Correlates of Sexual Risk among Recent Gay and Bisexual Immigrants from Western and Eastern Africa to the USA

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Abstract We examined correlates of sexual risk among gay and bisexual men, who recently migrated from western and eastern African countries to the USA and lived in New York City and who are HIV negative or of unknown status. These men migrate from countries where same-sex sexuality is socially rejected and mostly illegal contributing to the motivation to migrate. Their background might predispose these men to engagement in sexual risk practices, while they are not specifically addressed in HIV prevention programming. Participants ($N=62$) reported in face-to-face interviews on pre- and postmigration experiences, psychosocial determinants of sexual risk, and current sexual practices. Operationalization of sexual risk was based on the number of men with whom they had condomless receptive and/or insertive anal sex. Over a third of the men reported always having used condoms in the past year; among the other men, sexual risk varied. Multivariate analyses showed that sexual risk was lower among men with a stronger motivation to avoid HIV infection and higher among men who currently engaged in transactional sex. Further analyses indicated that housing instability was independently associated with reduced motivation to avoid HIV infection

and with engagement in transactional sex in the USA. In recent western and eastern African gay and bisexual immigrants to the USA, structural factors, including housing instability, are strongly associated with sexual risk.

Keywords Gay and bisexual men · Migration · Sexual risk · Housing instability · West and East Africa · New York City

Migration as a social determinant of health [1] has systematically been found to be associated with increased risk for HIV infection [2, 3]. For instance, reviewing the role of ethnicity from HIV/AIDS surveillance data in England and Wales, it was found that a disproportionately high number of new diagnoses among men who have sex with men (MSM) was in black and minority ethnic MSM and that a disproportionately high number of those men were from Caribbean and African origin [4, 5]. In more than half of the cases where this could be established, infection had occurred in the UK. Postmigration acquisition of HIV was supported by acquisition of viral clades that are not prevalent in the men's home country [6].

Despite this increased risk of HIV infection, little is known about the factors associated with unprotected sexual behavior among migrant gay and bisexual men. Qualitative research among gay and bisexual men who recently migrated to New York City suggests them to be more vulnerable to HIV infection than established residents because of their inexperience in encountering vast

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sexual opportunity, lack of practice in local norms of sexual communication, or lack of economic resources or social connections, encouraging them to have sex for money or shelter [7]. Another qualitative study suggests that moving to urban gay communities to avoid minority stress at home reinforces insecurities that lead to sexual risk-taking [8]. A quantitative study found that discrimination in one's hometown, recency of arrival, and moving to escape stress as a motivation to migrate were associated with HIV transmission risk behavior [9].

Less is known about engagement in HIV risk behavior among international gay and bisexual men, even though migration from outside the USA has been found to be independently associated with risk behavior among migrant MSM [9]. Migration might be particularly critical for gay and bisexual men who arrive from Africa, where same-sex sexuality is criminalized in many countries [10] and seems the least accepted compared to other parts of the world [11], while in some African countries, the negative legal and social climate even seems to worsen [12, 13]. According to relevant service organizations, the number of gay and bisexual immigrants from West and East Africa to NYC is increasing. It is possible that factors unique to this population are more critical than factors that are traditionally identified as determinants of sexual risk, including knowledge and attitudes, internalized homophobia and sexual identity confusion, substance use, and mental health [14, 15].

Increased HIV risk in African gay and bisexual immigrants could be associated with premigration experiences, the migration process itself, and postmigration adaptation. Same-sex sexuality often being one of the main reasons for migration, these men may have had traumatic experiences in their country of origin, such as having to hide one's same-sex attraction, discrimination and violence, or abusive experiences such as blackmail or forced sex [16–18]. Such traumatic experiences might negatively impact one's ability or motivation to look after one's health [19]. The migration process itself might have been stressful and although for African MSM, migrating to the USA might be experienced as liberating in terms of their homosexuality [7], it can also induce feelings of grief and loss [20]. The economic and political circumstances under which men arrive and the reception they encounter in their host country also might have a negative impact. In terms of the adaptation process, sexual risk might be increased for men with an insecure immigration status (e.g., being undocumented or seeking asylum) [21–23]. Part of the adaptation process is generating

income or finding a place to live; not having income might prompt the need to borrow money or to find clandestine sources, such as selling sex [7]. Transactional sex might also result from being without a place to live [24, 25]. Motivated by economic vulnerability, men may be more likely to have more sexual partners or concurrent sexual partnerships leading to an increased risk of HIV infection [26]. Also, the power dynamics in relationships where there is material benefit could mean that these men are less able or motivated to negotiate safer sex and as such may become more likely to participate in riskier sexual encounters [27].

In order to inform the development of targeted intervention strategies, we explored personal, social, and contextual risk factors for sex with men without condoms among recent gay and bisexual immigrants from West and East Africa to the USA. Because of their increased risk, it is critical to understand the factors that contribute to it. As far as we know, no such studies have been conducted with this specific population.

Materials and Methods

Participants and Procedure

Participants were recruited through several passive and active recruitment strategies. Passive recruitment included recruitment via social media and the use of postcards (in English and French) displayed in community-based organizations (CBOs) and other venues frequented by the target population. These cards contained the study name and the general purpose of the research as well as contact information for the study team so that interested potential respondents could contact study staff and inquire about the study. We used active recruitment through referrals from CBOs that provide service to this population. In addition, recruitment cards were given to each enrolled participant after completion of the interview to distribute to members of his social network to facilitate chain referrals. All men interested in participating in the study had to take initiative themselves to contact study staff, and, if interested in participating, undergo a brief telephone screening to ensure that they met eligibility criteria.

Inclusion criteria were as follows: 18 years or older, able to communicate in English or French, having migrated from to the USA from western or eastern Africa within the last 5 years, currently residing in New York

City (NYC), and identifying as gay or bisexual or reporting sex with same-sex persons. The questionnaire was translated from English into French and back translated. Interviews were conducted by the second author, who himself is an African immigrant and connected to the African gay and bisexual immigrant community in New York City, and a research assistant, Mark Jablonski, who was extensively trained before the start of the data collection. Familiarity of the second author with this population facilitated study implementation.

All participants were interviewed face-to-face at a private location with a structured computer-assisted questionnaire. Interviews were conducted from July to November 2015. Men received a cash incentive of \$30 for participating in the study. Seventy men were interviewed. Thirteen interviews were conducted in French. Eight men reported to be HIV positive; because we assumed that safer sex is a different issue for HIV-negative men than it is for HIV-positive men—whereas the concern of the former is not to get infected, the concern of the latter is not to infect other men—and likely to be determined by other factors, we excluded the HIV-positive men from the current analyses. All study procedures were approved by the IRB of the New York State Psychiatric Institute. In addition, the identity of the participants was protected by a Confidentiality Certificate issued by the National Institute of Mental Health.

Measures

To assess the variables in this survey, we made use of existing validate scales where possible and used questions and scales that have been successfully used in research with African MSM more generally.

An extensive assessment of the men's sexual behavior informed the calculation of a sexual risk index, which included the number of men that participants had receptive or insertive anal sex with in the preceding year without using a condom. If men did not have any condomless receptive anal sex, they scored a zero. If men only had condomless receptive anal sex with one person, they scored one. If they had condomless receptive anal sex with two or more persons, they scored two. The same rule was applied to insertive anal sex. Adding both scores resulted in an index ranging from 0 to 4.

We assessed openness about one's same-sex attraction in the country of origin by asking for several persons (brother and sisters, father, mother, friends, colleagues at work) whether they knew that the person had

such feelings, while he was living in country of origin; all positive answers were summed.

Homophobic violence in country of origin was assessed with 11 items asking about the frequency with which several forms of negative behavior had happened to them “as a result of sexual orientation or practice.” These behaviors included verbal abuse, verbal threats of physical violence, having personal property damaged or destroyed, being chased or followed, being spat upon, having objects thrown at one's body, being blackmailed, being denied employment or fired from a job, and being evicted or denied housing [28]. Frequency was assessed on a 5-point scale (never–very often; $\alpha = 0.90$).

Transactional sex in country of origin or the USA was assessed with the question “Have you ever received anything in return for having sex with someone while you were still living in your home country/since living in the United States?”; follow-up questions assessed the number and sex of persons involved and the commodities exchanged for sex.

Forced sex was based upon a general question about having had forced sex experiences (“Has someone ever forced you to have sex when you did not want to yourself? This could have been a stranger, someone you knew, or a regular partner.”); follow-up questions were used to determine whether such experiences had occurred before the person migrated to the USA.

Insecure immigration status was based on a question about current status and included the following answer categories: green card holder, student visa, undocumented, asylum seeker, asylee (granted asylum), US citizen, and other. Undocumented participants and asylum seekers were categorized as having an insecure immigration status.

Housing instability was assessed with five questions, e.g., “Since living in NYC, have you ever stayed with friends/family because you had no place to sleep?” with yes/no answer categories [29]; scores were summed ($\alpha = 0.72$).

Financial instability was assessed with the question, “In the last 12 months, how often have you had to borrow money from a friend or relative to survive financially?” (never–almost always).

Social support was measured using five items that asked how true it was that there is someone that the person can rely on for money, food, a place to stay, to talk to if he has problems, to accompany him to a doctor, or help him if he gets hurt [30] (never true—always true; $\alpha = 0.89$).

Migratory grief was assessed with seven items from the Migratory Grief and Loss Questionnaire [20], in particular those dealing with identity discontinuity (e.g.,

“You feel like a stranger in this country”) (never—always; $\alpha=0.84$).

Alcohol use was assessed with the AUDIT-C, a 3-item screening test for heavy drinking or active alcohol use or dependence [31]. Recreational drug use was assessed with the question how often men had used such drugs in the past year after an introduction explaining the concept.

To assess symptoms of posttraumatic stress disorder, we used the PTSD Checklist (PCL) [32] consisting of six items identifying the frequency with which the participant had been bothered by specific problems (e.g., “Trouble concentrating on things, such as reading the newspaper or watching television”) over the past 2 weeks; answers were scored on a 4-point scale (not at all—nearly every day); an average score was computed ($\alpha=0.82$). Mental distress was assessed with the PHQ-9 ($\alpha=0.84$) [33, 34].

Sexual attraction was assessed with the question “Do you currently feel more sexually attracted to men or to women?” and a 5-point response scale (only to women—only to men). Sexual identification was assessed with the question “What word would you use to describe your sexuality? Would you call yourself gay, bisexual, or straight, or would you use another word?” The extent to which persons hide their sexual orientation in NYC was assessed with one question: “While living in New York, how hard do you try to keep your sexual orientation hidden?” with four response categories: try very hard; try somewhat hard; do not try, but do not talk about it; and I openly talk about it [35].

Sexual identity confusion was assessed by asking participants to indicate on a 4-point scale (strongly agree—strongly disagree) their agreement with statements such as “You are not totally sure what your sexual orientation is [36].” Internalized homophobia was assessed with a 4-item scale adapted from scales used with comparable populations [37]; e.g., “You feel that being attracted to men is a personal shortcoming for you”. For both scales, mean scores were computed ($\alpha=0.82$ and 0.80 , respectively).

HIV knowledge was assessed with seven true or false statements about possible transmission and protection against HIV (e.g., “Oral sex is just as risky as anal intercourse for transmitting HIV”). All correct answers were summed; “Don’t know” answers were scored as incorrect.

Attitudes towards condoms were assessed with two statements (e.g., “The use of condoms can make sex

more stimulating”) using a 5-point Likert scale (strongly agree—strongly disagree; $\alpha=0.70$). Higher scores indicate more positive attitudes.

Motivation to prevent HIV infection was assessed with the following two questions: “How important is it for you to remain HIV-negative? On a scale of 1–10 (not at all important) and 10 (extremely important)” and “When you consider everything that matters to you about your sex life, how much do you plan to do to avoid getting HIV? On a scale of 1–10 (1—You will do nothing to avoid getting HIV, 10—You will do everything to avoid getting HIV including not having sex)”; a mean score was calculated ($\alpha=0.90$).

Finally, we collected demographic information, including the number of years participants were living in New York.

Data Analysis

Initial analyses were conducted to identify correlates of sexual risk, first with bivariate and then backward stepwise linear regressions that begins with all independent variables in the model and then removes non-significant variables until only significant predictors remain in the equation. Two variables emerged from this analysis as significant, independent predictors of sexual risk: motivation to prevent HIV infection and engagement in transactional sex in the USA. To identify possible distal determinants of sexual risk, we subsequently used the same analytic approach (bivariate analyses followed by backward stepwise regressions) with these two variables now as dependent variables, rather than predictors. Linear regression was used for motivation to prevent HIV infection as a continuous variable, and logistic regressions were used for engagement in transactional sex in the USA as a dichotomous variable. Certain variables were excluded from these secondary regression analyses for various reasons. HIV knowledge and attitudes towards condoms, as integral parts of motivation, were excluded from the regression on motivation to prevent HIV infection. Alcohol and drug use, PTSD, and mental health were excluded from the multivariate regression on transactional sex because they were seen as correlates or likely outcomes rather than causes of transactional sex. Since inclusion of all variables left our model overspecified, we also excluded transactional

sex in country of origin from this analysis because of its strong associations with the outcome variable. Data were analyzed using IBM SPSS Statistics 23.

Results

The 62 men who reported not to be HIV positive were between 20 and 41 years old ($M=31.1$ years). The men came from 15 different East and West African countries (Benin, Burkina Faso, Chad, Ghana, Guinea, Ivory Coast, Kenya, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, The Gambia, and Uganda). The largest proportions of men came from Nigeria (24.4%) and Ghana (16.1%). One man was born in the USA, but left the country as a baby, grew up in the Ivory Coast, and moved back to the USA in 2012. While some men had arrived in the USA in the preceding year (14.5%), others were living here for 3 to 5 years (24.2%); the mean period of living in the USA was 1.7 years ($SD=1.28$). The majority of men were undocumented (21.0%) or asylum seekers (30.6%). Other men had a green card (14.5%), a student visa (12.9%), or a visitor visa (6.5%); were granted asylum (11.3%); or were US citizens (3.2%). Other characteristics of the participating men are presented in Table 1.

The sexual risk index ranged from 0 to 4, with a mean of 1.6 ($SD=1.53$); 38.7% of the men reported no condomless anal sex in the preceding year. Bivariately, sexual risk was strongly associated with the motivation to prevent HIV infection ($\beta=0.46$, $p=0.000$), having used recreational drugs in the past year ($\beta=0.26$, $p=0.042$), current housing instability ($\beta=0.45$, $p=0.000$), and having engaged in transactional sex in the USA ($\beta=0.49$, $p=0.000$; see Table 2). Men who reported sexual attraction to both men and women had less risk compared to men who reported sexual attraction only to men ($\beta=0.27$, $p=0.037$). Premigration factors associated with sexual risk included having been more open about same-sex attraction in the country of origin ($\beta=0.27$, $p=0.034$), engagement in transactional sex ($\beta=0.29$, $p=0.020$), and having had forced sex experiences ($\beta=0.28$, $p=0.028$).

The backward stepwise linear regression of sexual risk identified two independent factors: motivation to prevent HIV infection ($\beta=-0.35$, $p=0.001$) and engagement in transactional sex in the USA

Table 1 Characteristics of recent gay and bisexual immigrants from East and West Africa to the USA ($N=62$)

	<i>M</i> (<i>SD</i>)	% (<i>n</i>)
Age, years	31.1 (5.76)	
Education		
Less than college		38.7 (24)
College or higher		61.3 (38)
Sexual attraction		
To men and women		50.0 (31)
To men only		50.0 (31)
Sexual identity		
Bisexual		33.9 (21)
Gay		66.1 (41)
Openness in country of origin	1.9 (1.39)	
Homophobic violence in country of origin	1.7 (0.76)	
Transactional sex in country of origin		
No		41.9 (26)
Yes		58.1 (36)
Forced sex before migration		
No		64.5 (40)
Yes		35.5 (22)
Insecure immigration status		
No		48.4 (30)
Yes		51.6 (32)
Years living in the USA	1.7 (1.28)	
Migratory grief	2.0 (0.65)	
Social support	3.1 (0.98)	
Housing instability in NY	3.4 (1.46)	
Financial instability in NY	3.1 (1.07)	
Transactional sex in the USA		
No		48.4 (30)
Yes		51.6 (32)
Alcohol use	3.5 (2.58)	
Recreational drug use	2.4 (1.52)	
PTSD	2.3 (0.75)	
Mental distress	1.8 (0.55)	
Hiding sexual orientation in NY	2.8 (0.77)	
Identity confusion	2.0 (0.58)	
Internalized homophobia	2.7 (0.69)	
HIV knowledge	5.8 (1.08)	
Attitudes towards condoms	2.6 (0.84)	
Motivation to prevent HIV infection	8.9 (1.37)	

($\beta=0.39$, $p=0.002$; $R^2=0.35$). Men with a stronger motivation to prevent HIV infection were less likely to engage in sexual risk, whereas men who engaged

in transactional sex were more likely to engage in sexual risk.

Correlates of Motivation to Prevent Infection

Motivation to prevent HIV infection ranged from 5 to 10 and had a mean score of 8.9 (SD=1.37). Men with a stronger motivation had more correct knowledge about HIV ($\beta=0.31$, $p=0.015$) and more positive attitudes towards condoms ($\beta=0.28$, $p=0.030$; see Table 2). Motivation was also stronger among men who had been living longer in the USA ($\beta=0.33$, $p=0.008$). Motivation was lower among men who reported more housing instability ($\beta=-0.41$, $p=0.000$) and who had engaged in transactional sex in the USA ($\beta=-0.28$, $p=0.027$). None of the premigration factors was bivariate associated with motivation to prevent HIV infection.

The backward stepwise linear regression of motivation to prevent HIV infection identified current housing instability as independent predictor ($\beta=-0.41$, $p=0.001$; $R^2=0.17$; financial instability was excluded from this analysis because there was an unlikely positive association with motivation). The negative independent association between housing instability and motivation to prevent HIV infection indicates that men who experienced more housing instability were less motivated to prevent HIV infection.

Correlates of Engagement in Transactional Sex

More than half of the participants said to have engaged in transactional sex after having arrived in the USA. The mean number of persons that these men had transactional sex with was 8.2 (SD=8.56; range 1 to 40). Most men had only had transactional sex with men (78.1%, $n=25$); six men reported transactional sex with both men and women (18.8%); and one man reported only transactional sex with women. Asked what they received in return for sex, all men reported money; about three quarters of the men also reported food, clothing, and/or cosmetics (81.3%); a place to sleep (87.5%); or a cell phone (75.0%).

Having engaged in transactional sex in the USA was bivariate associated with factors reflecting the men's current situation as well as premigration factors (see Table 2). Men who had engaged in transactional sex were older [odds ratio (OR)=1.11, 95% confidence interval (95%CI)=1.01, 1.22, $p=0.037$] and more likely to report current alcohol and recreational drug use (OR=1.34,

95%CI=1.07, 1.67, $p=0.010$ and OR=2.08, 95%CI=1.37, 3.16, $p=0.001$, respectively); they also reported more mental distress (OR=3.37, 95%CI=1.17, 9.68, $p=0.024$). Engagement in transactional sex was furthermore associated with housing instability (OR=2.73, 95%CI=1.67, 4.47, $p=0.000$) and men's efforts to hide their sexual orientation (OR=2.06, 95%CI=1.01, 4.23, $p=0.048$). If men currently experienced more social support, they were less likely to have engaged in transactional sex (OR=0.55, 95%CI=0.31, 0.97, $p=0.038$). In terms of premigration factors, transactional sex in the USA was associated with having engaged in transactional sex in the country of origin (OR=31.76, 95%CI=7.38, 136.63, $p=0.000$), being more open about one's same-sex attraction in the country of origin (OR=2.65, 95%CI=1.47, 4.76, $p=0.001$), and having experienced forced sex before migration (OR=4.00, 95%CI=1.29, 12.40, $p=0.016$). Transactional sex in the country of origin most often involved men as sexual partners (77.8%; 22.2% of the participants reported transactional sex with both men and women) and always involved the exchange of money. Most of the men's premigration forced sex experiences had happened more than once (59.1%) and occurred over several years, starting before the age of 16 (77.2%), and were most frequently perpetrated by men (86.3%).

Backward stepwise logistic regression identified openness in country of origin and current housing instability as independent correlates of engagement in transactional sex in the USA [adjusted odds ratio (AOR)=3.05, 95%CI=1.21, 7.68, $p=0.018$, and AOR=2.66, 95%CI=1.45, 4.90, $p=0.002$, respectively]. Men who were more open about their homosexuality in their country of origin and men who currently experienced more housing instability were more likely to engage in transactional sex. Migratory grief and internalized homophobia were marginally significant (AOR=0.28, 95%CI=0.08, 1.03, $p=0.055$, and AOR=3.46, 95%CI=0.95, 12.62, $p=0.060$, respectively). Men with more migratory grief were less likely to engage in transactional sex, whereas men with stronger internalized homophobia were more likely to do so.

Discussion

Our study among recent gay and bisexual immigrants from East and West African countries to the USA showed that level of sexual risk was independently

Table 2 Associations of characteristics of recent gay and bisexual immigrants from East and West Africa to the USA with sexual risk, motivation to prevent HIV infection, and engagement in transactional in the USA ($n = 62$): New York City, NY; 2015

	Sexual risk			Motivation to prevent infection			Engagement in transactional sex in the USA		
	<i>M</i> (SD)	β	<i>p</i>	<i>M</i> (SD)	β	<i>p</i>	% (<i>n/N</i>)	OR 95%CI	<i>p</i>
Age, years		0.02	0.850		0.01	0.965		1.11 (1.01, 1.22)	0.037
Education		-0.18	0.152		-0.10	0.453			
Less than college	1.9 (1.56)			9.0 (1.13)			54.2 (13/24)	Referent	
College or higher	1.3 (1.49)			8.8 (1.51)			50.0 (19/38)	0.85 (0.30, 2.36)	0.749
Sexual attraction		0.27	0.037		-0.25	0.051			
To men and women	1.2 (1.49)			9.2 (1.39)			41.9 (13/31)	Referent	
To men only	2.0 (1.49)			8.5 (1.28)			61.3 (19/31)	2.19 (0.79, 6.05)	0.130
Sexual identity		-0.24	0.057		0.18	0.170			
Gay	1.8 (1.51)			8.7 (1.38)			58.5 (24/41)	Referent	
Bisexual	1.1 (1.47)			9.2 (1.32)			38.1 (8/21)	0.44 (0.15, 1.28)	0.131
Openness in country of origin		0.27	0.034		-0.12	0.340		2.65 (1.47, 4.76)	0.001
Homophobic violence in country of origin		0.16	0.226		-0.17	0.197		1.33 (0.68, 2.61)	0.407
Transactional sex in country of origin		0.29	0.020		-0.15	0.242			
No	1.0 (1.34)			9.1 (1.56)			11.5 (3/26)	Referent	
Yes	1.9 (1.57)			8.7 (1.21)			80.6 (29/36)	31.76 (7.38, 136.63)	0.000
Forced sex before migration		0.28	0.028		-0.12	0.356			
No	1.3 (1.41)			9.0 (1.37)			40.0 (16/40)	Referent	
Yes	2.1 (1.61)			8.6 (1.38)			72.7 (16/22)	4.00 (1.29, 12.40)	0.016
Insecure immigration status		0.23	0.069		-0.16	0.207			
No	1.2 (1.42)			9.1 (1.11)			40.0 (12/30)	Referent	
Yes	1.9 (1.57)			8.6 (1.57)			62.5 (20/32)	2.50 (0.90, 6.95)	0.079
Years living in the USA		-0.11	0.402		0.33	0.008		0.86 (0.58, 1.28)	0.456
Migratory grief		0.01	0.924		0.00	0.974		1.06 (0.49, 2.31)	0.880
Social support		-0.12	0.359		0.15	0.253		0.55 (0.31, 0.97)	0.038
Housing instability in NY		0.45	0.000		-0.41	0.001		2.73 (1.67, 4.47)	0.000
Financial instability in NY		0.11	0.406		0.02	0.858		1.33 (0.82, 2.16)	0.241
Transactional sex in the USA		0.49	0.000		-0.28	0.027			
No	0.8 (1.16)			9.3 (1.44)					
Yes	2.3 (1.51)			8.5 (1.21)					
Alcohol use		0.24	0.061		-0.17	0.179		1.34 (1.07, 1.67)	0.010
Recreational drug use		0.26	0.042		-0.16	0.221		2.08 (1.37, 3.16)	0.001
PTSD		0.14	0.286		-0.07	0.576		1.76 (0.87, 3.55)	0.115
Mental distress		0.05	0.726		-0.10	0.422		3.37 (1.17, 9.68)	0.024
Hiding sexual orientation in NY		0.16	0.210		-0.25	0.053		2.06 (1.01, 4.23)	0.048
Identity confusion		-0.01	0.968		-0.05	0.685		0.95 (0.40, 2.26)	0.909
Internalized homophobia		0.12	0.341		-0.07	0.585		1.81 (0.83, 3.92)	0.135
HIV knowledge		-0.03	0.831		0.31	0.015			
Attitudes towards condoms		-0.13	0.330		0.28	0.030			
Motivation to prevent HIV infection		-0.46	0.000						

CI confidence interval for odds ratio (OR)

associated with the men's motivation to protect oneself and engagement in transactional sex in the USA. A critical factor that seemed to undermine the motivation to protect oneself was current housing instability. Housing instability also seemed the main factor for engagement in transactional sex.

Our findings are in line with results from studies with similar populations. For instance, Evans and colleagues [38] found that engagement in commercial sex predicted sexual risk among MSM who migrated from central and eastern European countries to the UK. Unlike others [7, 9], we did not find that economic instability was associated with sexual risk behavior and also not with engagement in transactional sex. This is likely a consequence of the suboptimal operationalization of economic instability in this study. Using only a single item, we asked about the frequency with which men had to borrow money from a friend or relative.

Premigration factors seemed relevant as far as they concerned openness about one's homosexuality and engagement in transactional sex. Both variables were strongly associated (data not shown). As in a few other studies, trauma symptoms, assessed as PTSD, were not associated with HIV risk behaviors [19]. The same applied to homophobic violence, although other studies found homophobic violence to be associated with engagement in HIV risk behavior in migrant gay and bisexual men [9] (this study identified associations of homophobic violence with other health risks, including drug and alcohol use, and mental health). Even though having gained asylum was found to be a protective factor in qualitative research among young transgender Latinas [22], insecure immigration status was only marginally associated with sexual risk in the current study.

Factors traditionally identified as determinants of sexual risk, including knowledge and attitudes, internalized homophobia and sexual identity confusion, substance use, and mental health [14, 15], only played a marginal role in this study. However, motivation to prevent infection was independently associated with engagement in sexual risk, with housing instability as a critical predictor of motivation to prevent infection.

Several limitations should be taken into account in interpreting these findings. Our operationalization of sexual risk as condomless anal sex does not account for condomless sex with a recognized monogamous partner. It is also possible that participants protected themselves in other ways. We expect the latter to be unlikely given the participants' social circumstances.

Furthermore, the sexual risk index took number of partners as well as sexual roles into account. If there is any effect of this operationalization on our findings, we expect that it attenuated the associations we found. Furthermore, because the sample is relatively small, power was limited. With a bigger sample, more associations and differences might have been significant. Another limitation is the use of a convenience sample, although the fact that 15 of 36 East and West African countries were represented supports the diversity within the sample. Finally, it is not clear to what extent findings can be generalized to this specific population or gay and bisexual migrants more generally.

Being primarily associated with structural factors, addressing the risk of HIV infection among recent gay and bisexual immigrants from West and East Africa requires structural approaches that pay attention to housing and socioeconomic needs.

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