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Adeyinka M. Akinsulure-Smith
CUNY City College

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Exploring HIV Knowledge, Risk and Protective Factors Among West African Forced Migrants in New York City

Adeyinka M. Akinsulure-Smith

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Abstract Because of ongoing political and social instability throughout the continent, many Africans have become forced migrants. Unlike immigrants who choose to migrate, forced migrants flee their countries in search of safety and often endure multiple traumatic events during their migration. They are often unprepared for new risks in their adopted country. There is a high incidence of newly-diagnosed HIV cases among West African immigrants in the New York City metropolitan area, but little research to date to understand why this might occur. In order to gain insight, the current pilot study explored HIV knowledge, risk and protective behaviors among 52 West African-born forced migrants in New York City. HIV risk behavior came primarily from unprotected heterosexual activities. While most participants were very knowledgeable about HIV transmission and risk factors, almost half reported that they had not used condoms during sexual activities in the past 6 months. Women were more knowledgeable about HIV transmission, yet reported significantly more STDs than men. Many participants did not know about HIV/AIDS treatments and could not identify HIV/AIDS services and resources within their immigrant communities. Factors influencing HIV risk and protective behaviors among this population are identified and discussed. Suggestions for future research and strategies to reduce risky behaviors while enhancing protective ones among forced West African migrants are highlighted.

Keywords HIV knowledge · Risk · Sexual behavior · Africans · Immigrants

West Africa consists of 61¹ countries bounded by the Atlantic Ocean on the west and south, the Sahara Desert on the north, and the Benue Trough on the east [22]. West Africans are not only linked by geographic proximity, but by cultural and linguistic commonalities. Many of these countries have experienced significant armed conflict, with subsequent widespread sexual- and gender-based violence, extensive destruction of property and loss of life, ongoing physical and emotional trauma, and forced migration through mass population displacement [6, 35].

Unlike immigrants who *choose* to migrate, many West Africans have become forced migrants (i.e., refugees, asylees, and asylum seekers), fleeing their countries in search of safety and enduring multiple traumatic events before, during, and even after migration [3, 8, 13, 16, 20, 28, 33, 36]. Migratory patterns of West Africans to the United States (US) indicate that West Africans made up 36.3 % of all African migrants [10, 22]. Between 2001 and 2010, African-born migrants made up 28.4 % of refugees and 21.2 % of asylees (i.e., forced migrants) admitted to the US. During this period, the West African countries of Liberia (16 % of refugees), Sierra Leone (4.8 % of refugees) and Cameroon (10.5 % of asylees) were among the top 10 countries of origin [22].

In 2009, New York City (NYC) became home to the largest number of African-born migrants residing in the US. While it is not clear what percentage of this population are forced West African migrants, anecdotal reports from service providers in NYC indicate that many are. Furthermore, service providers report that the typical West

A. M. Akinsulure-Smith (✉)
Department of Psychology, The City College of New York,
City University of New York, New York, NY 10031, USA
e-mail: aakinsulure-smith@ccny.cuny.edu

¹ Benin, Burkina-Faso, Cape Verde, Cote d'Ivoire, The Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Mauritania, Niger, Nigeria, Senegal, Sierra Leone, Togo.

African forced migrant comes from a country that has experienced long-term conflict; arrives without immediate family, at economic disadvantage, with a history of trauma and a range of physical and mental health conditions; and faces multiple legal and social challenges, such as language barriers, inadequate housing, and limited resources [1, 2, 4, 8, 12, 16]. Together, these factors may increase HIV risk and make service response more complex (personal communication with M. Jou, July 2009).

Those who work with West African immigrants in NYC, especially forced migrants, report numerous challenges to providing culturally-appropriate HIV/AIDS services and interventions, including inadequate information about HIV/AIDS services, language difficulties in interactions with institutions such as hospitals, and fears due to immigration status (personal communication with T. Traore, April, 2009). These challenges are further compounded by the reality that, although HIV seroprevalence rates of individual West African countries vary from unknown (largely because of armed conflict or poor public health surveillance) to nearly 8 % [37], new HIV cases among West African-born immigrants in New York are increasing. In 2006, 21 % of NYC's newly-diagnosed HIV cases were among foreign-born Africans, 80 % of whom were West African (NYC Department of Health and Mental Hygiene [24–26]). Given the prevalence of forced migrants from that region, and given the increase in HIV risk behaviors among forced migrants in general, it is quite likely that a very high percentage of those newly-diagnosed West Africans living in NYC are forced migrants.

It therefore is surprising that information about HIV risk and protective factors among West African forced migrants in the US in general, and in NYC in particular, is only available anecdotally. With limited evidenced-based examination, there is no way to know the extent to which these anecdotal service provider reports do or do not accurately reflect the HIV-related risk factors and needs, as well as the general health and mental health needs, of underserved and underresourced West African forced migrants residing in NYC. In fact, only two studies have examined the HIV-related experiences of African immigrants in general to the US; neither focused specifically on West Africans nor did either distinguish between voluntary and forced migrants.

Rosenthal et al. [30] assessed the HIV/AIDS knowledge, risk behaviors, perceptions, and access to services among African immigrants in Houston. Their findings suggest that while African immigrants had a high level of knowledge about modes of HIV transmission, many reported low self-perceived risk for contracting HIV. Foley [14] explored the perspectives of HIV service providers for African immigrants and the cultural and structural barriers of African women in HIV prevention, testing, and treatment in Philadelphia; she found that African immigrant women face a number of structural and

cultural barriers to care, including legal status, linguistic problems, fear of the American health system, and misunderstanding about modes of HIV transmission.

Both studies highlight the need for culturally and contextually sensitive HIV education and prevention services for African immigrants, as well as the need to conduct more research to understand better the HIV health- and mental health-related needs of this population. While these findings echo the unique public health challenges faced by all immigrant populations, and point to issues such as “level of risk, acculturation, religious background, and knowledge of [and] access to services” [30] as significant factors in providing useful HIV/AIDS prevention programs for African immigrants in the US, neither study distinguishes between the many different regions, cultures, and populations in the African continent, nor does either take into consideration the different experiences of forced versus voluntary immigrants.

The current study, then, is the first such research to systematically explore HIV knowledge, risk, and protective behaviors among West African forced migrants in NYC. Given the high prevalence of West African forced migrants in NYC and the high proportion of newly diagnosed HIV West African-born cases in NYC, such research can contribute to an understanding of the risk and protective factors for West African forced migrants and build a foundation for future studies and interventions to support the development of evidence-based, culturally-informed interventions for West Africans, in particular those who are forced migrants.

This pilot study was conducted with participants from Liberia and Sierra Leone. According to UNICEF [38, 39], HIV prevalence rates in both countries have remained low (Liberia, 1.5 % and Sierra Leone, 1.6 %). From 2001 to 2010, these two countries were among the leading countries of origin of African refugee arrivals to the US (Liberia, 16 %; Sierra Leone, 4.2 % [22]) and together represent nearly 11 % of West African immigration to NYC [23]. Each has endured a civil war for over a decade [15], and for each country, English is the official “First” language. Thus, participants from these countries offer an opportunity to examine in their own voice, uncomplicated by any linguistic- or translation-related factors, the self-described risk and protective factors of forced migrants who have left the HIV epidemics in their countries of origin and have entered an epicenter of the US epidemic.

Method

Measures

The survey instrument consisted of 314 questions, including: demographics (e.g., age, gender, marital status, length

of time in NYC, reason for immigration, religion, education), knowledge of HIV/AIDS and its modes of transmission, patterns of sexual behavior, patterns of substance use, health concerns, sources of information about HIV/AIDS, and awareness/perceived accessibility of available services, and emotional and behavioral functioning measures. Instruments are described below.

Demographic data sheet that included age, marital status, country of origin, languages spoken, religion, and level of education.

HIV/AIDS Knowledge and Modes of Transmission

Participants were asked 50 factual questions regarding HIV, AIDS, and STDs, which they answered “Yes”, “No”, “I don’t know” or “Don’t understand the question.” This survey was designed to assess their understanding and practical knowledge regarding: (a) the natural history of HIV and its relationship to AIDS; (b) major transmission routes, facts and misconceptions about major transmission routes, facts and misconceptions about household/casual transmission; (c) contagiousness of HIV and of illnesses associated with it; (d) sexual risk reduction strategies, needle use risk reduction strategies, universal precautions for all blood-borne illnesses; and (e) effectiveness of various risk reduction strategies [21]. Coefficient α for the scale was 0.84.

A *Self-Rating HIV/AIDS Information Questionnaire* developed by this author was also included in the survey. Participants were asked to rate their knowledge of HIV/AIDS transmission, diagnosis, treatment, services, and prevention, indicating their level of knowledge on a scale of 0–2 (0 = very knowledgeable, 1 = somewhat knowledgeable, 2 = not knowledgeable).

Patterns of Sexual Behavior

In order to understand sexual risk taking behavior, participants were asked to report on the frequency of sexual intercourse in the last 6 months and to describe the frequency of sexual acts that were protected by safer sex, birth control methods or both. Male or female condom use for every instance of vaginal or anal intercourse or abstention from vaginal or anal sex was scored as 1; a score of 0 was given for less than 100 % protection. Participants answered 72 questions about their sexual practices in the previous 6 months, including coitus, number of sexual partners, condom use, and anal intercourse [21].

Patterns of Substance Use

Patterns of substance use were captured with a series of 45 questions regarding types of substances ingested in the past

2 years, method of ingestion (inhalation, injection, oral ingestion, other), and quantity of the substances ingested. These questions were designed specifically for this study by the author.

The Life Events Checklist (LEC; [7]) is an extensively used 17-item, self-report measure of exposure to potentially traumatic events in a respondent’s lifetime. The measure evaluates exposure to 16 events documented to possibly result in PTSD or distress (e.g., “Direct combat experience in war” or “Seeing someone seriously injured or violently killed”). The LEC also includes one item to assess for any other extraordinarily stressful event not captured by the other items. This measure has shown adequate psychometric properties as a stand-alone assessment of exposure to trauma [17].

The Center for Epidemiologic Studies Depression Scale (CES-D; [29]) is a self-report instrument consisting of 20 items that measures current depressive symptoms and has shown strong psychometric properties. Internal consistency as measured by Cronbach’s alpha is high across a variety of populations (generally around 0.85 in community samples and 0.90 in psychiatric samples). Split-half reliability is also high, ranging from 0.77 to 0.92. Test–retest reliability studies ranging over 2–8 weeks show moderate correlations ($r = 0.51–0.67$) [31]. In terms of validity, the measure correlates strongly with other established measures of depression [41]. A score of 16 or higher has been used extensively as the clinical cut-off point for high depressive symptoms [29].

The PTSD Checklist (PCL-C; [42]) is a 17-item self-report measure of PTSD that lists the 17 symptoms of PTSD according to the *Diagnostic and Statistical Manual of Mental Disorders* (4th ed., *DSM-IV*, [5]). It has been used widely in research and clinical settings, with a variety of populations, and has been shown to have strong psychometric properties [18, 19, 40]. It has very good internal consistency (Cronbach’s alpha = 0.94) and temporal stability (retest $r = 0.88$, 1-week interval), and correlates strongly (i.e., $r > 0.75$) with other measures of PTSD symptoms [27, 32].

Additional measures included a checklist of sources of HIV information (media, print, interpersonal, and community-based resources of HIV information). Participants were asked whether they had used these resources. Participants were also asked about other health concerns as well as experiences of Female Genital Cutting.

The Open-Ended Interview explored participants’ perceptions about the context of the HIV epidemic in their countries of origin and in their new immigrant communities in the US, as well as about their own concomitant risk and protective factors.

Community Advisory Board In order to ensure that the measures and procedures were culturally appropriate, the

author developed a Community Advisory Board (CAB). Liberian- and Sierra Leonean-born immigrant volunteers were sought who were: (a) forced migrants, or voluntary migrants who had cared for or worked with African forced migrants (particularly those from Liberia and Sierra Leone); (b) willing to attend a 4-h meeting to review all the survey materials and procedures; and (c) 18 or over. Ultimately, the CAB was comprised of two Liberian- and three Sierra Leonean-born African immigrants, two female and three male, four of whom were forced migrants. The only member who was not a forced migrant had extensive experience caring for and working with forced African migrants. All had lived in NYC for an average of 6 years.

The CAB reviewed the recruitment and data collection procedures, consent forms, questionnaire items via ACASI, the open-ended interview questions, and the “HIV/AIDS Fact Packet.” All materials were adjusted according to their suggestions and then reviewed independently by two West African immigrant volunteers from the community, who gave further feedback which was incorporated into the final instrument and interview questions.

Recruitment and Data Collection Procedure

All procedures were approved by the Institutional Review Board of the City College of New York (CCNY), City University of New York (CUNY) and participants gave written consent. Recruitment of the participants was purposive and conducted throughout NYC, especially in areas with high concentrations of West Africans—i.e., Harlem, the Bronx, and the Richmond neighborhood on Staten Island. Information regarding the study was disseminated with the help of a Community Advisory Board (CAB) and African immigrant serving organizations, as well as through local West African immigrant media outlets (e.g., a radio show). Additionally, flyers with information about the study and contact information were posted in strategic locations (e.g., West African businesses and residential neighborhoods inhabited predominantly by West Africans). Because flyers and a radio program were used to recruit participants for this pilot study, there is no way to know how many people saw or heard about the study.

Prospective participants could make contact with the researchers through one of several means: a telephone call, email, local community members or direct approach by the Principal Investigator (PI) or her trained graduate-level Research Assistant (RA). All potential participants were screened by the PI or RA using a short demographic questionnaire to determine eligibility: Liberian- or Sierra Leonean-born, forced migrant, lived in NYC for at least 1 year (to ensure familiarity with NYC services), and sexually active within the past 6 months (to ensure that

they could accurately recount their recent sexual experiences). Eligible individuals were invited to participate and were offered their choice of interview date, time, and location (the PI’s office at CCNY, a private home set up in the Staten Island community, or in the offices of a local Staten Island African community based organization). In all locations, private rooms were utilized.

Upon arrival at the agreed upon interview site, each prospective participant was welcomed by the PI or the RA and reminded of the purpose and content of the study, the participant’s right to refuse participation, and the participant’s right to start participating and subsequently stop at any time. They were then asked for their consent. Once consent was given, they were set up in a private room with a laptop computer equipped with headphones to complete a structured questionnaire via Audio Computer-Assisted Self-Interview (ACASI). The interviewer waited in a separate room until they were finished (or had any questions). It took each respondent approximately 50 min to complete the interview. At the end of the ACASI interview, a 15-min open-ended interview was conducted in the same room by the individual who had welcomed them and asked for their consent.

Given the widespread reluctance of West Africans to discuss their sexual behavior [9], it was anticipated that the combination of structured ACASI and open-ended interviewing would provide an opportunity for these participants to openly share their experiences and behaviors regarding sensitive topics. ACASI is a self-administered questionnaire on a computer. The computer displays the text of each question and its answer alternatives while a prerecorded interviewer’s voice reads them to the participant, who listens privately through headphones. Participants answer questions by clicking the appropriate response option on the computer monitor with the mouse. ACASI standardizes survey administration across a variety of settings and maximizes responses to highly personal and sensitive questions. Using ACASI to measure HIV risk behavior has been demonstrated to increase participants’ sense of privacy, thereby improving the accuracy of reporting of sensitive issues and reducing the occurrence of socially desirable responses [11].

Upon completion, each participant received an “HIV/AIDS Fact Packet” with information about HIV/AIDS and related resources in the five NYC boroughs, including a list of referrals to local, federally-approved hospital emergency rooms, so that any participant who experienced any discomfort as a result of participation could seek further assistance without jeopardizing any legal issues attendant on immigration. The packet deliberately offered information for all five boroughs so that participants could choose to go anywhere in NYC in order to preserve their anonymity.

Participants

There were 52 participants: 50 % from Liberia ($n = 26$) and 50 % from Sierra Leone ($n = 26$); 29 (56 %) were men and 23 (44 %) were women. Participants were between the ages of 19 and 63, with an average age of 35.75 years ($SD = 12.60$). They were primarily Christian ($n = 31$, 60 %) or Muslim ($n = 20$, 39 %). Education levels varied: 22 (42 %) had completed secondary school, 19 (37 %) had graduated from college, 5 (10 %) had completed trade school, 4 (8 %) had completed graduate school and 2 (4 %) had never attended school.

Data Analysis

After data collection was completed, responses to the instrument were coded and analyzed using the Statistical Package for the Social Sciences (SPSS). Statistical analyses included examination of item scores and item-total reliability procedures (percent passing or failing an item or answering an item in a particular way) in order to indicate common risks and factors associated with enhanced or lowered risk. Preliminary analyses were conducted of differing risks by important subgroups (e.g., length of time in NYC, experience/non experience in conflict, gender, marital status, religion, level of education). All audio recorded interviews were transcribed by the RA and independently analyzed by the PI and the RA by examining transcripts and identifying themes. Conflicts in theme identification were resolved by reference to the transcripts and a joint review.

Results

Risky Sexual Behavior

Chief HIV risk was from heterosexual activities. No participants reported sharing needles and few reported ever having anal intercourse ($n = 4$, 7.7 %, 2 females and 2 males). Ninety-seven percent of participants ($n = 50$) reported having been sexually active (oral, vaginal or anal sex) at least once in their lifetime. Of sexually active participants, 41 (82 %) reported having had vaginal sex in the past 6 months, 22 (44 %) reported having had oral-vaginal sex in the past 6 months, and 20 (40 %) reported having had oral-penile sex in the past 6 months. Of the 41 participants who reported having had vaginal sex in the past 6 months, 18 (44 %) reported never using condoms, 8 (20 %) reported using condoms at least once, and 12 (29 %) reported using condoms 100 % of the time. Participants who were single reported using condoms significantly more often ($M 60.17$ %, $SD 47.88$) than participants

who were married or lived with a partner ($M 21.97$ %, $SD 36.97$), $t(30) = 2.66$, $p = .013$.

HIV/AIDS Knowledge

On average, participants answered correctly 33.31 ($SD 6.87$) out of 50 questions regarding HIV/AIDS; scores ranged between 6 and 45. The HIV/AIDS questions were divided into four categories for analyses: transmission, testing and diagnoses, treatment, and prevention. Participants performed best on questions regarding transmission of HIV/AIDS (70 % accurate) and worst on questions regarding treatment (49 % accurate).

On the self rating of HIV/AIDS information, participants had an average score of 6.71 ($SD 2.42$) out of 10, where higher scores indicate poor knowledge. The least understood topics on the self rating were HIV/AIDS treatment and HIV/AIDS services, with only 11 (21 %) and 9 (17 %) reporting being very knowledgeable, respectively. Two (4 %) participants reported having little knowledge regarding HIV/AIDS prevention, 3 (6 %) reported having little knowledge regarding HIV/AIDS transmission, and 7 (14 %) reported having little knowledge regarding HIV/AIDS testing and diagnosis. HIV/AIDS knowledge scale and the HIV/AIDS self rating were positively correlated, $r(52) = 0.31$, $p = .027$, which indicates that those who reported being very knowledgeable on the self report scale on average performed worse on the HIV/AIDS knowledge questionnaire.

Gender Differences

On average, women reported having had 4.52 ($SD 2.06$) lifetime male sexual partners. None reported female partners. Nineteen (83 %) women reported being sexually active in the past 6 months. Seventeen (89 %) sexually active women reported having one male sexual partner in the past 6 months and two (10 %) reported having been sexually active with two male partners in the past 6 months. Twenty-eight (97 %) men reported having had lifetime female sexual partners with a range of 1–200 and a median of 8.0. Two (7 %) male participants reported having had male and female sexual partners; one reported having had two male partners and the other 20 male partners. All male participants who responded ($n = 28$) reported being sexually active in the past 6 months. On average, men reported having had significantly more sexual partners in the past 6 months ($M 2.04$, $SD 2.47$) than women reported ($M 0.85$ $SD 0.49$), $t(29) = 2.4$, $p = .022$. Number of lifetime sexual partners was not significantly different between the genders.

Of male participants sexually active in the past 6 months, 10 (36 %) reported never using condoms, 10

(36 %) reported using condoms 100 % of the time, 1 (4 %) reported using condoms 80 % of the time, and 7 (25 %) did not respond. In contrast, 8 (42 %) women who were sexually active in the past 6 months reported never using condoms, 2 (11 %) reported using condoms 100 % of the time, and 7 (37 %) reported using condoms less than 50 % of the time.

There was a trend towards more female ($n = 6$, 26 %) than male ($n = 2$, 7 %) participants reporting ever having had a sexually transmitted disease ($\chi^2 = 3.71$, $p = .054$). The most common STD reported was the Human Papillomavirus (HPV; $n = 6$, 75 %) and most participants with an STD sought treatment with a private doctor ($n = 7$, 88 %). While women scored significantly higher (had more correct answers) on the HIV knowledge survey ($M 35.57$, $SD 4.57$) than did men ($M 31.52$, $SD 7.87$), $t(50) = -2.2$, $p = .033$, they reported having slightly less HIV/AIDS knowledge than did men on the HIV/AIDS self report scale ($M 7.34$, $SD 2.42$ vs. $M 6.21$ $SD 2.34$) but the difference was not significant ($t(50) = 0.91$, $p = .091$) (see Table 1).

More men than women had completed college and/or graduate school ($\chi^2 = 0.042$), and were employed at the time of the interview ($\chi^2 = 0.008$). Men and women did not significantly differ in age, country of origin, religious affiliation, marital status, psychological symptom scores, or number of traumatic life events.

Traumatic Life Events

Participants reported having personally experienced an average of 3.67 ($SD 2.94$) different types of traumatic life events, and witnessing an average of 3.67 ($SD 3.37$)

different types of traumatic life events. The most frequently reported types of traumatic events that were experienced by participants included sudden unexpected death of someone close to you ($n = 31$, 60 %), combat or exposure to war zone ($n = 28$, 54 %), physical assault ($n = 21$, 40 %), severe human suffering ($n = 17$, 33 %), and transportation accident ($n = 16$, 31 %). Number of different types of trauma experiences did not significantly differ by participant's gender or country of origin.

Prevalence of Female Genital Cutting (FGC) Among Women

Of the 23 female participants, 7 reported a history of FGC [1, 2].

Correlates of Psychological Adjustment

On average, participants reported clinically significant scores on the CES-D ($M 34.7$, $SD 10.88$) and elevated scores on the PCL-C ($M 30.81$, $SD 10.74$). Age was positively correlated with PCL-C scores, $r(52) = 0.40$, $p = .004$, but not CES-D scores. There were no significant differences between men and women for either CES-D or PCL-C scores. There were no significant differences due to country of origin, religious affiliation, marital status or employment status.

The relationship between psychological adjustment, risky sexual behavior, HIV knowledge, substance use, and traumatic life events was examined. CES-D scores and PCL-C scores were highly correlated $r(52) = 0.62$, $p < .001$. The number of different types of traumatic life events that

Table 1 Comparison of risky sexual behavior, HIV knowledge, psychological adjustment and life events between men and women

| | Male (n = 29) | | | Female (n = 23) | | |
|-----------------------------------|---------------|------|----------|-----------------|------|-----------|
| | M | SD | Range | M | SD | Range |
| <i>Risky sexual behavior</i> | | | | | | |
| No. lifetime sexual partners | 16.6 | 37.4 | 1–200 | 4.5 | 2.1 | 2–10 |
| No. sexual partners in past 6 mo. | 4.2 | 8.5 | 0–45 | 1.0 | 0.45 | 0–2* |
| % sexual encounters with condoms | 0.51 | 0.50 | 0.00–1.0 | 0.23 | 0.33 | 0.00–1.0* |
| History of STD (yes/no) | 2/26 | – | – | 6/16 | – | –** |
| HIV knowledge | 31.5 | 7.9 | 6–43 | 35.6 | 4.6 | 28–45* |
| HIV knowledge: self report | 6.2 | 2.3 | 2–10 | 7.3 | 2.4 | 2–10 |
| <i>Psychological adjustment</i> | | | | | | |
| CESD | 33.0 | 8.7 | 20–60 | 36.9 | 13.0 | 20–69 |
| PCL-C | 31.9 | 11.6 | 15–56 | 29.4 | 9.6 | 15–50 |
| <i>Life events checklist</i> | | | | | | |
| Happened to me | 3.6 | 2.8 | 0–10 | 3.8 | 3.2 | 0–12 |
| Witnessed | 3.5 | 3.2 | 0–13 | 3.9 | 3.6 | 0–14 |

* $p < .05$

** $p = .054$

happened to participants was positively correlated both to CES-D scores, $r(47) = 0.36, p = .012$, and to PCL-C scores, $r(47) = 0.44, p = .002$. However, the number of different types of traumatic life events that were witnessed but not personally experienced by participants was not correlated with either CESD-D or PCL-C scores. Psychological symptom scores were not correlated with condom use, number of sexual partners, having had an STD, history of FGC, HIV knowledge, or substance use.

Correlates of Risky Sexual Behavior

The relationships between sexual behaviors and substance use, HIV knowledge, and traumatic life events were explored. Total number of lifetime sexual partners was positively correlated with percent condom use in the past 6 months, $r(38) = 0.39, p = .016$. Participants who reported using alcohol in the past 6 months also reported having a higher number of sexual partners in the past 6 months, $r(47) = 0.31, p = .033$. Although HIV knowledge and percent condom use were not correlated, when we entered these variables into a regression model controlling for marital status, higher scores on the HIV knowledge scale significantly predicted higher percentage of condom usage in the past 6 months, even after controlling for marital status (see Table 2).

Correlates of Substance Use

Eight (15 %) participants reported using any substance in the past 2 years. Of these, 4 (50 %) reported using alcohol, 1 (13 %) reported using marijuana, and 3 (38 %) did not indicate the type of substance used. Participants who reported ingesting substances in the past 2 years did not significantly differ from those who did not in regards to psychological symptoms scores, traumatic life events, number of sexual partners (lifetime or in the past 6 months), HIV knowledge scale scores, percent condom use, marital status, substance use, location of interview, gender, country of origin or history of STDs.

Table 2 Predicting Condom use by HIV knowledge scale scores while controlling for marital status

| | b | SE b | β |
|----------------|--------|-------|---------|
| <i>Step 1</i> | | | |
| Constant | 56.47 | 9.63 | |
| Marital status | -35.59 | 13.45 | -0.399* |
| <i>Step 2</i> | | | |
| Constant | 129.15 | 34.36 | |
| Marital status | -36.57 | 12.18 | -0.410* |
| HIV knowledge | -2.12 | 1.00 | -0.315* |

$R^2 = 0.159$ for Step 1; $R^2 = 0.258$ for Step 2; * $p < .05$

Religion

Number of sexual partners was not significantly different between Muslims and Christians for either gender. In addition, condom use was not significantly different between Christian and Muslim participants.

Semi-Structured Interviews

All participants agreed to participate in the follow up semi-structured interviews.

Knowledge of HIV/AIDS Transmission Both male and female participants had a solid understanding of HIV transmission routes; most were able to list general sexual activity, blood exposure, and needles as ways to contract the disease. While most knew at least two ways to get infected, none noted mother-to-child transmission nor identified specific risky sexual acts.

Knew Someone with HIV/AIDS in Home Country Only 10 (19 %) participants reported that they personally knew someone in their home country who had contracted HIV/AIDS. Those who did know of an HIV + person noticed physical signs and symptoms of an advanced stage or described a suspected person whose status was already general community knowledge.

...Not eating right. In other words, no appetite to eat, very weak, um losing weight over the years, um serious cough and cold, um very weak...

37-year-old Sierra Leonean male

Typically, participants were not informed as a confidante, but rather noted these changes as an observer. The knowledge of an individual's HIV status was rumored, not openly discussed. In general, those participants who did not know anyone HIV + had no expectation they would be directly informed about anyone's status because HIV/AIDS is such a taboo topic.

Nobody like to come around you first of all. Second of all, nobody wants to touch you. Third, nobody wants to even eat the spoon you eat from, neither the plate because they are not educated to what is going on

21-year-old Liberian male

Risk Factors in Home Country When asked about HIV risk factors in their home countries, participants overwhelmingly declared HIV transmission routes as the significant risk factors in their home countries, with sexual behaviors dominating the list. Participants listed what people *did* more than what people believed or people's identity

as making them vulnerable to HIV infection. Responses given included “unprotected sex,” “prostitution,” “promiscuity,” “multiple partners,” and even “revenge sex.” As for cultural practices or belief systems specific to West Africa, “traditional marriage” or “polygamy” was noted:

“...Polygamy, um people are polygamous, they have two or three or four wives so they, it’s acceptable. That’s a way, an easy way of transferring disease from one wife to the other. Secondly, there is absolute poverty as such, most girls, young girls get engaged in prostitution. They’re trying to find their daily bread and most of them do not have condoms.”

46-year-old Sierra Leonean Male

One female Sierra Leonean participant also named “The Bondo Society” (a secret women’s society that practices Female Genital Cutting). Only three participants mentioned “drugs,” reflecting that participants did not believe drug use was a prevalent transmission route in their home countries. However, “the war” was mentioned several times. Specifically, rape during war was a risk factor that previously contributed to the spread of HIV. It was striking that two female participants mentioned contaminated razors as a risk factor in their home country, “... people go to the barber shop, they will share the same razor blade for 10 people” (49-year-old Sierra Leonean female).

Another participant mentioned “contaminated blood donations” (transfusions) and “poverty,” which spoke to the participant’s home country being a developing country. Those who elaborated on poverty linked it to a general lack of knowledge of the disease and an overall lack of education services in their home countries. These participants concluded that if people lacked a basic education, they would not have information on what HIV/AIDS was and how they could protect themselves from the disease.

Protective Factors in Home Country Overall, answers about protective factors in the home country were about responsible sexual practices (e.g., using condoms, abstinence, monogamy, and safe sex). While one participant stated that “no education” was a risk factor, several participants specifically answered that “education and testing” were protective factors in their home country. No one specified whether by “education” they meant public health awareness or a formal education. Participants did not mention religion or cultural norms as protective factors.

Knowledge of HIV/AIDS Services in Home Country Only six participants had a specific answer for available services for HIV + individuals in their home countries. All services reported by participants were foreign funded or international operations (e.g., Salvation Army, the United Nations, International Rescue Committee, and Catholic Relief).

Only one person was aware of domestic efforts lead by the National AIDS Secretariat in Sierra Leone. A Liberian participant mentioned a hospital, “JFK” in Liberia, which according to the participant was the largest effort dedicated to serving the HIV/AIDS infected. He also noted that this hospital carried enormous stigma. Notably, only one participant mentioned a traditional healer, continuing the trend of answers about the home country context being very universal and not specific to the West African context.

They turn to tradition and witchcraft, blaming witchcraft, using traditional medicine which sometimes can be potent, sometimes do not even work

46-year-old Sierra Leonean Male

Knew Someone with HIV/AIDS in Immigrant Community Participants resoundingly did not know anyone with HIV/AIDS within their New York immigrant communities and further went on to comment that HIV was *not* an issue for their communities.

Risk Factors in Immigrant Community There were no differences for risk factors named in the home country versus in the immigrant community. The only exception to this was one participant who discussed the large number of West African immigrants who work as home health aides, for whom the risk of transmission exists at the job, despite the safety precaution training provided. In reference to the West African community of refugees and asylum seekers, one participant stated that “insular dating” is a risk factor, meaning the disease can quickly spread because “Liberians stick to Liberians.” Only one person named a specific sexual act, “oral sex” as a risk factor, with most participants naming sex as a general high risk behavior. Some participants also spoke about sharing needles, and drugs and alcohol abuse as part of a local lifestyle involving “reckless partying.” Whether this was a coping mechanism for Posttraumatic Stress Syndrome and other mental health issues of war survivors or simply “what young people do” given their developmental stage was not discussed in depth.

Overall, many of the participants did not see themselves as being at risk and most subscribed to the belief that the people most at risk for HIV/AIDS in their West African immigrant communities are “young girls and boys in this community.” Throughout the interviews, participants referenced “youth” when discussing risk, indicating a belief that young people were at higher risk:

“Because they doesn’t have lot of protection, um most of these teenagers do not use sexual, they doesn’t use condoms and stuff like that to protect themselves because you have to buy them”

31-year-old Liberian female

Participants did report instances of prostitution in the host country, but felt that it was not as common as in their home countries. There was a sense among participants that commercial sex work was one of the few ways impoverished women in their home countries had to support themselves and their families, while in the host country, there were better options for these women to survive.

Protective Factors in Immigrant Community There was a strong emphasis on education and testing awareness as a protective factor in the US. This was in addition to safe sexual practices, with condom use and monogamy as top answers. Only one participant mentioned religion as a protective factor, while the majority mentioned “no drug use,” “clean needles,” and “testing.”

Knowledge of HIV/AIDS Services in the Immigrant Community Over 45 % of participants had no knowledge of services available for those with HIV/AIDS, stating that their lack of awareness was due to not knowing anyone who was infected. Participants did not know who in the community needed help or where they could go if they needed help. Finally, only 9 (17 %) participants were able to identify resources within their immigrant communities that provide HIV/AIDS services. These participants suggested general medical care sites, such as a “hospital” or a “clinic” as a possible place to get HIV/AIDS services. Only one person mentioned “African Services Committee,” an agency in NYC offering a range of HIV/AIDS services to the African immigrant community, as a possible resource.

Discussion

This pilot study is the first to explore HIV knowledge, risk, and protective factors among West African forced migrants. Findings show that for this population ($n = 52$), the main risk factor is from heterosexual activities. Although the majority of the participants were knowledgeable about HIV/AIDS transmission (70 % accurate most of the time), they lacked information about HIV/AIDS treatment, as well as knowledge regarding HIV/AIDS resources and services within their immigrant communities. In addition, while participants reported a lot of information about HIV/AIDS transmission, many had not translated their knowledge into action; almost half (44 %) of the participants who reported that they had had vaginal sex in the past 6 months ($n = 41$) had not used condoms during that 6 month period. HIV/AIDS knowledge scale and the HIV/AIDS self rating were positively correlated, $r(52) = 0.31$, $p = .027$, indicating that those who reported being very knowledgeable on the self report scale on

average performed worse on the HIV/AIDS knowledge questionnaire.

There appears to be a clear difference between what participants say they know and what they demonstrate they know. Such findings have significant implications for education, prevention, and treatment. Thus it may be that when providing information on education, prevention, and treatment, providers should not make assumptions about knowledge, but should start by providing the most basic information and then building from there.

While West African immigrant women were more knowledgeable about HIV/AIDS transmission than men, they reported significantly more STDs. In reviewing these results, it is important to emphasize that the focus of this study has been on the paucity of data on West Africans, specifically, as opposed to Africans in general, in the US, yet the findings are striking given that African-born immigrant women made up 25 % of the new HIV diagnoses among foreign-born females in NYC, while African-born males only accounted for 13 % of new HIV diagnoses among foreign-born males (New York City, Department of Health and Mental Hygiene [24–26]). It may be that while West African women are knowledgeable about HIV/AIDS transmission, they do not feel empowered or lack the negotiation skills to decrease their vulnerability.

It was surprising that while the number of HIV cases within the NYC African-born population continues to rise significantly, only a few participants reported that they knew someone who was HIV positive; the majority denied having such knowledge. It may be that there continues to be so much stigma around the disease, that many keep their diagnoses to themselves or that within this sometimes tight-knit community, people do not want to admit that they know someone who is HIV positive for fear that such a diagnosis might reflect poorly on them. Future studies with this population might examine ways in which stigma and shame can play a role in risk and protective factors for HIV/AIDS transmission.

It is important to note that it was during the one-on-one open-ended interviews that participants denied this knowledge. Post data collection interviews with participants indicated that they felt most comfortable responding to questions alone, in privacy, with the computer. This suggests that the information provided was accurate, thereby supporting Des Jarlais et al. [11] findings that the use of ACASI increases participants’ sense of privacy and improves the accuracy of reporting sensitive information. It may be that when participants were asked to share information about “taboo” subjects, including sexual practices and traumatic experiences via ACASI (on the computer), they were much more willing to do so, than to discuss these sensitive topics face-to-face with another person. One way to continue to collect accurate data and reach a larger, more varied

audience is to reach out to and solicit African immigrants via immigrant social networks and conduct the study on line. The one drawback of such an approach is that those who do not have access to the internet will be left out.

Finally, given that group discussion is the preferred mode of discourse in many African societies and practitioners have noted that this extends to emotional and psychological content as well [1, 2, 4, 34], another option for more accurate and nuanced information might be to use multiple formats, including focus groups and individual interviews, to collect data.

The findings of the current pilot study must be viewed in light of some of its limitations. The small sample size and narrow focus on Sierra Leonean and Liberian forced migrants, recruited through community based organizations, who had experienced significant civil war-related trauma, impacts the generalizability of these findings to the larger population of African immigrants. In order to increase generalizability, future research in this area should consider outreach to the West African immigrant population in NYC beyond Sierra Leoneans and Liberians. Despite these methodological constraints, the study's findings points to areas (e.g., gender differences, influence of stigma, lack of knowledge about resources and treatment) that are important to developing useful interventions with this population. West African immigrants are among the fastest growing immigrant groups in the US, and their increasing incidence of HIV/AIDS makes them an important group to study and target for culturally appropriate interventions.

It is important to note that this study included not just refugees and asylees but also asylum seekers and undocumented forced migrants, who may have structural (i.e., lack of legal immigration documents), as well as cultural barriers that impede their willingness and ability to access services or even their eligibility to receive services. Despite such factors, this pilot study points to the need of sexual and health education, not only to improve West African forced migrants' understanding of sexual risk behaviors and to empower women to negotiate safe sex interactions, but also to increase awareness of the resources and services that are available to them. Although there are many African grassroots community based organizations in New York, there are only two, African Hope Committee and African Services Committee (both located in Harlem), working directly to address HIV/AIDS related issues within the African immigrant community. Neither specifically addresses the needs of West African immigrants. It may be that for forced migrants, other needs (such as immigration documents, acculturation, etc.) take precedence over HIV/AIDS concerns. Furthermore, for forced migrants who have experienced upheaval, political persecution, torture, and displacement, it may be that they are reluctant to go to "authorities" for assistance on this "taboo" topic. These findings point to the need for more

outreach and partnerships among the various community based organizations regarding this issue.

Conclusions

In NYC, the incidence and prevalence rates of HIV/AIDS are increasing significantly among the African immigrant population. This study explored HIV/AIDS risk and protective factors among West African forced migrants in New York City and found that heterosexual activities are the primary source of risk for this population. While HIV knowledge was moderate (higher for transmission routes than for services), many participants did not have adequate information about treatment or HIV/AIDS resources within their immigrant communities.

Furthermore, while there are two organizations in NYC that provide HIV/AIDS services for African immigrants, it is clear that more public service organizations and grassroots, community based organizations need support and assistance in order to effectively conduct outreach and address the apparent lack of knowledge regarding HIV/AIDS resources and services directly aimed at African immigrant communities.

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