ORIGINAL ARTICLE

HIV testing and high risk sexual behaviour among London's migrant African communities: a participatory research study

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Objectives: To describe the demographic and behavioural factors associated with HIV testing among migrant Africans in London.

Methods: A cross sectional survey of migrants from five sub-Saharan African communities (Congo, Kenya, Uganda, Zambia, Zimbabwe) resident in London was carried out. The study formed part of a larger community based participatory research initiative with migrant African communities in London—the MAYISHA project. Trained, ethnically matched interviewers recruited study participants in a variety of community venues. A brief self completion questionnaire collected data on demographic characteristics, utilisation of sexual health services, HIV testing history, sexual behaviour, and attitudes.

Results: Valid questionnaires were obtained from 748 participants (396 men and 352 women), median ages 31 and 27 years, respectively. Median length of UK residence was 6 years. 34% of men and 30% of women reported ever having had an HIV test. HIV testing was significantly associated with age and previous STI diagnosis among women; and additionally, nationality, education, employment, and self perceived risk of acquiring HIV among men. After controlling for significant demographic variables, previous diagnosis of an STI (adjusted odds ratio and 95% confidence interval for men: 2.96, 1.63 to 5.38, and women 2.03, 1.06 to 3.88) and perceived risk of acquiring HIV for men (adjusted OR 2.28, 95%CI 1.34 to 3.90) remained independently associated.

Conclusion: Among these high HIV prevalence migrant communities, these data suggest that HIV testing remains largely associated with an individual's STI history or self perceived risk. This strategy may be inappropriate given the potential for onward and vertical transmission. Antenatal HIV testing combined with proactive targeted HIV testing promotion should be prioritised.

After homosexual and bisexual men, African communities in the United Kingdom, particularly those from sub-Saharan Africa, are the second largest social group affected by HIV/AIDS. Over 1000 new HIV infections are diagnosed among Africans annually, many with advanced HIV disease.[1 2] In 1999, nearly 3902 HIV infected black Africans were seen for care in England, Wales, and Northern Ireland, representing 20% of all patients seen for treatment.[1] Previous studies have focused on clinical care and disease progression within black African communities[3–6] and have highlighted differences in clinical presentation and opportunistic infections between Africans and other ethnic groups. However, there remains no evidence to suggest that African communities have worsened clinical disease spectrum or prognosis,[6] nor is there any evidence that Africans in contact with treatment services are less likely to avail themselves of antiretroviral therapy. Despite these positive clinical indices, persistent and significant social stigma related to HIV/AIDS disease, discrimination and fear of recrimination results in poor uptake of primary and secondary HIV prevention initiatives including voluntary confidential HIV testing.[7] As such, the advent of HAART has made little impact on AIDS diagnoses among these communities as many may choose not to ascertain their HIV status, thereby presenting with advanced disease.[7]

Current HIV/AIDS surveillance data suggest that the majority of HIV infections among Africans may have been acquired before arrival in the United Kingdom.[2] Recent HIV prevention interventions with migrant communities have therefore raised the importance of promoting HIV testing in order to reduce the proportion of undiagnosed infections and minimise the risk of onward or vertical disease transmission. In this paper we examine the demographic, behavioural, and attitudinal factors associated with the uptake of HIV testing among this high risk population subgroup.

METHODS

This cross sectional community based survey was undertaken as part of a larger participatory research project—the MAYISHA project (name derived from the Swahili term *maisha* meaning lifestyles or behaviour). MAYISHA aimed to determine the feasibility and acceptability of actively involving a number of London's at-risk migrant African communities (from Congo, Kenya, Uganda, Zambia, and Zimbabwe) in undertaking sexual behaviour research relevant to planning and implementing local HIV prevention interventions. These communities are among the most populous migrant sub-Saharan African communities in London and bear a disproportionate burden of prevalent HIV infections in Britain.

MAYISHA utilised a "hub and spoke" model of participatory research.[8] Ten representatives (key workers) from each of seven local African community based organisations (CBOs) were included in the study research team (the hub). Key workers were involved in all stages of the study's design, development implementation, and evaluation. They facilitated access to, and communication with, the five target communities both informally, through their own contacts, and formally, via the CBO activities (the spokes). MAYISHA was conducted in four interlinked phases over a 2 year period commencing September 1997. They included establishing collaborative partnerships with local communities; social mapping of local target communities and venues for recruitment using rapid assessment techniques; community based surveying in social and commercial venues; and evaluation of the MAYISHA model of participatory research.[9]

Table 1 Demographic characteristics of study participants

Characteristic	Male	Female	p Value
Age (years, median, range)	31 (16–70)	27 (16–68)	<0.0005
Nationality (%)			
Congo/Zaire	26.5 (105/396)	20.2 (71/352)	
Kenya	15.4 (61/396)	17.1 (60/352)	
Uganda	17.7 (70/396)	17.6 (62/352)	
UK	1.3 (5/396)	1.4 (5/352)	0.12
Zambia	15.4 (61/396)	12.8 (45/352)	
Zimbabwe	17.4 (69/396)	25.3 (89/352)	
Other	6.3 (25/396)	5.7 (20/352)	
Country of birth (%)			
Africa	94.9 (332/350)	92.9 (289/311)	
UK	3.7 (13/350)	4.8 (15/311)	0.56
Other	1.4 (5/350)	2.3 (7/311)	
Region of residence between 10–16 years of age (%)			
Africa	85.5 (337/394)	81.2 (285/351)	0.28
Outside Africa	14.2 (56/394)	18.5 (65/351)	
Both	0.3 (1/394)	0.3 (1/351)	
Median (range) length of residency in the UK, years	6 (1–63)	6 (1–67)	0.27
Employment status (%)			
Employed	50.3 (196/390)	40.8 (142/348)	<0.0005
In education, not employed	26.7 (104/390)	33.1 (115/348)	
Caring for home/family, not employed or in education	3.6 (14/390)	9.8 (34/348)	
Unemployed/other	19.5 (76/390)	16.4 (57/348)	
Highest level of formal education received (%)			
None	0.8 (3/392)	0.9 (3/353)	0.001
Primary	3.1 (12/392)	5.1 (18/353)	
Secondary	20.9 (82/392)	33.1 (117/353)	
University/college	54.6 (214/392)	47.9 (169/353)	
Professional training	19.6 (77/392)	12.8 (45/353)	
Other	1.0 (4/392)	0.3 (1/353)	
Marital status (%)			
Married	40.1 (157/392)	27.8 (98/352)	0.003
Widowed/separated/divorced	4.9 (19/392)	7.7 (27/352)	
Cohabiting	14.5 (57/392)	17.6 (62/352)	
Partner but not cohabiting	10.0 (39/392)	15.3 (54/352)	
Single	30.6 (120/392)	31.5 (111/352)	

This cross sectional survey was undertaken in social and commercial venues frequented by the five target African communities (self identified nationals of Congo, Kenya, Uganda, Zambia, and Zimbabwe) who were either resident or utilised social and commercial venues in Camden and Islington—two inner London boroughs. The venues were identified in a preceding rapid assessment exercise[10]—which utilised socio-anthropological and quantitative methods including review of published literature, key informant interviews, site enumeration, visits and participant observation, semistructured interviews with community representatives and local African CBOs. A sampling frame of target venues was then constructed which detailed the type of venue, its use by the target communities, as well as the feasibility and acceptability of on-site questionnaire distribution and completion. A range of venues were identified as being suitable for study recruitment including schools, universities, churches, embassies, bars, restaurants, clubs, hairdressers, and night clubs. Permission was sought and obtained from each venue owner before study recruitment was undertaken.

A brief, 21 item questionnaire was developed in conjunction with key workers and included questions on basic demographic information including sex, age, nationality, country of birth, country of residence when aged between 10 and 16 years, employment and relationship status, and level of education. Questions on previous STI diagnosis, HIV testing history, sexual partnerships in the past year, condom use, use of vaginal drying agents, travel to home country, and sexual contact abroad were also included. Finally, questions related to perceived risk, perceptions of group norms, self efficacy, as well as the credibility of sources for sexual health information were assessed. The questionnaire was translated into French for distribution to francophone (in particular Congolese) respondents.

A cadre of 25 trained volunteers from the five target communities, nominated by the MAYISHA key workers, undertook recruitment. The volunteers were selected on the basis of their familiarity with their local communities and their experience in sexual health promotion and outreach activities. All were required to participate in a one day training session that outlined recruitment procedures and standardised data collection techniques. Training was also provided on maintaining privacy and confidentiality in social venues, as well as mechanisms to monitor response rates. Study recruitment took place over a 10 week period and was confined to the pre-identified social venues. Potential participants were approached in each site by the recruiters who explained the study, handed out explanatory flyers, and distributed questionnaires if the participants consented to the survey. At each venue, recruiters were asked to note the numbers of questionnaires distributed and returned, and reasons for non-participation. All questionnaires were returned to a central study coordinator.

All analysis was performed using STATA version 6.0. To compare groups of study participants (for example, men and women), standard techniques were used. Specifically, the χ^2 test was used to compare groups with regard to categorical factors, and the Mann-Whitney test used for continuous factors (for example, age). The unadjusted odds ratio (OR) was initially used to examine the nature of association between various explanatory factors and various outcomes of interest (for example, HIV testing). ORs together with confidence intervals were calculated using logistic regression to examine the association between individual behavioural factors (for example, previous STI diagnosis), and the outcomes, adjusting for those demographic factors found significantly associated with the outcome.

Table 2 High risk sexual behaviours and use of sexual health services among study participants; proportions by sex

Characteristic	Male	Female	p Value
New sexual partner in the last year?			
Yes	43.1 (173/401)	40.4 (143/354)	0.45
Proportion using condoms for last act of intercourse	46.1 (167/362)	42.9 (129/301)	0.40
Reasons for using condoms on last occasion of intercourse			
Pregnancy	18.8 (30/160)	16.9 (22/130)	0.006
STD/HIV	24.4 (39/160)	11.5 (15/130)	
Both pregnancy and HIV	51.3 (82/160)	69.2 (90/130)	
Other reason	5.6 (9/160)	2.3 (3/130)	
Use of vaginal herbs			
Frequently in the UK	3.9 (14/357)	4.9 (16/325)	<0.0005
Occasionally in the UK	5.0 (18/357)	6.8 (22/325)	
Not in UK, but in home country	9.5 (34/357)	9.9 (32/325)	
Never used	43.4 (155/357)	62.2 (202/325)	
Unsure/don't know	38.1 (136/357)	16.3 (53/325)	
Ever been previously diagnosed with an STI?			
Never	71.2 (255/358)	79.5 (252/317)	0.001
>5 years ago	13.1 (47/358)	4.4 (14/317)	
Between 1–5 years	10.1 (36/358)	10.7 (34/317)	
Within past year	5.6 (20/358)	5.4 (17/317)	
Ever knowingly had an HIV test?			
Never	66.1 (226/342)	70.0 (217/311)	0.54
>5 years ago	4.1 (14/342)	4.2 (13/311)	
Between 1–5 years	17.0 (58/342)	16.7 (52/311)	
Within past year	12.9 (44/342)	9.3 (29/311)	

The study was approved by the research ethics committee of the Camden and Islington Community Health Services NHS Trust.

RESULTS

Of the 1000 questionnaires distributed, 756 respondents participated in the study and 748 (396 men and 352 women) returned valid questionnaires. Their demographic characteristics are summarised in table 1. Although the majority of respondents were from the five target communities, 6% were either nationals of other African countries, or UK born. Over 90% of men and women were born in Africa with a high proportion of respondents (86% of men and 81% of women) migrating to the United Kingdom after early adolescence (10–16 years of age). The median length of residency in the United Kingdom was 6 years. Of the five target African communities, the Congolese were the most populous, accounting for a fifth of female and quarter of male participants. Nevertheless, overall, there were no significant differences in the ethnic distribution of male and female respondents ($p=0.12$).

Men were significantly older than women (median age 31 years, range 16–70 years, compared with 27 years (16–68 years), $p < 0.0005$). Significant differences in marital status were also observed with men being more likely to be married than women (40.1% *v* 27.8%) and women were more likely to be partnered (cohabiting or not) than men (31.9% *v* 24.5%). While 74.2% of men and 60.7% of women ($p<0.001$) reported having a university degree or higher professional qualification, only 50.3% of men and 40.8% of women were in full time employment. Women were more likely than men to be caring for home/family or to be in full time education.

The distribution of high risk sexual behaviours and sexual history by sex are outlined in table 2. Just over 40% of respondents reported having had sexual intercourse with one or more new sexual partners in the preceding year. Condom use at last sexual intercourse was reported by 46% (167/362) of men and 43% (129/301) of women. The reasons for using condoms differed significantly between men and women ($p=0.006$). Men were more likely than women to report using condoms to prevent pregnancy (19% *v* 17%) and STIs (24% *v* 12%) whereas women were more likely than men to report condom use to prevent "both pregnancy and STIs" (69.2% *v* 51.3%). While 28.5% of men and 20.5% of women ($p<0.001$) reported having previously been diagnosed with an STI, approximately 5% of men and women reported having an STI within the past year. Just over a third of men and 30% of women reported having knowingly had an HIV test. The majority (88% of men and 86% of women) who had been HIV tested reported having done so within the past 5 years.

Table 3 summarises the factors associated with ever having had an HIV test. Among women, HIV testing was significantly associated with increasing age, and having a previously diagnosed STI. Over 40% of women over the age of 25 years reported ever having had and HIV test, with one in two women aged 30–34 years having done so. Among men, HIV testing was associated with increasing age, nationality, university or professional education, marital status, previous diagnosis with an STI, and self perceived risk of catching HIV/AIDS. Men who were in a non-marital relationship (OR 0.31, 95% CI 0.12 to 0.80) or single (OR 0.44, 95% CI 0.26 to 0.74) were significantly less likely to report having had an HIV test compared with married men. Nearly half of men who perceived themselves a being at risk of catching HIV/AIDS had ever had an HIV test, compared with a third of women.

After controlling for significant demographic variables, previous diagnosis with an STI (adjusted odds ratio 2.96, 95% confidence interval 1.63 to 5.38) and self perceived risk of catching HIV/AIDS (adjusted OR 2.28, 95% CI 1.34 to 3.90) were the only factors independently associated with having an HIV test among men. Among women, previous diagnosis with an STI (adjusted OR 2.03, 95% CI 1.06 to 3.88) remained the only independent association with HIV testing.

DISCUSSION

This is, to our knowledge, the first quantitative community based survey of HIV testing and sexual behaviours among migrant sub-Saharan African communities in the United Kingdom. In this sample of relatively young, highly educated, yet economically disadvantaged Africans, we found clear evidence of sexual health need. The majority of our sample was born in Africa, migrated to the United Kingdom after 16 years

Table 3 Factors associated with HIV testing among African women and men

Variable	Women		Men	
	Proportion having an HIV test (%) (N/N)	Crude odds ratio (95% CI)	Proportion having an HIV test (%) (N/N)	Crude odds ratio (95% CI)
Age group				
<25	21 (22/105)	1 –	17 (11/63)	1 –
25–29	36 (32/90)	2.08 (1.10 to 3.94)	31 (27/86)	2.16 (0.98 to 4.79)
30–34	50 (29/58)	3.77 (1.88 to 7.57)	39 (31/80)	2.99 (1.36 to 6.60)
>35	40 (25/63)	2.48 (1.24 to 4.95)	46 (53/116)	3.98 (1.89 to 8.39)
Highest level of formal education received				
Secondary or less	31 (41/132)	1 –	20 (17/87)	1 –
University/college	34 (54/157)	1.16 (0.71 to 1.91)	41 (81/196)	2.90 (1.59 to 5.29)
Professional/other	47 (20/43)	1.93 (0.96 to 3.90)	43 (30/70)	3.09 (1.52 to 6.29)
Marital status				
Married	45 (41/92)	1 –	45 (64/143)	1 –
Widowed, etc	31 (8/26)	0.55 (0.22 to 1.40)	36 (5/14)	0.69 (0.22 to 2.15)
Cohabiting	35 (19/54)	0.68 (0.34 to 1.35)	43 (22/51)	0.94 (0.49 to 1.78)
In relationship	31 (16/51)	0.57 (0.28 to 1.17)	20 (6/30)	0.31 (0.12 to 0.80)
Single	29 (31/108)	0.50 (0.28 to 0.90)	26 (30/115)	0.44 (0.26 to 0.74)
Previously diagnosed with an STD				
Yes	49 (34/69)	2.11 (1.22 to 3.64)	51 (51/100)	2.51 (1.55 to 4.06)
No	32 (76/241)	1 –	29 (70/239)	1 –
More than 5 sexual partners in past year				
Yes	29 (2/7)	0.75 (0.14 to 3.93)	52 (12/23)	2.02 (0.87 to 4.72)
No	35 (113/325)	1 –	35 (116/331)	1 –
Condom use at last intercourse/reason				
Pregnancy	57 (12/21)	2.50 (0.99 to 6.29)	56 (14/25)	2.47 (1.05 to 5.82)
STDs/HIV	40 (6/15)	1.25 (0.42 to 3.69)	34 (12/35)	1.01 (0.47 to 2.19)
Both	34 (29/85)	0.97 (0.56 to 1.69)	40 (33/82)	1.31 (0.76 to 2.27)
Other	33 (1/3)	0.94 (0.08 to 10.6)	56 (5/9)	2.43 (0.63 to 9.42)
Not used	35 (55/158)	1 –	34 (54/159)	1 –
Perceived risk of catching HIV/AIDS (Q17)				
Some or high risk	34 (41/120)	1.02 (0.63 to 1.66)	48 (57/120)	2.35 (1.47 to 3.76)
No or low risk	34 (61/181)	1 –	28 (57/205)	1 –
Perceived peer group norms about using condoms with new partners				
Positive	37 (84/227)	1 –	37 (81/220)	1 –
Negative	25 (17/67)	0.58 (0.31 to 1.07)	31 (30/96)	0.78 (0.47 to 1.30)

of age, and had been resident in the United Kingdom for under a decade. Many may have been exposed to HIV (and other STIs) before migration or maintain culturally prescribed practices (for example, use of vaginal herbs) which place them at increased HIV transmission risk. Our study suggests that on migration to the United Kingdom, many remain vulnerable to HIV transmission by virtue of their behavioural risk,[11] acquisition of new STIs, low levels of condom utilisation, and low levels of perceived risk of acquiring HIV. The data justify prioritising these communities for intensive HIV prevention interventions, including sexual health promotion, condom promotion, and STI screening and treatment.

The promotion of HIV testing has been one of the main HIV prevention interventions with migrant sub-Saharan African communities in Britain.[7] This strategy aims to reduce the proportion of undiagnosed HIV infection thereby facilitating early access to effective therapy and care, and reducing the risk of onward transmission (either vertically or through sexual intercourse). Although excellent results have been achieved in the antenatal testing programme,[12 13] the results of this survey suggest that much needs to be done to encourage HIV testing among those who are unlikely to be directly targeted. We found that 30% of men and 26% of women reported having had an HIV test in the past 5 years. Although substantially higher than the general UK population (13% of British men and women reported having had an HIV test in the past 5 years in the 1990 National Survey of Sexual Attitudes Lifestyles),[14] this contrasts with generally higher levels of HIV testing reported by homosexual and bisexual men recruited in social and commercial venues (generally over 60%).[15 16] The data also confirm substantial variations in reported HIV testing across nationalities. Those who have been HIV tested were more likely to have been previously diagnosed with an STI or perceived themselves to be at increased risk of acquiring HIV. This suggests that the uptake of HIV testing among these migrant communities may be driven by actual or perceived HIV risk—a potentially inappropriate strategy given the high background HIV prevalence in their countries of origin, and high rates of disease in the migrant populations in Britain.[17] The lack of association between length of residency in the United Kingdom and the uptake of HIV testing suggests that more work needs to be done to dispel the stigma associated with HIV testing, while promoting free, confidential, and open access sexual health services among these communities.

Our study has a number of limitations. Firstly, as recruitment was undertaken in social and commercial venues in London, we are concerned about potential participation and selection bias. Individuals recruited from the pre-identified social and commercial venues are potentially more likely to be young, male, and economically productive compared with those who do not attend. Nevertheless, as many of these venues also form the main foci for community based sexual health outreach interventions, we are able to identify needs and inform relevant disease prevention strategies for this target group. Secondly, ethnically matched interviewers undertook recruitment. Although a previous community based qualitative study among London's ethnic minorities had shown clear benefits of ethnic matching,[18] this may have had an opposite effect by reducing respondents' willingness to divulge sensitive or socially censored information in the more public, social venues. Interviewers were given substantial training on strategies for maintaining confidentiality in social venues (including use of information leaflets to reassure client; physically isolating respondents from others; packaging and storing completed questionnaires securely). Post-study qualitative feedback interviews with recruiters revealed

that the reception from community members was overwhelmingly positive. Many recruiters received positive comments and support from community members as the study was seen to be undertaken by "their own."[9] Finally, previous researchers have criticised the use of ethnicity in epidemiological studies of sexual behaviour.[19 20] The term "Africans" includes diverse nationalities, cultures, and ethnic communities. We attempted to reduce the limitations of this approach by purposively restricting our study population to five naturally occurring nation groups. Despite this, however, the study was not powered to examine differences between ethnocultural subgroups—for example, tribal groupings, within these communities. Such ethnic subgroups may show as much or even more diversity among them than exists between nation states.[18]

Our findings support the need for intensified sexual health promotion among African communities in the United Kingdom that should be directed at both *primary* and *secondary* HIV prevention. Primary prevention, aimed at preventing the spread and acquisition of HIV infection and other STIs, is highly relevant given the acquisition of new sexual partners in home countries, negative attitudes towards condom use, and acquisition of STIs while in the United Kingdom. Secondary prevention interventions are most relevant to individuals who are aware of their HIV status. Given the relatively low perceived risk in these communities, interventions aimed at reducing the barriers to taking up HIV tests are paramount.

The UK HIV/AIDS epidemic is dynamic and reflects global trends. As we move into its third decade, its endemicity will depend upon local as well as external factors. Chief among the latter are the success of global prevention and control measures, migratory patterns from high prevalence countries, and sexual mixing within and between migrant and established populations. HIV prevention among homosexual men has shown the benefits of adopting evidence based approaches to identify and meet changing needs and priorities. The same now needs to be done for Britain's sub-Saharan African committees.

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CONTRIBUTORS

All members listed in the MAYISHA Research Team made a substantial contribution to the design, implementation and data analysis and interpretation. KF and OD conceived the study and are co-investigators; MC was the project coordinator; AC undertook the statistical analysis presented in this paper; all four main authors contributed to the writing of this paper.

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