

# Prevalence and Determinants of HIV infection in South Africa: Results from the 2008 National HIV survey

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## Abstract

The HIV epidemic has emerged as a health concern, with the highest prevalence in Sub-Saharan Africa. In South Africa particularly, HIV has been the subject of much debate regarding the largest number of people living with HIV. It is essential to understand the social determinants of HIV prevalence in South Africa for informing policy makers to combat the disease. This paper presents the risk factors such as social, cultural and behavioural determinants of HIV prevalence in South Africa. A cross-sectional national population-based household survey was conducted using a multi-stage stratified sampling approach in 2008. All people living in South African households were eligible to participate. Dried blood spots specimens were collected by finger-prick (or heel-prick in infants) and tested for HIV antibodies to determine the prevalence and incidence of HIV infection. Findings demonstrate that Africans (0 yrs and above) had the highest prevalence of HIV infection of 13.2%, followed by Coloureds at 1.9% and Whites and Indians with the lowest prevalence of less than 0.5%. The risk of HIV was significantly higher among those sexually active in the past twelve months compared to those who were secondary abstainers. Also, The results presented in this paper demonstrate the extent to which HIV prevalence varies across demographic, socio-economic and behavioural factors. The differences in HIV prevalence between age groups call for formulation of interventions that are specific to each group.

## Keywords

HIV prevalence, determinants, demographic, sexual behaviour, South Africa

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## 1. Introduction

Sub-Saharan Africa has the highest prevalence of human immunodeficiency virus (HIV) infections globally, while South Africa has the largest number of people living with HIV in the continent [1]. In South Africa, HIV is transmitted predominantly through heterosexual sex. Recent studies show that transmission through men who have sex with men is also high [2]. The HIV epidemic remains a public health catastrophe which indiscriminately affects individuals, households and communities in the public and private sectors and consumes a significant proportion of the budget for health services

New data show that globally, the proportion of people living with HIV has leveled off and that the number of new infections has fallen partly due to the impact of HIV programs [1]. Two population-based surveys conducted in South Africa reported HIV prevalence at 11.4% in 2002 and 10.8% in 2005 among those aged 2 years and above adult population [3, 4]. Recent reports suggest that HIV has stabilized with no substantial further decline despite extensive efforts to reduce sexual risk behaviour [3, 5]. However, recent estimates of HIV incidence show the impact of antiretroviral treatment on HIV prevalence with an estimated 2% increase in prevalence among South African adult due to ART [6].

In South Africa, underlying risk factors are social such as level of education [7], economic (migrant labour system rural to urban [8]), biological (high prevalence of other sexually transmitted infections) [9], cultural (gender inequality) [10] and behavioural determinants (multiple sexual partners, intergenerational sex [3] and sexual violence). The combination of these factors and the likely interaction with the impact of HIV prevention and antiretroviral treatment poses a challenge for the interpretation of HIV prevalence [6]. Evidence from surveys exists of significant increases in condom use and awareness of HIV status, especially among youth [3].

Understanding the relative role of these factors is important for informing policy and developing programmes to combat HIV. This paper describes HIV prevalence among the general population in South Africa and assesses the key determinants of HIV infection in the country using the 2008 population-based national survey.

## 2. Materials and Methods

### 2.1. Sampling Process

A national population-based household survey was conducted using multistage stratified second-generation surveillance survey design. All people living in South African households were eligible to participate. A systematic probability sample of 15 households was drawn from each of the randomly selected 1000 enumeration areas (EAs) from 2001 census EAs. In each household, one person was randomly selected in each of the four mutually exclusive age groups (< 2 years, 2-14 years, 15-24 years and  $\geq$  25 years) and invited to participate in the survey.

Dried blood spots specimens collected by finger-prick (or heel-prick in infants) were tested for HIV antibodies. All HIV testing was anonymous and unlinked to any personal identifies. Individuals wanting to know their status were referred to local voluntary counselling and testing (VCT) facilities in the area. A detailed questionnaire soliciting information related to knowledge, attitudes, practice, behaviours, and demographic factors was administered.

Ethical approval for the study was obtained from the Ethics Committee of the Human Sciences Research Council.

### 2.2. Statistical Analysis

The data were analyzed using the STATA version 11 svy suites of commands to account for multi-stage complex sampling design used. An EA was specified as the primary sampling unit and the province as the strata. The individual weights were computed and then used in the analyses to take into account unequal sampling probabili-

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\* Social determinants of HIV prevalence in South Africa

ities and HIV testing response rate. Unweighted absolute numbers and weighted proportions are both reported. Variables found to be significant ( $p\text{-value}\leq 0.05$ ) from univariate analysis (based on likelihood ratio test) were used in fitting adjusted multiple logistic regression model. The 95% confidence intervals (95%CI) are reported and odds ratios (OR) are used to interpret the strength and direction of the relationship throughout the paper.

### 3. Results

#### 3.1. HIV prevalence by socio-demographic characteristics

Of the 23 369 eligible individuals sampled, 15 031 (64.3%) agreed to provide blood specimen for HIV testing and were anonymously linked to the behavioural questionnaires. HIV prevalence among people aged 0 years and older was found to be 10.6% [95% CI: 9.8% – 11.6%], with a significantly higher HIV prevalence among females (12.6%) than males (8.7%),  $p < 0.001$ . This translates to 5.2 million people aged from 0 and older infected with HIV in South Africa in 2008. Females were almost two times more likely to be infected with HIV than males [OR =1.8; 95% CI: 1.5 – 2.2]. HIV prevalence among adults in the reproductive age group of 15–49 years was found to be (16.9%; [95% CI: 15.5% - 18.4%]). In the reproductive age group, females were significantly more likely to be infected with HIV (21.3%) than male (11.7%) with OR=2.1 [95%CI: 1.7 – 2.5].

HIV prevalence varies considerably by socio-demographic characteristics, Table 1. The results show that there is a significant association between race and HIV infection risk,  $p\text{-value} < 0.001$ . Africans had the highest prevalence of HIV infection, with a prevalence of 13.2%, followed by Coloureds at 1.9%, and was lowest among both Whites and Indians with a prevalence of less than 0.5%. Among persons in the reproductive age group of 15-49 years, the prevalence varied by race, and it was more pronounced among Africans (21.4%) and Coloureds (2.4%) and least among Indians (0.6%) and Whites (0.5%),  $p\text{-value} < 0.001$ . Age was significantly associated with high prevalence of HIV infection among those aged 15 years and older. Those aged 25 to 49 years had the highest prevalence of HIV infection compared to those aged 15 to 24 years, and 50 years and older.

**Table 1: HIV prevalence by socio demographic characteristics**

Variable	Total tested	HIV prevalence	
		HIV+%	[95%CI]
Total tested	15002	10.6	[9.8 - 11.6]
Age group (in years)			
0-14	4194	2.8	[2.2 - 3.6]
15-24	3617	8.7	[7.2 - 10.4]
25-49	4489	22.2	[20.2 - 24.2]
50+	2702	5.4	[4.3 - 6.8]
Sex of respondent			
Male	6335	7.7	[6.7 - 9.0]
Female	8667	13.3	[12.2 - 14.5]
Race			
African	9265	13.2	[12.2 - 14.3]
White	1343	0.3	[0.1 - 0.9]
Coloured	3248	1.7	[1.2 - 2.3]
Indian	1120	0.3	[0.1 - 1.1]
Locality type			
Urban formal	8730	8.8	[7.6 - 10.2]
Urban informal	1888	19.9	[17.3 - 22.8]
Rural informal (tribal authority areas)	3391	10.7	[9.2 - 12.4]
Rural formal (farms)	993	10.9	[8.5 - 13.8]
Educational level completed			
No schooling	735	10.9	[8.2 - 14.3]
Primary	2033	16.5	[14.3 - 9.0]
Secondary	6461	15.4	[13.9 - 17.1]
Tertiary	5773	4.2	[3.5 - 5.1]
Marital status			
Single	4790	18.1	[16.3 - 20.1]
Married or cohabiting	4007	10.1	[8.6 - 11.8]
Widowed	904	10.4	[8.1 - 13.2]
Divorced	454	15.0	[10.3 - 21.3]

Disaggregating HIV infection by locality type, it was found that HIV prevalence was significantly higher amongst those living in urban informal areas followed by those in rural formal areas, tribal areas and urban formal areas. There was a significant statistical association found between HIV prevalence and locality type,  $p$ -value  $< 0.001$ . It is particularly important to note that HIV prevalence in informal settlements was more than twice the prevalence found in formal urban areas.

The prevalence of HIV infection also varied considerably by educational level attained. Table 1 show that HIV infection was highest among those that had attained primary and secondary level of education and least among those that had tertiary education. Having tertiary education seems to be protective. However, those with no schooling had lower HIV prevalence (10.9%) than those that had primary or secondary education. The majority (66.5%) of those with no education and infected with HIV were from rural informal and urban informal areas with 40.9% from rural informal areas. Urban informal and rural informal areas make up 76.9% of those that were infected with HIV and had either primary or secondary education levels.

HIV prevalence is considerably high among those that are single than any other marital status, Table 1. Ironically, Africans (55.6%) are more likely to be single followed by Coloureds (43.5%). Whites and Indians are more likely to be married. Among those aged 15 years and older, the odds of being infected with HIV were 2 times higher among those who were single compared to those who were married [OR=2.0 95%CI: 1.6 – 2.4]. Similarly the odds of HIV infection were 1.6 times higher if divorced compared to when married

### 3.2. HIV prevalence by socio-demographic and behavioural determinants

A total of 9 572 respondents among those aged 15 years and older indicated that they have ever had sexual intercourse with 73.1% currently sexually active and 26.9% being secondary abstainers. The prevalence of HIV was significantly higher among the sexually active in the last twelve months compared to those that were secondary abstainers.

**Table 2: HIV prevalence by socio-demographic and behavioural determinants for respondents 15 years and older who ever had sex**

Variable	Total	HIV+% [95%CI]	Univariate analysis	
			OR [95%CI]	p-value
Sexually active in the last 12 months among those ever had sex				
Sexually active	5394	16.5[14.8 - 18.3]	1.7 [1.3 – 2.2]	<0.001
Abstained	2075	10.4[8.6 - 12.7]	1	
Sex of the respondent				
Male	2083	10.7[8.8 - 12.9]	1	<0.001
Female	4639	18.3[16.6 - 20.1]	1.9 [1.5 – 2.3]	
Race				
African	4418	19.8[18.1 – 21.6]	20.2 [13.9 – 29.3]	<0.001
Other	3051	1.2 [0.8 - 1.7]	1	
Age group				
15-24	1917	12.0[10.1 – 14.3]	2.8[2.0 – 3.9]	<0.001
25-49	3454	21.5[19.3 – 23.9]	5.6[4.2 – 7.4]	
50+	2098	4.7[3.6 – 6.0]	1	
Marital status				
Single	3005	20.7 [18.5 – 23.0]	2.3[1.8 – 2.9]	<0.001
Married/cohabiting	3365	10.3 [8.5 – 12.3]	1	
Widowed	732	9.4 [6.9 - 12.6]	0.9[0.6 - 1.3]	
Divorced	336	15.7 [10.0 - 23.6]	1.6[1.0 – 2.8]	
Locality type				
Urban formal	4395	11.8[10.0 - 13.9]	1	<0.001
Urban informal	911	29.5[25.3 – 34.0.7]	3.1[2.4 – 4.2]	
Rural informal	1542	16.3[13.7 - 19.3]	1.5[1.1 – 1.9]	
Rural formal	621	16.1[12.3 - 20.8]	1.4[1.0 - 2.1]	
Number of sex partners last 12 months				
One partner	4857	16.2[14.4 - 18.1]	1	0.493
More than one partner	469	18.0[13.5 - 23.6]	1.1[0.8 – 1.6]	
Age mixing				
Partner 5 years older	1148	23.2[19.6 - 27.2]	1.6 [1.3 – 2.1]	0.001
Partner 5 years younger	860	13.5.1[10.0 - 17.9]	0.8[0.6 – 1.2]	
Partner within 5 years	3136	15.6[13.6 - 17.9]	1	
Age at sexual debut				
Younger than 16 years	848	16.5[13.3 - 20.3]	1.1 [0.9 - 1.5]	0.441
16 years or older	5893	15.1[13.7 - 16.7]	1	

The odds of being infected with HIV if sexually active in the last twelve months were 1.7 (p-value<0.001) times higher than for those who were secondary abstainers. Among those that have ever had sex, females were significantly more likely to be infected with HIV, Table 2. HIV prevalence was considerably higher among Africans compared to other race groups. There was a significant association between age and HIV infection with youth aged 15 to 24 years and middle aged adults aged 25 to 49 years having odds of 2.8 and 5.6 time more likely to be infected with HIV compared to adults aged 50 years and above, Table 2. Being single or divorced was significantly associated with higher chances of HIV infection. Similarly, having a sexual partner that is five years older was associated with higher chances of being infected with HIV.

Exploring condom use at last sex, the result showed that those who reported condom use at last sex were significantly at high risk of HIV infection OR=1.6, p-value<0.001. Males were more likely to report condom use at last sex than females (66.0% vs 59.4%, p-value=0.001). Table 3 presents condom use and HIV

prevalence between those who used condoms at last sex and those that did not use condoms at last sex by males and females aged 15 years and above who have ever had sex. There is a considerably higher rate of condom use among African males than males of other races. This was similar for African females compared to females of other race groups. However, reporting of condom use at last sex was higher among African males than African females. In both males and females, youth aged 15 to 24 years reported higher condom use at last sex than any other age group, Table 3. Males and females who reported multiple partners were more likely to report condom use at last sex. Among females, condom use at last sex was higher when partner was within five years of age than otherwise. Single males and single females were more likely to report condom use at last sex than any other marital category.

**Table 3: Comparing HIV prevalence between those who reported condom use at last sex and those that did not among males and females aged 15 years and above**

	Males			Females		
	Used condom	Not used condom	P-value	Used condom	Not used condom	P-value
	HIV+% [95%CI]	HIV+% [95%CI]		HIV+% [95%CI]	HIV+% [95%CI]	
<b>Race</b>						
Africans	16.1 [12.8 – 20.1]	18.0 [11.9 – 26.2]	0.626	31.8[28.3 – 33.7]	28.3[23.2 – 33.9]	0.306
Other	1.2 [0.4 - 3.1]	0.5 [0.1 – 2.4]	0.627	3.2[1.7 – 6.1]	1.6[0.7 – 3.7]	0.199
<b>Age in years</b>						
15 – 24	4.3[2.5 – 7.3]	2.8[1.0 – 7.4]	0.429	18.9[14.7 – 23.9]	17.8[12.6 – 24.5]	0.779
25 – 49	23.5[18.2 – 29.8]	13.0 [8.3 – 19.8]	0.010	36.9[31.9 – 42.3]	18.9[14.5 – 24.2]	<0.001
50+	13.1[6.9 – 23.3]	2.4[0.8 – 7.1]	0.003	6.6[1.9 - 21.2]	4.5[1.2 – 15.2]	0.672
<b>Geotype</b>						
Urban formal	12.2[8.5 – 17.1]	6.2[3.6 – 10.6]	0.014	25.6[20.7 31.2]	10.9[7.7 – 15.4]	<0.001
Urban informal	22.2[14.8 – 32.1]	36.7[21.7 – 54.8]	0.145	38.9[32.3 – 45.9]	40.9[28.8 – 54.3]	0.803
Rural informal	12.2[7.9 – 18.5]	14.2[3.4 – 43.6]	0.831	27.1[21.8 – 33.1]	26.6[18.6 – 36.5]	0.923
Rural formal	21.8[10.1 – 41.0]	11.8[ 5.4- 23.7]	0.210	40.0[27.8 – 53.5 ]	16.0[9.4 – 26.0 ]	0.001
<b>Number of sex partners last 12 months</b>						
One partner	14.1[10.6 – 18.6]	9.2[5.6 – 14.8]	0.108	30.0[26.3 – 34.0]	16.6[13.0 – 20.9]	<0.0001
Multiple partners	13.0[8.0 – 20.4]	15.2[6.4 – 32.0]	0.748	30.5[16.4 – 49.7]	22.1[6.4 – 53.9]	0.596
<b>Partner age mixing</b>						
Partner 5 years or older	17.8[4.5 – 49.7]	3.0[0.4 – 20.8]	0.095	32.4[25.5 – 40.2]	24.4[17.9 – 32.4]	0.134
Partner 5 yrs or younger	19.9 [13.8 – 27.8]	12.5[5.8 – 25.1]	0.248	23.0[ 6.9 – 54.5]	2.5[0.3 – 17.4]	0.021
Partner within 5 years	11.7[8.6 – 15.9]	8.6[5.1 – 14.1]	0.272	28.9[24.5 – 33.8]	13.2[9.5 – 18.1]	<0.001
<b>Marital status</b>						
Single	11.0[8.3 – 14.5]	9.9[5.9 – 16.3]	0.727	29.9[25.9 – 34.3]	32.5[25.6 – 40.2]	0.552
Married/cohabiting	20.3[12.8 – 30.6]	9.5[5.3 – 16.6]	0.019	25.7[19.3 – 33.5]	8.5[5.8 – 12.1]	<0.001
Widowed	29.6[11.7 – 57.1]	20.1[2.9 – 68.0]	0.668	27.4[14.5 – 45.7]	17.0[5.7 – 40.8]	0.404
Divorced	16.3[4.8 – 43.1]	0[0 – 0]	0.255	20.8[9.4 – 40.1]	7.4[1.8 – 25.7]	0.159
<b>Had an HIV test and received results</b>						
Yes	17.2[12.7 – 23.0]	6.7[3.8 - 11.4]	0.002	29.3[25.4 – 33.5]	15.4[11.8 – 19.8]	<0.001
No	10.7[7.4 – 15.1]	13.8[7.7 – 23.3]	0.429	26.6[20.6 – 33.6]	23.3[16.9 – 31.6]	0.539

The results show that among African males, those that did not use a condom at last sex had slightly higher (though not significant, p-value=0.626) prevalence of HIV than those that used a condom. Similar results were observed among African females and other race groups (Indians, Coloureds and Whites) combined for both males and females respectively. By different age groups, opposite results were observed with those that used a condom at last sex more likely to be infected with HIV. This was more so among those aged 25 to 49 for both males (p-value=0.01) and females (p-value<0.001). The results are an indication of the challenges faced with the lack of consistent condom use. Furthermore, it is possible that those who used a condom at last sex were already infected with HIV especially at this stage of the epidemic. Similar results of higher risk of HIV infection among those who reported condom use at last sex compared to those who did not report use of condom at last sex for both males and females was observed also by number of sexual partners in the last 12 months, partner age mixing, marital status and having ever tested for HIV and receiving results.

A self-perceived risk of getting infected with HIV among respondents 15 years and older who reported to be sexually active in the past 12 months was correlated with an increase in HIV prevalence. Respondents who disagreed that “you can reduce the risk of getting HIV by having fewer sexual partners” were more likely to have HIV compared to those that agreed to this statement (OR=1.4; 95% CI, 1.0-1.9). Respondents who reported condom use last time they had sex act had an almost two times higher HIV prevalence compared to those who did not use a condom.

Multivariate logistic regression analysis of jointly independent determinants of HIV was conducted on determinants that were significant in the univariate analysis. The multivariate regression analysis results are presented in Table 4. Due to collinearity, sexual activity in the last twelve months was removed as a potential determinant from the model. In the model that included all the other remaining variable, age mixing was no longer statistically significant and thus removed from the model. Sex, race, age, marital status and locality type were jointly significant independent determinants of HIV infection.

**Table 4: Multivariate analysis of socio-demographic and behavioural determinants of HIV among those aged 15 years and above**

Variable	Odds ratio	95% CI	p-value
<b>Sex of the respondent</b>			
Male	1		
Female	1.7	1.4 - 2.1	<0.001
<b>Race</b>			
African	19.6	13.5 - 28.5	<0.001
Other	1		
<b>Age group</b>			
15-24	1.0	0.7 - 1.5	0.875
25-49	4.4	3.2 - 6.0	<0.001
50+	1		
<b>Marital status</b>			
Single	2.1	1.6 - 2.7	<0.000
Married/cohabiting	1		
Widowed	1.4	0.9 - 1.9	0.095
Divorced	1.7	0.9 - 3.0	0.055
<b>Locality type</b>			
Urban formal	1		
Urban informal	1.7	1.3 - 2.2	0.000
Rural informal	1.1	0.8 - 1.4	0.584
Rural formal	1.3	0.9 - 1.8	0.111

## 4. Discussion

The overall HIV prevalence of 10.6% includes children younger than 2 years. Excluding children under 2 years of age changes the prevalence estimate to 10.9%, which is comparable to the estimates of 11.4% in 2002 [4] and 10.8% in 2005 [3]. The determinants of HIV prevalence included demographic factors such as age, gender, race, locality type, and province. With regards to age, the present survey shows that sub-epidemics exist among all age groups at both ends of the age spectrum, such as among children and among the elderly aged 50 years and older. The finding that the epidemic is predominantly affecting the African race group in South Africa is consistent with previous findings from the 2004 youth survey [11], 2002 and 2005 national household surveys [4,3]. Findings from the population-based survey demonstrated disparities across racial groups on access to HIV prevention information. The association might also reflect differences in socio-cultural values and norms which underlie some of risky sexual practices that are driving the epidemic such as multiple concurrent sexual partnerships and low rates of male circumcision among some ethnic groups [12]. The epidemic is also more common in informal settlements which are predominantly inhabited by Africans and are overwhelmingly poor. The bleak economic prospects also drive some individuals, especially young women, to engage in risky practices such as exchanging sex for favours [13, 14]. Focus groups findings in qualitative data confirm that young girls have older sex partners for financial

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support. This behaviour was found to be common in these communities (HSRC unpublished data). Sexual violence is also a serious problem in South Africa and especially in informal settlements. Sexual violence has been found to correlate with high-risk sexual behaviours and high HIV prevalence [15, 16, 17].

In terms of basic HIV prevention strategies, the study found that the overwhelming majority of both male and female adult South Africans who were sexually active in the previous year reported that they had one partner only. However, significant minorities of males especially among youth aged 15-24 years and adults aged 25-49 years reported that they had more than one sexual partner at the same time when compared to their female counterparts. These findings are consistent with results from other studies [11].

Issue of partner concurrency is said to contribute to high HIV prevalence among those reporting more than one sexual partner [18]. While having multiple concurrent sexual partners might account for some of the new infections among youth, it is encouraging that a high proportion of youth aged 15-24 years especially males reported that they had used condoms during the last sex act. The self-reported rates of condom use found in this study shows significant increases among all age groups of both sexes. It appears that young people are heeding the “ABC” HIV prevention campaign message which includes both correct and consistent condom use. This has most likely contributed to the observed reduction in new HIV infections [6]. However, HIV infection was high among those who reported condom use at last sex. It is possible that participants gave socially desirable answers to the question of condom use at last sex act or the results could be pointing to either inconsistent or incorrectly condom use or people using condoms after they were already infected with HIV. Unfortunately we did not ask about consistency of condom use specifically in this study. Indeed, there is some evidence of condom slippage being a fairly common problem in South Africa [16]. However, this issue requires further investigation.

The association found between intergenerational sex and HIV prevalence in this study confirms earlier [3]. This is in the context of a lot of theorising about the role that age mixing between older men (“sugar daddies”) and young girls plays in driving new infections. It was also shown in this study that age mixing with an age differential of 5 years (older) is detrimental for both young females and young males alike as both groups had significantly higher prevalence than their counterparts involved in same-age heterosexual relationships. Thus, young males who have sexual relationships with older women (“sugar mommies”) also face similar increased risks of HIV infection as their female counterparts who have sexual relationships with “sugar daddies”. The finding highlights gender disparity seen in both HIV prevalence and HIV incidence rates. There is therefore, a need for structural or societal interventions to deter such relationships as they have been shown to drive HIV infection among young girls. Appropriate interventions must be developed as a matter of urgency to address this challenge.

The present study had some limitations that are worth highlighting. First, the study was based on a cross-sectional study design, which does not permit determining causality. Secondly, because of self-reports typical of behavioural surveys, the results may be influenced by recall bias and social desirability. However, the similarity between the findings from this study and other independent studies suggest that the results are generally plausible [11]. Finally, lower HIV response rate could either lead to under estimate of HIV prevalence if those who knew were infected with HIV consistently refused to participate or overestimate if those at less risk of infection consistently refused to participate. However, comparison of sexual behaviour between those tested and those not tested did not show any possible bias [16].

In conclusion, the national estimates on HIV prevalence derived from the populations-based surveys like the current one will serve as benchmark figures for future assessments of the dynamics and trends of the HIV epidemics in countries with hyper endemic situations like South Africa, and will provide a mechanism for tracking the impacts of prevention interventions. The results presented in this paper demonstrate the extent to which HIV prevalence varies across demographic, socio-economic and behavioural factors. The differences in HIV prevalence between age groups call for formulation of interventions that are specific to each group. The awareness that the risk of becoming infected with HIV does not only depend on one’s behaviour, but also on that of the partner needs to be emphasised.

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