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HIV-related discrimination reported by people living with HIV in London, UK

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Running heading

HIV-related discrimination reported by people living with HIV in London

Abstract

The objective was to examine the extent to which people living with HIV in London reported being discriminated against because of their infection. In 2004-2005, people living with HIV attending NHS outpatient HIV clinics in north east London were asked: "Have you ever been treated unfairly or differently because of your HIV status - in other words discriminated against?". Of the 1687 people who returned a questionnaire (73% response rate), data from 1385 respondents were included in this analysis; 448 heterosexual women and 210 heterosexual men of black African origin, 727 gay/bisexual men (621 white, 106 ethnic minority). Overall, nearly one-third of respondents (29.9%, 414/1385) said they had been discriminated against because of their HIV infection. Of those who reported experiencing HIV-related discrimination, almost a half (49.6%, 200/403) said this had involved a health care worker including their dentist (n=102, 25.3%) or primary care physician (n=70, 17.4%).

Key words

HIV, discrimination, gay men, black African, London

Introduction

The consequences of HIV-related discrimination, together with the fear of discrimination are far-reaching. They include delays in seeking an HIV test, failure to access health and social care and non-disclosure of HIV status. People who experience HIV discrimination suffer rejection, isolation and emotional distress. There is also evidence that HIV discrimination may contribute to an increase in HIV risk behaviours. (Kinniburgh, Scott, Gottleib, & Power, 2001; Atrill, Kinniburgh, & Power, 2001; Berger, Ferrans CE, & Lashley FR, 2001; Carr & Gramling, 2004; Fife BL & Wright ER, 2000; Green & Sobo, 2000; Petrak, Doyle, Smith, Skinner, & Hedge, 2001; McMunn, Mwanje, & Posniak, 1997; Erwin & Peters, 1999; Dodds et al., 2004; Carter, 2006; Chesney & Smith, 1999; Kalichman & Simbayi, 2003; Stall et al., 1996; Herek, Capitanio, & Widaman, 2003; Peretti-Watel, Spire, Obadia, & Moatti, 2007). From a theoretical perspective, discussion of HIV-related discrimination has traditionally drawn on Goffman's seminal work on stigma and spoiled identity (Goffman, 1963). However, other conceptual frameworks have been formulated which emphasise the role of structural inequalities at a societal level as well as focusing on the individual (Parker & Aggleton, 2003).

In the UK, the people most affected by HIV are gay men (the majority of whom are white) and black African heterosexual men and women. They currently account for three-quarters of people receiving HIV treatment and care in this country (The UK Collaborative Group for HIV and STI Surveillance, 2006). Tackling HIV-related discrimination in the UK is one of the key aims of the National Strategy for Sexual Health and HIV published in 2001 (Department of Health, 2001). The 2006 Department of Health draft Action plan on HIV-related stigma and discrimination noted

that discriminating against people with HIV had public health consequences and should not be allowed to go unchallenged (Department of Health, 2006); (Link & Phelan, 2006).

In marked contrast to the USA, there has been relatively little research in the UK about how many people living with HIV have experienced HIV-related discrimination (Kinniburgh et al., 2001). The objective of this analysis was, therefore, to examine the extent to which people living with HIV in London reported being discriminated against because of their infection and by whom. We also sought to identify factors associated with reporting HIV-related discrimination.

Methods

Participants

Between June 2004 and June 2005, people diagnosed with HIV infection aged 18 years and above, receiving HIV treatment and care in National Health Service (NHS) hospital outpatient clinics in north east London, were invited to participate in the study. The hospitals were St Bartholomew's, Royal London, Newham, Homerton, Whipp's Cross and Barking (Elford, Anderson, Bukutu, & Ibrahim, 2006; Elford, Ibrahim, Bukutu, & Anderson, 2007b). In the UK, the majority of patients with diagnosed HIV infection seek clinical care in National Health Service (NHS) outpatient clinics (personal communication Brian Rice, Health Protection Agency, 2007). Consequently, an NHS clinic sample is broadly representative of all those living with diagnosed HIV (referred to in this paper as "people living with HIV"). All patients who expressed interest in the project were provided with written information about the research. If the patient agreed

to participate having read the information sheet they were asked to sign a consent form. No financial renumeration was offered to participants. After providing written consent, they were asked to complete a confidential, self-administered, pen-and-paper questionnaire in the clinic or at home. Patients with a limited command of English were ineligible as were those who were too ill or too distressed to complete a questionnaire.

Measures

Participants were asked: “Have you ever been treated unfairly or differently because of your HIV status (in other words, discriminated against)?” If they answered Yes, they were asked “by whom?”. They could then tick any of the following: my partner, my family, my friends, my neighbours, sexual partners, at school or college, workmates/colleagues, my GP, my dentist, HIV clinic, sexual health clinic, antenatal services, social services, voluntary sector, community groups, other (with a space for them to describe “other”). Respondents could tick more than one category. There was space directly beneath the question for respondents to describe the experience in their own words.

Respondents were asked to provide information on their age, sex, ethnicity, sexual orientation, employment, education, country of birth, immigration status and if they were in a relationship. They were also asked when they were diagnosed with HIV, whether they were on antiretroviral therapy, if they had experienced side effects from their HIV drugs, their most recent (self-reported) viral load and CD4 count, and whether their body was showing signs that they were living with HIV (eg a change in body shape or fat distribution). Respondents were asked whether they had had vaginal or anal intercourse in the previous 3 months and if so, the HIV status of their partner(s).

In addition questions were included on their use of voluntary services (such as the Terrence Higgins Trust) in the last 12 months, whether they had looked for information about HIV in the previous 12 months (in newspapers or magazines, etc), whether they had access to the Internet at home or work, and whether they had felt depressed or had had suicidal thoughts in the last 3 months.. They were also asked whether they were registered with a general practitioner (GP) (ie primary care physician) and did their GP know they were HIV positive.

Data analyses

Data were analysed using STATA. Analyses were conducted separately for gay/bisexual men (referred to here as “gay men”), black African heterosexual men and black African heterosexual women as well as for the three groups combined. The association between HIV-related discrimination and the social, behavioural, demographic and clinical variables described above was initially examined separately for each group in a univariate logistic model (Altman, 1999). In the model, the percentage who reported HIV-related discrimination was the dependent (outcome) variable. Age, number of years since diagnosis, CD4 count and viral load were entered into the model as continuous variables. Variables found to be significantly ($p<0.05$) associated with HIV-related discrimination in univariate analysis (table i) were entered into a multivariate model. Adjusted odds ratios that remained significant in the multivariate model are included in table ii with 95% confidence intervals.

Differences in rates of HIV-related discrimination between the three groups (gay men, black African heterosexual men, black African heterosexual women) were also

examined initially in a univariate logistic model and then in a multivariate logistic model controlling for confounding factors identified in table ii.

In table iii, the chi-square test and Fisher's exact test were used for examining global differences in proportions.

Results

Participants

During the study period, 2680 individual patients attended the HIV outpatient clinics in the six participating hospitals; 2299 were eligible for the study and 1687 completed and returned a questionnaire (response rate 73% of eligible patients, 63% of all patients). Gay men (n=758), black African heterosexual women (n=480) and black African heterosexual men (n=224) accounted for 87% of the respondents and are included here (overall N=1462). Of the 758 gay men, 646 described themselves as white while 112 were ethnic minority (ie non-white) coming from diverse backgrounds including black Caribbean (26), black African (13), Indian, Pakistani or Bangladeshi (9) and "mixed or other ethnicity" (57).

The remaining respondents were not included in the analysis because of small numbers in each subgroup (Altman, 1999). They comprised white heterosexual men (n=64) and women (39); black Caribbean heterosexual men (13) and women (26); heterosexual men (21) and women (36) of "other black", Asian or "mixed/other" backgrounds; and 26 bisexual women or lesbians of different ethnicities.

Median time since diagnosis was 6 years for gay men compared with 3 years for black African heterosexual men and women (Z=10.89, p<0.01). Gay men were more likely to think that their body was showing signs of their living with HIV (eg lypodystrophy) than black African heterosexual men or women (51.4%, 36.1%, 35.6% respectively, chi square=33.4, df=2, p<0.001) (table i). The median age of gay men and black African heterosexual men was 39 years compared with 36 years for Black African heterosexual women (Z=6.5, p<0.01).

Discrimination

Of the 1462 gay men and black African heterosexual men and women who completed a questionnaire, 1385 answered the question on HIV-related discrimination. Overall, 414 (29.9%) reported being discriminated against because of their HIV status. In univariate analysis, gay men were more likely to report HIV-related discrimination than black African heterosexual men or women; gay men 34.0% (reference group), black African heterosexual women 27.5% (unadjusted odds ratio (OR) 0.74, 95% confidence interval (CI) 0.57, 0.95, p<0.05), black African heterosexual men 21.0% (unadjusted OR 0.52, 95% CI 0.36, 0.74, p<0.001) (table i). Of the 90 people who were diagnosed with HIV in the 12 months before the survey, 15 (16.7%) reported experiencing HIV-related discrimination.

There was no significant difference between white and ethnic minority gay men in the percentage reporting HIV-related discrimination (white gay men 211/621, 34.0%; ethnic minority gay men 36/106, 34.0%, chi square test=0.0, df=1, p=1.0). Consequently, the data for white and ethnic minority gay men were combined for the remaining analysis.

In multivariate analysis, reporting HIV-related discrimination was significantly associated with the number of years since HIV diagnosis and the body showing signs of living with HIV in all three groups ($p<0.05$) (table ii). Among the 206 gay men who had been diagnosed with HIV for ten years or more, 92 (44.7%) reported experiencing HIV-related discrimination (table i). For gay men and black African heterosexual men, reporting HIV-related discrimination was also associated with having a higher education and currently taking highly active antiretroviral therapy. Black African heterosexual men who were British/EU citizens or had leave to remain in the UK were less likely to report HIV-related discrimination than those whose immigration status in the UK was uncertain. Gay men without employment were more likely to report HIV-related discrimination than those who were employed. In all three groups, there was no significant association between HIV-related discrimination and unprotected intercourse with a partner of unknown or discordant HIV status (data available from authors).

After controlling for the number of years since HIV diagnosis and the body showing signs of living with HIV in a multivariate logistic model, no significant differences remained between gay men (reference group, 1.0), black African heterosexual women (adjusted OR 1.06, 95% CI 0.79, 1.41, p=0.7) and black African heterosexual men (adjusted OR 0.71, 95% CI 0.48, 1.05, p=0.1) in the percentage who reported HIV-related discrimination. There was no evidence of an interaction between number of years since HIV diagnosis and body showing signs of living with HIV across the three groups (likelihood ratio test chi-square=0.64, df=1, p=0.4).

Who did the discriminating?

Of the 414 people who reported experiencing HIV-related discrimination, 403 answered the question “By whom?”. Nearly half of them (49.6%, 200/403) said this had involved a health care worker including their dentist (n=102, 25.3%), general practitioner (n=70, 17.4%) and “unspecified” hospital staff (n=42, 10.4%) (table iii). In all groups, the number of years since HIV diagnosis was significantly associated with their reporting discrimination by a health care worker in both univariate and multivariate analysis (data available from authors on request). Overall, 14.4% of the whole sample (200/1385) reported being discriminated against by a health care worker because of their HIV status. Of the 70 people who reported HIV-related discrimination involving their GP (table iii), 54 provided information about being registered with a GP and whether their GP knew they were HIV positive. Fifty-one said their GP was aware of their HIV status and only 3 said their GP did not know they were HIV positive.

Experience of discrimination

Of the 414 respondents who said they had been treated unfairly or differently because of their HIV infection, 316 provided additional information about the experience. Fifty-four people specifically mentioned their HIV status. Their comments included the following: “the dentist refused to treat me when I told him my status”; “in my local surgery, when they found out I was HIV positive they refused to treat me”; “staff mistreated me when they found out about my HIV status”; “accident and emergency in a hospital, the nurse was rude to me when I told her about my HIV status”; “social services did not want to help me when I disclosed my status”; “I lost out on career opportunities when they found out I was HIV positive”;; “I registered with an employment agency and upon informing them of my HIV status I never heard from them again”; “I volunteered to work and was rejected due to my HIV status”;

"occupational health department, they forced me to talk about my HIV status in front of other people and I lost my job" "one friend I have known for more than 20 years hasn't seen or tried to contact me since finding out my HIV status"; "they did not want to know me after I disclosed my status to my friends"; "African people think it is a crime to have HIV and talk behind your back"; "I was rejected from my family because of my HIV". A further 72 people indicated that the discrimination was HIV-related without specifically mentioning their HIV status. Their comments included the following: "it was horrible, they thought they could just get it by sitting next to me or visiting their homes"; "employment services advisor said "Do me a favour, I have enough trouble placing epileptics – go and take your benefits""; "if you tell partners they don't come back"; "relatives….were afraid of sharing a bathroom with me"; "got forced into medical retirement even though I was well at the time". Most of the remaining comments comprised just one or two words eg "unfair treatment", "rejection", "friends".

Mental health

In univariate analysis, reporting HIV-related discrimination was significantly associated with having suicidal thoughts and depression among gay men and black African heterosexual women but not among black African heterosexual men (table i). After controlling for the number of years since diagnosis and their body showing signs of living with HIV, these associations remained significant for gay men ($p<0.05$) (table ii); for black African heterosexual women, the association with suicidal thoughts was of borderline significance in the multivariate model (aOR 1.85, 95% CI 0.97, 3.55, $p=0.06$).

Discussion

In a diverse sample of people living with HIV surveyed in London in 2004 or 2005, nearly a third said they had been discriminated against because of their HIV infection. Of those who reported HIV-related discrimination, almost a half said this had involved a health care worker including dentists, general practitioners (ie primary care physicians) and hospital staff outside the HIV clinic. Overall, one-in-seven people living with HIV in our survey said they had been discriminated against by a health care worker because of their HIV status. While a number of studies in the USA and Australia have documented discrimination against HIV-infected people by health care staff (Schuster et al., 2005; Kass, Faden, Fox, & Dudley, 1992; Kelly, St Lawrence, Smith, Hood, & Cook, 1987; Bermingham & Kippax, 1998; Sohler, Li, & Cunningham, 2007) we are not aware of any previous quantitative studies in the UK that have examined this in detail.

Both the number of years since HIV diagnosis and the body showing signs of living with HIV were associated with reporting HIV-related discrimination. Gay men had, on average, been diagnosed with HIV for longer than black African heterosexual men and women. They were also more likely to say their body was showing signs of living with HIV. Once these factors were taken into account, there were no statistically significant differences between gay men and black African heterosexual men and women in the likelihood of their reporting HIV-related discrimination. Nor was there any significant difference between white and ethnic minority gay men. Our analysis suggests that HIV-related discrimination is a function of “exposure to risk”, specifically the number of years you have lived with HIV and whether the body is showing signs of HIV, rather than ethnicity, gender or sexual orientation.

These findings resonate with Goffman's work on stigma and spoiled identity. According to Goffman, people with a certain condition or illness (eg a mental illness) may be seen by others as being "discredited". That is to say, they are seen as being culturally unacceptable or inferior (Goffman, 1963; Anderson & Weatherburn, 2004; Scambler, 2003). Definitions of what is unacceptable may, however, vary. Certain conditions may be stigmatised in one culture but not another and the stigma associated with a condition may change over time. Stigmatised conditions may also vary in their visibility and their effect on people's lives. A person with a visible condition is more likely to be stigmatised than a person with a condition which is not visible. Consequently, people whose condition is not visible may try to "pass as normal", by censoring what others know about them, to avoid being stigmatised.

A person with visible signs of HIV will find it hard to conceal their infection. According to Goffman, this will make them more vulnerable to HIV-related stigma and discrimination than someone without visible signs of infection (Goffman, 1963; Scambler, 2003). Our data clearly support this. Those respondents who said their body was showing signs of HIV were more likely to experience HIV-related discrimination than those without visible signs of HIV. Likewise with the passage of time, people may find it harder to conceal their HIV diagnosis from others, and so are more likely to be stigmatised. Our data support this too; those who had been diagnosed for a longer period of time were more likely to experience HIV-related discrimination than someone who was diagnosed more recently. Goffman's work on stigma and spoiled identity could also explain the HIV-related discrimination reported in health care settings where staff are more likely to be aware of a patient's HIV infection than elsewhere.

Since we asked respondents whether they had *ever* been discriminated against, we were not able to establish precisely when this occurred. However, 90 respondents were diagnosed with HIV in the 12 months before the survey (ie between June 2003 and June 2004). Of these, nearly twenty percent said they had experienced discrimination because of their HIV status highlighting that HIV-related discrimination continues to occur in the UK (Anderson et al., 2004).

Of those who had experienced HIV-related discrimination, one-in-five said they had been discriminated against at work. Gay men were more likely to say they had been discriminated against at work than black African heterosexual men and women. This differential may be explained, in part, by the fact that gay men in our survey were more likely to be employed than African respondents (Elford, Ibrahim, Bukutu, & Anderson, 2007a). The Disability Discrimination Act (DDA) introduced in the UK in 2005 now makes it unlawful to discriminate against people with HIV in the workplace (National AIDS Trust, 2007b; National AIDS Trust, 2007a)

Among those reporting HIV-related discrimination, two-out-of-five said they had been discriminated against by someone in their family, by friends or by their current partner. One respondent wrote “I was rejected from my family because of my HIV” while another observed “they did not want to know me after I disclosed my status to my friends”. Inevitably, the rejection and isolation experienced by these respondents will place an enormous burden on them. For gay men and black African women, HIV-related discrimination was associated with having suicidal thoughts or depression. These findings are consistent with other research which shows that the experience of discrimination can result in emotional distress and poor mental health (Huebner,

Rebchook, & Kegeles, 2004; Kessler, Mickelson, & Williams, 1999; Mays & Cochran, 2001; Krieger, 2000).

There are some limitations to our investigation. Our analysis was based on self-reported data which rely, at least in part, on a respondent interpreting a negative experience as being HIV-related discrimination. This is an inherent limitation of all research into discrimination, since it relies not only on subjective experience but also on a person's willingness to report the experience (Rothon & Heath, 2003; Harris et al., 2006; Huebner et al., 2004; Krieger, 2000; Peretti-Watel et al., 2007). For example, we can not rule out the possibility that the concept (and reporting) of discrimination varies between cultures, specifically between gay men (predominantly white in our study) and heterosexual men and women of black African origin. The association between higher education and discrimination could also reflect the fact that people with a higher education are more likely to interpret a negative experience as HIV-related discrimination than other people. The same might apply to those with emotional distress or poor mental health.

The question we asked about discrimination was rather broad so may not have fully captured the textured and nuanced aspects of perceived and actual discrimination (Anderson & Doyal, 2004). All participants in this study had at least two stigmatised identities; they were all HIV positive and they were also gay or black African. Consequently it may have been difficult to distinguish HIV-related discrimination from discrimination due to their other stigmatised identities. This is a problem faced by other researchers too. For example, a recent French study asked people with HIV whether they had ever felt discriminated against by relatives, friends or colleagues because of their serostatus (Peretti-Watel et al., 2007). Respondents included gay men,

intravenous drug users and black African heterosexual men and women all of whom may be stigmatised regardless of their HIV status. Nonetheless, in our study the additional information provided by some respondents clearly indicates that they experienced discrimination because of their HIV infection rather than because of their other stigmatised identity.

Furthermore, the strong association, seen in all groups, between HIV-related discrimination (as defined in this study), the body showing signs of living with HIV and the number of years since diagnosis provides face validity for our findings. A person with visible signs of HIV will be less able to conceal the diagnosis than someone without such signs and is therefore more likely to experience HIV-related discrimination. Likewise someone who has lived with an HIV diagnosis for many years may find it harder to conceal their infection than someone who was diagnosed recently, and is also more likely to experience HIV discrimination. The strong association with the visibility of their HIV infection and the number of years since diagnosis suggests that the respondents in our study were indeed reporting discrimination due to their HIV infection rather than discrimination due to another stigmatised identity.

Because of the nature of the patient population we sampled, our study only had sufficient power to examine HIV-related discrimination among gay men (white and ethic minority combined) and black African heterosexual men and women. They currently account for three-quarters of people living with HIV in the UK (The UK Collaborative Group for HIV and STI Surveillance, 2006). We were not able to examine HIV-related discrimination among heterosexual men and women from white, black Caribbean or other ethnic minority backgrounds because of small numbers in our sample. It is likely that they will also experience HIV-related discrimination. Since our analysis included

only 106 ethnic minority gay men, it was not possible to examine HIV-related discrimination among gay men from individual ethnic groups such as black African, black Caribbean or South Asian. However, overall we found no difference between white and ethnic minority gay men in the proportion who reported HIV-related discrimination

Our study has a number of strengths. It is based on a large sample comprising a broad cross-section of people with a laboratory-confirmed HIV diagnosis, all coming from a common source (NHS HIV outpatient clinics). In the UK, the majority of patients with diagnosed HIV infection seek clinical care in NHS clinics. The number of people diagnosed with HIV in the UK *not* receiving treatment and care in NHS clinics is considered to be very small (personal communication, Brian Rice, Health Protection Agency 2007). Consequently, in the UK an NHS clinic sample is broadly representative of all those living with an HIV diagnosis. While all respondents were recruited in HIV outpatient clinics in one geographic area (north east London), the social, demographic and behavioural characteristics of the gay men in this study are broadly similar to those of HIV positive gay men surveyed in other outpatient clinics elsewhere in London (Stephenson et al., 2003; Bolding, Davis, Hart G, Sherr, & Elford, 2005). We were not able to make a similar comparison for HIV positive black African heterosexual men and women since ours is the first large scale survey of this population in outpatient clinics. An additional strength is that ours is the first quantitative study to examine HIV-related discrimination in detail in the UK.

In conclusion, nearly a third of people living with HIV in London in 2004-2005 said they had been discriminated against because of their HIV status. In multivariate analysis there was no statistically significant difference between gay men and black African

heterosexual men and women in the likelihood of their reporting HIV-related discrimination. Of those who had experienced HIV-related discrimination, almost a half said this had involved a health care worker including their dentist, GP (primary care physician) and hospital staff outside the HIV clinic. Our findings highlight the urgent need for the Department of Health to implement its action plan for combating HIV-related discrimination in the UK, inside as well as outside the NHS (Department of Health, 2006)

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Table i: Factors associated with HIV-related discrimination (univariate analysis)

	Gay Men				Black African heterosexual men				Black African heterosexual women			
	N	n	%	X^2	N	n	%	X^2	N	n	%	X^2
Reported HIV-related discrimination (overall)	727	247	*34.0*		210	44	*21.0*		448	123	*27.5*	
Age												
<30	68	25	36.8	* 9.0	20	3	*15.0*	1.4	86	20	*23.2*	4.1
30-39	322	114	35.4		95	23	*24.2*		225	61	*27.1*	
40-49	240	88	36.7		76	15	*19.7*		106	36	*34.0*	
≥50	97	20	20.6		19	3	*15.8*		31	6	*19.4*	
Has university education or professional training												
Yes	498	184	*36.9*	** 7.2	135	34	*25.2*	* 3.7	273	72	*26.4*	0.5
No	221	59	*26.7*		73	10	*13.7*		167	49	*29.3*	
Currently employed												
Yes	409	110	*26.9*	** 20.3	90	14	*15.6*	3.3	151	35	*23.2*	1.8
No	307	132	*43.0*		115	30	*26.1*		280	82	*29.2*	
British/EU citizen or has leave to remain in UK												
Yes	689	233	*33.8*	0.4	112	14	*12.5*	**10.6	214	65	*30.4*	1.7
No	31	11	*35.5*		93	29	*31.2*		215	53	*24.7*	
Currently in a relationship												
Yes	381	114	*29.9*	* 5.5	146	31	*21.2*	0.0	274	73	*26.6*	0.7
No	343	131	*38.2*		59	13	*22.0*		162	49	*30.2*	
Years since diagnosis												
≤2	170	33	*19.4*	** 20.2	75	10	*13.3*	* 4.8	188	37	*19.7*	** 13.8
3-4	122	36	*29.5*		54	13	*24.1*		101	31	*30.7*	
5-9	212	82	*38.7*		50	14	*28.0*		109	38	*34.9*	
10-14	122	57	*46.7*		16	4	*25.0*		27	11	*40.7*	
≥15	84	35	*41.7*		3	1	*33.3*		3	2	*66.7*	
Body showing signs that they are living with HIV												
Yes	370	159	*43.0*	** 27.1	74	24	*32.4*	** 8.3	154	62	*40.2*	**17.8
No	350	86	*24.6*		131	20	*15.3*		278	59	*21.2*	
Currently taking HAART†												
Yes	512	197	*38.5*	** 15.5	171	41	*24.0*	* 4.8	335	100	*29.9*	* 4.0
No	211	49	*23.2*		38	3	*7.9*		110	22	*20.0*	

continued on next page

	Gay Men				Black African heterosexual men				Black African heterosexual women			
	N	n	%	X^2	N	n	%	X^2	N	n	%	X^2
Has side effects from HIV drugs												
Yes	243	120	*49.4*	** 23.8	53	19	*35.8*	* 5.7	117	55	*47.0*	** 23.7
No	259	73	*28.2*		107	20	*18.7*		201	42	*20.9*	
Used voluntary services in last 12 months												
Yes	427	171	*40.0*	** 13.6	129	38	*29.5*	3.3	317	97	*30.6*	2.9
No	217	55	*25.3*		40	6	*15.0*		73	15	*20.5*	
Looked for information abut HIV in last 12 months in the press, clinic etc												
Yes	503	184	*36.6*	* 5.0	133	35	26.3	2.4	293	84	*28.7*	0.3
No	163	44	*27.0*		36	5	13.9		93	24	*25.9*	
Felt depressed in the last 3 months												
Yes	424	171	*40.3*	** 17.7	90	21	*23.3*	0.5	225	74	*32.9*	* 4.3
No	267	66	*24.7*		79	15	*19.0*		152	35	*23.0*	
Had suicidal thoughts in the last 3 months												
Yes	173	86	*49.7*	** 24.8	33	10	*30.3*	0.9	71	33	*46.5*	** 11.5
No	452	129	*28.5*		108	24	*22.2*		236	60	*25.4*	

* p<0.05, ** p<0.01, in separate univariate logistic models for gay men, black African heterosexual men and black African heterosexual women

N = number of respondents (denominator)
n = number of respondents who said they been discriminated against because of their HIV infection (numerator)

† HAART, highly active antiretroviral therapy

There was no association between experiencing HIV-related discrimination and viral load, CD4 count, unprotected intercourse with a partner of unknown or discordant HIV status (ie non-concordant intercourse), being registered with a general practitioner or having access to the Internet (all p>0.05) (data available from authors)

Table ii: Factors associated with HIV-related discrimination (multivariate analysis)

Variable	Gay men		Black African heterosexual men		Black African heterosexual women	
	Adjusted odds ratio	(95% CI)	Adjusted odds ratio	(95% CI)	Adjusted odds ratio	(95% CI)
Age	0.95	(0.92, 0.97)	-	-	-	-
Has university education or professional training	2.17	(1.45, 3.23)	2.51	(1.05, 6.01)	-	-
Currently employed	0.53	(0.37, 0.78)	-	-	-	-
British/EU citizen or has leave to remain in UK	-	-	0.23	(0.10, 0.53)	-	-
Years since diagnosis	1.07	(1.03,1.10)	1.16	(1.04, 1.29)	1.09	(1.02,1.17)
Body showing signs that they are living with HIV	1.84	(1.29, 2.62)	2.43	(1.12, 5.26)	2.18	(1.40, 3.41)
Currently taking HAART	1.88	(1.24, 2.87)	4.90	(1.04, 23.0)	-	-
Used voluntary services in last 12 months	1.73	(1.11, 2.67)	-	-	-	-
Felt depressed in the last 3 months	1.65	(1.04, 2.62)	-	-	-	-
Had suicidal thoughts in the last 3 months	1.65	(1.03, 2.66)	-	-	-	-

For each group of respondents, variables found to be significantly associated with HIV-related discrimination in univariate analysis (table i) were entered into a multivariate model. Adjusted odds ratios for associations that remained significant in the multivariate model are presented in table ii, with 95% confidence intervals (CI).

“Currently taking HAART” and “Having side effects from HIV drugs” were both associated with experiencing HIV-related discrimination in univariate analysis (table i). Everyone who reported side effects from HIV drugs was currently taking HAART. To overcome collinearity, only “Currently taking HAART” was entered in the multivariate logistic model.

Table iii: “By whom have you been treated unfairly or differently because of your HIV status?”
(Analysis restricted to respondents who reported HIV-related discrimination)

	Gay men (N=244)		Black African heterosexual men (N=43)		Black African heterosexual women (N=116)		All respondents (N=403)		X^2
	n	%	n	%	n	%	n	%	
Dentist	80	*32.8*	6	*14.0*	16	*13.8*	102	*25.3*	** 18.3
General practitioner	43	*17.6*	6	*14.0*	21	*18.1*	70	*17.4*	0.4
Hospital staff (unspecified)	14	*5.7*	7	*16.3*	21	*18.1*	42	*10.4*	** 14.6
Hospital staff in HIV clinics	10	*4.1*	3	*6.9*	6	*5.2*	19	*4.7*	0.8
Hospital staff outside HIV clinics	8	*3.3*	0	*0.0*	2	*1.7*	10	*2.5*	2.0
Sexual health clinics	6	*2.4*	1	*2.3*	4	*3.4*	11	*2.7*	0.3
Maternity services	0	*0*	0	*0*	11	*9.5*	11	*2.7*	-
Any health care worker†	124	*50.8*	15	*34.9*	61	*52.6*	200	*49.6*	4.3
Colleague/at work	70	*28.7*	6	*14.0*	11	*9.5*	87	*21.6*	** 18.8
At school/college	9	*3.7*	1	*2.3*	3	*2.6*	13	*3.2*	0.4
Sexual partner	97	*39.8*	7	*16.3*	6	*5.2*	110	*27.3*	** 30.3
Partner/husband/wife/boyfriend etc	31	*12.7*	7	*16.3*	16	*13.8*	54	*13.4*	0.4
Family	42	*17.2*	7	*16.3*	18	*15.5*	67	*16.6*	0.2
Friends	62	*25.4*	16	*37.2*	23	*19.8*	101	*25.1*	5.1
Partner or family or friends‡	101	*40.9*	24	*54.6*	47	*38.2*	172	*41.6*	3.4
Neighbour	29	*11.9*	1	*2.3*	6	*5.2*	36	*8.9*	* 6.9
Landlord	12	*4.9*	0	*0*	0	*0*	12	*3.0*	-
Voluntary/social services	40	*16.4*	9	*20.9*	21	*18.1*	70	*17.4*	0.5

Chi-square test: * p<0.05, **p<0.01

† Includes anyone who reported being discriminated against by one of the health care workers in the table. Some respondents reported being discriminated against by more than one category of health care worker.

‡ Includes anyone who reported being discriminated against by their partner, family or friends. Some respondents reported being discriminated against by more than one such person.