

ASSESSING THE HIV/AIDS HEALTH SERVICES NEEDS OF AFRICAN IMMIGRANTS TO HOUSTON

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This study investigated HIV/AIDS knowledge, risk behaviors and perceptions, and access to services among Black immigrants from more than 20 African nations to Houston, Texas, United States. Three hundred nine respondents completed a 98-item self-administered questionnaire on HIV/AIDS knowledge, risk behaviors, access to services, and stigma. Data analysis revealed this population to be highly educated (70.9% had educational attainment levels beyond high school), with a plurality motivated to immigrate to the United States for academic reasons (45.0%). As a group they displayed a high level of knowledge about modes of HIV transmission. Generally, Christian background respondents had higher knowledge than those of Muslim background. Nevertheless, 36.3% reported that they had never used a condom, with the overwhelming majority of respondents reporting low self-perceived risk for contracting HIV (79.5%). These findings, together with the persistent practice of traditional rituals such as body scarring/tattooing by a significant minority (20.1%), a lack of awareness about vertical transmission (16.3% of women; 29.9% of men), and discouraging scores on an HIV stigma perception scale, suggest that a targeted campaign to raise awareness in this population is warranted.

Are migrant populations at a higher risk for HIV infection than citizens of their host country (Joint United Nations Programme on HIV/AIDS, 2000)? As is the case with many communicable diseases, particularly those with a long incubation period, it is often difficult to discern whether migration-related transmission is truly a consequence of post-migration infection or merely the geographic relocation of the infection acquired prior to migration (Gellert, 1993). Flawed data collection techniques, such as the grouping together by some countries of native-born ethnic minorities and

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immigrants, further obfuscates the issue. The fact that many countries, including the United States, screen immigrant but not native populations for HIV makes comparisons of risk still more nebulous.

The U.S. immigration situation is complicated by the fact that although the approximately 1 million people seeking temporary residence are screened for HIV (and some are eligible for waivers of the HIV inadmissibility condition), none of the approximately 22 million on nonimmigrant visas (students, temporary visitors) are screened for HIV. This latter group may be more likely to engage in risk behaviors. Furthermore, the HIV infection inadmissibility conditions may deter HIV testing or act as a barrier to accessing HIV-related services.

Nevertheless, there is a growing body of epidemiological and behavioral literature suggesting that the apparently increased risk for HIV infection among migrant populations may be explained by other living condition variables (Joint United Nations Programme on HIV/AIDS, 2000). Once these conditions, such as single status or economic disadvantage, are controlled for, the disparity often disappears.

The multiple cultural and socioeconomic factors unique to immigrant populations, particularly those migrating from a less developed to a more developed nation, warrant specialized interventions to address the issues of HIV/AIDS prevention, transmission, and treatment. For many, perhaps most, immigrants, language barriers to understanding health service messages in the host country contribute to vulnerability to HIV transmission risk. Difficulty abandoning traditional (and often incorrect) health beliefs in a host country that devalues these beliefs in favor of a Western medical model is another common theme. Intense stigmatization among immigrants about HIV/AIDS due to misinformation and deeply held cultural norms in the country of origin promotes denial and avoidance, further enhancing a group's susceptibility to risk. These are only a few of the barriers to heightened awareness among immigrants that must be taken into consideration by public health officials.

Several studies discuss the phenomenon of intranational rural to urban migration among HIV-positive individuals (Montoya, Bell, Richard, Goodpastor, & Carson, 1998), the legal aspects of HIV/AIDS with respect to immigration policy (Gellert, 1993; Sorensen, Lopez, & Anderson, 2001), and health services utilization patterns by immigrants in relation to HIV prevention (McMunn, Mwanje, Paine, & Pozniak, 1998). There is a dearth of data, however, on the experiences of immigrants regarding perceptions of, knowledge about, and risk behaviors for HIV (Sorensen et al., 2001; Loue & Oppenheim, 1994).

A 1997 case-controlled study of Turkish immigrants to Sweden compared levels of knowledge in a group receiving interpreter-assisted, physician-based HIV counseling ($n = 150$) with a control group receiving no systematic counseling ($n = 98$), as well as with a group of nonimmigrant Swiss patients ($n = 148$) (Bucher, Eser, & Weinbacher, 1997). At baseline, prior to assignment to study groups, all Turkish immigrant patients demonstrated lower global knowledge scores than their Swiss counterparts. At 6-month follow-up, mean percentage scores of correct answers among all Turkish immigrants (i.e. intervention and control groups combined) improved from 49.3% to 60.0% ($p < 0.001$). The difference of gained knowledge between interventional and control groups, however, was borderline statistically significant. The authors caution that study design and low follow-up limit conclusions from this study.

To date, the most systematic investigation of how to best plan and implement HIV/AIDS awareness programs geared toward immigrant communities is a report by

the Joint United Nations Programme on HIV/AIDS (2000). This *Migration Populations* report highlighted the great and inherent diversity among immigrant groups and thus demands that public health intervention efforts begin with data collection and analysis of population characteristics. The authors identify seven population characteristics that are predictive of subsequent vulnerability to HIV transmission and therefore important in guiding all stages of program development and implementation. They are (a) health status; (b) risk behaviors; (c) attitudes, beliefs, and practices; (d) legal status; (e) motives for migration and period of migration; (f) demographic characteristics; and (g) social position within the host society and social changes resulting from the immigration.

There are few data that allow for the planning and provision of HIV/AIDS awareness and prevention services to immigrant communities. In Houston, the largest African immigrant groups are Nigerian, Ethiopian, Ghanaian, Somalian, and Eritrean, with the Ethiopian, Somalian and Eritrean communities largely being refugees. The present investigation was undertaken to ascertain characteristics of Black immigrants in Houston, Texas, to determine their HIV/AIDS knowledge and risk behavior levels, and understanding of availability of services.

METHODS

During November and December of 2000, 309 African immigrants aged 18-74 were recruited by outreach workers/volunteers affiliated with a Houston-area community-based organization. Saving Lives through Alternative Options (SLAO) serves immigrants mainly of African origin by providing services such as civic education, job training and referrals, and prevention of substance abuse and domestic violence.

SLAO workers visited community agencies, attended health fairs and community events, and made presentations. Outreach workers were from Ethiopia and Sierra Leone and were fluent in both English and an African national or tribal language. Participants were asked to complete a 98-item questionnaire developed by SLAO African community leaders in conjunction with a public health research agency specializing in community research and social marketing. The questionnaire covered demographic and geographic characteristics, HIV/AIDS knowledge, condom use and sexual behavior, stigma, and risk perception. A copy of the questionnaire is available from the second author. The questionnaire was in English and those with insufficient English to respond to it were to be excluded. In practice, no individual approached had insufficient English to complete the questionnaire. We used STATA software (Stata Corp., 2003) to generate univariate analyses and cross tabulations.

RESULTS

Table 1 gives basic demographic data and other descriptive information about the sample.

There was a statistically significant difference in whether a respondent had health insurance according to income. Of 241 respondents, 49.1% whose annual income was less than \$30,000 reported having health insurance ($n = 80$) compared with 89.7% of those whose annual income was greater than or equal to \$30,000 ($n = 70$) ($p = .000$). There was no statistically significant difference, however, by gender; 62.4% ($n = 88$) of males and 58.3% ($n = 63$) of females possession of health insurance ($p = .514$).

TABLE 1. Respondent Characteristics

Variable	N	%
Total participants	309	
Sex		
Males	177	58.4
Females	126	41.6
Marital status		
Single/separated/divorced/widowed	162	55.1
Married/common law	132	44.9
Religion		
Muslim	79	26.3
Christian	221	73.7
Education^a		
High school or less	84	29.1
More than high school	205	70.9
Income (annual)		
< \$30,000	202	70.6
≥ \$30,000	84	29.4
Immigration status		
Student	131	45.0
Diplomat	4	1.4
Refugee	59	20.3
Asylee	12	4.1
Family Reunification	37	12.7
Other	48	16.5
Time in U.S.^a		
9 years or less	176	63.1
Greater than 9 years	103	36.9
Do you have health insurance coverage?		
Yes	171	60.2
No	113	40.0
Ever tested for HIV		
Yes	212	70.7
No	88	29.3
HIV status		
Positive	5	2.5
Negative	188	92.2
Other	11	4.4
Is HIV/AIDS a problem in your community?		
Yes	203	69.1
No	91	31.0

^aSplit at median

HIV KNOWLEDGE

Overall, the respondents reported a high level of understanding about how HIV is transmitted. We created a “knowledge score” to look at the number of correct answers out of a total of 11 possible modes of transmission. The mean correct score was 8.2 out of a possible score of 11, approximately 74.5% correct. This is not surprising in light of the high levels of educational attainment among respondents; 70.9% had achieved greater than high school levels of education. Our analysis revealed that education is positively correlated with knowledge score ($r = .18, p = .002$).

On *t* test, we found no statistically significant difference in knowledge score by gender. Christians have a significantly higher knowledge score (8.4/11) than do Muslims (7.7/11) ($p = .000$).

Those respondents who perceived themselves as being at low/no risk for contracting HIV had higher knowledge scores (8.4/11) compared to those who categorize themselves as belonging to a higher risk group (7.8/11). This was also statistically significant ($p = .023$). Of those who practiced body scarring/tattooing ($n = 59$), only 52.5% ($n = 31$) were correct in identifying this practice as a possible mode of HIV transmission, whereas 69.6% ($n = 154$) of those who did not engage in these rituals knew they posed a risk ($p = .018$). Women were significantly more likely than men to know that an HIV-positive pregnant woman can transmit the virus to her fetus during delivery or during breast-feeding, (83.7% vs. 70.1%, $p = .007$).

RISK PERCEPTION

When asked to rate their level of risk for contracting HIV, 79.5% of respondents ($n = 217$) rated themselves as being of the lowest possible risk (1 on a 1-5 scale, in which 1 = lowest risk and 5 = highest risk). We found no statistically significant discrepancy in risk perception by gender, religion, education, or having practiced the rituals of body scarring/tattooing. As a group, people who are married consider themselves at lower risk for contracting HIV. Only 12.5% of individuals who described themselves as married perceived themselves as being at higher risk versus 27.9% of single/separated/divorced/widowed individuals ($p = .002$). People who reported having ever been treated for an STD ($n = 33$) were more than twice as likely to perceive a higher level of risk for contracting HIV than those who had never been treated for an a sexually transmitted disease (STD) (39.4% vs. 17.9%; $p = .004$).

CONDOM USE

Respondents were asked if they had ever used a condom; 63.7% reported that they had ($n = 184$) and 36.3% had never used a condom ($n = 105$). Those who had ever used a condom were then asked about frequency of condom use during the previous 3 months. The median response was 75% (most of the time), while the modal response was all of the time (44.6 %). Table 2 is a summary of findings on condom use.

We found the differential in condom use between males and females to be statistically significant ($p = .000$), with men reporting far greater use than women. There were no statistically significant discrepancies in having ever used a condom by country of origin, religion, marital status, or educational attainment. However, for frequency of condom use in the past 3 months, we found statistically significant differences for several variables. With respect to gender, we found that 41.2% of female condom users had used condoms 75-100% of the time in the past 3 months ($n = 14$), whereas 66.7% of male condom users reported 75-100% condom use during that time period ($n = 58$) ($p = .010$).

Not surprisingly, married condom users were less likely to have used a condom 75-100% of the time in the past 3 months (45.0%, $n = 18$) than were unmarried respondents (65.4%, $n = 51$) ($p = .033$). Interestingly, of those who consider themselves to be at the lowest possible risk for HIV transmission, 61.0% reported having ever used a condom, whereas 76.5% of those who perceived themselves to be at higher risk had ever used condoms ($p = .039$). The perception of low risk, however, might be because of consistent condom use.

STIGMA REGARDING HIV/AIDS

Respondents were asked, "How do people in your community/culture commonly react to and treat people with HIV disease?" Four statements were presented and respondents indicated agreement or disagreement with the statements. Only one

TABLE 2 Patterns of Condom Use

	Ever Condom Use		Condom Use in Past 3 Months	
	Yes (<i>n</i>)	No (<i>n</i>)	≤ 75% of the time (<i>n</i>)	75–100% of the time (<i>n</i>)
Overall	63.7 (184)	36.3 (105)	74.4 (215)	25.6 (74)
Gender				
Males	72.1 (124)	27.9 (48)	66.3 (114)	33.7 (58)
Females	50.5 (56)	49.6 (55)	87.4 (97)	12.6 (14)
Religion				
Muslim	59.2 (45)	40.8 (31)	73.7 (56)	26.3 (20)
Christian	64.7 (132)	39.3 (72)	75.0 (153)	25.0 (51)
Marital status				
Unmarried ^a	66.0 (101)	34.0 (52)	66.7 (102)	33.3 (51)
Married ^b	62.8 (76)	37.2 (45)	85.1 (103)	14.9 (18)
Education^c				
≤ High school	63.6 (49)	36.4 (28)	74.0 (57)	26.0 (20)
> High school	64.0 (126)	36.0 (71)	74.6 (147)	25.4 (50)
Risk perception				
No risk	61.0 (125)	39.0 (80)	75.1 (154)	24.9 (51)
Any risk	76.5 (39)	33.5 (12)	70.6 (36)	29.4 (15)

^aSingle/separated/divorced/widowed; ^bMarried/common law; ^cSplit at median.

third agreed that people with HIV are treated “openly, with sympathy, like any patient with chronic illness” (33.0%, $n = 96$). Nearly two thirds agreed that people in their communities respond to HIV-positive individuals “with fear, avoidance, and secrecy” (63.9%, $n = 186$). Almost half said that members of their community would react “by gossiping about how the person contracted the disease” (47.8%, $n = 139$) or “by making the person with HIV/AIDS feel as a social outcast” (43.3%, $n = 126$).

To analyze further this information, we created a “stigma score” to characterize degrees of stigma perceived by subsets of the study population. Using difference of means test, we found that females tend to be more pessimistic about how their communities/cultures react to and treat people with HIV than do males ($p = .009$). Christians are more likely than Muslims to perceive stigma against HIV-positive individuals in their communities/cultures ($p = .014$). There was no statistically significant difference in stigma score by marital status.

We found a weakly positive correlation ($r = .045$) between higher levels of educational attainment and the perception that there is greater stigma in the community/cultures, although the relationship was not statistically significant. Interestingly, we also found a negative correlation ($r = -0.08$, $p = .20$) between length of time in the United States and perception of stigma in the community/culture. In other words, the longer an individual has been in the host country, the less likely they are to perceive stigmatization about people living with HIV/AIDS among members of their community/culture.

AWARENESS OF SERVICES

Any needs assessment must consider a baseline body of knowledge among respondents about existing services in the community. This information assists both in initial program planning as well as evaluating success of a program by providing a quantifiable measure of change in awareness after an intervention is executed. We first asked respondents generally, “Are you aware of HIV/AIDS services in your community?” The study sample was nearly split, with 50.5% ($n = 156$) reporting they

TABLE 3. Percent Practicing Sexual Negotiation

	Yes (<i>n</i>)	No (<i>n</i>)
Sexual faithfulness or infidelity	38.3% (18)	61.7% (29)
Request for using condoms for the first time	34.0% (16)	66.0% (31)
Resistance to having sex	6.4% (3)	93.6% (4)
The need to know sexual contacts	17.0% (8)	83.0% (39)
The need to have an HIV test	8.5% (4)	91.5% (43)

were aware and 49.5% ($n = 153$) that they were unaware of services. On further analysis, we found no statistically significant difference in awareness by gender, origin, religion, marital status, education, or even risk perception. AIDS services were defined as services for those already infected.

We also asked about availability of specific services. Of the 138 respondents who completed this item on the questionnaire, 79.0% ($n = 109$) reported awareness of HIV testing and diagnostic services, 48.6% ($n = 67$) were aware of HIV treatment services, 56.5% ($n = 78$) were aware of HIV support and counseling services, and 36.2% ($n = 50$) were aware of HIV research and clinical trials.

SEXUAL NEGOTIATION

Respondents were asked, "Within the past 2 years, have you had sex with a partner who has spent some time outside the United States?" Of the 316 individuals that answered this question, 18.7% ($n = 52$) answered "yes," 5.4% ($n = 15$) answered "don't know," and 76.0% ($n = 21$) answered "no." Of those who answered "yes," 72.6% ($n = 37$) were male and 27.5% ($n = 14$) were female. Women were far more likely than men to report uncertainty about whether or not their partners had sex with someone while outside the country (60.0%, $n = 9$ vs. 40.0%, $n = 6$), but more men than women expressed confidence that they had not had sex with someone who had been outside the US in the previous 2 years (58.5%, $n = 121$ versus 41.6%, $n = 86$). All three findings were statistically significant ($p = .048$). Those who answered "yes" to the question above were further asked, "Upon return, were any of the following questions raised by either you or your partner?" Table 3 illustrates the results.

Of interest was the practice of sexual negotiation-related communication among those who had engaged in intercourse with a partner that had spent time outside of the United State in the preceding 2 years. Only 44 respondents reported that they or their partners had used sexual negotiation. Using the difference of means test, we found that men reported a more frequent use of negotiation techniques than women ($p = .028$); there was no corresponding difference with education ($p = .132$).

DISCUSSION

Several limitations in our study should be noted. Because the study design was based on a nonrandom sample of immigrants recruited through local community activities, we cannot ignore the possibility that respondents as a whole represent a more highly educated and informed group than might be the case for their communities more generally. As such, generalizability of findings to the community at large may be inappropriate.

Additionally, ambiguous wording was a problem in the question “Have you ever used a condom?” Although our analysis revealed a statistically significant difference in both ever condom use and frequency of past 3 month condom use between men and women, we must be cautious in the interpretation of this finding. Female respondents may have understood this question to ask whether they have ever used a female condom, in which case much lower rates of use would be expected given the high cost, low availability, and generally low levels of awareness about this method of risk reduction. This example highlights the importance of careful phrasing of questions in crafting any research instrument, particularly when the study populations’ first language may be different from that used in the instrument.

Several findings were interesting but small sample sizes rendered conclusions tentative. This was particularly true in analyzing frequency of condom use in the past three months (see Table 2). For example, although there was a statistically significant association between religion and ever condom use, small sample sizes among Muslims caution against drawing strong conclusions from this finding. In addition, although we were interested in knowledge by subgroups of the sample who were HIV-positive ($n = 5$), reported present or past intravenous drug users ($n = 9$), and had been injected with medication by someone other than a health care professional ($n = 17$), sample sizes were prohibitively small to determine statistical significance. Several observations about certain of the findings warrant further discussion.

KNOWLEDGE

There were several notable findings in the analysis of respondents’ base of knowledge regarding modes of transmission of HIV. First, it is notable that when gender and religion were considered, Christian women demonstrated the highest level of knowledge. Second, the discovery that respondents who reported having practiced body scarring/tattooing were less likely to identify this practice as a mode of transmission of HIV infection highlights the importance of exploring the role of tribal cultural rituals among members of particular immigrant groups. Program planning should consider targeting those who still practice those rituals for risk reduction. Finally, despite the high level of knowledge among both men and women in the sample, 16% of women were not aware that an HIV-positive woman could transmit the virus to her unborn fetus during pregnancy and labor and to an infant while breast-feeding.

RISK PERCEPTION

The data show that a majority of respondents rate their risk for contracting HIV to be extremely low or nonexistent. We offer several plausible interpretations for this finding. The first is that given their high levels of knowledge about how HIV/AIDS is transmitted, discussed earlier, this group of respondents has put to practice learned risk reduction behaviors, thereby lowering both their actual and self-perceived risk for contracting HIV. An alternative explanation is that given their high level of exposure to persons affected with AIDS—47.3% of all respondents reported having known someone in their community who has died as a consequence of AIDS-related illnesses, and presumably more may also know someone living with HIV/AIDS—this group has learned firsthand the human suffering associated with this disease and as such is more likely to avoid high-risk behaviors. This hypothesis can be countered by the finding that there was no statistically significant difference between low- and high-risk individuals and having known someone who died of AIDS (44.2% and 50.0%, respectively; $p = .442$). A third interpretation suggests

that an individual or group possesses the perception that they are somehow shielded from risk in ways that others are not. In essence, their state of denial impairs their perception of risk.

Other data seem to challenge the supposition that the perception of low/no risk among the overwhelming majority of respondents is a consequence of denial. The finding that respondents who had been treated in the past for an STD perceived a higher level of risk than those who had not exhibits genuine understanding about factors that contribute to risk. In addition, respondents demonstrated concordance between self-perceived risk and having ever used a condom. We interpret this finding to mean that perception of risk is being met with an appropriate risk-reducing response suitable to the level of risk. This assertion is weakened, however, by the finding that there was no statistically significant difference in frequency of condom use during the past 3 months between those who consider themselves at the lowest possible risk and those who perceive themselves to be at some higher degree of risk.

STIGMA

With regard to the statistically significant finding that perceived stigmatization among respondents toward people with HIV/AIDS decreases as length of time in the United States increases, we posit two interpretations. The first is that the departure of an individual from a society where the cultural norm is a high level of stigmatization regarding people living with HIV/AIDS effectively removes some stigma-reinforcing stimuli from their experiences. The second is that acculturation into a host country whose popular culture has a *relatively* low level of stigmatization promotes the modification of perceptions and beliefs about HIV/AIDS in general and those afflicted in particular. Both scenarios likely operate in tandem to explain this finding.

IMPLICATIONS FOR FUTURE RESEARCH

Immigrant groups are not monolithic. The characteristics of a particular group and the circumstances surrounding that groups' migration are unique. As such, even if future studies lend support to the hypothesis that immigrant groups are generally more vulnerable to HIV infection than host populations, attempts to make comparisons between and among different immigrant groups should be undertaken with great caution. For African migrants, although there are cultural differences even within countries, many of these are moderated by religion. Furthermore, the response to migrants in the United States by the public and many health services is often by general origin (e.g., "African" or "Asian," rather than by specific country or cultural origin. There may also be distinctions between those who are refugees compared with those who migrated for economic or educational reasons.

Our study population is an excellent example of an immigrant group whose characteristics are unlike those of other immigrant groups described in the public health literature. In their investigation of determinants of high-risk sexual behavior among African immigrants in Amsterdam, a group of Dutch researchers found that less educated immigrant men from Surinam, the Antilles, and Ghana more often reported engaging in unprotected sex than did those with higher educational attainment (Gras, Benthem, Coutinho, & van den Hoek, 2001).

In contrast, our study shows no statistically significant difference in self-reporting of ever condom use by educational attainment. Respondents with high school or less education ($n = 77$) were equally as likely to have ever used a condom (63.6%) as those with greater than high school education ($n = 197$, 64.0%). This finding held for

frequency of condom use in the past 3 months (see Table 2). Moreover, in our study, educational attainment was only weakly predictive of knowledge about modes of transmission of HIV ($r = .18$) despite being statistically significant ($p < .002$). This finding may be explained by our unusually well educated study sample: 70.9% had education beyond high school, and 54.3% had earned a college degree. Forty-five percent of respondents reported that they first entered the United States on a student visa. This comparison is an excellent illustration of how both demographic characteristics and migration motivation can vary dramatically, even between two groups of African immigrants both migrating to western nations. To treat all African immigrants as a single unit is obviously misleading.

CONCLUSIONS

These data show that Black African immigrants to the United States are characterized by relatively high levels of education. However, use of preventive measures, some areas of knowledge, knowledge of HIV-related services, and perceptions of HIV-related stigma suggest that this population would benefit from HIV prevention and outreach as much as nonimmigrant populations and that educational attainment is no predictor of specific HIV-related knowledge.

The present study contributes to the immigrant communities represented in this study—as well as to public health understanding of issues of immigration and HIV/AIDS prevention planning nationwide and internationally. As governments worldwide adopt ever-expanding open market economic reforms, and tribal conflicts and civil wars rage on, international migration will increase. Whether migration is motivated by the choice to seek educational or employment opportunities in a foreign land, by human rights violations in one's homeland, or simply the desire for families to reunite, individuals who migrate face unique public health challenges in the host country. HIV/AIDS is one of many serious public health issues that demands further study as it pertains to the experiences of migrants. These data, however, suggest that it is not necessarily immigration as such but issues such as level of risk, acculturation, religious background, education, and knowledge of access to services that are important in providing HIV/AIDS prevention programs for Black African immigrant populations in the United States.

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