165.97, p < 0.001$), “not worried that I might get HIV” ($\chi^2 = 99.13, p < 0.001$), “people my age are too young to

Table 11. Attitudes, beliefs, and HIV testing in the past 1 year

Attitude/belief	Total		HIV testing in past 1 year		Test statistics
	<i>N</i>	(%)	No %	Yes %	χ^2 (<i>df</i>)
“People like me do not get HIV”					
Poor attitude/belief	154	(39.4)	10.5	95.5	264.89(1)***
Positive attitude/belief	236	(60.5)	89.5	4.5	
“Very health, body can fight off HIV”					
Poor attitude/belief	265	(69.0)	94.9	18.5	234.81(1)***
Positive attitude/belief	119	(31.0)	5.1	81.5	
“Too young to get an HIV infection”					
Poor attitude/belief	283	(73.1)	93.8	32.3	165.97(1)***
Positive attitude/belief	104	(26.9)	6.2	67.7	
“Not worried that I might get HIV”					
Poor attitude/belief	270	(70.9)	87.4	38.3	99.13(1)***
Positive attitude/belief	111	(29.1)	12.6	61.7	
“People my age are too young to get an HIV infection”					
Poor attitude/belief	142	(36.9)	7.1	94.7	
Positive attitude/belief	243	(63.1)	92.9	5.3	
“People my age do not get HIV”					
Poor attitude/belief	173	(45.5)	21.4	93.0	175.17(3)***
Positive attitude/belief	207	(54.5)	78.6	7.0	

get HIV” ($\chi^2 = 284.69, p < 0.001$), and “people my age do not get HIV” ($\chi^2 = 175.17, p < 0.001$).

Research Questions and Tests of Hypotheses

To explore the perceptions, attitudes, beliefs, and behaviors of sub-Saharan African immigrants toward HIV testing and infection, two core research questions were addressed:

1. Do the perceptions, attitudes and beliefs of sub-Saharan African immigrants about HIV infection affect their decision to take an HIV test?
2. What are the factors that influence HIV testing among sub-Saharan African immigrants in Chicago?

In this study, several hypotheses were tested using a variety of analyses.

Hypothesis 1

Hypothesis 1 stated there is a relationship between HIV risk perception and HIV testing among sub-Saharan African immigrants in Chicago. To determine the relationship between HIV testing status and HIV risk perception (perceived HIV risk susceptibility), chi square testing was used. The chi square test assessed whether there is a relationship between HIV testing status and HIV risk perception. The chi square results in Table 12 show a significant difference in testing rates between those with high and low perceived HIV risk ($\chi^2 (1) = 334.71, p = .001$). This means that there were associations between HIV testing status of participants in the past 1 year and their HIV risk perception. Those who were tested in the last year had significantly higher perceived HIV risk susceptibility than

Table 12. Cross-tabulation for HIV Testing by HIV risk perception (perceived risk susceptibility)

Self-perceived risk		Tested for HIV in past year		
		No	Yes	Total
Low	<i>n</i>	345	6	251
	% within HIV risk perception	97.6%	2.4%	100%
	% of total	64.8%	1.6%	66.4%
High	<i>n</i>	4	123	127
	% within HIV risk perception	3.1%	96.9%	100%
	% of total	1.1%	32.5%	33.6%
Total	<i>N</i>	249	129	378
	% within HIV risk perception	65.8%	34.2%	100%
	% of total	65.8%	34.2%	100%

those not tested in the last year. In other words, there was a positive correlation between the level of HIV risk perception and receiving an HIV test within the past year.

Generally, the majority of the participants (65.8%) reported not having had an HIV test in the past 1 year, compared to (34.2%) who reported having an HIV test within the same time period. Similarly, a significant majority of participants (66.4%) more often perceived themselves to be at no or low risk than at moderate to high risk of getting HIV infection (33.6%). A large proportion of participants (96.9%) who perceived themselves at high risk for contracting HIV infection received an HIV test within the previous 1 year.

Only 3.1 % of those within this category (high HIV risk perception) reported no HIV testing within the past 1 year. Overall, the majority of the participants appeared to be claiming, or believing themselves to be, at no or low risk and not to have received an

HIV test within the past year. The low-risk perception and low testing status are statistically correlated ($\chi^2 = 334.71, p < 0.001$). Given this finding, the hypothesis of a relationship between HIV risk perception and HIV testing of sub-Saharan African immigrants in Chicago was supported.

Hypothesis 2

Hypothesis 2 stated that there is a relationship between engagement in HIV sexual risk behavior and HIV testing among sub-Saharan African immigrants in Chicago. To determine the relationship between HIV testing status and HIV sexual risk behavior, chi square test was used. The findings in Table 13 indicate that there was no association between the two variables. Participants' HIV testing status within the past 1 year is not significantly related to their risk behavior ($\chi^2 (1) = 1.80, p = .20$). Given these findings, the hypothesis of a relationship between HIV testing and HIV risk behavior of sub-Saharan African immigrants in Chicago was not supported.

Table 13. Cross tabulation for HIV testing by HIV risk behavior

HIV test in the last 1 year		HIV risk behavior		
		No	Yes	Total
No	<i>n</i>	87	171	258
	% within HIV Testing	33.7%	68.3%	100.0%
	% of Total	22.3%	43.7%	66.0%
Yes	<i>n</i>	38	97	133
	% within HIV testing	27.1%	72.9%	100.0%
	% of Total	9.2%	24.8%	34.0%
Total	<i>N</i>	123	268	391
	% within HIV testing	31.5%	68.5%	100.0%
	% of Total	31.5%	68.5%	100.0%

Hypothesis 3

Hypothesis 3 stated that there is a gender difference in the HIV testing rates of sub-Saharan African immigrants in Chicago. To determine the relationship between gender and HIV testing, a chi square test was used. The findings in Table 14 indicate that males and females were similar in terms of HIV testing ($\chi^2 (1) = .84, p = .39$). Given these findings, the hypothesis that there are gender differences in the HIV testing rates of sub-Saharan African immigrants in Chicago was not supported.

Table 14. Cross tabulation for gender by HIV testing

Gender		Tested for HIV in past year		
		No	Yes	Total
Male	<i>n</i>	130	61	191
	% within gender	68.1%	31.9%	100.0%
	% of total	33.5%	15.7%	49.2%
Female	<i>n</i>	125	72	198
	% within gender	63.6%	36.4%	100.0%
	% of total	32.4%	18.5%	50.9%
Total	<i>n</i>	256	133	389
	% within gender	65.8%	34.2%	100.0%
	% of total	65.8%	34.2%	100.0%

Hypothesis 4

Hypothesis 4 stated that there is a gender difference in the HIV risk perception of sub-Saharan African immigrants in Chicago. To test for a gender-based difference in HIV risk perception (perceived susceptibility), the chi square test was used. No significant difference in HIV risk perception by gender was found ($\chi^2 (1) = .40, p = .59$). Males and

females were found to be similar in terms of their level of perceived HIV risk susceptibility. The results are shown in Table 15. Based on these results, the hypothesis that there is a gender difference in the HIV risk perception of sub-Saharan African immigrants in Chicago was not supported.

Table 15. Cross tabulation for gender by HIV risk perception

Gender		HIV risk perception (perceived risk susceptibility)		
		No	Yes	Total
Male	<i>n</i>	125	61	186
	% within Gender	67.2%	32.8%	100%
	% of Total	32.8%	16.0%	48.8%
Female	<i>n</i>	125	70	195
	% within Gender	64.1%	35.9%	100%
	% of Total	32.8%	18.4%	51.2%
Total	<i>n</i>	256	131	381
	% within Gender	65.8%	34.2%	100%
	% of Total	65.8%	34.4%	100%

Hypothesis 5

Hypothesis 5 stated that there is a gender difference in HIV risk behavior among sub-Saharan African immigrants in Chicago. To test this hypothesis, a chi square test was also used. The chi square model assessed the relationship between gender and HIV sexual risk behavior and found significant differences in HIV sexual risk behavior by gender ($\chi^2(1) = 4.82, p = .028$). The chi square results show that sub-Saharan Africa males and females in this sample were different in terms of their HIV sexual risk behavior. More

males than females reported engaging in HIV risk behaviors. Based on these results, the hypothesis that there is a gender difference in the HIV risk behaviors of sub-Saharan African immigrants in Chicago was supported.

Table 16. Cross tabulation for gender by HIV risk behavior

Gender		HIV risk perception		
		No	Yes	Total
Male	<i>n</i>	50	142	192
	% within Gender	26.0%	74.0%	100%
	% of Total	12.7%	36.1%	48.9%
Female	<i>n</i>	73	128	201
	% within Gender	36.3%	63.7%	100%
	% of Total	18.6%	32.6%	51.1%
Total	<i>n</i>	123	270	393
	% within Gender	31.3%	68.7%	100%
	% of Total	31.3%	68.7%	100%

Hypothesis 6

Hypothesis 6 stated that there is a difference in HIV risk perception among different groups of sub-Saharan African immigrants in Chicago. The chi square model was used to examine the relationship between region of African origin and HIV risk perception. Results indicated no significant differences in HIV risk perception by region ($\chi^2 (3) = 2.4, p = .49$). The chi square result can be found in Table 17. The results did not support the hypothesis that there is a difference in HIV risk perception among different groups of sub-Saharan African immigrants in Chicago (as measured by region).

Table 17. Cross tabulation for region by HIV risk perception

Region		HIV risk perception		
		No	Yes	Total
Western	<i>n</i>	85	53	138
	% within region	61.6%	38.1%	100%
	% of total	22.3%	13.9%	36.1%
Central	<i>n</i>	66	29	95
	% within region	69.5%	30.5%	100.0%
	% of total	17.3%	7.6%	24.9%
Eastern	<i>n</i>	62	27	89
	% within region	69.7%	30.3%	100.0%
	% of total	16.2%	7.1%	23.3%
Southern	<i>n</i>	38	22	60
	% within region	63.3%	36.7%	100.0%
	% of total	9.9%	5.8%	15.7%
Total	<i>N</i>	251	131	382
	% within region	65.7%	34.3%	100.0%
	% of total	65.7%	34.3%	100.0%

Hypothesis 7

Hypothesis 7 stated that there is a difference in HIV risk behaviors among different groups of sub-Saharan African immigrants in Chicago as defined by region of origin. To determine the relationship between sub-Saharan African immigrants' region of origin and HIV sexual risk behavior, the chi square test was used. The chi square test revealed significant differences in HIV sexual risk behavior by sub-Saharan African immigrant region ($\chi^2 (3) = 13.01, p = .005$). The distributions can be found in Table 18.

Table 18. Cross-tabulation for region by HIV risk behavior

Region		HIV risk perception		
		No	Yes	Total
Western	<i>n</i>	42	103	145
	% within region	29.0.6%	71.0%	100%
	% of total	10.6%	26.1%	36.7%
Central	<i>n</i>	19	78	97
	% within region	19.6%	80.4%	100%
	% of total	4.8%	19.7%	24.6%
Eastern	<i>n</i>	39	53	92
	% within region	42.4%	57.6%	100%
	% of total	9.9%	13.4%	23.3%
Southern	<i>n</i>	23	38	61
	% within region	37.7%	62.3%	100%
	% of total	5.8%	9.6%	15.4%
Total	<i>N</i>	123	272	395
	% within region	31.1%	68.9%	100%
	% of total	31.1%	68.9%	100%

The hypothesis, that there is a difference in the HIV risk behaviors of sub-Saharan African immigrants in Chicago by region was supported.

Approximately 69% of study participants reported having risky behaviors. Of those reporting risky behaviors, 47.4% had no health insurance, 41.1% had not had a physical health examination in more than 1 year, 25.5% had not seen a health care provider within the past 12 months, and 55.1% reported that they were not offered an HIV test during their last visit with a health care provider. Additional analysis revealed that approximately 68% of those with risky sexual behaviors have never been tested and

almost 64% of those engaging in risky behaviors perceived themselves to be at low risk for HIV.

Additional analyses were conducted using ANOVA to examine the relationship between sub-Saharan African immigrant region and percentage of condom use with a casual partner. Condom use with a casual sex partner was used to exclude condom use or nonuse by a married couple or cohabiting partners. The ANOVA revealed there were significant differences in percentage of condom use with casual partner by sub-Saharan African immigrant region ($F(3, 201) = 6.62, p = .001$). Tukey post hoc tests were used to determine the nature of this difference. Immigrants from the western region ($M = 70.51$) used a condom with their casual partner significantly more than those from the central region ($M = 53.63$). Those from the southern region ($M = 86.27$) used a condom with their casual partner significantly more than those from the central region ($M = 53.63$). Immigrants from the eastern region ($M = 72.31$) used a condom with their casual partner significantly more than those from the central region ($M = 53.63$). The descriptive statistics for the groups are presented in Table 19, and the ANOVA statistics can be found in Table 20. Figure 6 shows a graphic representation of these differences. There were statistically significant regional differences in both the percentage of condom use with a casual sex partner and HIV risk behavior. Therefore, the hypothesis that there is a difference in HIV risk behaviors among different groups of sub-Saharan African immigrants in Chicago was supported.

Table 19. Descriptive statistics: percentage time of condom use with casual partner by sub-Saharan African region

Region	<i>N</i>	<i>M</i>	<i>SD</i>	Std. error	95% confidence interval		Minimum	Maximum
					Lower	Upper		
Western	74	70.51	29.79	3.46	63.61	77.42	0	100
Central	56	53.63	39.27	5.24	43.11	64.14	0	100
Eastern	49	72.31	33.22	4.74	62.76	81.85	0	100
Southern	26	86.27	25.35	4.97	76.03	96.51	10	100
Total	205	68.33	34.31	2.39	63.60	73.05	0	100

Table 20. ANOVA: percentage time of condom use with casual partner by sub-Saharan African region

	Sum of Squares	<i>df</i>	Mean square	<i>F</i>	Sig.
Between groups	21603.96	3	7211.45	6162	.001
Within groups	218659.13	201	1027.95		
Total	240263.10	204			

Hypothesis 8

Hypothesis 8 stated there is a difference in HIV testing among different groups of sub-Saharan African immigrants in Chicago (i.e., by region). To determine the relationship between region and HIV testing, a chi square model was used. The findings in Table 21 indicate that regions were similar in terms of HIV testing ($\chi^2(3) = 3.05, p = .38$). Given these findings, the hypothesis of regional differences in the HIV testing rates of sub-Saharan African immigrants in Chicago was not supported.

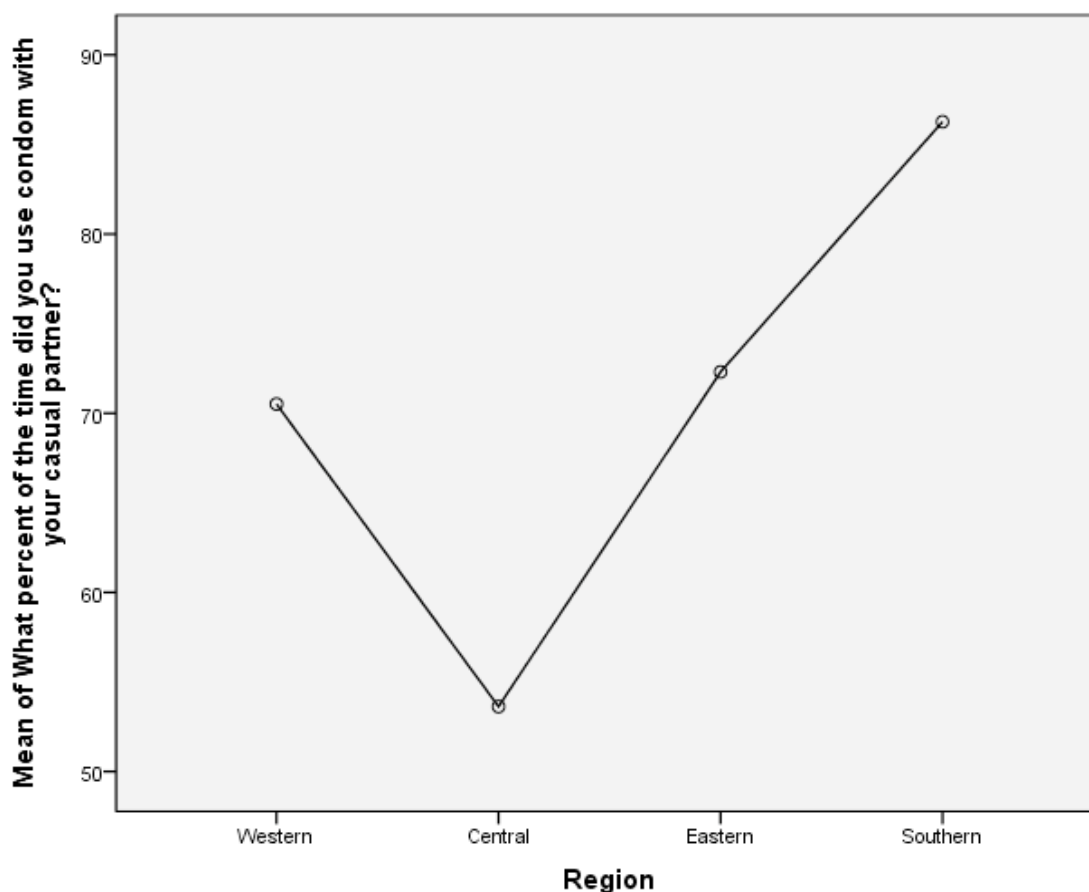


Figure 5. Mean plots.

Regression Analysis for Hypothesis 9

Logistic regression analyses were used to examine multivariate relationships for HIV testing. The dependent variable for this analysis was HIV testing status, which is a categorical variable. Therefore, binary logistic regression was used. The logistic regression model examined the question, To what extent does the HIV risk perception of African immigrants predict their HIV testing, decision to test for HIV, or future intention to test for HIV? The findings of the logistic regression are summarized in Table 22. The

Table 21. Cross tabulation for HIV testing by region

Region		HIV risk perception		Total
		No	Yes	
Western	<i>n</i>	87	56	143
	% within region	60.8%	39.2%	100.0%
	% of total	22.3%	14.3%	36.6%
Central	<i>n</i>	65	31	96
	% within region	67.7%	32.3%	100.0%
	% of total	16.6%	7.9%	24.6%
Eastern	<i>n</i>	65	26	91
	% within region	71.4%	28.6%	100.0%
	% of total	16.6%	6.6%	23.3%
Southern	<i>n</i>	41	20	61
	% within region	67.2%	32.8%	100.0%
	% of total	10.5%	5.1%	15.6%
Total	<i>N</i>	258	133	391
	% within region	66.0%	34.0%	100.0%
	% of total	66.0%	34.0%	100.0%

unstandardized coefficients, their respective standard errors, the Wald statistic, and the odds ratios of the predictors are included in the table.

Percentage Distribution and Adjusted Odd Ratios of HIV Testing Status of Participants in the Past 1 Year and Selected Sociodemographic Variables

The findings in Table 22 show that only perceived susceptibility significantly predicted HIV testing ($OR = .001, p = .001$). Participants with low risk perception were significantly less likely to report having an HIV test in the last 1 year than those with high HIV risk perception. None of the other variables (employment status, level of

Table 22. Selected demographic characteristics

Characteristic	Total N (%)	Had HIV test in past 1 year AOR (95% CL)
HIV risk perception		
High	127 (33.6)	1.00(referent)
No/low	251 (66.4)	.01(.001–.004)***
Employment status		
Employed	291 (77.2)	1.00 (referent)
Unemployed	86 (22.8)	.35 (0.76–1.64)
Highest level of education		
≤ High school	66 (17.2)	1.00 (referent)
Some college	138 (35.9)	1.97 (.31–12.14)
College degree and above	180 (46.9)	2.62 (0.56–12.18)
Last physical exam		
≤ 1 year ago	226 (58.2)	1.00 (referent)
> 1 year ago or never	162 (41.8)	0.23 (0.4–1.34)
Seen health care provider in past 12 months		
No	94 (24.4)	1.00 (referent)
Yes	292 (75.6)	1.91 (.27–13.29)
Offered an HIV test		
Yes	157 (41.1)	1.00 (referent)
No	225 (58.9)	.52 (.120–2.19)
Future intentions for HIV test		
Somewhat/very likely	253 (65.7)	1.00 (referent)
Somewhat/very unlikely	132 (34.3)	.29 (.059–1.39)
Ever tested for HIV		
Yes	290 (74.4)	1.00 (referent)
No	100 (25.6)	.22 (.030–1.48)

Note. χ (df) = Chi-square (degree of freedom)

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

education, physical examination status, having seen a health care provider in the past 12 months, having been offered an HIV test, and ever having been tested for HIV) in the model predicted having an HIV test in the past 1 year. Given the results, the hypothesis that HIV risk perception of African immigrants predicts their HIV testing was supported.

Regression Analysis for Hypothesis 10

Testing of Hypothesis 10 required examining the extent to which HIV risk perceptions of African immigrants predicted intentions for future HIV testing. Results of the binary logistic regression on future intentions for HIV (see Table 23) showed that the strongest independent predictors of future intentions for HIV test were HIV risk behavior (OR = .57; .33–1.0) and marital status, (OR = . 2.32; 1.15–4.67). Compared to married participants, participants with marital status categorized as other (separated, divorced, or widowed) were significantly more likely to indicate having intentions of testing for HIV in the future. Similarly, participants with no risk behaviors were significantly less likely to indicate future HIV testing intentions when compared to those with high-risk behaviors.

Percentage Distribution and Adjusted Odd Ratios of Participants' Future

Intentions and Selected Sociodemographic Variables

Age, physical examination status, having seen a health provider in the past 12 months, having been offered an HIV test, having ever been tested for HIV, HIV risk perception, and HIV testing in the past 1 year, were not associated with HIV future testing intentions.

Table 23. Selected demographic characteristics

Characteristic	Total N (%)	Future HIV testing intentions AOR (95% CL)
Age		
18–24	71 (18.3)	1.00 (referent)
25–29	71 (18.3)	.65 (.23–1.8)
30–39	111 (28.5)	1.82 (.66–4.98)
40–49	85 (21.9)	2.21 (0.95–5.13)
50 and above	51 (13.1)	1.14 (0.48–2.68)
Religion		
None	51 (13.2)	1.00 (referent)
Christians	334 (86.8)	.55 (0.26–1.13)
Marital status		
Married	173 (46.0)	1.00 (referent)
Other	51 (13.6)	2.32 (1.15–4.68)**
Never married	152 (40.4)	1.23 (.57–2.67)
HIV risk behavior		
Risky behavior	269 (69.2)	1.00 (referent)
No risky behavior	120 (30.8)	.57 (.33–1.0)*
Ever test for HIV		
No	98 (25.3)	1.00 (referent)
Yes	289 (74.7)	.68 (.37–1.25)
HIV test past 1 year		
No	253 (65.7)	1.00 (referent)
Yes	132 (34.3)	.36 (.75–1.76)
Seen health care provider in past 12 months		
No	95 (24.8)	1.00 (referent)
Yes	288(75.2)	.59 (.3–1.18)
Offered HIV test		
No	225 (59.4)	1.00 (referent)
Yes	154 (40.6)	.81 (.46–1.43)
HIV risk perception		
No	246 (65.4)	1.00 (referent)
Yes	130 (34.6)	.98 (.2–4.72)
Last physical examination		
Never or >1 year	165 (42.7)	1.00(Referent)
1 year ago or less	221 (57.3)	.99 (.5 – 1.6)

Note. χ (df) = Chi-square (degree of freedom)

* $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$.

Given the results, the hypothesis that HIV risk perception of African immigrants predicts their future HIV testing intentions was not supported. The outcomes of the researcher's hypotheses are summarized in Table 24.

Table 23. Summary of hypotheses

Hypothesis	Outcome
1. There is a relationship between HIV risk perception and HIV testing among sub-Saharan African immigrants in Chicago.	Supported
2. There is a relationship between engagement in HIV sexual risk behavior and HIV testing among sub-Saharan African immigrants in Chicago.	Not supported
3. There is a gender difference in the HIV testing rates of sub-Saharan African immigrants in Chicago,	Not supported
4. There is a gender difference in the HIV risk perception of sub-Saharan African immigrants in Chicago.	Not supported
5. There is a gender difference in HIV risk behavior among sub-Saharan African immigrants in Chicago.	Supported
6. There is a difference in HIV risk perception among different groups of sub-Saharan African immigrants in Chicago by region of origin.	Not supported
7. There is a difference in HIV risk behaviors among different groups of sub-Saharan African immigrants in Chicago based on region of origin.	Supported
8. There is a difference in HIV testing among different groups of sub-Saharan African immigrants in Chicago by region of origin.	Not supported
9. HIV risk perceptions of African immigrants predict their past HIV testing.	Supported
10. HIV risk perceptions of African immigrants predict their future intentions to test for HIV.	Not supported

CHAPTER FIVE

DISCUSSION OF RESULTS

This chapter discusses the implications of the findings and offers recommendations to help address some of the issues affecting sub-Saharan African immigrants' testing patterns and health-seeking behaviors. This study, which examined the HIV testing patterns and behaviors of sub-Saharan African immigrants living in Chicago, sought to identify the factors that influenced HIV testing in the past 1 year, as well as those that might influence future HIV testing intentions, and the perceived barriers to HIV testing among this group of immigrants.

The findings are discussed under three main categories. Findings in the first section related to the sociodemographic and sexuality features of different groups of sub-Saharan African-born immigrants living in Chicago. Findings in the second section, attitudes and behaviors of sub-Saharan African immigrants toward HIV and HIV testing, related to the first research question, Do the perceptions, attitudes, and beliefs of sub-Saharan African immigrants about HIV infection affect their decision to take an HIV test? Findings in the third section, perceived barriers to and factors influencing HIV testing among sub-Saharan African immigrants in Chicago, related to the second research question, What are the factors that influence HIV testing among sub-Saharan African immigrants in Chicago?

Researchers observed an increase in HIV diagnosis among foreign-born Africans (Akinsete, Sides et al. 2007; Kent, 2005). As mentioned earlier, many foreign-born Africans are only diagnosed at a late stage of the infection after developing symptoms suggestive of AIDS (Minnesota Health Department, 2010; Page et al., 2009; Satcher et al., 2010). Late diagnosis is a reflection of late testing, which can occur for a wide variety of reasons, as discussed earlier. Late testing with late diagnosis can interfere in successful treatment. The concern for the health of this community, and the need to understand the factors involved in the HIV testing within this community, stimulated this study.

Sociodemographic Characteristics

The African-born population in the United States has been increasing, accounting for about 33% of all foreign-born Blacks in the United States and 3.8% of all immigrants in the United States (U.S. Census Bureau, 2010). Recent estimates have put the number of African-born persons living in Chicago at 20,826 (U.S. Census Bureau, 2010). The descriptive profile of the participants in this study supplements the limited data regarding the African immigrant population of Chicago. Because this study included nearly 400 individuals from a total African immigrant population of approximately 20,000, this study may be considered generalizable with certain limitations.

More than one-third (36.5%) of the study population was between 18 and 29 years of age. A slightly smaller proportion (29.3%) was between 30 and 39 years. Of the remainder, 21.6% were between 40 and 49, and only 13% were age 50 or above. A similar proportion of females (51.1%) and males (48.9%) participated in the survey. This

suggested that African women in Chicago were participating in social and community events that some informants said used to be the exclusive arena of men.

The religious affiliations of the survey participants were similar to those recorded for African immigrants and refugees in Illinois. (UAO, 2009a.). Christianity was the dominant religion among respondents (87%), with Islam a distant second at 5.6%. Those who declared Hinduism as their religion made up 0.4% of the sample, and those who declared no religion constituted 4.8%. There were slightly more married participants (46.3%) than participants who had never been married (40.5%).

Participants were from southern, eastern, western, or central regions of Africa. They came from 22 countries in Africa. Participants spoke 60 different languages or dialects and were of 65 different ethnicities or tribal groups. Because of the stratified sampling technique used in the study, this diversity was considered representative of the sub-Saharan African immigrant population in Chicago.

About one-quarter (26.7%) of the participants were homeowners and more than half (56.7%) rented a home or apartment. The remaining respondents either lived with family or friends (15.8%) or were homeless (0.8%). Approximately four-fifths (78%) of participants in the present study were employed, and almost half reported having a college degree or above. Yet, about 30.2% were living in poverty. More men than women were found to be below the poverty line.

All these factors need to be considered when understanding access to health care. As Bhattacharya (2004) observed, people with low income may have limited or no resources to expend on health care needs due to immediate survival concerns such as rent

and food. In other words, basic survival may take priority over addressing health problems. According to data from the 2009 American Community Survey (CDPH, 2011c), 21.6% of Chicago residents lived below the poverty line, a much lower percentage than found in the study sample. Studies linked poverty to AIDS and HIV (CDPH, 2011c; Peterman et al., 2005).

Many study participants (43.8%) reported having no health insurance coverage. Likewise many (42.1%) had not had a physical health examination for more than 1 year. According to the CDC (2010a), adults without regular health insurance were more likely to skip medical care due to cost concerns. This can lead to poor health and increased long-term health care costs, as well as early death. HIV testing would be similarly affected by this lack of health care or a regular health care provider.

The average length of stay of participants in the United States was 9.16 years. Many participants were new immigrants with almost half (46.8%) reporting living in the United States for 5 years or less. A lack of knowledge of health resources, including available local HIV testing resources, may contribute to delaying HIV testing.

The immigrants in this study, despite their strong connections to the United States, traveled to Africa and had connections with their home countries. More than three-fifths (60.5%) reported traveling to Africa. The survey did not inquire specifically about sexual contacts during trips to Africa; this line of inquiry should be explored in light of the prevalence of HIV in sub-Saharan Africa.

Attitudes and Behaviors of Sub-Saharan African Immigrants Toward

HIV and HIV Testing

Despite diverse sociodemographic and health-related features, sub-Saharan African immigrants have broad commonalities in behavior patterns, cultural values, and worldview, especially with respect to their shared immigration experience in the United States. The present study sought to identify factors that influenced HIV testing in the past 1 year and those that may influence future HIV testing intentions.

Overall, this study found that participants were mostly heterosexual, with 95.3% reporting engaging in heterosexual relationship. Satcher et al. (2010) found similar heterosexual relationship patterns among foreign-born Blacks in the United States. The majority of the participants were sexually active, with more than three-fourths (77.4%) reporting having had sex within the 6 months prior to the survey administration. Similarly, the majority of the participants reported having multiple sex partners and engaging in unprotected sex. The mean number of sex partners was 2.11 and the average condom use with casual partners was 68.3%. The HIV prevalence among study participants who responded to the item on the result of their last HIV test was 4.0%. This prevalence was almost 4 times the prevalence (1.2%) reported for low-socioeconomic status heterosexuals in Chicago (CDPH, 2011c).

Risk Perception, Risk Behavior, Recent HIV Testing, and Related Factors

Sub-Saharan Africa has a very high prevalence of HIV/AIDS, and it may be assumed that African immigrants are cognizant of the devastating impact of the epidemic in Africa. However, many study participants did not recognize their own risk factors.

About 68% of those with risky sexual behaviors had never been tested, and approximately 64% of those engaging in risky behaviors perceived themselves to be at no or low risk for HIV.

The study found a relationship between HIV risk perception and HIV testing in the past 1 year. Participants with low risk perception were significantly less likely to report having had an HIV test in the last 1 year than those with high HIV risk perception. Similar findings have been reported by Cunningham et al. (2009), Lapidus et al. (2006), Mugavero et al. (2007), and Ostermann et al. (2007). Sub-Saharan African immigrants tend to perceive themselves to be at low risk for HIV infection, despite rather high rates of risk behavior. Three-fifths (60%) of participants reported that they did not get tested for HIV in the past 1 year because it was unlikely that they had been exposed to HIV. This reason endured despite the fact that about 68% of the study participants reported engaging in one or more risky behaviors and despite the low mean percentage condom use with main and casual sexual partners—29.58% and 68.33%, respectively. In other words, they reported taking risks but not feeling that they were at risk.

A more detailed study of their beliefs about risk would be instructive for public health promotion work, social work program design, and individual counseling. Considering the rate of infection among African immigrants as described by Kent (2005) and Akinsete, Sides et al. (2007), and the awareness of the epidemic in Africa, it is surprising that African immigrants would seem to be in a high level of denial about their own risk factors. Low levels of risk perception were found in all groups.

The study did not find any significant differences in the HIV testing rates of immigrants from different regions of sub-Saharan Africa within the past 1 year; yet regional differences were found in the degree of risky behavior. Participants from western, central, eastern, and southern regions reported similar HIV testing rates within the past 1 year. This needs to be further investigated especially as other researchers have found differences in HIV testing behavior based on region of origin (Lopez-Quintero et al., 2005; MacPhail, Pettifor, Mayo, & Rees, 2009).

However, other significant differences in the participants' patterns of HIV testing in the past 1 year were found. For example, employment status and level of education were found to have a relationship to testing within the past year. Seventy-one percent of those who were employed reported having an HIV test within the past 1 year, whereas only 28.9% of those who were unemployed indicated having an HIV test within this same time frame. This difference maybe at least partially explained by the enhanced access to health care services and increased health care utilization for those whose employers provided health insurance. It may also be partially attributable to requirements of the employment. Other factors that affect individuals' likeliness to be employed also may affect their likeliness to have access to health care, such as length of time since immigration or level of education.

Access to health insurance may reduce many structural and informational barriers to health care access and promote the possibility of visiting a health care provider, which has been found to be associated with HIV testing within the past 1 year (MacPhail et al., 2009). Other studies (Castillo, Sobrino, & de la Fuente, 2002; Manavi, 2004; Schwarcecz

et al., 2006) have found an association between lack of health insurance and an increased likelihood of late HIV testing or delayed HIV diagnosis, a phenomenon noted among African immigrants (Minnesota Health Department 2010; Page et al., 2009; Satcher et al., 2010).

In the present study, 4 out of every 5 participants with some college education or a college degree or above reported having had an HIV test within the past 1 year. These findings were consistent with those of other studies (Ebrahim et al., 2006; Inugu, 2002; Lopez-Quintero et al., 2005; Rountree et al., 2009) in finding an association between level of education and HIV testing within the previous year. In light of the high level of education found in the study population, this finding is encouraging with regard to the potential for increasing testing rates in the future.

In contrast, no association between gender or age and HIV testing was found in this study, whereas other research uncovered an association (Ebrahim et al., 2006; Inugu, 2002; Lerkas, Schrimshaw, & Siegel 2005; Lopez-Quintero et al., 2005; Nguyen et al., 2006; Opt & Loffredo, 2004; Rountree et al 2009). In this study, males and females were similar in terms of their HIV testing status within the past 1 year (32% vs. 36%, respectively). Some researchers have found women who were not pregnant to be nearly three times as likely to never have been tested for HIV as pregnant women (Lopez-Quintero et al., 2005). It is possible that the female study participants had not been pregnant during the past 1 year and therefore did not benefit from the prenatal screening protocols that encourage routine antenatal testing. Similarly, the age of the study participants did not affect their HIV testing within the past year, as had been found by

other researchers (Lerkas et al., 2005; Nguyen et al., 2006; Opt & Loffredo, 2004; Rountree et al., 2009; Takashashi et al., 2005). This is an unexpected finding meriting additional investigation.

Health Care Utilization and Access

Alongside other studies (Lopez-Quintero et al., 2005; Petroll et al., 2008), the present study found a significant association between physical examination status and previous HIV testing, and between having seen a health care provider in the past 12 months and previous HIV testing. Having been offered an HIV test during the last visit to a provider (without reference to how long ago) was also associated with having had an HIV test in the past year. Sixty-six percent of participants who were offered an HIV test during the last visit with their provider reported having had an HIV test within the past year. This observation was similar to the findings of other studies (Laddicoat et al., 2004; Petroll et al., 2008; White, Warren, Scribner, & Frazee et al., 2009), in which associations were found between being offered an HIV test by a physician and actually having an HIV test. Fortenberry et al. (2002) also found the use of health services to be associated with HIV testing.

Of those who had never been tested for HIV, 34.4% denied having been offered an HIV test during their last visit to a health care provider. This represented a missed opportunity for HIV testing. The CDC (2006b) recommended that health care providers offer HIV screening to all persons who have never been tested for HIV and refer all at-risk persons who test negative to risk-reduction services. Yet, apparently this is not

happening. In light of the findings that having been offered an HIV test correlates with having been tested, this finding suggests a structural barrier or failure.

Testing Behavior, Risk Behavior, and Attitudes

In terms of ever having ever been tested for HIV, 74.7% reported having been tested for HIV at some time. By comparison, the CDC (2010a) reported that the percentage of persons in the United States aged 18–64 who had ever tested for HIV in 2009 was 45% and that 55% of adults had never been tested. The high testing rate among study participants may be related to several factors: (a) the high level of education of African immigrants in general, and of this population specifically; (b) the impact of immigration requirements and perceived immigration requirements, and (c) the rates of HIV/AIDS in their home countries. Still, this rate cannot be considered high in light of the degree of risk behavior identified.

Future HIV testing intentions and having ever tested for HIV were associated with HIV testing in the past 1 year. About 4 in every 5 participants (82.6%) who indicated that they were somewhat likely or very likely to have an HIV test within 1 year of study participation, had been tested within the past 1 year. Interestingly, the vast majority (92.5%) of those who reported ever having been tested for HIV also reported having been tested within the past 1 year. In this study, 74.7% had ever been tested for HIV at some time and about 34% had been tested in the past 1 year. Of those who had never been tested for HIV (25.3%), about 30% expressed no future HIV testing intentions. In light of the correlation between low risk perception and low testing rates, as noted above, it is not

surprising that those who have not been tested would not intend to be tested. This is the very challenge that needs to be addressed.

As mentioned, no association between HIV risk behavior and HIV testing was found, although other researchers have found this association. (Lapidus et al., 2006; Lopez-Quintero et al., 2005; Maguen et al., 2000). Chi-square analysis conducted to examine the relationship between HIV risk behavior and HIV testing found that participants' HIV risk behavior was not associated with their HIV testing status within the past one year. This may be related to the finding that this group of sub-Saharan African immigrants did not perceive themselves to be at risk despite engaging in risky behaviors and despite an assumption that they would have been aware of HIV risk issues in their home countries. The need for additional information regarding their perception of low risk is evident because perceived risk was found to correlate with testing behavior (see above.)

Examination of participants' HIV risk behavior by gender revealed a gender difference in HIV risk behavior, with men being significantly more likely to engage in risky behaviors than women. Other researchers found similar gender differences in HIV risk behavior (Abiona, Adefuye, Balogun, & Sloan, 2009; Lapidus et al., 2006; Li et al., 2004). This finding merits further investigation with specific reference to African immigrants in the United States.

While no regionally based differences in perceived risk were found, the level of risk behavior differed by region of origin and by gender. Adefuye et al. (2012) and Kretzschmar et al. (2008) found differences in HIV risk behavior based on region. In the

present study, ANOVA results showed that immigrants from the western, eastern, and southern regions of sub-Saharan Africa used condoms with their casual sex partners significantly more than those from the central region. The southern region recorded the highest prevalence of HIV/AIDS and the most devastating impact from HIV/AIDS; it may be that this leads immigrants from that region to have more awareness of the realities of transmission of the HIV infection and its potential impact on whole communities, and that this awareness influences them to reduce their risk behaviors and increase their risk reduction behaviors. More information would be needed regarding the level of condom promotion in each of the home countries in order to learn if prior experience with risk prevention education also had an impact on preventive behavior. Surprisingly, as mentioned elsewhere, no differences by region were found in this study regarding measured levels of risk perception or perceived HIV risk susceptibility, despite difference in preventive action. Other researchers (Adefuye et al., 2012; Mgbere, 2012) have found differences in HIV risk perceptions based on region. Further study would be needed to elucidate these findings.

The study also revealed a significant association between participants' attitudes and beliefs about HIV infection and their HIV testing in the past 1 year. Other researchers (including Genberg et al., 2009) found an association between negative attitude toward people living with HIV and not having been tested for HIV. Genberg et al. (2009) also found that people who have never discussed HIV/AIDS with anyone were more likely to have a more negative attitude about people living with HIV. Other studies conducted on African immigrants in the United States (Beyene, 2000; Mitha et al., 2009; Rosenthal et

al., 2003) found a difference in understanding of HIV infection on the part of African immigrants when compared with the general population and also reported that African immigrants held HIV beliefs and attitudes similar to those reported in their native countries.

Perceived Barriers to and Factors Influencing HIV Testing

In this study, the majority of respondents stated that African immigrants do not get tested because they do not think they are at risk for HIV. Other remarkable barriers they identified include fear of negative consequences, shame and stigma, cost or limited time and resources, ignorance about HIV or lack of knowledge of testing sites, immigration considerations, cultural norms, perceived mutual monogamy, confidentiality issues, and other HIV testing logistics including insensitivity of health care providers. Other research has generated similar findings (Weiser et al., 2006). A study conducted among truck drivers crossing southern borders in Brazil found that less stigma was significantly associated with higher rates of HIV testing, willingness to disclose positive HIV test results, and knowing where to get tested (Pulverwitz, Lippman, Chinaglia, & Diaz, 2008).

There is widespread concern that HIV-related stigma is a major barrier to HIV testing and treatment in sub-Saharan contexts (Botswana National Strategy, 2004; Kalichman & Simbayi, 2003). A study conducted in Dar es Salaam, Tanzania, on women's barriers to HIV testing (Maman, Mbwapo, Hogan, Kilonza, & Sweat, 2001) identified individual, relational, and environmental factors that affect HIV testing and status disclosure. In their study, among the individual factors, perception of personal risk

/ susceptibility to HIV infection was the main factor affecting HIV testing, followed by perceived benefit of HIV testing. Other factors included decision making and communication patterns between partners, fear of partners' reaction, and partners' attitudes toward HIV testing. Fear of partner reaction was the most cited relational barrier to HIV testing by study participants.

Fakoya et al. (2008) explored the barriers to HIV testing among sub-Saharan African immigrants. The study found that fear of stigma and discrimination in the community, fear of death and disease, and access to testing and care constituted barriers to HIV testing among their study participants. In addition, restrictive immigration policies, lack of political will, and the lack of African representation in decision making processes, also prevented Africans from getting tested for HIV in their study. Each of these factors has been identified in the current study.

Stigma and the barriers identified in the present study may be congruent with other studies that used different terminology. For example, "fear of the consequences" and "cultural norms," terms from the present study, might be synonymous with responses in other studies such as "fear of illness" and "communication patterns with spouses." Exactly how concepts about barriers are articulated and interact within different populations invite future research.

Analyzing Impact of Factors Under Consideration as Barriers

Binary regression analysis was conducted to examine the extent to which employment, level of education, having seen a health care provider in the past 12 months, having been offered an HIV test during the last visit to a provider, future HIV testing

intentions, having ever been tested for HIV, and HIV risk perception were predictive of HIV testing in the past year. Results revealed that only HIV risk perception significantly predicted HIV testing within the past 1 year. Participants with low risk perception were significantly less likely to report having an HIV test in the last 1 year than those with high HIV risk perception. This finding has important implications, suggesting that programs to increase awareness of risk might influence decisions to be tested. A study conducted on Latino immigrant populations in the United States found HIV testing to be associated with level of risk perception (Sena et al., 2010). Other studies conducted in the United States found similar association between level of risk perception and past HIV testing (Cunningham et al., 2009; Lapidus et al., 2006; Lopez-Quintero et al., 2005; Mugavero et al., 2007; Ostermann, 2007; Takahashi et al., 2005). Studies conducted in Europe on immigrants and HIV testing also showed that level of risk perception predicts HIV testing (Campbell & Bernhardt 2003; Fenton et al., 2002; Mounier-Jack, Adler, & Coker, 2008).

Unlike the situation with testing within the prior year, future HIV testing intentions were found through bivariate analysis to be influenced by many factors: religion, marital status, age, physical examination status, having seen a health provider in the past 12 months, having been offered an HIV test, HIV risk behavior, having had an HIV test in the past 1 year; having ever tested for HIV; and HIV risk perception. However, binary logistic regression revealed that HIV risk behavior and marital status were the strongest independent predictors of future testing intention for HIV. Compared to married participants, participants with marital status categorized as other (i.e.,

separated, divorced, or widowed) were significantly more likely to indicate having intentions to test for HIV in the future. This may suggest a cultural assumption of monogamy or other features of marital relationships. Participants with no reported risk behavior were significantly less likely to indicate future HIV testing intentions when compared to those with high-risk behaviors. These findings of association between HIV risk behavior, marital status, and future HIV testing intention need to be further investigated. Other researchers have also found risk behavior and marital status to be associated with future HIV testing intentions (Lopez-Quintero et al., 2005).

The majority of participants (82%) who had been tested for HIV were tested involuntarily or under pressure. Very few (18%) voluntarily sought HIV testing in the form of a routine test (4.9%) or out of concern that they might have been infected with HIV (13.1%). The rest (82%) were considered to have been tested involuntarily due to recommendation by a sex partner (10.4%), recommendation by a health care provider (16.8%), immigration requirements (20.1%), pregnancy (14.1%), hospital or surgical procedure requirements (10.1%), or insurance or job-related reasons (10.5%). The most common reason cited was immigration purposes (20.1%), followed by pregnancy (14.1%). About 13% of participants who had been tested reported having been tested because of concerns about possible exposure to HIV. While this qualifies as a voluntary decision, it could equally be considered “pressure.”

Private doctor’s office / HMO (30.3%) and hospital inpatient, outpatient, or emergency room facility (23.9%) were the most commonly cited places of last HIV test. Community health clinic or public health clinic (13.5%), STI clinic (8.1%), family

planning clinic (5.5%), and tuberculosis clinic (1.6%) were also reported as places of last HIV test.

Of participants, 59.9% stated that they did not get tested for HIV because it is unlikely they had been exposed to the virus, whereas 9.4% of participants cited being afraid to find out about their HIV status as the reason for not testing in the past 1 year. About 4% did not trust the confidentiality of the results or worried that their name would be reported to the government. The same proportion of participants also reported being afraid of losing jobs, housing, insurance, friends, family, or significant relationships. These findings suggested that HIV is still a stigmatized disease. The frequent founding of denial of risk may be partially a result of the stigma associated with HIV infection. Approximately 11% of participants reported that they did not get tested because they did not know where to get tested. This is not surprising given the fact that about 46% of the study population comprised recent immigrants, who may lack access to information on available testing resources.

This study is a formative research endeavor that fills a void in the literature by exploring the sociodemographic characteristics of a representative segment of sub-Saharan African immigrants in Chicago. It explored in depth the HIV testing patterns, future HIV testing intentions, and the perceived barriers to HIV testing of this hard-to-reach immigrant community, which has been under-studied in terms of HIV/AIDS-related research despite its unique HIV/AIDS epidemiological and clinical features. As such, it has the potential to inform efforts by the provider and public health communities

to increase the acceptability of and participation in HIV testing among sub-Saharan Africa immigrants and possibly other groups of recently arrived immigrants.

Limitations of the Study

Despite its important findings, this study is subject to some limitations. The study was based on self-report of sexual and HIV testing behavior, and it is difficult to assess whether truthfulness and recall might have been issues, although every effort was made to assess and to minimize these risks by asking the respondents to rate the truthfulness of their responses to the study questionnaire and by limiting the recall period. Moreover, generalizability of the study was limited by the study's design and scope. Although probability sampling was used to select participating African countries and civic and professional associations, nonprobability convenience sampling was used to select individual participants. Therefore, there exists the possibility that the study participants might not have been truly representative of the sub-Saharan African immigrant population in Chicago. Immigrants who did not attend the scheduled activities or who did not chose to complete the questionnaires might have had different demographic characteristics than the study participants and might also have differed in their attitudes, perceptions, and behaviors as measured in this study. Similarly, since the study focused on sub-Saharan African immigrants with English language proficiency, potential respondents who were excluded based on this criterion might have had different demographic and behavioral characteristics from those who participated in this study.

This study did not exclude HIV-positive individuals. Because 4% of respondents were HIV positive, they may have been more knowledgeable about HIV—and more

importantly may have been in systems of care that influenced their behaviors. In addition, because HIV and sexual activity are sensitive topics, the questions might have elicited socially desirable answers from survey respondents, leading to social desirability bias. In consideration of some of these limitations, respondents were asked to rate the truthfulness of their responses to the study questionnaire. An overwhelming majority (97.4%) reported either being completely truthful or pretty truthful in their responses. In survey- and interview-based research, truthfulness is very difficult to ensure without corroboratory triangulation, which was not done in this study,

Implications, Recommendations, and Conclusions

Social work as a profession is committed to undertaking research and integrating the results into practice and policy recommendations consistent with the pragmatism paradigm. The findings from this study point in numerous directions for consideration by the social work profession and by the African immigrant community. The public health community has agreed that HIV testing is important in addressing the HIV/AIDS epidemic. African immigrants should receive positive acknowledgement that they seem to have achieved a higher rate of HIV testing than the general U.S. population. However, the findings of this study, when taken together, indicate that much remains to be done.

In this study, there was a relatively higher HIV testing rate compared with the CDPH published rate for low-socioeconomic status heterosexuals (4% vs. 1.2%), a low self-perceived high risk (3.1%) among those who had not tested for HIV in the past 1 year, and a high rate of failure to seek HIV testing (25% never tested and 33% did not plan to get tested in the next year).

The study found that participants traveled to Africa and had connections with their home countries despite their strong connection to the United States. However, this study did not inquire about sexual contacts during trips to Africa. This topic needs further investigation due to the prevalence of HIV in Africa. Moreover, many African immigrants in this study reported engaging in risk behaviors but believed that they were at risk for HIV infection. A more detailed study of the dissonance between the belief and behavior patterns of these participants needs to be explored. As indicated earlier, the similarity in rates of HIV testing in the past 1 year and the measured level of risk perception of participants from different regions of Africa also must be further investigated. Similarly, the unexpected finding that the age of African immigrants did not affect HIV testing in the past 1 year also merits additional investigation.

The social work commitment to the principle of social justice is well suited for addressing the complex issues of immigrants and HIV infection and testing. The ecological and empowerment perspectives and the bio-psycho-social-cultural-spiritual framework will also enhance the application of the study's findings to work with immigrants at risk for HIV infection, particularly through understanding the mezzo and macro factors, which in addition to micro factors, may influence HIV-related behaviors.

Social workers are involved in direct service, research, agency leadership, and advocacy aspects in the HIV field. In all these roles, awareness of and utilizing the findings of this study can enhance the cultural appropriateness and the effectiveness of their work. The African immigrant community can use the findings for their

empowerment as community agents and for their own improved individual and community health status.

In this study, HIV risk perception was found to affect HIV testing. The study helps to clarify the extent to which risk perception, usually seen as a micro factor, is embedded in mezzo and macro factors such as family and cultural values, global disparities in the HIV/AIDS epidemic, and immigration features. Such clarification can be used to amplify the impact of social work and public health planning and interventions.

Social work professionals and other service providers, strengthened by an enhanced understanding of sociodemographic, cultural, behavioral, and attitudinal information related to HIV testing barriers for African immigrants, have a new opportunity to enhance advocacy, program design, and individual services for these groups. This study highlights the need for social workers working with African immigrants to go beyond the approaches of individual education and broad public education to identify and work with other community and structural factors in working for the improved uptake of HIV testing by this population.

The present study provides a window into the linguistic and cultural diversities among sub-Saharan African immigrants, even within groups from the same region. There are also different categories of immigrants in the United States, including undocumented immigrants, refugees, asylum seekers, and permanent residents. Variations in immigration status may influence HIV testing and treatment patterns. Failure to recognize such diversity and to adjust service provision accordingly may have contributed to

findings in this research that some African immigrants avoid testing because of fear of anticipated consequences and fear of how providers might treat them or use the knowledge of their status.

Data regarding perceived barriers to HIV testing highlighted immigration-related considerations as an important source of barriers. Based on the results of this study, it is clear that abolition of a restrictive policy, such as the requirement for an HIV test prior to immigration, does not guarantee an immediate understanding of that policy.. In light of this finding, strategic efforts need to be made by social workers and other professionals working with these immigrants to sensitize this group of immigrants to changes in immigration laws and health policies, as well as the implications of these changes. The analysis of the perceived barriers to HIV testing also revealed the need to assess and address the level of awareness and understanding of immigration and health care policies and resources, and access to health care services.

Findings from this study can be used to sensitize social workers and others engaged in policy making to the inaccuracies and incompleteness of epidemiological data about this population. For instance, 4% ($n = 11$) of study participants indicated that they were HIV positive. At this time, U.S. HIV/AIDS case surveillance does not mandate recording of country of birth and prevalence data for African immigrants. Hence, HIV/AIDS prevalence of African immigrants may be erroneously subsumed under HIV/AIDS prevalence rates for African Americans. This wrongful categorization may artificially increase the HIV/AIDS diagnosis rate of African Americans and may lead to

misguided targeting of preventive and care resources while obscuring specific needs of African immigrants.

The current data aggregation process, which can lead to misguided targeting of HIV resources, may also disempower the African immigrant community further by failing to provide them with the information needed to take appropriate actions, take charge over their lives, or connect with other groups who share similar HIV-related features. As Collins (2005) observed, empowerment is a collaborative process that includes empowering communities to develop a broader agenda of social justice with other groups with similar concerns.

Becoming culturally competent is a developmental process in which one learns to acknowledge, appreciate, and adapt to diversity; to evaluate one's own knowledge, beliefs, and attitudes about other people's cultures; and to integrate the patient's beliefs and customs into the health care delivery process (Foley, 2005). The present study supports efforts of the social work profession to build cultural competency among providers who interface with immigrants in the health care system.

In using this strength-based, culturally sensitive approach, social workers using the empowerment model should remember that power arises from a group and that an outside-based intervention may undermine the development of the internal strengths of the group. Using the perspectives put forward by Arai (1997), by which empowerment is seen as a transformation process, with the goal of changing the thresholds of powerlessness and increasing people's control over their lives, social workers might work, as this investigator did, through community-based organizations. In this way and

others, social workers should make conscientious efforts to decrease professional dominance and to enhance African immigrants' ability to make choices and realize self-determination. The openness of community leaders and organizations to participate in this study suggests that African immigrants, despite many disempowering features of their lives as immigrants in the United States, are ready and willing to move forward collectively for their own empowerment.

In the current study, HIV testing was significantly correlated with HIV risk perception. This strongly suggests that social workers and others need to intervene to ensure that these immigrants receive the health and financial benefits to which they are entitled and which make HIV testing more accessible. The fact that those who had been seen by a physician had better prior HIV testing behaviors and future testing plans indicates that improved access to health care may enhance participation in HIV testing. Hence, to promote the uptake of HIV testing among African immigrants, social workers—motivated by social justice and empowerment goals—must address structural and social barriers to HIV testing such as increasing access and enhancing awareness of risk factors.

African immigrants in the United States are often exposed to the mainstream ethnocentric worldview, which portrays them as inferior. Using an empowerment model, their collective sense of self can be enhanced by exposing them to literature, video, and other images that portray African immigrants in a positive way. Media campaigns designed for this community, especially through the use of paid commercials on radio and television, could be used to promote the importance of HIV testing specifically

within and for the African immigrant community. Radio talk shows featuring sub-Saharan African health care providers and patient testimonials could also be employed.

Culturally specific presentations regarding the HIV/AIDS epidemic designed to address awareness of HIV risk can help to overcome the negative impact of stigma on testing and treatment need. Encouraging an African immigrant to speak up within his or her community about including HIV testing as part of routine health care can build individual self-efficacy while providing a role model with whom the community can identify.

Free community-based classes to improve the skills needed to access HIV testing may also help to lessen the barriers experienced by African immigrants. By making HIV-related materials available throughout the community, at organizations, and at local businesses, community members will come to understand that protection from infection is part of community life. Community-based health fairs, where information on the HIV/AIDS epidemic is shared, may be particularly helpful in disseminating news about developments and policies on HIV testing. In addition, general community health education aimed at improving health status through the promotion of healthy behaviors and altering those forces that adversely affect the health and well-being of community members, can take place during a health fair. In this way, African immigrants may discover ways to overcome the barriers they encounter in accessing all health services. Perhaps including HIV among general health promotion activities can contribute to reducing HIV related stigma and to improving access.

The disparity in the HIV/AIDS disease burden of sub-Saharan Africans and the tendency for late HIV diagnoses among African immigrants in the United States constitute a social justice issue and underscore the need among African immigrants for empowerment in all senses of the word. Social workers can use the findings of this study in their work with African immigrants at risk for infection to encourage early HIV diagnosis and to ensure proper linkages to preventive and care services. African immigrant organizations can likewise use the findings reported here in their efforts to increase awareness, health service use, and individual healthy behaviors within their communities. Both social workers and African immigrants have new resources for their advocacy work to address the disparities experienced by sub-Saharan African immigrants.

As present research suggests, African immigrants are battling with denial and stigma associated with HIV infection, testing, and treatment in both their native countries and in the United States. A large portion of these immigrants may perceive themselves to be at low risk for HIV infection despite engaging in high-risk behavior. This denial can arise for many reasons, including because of culturally specific fears and stigma associated with the infection. In light of such challenges, the use of empowerment precepts is indicated.

APPENDIX A
STUDY QUESTIONNAIRE

STUDY QUESTIONNAIRE

Thank you for agreeing to participate in this study. We would like you to complete this survey on the perceptions, attitudes, and acceptability of HIV testing among sub-Saharan African immigrants in Chicago. The information obtained from this study will help policy makers design HIV information, testing, and treatment programs for Africans in the United States. In order to participate in the study, you must be **an immigrant from sub-Saharan Africa currently living in the city of Chicago. You must also be 18 years or above and must speak and write English very well. You will complete this questionnaire only once. If you have ever filled out this questionnaire before, please stop do not complete again.**

Please answer the following questions as instructed and to the best of your knowledge. There are no right or wrong answers. Your responses are completely voluntary, anonymous, and confidential. No answers given can be linked to you. **PLEASE DO NOT WRITE YOUR NAME OR ANY IDENTIFYING INFORMATION ON THE QUESTIONNAIRE. By completing and returning this survey, it is assumed that you have provided your consent to participate in this survey.** At the end of the survey, please drop the completed questionnaire into the box provided.

	Strongly agree (1)	Agree (2)	Not sure (0)	Disagree (3)	Strongly disagree (4)
Please put an (X) on the answer most applicable to you.					
1. People like me do not get HIV infection.	()	()	()	()	()
2. I am very healthy so my body can fight off an HIV infection.	()	()	()	()	()
3. I am too young to get an HIV infection.	()	()	()	()	()
4. I am not worried that I might get an HIV infection.	()	()	()	()	()
5. People my age are too young to get an HIV infection.	()	()	()	()	()
6. People my age do not get HIV infections.	()	()	()	()	()
7. It is possible that I have HIV/AIDS.	()	()	()	()	()
8. My sexual practice puts me at risk for HIV/AIDS.	()	()	()	()	()
9. I am not at risk for HIV/AIDS.	()	()	()	()	()
10. There is a possibility that I have had sex with someone at risk for HIV/AIDS.	()	()	()	()	()

	Yes (1)	No (0)	Don't know (0)
Please put an (X) on the answer most applicable to you.			
11. Have you had 2 or more sex partners in the past 10 years?	Yes ()	No ()	DK ()
12. Have you had anal sex (a man puts his penis into the anus of another person) with any of your sexual partners during the past 10 years?	Yes ()	No ()	DK ()
13. Have you ever had a sexually transmitted disease such as gonorrhea, syphilis, Chlamydia, genital warts, or genital herpes?	Yes ()	No ()	DK ()
14. At any time in the past 10 years, have you ever given money or drugs to anyone to have sex with you?	Yes ()	No ()	DK ()
15. Have you ever had sex with someone so that they would give you money or drugs?	Yes ()	No ()	DK ()
16. Have you ever injected street drugs, steroids, or vitamins with a needle?	Yes ()	No ()	DK ()
17. Have any of your sexual partners in the past 10 years ever injected street drugs, steroids, or vitamins with a needle?	Yes ()	No ()	DK ()
18. Have any of your sexual partners in the past 10 years been men who have sex with other men?	Yes ()	No ()	DK ()
19. Have any of your sexual partners in the past 10 years ever had a sexually transmitted disease, such as gonorrhea, syphilis, Chlamydia, genital warts, or genital herpes?	Yes ()	No ()	DK ()

20. How often have you used condom when having anal sex in the past 10 years?
 A. Never () 1 B. Sometimes () 2
 C. Always () 3 D. Have not had anal sex () 0
21. When was the last time you had a physical (i.e., the last time you went to a doctor for a routine check-up without active symptom)?
 1 year ago or less () 1
 2 years ago () 2
 3 years ago () 3
 4 years ago or more () 4
 Don't know () 99
22. In the past 12 months, have you seen a health care provider (nurse, doctor, etc.)?
 No.....() 0 skip to Question 24
 Yes.....() 1
 Prefer not to answer.....() 7 skip to Question 24
 Don't know.....() 99 skip to Question 24
23. Were you offered an HIV test during a previous visit with a provider?
 No.....() 0
 Yes.....() 1
 Prefer not to answer.....() 7
 Don't know.....() 99
24. Have you donated blood since March 1985?
 No.....() 0
 Yes.....() 1
 Prefer not to answer.....() 7
 Don't know.....() 99
25. Have you ever been tested for HIV (HIV is a virus that causes AIDS) other than tests you may have had as part of blood donations?
 No.....() 0 skip to Question 35
 Yes.....() 1
 Prefer not to answer.....() 7 skip to Question 35
 Don't know.....() 99 skip to Question 35
26. If yes, what year did you have your first HIV test? _____ (year)
27. Have you been tested for HIV in the past 1 year?
 No.....() 0
 Yes.....() 1
 Prefer not to answer.....() 7
 Don't know.....() 99

28. If yes, about how many times **in the past 1 year** have you been tested for HIV?

29. Did you get the results of the test(s)?
 No.....() 0
 Yes.....() 1 skip to Question 31
 Prefer not to answer.....() 7
 Don't know.....() 99

30. The last time you did not get the test result(s), what was the major reason?

31. When was the last time you were tested for HIV? /
 M M Y Y Y Y
 Prefer not to answer.....() 77 skip to Question 35
 Don't know.....() 99 skip to Question 35

32. Which of these would you say was the **main reason** for getting tested during your last HIV test? (**Check only one**)

- | | |
|--|-----|
| [1] Thought/Worried that you may have been infected | () |
| [2] Because a doctor, nurse or other health care professional asked you to | () |
| [3] Because the Health Department asked you to | () |
| [4] Because sex partner asked you to | () |
| [5] For hospitalization or surgical procedure | () |
| [6] To apply for health insurance or life insurance | () |
| [7] To comply with guidelines for health workers | () |
| [8] To apply for a new job | () |
| [9] For military induction, separation, or during military service | () |
| [10] For immigration | () |
| [11] Because of pregnancy | () |
| [12] Other reason – specify _____ | () |
| [77] Prefer not to answer | () |
| [99] Don't know | () |

33. Where did you have your last HIV test? **Check only one.**

- [01] Private Doctor/HMO ()
- [02] Counseling or testing site ()
- [03] Hospital (inpatient) ()
- [04] STD clinic ()
- [05] Family planning clinic ()
- [06] Prenatal clinic ()
- [07] Tuberculosis clinic ()
- [08] AIDS/infectious disease clinic ()
- [09] Military clinic ()
- [10] Insurance clinic ()
- [11] Employer clinic ()
- [12] Community health clinic or public health clinic ()
- [13] Outpatient hospital clinic or ER ()
- [14] Correctional facility (jail or prison) ()
- [15] Drug treatment facility ()
- [16] At home, with a home test kit ()
- [17] At home, by nurse or health care worker ()
- [18] Other location (specify _____) ()
- [77] Prefer not to answer ()
- [99] Don't know ()

34. What was the result of your last HIV test? **Check only one.**

- Negative.....() 1
- Positive.....() 2
- Indeterminate.....() 3
- Never obtained results.....() 4
- Prefer not to answer..... () 7
- Don't know.....() 9

PERSONS WHO HAVE NOT BEEN TESTED FOR HIV IN THE PAST 1 YEAR

35. If you have not been tested for HIV in the past 1 year, which ones of these would you say is the **MAIN** reason why you have not been tested? (**Check only one.**)

- [01] It's unlikely you've been exposed to HIV; ()
 [02] You were afraid to find out if you were HIV positive ()
 [03] You didn't want to think about HIV or about being HIV positive ()
 [04] You were worried your name would be reported
 to the government if you tested positive ()
 [05] You don't like needles ()
 [07] You don't trust the results to be confidential ()
 [08] You were afraid of losing job, insurance, housing, friends, family, if
 people knew you were HIV positive ()
 [09] You didn't know where to get tested or ()
 [10] Some other reason (specify _____) ()

36. How likely is it that you will get tested in the next year? Would you say:
 [1] Very likely ()
 [2] Somewhat likely ()
 [3] Somewhat unlikely ()
 [4] Very unlikely ()

We would like to know a little about your sexual behaviors

37. Have you ever had sex with someone of the opposite sex?

No.....() 0
 Yes.....() 1
 Prefer not to answer.....() 7
 Don't know.....() 9

38. Have you ever had sex with someone of the same sex?

No.....() 0 skip to question 40
 Yes.....() 1
 Prefer not to answer.....() 7 skip to question 40
 Don't know.....() 9 skip to question 40

39. If yes, how often do you have sex with someone of the same sex?
 Rarely.....() 1
 Sometimes.....() 2
 Usually.....() 3
 Prefer not to answer.....() 77
 Don't know.....() 99
40. How old were you the **first time** you had sex **with anyone**? ____
 Prefer not to answer.....() 77
 Don't know.....() 99
41. How many sex partners have you had sex with in the past 12 months (include both casual and main partners) ____ # of partners
42. What type of sex do you have with this person(s)? (**Check all that apply.**)
 Oral.....() 1
 Anal.....() 2
 Vaginal.....() 3
 Other please specify _____
 Prefer not to answer.....() 77
 Don't know.....() 99
43. What percentage of the time did you use condom during these sexual encounters?
 Main sex partner..... %
 Casual sex partner..... %
 Prefer not to answer.....() 7
 Don't know.....() 9
44. Do you currently have a main partner? By main partner, I mean a husband, boyfriend, wife, girlfriend, etc.
 No.....() 0
 Yes.....() 1
 Prefer not to answer.....() 77
 Don't know.....() 99
45. Are you sexually active? (i.e. have you had sex with anyone in the past 6 months?)
 No.....() 0
 Yes.....() 1
 Prefer not to answer.....() 77
 Don't know.....() 99

Section C: Background and Demographic Information

46. Gender: Male.....()1
 Female.....()2
 Transgender.....()3
 Other please specify_____
47. Age? _____ years
48. How long have you lived in the United States? _____ years
49. Do you have health insurance or coverage? This includes Medicare and Medicaid, and any other form of health insurance.
 No.....()0
 Yes.....()1
 Prefer not to answer.....()77
50. Marital status:
 Married.....()1
 Separated.....()2
 Divorced.....()3
 Widowed()4
 Never married.....()5
 Prefer not to answer.....()6
51. Highest level of education completed?
 Never attended school.....()0
 Elementary school.....()1
 Some secondary school.....()2
 High school diploma.....()3
 Post high school education (including some college or technical training.....()4
 Associate degree.....()5
 College graduate (BA, BS).....()6
 Graduate School (MA, etc.).....()7
 Other (specify _____)8
 Prefer not to answer.....()77

52. Religion:
- None.....()0
 - Christianity.....()1
 - Islam.....()2
 - Hinduism.....()3
 - Buddhism.....()4
 - Judaism.....()5
 - Native African Religion (**Specify**.....)6
 - Other (**Specify**.....)7
 - Prefer not to answer.....()77
53. Occupation? _____
54. Type of residence
- Own your home.....()1
 - Rent a home or apartment.....()2
 - Live with friends or family and pay them rent.....()3
 - Live with friends or family without paying them rent.....()4
 - Live in hotel or rooming house.....()5
 - Homeless.....()6
 - Other (**Specify**.....)7
 - Prefer not to answer.....()77
55. Current employment status?
- Employed full-time.....()1
 - Employed part-time.....()2
 - A full-time student.....()3
 - Retired.....()4
 - Disabled for work.....()5
 - Unemployed.....()6
 - Other.....()7
 - Prefer not to answer.....()77
 - Don't know.....()99
56. Household income from last year?
- a. 0 to \$4,999.....()1
 - b. \$5,000 to \$9,999.....()2
 - c. \$10,000 to \$14,999.....()3
 - d. \$15,000 to \$19,999.....()4
 - e. \$20, 000 to \$29,999.....()5
 - f. \$30,000 to \$39,999.....()6
 - g. \$40,000 to \$49,999.....()7
 - h. \$50,000 to \$74,999.....()8
 - i. \$75,000 or more.....()9

Prefer not to answer..... () 77

Don't know.....() 99

57. Country of origin_____

58. What is your ethnic or tribal group? _____

59. What is your native language_____

60. Current zip code? _ _ _ _ _

61. Do you travel to Africa?

No.....() 0

Yes.....() 1

Prefer not to answer.....() 77

Don't know.....() 99

62. If yes, how often do you go?

Less than once a year.....() 1

Once a year.....() 2

Once in 2 years.....() 3

Once in 3 years.....() 4

Once in 4 years.....() 5

Once in 5 years.....() 6

Once in 10 years or more.....() 7

63. What do you think are the possible barriers to HIV testing among African immigrants in your community in Chicago?

1 _____

2 _____

3 _____

4 _____

5 _____

64. In general, how truthful would you say you were in responding to this survey questionnaire?

4 _____ Completely truthful

3 _____ Pretty truthful

2 _____ Not very truthful

1 _____ Not truthful at all

Other comments:

Thank you very much for your time.

FOR OFFICIAL USE ONLY

Date completed ____/____/2011
MM DD Y Y Y Y

Survey number ____ **Region** _____

Site _____

APPENDIX B

SURVEY QUESTIONS DOMAINS AND SOURCES

Survey items	Domains	Source
1–6	Attitudes and beliefs	Lux & Petosa (1994)
7–10	Perceived susceptibility to HIV	Investigator
11–20	Brief HIV screener	Gerbert et al. 1998
21–23	Commitment to / access to health care	Investigator
24–36	HIV Testing	Modified CDC
37–45	Sexual status/identity	Investigator
46–62	Personal characteristics	Investigator /Simbiri (2006)
63	HIV testing barriers	Investigator
64	Quality assurance	Simbiri (2006).

APPENDIX C
CONSENT TO PARTICIPATE IN RESEARCH

Project Title: Perceptions, Attitudes, and Acceptability of HIV Testing Among Sub-Saharan African Immigrants in Chicago

Researcher(s): *Rita Amadi*

Faculty Sponsor: *Edward Gumz, PhD*

Introduction:

You are being asked to take part in a research study being conducted by *Rita Amadi* for a *Ph.D dissertation*, under the supervision of *Dr. Edward Gumz* in the School of Social Work at Loyola University of Chicago. You are being asked to participate because *you are an African born immigrant from a sub-Saharan region of Africa who may have some valuable information to offer on the issue of HIV/AIDS. All the sub-Saharan African immigrants aged 18 or above who have membership affiliation with some selected civic and professional organizations in your diaspora community will be approached to participate in this study.* **YOUR PARTICIPATION IN THIS STUDY IS PURELY VOLUNTARY.** Please read this form carefully and ask any questions you may have before deciding whether to participate in the study or not. This consent statement and the attached HIV flyer are for you to keep.

Purpose: The purpose of this study is to:

- Help policy makers and HIV service providers understand the impact of the culture, attitude, and belief systems of sub-Saharan African immigrants on their HIV testing patterns.
- To sensitize policy makers to the diverse and unique demographic features of sub-Saharan African immigrants and their perceptions on HIV testing, which would help facilitate the development of culturally competent HIV policies.
- To support the implementation of culturally sensitive HIV testing policies that would boost the rate of HIV testing among African immigrants.

Procedures:

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

Complete a 64-item questionnaire that asks some sensitive questions about your personal characteristics and personal experiences, and your general attitudes and behaviors towards HIV testing. Specifically, you will be asked questions relating to your behaviors (such as sexual practices and substance abuse) that may put you at risk for HIV infection. You will also be asked questions about your cultural beliefs and attitudes, and your HIV testing history and future intentions to test for HIV. The items in the questionnaire are divided into 5 categories, which include perceived susceptibility to HIV infection, brief HIV screener, HIV Testing, sexual status/identity, and sociodemographic characteristics. The questionnaire will be administered during your regular spring/summer activity functions. It will take approximately 25 minutes to complete the questionnaire.

Risks/Benefits:

Although the study involves the use of a survey questionnaire that does not request any identifying information from participants, participation in this study may involve greater than minimal risk to study participants. The questionnaire contains sensitive questions about drug use and sexual behaviors, which may cause participants a great deal of mental distress. Moreover, thinking about one's subjective lived experiences and sexual risk behaviors may sometimes evoke emotions that may warrant additional help. If you experience unpleasant emotions after completing this survey or wish to process your feelings, please contact one of the sources listed in the Contacts and Questions section below.

Your responses to this survey are expected to generate findings that would assist professionals in enhancing their knowledge and skills in working with African immigrants, in testing and prevention of HIV, and working with those at risk for HIV infection. Findings from this study will also help to direct HIV prevention interventions to meet the specific needs of African immigrants.

In order to maintain the privacy and confidentiality of your information, responses will be kept under lock and key and will be accessible only to the researcher or his or her designated research assistants. Your questionnaires will be shredded at the end of the study after a mandatory period required by the IRB for such documents to be kept. With regard to the electronic data (which has no identifiers), the researcher will also keep the data under lock and key, and will destroy it after 5 years.

Compensation:

You will be given a \$5.00 phone calling card as compensation for participating in the survey. This calling card will be yours to keep even if you later decide to withdraw your participation in the study. At the end of the survey, the researcher will also provide you with an HIV testing resource list and basic information about HIV/AIDS.

Confidentiality:

Your responses are anonymous and confidential, and consequently no names should be noted anywhere on the questionnaire. To maintain the privacy and confidentiality of your information, responses will be kept under lock and key, and will be accessible only to the researcher and her designated research assistant(s). The data from your responses will be coded, which will further conceal any possible identifying information on the questionnaire. No names should be noted anywhere on the questionnaire. The questionnaire will be shredded at the end of the study.

You are asked to answer the questions as honestly and as carefully as you can. The researcher and/or the research assistants will be available throughout the duration of the survey administration to respond to questions you may have while completing the survey questionnaire.

Voluntary Participation:

By completing the questionnaire, you have agreed to participate in the survey. However, your participation in this study is voluntary. If you do not want to be in this study, you do not have to participate. Even if you decide to participate, you are free not to answer any question or to withdraw from participation at any time without penalty. **Your decision to participate or not to participate in this study will have no impact on your relationship with any of the African community organizations.** No one can identify who completes which questionnaire. Therefore, after your questionnaire is returned, you cannot alter or withdraw it.

Contacts and Questions:

If you have questions about this research study, please feel free to *contact me (Rita Amadi)* at 773-556-5113 or email me at ritaamadione@yahoo.com or Dr. Gumz at 312-915-7015 or e-mail: egumz@luc.edu. If you experience any psychological distress after the completion of this survey, please call the following:

Chicago: Free anonymous HIV Testing Sites and Information

Lakeview Clinic
2861 N. Clark
Chicago, IL 60657
312-744-5507

Englewood Clinic
641 W. 63rd Street
Chicago, IL 60621
312-747-8911

Uptown Clinic
845 W. Wilson
Chicago, IL 60640
312-744-1935

Roseland Neighborhood Health Center
200 E. 115th Street
Chicago, IL 60628
312-747-2817

You can also call the Ruth Rothstein CORE center at 312-572-4850, the AIDS Foundation of Chicago at 312-922-2322, or the AIDS National Hotline at 1-800-342-2437.

If you have questions about your rights as a research participant, you may contact the Office of Research Services at (773) 508-2471.

APPENDIX D

LOYOLA UNIVERSITY IRB APPROVAL LETTER



OFFICE OF RESEARCH SERVICES

Tuesday, May 29, 2012

Dear Rita Amadi,

On Tuesday, February 15, 2011 the Loyola University Chicago Institutional Review Board (IRB) reviewed and approved your Initial application for the project titled **"Perceptions, attitudes, and acceptability of HIV testing among Sub-Saharan immigrants in Chicago"**. Based on the information you provided, the IRB determined that:

- the risks to subjects are minimized through (i) the utilization of procedures consistent with sound research design and do not unnecessarily expose participants to risk, and (ii) whenever appropriate, the research utilizes procedures already being performed on the subjects for diagnostic or treatment purposes
- the risks to participants are reasonable in relation to anticipated benefits, if any, to participants, and the importance of the knowledge that may reasonably be expected to result
- the selection of subjects is equitable
- informed consent be sought from each prospective subject or the subject's legally authorized representative, in accordance with, and to the extent required by §46.116
- informed consent be appropriately documented, in accordance with, and to the extent required by §46.117
- when appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of subjects
- when appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of data
- when some or all of the subjects are likely to be vulnerable to coercion or undue influence, such as children, prisoners, pregnant women, mentally disabled persons, or economically or educationally disadvantaged persons, additional safeguards have been included in the study to protect the rights and welfare of these subjects

In addition, the IRB determined that documented consent is not required for all participants.

This review procedure, administered by the IRB, in no way absolves you, the researcher, from the obligation to adhere to all Federal, State, and local laws and the Loyola University Chicago policies. Immediately inform the IRB if you would like to change aspects of your approved project (please consult our website for specific instructions). You, the researcher, are respectfully reminded that the University's ability to support its researchers in litigation is dependent upon conformity with continuing approval for their work.

Please notify the IRB of completion of this research and/or departure from the Loyola University Chicago by submitting a Project Closure Report using the CAP system. In all correspondence with the IRB regarding this project, please refer to IRB project number #355 or IRB application number #3.

The IRB approval granted for this project expires on **1/19/2012 12:00:00 AM**

If you have any questions regarding this approval, the IRB, or the Loyola University Chicago Human Subject Protection Program, please phone the Assistant Director for Research Compliance at (773) 508-2689 or email the IRB at irb@luc.edu.

Best wishes for your research,

Raymond H. Dye, Jr., Ph.D.
Chairperson, Institutional Review Board

APPENDIX E

HIV RESOURCES DISTRIBUTED TO POTENTIAL STUDY PARTICIPANTS



The human immunodeficiency virus (HIV) is the virus that causes AIDS, or acquired immunodeficiency syndrome, a disease that causes the body to lose its natural protection against infection. The disease is one of the most devastating epidemics in modern history.

The virus is found in the blood and other body fluids of infected individuals. It can be transmitted during vaginal, anal or oral sex; or when sharing needles to shoot drugs, pierce the body or make tattoos. Pregnant women with HIV infection can pass the virus to their baby during pregnancy or delivery, as well as through breast feeding.

HIV attacks certain white blood cells that protect the body against illness. A person with AIDS is more likely to become ill from infections and unusual types of pneumonia and cancer that healthy persons normally can fight off.

Since HIV was first identified in 1981, it has spread rapidly throughout the world. In the United States, an estimated 800,000 to 900,000 people are currently living with HIV/AIDS, and up to one-third do not know they are infected. Since 1981, nearly 450,000 people in the United States have died.

Illinois has the seventh highest number of AIDS cases in the nation, with 30,000 reported cases of AIDS since 1981. Of those diagnosed with the disease, about 16,500 have died.

Approximately 40,000 people in the United States become infected each year. People of color, particularly African Americans and Latinos, are disproportionately affected by HIV/AIDS and have some of the highest infection rates. Gay and bisexual men, injection drug users and women represent other populations at greatest risk of infection.

There is no vaccine or cure for AIDS and those with HIV are infected for life.

There are, however, treatments and medicines that can help the body resist the virus, including antiretroviral drugs. These drugs can increase the number of years between contracting HIV and developing AIDS, but they are not able to prevent the onset of AIDS.

Chicago: HIV Testing Sites and Information

The City of Chicago Department of Public Health offers free confidential HIV Testing at:
at the following locations:

Lakeview Clinic
2861 N. Clark
Chicago, IL 60657
312-744-5507

Englewood Clinic
641 W. 63rd Street
Chicago, IL 60621
312-747-8911

Uptown Clinic
845 W. Wilson
Chicago, IL 60640
312-744-1935

Roseland Neighborhood Health Center
200 E. 115th Street
Chicago, IL 60628
312-747-2817

South Austin Clinic
4958 W. Madison Street
Chicago, IL 60644
312-746-4871

West Town Clinic
2418 W. Division Street
Chicago, IL 60622
312-744-5464

Note that in addition to free confidential testing, the first four clinics listed also offer free anonymous HIV tests.

Please contact the State of Illinois AIDS Hotline at 1-800-AID-AIDS for information on HIV counseling and testing services outside Chicago metropolitan area.

For free consultation / national STD testing services, call 1-888-840-8688

APPENDIX F

MAP OF SUB-SAHARAN AFRICA REGION AND COUNTRIES



APPENDIX G
LIST OF AFRICAN COUNTRIES BY REGION

EASTERN AFRICA

Burundi
Comoros
Djibouti
Eritrea
Ethiopia
Kenya
Madagascar
Malawi
Mauritius
Mayotte
Mozambique
Reunion
Rwanda
Seychelles
Somalia
Uganda
United Republic of Tanzania
Zambia
Zimbabwe

CENTRAL AFRICA

Angola
Cameroon
Central African Republic
Chad
Congo
Democratic Republic of the Congo
Equatorial Guinea
Gabon
Sao Tome and Principe

NORTHERN AFRICA

Algeria
Egypt
Libyan Arab Jamahiriya
Morocco
Sudan
Tunisia
Western Sahara

SOUTHERN AFRICA

Botswana
Lesotho
Namibia
South Africa
Swaziland

WESTERN AFRICA

Benin
Burkina Faso
Cape Verde
Côte d'Ivoire (Ivory Coast)
Ghana
Guinea
Guinea-Bissau
Liberia
Mali
Mauritania
Niger
Nigeria
Saint Helena
Senegal
Sierra Leone
The Gambia
Togo

From "Countries by Region," by Flags of the World, 2007, retrieved from
<http://flagspot.net/flags/region.html>.

APPENDIX H
AFRICAN COMMUNITY ASSOCIATIONS IN ILLINOIS

1. Association of Beninese of Illinois
2. Cameroonian Community
3. Congolese Community
4. Eritrean Community
5. Ethiopian Community Association of Chicago
6. Ghana National council
7. Guinean Community Association
8. Ivory Coast Community Association
9. United Kenyans of Chicago
10. Organization of the Liberian Community
11. Maghreb Association of North America (MANA)
12. Malian Community Association
13. Malawian Community
14. Nigerian Community of Chicagoland
15. Rwandan Community Association
16. Senegalese Community Association
17. Sierra Leone Community Association of Chicago
18. Somali Community of Metro Chicago
19. South African Community Association
20. Sudanese Community Association
21. Tanzanian Community Association – Midwest USA
22. Togolese Community Association
23. Ugandan Community Association
24. Association of Zimbabweans in Chicago

From “Illinois African Community Resource Guide,” by United African Organization, 2009, retrieved from <http://www.unitedafricans.org>.

Additional List Developed by Researcher

Nigerian National Alliance
 Igbo Association of Chicagoland
 Lagosian Community Association
 Nigeria Progressive Organization
 Zambia Heritage Association of Chicago
 Cameroon Women Organization
 Liberia Community Association
 Enyimba Social Club of Nigeria
 Nigeria Nurses Association
 Cameroon Brothers Association
 Umunna Association Chicago
 Oganihu Owerri Association
 Anambra Association Chicago
 Wawa United Organization

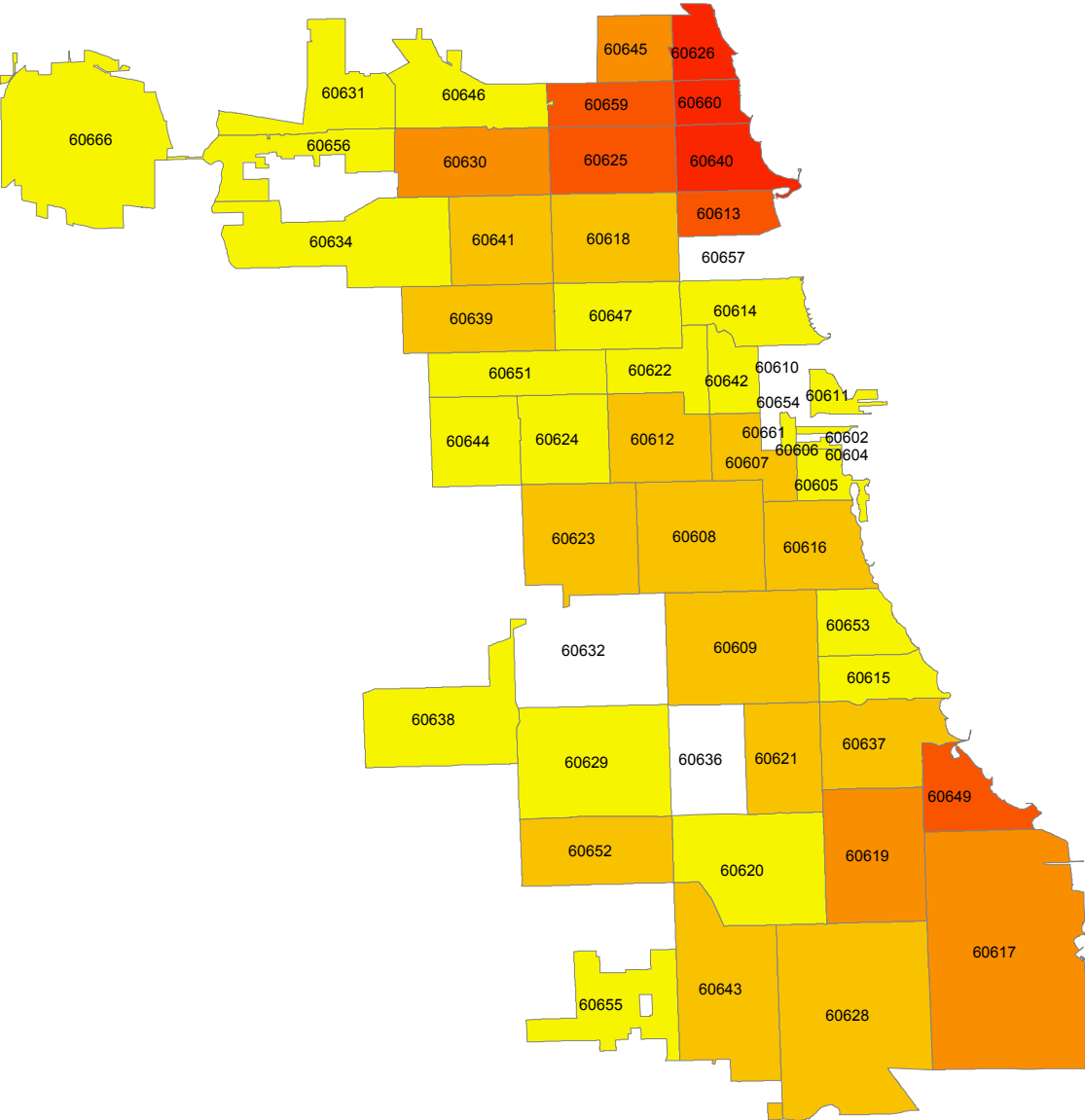
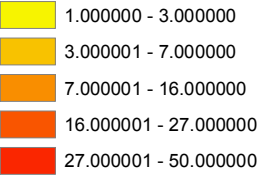
Nigerian American Public Professional Association
Udodiri Women Organization
Anambra Women United
Ilu Club of Chicago
Egba Unity of Chicago
Yoruba People's Congress
Nigerian American Forum
Ekiti-Kete Association of Chicago
Ondo State Association
Ijebu Isiwo Descendants Inc.

APPENDIX I
PARTICIPANTS' ZIP CODES

Legend

STUDY.ZIPCODE

Frequency



APPENDIX J
PARTICIPANTS' NATIVE COUNTRIES, TRIBES,
ETHNICITIES AND LANGUAGES

Native Countries of Study Participants

Nigeria
Liberia
Ghana
Togo
Republic of Benin
Cote D'Ivoire
Cameroon
Gabon
Democratic Republic of Congo
Congo Brazzaville
Ethiopia
Eritrea
Uganda
Tanzania
Kenya
Zambia
South Africa
Angola
Zimbabwe
Botswana
Malawi
Lesotho

Total 22

Tribes/Ethnicities of Study Participants

Akan
Amhara
Ashanti
Baganda
Bakongo
Bakossi
Bakundu
Bakwena
Bali
Bamileke
Bamoum
Banso'o

Bantu
Bas-Congo
Basotho
Bassa
Bemba
Benin(Bini)
Beti
Bulu
Chewa
Douala
Edo
Ewe
Ewondo
Fanti
Fon
Gamo
Ga
Gio
Gurage
Ibo
Ijaw
Keiyo
Kissi
Kpelle
Kru
Lenje
Loma
Lozi
Luba
Luo
Mandingo
Mano
Masai
Munyoro (Bunyoro)
Muyuka
Ngemba
Ngoni
Nso
Oromo
Pende

Punu
RSA Colored
Shona
Tigre
Tikar
Tonga
Toro
Tsonga
Tswana
Urhobo
Wolayta
Yoruba
Zulu

Total 65

Native Languages/Dialects of Study Participants

Afrikaans
Akoose

Amharic (Amarigna)

Awing
Bafut
Bakweri
Bamilike'
Bakundu
Bemba
Bossa
Chewa (Nyanja)
Chomba
Douala
Dschang
Edo
English
Ewe
Fanti
Francois
French
Gio
Ga
Igbo

Ijaw
Kikongo (Kongo)
Kissi
Kiyansi
Twi
Lango
Lingala
Loma
Luganda
Lusoga
Maa
Mande
Mandingo
Mankon
Mbo
Medumba
Nambwe (Lungu)
Namwanga
Nkonde
Nso
Oromo
Portuguese
Runyankore
Runyoro
Shona (Chisona)
Sotho (Sesotho)
Swahili
Tigrigna
Tonga
Toro
Tshiluba
Tsonga
Urhobo
Xhosa
Yemba
Yoruba
Zulu (Lala)

Total 60

APPENDIX K

GLOSSARY

Acculturation: a process in which individuals from one ethnic group adopt the behaviors, beliefs, and way of life of another ethnic group. Acculturation can be unidimensional or reciprocal. Acculturation differs from assimilation, which is marked by loss of ethnic identity, changes in language preferences, attitudes and values.

African diaspora: people of African origin residing outside the continent regardless of their nationality or citizenship status.

AIDS Drug Assistance Program (ADAP): a federally funded drug assistance program providing financial assistance for medications. This program does not discriminate based on citizenship status.

AIDS: a condition in which the patient has, even temporarily, reached the more advanced stages of HIV infection. The biological markers are set forth and adjusted from time to time by the U.S. Centers for Disease Control and Prevention.

Anonymous HIV test: a type of HIV testing, conducted without providing a name to the testing center. Only the individual who is having the test is provided with the test results. Anonymous testing is available in the state of Illinois; however if the test result turns out positive, the individual will need to undergo confidential testing (i.e., provide his or her name) in order to receive treatment.

Assimilation: occurs when individuals from an ethnic group assume the cultural and structural features of another ethnic community, eventuating replacement of the group's former identity with that of the new ethnic community. It is the principle that immigrants or their descendants will adopt enough of American culture to eventually make them identifiable as American.

Confidential HIV test: testing in which centers record the patient's/client's name together with his or her test result. Medical personnel, local, and state health departments have access to the test result.

Conventional antibody testing: Enzyme immuno-sorbent essays (EIA) test results are categorized as either reactive or nonreactive. Nonreactive specimen results from the initial EIA test are deemed HIV negative. However, specimens with a reactive EIA test result are retested and if the result is positive, the specimen is reported to be repeatedly reactive and must go through a confirmatory test with a more specific supplemental HIV test. If the confirmatory test is reactive, the specimen is considered HIV positive.

Cultural ethnocentric (perspective) school: The cultural ethnocentric school concept visualizes the Black family from a deficit perspective. It views them as dysfunctional and pathological and asserts that the Black family is destabilized, disorganized, and incapable of providing its members with the necessary

psychological or social support to fully assimilate into the American social system. This school of thought blames the Black family and asserts that their behavior should conform to the larger society's ethnocentric standard without looking beyond to see the rationale for this behavior and a culturally sensitive approach to viewing the behavior.

Diagnostic HIV testing: a test given to a person who exhibits signs or symptoms consistent with HIV-related infection or AIDS. This test is given to support clinical diagnosis or management.

Epidemic: the appearance and quick spread of an infection within a certain population or group that was previously uninfected.

Health care access: refers to how easily patients are able to obtain needed health care and their actual use of health services. Concepts relevant to health care access are categorized into barriers, facilitators, and health care services utilization.

HIV (not AIDS): denotes that the patient has tested positive for an HIV antibody, antigen, or other diagnostic determinant specific for the HIV virus.

HIV screening: the application of HIV testing procedure to populations.

HIV incidence: the number of new HIV infections occurring at a specific period of time within a specific population.

Immigration and Nationalization Act (INA) (1987): an act that specifies who may be admitted to the United States and the grounds under which the person may be admitted.

Immigration: the permanent resettlement of a person or group of persons from one country to another with or without legal authorization.

Late AIDS diagnosis (late testing): AIDS diagnosis made within 12 months of initial HIV diagnosis.

Legal or lawful permanent residents (LPRS): foreign-born residents legally admitted to reside permanently in the United States either due to the fact that they qualify for changing their status to permanent residents in the United States or for immigrant visas abroad. Legal permanent residents have permanent resident documentation known as a green card. They are qualified to naturalize 3 to 5 years after obtaining their green cards. Immigrants who possess permanent resident visas or green cards are known as legal permanent residents.

Melting pot: This is a metaphorical concept that elucidates how homogenous societies evolve. In this paradigm, the ingredients in the pot are individuals from various

ethnic and religious backgrounds. These individuals are combined in such a way that they lose their distinct identities to a certain degree. This relative loss of identity eventuates a final product characterized by an Americanized identity, which is overall quite uniform and distinct from the original identities. The melting pot is therefore a model of ethnic relations in which ethnic groups engage in a form of reciprocal fusion. The melting pot ideology is associated with “model” past generations of immigrants in the United States believed to have become successful by working to relinquish their ethnic identities and by adopting the culture of their new country while influencing it reciprocally to an extent.

Native-born citizens: Every person born in the United States is automatically granted birthright citizenship irrespective of his or her parents’ legal status or birthplace as well as those born in foreign nations to a U.S. citizen parent. This group comprises all individuals born in the United States, Puerto Rico, U.S. Virgin Island, and other U.S. territories and possessions,

Naturalized citizens: Through the naturalization process, legal permanent residents can become U.S. citizens. Ideally, they must be residents in the United States for 3 to 5 years to be eligible for naturalization, although some may qualify sooner. Prior to qualification for U.S. citizenship, LPRs must pass background checks and a citizenship test.

Opt-In HIV test: a testing program that requires that testing be conducted only after individual pretest counseling has been performed, with patients actively selecting whether to be tested or not. It is a test strategy that recommends precise counseling with or without consent.

Opt-Out HIV test: An HIV testing strategy in which testing is offered routinely to all individuals seeking care in certain health care settings even though they are not symptomatic for HIV infection. In this testing dynamic, the emphasis is shifted from patient-initiated to provider-initiated testing. However, the test still remains voluntary with the opportunity for the client/patient to decline (opt out).

Public charge: an individual who requires government financial support. It occurs when an immigrant depends on the government for personal or health care expenses. The provision is used to exclude individuals likely to decimate the nation’s health care resources.

Rapid diagnostic tests: a type of HIV test that produces results in about 20 minutes. It is screening test with a high sensitivity and specificity rate. It is especially useful for screening individuals who are unlikely to return for the test results of conventional HIV screening.

Refugees and asylees: foreign-born people who are granted legal immigration status on humanitarian grounds based on a well-established fear of persecution in their

countries of origin. They are involuntary immigrants who flee persecution in their home country and have been granted refugee status, often before entering into the United States. Like refugees, asylees must meet the same “fear of persecution criteria,” but they usually have a valid visa or have overstayed their valid visa. While in the United States, they claim asylum and are granted legal immigration status. Both refugees and asylees are qualified for permanent residency. Refugees and asylees by virtue of their legal status are eligible for key federal benefit programs. They have access to some social benefit programs that are not available to other legal immigrants.

Routine test: This implies a “routine” recommendation to get tested. It means that the medical practitioner should as a matter of beneficence and best practice initiate conversation about HIV testing with their patients.

“Salad bowl” theory (multiculturalism): Contends that often times newly arrived immigrants do not lose the distinct aspect of their cultures as in the melting pot paradigm; rather they retain them. The unique features of each culture are still identifiable and notable within the larger American society and contribute to the richness of the American society—just like the ingredients in a salad.

Stratification: a statistical method used for dividing members of a given population into relatively homogeneous subgroups prior to sampling. Thereafter, a random sampling is applied in each stratum.

Temporary residents: different sets of foreign-born U.S. residents who have been admitted to the United States for short, temporary, or unspecified periods of time but have not adjusted their status to permanent residency. The majority of these immigrants may have entered into the United States for a temporary period for specific reasons such as work, study, natural disasters, or political instability in their home countries. Others may have sought to stay for an indefinite or permanent period and have obtained a pending status that permits them to stay in the United States, and often to work. However, temporary residents do not have equal rights with legal permanent residents.

Travel: a short stay that is meant to be temporary.

Undocumented aliens (illegal immigrants): a group of foreign-born people who do not have a valid visa or other immigration documents because they entered the country secretly without inspection, overstayed their temporary visa period, or went contrary to their initial terms of admission. These are categories of immigrants who have no authorization to reside or work in the United States. These groups of immigrants generally lack legal status, have limited access to paid employment, are not qualified for most social benefits, and cannot adjust their status to U.S. citizenship under the current law (2010).

Voluntary counseling and testing (VCT): client-initiated HIV counseling and testing aimed at learning his or her HIV status.

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VITA

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In the course of her educational and career endeavors, she won several prizes and awards for her outstanding performances. Prominent among these are the Loyola University Advanced Doctoral Fellowship and the Council for the Development of Economic and Social Research in Africa (CODESRIA) Small Grant Proposal Writing. She has also conducted many independent studies and has given presentations at both national and international conferences. She strongly believes in the inherent dignity of every individual. She attaches much value to equity and social justice, and has an inclination toward helping those in need and working to ensure effective social change.

