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AIDS, GENDER AND ACCESS TO ANTIRETROVIRAL TREATMENT IN SOUTH AFRICA

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Abstract

In South Africa, the AIDS epidemic has highly gendered dimensions. Typically, women's social oppression is implicated in understanding gender and AIDS issues. In the context of treatment, this paper shows that HAART coverage is better for women than for men. It argues that social constructs of masculinity are exposing men to risk, resulting in the undermining of men's access to HAART. Men's tendency to access health services less readily than women is a key factor explaining why men tend to access HAART relatively less. The paper draws on a range of data sources, including the ASSA2003 demographic model and the Demographic and Health Survey.

Background

Sex and gender are at the heart of the AIDS epidemic because most new HIV infections occur through sexual intercourse and women appear to be especially at risk. The inferior socio-economic status of women has been implicated in this, but the gender dimension of AIDS is more complex than women's social oppression. Norms of masculinity also expose men to risk, and appear to be undermining their access to highly active antiretroviral therapy (HAART). This paper explores the role of gender in structuring access to HAART in South Africa. It draws on a range of data sources to probe whether, and why, men are accessing HAART in fewer numbers than expected given demographic patterns.

When HIV was first isolated in the United States twenty-five years ago, the AIDS epidemic was seen to be affecting men disproportionately – largely as a consequence of its rapid spread through the East coast community of gay men. However, as the epidemic extended its reach into injecting drug users and minority populations in the United States, and once the predominantly heterosexually-driven African AIDS epidemic started to peak, the gender balance shifted to include ever higher proportions of women. It is now estimated that (nearly) half (48%) of global HIV infections are amongst women, and in Sub-Saharan Africa, which is home to 62% of the world's HIV infected

people, 59% are women (Table 1). This, coupled with rising rates of female infection across the globe has lead to growing concern about the 'feminization' of the AIDS epidemic (UNAIDS, 2006).

South Africa and India top the global charts when it comes to the numbers of HIV positive people living within their borders. Together, they account for about 30% of global HIV infections. But whereas India follows the rest of Asia in having an AIDS epidemic concentrated amongst injecting drug users and men who have sex with men – thereby resulting in less than a third of HIV infections being amongst women – South Africa is firmly located within the African and Caribbean pattern of a heterosexual epidemic which affects women disproportionately. This is especially the case with regard to young women, where infection rates are over three times the rate of young men. According to the most recent South African national HIV prevalence survey, HIV prevalence amongst 20-24 year olds was 23.9% for women, and 6.0% for men (Shisana *et al*, 2005: 34).

Part of the explanation is biological as women are physiologically more vulnerable to HIV infection,[1] and part is behavioural. According to the South African national HIV prevalence survey, young women are more sexually experienced than young men (*ibid*: 51), thus reflecting the pattern of young women having relationships with older men. This in turn places them at an elevated risk of HIV infection: women reporting having relationships with men more than 5 years older than themselves, and men reporting having relationships with women more than 5 years younger than themselves, were statistically more likely to be HIV positive (Shisana *et al*, 2005: 60-1).

Sexual partnering and the negotiations around safe sex are profoundly structured by prevailing cultural norms and gender inequalities (e.g. Walker and Gilbert, 2002; Baylies and Bujra, 2001: 1-24; UNAIDS/UNFPA/UNIFEM, 2004; Lewis, 2005; Stillwaggon, 2006). As UNAIDS observes: "Gender inequalities as well as gender norms and relations, including practices around sexuality, marriage and reproduction; harmful traditional practices; barriers to women's and girls' education; lack of access for women to health information and care; and inadequate access to economic, social, legal and political empowerment are major contextual barriers to effective HIV prevention (2005: 25-6).

[1] Women are between two and four times more likely than men to contract HIV from a sexual encounter. Reasons include higher concentrations of HIV in semen than in vaginal fluid, the larger area of exposed female than male genital surface area, the longer period of exposure of semen in the vaginal tract, and the greater permeability of the mucous membranes in the vagina compared to the penis (see summary of evidence in Baylies and Bujra (2001: 5)).

Table 1: The Global HIV Epidemic in 2005

Country	*Adults (15 years and older) Estimate [low estimate – high estimate]*	*Women (15 years and older) Estimate [low estimate – high estimate]*	*% of HIV positive people who are women*	*% of total global HIV infect-ions*	*Female: Male HIV Prev-alence (15-24)*
Global	36 300 000 [31 400 000 - 43 400 000]	17 300 000 [14 800 000 - 20 600 000]	47.7%	100.0%	2.9
Sub-Saharan Africa	22 400 000 [19 900 000 - 25 100 000]	13 200 000 [11 400 000 - 15 100 000]	58.9%	61.7%	2.8
South Africa	*5 300 000 [4 800 000 – 5 800 000]*	*3 100 000 [2 800 000 – 3 400 000]*	*58.5%*	*14.6%*	*3.3*
East Asia	680 000 [420 000 - 1 100 000]	190 000 [110 000 - 330 000]	27.9%	1.9%	N/A
Oceania	75 000 [46 000 - 160 000]	35 000 [17 000 - 86 000]	46.7%	0.2%	N/A
South and South-East Asia	7 400 000 [5 000 000 - 11 500 000]	2 200 000 [1 300 000 - 3 500 000]	29.7%	20.4%	0.7
India	*5 600 000 [3 400 000 – 9 300 000]*	*1 600 000 [820 000 – 2 800 000]*	*28.6%*	*15.4%*	*N/A*
Eastern Europe and Central Asia	1 500 000 [1 000 000 - 2 300 000]	420 000 [270 000 - 680 000]	28.0%	4.1%	0.56
Western and Central Europe	710 000 [550 000 - 950 000]	200 000 [150 000 - 290 000]	28.2%	2.0%	N/A
North Africa and Middle East	400 000 [230 000 - 660 000]	190 000 [95 000 - 350 000]	47.5%	1.1%	2
North America	1 200 000 [770 000 - 2 000 000]	[310 000 170 000 - 550 000]	25.8%	3.3%	N/A
Caribbean	300 000 [220 000 - 400 000]	[160 000 100 000 - 220 000]	53.3%	0.8%	2.3
Latin America	1 600 000 [1 200 000 - 2 400 000]	480 000 [340 000 - 760 000]	3.0%	4.4%	0.6

Source: http://data.unaids.org/pub/GlobalReport/2006/Annex2_Data_en.xls

This, in effect, requires that successful HIV prevention policies make social inroads not normally envisaged as part of a public health intervention. The UNAIDS-led Global Coalition on Women and AIDS has identified seven action areas to address women's vulnerability to HIV: improved reproductive care; reducing violence against women; protecting property and inheritance rights of women; ensuring equal access for females to treatment and care; supporting efforts to provide universal education for girls; supporting improved community care with a special focus on women; and promoting safe sex technologies that are controlled by women, such as the female condom and microbicides (Global Coalition on Women and AIDS, 2005: 2).

But the flip-side of cultural norms and practices which oppress women are the norms and practices which define masculinity in ways which also put men at risk. These include, most obviously, definitions of masculinity which emphasise multiple partnering and sexual relations with younger women as well as a

preference for 'skin on skin' (i.e. unsafe) sex. Thus, dealing with the feminisation of the AIDS epidemic also entails reaching out to men and boys in an effort to change sexual culture and risky masculinities (UNAIDS, 2000).

In contrast to the literature on AIDS infection and prevention, very little has been written on the gender dimensions of providing highly active antiretroviral therapy (HAART) to treat AIDS. Since the launch of the Global Fund to fight AIDS, Tuberculosis and Malaria in January 2002, and the United States President's Emergency Plan for AIDS Relief (PEPFAR) in January 2003, access to HAART in developing countries has risen substantially. This process was supported by the World Health Organisation and UNAIDS with their '3 by 5' plan (to put 3 million people in developing countries on HAART by 2005).[2] Although the 3 by 5 target was not reached, this unprecedented international effort has helped facilitate a dramatic increase in the numbers of people accessing HAART in developing and transitional countries (Nattrass, 2006b). As of December 2005, it was estimated that 20% of people needing HAART in such countries were actually receiving it (WHO, 2006: 19).

When this initiative took off in 2003/4, the UNAIDS-led Global Coalition on Women and AIDS expressed concern that AIDS-related gender biases would continue and that men would dominate access to HAART. These concerns were fuelled by reports such as one from Kenya which suggested that men with AIDS were twice as likely as their female counterparts to be admitted to hospital (UNAIDS, 2006: 167), and another from Zambia indicating that men were accessing HAART in disproportionately high numbers (UNAIDS/UNFPA/UNIFEM, 2004: 23-4). International agencies therefore called for women to be provided with equitable access to HAART (UNAIDS/UNFPA/UNIFEM, 2004: 25).

It turned out, however, that men have not benefited disproportionately from HAART (UNAIDS, 2006: 167-8). As of December 2005, only in Ethiopia and Ghana were fewer women accessing HAART than would be expected given the gender composition of the epidemic – whereas in South Africa, Burundi, Cambodia, China and Panama, more women were accessing HAART than expected (WHO, 2006: 22). The WHO report speculated that this could be because women were better linked into community networks and thus had better health care information and were better able to access public health facilities than men – especially where these were linked to mother-to-child-transmission-prevention (MTCTP) programmes (*ibid: 22*).

[2] Details of the 'three by five' initiative' can be found on http://www.who.int/3by5

As noted earlier, this paper explores the gender dimensions of access to HAART in South Africa. South Africa is an important case study because, as mentioned earlier, it shares with India the unfortunate record for the highest number of HIV positive people living within its borders. Furthermore, the South African case study is important also because of the internationally renowned pilot HAART programme launched by Medécins Sans Frontières (MSF) and the Western Cape Provincial Government in Khayeltisha (an African township outside Cape Town). This project, which successfully rolled out HAART to poor people, was declared a 'best practice' by the WHO in 2003 and widely publicised as an example of how it is possible to provide HAART in resource-constrained settings and achieve good clinical results (e.g. MSF *et al*, 2003; Coetzee *et al*, 2004). The lessons we can learn from this project thus have important practical and symbolic implications.

Part 1 of the paper provides an overview of the AIDS epidemic in South Africa, pointing to its highly gendered dimensions. This section also serves to introduce the ASSA2003 demographic model and to outline its predictions as to the expected gender balance of those needing HAART. It concludes that the available evidence indicates that HAART coverage is significantly better for women than for men. As demonstrated through regression analysis on data from the Demographic and Health Survey, a large part of the reason for this is that men generally access health services less readily than women. However, as this in itself may not fully account for the significant differences in accessing HAART, Part 2 explores socio-economic data from Khayelitsha to see if other factors may also be at work. Although there are some indications that men are less optimistic about HAART than women, neither these differences nor differences towards traditional healing were statistically significant covariates. The key reason why men appear to access HAART less readily than women thus appears to be because they are typically less likely to access health services in general.

1. Gender and AIDS in South Africa.

Data on the extent and patterns of the AIDS epidemic in South Africa come from three sources: the antenatal clinic survey (i.e. data on pregnant women); occasional national sample surveys of HIV prevalence; and demographic modelling work which draws on such data together with trends in fertility and mortality. The ASSA2003 model is the best available demographic model. Figure 1 shows selected output from the ASSA model as well as 'raw' data from the antenatal clinic survey and the most recent national survey (Shisana *et al*, 2005: 33). The picture shows consistently higher HIV prevalence amongst women. The ASSA model also utilises death data by age, gender and race to

calibrate the model so as to ensure that its HIV prevalence projections are not only consistent with antenatal survey data, but are also able to predict known patterns of deaths over time. Figure 2 shows actual and predicted deaths by age and gender over time in South Africa.

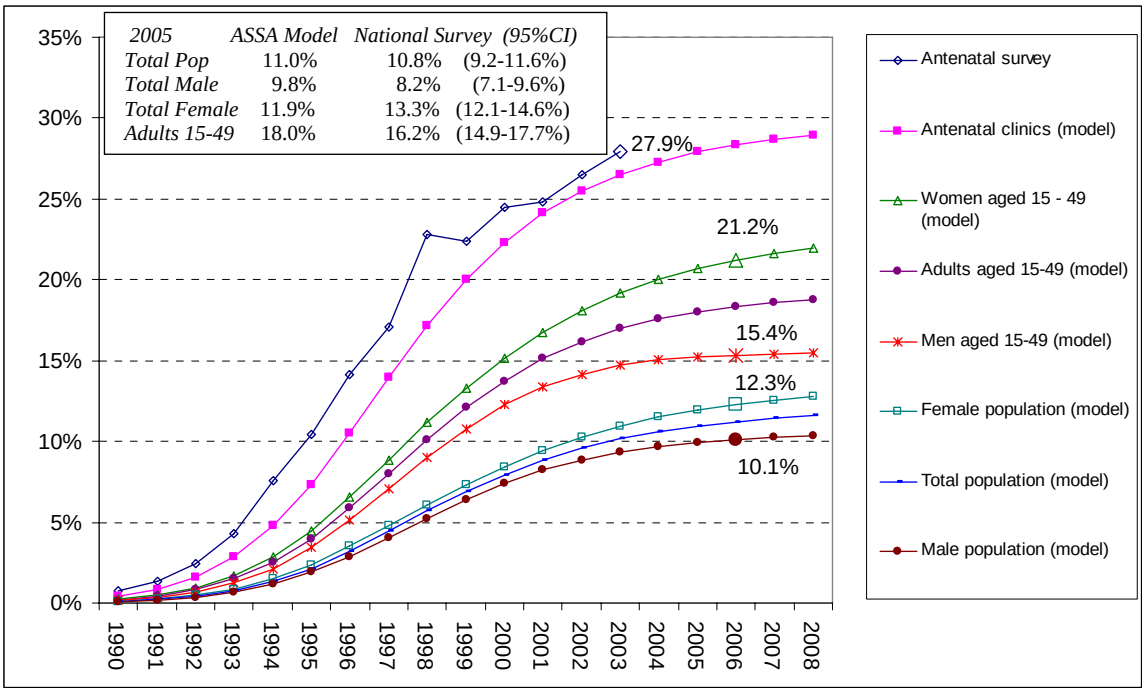

Figure 1: HIV Prevalence in South Africa

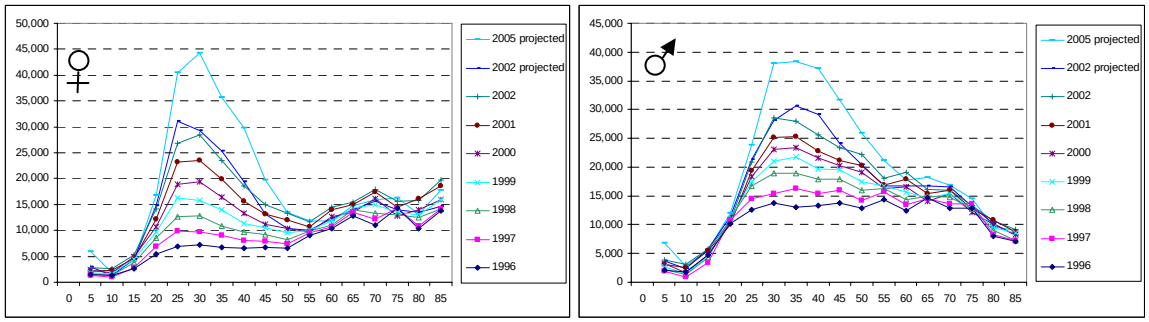

Figure 2. ASSA2003: Actual and Projected Female and Male Deaths (entire country)

Figure 2 shows that the number of deaths in young age groups has risen over three-fold since 1996 and that the increase has been especially dramatic for young women. The ASSA model successfully tracks these data.

What should we expect to be the gender balance of people needing HAART?

The ASSA model provides national and provincial estimates of HIV prevalence and includes the impact of various AIDS interventions, including the 'rollout' of HAART, on the numbers of AIDS sick people, overall demographic trends etc. The model allows for provincial variation in AIDS policy – for example, it has the Western Cape rolling out mother-to-child transmission prevention (MTCTP) and HAART much faster than the national average.[3]

The AIDS epidemic is located overwhelmingly in the black African population. As can be seen in Figure 3, this is because prevalence rates are highest in the African population, which comprises four-fifths of the total population. According to the ASSA2003 model, 98% of AIDS sickness and death in 2005 was amongst black people. Note that racial inequality is still very much in evidence in post-apartheid South Africa: As shown in Figure 3, over half of Whites who were estimated to be eligible for HAART were receiving it, whereas less than a fifth of the other population groups were. This reflects persistent racial disparities in income and points to the importance of the rollout of HAART in the public sector for reaching Africans living with AIDS.

This paper utilises data from the ASSA2003 projections for the Western Cape. Figure 4 shows the Antenatal Clinic Survey data and the model-based projections of HIV prevalence for black adults and for the black population. The figure shows that the ASSA2003 model's projection for the population of people attending antenatal clinics is very close to the actual data. Prevalence for adult women is projected to be much higher than that for men. This is a consequence of assumptions built into the model with regard to relative transmission probabilities (which are higher for women than men) and as a consequence of the ASSA2003 model's calibration to fit differential deaths by age and gender.

[3] The national average for rolling out MTCTP for Blacks had the program reaching 10% in 2001, 40% in 2002, 60% in 2003, 80% in 2004 and 90% in 2005 (whereas the Western Cape model had it reaching 35%, 65% , 75%, 85% and 90% respectively). The national average for rolling out HAART to Blacks had coverage starting at 2% in 2000 and rising to 30% by 2005, whereas the Western Cape had it starting at 2% in 2000 and rising to 60% in 2005. These modelling assumptions are very close to what happened in reality (Nattrass, 2006c).

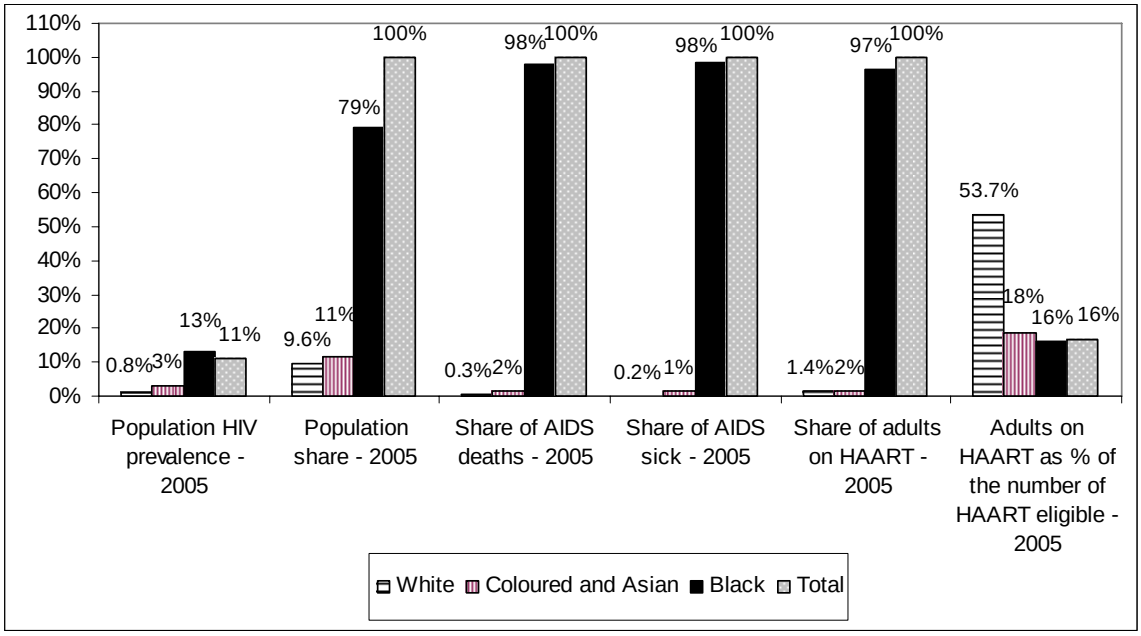

Figure 3: South Africa's AIDS epidemic by population Group (ASSA2003 model)

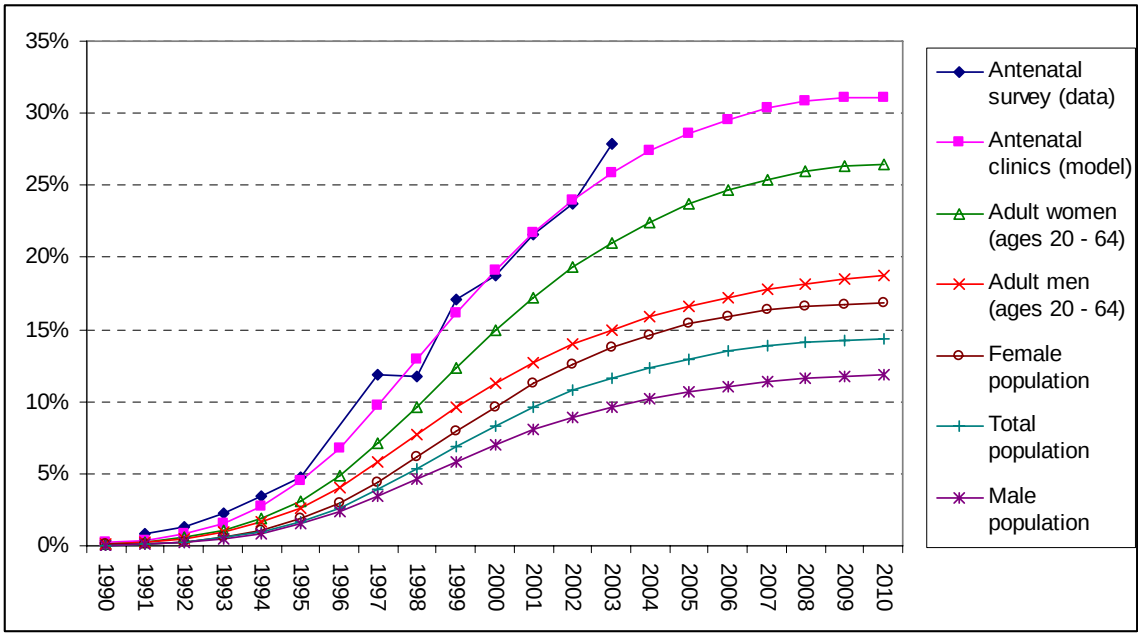

Figure 4. ASSA2003 Provincial Model, Projections of HIV Prevalence for Africans in the Western Cape

HAART has been available in the private sector in South Africa since about 2000. In May 2001, MSF, in collaboration with the Western Cape Provincial Government, launched the first public sector HAART project in Khayelitsha.[4]

[4] See Coetzee *et al* (2004) for more details about this programme.

Since 2004, HAART has become more generally available in the public sector. However, most cohort studies that are available draw on data from Khayelisha and the private sector. Data from Khayelitsha shows that about 70% of HAART patients are female, and that this has not changed over time (Coetzee *et al*, 2004; Western Cape Department of Health, 2006). According to the Western Cape Department of Health, this gender pattern persists beyond Khayelitsha: "A striking feature of ART treatment programmes in Southern Africa is the predominance of women, as has been the case in the Western Cape. The proportion of men starting ART has remained around 30% over the five years of enrolment in the province, with a very slight increase over time" (Western Cape Department of Health, 2006: 11-12).

One would, of course, expect more women than men to be on HAART given that HIV infection rates are higher among women. However, the proportion of women on HAART is significantly higher than would be expected given demographic trends. The ASSA2003 model is able to predict the number of people becoming AIDS sick (and hence eligible for HAART) by race and gender in the Western Cape. This model predicted that in 2002, 57% of AIDS sick black people would be women – i.e. a significantly lower figure than the 70% indicated above.

A similarly disproportionate number of women is evident in data collected by a private sector HAART rollout programme. Nachega *et al* (2006: 80) found that 60.5% of 6,288 patients enrolled in a South African private sector AIDS management programme between January 1999 and August 2004 were women. This is greater than would be expected, given that only 33% of workers in the formal sector are female.[5]

Why are women accessing HAART in disproportionately greater numbers than men? One possible explanation is women in general are more likely than men to seek health care. Qualitative evidence suggests that HIV-positive men are reluctant to seek health care (Beck, 2004) and clinical data from Khayelitsha indicates that men have lower CD4 counts than women when starting HAART, i.e. they are sicker when they start treatment (Boulle *et al*, 2004: 7; Coetzee *et al*, 2004: 891). Similar trends were evident also in the private sector (Nachega *et al*, 2006).

According to Beck (2004), this is related to cultural constructions of masculinity which make it difficulty for men to admit weakness and seek help. His argument, based on qualitative data analysis, was supported in a subsequent

[5] Data from the Labour Force Survey, September 2005. Summary statistics available on: PO210, 24 January 2006: http://www.statssa.gov.za/publications/P0210/P0210September2005.pdf

2004 survey of 566 Khayelitsha residents[6] in which two-thirds of respondents agreed or agreed strongly with the statement that 'Men think of ill-health as a sign of weakness which is why they go to a doctor less often than women'.

If it is the case that men do indeed seek treatment less often than women, then this could be an important part of the reason why men are under-represented in the HAART programme. Data from the most recent (1998) South African Demographic and Health Survey (DHS) show significant differences between men and women when it comes to health-seeking behaviour in general (see Table 2). This is true both within the total population and for Africans only. Only with respect to the demand for alternative healers (such as traditional healers, herbalists and faith healers) were the differences between men and women *not* significant – however, demand for alternative healers is low, with only 4.3% of Africans (and 3.5% of the total population) reporting that they had visited such an alternative healer in the past month.

Table 2: DHS Question "During the last month have you been to any of the following health services for medical care for yourself?"

	Men	*Women*	*Total*
Total Population			
Any kind of health care (government or private hospital, district surgeon clinic, chemist shop, private doctor, traditional healer, herbalist or faith healer).	28.3%	39.2%	34.7%
	Pearson chi2(1) = 175.0791 Pr = 0.000		
Government hospital or clinic	10.4%	17.4%	14.5%
	Pearson chi2(1) = 130.9413 Pr = 0.000		
Private doctor in the past month for yourself	8.7%	11.6%	10.4%
	Pearson chi2(1) = 30.2681 Pr = 0.000		
Traditional healer, herbalist or faith healer	3.2%	3.7%	3.5%
	Pearson chi2(1) = 2.9634 Pr = 0.085		
African Population			
Any kind of health care (government or private hospital, district surgeon clinic, chemist shop, private doctor, traditional healer, herbalist or faith healer).	25.5%	36.1%	31.8%
	Pearson chi2(1) = 132.0014 Pr = 0.000		
Government hospital or clinic	10.9%	18.1%	15.2%
	Pearson chi2(1) = 103.2091 Pr = 0.000		
Private doctor in the past month for yourself	6.2%	8.9%	7.8%
	Pearson chi2(1) = 24.9089 Pr = 0.000		
Traditional healer, herbalist or faith healer	4.0%	4.6%	4.3%
	Pearson chi2(1) = 2.3074 Pr = 0.129		

[6] This was actually the second wave of a panel study initially conducted in 2000 by the University of Cape Town, and although there was attrition between the waves, there is no significant evidence of attrition bias, at least as far as labour-market analysis is concerned (Magruder and Nattrass, 2005). The survey can thus be regarded as broadly representative.

Table 3 explores, using dprobit regression analysis, the determinants of whether an African is likely to have visited a government hospital or clinic in the past month. (Visits to such government facilities were chosen in order to shed light on the gender pattern of HAART uptake in the public sector.) The analysis controls for gender, age, pregnancy and for child-bearing age (to capture any possible other reason besides pregnancy, such as birth control injections, which would give women reasons specific to their biology to go to clinics more than men). It also controls for ill-health (explanatory variables 5-9), for socio-economic status (variables 10-13) and for whether respondents have sought health care from private doctors and alternative healers in the past month (variables 14 and 15). The analysis indicates that those of higher socio-economic status (who are also more likely to have visited a private doctor) are less likely to have visited government health facilities, whereas those of lower socio-economic status are more likely to have visited government health care facilities. Note that the demand for alternative health care appears to be complementary with visiting government health care clinics.

The analysis indicates that even after controlling for age, socio-economic status and ill-health, men are significantly less likely to have visited a government health facility in the past month. According to the marginal effects analysis, the conditional predicted percentage of men visiting government health care facilities is likely to be 4.5 percentage points lower than that for women. In other words, we would expect the proportion of men attending government clinics to be 25% lower (4.5/18.1 = 25%) than that of women purely because men are less likely to seek medical help than women when afflicted with the same illness.

If we take the predicted difference, then this model suggests that controlling for age, socio-economic status and reported ill-health, we should expect at most the proportion of AIDS-sick women to be visiting government clinics and hospitals to exceed that of men by 25 percent. In other words, even though 43% of HAART eligible patients are likely to be men, we should probably expect this number to be 25% lower. This implies that the expected proportion of male HAART patients should be 36% (36% = (0.75*0.43)/((0.75*0.43)+ 0.57). Male reluctance to seek health care in general could thus account for a lot, but not all, of the gender imbalance of those seeking HAART. The question thus remains if men are especially reluctant to access AIDS-related medical therapies.

Table 3: Dprobit Regression Analysis of whether African respondents visited a government hospital or clinic in the past month for medical care for themselves

Explanatory variables	*dF/dx*	*Std. Error*	*z*	*P>|z|*	*x-bar*
1. Male	-.04488	.0060238	-7.26	0.000	.417291
2. Age	.0009165	.0002985	3.07	0.002	38.4196
3. People of child-bearing age (proxied as 15-40 years old)	.0232085	.0107733	2.14	0.033	.564579
4. Pregnant women	.1287419	.0387317	4.05	0.000	.009814
5. Record of ill-health (proxied as people who have been told by a medical professional that they have, or have had cancer, TB, asthma, high blood pressure, diabetes, a stroke, heart-attack or angina, high blood pressure, high blood cholesterol, emphysema).	.0599244	.0087728	7.35	0.000	.245805
6. Underweight (body mass index of less than 18.5)	.0184292	.0106761	1.80	0.073	.098816
7. Obese	-.009410	.0071402	-1.30	0.195	.202877
8. On medication (proxied as those who report taking any prescribed medication regularly)	.2203283	.0138618	19.41	0.000	.140321
9. Self-assessed breathing problems (those who report that they feel they have less breath when exerting themselves than other people their age)	.0594372	.0084254	7.69	0.000	.185721
10. Live in informal unserviced housing (proxied as those living without any toilet facilities)	.018937	0096104	2.05	0.041	.117621
11. Live in informal housing with basic services (proxied as those using a 'bucket' toilet system)	.0496361	.0125102	4.37	0.000	.075966
12. Live in formal housing with internal plumbing	-.049708	.0061262	-7.77	0.000	.366497
13. Worked for pay in the past twelve months	-.025682	0062103	-4.03	0.000	.339077
14. Have visited an alternative healer in the past month	.0729536	.0187005	4.47	0.000	.036301
15. Have visited a private doctor in the past month	-.054056	.0072518	-6.32	0.000	.101663
Observed P Predicted P (at x-bar)	.1431675 .120817				
Pseudo R-squared Number of observations	.1137 13348				

Note: dF/dx is for discrete change of dummy variable from 0 to 1, z and P>|z| are the test of the underlying coefficient being 0.

One possibility is that women access HAART in greater numbers (and in earlier stages of the disease) because they have better information than men about primary health care facilities – including those offering HIV testing and treatment. This is one of the reasons suggested by the WHO when speculating about the reasons for women's greater access to HAART (WHO, 2006: 22). However, according to the national survey there were no gender-based differences regarding knowledge of HIV testing services or the existence of HAART: roughly four out of five men and women were aware of both (Shisana *et al*, 2005: 79, 88).

Another possibility is that women are accessing HAART in greater numbers because they are getting tested for HIV in greater numbers because many women test for HIV when they are pregnant (Shisana *et al*, 2005: 83). The 2005 national prevalence survey found that more women than men reported having been tested for HIV (30.9% as opposed to 26.4%) – but the difference was not statistically significant (*ibid*: 80). It is thus possible that women are more likely to test for HIV, but that on learning about their HIV status, many of them communicate the information to their partners, thereby encouraging them to get tested – and in this way, narrow the overall reported gap between men and women when it comes to testing.

If differential testing rates are unlikely to be the (or even a) reason for why women access HAART in disproportionate numbers, we need to probe possible attitudinal explanations. The 2005 National HIV survey asked questions about what might prevent people from accessing HAART if they became HIV positive. Unfortunately, the report did not break down responses by gender, and the data is not publicly available for further analysis. According to data presented in the report about one quarter of people reported that they would not access HAART because they did not believe in AIDS, or because they feared being harmed by side effects, and even killed by the drugs (Shisana *et al*, 2005: 89). Furthermore, 15% of respondents thought that traditional medicine could reduce the quantity of the HI virus. If these beliefs are disproportionately held by men, as suggested by Beck (2004), then this could also help explain their disproportionately low uptake of HAART.

The rest of this paper explores the issue of differential access to HAART by drawing on several data sets from Khayelitsha, an African township (comprised mainly of Xhosa-speaking residents) outside of Cape Town that is famous for having the first pilot HAART programme in the country. Data collected from HAART patients and from the general population can be used to explore various cultural and other barriers to accessing treatment.

2) Gender and Access to HAART in Khayelitsha

Before exploring possible demand-side determinants of access to HAART, it is worth first posing the question as to whether this is a product arsing from the supply-side – i.e. from selection criteria into the programme. As outlined in MSF *et al* (2003), the selection criteria favoured those who: had a fixed address in Khayelitsha; had a 'stable' home environment; had disclosed their HIV status to others; and arrived on time for clinic appointments. Taken at face value, such criteria may well have introduced selection bias into the programme. However, according to those managing the MSF programme, no one who was deemed

clinically to need HAART was ever denied treatment.[7] Those 'failing' the criteria were helped to correct the problem and were put on treatment. In other words, it is safe to assume that the problem for men in accessing HAART lies on the demand side of the story.

The MSF clinic collected some basic socio-economic data from HAART patients at six month intervals. Analysis of this data revealed that the proportion of non-labour force participants fell as treatment progressed (which one would expect given that HAART restores people to health) and that the numbers of respondents in employment rose over the period, as did the percentage seeking work. Panel data analysis of these labour-market transitions revealed that gender was an insignificant determinant in all cases (Coetzee, 2005).

Unfortunately this clinic-level data set has many limitations, the most important being that very little socio-economic data were collected. Fortunately another data set is also available comprising 242 respondents in Khayelitsha who had, by 2004, been on HAART for at least a year. These data were collected in 2004 by the AIDS and Society Research Unit at the University of Cape Town. The main disadvantage of this data set is that the respondents were recruited through word of mouth and other informal processes and thus cannot be regarded as a random sample. However, as two-thirds of the MSF's starting HAART cohort was recruited into this survey, some confidence can be attached to it. A comparison between the MSF data set and this HAART data set indicates that respondents in the 2004 survey were slightly more likely to be female, were slightly less well educated and more likely to be unemployed than respondents in the MSF data set who had been on HAART for a year.

One of the advantages of this 2004 HAART data set is that many of the socio-economic questions that were posed to HAART respondents were included in a random survey of Khayelitsha residents that same year. The same fieldworkers were used for both surveys to ensure comparability across the surveys. By drawing a 'matched' sub-sample of 242 respondents from the Khayelitsha survey (matched according to age, gender and education to the HAART sample) the Khayelisha matched sub-sample can provide an interesting comparative context for the HAART sample. It allows us to contrast labour-market and other socio-economic characteristics between people on HAART, and their matched counterparts in the general Khayelitsha population.[8]

[7] Information provided by Marta Darda and Toby Kaspar.

[8] First, the two data sets were appended and a new variable created taking the value of 1 if the respondent was in the HAART data set, and a value of 0 if the respondent was in the Khayelitsha data set. A probit regression was then run on this variable using age, gender and education as independent variables. This regression produced a predicted value for all respondents (HAART and Khayelitsha) – i.e. an estimated probability for being in the

Table 4. Key characteristics of the HAART and the Khayelitsha Matched Samples

	Men		*Women*		*Total*	
	K-matched	HAART	K-matched	HAART	K-matched	HAART
Labour market status						
Employed	68.2%	28.6%	50%	32.7%	53.3%	28.9%
Active job seeker	25.0%	6.1%	35.1%	7.8%	33.2%	8.7%
Non-active job seeker	6.8%	12.2%	14.9%	40.4%	13.5%	40.9%
Non labour force participant	0.0%	10.2%	0.0%	19.2%	0.0%	17.4%
Pearson chi2(4)	23.372 (Pr = 0.000)		103.3110 (Pr = 0.000)		122.613 (Pr = 0.000)	
Unemployment rate (broad)	31.8%	61.3%	50.0%	59.6%	46.6%	60.0%
Labour force participation rate	100%	89.8%	100%	80.8%	100%	82.6%
Poor or fair health	4.7%	16.3%	3.1%	13.2%	3.4%	13.8%
Pearson chi2(4)	3.2224 Pr = 0.073		13.2096 Pr = 0.000		16.5630 Pr = 0.005	
Excellent health	58.1%	32.7%	48.8%	34.2%	56.7%	33.9%
Pearson chi2(4)	6.0217 Pr = 0.006		10.4273 Pr = 0.001		25.0881 Pr = 0.000	
Disability grant recipient	2.3%	69.4%	5.6%	73.6%	5.0%	72.7%
Pearson chi2(4)	43.6983 Pr = 0.000		187.4304 Pr = 0.000		230.7178 Pr = 0.000	

Table 4 shows the HAART sample was more likely to include non-labour force participants and non-active job seekers than the Khayelitsha matched sample. In other words, despite the fact that the HAART sample had been on HAART for over a year, respondents were significantly less likely to be employed or actively seeking employment. Thus despite having their health restored by antiretroviral therapy, people on HAART display significantly different labour-market behaviours.

This is no doubt in part the result of residual health problems. Although people on HAART are restored to health, they are not necessarily restored to health to the same extent as people who have not had to experience AIDS-related illness or the challenge of going on HAART. Table 5 contrasts the self-reported health status of HAART patients and the Khayelitsha matched sample. The following question was asked in both surveys: "In general, how is your health? Would you say it is poor, fair, good, very good or excellent?". Table 4 shows that HAART patients, and especially male patients, were significantly more likely to report poor or fair health than their matched counterparts in Khayelitsha – and

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HAART data set given the model based on education, age and gender. For each HAART respondent, the closest match was selected (in terms of estimated predicted probability) from the sample of Khayelitsha respondents. I am very grateful to Chris Udry who designed the first programme to help us draw the matched data set, and to Jeremy Magruder who helped refine it – but the final program including mistakes is my responsibility. The do file for the matching is 'matchkmptoarv.do'

3significantly less likely to describe their health as excellent. This is consistent with the fact that men seek treatment only when they are very ill (as is evident in the lower starting CD4 counts amongst men (Coetzee *et al*, 2004)) and hence are likely to have a longer period of recovery and more problems along the way.

It is worth noting that well over two thirds of the HAART sample had access to government disability grants, whereas only 5% of the Khayelitsha matched sample had access to such grants. This reflects the fact that the HAART patients were sick with AIDS when they started treatment (and hence were eligible for the disability grant which is paid to adults deemed to be too sick or disabled to work)[9] and were supported in their applications for disability grant renewals by the doctors working in the HAART clinics. Note also that some doctors support disability grant applicants even when the patients are medically well enough to work because no welfare grants are available for able bodied people of working age and they want to ensure that their patients have a basic income to ensure adequate nutrition. Hence, the presence of a disability grant does not necessarily indicate poor health status.

Table 5 presents a set of regression models on employment status. Model 1 shows that for the Khayelitsha matched sample, being male and being in excellent health had a positive and statistically significant impact on the probability of being in employment. Despite controlling for health status, having a disability grant per se also had a statistically significant negative impact. Model 2 repeats the exercise, this time for the HAART patients. It shows that being male had no significant impact on the probability of employment (but years of education and being in excellent health were significant and positive determinants and the disability grant was unrelated to employment status – no doubt because so many people in the HAART sample had such grants, irrespective of self assessed current health status).[10]

How do we interpret the fact that being a male in the HAART sample did not provide the expected labour-market advantages relative to women? The obvious explanation is that the men were sicker than the women (as shown in Table 4, more men than women reported poor or fair health, and fewer men than women reported excellent health). But it is also possible that the HAART sample had a higher proportion of unemployable men in it – perhaps because employed male HAART patients may have been selected against by the snowball, word-of-

[9] See Nattrass 2006a for a discussion of the role of the disability grant in South Africa's welfare net, and the implications of this for the HAART rollout.

[10] Indeed, 37.4% of those on disability grants reported their health status (as opposed to only 24.6% of those with access to a disability grant). This could either suggest that disability grants are being used to support those who do not need it, or it could suggest that those with disability grants are more likely to report excellent health (perhaps because the disability grant improves their nutritional status).

mouth sampling technique adopted in the study, or perhaps because of other unexplored factors specific to the characteristics of men on HAART.

Table 5. Determinants of Employment in the HAART and the Khayelitsha Matched Samples

Dprobit regression Dependent variable: 1=Wage or self employed, 0=all other labour-marked states	Khayelitsha matched sample	HAART patients	HAART patients & matched sample	
	1	2	3	4
Age dF/dx Std Error P>|z|	 .0048766 .0050639 0.336	 .0029919 .0050343 0.552	 .0021248 .0034894 0.543	 .0026159 .0035715 0.464
Years of schooling dF/dx Std Error P>|z|	 .0085474 .013147 0.516	** .0337184 .0129325 0.010	** .0222797 .0091479 0.015	** .0196912 .0092964 0.034
Male dF/dx Std Error P>|z|	** .1808461 .0845032 0.042	 .0193634 .0814979 0.811	** .200178 .0866219 0.023	** .1982747 .0880535 0.027
Poor health dF/dx Std Error P>|z|	 -.3390043 .1852419 0.147	 .1276442 .0998845 0.187	 .0309677 .0898754 0.729	 .0312311 .0909116 0.730
Excellent health dF/dx Std Error P>|z|	* .1341955 .0682986 0.051	*** .2261561 .0717126 0.001	*** .1787815 .0487892 0.000	*** .1849203 .0493932 0.000
Disability grant recipient dF/dx Std Error P>|z|	** -.3647602 .1287971 0.029	 -.119209 .0742022 0.101	 	*** -.1843729 .0646402 0.006
HAART patient dF/dx Std Error P>|z|	 	 	** -.136095 .052701 0.011	 -.0124006 .0711472 0.862
*HAART patient * Male* dF/dx Std Error P>|z|	 	 	 -.169245 .1045442 0.136	 -.0124006 .0711472 0.862
Number of observations	231	236	471	467
Pseudo R squared	0.0627	0.0704	0.0685	0.0814

Models 3 and 4 were conducted on a pooled sample of both HAART patients and their matched counterparts from the Khayelitsha survey. A dummy variable (HAART patients) took the value of 1 for the HAART respondents, and 0 for the Khayelitsha survey, and an interaction term (HAART patient*male) was included to see if there was something specific to being a male on the HAART programme when it came to determining access to employment. Regression 4 shows that controlling for age, education and reported health status and gender, being on the HAART programme reduced the probability of employment, but

that there was nothing significant about being a man on the HAART programme per se. Regression 5 produces a similar result, this time also controlling for whether the respondent is a disability grant recipient or not (the inclusion of which renders the variable 'HAART patient' insignificant). In short, there appears to be nothing specific about the men on the HAART programme that renders them any more or less likely to be in employment.

Table 6. Attitudes to Traditional Healing in Khayelitsha

	HAART		*K-Matched*		*Khayelitsha Total*	
	Female	Male	Female	Male	Female	Male
Some people have AIDS because they were bewitched	2.6%	8.2%	25.4%	14.0%	23.3%	23.5%
Pearson chi2(1)	3.389 (Pr = 0.066)		2.573 (Pr = 0.109)		0.0010 (Pr = 0.974)	
HIV positive people in South Africa can live long lives if they take their antiretrovirals regularly	99.0%	95.9%	93.8%	90.92%	92.7%	88.9%
Pearson chi2(1)	2.2295 Pr = 0.135		0.4699 Pr = 0.493		2.3966 Pr = 0.122	
Traditional African medicine can help fight AIDS	1.0%	4.1%	17.2%	22.7%	18.7%	16.9%
Pearson chi2(1)	2.2295 Pr = 0.135		0.7373 Pr = 0.391		0.2823 Pr = 0.595	

But there may be other factors which distinguish male HAART patients. For example, Beck argues on the basis of a qualitative study that one of the barriers to accessing HAART by men in Khayelitsha is a supposed cultural preference for sangomas or traditional healers (2004: 11-14). He quoted a male respondent as saying: "I believe in the tradition, in the sangoma. Few men believe in the drugs, in the treatment, but all men believe in the Sangoma because our fathers believed in the Sangoma" (*ibid*: 12). Women, by contrast, were argued to believe more in Western medicine because of their contact with birth control technology and medical services pertaining to pregnancy and birth (*ibid*: 11-12). Table 6 presents data from the HAART survey, the Khayelitsha survey and the 'matched' sub-sample on attitudes to traditional medicine and antiretrovirals. Gender patterns are mixed, but broadly in line with what Beck was finding – although none of the differences were statistically significant. Nevertheless, the findings suggest that a variable capturing these differences in a multivariate regression may prove worthwhile.

Another possible reason why men are accessing HAART less readily than women may relate to their psychological readiness or capacity to confront their HIV status and seek help. This is difficult to explore, but the two surveys did probe respondents on various psycho-social dimensions: depression/anxiety; levels of support from others and self-efficacy. Table 7 presents regression models, for men and women and the pooled sample as a whole, which includes

various possible psycho-social determinants of the characteristics of those accessing the HAART programme.

The variable 'low levels of support from others' is a dummy variable capturing the bottom quartile of a 'social support score' constructed out of nine questions, probing on a Likkert 5-point scale the extent to which respondents have someone to confide in, help them when they are sick, show them love and affection etc. Given ongoing concerns about AIDS-related stigma, it is a reasonable hypothesis that people on HAART would score lower than the general population – and it would be interesting to see if there were gender differences in this respect. The variable 'trust in people' is a dummy variable taking the value of 1 if respondents agreed or agreed strongly with the statement: 'Generally speaking, most people can be trusted'. It was included as a further indication of how supported the individual feels in his or her community. In a similar vein, two further 'social capital' dummy variables were included to capture whether respondents belonged to a church, or to community organisations.

The dummy variable "high depression/anxiety" captures the top quartile of a total score constructed out of five questions (asking about loneliness, stress, being overwhelmed by problems etc). While this provides a useful measure of mental health, it is unclear whether we should expect people on HAART to be less or more depressed than the general population: HIV-positive people are likely to be more depressed simply by virtue of having to deal with a chronic illness – but it is also the case that long-term HAART patients have had time to come to terms with their diagnosis and experience better health through HAART. Unsurprisingly, the available psychological studies of the impact of HAART are mixed (Brandt, 2006: 20).

The variable "confidence to accomplish goals" is a dummy variable taking the value of 1 if the respondent agrees or agrees strongly with the statement: 'It is easy for me to stick to my aims and accomplish my goals'. This variable was included as a measure of self-efficacy.

The variable 'visited a sangoma' is a dummy variable probing whether the respondent visited a sangoma the last time he or she was sick (but in the case of HAART respondents, this question was qualified to read 'before you went on antiretrovirals). It was included to see if there were any systematic differences between the HAART patients and the matched sample (and between men and women) when it came to health-seeking behaviour. Similarly, the variable 'visited a faith healer' probes if respondents had ever visited a faith healer.

Table 7. Psychosocial Determinants of being on the HAART Programme (as opposed to being in the Khayelitsha Matched Sample)

Dprobit regression Dependent variable: 1=In the HAART Programme, 0=Khayelitsha Matched Sample	Men and Women (1)	Men and women (2)	Men (3)	Women (4)
Low levels of support from others	**			*
dF/dx	.1215117	.091553	.1148485	.1111325
Std Error	.0578283	.0596967	.1577653	.0660349
P>|z|	0.039	0.129	0.481	0.097
High depression/anxiety				
dF/dx	-.0121303	-.079586	.1162466	-.105584
Std Error	.0627047	.0651538	.1900111	.0698427
P>|z|	0.847	0.224	0.557	0.134
Confidence to accomplish goals	***	***		***
dF/dx	-.3171847	-.3036848	-.3708455	-.2968856
Std Error	.0706207	.0785111	.1628884	.0888621
P>|z|	0.000	0.001	0.148	0.005
Trust in people	***	***	**	***
dF/dx	-.2401764	-.22985	-.3196567	-.2201468
Std Error	.0507142	.0524989	.1472041	.057782
P>|z|	0.000	0.000	0.039	0.000
Visited a sangoma	***	***	**	***
dF/dx	.4028354	.4031273	.4960964	.3502316
Std Error	.0575547	.0594505	.0848011	.0777466
P>|z|	0.000	0.000	0.013	0.000
Visited a faith healer	***	***		***
dF/dx	-.2281465	-.2487703	-.0396365	-.2878448
Std Error	.0669694	.0704942	.2901538	.073063
P>|z|	0.001	0.001	0.891	0.000
Belongs to a Church or Religious Group				*
dF/dx	-.075294	-.0756556	.2108646	-.1425586
Std Error	.0599774	.0622007	.1517366	.0725387
P>|z|	0.213	0.227	0.172	0.055
Belongs to a Community Organisation		**	***	
dF/dx	-.0707722	-.126546	-.5028149	-.0417702
Std Error	.0535064	.0565761	.1173912	.0642747
P>|z|	0.187	0.027	0.000	0.516
Poor health		***		**
dF/dx		.2720633	.3127699	.2781882
Std Error		.0869692	.1599286	.1017537
P>|z|		0.007	0.145	0.019
Excellent health		***	*	***
dF/dx		-.215721	-.2865443	-.2115838
Std Error		.0542762	.1468079	.0598829
P>|z|		0.000	0.061	0.001
Number of observations	452	448	88	360
Pseudo R squared	0.1389	0.1940	0.3949	0.1804

Models 1 and 2 indicate that for men and women together, low levels of support from others was associated with being in the HAART programme – but that this effect became insignificant once health status was controlled for. In other words, people on HAART are typically less well than the general population, and more likely to report insufficient levels of support from others – but that it is the effect of being unwell that dominates. The results also suggest that people in the

HAART programme are significantly less likely to trust others, are less likely to belong to a community organisation (once health status is controlled for) and are less likely to feel confident in their ability to accomplish their goals. Depression and belonging to a church were not significant covariates of being on the HAART programme.

Models 3 and 4 are equivalent to model 2, but this time run on a sub-sample of men and women respectively. Interestingly, even controlling for health status and other factors, low levels of social support characterised women in the HAART programme (relative to their matched counterparts) – whereas this was not the case for men. This might indicate that either the men on HAART were sufficiently proactive to find or construct an adequately supportive environment, or that only those who managed to do so, succeeded in getting into and remaining on the HAART programme.

Finally, with regard to alternative health-care seeking behaviour, for both men and women, having visited a sangoma was a significant predictor of being in the HAART programme. In other words, as was the case from the analysis of the DHS data (see Table 3) visiting a sangoma was complementary to, rather than a substitute for, using Western medicine – including, in this case, HAART.

Conclusion

So what is the answer to the puzzle? Why are men accessing HAART in disproportionate numbers? The main reason appears to be that men, in general, seek treatment for poor health less readily than women, and that AIDS-related illnesses are no exception. Although there are some indications that men are more suspicious than women about the relative merits of HAART versus alternative treatments, these were not significant and it appears that having visited a traditional healer is complementary to, rather than a substitute for, accessing HAART.

In short, gendered norms which make it difficult for men to admit weakness and seek medical attention are probably at the heart of the problem. Thus, although men are less vulnerable to HIV infection than women, their chances of accessing HAART and thus surviving AIDS are lower. In this respect, at least, gendered norms advantage women. However, for those women who depend on AIDS-sick men to contribute to household income, their lives would be a lot better if such men were more prepared to access HAART.

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