Republic of Namibia
Ministry of Health and Social Services

HIV/AIDs in Namibia: Behavioral and Contextual Factors Driving the Epidemic

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MEASURE Evaluation

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TABLE OF CONTENTS

LIST OF ACRONYMS

ANC	Antenatal Care
ARV	Anti-Retroviral
DHS	Demographic and Health Surveys
MoHSS	Ministry of Health and Social Services
NDHS	Namibia Demographic and Health Survey
NPC	National Planning Commission
OVC	Orphans and Vulnerable Children
PMTCT	Prevention of Mother-to-Child HIV Transmission
STI	Sexually Transmitted Infection
VCT	Voluntary Counseling and Testing

LIST OF TABLES

LIST OF FIGURES

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EXECUTIVE SUMMARY

This report identifies and describes what current evidence indicates are the main behavioral and contextual factors that are driving the HIV epidemic in Namibia. The report is intended to assist in the development of a national prevention strategy for combating the HIV/AIDS epidemic.

Data from several sources are triangulated to assess which factors are most likely to contribute to the spread of HIV across the population. In the absence of a national seroprevalence survey, the following were examined to identify the main drivers of the Namibian HIV epidemic:

1. The prevalence, distribution, and trends over time of proximate determinants of HIV infection within Namibia (obtained from an analysis of the Namibia Demographic and Health Surveys [NDHS] and other local surveys).

2. Socio-demographic factors associated with HIV infection among clients who were tested for HIV in select New Start voluntary counseling and testing (VCT) facilities throughout Namibia (obtained from analysis of these data).

3. The findings and conclusions of other researchers who have investigated various aspects of HIV/AIDS vulnerability in Namibia.

4. Factors most associated with HIV infection in neighboring countries, and in other generalized epidemics for which representative HIV prevalence surveys exist.

A number of factors (outlined below) are likely contributing to the high levels of HIV in Namibia. As described in this report, these various factors are often inter-related and operate in unison to create one of the worst HIV epidemics in the world.

Multiple and concurrent partnerships are likely contributing to the rapid spread of HIV throughout the country. In 2006, 16 percent of sexually active[1] men and 3 percent of sexually active women reported more than one partner over the previous 12 months (NDHS 2006). Several local studies also have recorded high levels of concurrent partnerships[2] throughout Namibia (Parker and Connolly 2007 and 2008), although nationally representative data are not available. Having multiple partners is not common, nor apparently a major risk factor for HIV for the majority of women. However, the widespread practice among men of maintaining multiple relationships is contributing to the high levels of HIV infection among women, especially young women (NDHS 2006; VCT data).

[1] "Sexually active" refers to individuals who report having any sexual intercourse in the 12 months preceding the survey.
[2] Concurrent partnerships, occurring within a month of each other, are particularly problematic due to elevated rates of transmission within the first weeks of infection.

Intergenerational sex exposes adolescents and young adults to partners who, by virtue of their age and longer sexual history, are more likely to be HIV positive.[3] Among women age 15 to 24, 7 percent of single women and 26 percent of married women have a partner 10 or more years older (NDHS 2006). Intergenerational sex in Namibia is associated with higher levels of sexually transmitted infections (STIs) and with a greater likelihood of having multiple partners (NDHS 2006). Intergenerational relationships introduce the virus into the younger cohort, where it quickly spreads as a result of rapid partner turnover and common concurrent partnerships (especially among young men).

Pervasive alcohol abuse and low levels of HIV risk-perception serve to foster multiple and concurrent partnerships, and may discourage consistent condom use (NDHS 2006). Nationally, 78 percent of men and 62 percent of women used a condom at last sex with a nonmarital non-cohabiting partner (NDHS 2006). In Caprivi and Kavango, regions facing the worst of the epidemic, condom use is the lowest in the nation (NDHS 2006). Furthermore, low levels of male circumcision are reported in some of the areas with the highest HIV prevalence, namely Caprivi, Ohangwena, Omusati and Oshikoto.

Over the years there has been a steady decline in marital or cohabiting relationships (NDHS 1992, 2000, and 2006). In 2006, approximately 1 in 3 Namibians ages 35 to 39 had never married or cohabitated with anyone. For women, never marrying or cohabiting was associated with having a greater number of sexual partners over one's lifetime (NDHS 2006). In most African countries one of the strongest predictors of HIV infection is the number of lifetime sexual partners (Macro International Inc. 2008).

Transactional sex appears to be common, even expected in many sectors of Namibia,[4] although research that quantifies this practice is lacking. In this context of widespread poverty and limited employment opportunities, sexual intercourse has become a commodity freely traded for goods and services by men and women (Mufune 2003). Women appear to be particularly vulnerable to transactional sex, possibly because their marital independence has not been matched with new income generating opportunities and many remain economically dependent on men.

High levels of population mobility also accelerate the spread of HIV. Namibia serves as a corridor for much traffic to and from Southern Africa, receiving migrants from the highest prevalence countries in the world. Furthermore, Namibia's reliance on the mining and fishing industry, as well as on seasonal agricultural production, requires regular internal population displacement. Travel away from home is associated with an increase in multiple partnerships in Namibia (NDHS 2006). Infections are passed on rapidly through a chain of interconnected sexual networks that can be distributed over various sections of the country. With multiple and concurrent partnerships relatively common in both rural and urban areas, the epidemic has spread to all regions of the country.

[3] As indicated by antenatal care (ANC) surveillance data and VCT client data.
[4] According to focus group undertaken in different regions by the Health Communication Partnership (HCP 2005).

The evidence strongly suggests that young women are at highest risk of acquiring HIV. Recent projections estimate that nearly half (44%) of new infections over the next 5 years will occur among 15 to 24 year olds; 77 percent of these will occur in young women. These women are most likely infected early in their sexual life by their first or second partner (VCT data, NDHS 2006; UNICEF 2006). It appears that the risk for many women stems from their choice of partner rather from their own behavior. Only 27 percent of women aged 15 to 49 reported more than two partners in their lifetime, and multiple partnerships were not a risk factor for HIV infection among female VCT clients.

Prevention efforts should focus on reducing multiple and concurrent partnerships, improving condom use, and raising perceptions of risk, particularly among youth and among employed men. Targeting individuals who frequent bars and *shebeens*, and migrant workers should be a priority.

There are important regional variations in behavior patterns, and the last section of this report discusses region-specific drivers.

I. INTRODUCTION

HIV prevalence in Namibia is among the highest in the world. Routine antenatal surveillance estimated that 1 in 5 pregnant women were infected with HIV in 2006. The epidemic has cut across all sectors of society and is severely affecting the population. Life expectancy has declined in the past decade, from 61 years in 1991 to 49 years in 2001 (National Planning Commission 2003), and as many as 17 percent of children under the age of 18 are orphaned by at least one parent (NDHS 2006). While there are indications that the epidemic is stabilizing (MOHSS 2006), thousands more will become infected over the next few years—barring major impact of HIV prevention efforts (MOHSS 2008).

Considerable increases in funding for HIV/AIDS programs and a strong commitment by the Government of Namibia present an important opportunity for curtailing the epidemic. In order to develop an effective prevention response, a deeper understanding of the dynamics of this HIV epidemic is required. The past few years have seen a surge of HIV/AIDS-related research throughout the country. Several surveys and studies have been conducted to examine HIV awareness and risk behaviors, and to gain more insight into which social factors increase vulnerability to infection. However, a comprehensive review of this research has not yet been undertaken.

The purpose of this study was to identify the main behavioral and contextual factors that are currently driving the HIV epidemic in Namibia. This report is intended to assist in the development of a national prevention strategy for combating the HIV/AIDS epidemic. A second report, to be read in conjunction with this one, presents an assessment of the nature and distribution of current prevention efforts. Together, these two reports are intended to highlight vulnerable groups, priority areas for intervention, and gaps in current services. Both reports were prepared for the Government of Namibia and its collaborating partners in anticipation of a strategy development meeting planned for November of 2008.

One cannot dissociate the current epidemic in Namibia from the political and economic context in which it emerged. Colonialism and apartheid rule in particular may have been instrumental in setting the stage for an epidemic of this magnitude. Forced labor migration, segregation of men from their families and communities, institutionalized racism, and imposed poverty are believed to have contributed to the spread of HIV to its current proportions, as did years of civil strife within Namibia and in neighboring countries. This report however, does not delve into these historical issues. Rather, it focuses on what factors are occurring today that keep fueling the epidemic and maintaining prevalence at these elevated levels.

About Namibia

Namibia is a fairly young country, having gained independence in 1990 following nearly a century of German and South African rule. This nation of 2 million people is one of the wealthiest in Africa, with a per capita GDP in 2004 of N$10,400, due largely to its mining industry (NPC 2006). However, the country also has the most unequal distribution of resources

in the world, with a Gini coefficient of 0.6 (NPC 2006). Almost one-third of the population (28%) lives in poverty,[5] a situation getting worse as a result of the crippling HIV/AIDS epidemic.

With approximately 824,000 square kilometers, Namibia is the second most sparsely populated country in the world. The population is unevenly distributed throughout the country, and more than half are situated in the North along a narrow stretch of land bordering Angola.

The population of Namibia is young, with 40 percent under the age of 15; and diverse, with over 10 ethnic groups (NPC 2003). Two-thirds of the population (67%) is rural, and the majority relies on subsistence agriculture or herding. Food insecurity for these populations is a major problem, given Namibia's vast deserts and arid climate. The country also has a high unemployment rate, estimated at 37 percent in 2004 (NPC 2006).

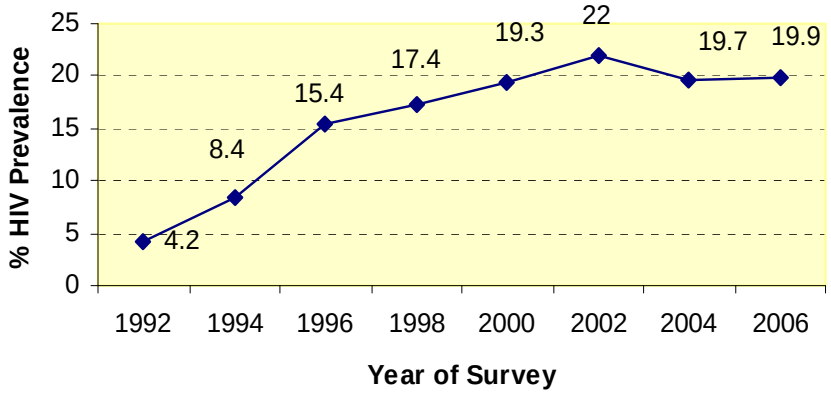
[5] Poverty is defined as spending more than 60% of total household consumption on food.

II. THE EPIDEMIOLOGY OF HIV/AIDS IN NAMIBIA

Namibia has a generalized HIV epidemic, with HIV primarily being transmitted through heterosexual transmission (MOHSS 2008a). The Government of Namibia has been monitoring HIV prevalence since 1992 through sentinel surveillance of pregnant women at select antenatal facilities throughout the country. The latest available data are from 2006, and were collected in 29 sites covering all 13 administrative regions of the country (MOHSS 2006).

Sentinel surveillance data estimate that 19.9 percent of pregnant women were HIV positive in 2006. These data indicate that prevalence is leveling off after peaking at 22 percent in 2002 (Figure 2.1).

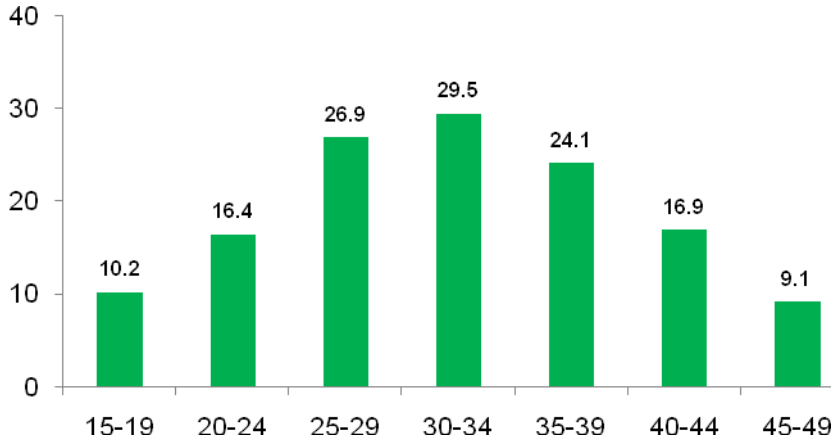
Figure 2.1: Trends in HIV prevalence among pregnant women



Source: Report of the 2006 National HIV Sentinel Survey, MoHSS, 2006

According to these data, women in Namibia are becoming infected quite young, with approximately 10 percent of pregnant adolescents age 15 to 19 already infected. By age 34 almost one third of pregnant women are HIV positive (Figure 2.2). Lower recorded prevalence in older age groups is likely due to high morbidity (which reduces the likelihood of pregnancy) and higher mortality among those infected in this age group. Recent increases in prevalence among women age 40 to 44 (from 12 to 17 percent between 2004 and 2006) are possibly due to the effects of improved access to ARV treatment.

Figure 2.2: HIV prevalence among pregnant women by age group, 2006



Source: Report of the 2006 National HIV Sentinel Survey, MoHSS, 2006

Site-specific prevalence in 2006 ranged from a low of 8 percent in Opuwo and Gobabis, to a high of 39 percent in Katima Mulilo (Figure 2.3). In general, prevalence is highest in the northern areas of the country near the Angola border. While the epidemic appears to be stabilizing at the national level, some sites show a continued rise in HIV prevalence, namely Engela, Rehoboth, Keetmanshoop, and Andara (MOHSS 2006).

Figure 2.3: Map of Namibia showing HIV prevalence by sentinel site, and population density

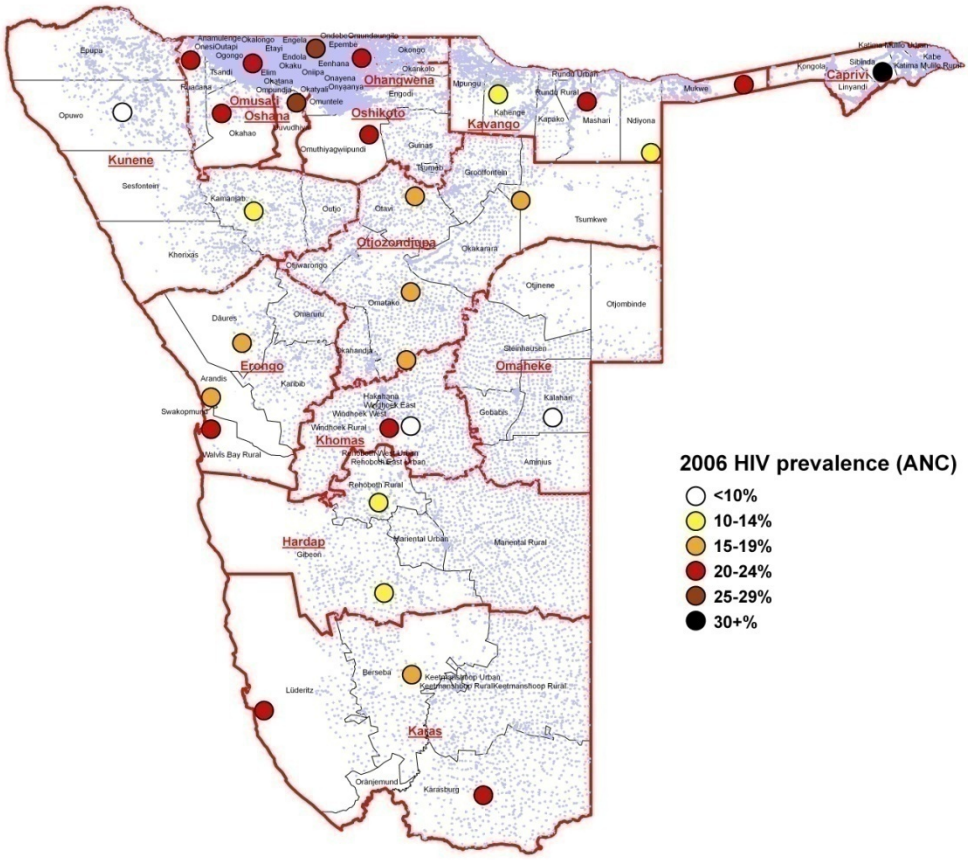


Table 2.1 presents HIV prevalence levels by site using both ANC sentinel surveillance data and data gathered from VCT clients at New Start facilities. Estimates from the two data sets diverge widely in part because they look at different populations, and different time frames. The ANC data includes only pregnant women age 15 to 49, while the VCT client data includes men and women ages 15 and up who voluntarily seek testing services.[6] The VCT client data concurs that HIV prevalence levels are highest in the northern regions, especially in Caprivi, Kavango, Ohangwena and Omusati, as well as in the coastal town of Walvis Bay.

Table 2.1: Prevalence of HIV among adult first-time clients of New Start VCT facilities, and among pregnant women at select antenatal facilities (ANC), by testing site

		VCT data (2003–2008)		ANC data (2006)
Region	**Site**	**Men**	**Women**	**Pregnant women**
Caprivi	Katima Mulilo	36.28	50.47	39.4
Erongo	Walvis Bay	15.27	24.03	22.1
Erongo	Swakopmund	11.25	16.39	17.3
Erongo	Omaruru	-	-	16
Hardap	Rehoboth	7.27	7.76	13.9
Hardap	Mariental	10.25	14.07	10.2
Karas	Keetmanshoop	12.38	13.06	18.5
Karas	Karasburg	-	-	22.7
Karas	Luderwitz	-	-	22.5
Kavango	Rundu	26.11	39.9	20.1
Kavango	Andara	20.59	24.36	22.7
Kavango	Nyangana	24.76	18.32	10.2
Kavango	Nankudu	-	-	13.9
Khomas	CCN Windhoek	12.69	15.87	9.1
Khomas	Bernard Noordkamp Windhoek	11.81	14.1	-
Khomas	Katutura	-	-	21.1
Kunene	Outjo	-	-	12.1
Kunene	Opuwo	-	-	7.9
Ohangwena	Eenhana	17.38	17.31	21.4
Ohangwena	Oshikango	17.11	22.22	-
Ohangwena	Engela	-	-	27.0
Omaheke	Gobabis	-	-	7.9
Omusati	Oshikuku	30.52	24.47	22.4
Omusati	Outapi	15.05	13.82	21.1
Omusati	Okahao	-	-	22.5
Oshana	Tonateni Oshakati	10.12	12.04	27.1
Oshikoto	Onandjokwe	-	-	23.7
Oshikoto	Tsumeb	-	-	17.0
Otjozondjupa	Otjiwarango	12.29	16.37	18.7
Otjozondjupa	Grootfontein	-	-	19.3
Otjozondjupa	Okahandja	-	-	18.5
Total		15	19.1	19.9
Number tested		40,439	63,130	7,303

VCT client data excludes individuals who sought testing because of illness or because of the death of a partner.[7]

[6] Possible biases associated with the VCT client data are discussed in Section 3 of this report.
[7] Excluding these provides more accurate estimates of prevalence for the catchment community (Baryarama 2008).

In 2008, MOHSS used computer models to extrapolate prevalence levels for the general population based on ANC data (MOHSS 2008). These models estimate a national prevalence of 15.4 percent among adults age 15 to 49 in 2007, and project a slight rise in prevalence to 15.8 percent in 2012 (MOHSS 2008). According to these models, the number of new infections will increase over the next few years, as a large cohort of youth comes of age. It is estimated that 15,500 individuals will become infected with HIV each year for the next 5 years (MOHSS 2008). Almost half (44%) of new infections are expected to occur among youths age 15 to 24, with women accounting for 3 of every 4 new infections among youth. Approximately 204,000 individuals were living with HIV in Namibia in 2007; this number is predicted to increase to 247,000 by 2013 if prevention efforts remain at their current levels (MOHSS 2008).

III. METHODS AND DATA SOURCES

The conceptual framework for this study was adapted from the work of Boerma and Weir (2005) and Poundstone, et. al. (2004). The framework outlines the determinants of sexual transmission of HIV from the individual level to the macro socio-economic determinants.

Data from several sources were triangulated to assess which factors were most likely to contribute to the spread of HIV in Namibia. The following were examined to identify the main drivers of the Namibian HIV epidemic:

1. The prevalence, distribution, and trends over time of proximate determinants of HIV infection within Namibia (obtained from an analysis of the Namibia DHS and other local surveys[8]).

2. Socio-demographic factors associated with HIV infection among clients who were tested for HIV in New Start voluntary counseling and testing facilities throughout Namibia (obtained from analysis of these data).

3. The findings and conclusions of other researchers who have investigated various aspects of HIV/AIDS vulnerability in Namibia.

4. Factors most associated with HIV infection in neighboring counties, and in other generalized epidemics for which representative HIV surveys exist.

Statistical Analyses

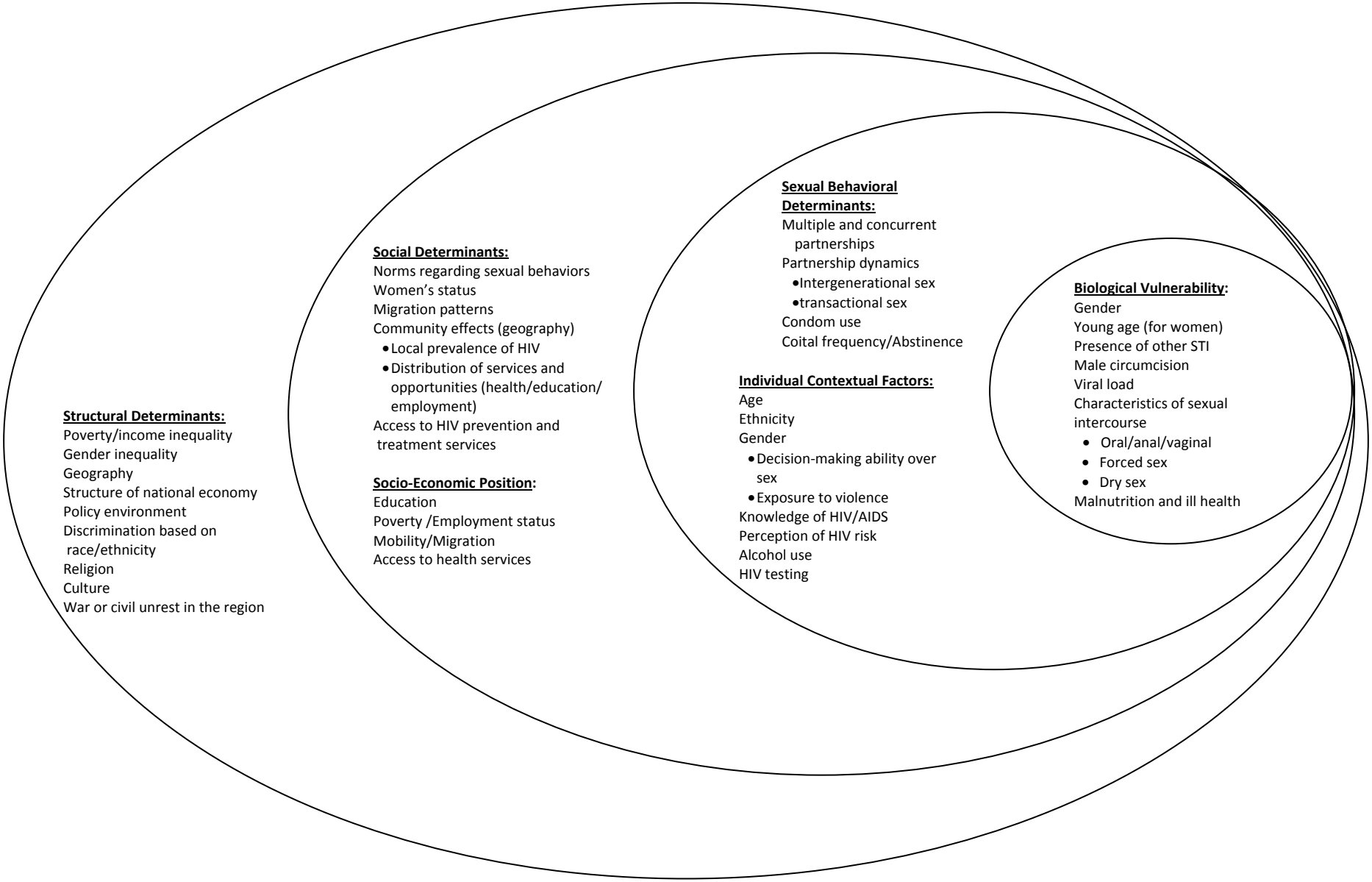
Original analyses of two data sets were undertaken for this study—

1. Demographic and Health Surveys:

Three Demographic and Health Surveys (DHS) have been collected in Namibia in 1992, 2000, and most recently in 2006. All three NDHS surveys are representative of women in Namibia age 15 to 49, at the national and regional levels. The last two NDHS additionally included a representative sample of men. Standardized questionnaires allow for comparison of data over time for most variables. However, because the 1992 NDHS did not include an HIV/AIDS module, trends relating to HIV risk behaviors could only be examined between 2000 and 2006.

[8] These are described in greater detail below.

Figure 3.1: Determinants of the Sexual Transmission of HIV/AIDS



Analysis of the 2006 Namibia DHS was undertaken to ascertain the frequency and distribution of HIV proximate determinants, and identify those most likely to contribute to the epidemic. Trends in the proximate determinants were examined by comparing data from the last two rounds of the NDHS (2000 and 2006). Furthermore, to identify vulnerable groups within the Namibian population, the distribution of each proximate determinant was examined by various background characteristics including education, wealth, marital status, age, urban/rural residence, and region. All analyses were undertaken separately for the 15 to 24 and 25 to 49 age groups. Various analyses were additionally stratified by marital status. Chi-square statistics were used to test associations, and all analyses controlled for survey design.[9]

2. Voluntary Counseling and Testing (VCT) clients:

Voluntary counseling and testing services, operating under the New Start name, routinely collect demographic and behavioral data from clients and link these to HIV test results. As of April 2008, over 127,000 individuals of all ages had been tested at these centers. These are the only data in Namibia that currently permit a direct examination of association between individual serostatus and other proximate determinants.

Multivariate logistic regression was undertaken to examine the effects of age, marital status, employment, occupation, education, residence, condom use, multiple partnerships and experience with transactional sex on the odds of testing HIV positive among adult first-time clients. All independent variables were included in the regression model simultaneously and kept because of their theoretical importance and statistical significance. Individuals ages 15 and older who had ever had sex were included in the analysis. Analyses were undertaken separately for men and women.

It is important to note that these data are not representative of the population as a whole, nor are they representative of individuals who obtain HIV testing in the country.[10] New Start facilities represent only a fraction of testing facilities in Namibia. There is a potential for considerable bias in these data: since the clients consist of individuals who have chosen to seek counseling and testing, it can be assumed that the risk of infection among these individuals differs in important ways from individuals who do not seek testing or who seek testing elsewhere.

Table 3.1 compares the characteristics of adult first time VCT clients to the characteristics of NDHS (2006) respondents since the latter are representative of the national population. It should be noted that adolescents, persons who are married or cohabiting, and rural residents are under-represented in the VCT dataset.

[9] Accounting for sample weights and cluster sampling using Stata software.
[10] New Start counseling and testing facilities represent only a fraction of all VCT services offered in the country.

Table 3.1: Characteristics of first-time VCT clients and of NDHS 2006 respondents

	Women		Men	
Characteristic	**VCT clients**	**NDHS**	**VCT clients**	**NDHS**
Age				
15–19	10.5	22.9	5.5	23.3
20–24	27.8	18.9	20.0	19.2
25–29	22.9	16.6	23.5	17.9
30–34	14.6	14.5	18.3	15.0
35–39	9.5	10.7	12.4	10.2
40–44	6.0	9.5	7.3	8.5
45–49	3.1	7.0	4.0	6.0
50+	5.6	-	9.1	-
Marital Status				
never married	71.2	57.9	75.0	65.0
married/cohabiting	20.6	35.2	20.6	30.8
Separated or divorced	3.3	4.3	2.3	3.9
widowed	3.7	2.6	1.2	0.3
unspecified	1.2	-	0.9	-
Education				
None	5.5	6.6	6.4	9.2
Primary	27.7	24.8	25.8	28.3
Secondary	56.4	61.6	54.0	54.7
Tertiary	10.4	7.0	13.8	7.8
Residence[1]				
Urban	55.9	48.7	69.4	50.1
Rural	44.1	51.3	30.6	49.9

[1] The NDHS oversampled in urban areas in order to obtain a representative sample of this population. It is estimated that 33 percent of the Namibia population is urban (NPC 2003).

Other Sources of Data

Two additional sources of data are described here. Since this report draws heavily from these, it is worth describing their content, methods and limitations in more detail.

1. SIAPAC KAP baseline and post-intervention surveys (VCT-KAP data)

A baseline (2002) and follow-up survey (2005) were undertaken by the Social Impact Assessment and Policy Analysis Corporation (SIAPAC) to assess awareness of and demand for voluntary testing and counseling services (SIAPAC 2005). The surveys additionally collected information regarding sexual practices and attitudes relating to HIV/AIDS.

These surveys were conducted in Katima Mulilo, Rundu, Oshakati, Walvis Bay and Windhoek. Each round sampled a total of 1500 persons age 16 to 35. Respondents were sampled predominantly from poor urban areas. It is therefore impossible to generalize the findings to the general population. Comparison across sites must be interpreted with caution as the samples are small and respondents at each site may be quite different in terms of age and sex composition.

2. NawaLife Trust/Johns Hopkins University survey series[11]

A series of baseline and follow-up surveys were conducted in 15 communities across Namibia to assess the impact of HIV prevention, treatment and care programs. The surveys, conducted in two year cycles in each community, were also intended to track trends in behaviors, knowledge, attitudes relating to HIV. The surveys were originally overseen by the Johns Hopkins Bloomberg School of Public Health Center for Communication Programs (JHUCCP) in Namibia, and later shifted to the NawaLife Trust (NLT) in 2006.

Surveys were conducted in Oshikuku, Oniipa, Rehoboth, Andara, Nyangana, Rundu, Walvis Bay, Keetmanshoop, Oshakati, Katutura, Windhoek, Gobabis, Grootfontein, Omaruru and Otjiwarango. In each community, 300 individuals were selected using random household sampling. The surveys were conducted within a 10 km catchment area of HIV/AIDS focal hospitals, and are therefore not representative at the regional or national level. Sample sizes were small in each site, making detailed stratified analyses of these data impossible. Comparison across sites must be interpreted with caution as the samples are small and respondents at each site may be quite different in terms of age and sex composition.

[11] The findings of these surveys have been reported in various reports prepared by Parker and Connolly and Rimal and Smith (see bibliography).

IV. RESULTS OF NEW START VCT CLIENT DATA ANALYSIS

The only data for Namibia that permit a direct examination of factors associated with HIV serostatus, are those collected among clients voluntarily seeking testing at New Start VCT facilities. As discussed in Section 3, these data have some serious limitations, as they represent only individuals who chose to get tested, and chose to do so at these facilities specifically. We know from the NDHS that individuals who seek testing tend to be older, more educated and residing in urban areas (see Table A6). A comparison of New Start VCT clients with NDHS respondents indicates that the following groups are under-represented among New Start VCT clients: adolescents, married or cohabiting individuals and rural residents (Table 3.1). It is impossible to ascertain whether those who do not seek testing are more or less likely to have HIV.

With the caveat that these limitations exist, the results of multivariate regression using these data are presented below and in Table 4.1. Only first-time clients and adults over the age of 15 who have ever had sex were included in the analysis.

Age was an important predictor of testing positive for HIV after controlling for other variables.[12] Among women, the odds of testing positive were highest for those between the ages of 30 and 39, whereas for men the odds were highest at slightly older ages (35 to 45). Age differentials in HIV status were much more marked among men than among women.

For both men and women, higher education and employment lowered the odds of HIV infection.

Rural residents were significantly more likely to be HIV positive than urban individuals in this sample. However, rural residents were also less likely to seek testing at New Start facility so it is difficult to reach strong conclusions regarding risk differentials between urban and rural populations from these data.

Among VCT clients, currently married/cohabiting men were significantly more likely to be HIV positive than never-married men. However for women, being in a marital or cohabiting union was protective against HIV. Because married persons are far less likely to seek HIV testing services these data must be interpreted with caution.

Being separated, divorced or widowed significantly increased the likelihood of being HIV positive, among both men and women. It is not possible to ascertain from these data whether these individuals acquired HIV from their marital partner or from a different relationship.

For both men and women never using condoms in the previous 3 months and inconsistent use were significantly associated with HIV infection after adjusting for the other factors in Table 4.1.

[12] Other variables controlled for appear in Table 4.1 and are: residence, marital status, education, employment, occupation, condom use in the 3 months prior to testing and number of partners in the 3 months prior to testing, and engaging in transactional sex.

Engaging in transactional sex also significantly increased the odds of testing positive for HIV among both men and women.

Reporting two or more partners during the previous 3 months did not increase the odds of infection relative to having only one partner. However, recent behavior may not be an adequate measure of risk, as individuals seeking VCT services may have been infected months or years prior to testing. It should also be noted that a large number of individuals (5,925 or 5 percent of the sample) did not respond to this question, or were not asked about the number of partners, for reasons that were not clear in the data.

Further discussion of these data is included, when relevant, in subsequent sections of this report.

Table 4.1: Factors associated with HIV infection among adult first-time clients of New Start VCT facilities; New Start 2003–2008

	Men (N = 44,878)		Women (N = 69,363)	
	Odds Ratio[1]	P-value	Odds Ratio[1]	P-value
Age				
15–19	reference group		reference group	
20–24	2.13	0.000	2.29	0.000
25–29	6.54	0.000	4.65	0.000
30–34	12.74	0.000	6.80	0.000
35–39	18.59	0.000	6.95	0.000
40–44	18.69	0.000	4.78	0.000
45–54	13.61	0.000	3.04	0.000
55+	5.64	0.000	1.24	0.005
Residence				
urban	reference group		reference group	
rural	1.64	0.000	1.16	0.000
Marital Status				
never married	reference group		reference group	
married[2]	1.18	0.000	0.82	0.000
separated/divorced	1.39	0.000	1.85	0.000
widowed	2.78	0.000	2.44	0.000
other/ unspecified	1.34	0.036	1.36	0.001
Education				
none	reference group		reference group	
primary	1.08	0.087	1.18	0.000
secondary	0.67	0.000	0.82	0.000
higher	0.34	0.000	0.39	0.000
Employment				
unemployed	reference group		reference group	
employed	0.79	0.000	0.68	0.000

Continued…

Table 4.1—*Continued*

	Men (N = 44,878)		Women (N = 69,363)	
	Odds Ratio[1]	P-value	Odds Ratio[1]	P-value
Occupation				
unskilled	reference group		reference group	
skilled	0.96	0.309	0.83	0.000
professional	0.67	0.000	0.63	0.000
business/services	0.86	0.003	0.96	0.380
uniformed services	0.91	0.076	0.95	0.416
student	0.42	0.000	0.46	0.000
farmer	0.94	0.268	2.07	0.000
transport	0.84	0.022	-	-
unspecified	0.80	0.000	0.91	0.001
housewife	-	-	0.86	0.000
Multiple partners in past 3 months				
one partner	reference group		reference group	
two or more partners	0.91	0.020	1.03	0.652
unspecified	1.67	0.000	1.31	0.000
no partners	0.96	0.331	1.28	0.000
Transactional sex				
no	reference group		reference group	
yes	2.81	0.000	1.59	0.000
unspecified	0.96	0.528	1.29	0.000
Condom use in past 3 months				
always	reference group		reference group	
never	1.43	0.000	1.32	0.000
sometime	1.32	0.000	1.21	0.000
not applicable/no sex	1.41	0.000	1.13	0.002

[1] Adjusted for all variables in the table.

[2] This category probably includes individuals who are cohabiting but are not officially married. Because of the way the question is worded, it is also possible that some non-married but cohabiting individuals classified themselves as "other."

Only individuals with complete data on all variables were included in this analysis. Excludes 4,125 persons who have never had sex.

The sexual behavior of HIV positive individuals is of particular interest. Table 4.2 shows that approximately 40 percent of HIV positive men and women have not used condoms at all in the previous 3 months despite being sexually active. An additional 18 percent of HIV positive men and 14 percent of HIV positive women are only using condoms sometimes.

While the majority of HIV positive individuals report only one partner in the previous 3 months, 13 percent of HIV positive men and 2 percent of HIV positive women do report having relations with more than one partner.

Table 4.2: Condom use and multiple partnerships in 3 months prior to testing among HIV positive individuals, New Start VCT clients 2003–2008

	HIV+ Men (n = 9273)	HIV+ Women (n = 17,646)
Condom use in the previous 3 months		
never	39.0	43.0
sometimes	17.7	13.9
always	16.4	12.4
not sexually active	27.0	30.8
Number of partners in the previous 3 months		
no partners	25.5	32.0
1 partner	56.8	58.4
2+ partners	12.5	1.9
not specified	5.3	7.8

V. DRIVERS OF THE NAMIBIA HIV EPIDEMIC

5.1 Multiple and Concurrent Partnerships

Multiple and concurrent partnerships have been identified as an important contributor to the high levels of HIV across the southern African region (SDAC 2006). At the individual level, each additional partner over one's lifetime increases the odds of acquiring HIV (Macro International Inc. 2008). In addition to raising personal risk of acquiring HIV, multiple partnerships increase the odds of passing the virus to several other persons. At the population level, each infected individual needs only infect one new person for the epidemic to be sustained. However, if each HIV-positive individual infects more than one person on average, the epidemic will grow (Barnett and Whiteside 2006).

Concurrent partnerships—relationships that are closely spaced or overlapping in time—are more problematic than numerous sequential partnerships. In the case of sequential monogamy, a person who becomes infected must wait until the relationship ends, then find a new partner before subsequent infection can occur. With concurrent partnerships, however, infection of other partners occurs almost immediately. Furthermore, because viral loads are highest in the first 6 to 8 weeks of infection, persons with newly acquired HIV infections are more likely to pass the infection to additional sexual partners. In other words, concurrent sexual relationships raise the number of individuals who are infected over a short time period, thus accelerating the spread of the epidemic.

In Namibia, high levels of concurrent relationships and rapid turnover of partners among certain subgroups of the population have been documented, and are most likely significant contributors to the epidemic. In a context like Namibia where condom-use is inconsistent, circumcision rare,[13] sexually transmitted infections (STIs) are under-diagnosed and under-treated, and approximately 1 in 5 adults is already infected with HIV, then these concurrent partnerships become devastating.

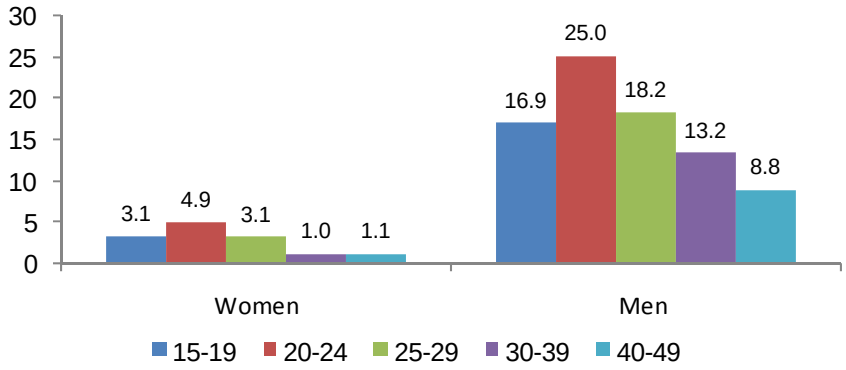
A series of localized surveys[14] conducted throughout the country between 2005 and 2007 found that among sexually active[15] adults, approximately 6 to 20 percent of men and 1 to 8 percent of women reported more than two partners within the previous month (Rimal and Smith 2006; Parker and Connolly 2007, 2008, and 2008a). While not representative at the regional level, these data nevertheless highlight the magnitude of this practice within Namibian society.

[13] Nationally, 21 percent of men are circumcised. However, there is wide variation in the rates of circumcision in different populations in Namibia.
[14] More information on these surveys conducted by NawaLife Trust and Johns Hopkins University can be found in Section 3.
[15] "Sexually active" refers to individuals who report having any sexual intercourse in the 12 months preceding the survey.

The majority of the studies from Namibia ask more broadly about the number of partners reported in the previous year; a definition that includes concurrent relationships, but also captures relationships that could be several months apart. These studies have produced widely divergent estimates of the frequency of multiple partnerships,[16] but all indicate a rapid rate of partner turnover among sexually active Namibians, especially male youths (Rimal and Smith 2006; Parker and Connolly 2007, 2008, and 2008a; SIAPAC 2005). Over 40 percent of male respondents in several communities reported multiple partners in the previous 12 months, including Walvis Bay, Keetmanshoop, Ohakati, Onandjwoke and Rehoboth (Parker and Connolly 2008 and 2008a; Measure Evaluation 2007 analysis of NLT/JU data[17]). Even according to the more conservative NDHS estimates, the levels of multiple partnerships are high (NDHS 2006).

Overall, the NDHS found that 16 percent of sexually active men and 3 percent of sexually active women reported having more than one partner in the previous 12 months (NDHS 2006). Young adults between the ages of 15 and 29 show the highest levels of multiple partnerships, with 20 percent of men and 4 percent of women reporting multiple partnerships in the previous 12 months (NDHS 2006). Multiple partnerships are greatly reduced by age 30 for women. For men, multiple partnerships continue well into their 40s, but to a lesser extent (Figure 5.1).

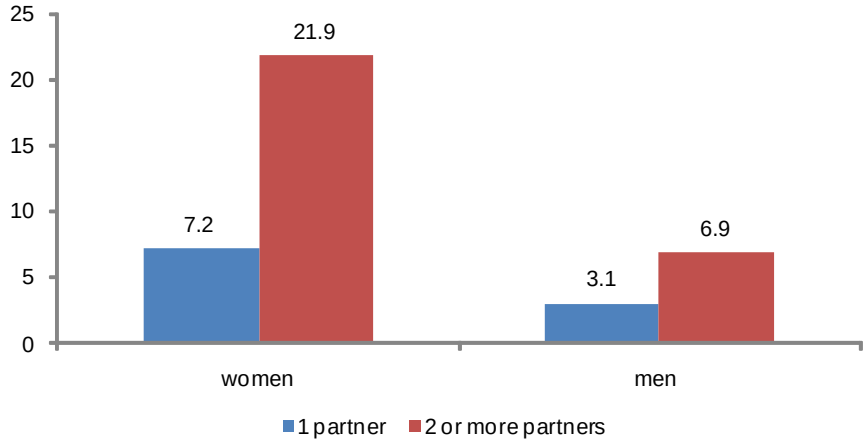
Figure 5.1.1: Proportion of sexually active respondents reporting more than one partner in 12 months by age group; NDHS 2006



Because this behavior is most common among youths under age 30, infections quickly become reproduced within that generation. Furthermore, large numbers of youth who acquire the virus have long sexually active lives, during which they can potentially transfer the virus to many others. Multiple concurrent partnerships also contribute to the spread of STIs in Namibia (NDHS 2006; Table A5), which further accelerates the spread of HIV.

[16] This is largely due to differences in the populations sampled.
[17] These data sets are described in Section 3.

Figure 5.1.2: Among sexually active respondents 15 to 49, the proportion reporting an STI, by number of partners in the previous 12 months

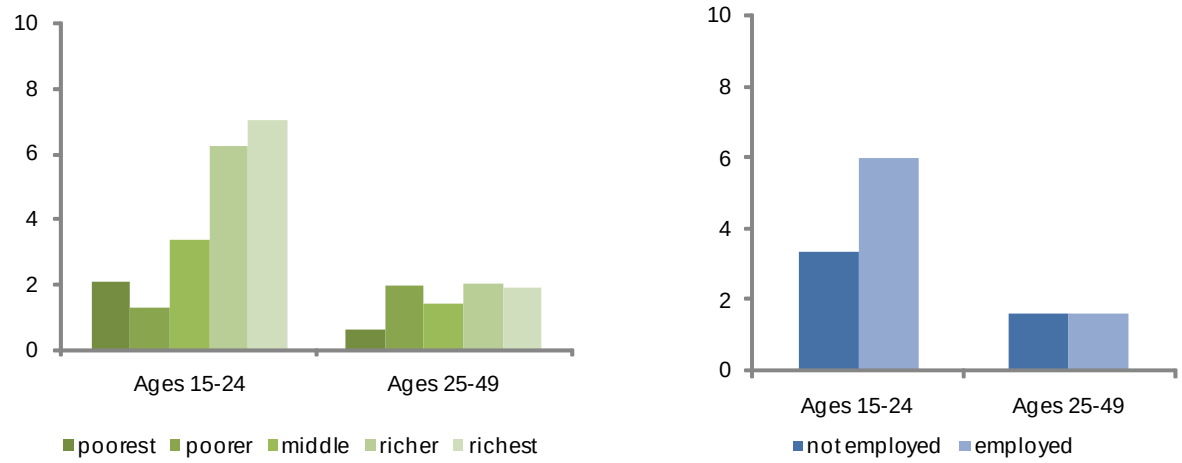


According to the 2006 NDHS, the only demographic factors significantly associated with having multiple partners in the previous 12 months among Namibian men were age, being employed, and among older men, not being in a marital/cohabiting union (Table A1). The DHS also shows a positive, although not significant trend toward increased multiple partnerships among more educated men (NDHS 2006). Other Namibian surveys have found that more educated men, employed men, and wealthier men are more likely to report multiple partners (MEASURE Evaluation 2007, analysis of NLT/JHU and VCT-KAP data).[18] An important finding among male youths 15 to 24 is that being in a married or cohabiting relationship did not significantly reduce multiple partnerships (NDHS 2006).

Overall, few women in Namibia report multiple partnerships. Those who do tend to be young, wealthy, urban, and employed (NDHS 2006; Table A1). Particularly high levels of multiple partnerships (11%) were reported by young women age 15 to 24 residing in large cities (NDHS 2006). Among young women, wealth ($p = 0.001$) and employment ($p = 0.008$) are strong predictors of having more than one partner in the previous year, as seen in Figure 5.1.3.

[18] For a description of these data see Section 3.

Figure 5.1.3: Proportion of women with multiple partners by wealth status and employment status; NDHS 2006



From the NDHS, we see that overall married individuals report multiple partnerships to a lesser extent than do non-married persons (Table A1). However, of those currently in a marital or cohabiting union, 8 percent of men and 1 percent of women report multiple partners. Among married or cohabiting youths age 15 to 24, 17 percent of men and 3 percent of women report multiple partners (NDHS 2006). Other localized studies from Namibia have found that approximately one-fourth of married men and half of cohabiting men[19] reported having more than one partner in the previous 12 months (Parker and Connolly 2008 and 2008a). Women formerly in a union[20] had the highest reported levels of multiple partnerships in the previous 12 months (7.3 percent, according to the 2006 NDHS), suggesting that new partners are acquired rapidly by these women.

In Namibia, as in the rest of the region, multiple and concurrent partnerships are fundamentally linked to high levels of population mobility. The 2006 Namibia DHS found that individuals who traveled away from home in the previous 12 months were significantly more likely to report multiple partners during those 12 months (Table A1). As will be discussed in Section 5.7, population movement increases opportunities to engage in multiple and concurrent partnerships.

Traditions of polygyny also explain high levels of multiple partnerships among certain groups (Mufune 2003).

NDHS data indicate that multiple partnerships are declining among men, but not women (NDHS 2000; 2006). The number of men reporting more than one sexual partner in the previous 12 months declined from 21 percent in 2000, to 16 percent in 2006 ($p = 0.000$) (Table 5.1). For women, no statistical differences were noted between the two surveys ($p = 0.224$).

[19] Data from Gobabis, Grootfontein, Omaruru, Onandjokwe, Oshikuku, and Rehoboth.
[20] Separated, divorced, or widowed.

Table 5.1: Among sexually active respondents age 15 to 49, the percentage who had intercourse with more than one partner in the past 12 months by year, sex and region; NDHS 2000 and 2006

	Women			Men		
	2000	2006	*p*-value	2000	2006	*p*-value
Caprivi	1.1	0.4	0.163	4.4	17.5	0.006
Erongo	2.8	1.3	0.165	51.7	22.8	0.000
Hardap	3.4	2.1	0.280	11.1	9.8	0.826
Karas	2.4	2.5	0.983	15.6	15.6	0.976
Kavango	3.8	0.8	0.001	7.4	13.2	0.051
Khomas	3.1	4.5	0.098	18.9	16.0	0.181
Kunene	7.0	5.1	0.486	32.1	16.1	0.015
Ohangwena	1.0	0.4	0.233	22.8	14.5	0.068
Omaheke	3.9	5.0	0.600	19.5	23.8	0.407
Omusati	2.0	3.2	0.358	25.7	15.5	0.026
Oshana	1.9	0.8	0.183	18.1	11.6	0.080
Oshikoto	1.4	1.2	0.754	17.9	21.4	0.374
Otjozondjupa	5.1	4.2	0.465	20.3	7.7	0.000
Total	**2.9**	**2.5**	**0.224**	**20.7**	**16.2**	**0.000**

Some regions, however, indicate the reverse trend. The Northeast in particular has seen a striking rise in the proportion of men reporting two or more partners in 12 months (NDHS 2000 and 2006). This region also has the highest prevalence of HIV in the country (MOHSS 2006). Among men in Caprivi, multiple partnerships increased from 4 percent to 18 percent between 2000 and 2006 ($p = 0.006$); and in Kavango, from 7 percent to 13 percent over the same time period ($p = 0.051$). Other research also indicates possible increases in multiple and concurrent partnerships in some Namibian towns such as Gobabis (Parker and Connolly 2008), Walvis Bay, Oshakati (Rimal and Smith 2006), Oshikuku, and Rehoboth (Parker and Connolly 2008a). However, these data should be interpreted with caution, as they rely on small samples that are not readily comparable over time.

The highest levels of multiple partnerships among men in 2006 were in Omaheke (24%) and Erongo (23%) and Oshikoto (21%) (NDHS 2000 and 2006). They were least frequent in Otjozondjupa (8%) and Hardap (10%), according to the NDHS.

Khomas saw increases in the proportion of sexually active women reporting multiple partnerships in a year, from 3 percent to 5 percent ($p = 0.098$). Among women, the prevalence of multiple partnerships was highest in Kunene and Omaheke (5 percent each), and least in Ohangwena and Caprivi (0.4%).

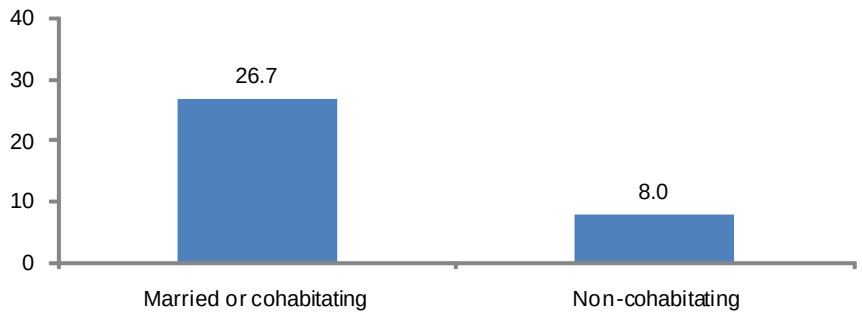
The low levels of multiple partnerships among women in high HIV prevalence areas, suggest that multiple partnerships among women are less important drivers of the epidemic than multiple partnerships among men.

5.2 Intergenerational Sex

Generally, the prevalence of HIV rises with age because of increased exposure to different sexual partners over one's lifetime. Data from Namibia and elsewhere indicate that HIV prevalence among men is highest for the 35 to 45 age group (VCT client data presented in Table 4.1; MOHSS 2008; Macro International Inc. 2008).[21] Under these circumstances, having intercourse with an older partner rather than a peer poses an increased risk of infection for young women. This is aggravated by the fact that young women have increased biological vulnerability to infection.

Intergenerational sex is far more common among young married and cohabiting women than among single women. According to the 2006 NDHS, young married or cohabiting women are six times more likely than non-married women the same age (15–24) to have a partner 10 or more years older (Figure 5.2.1). Almost one-third (27%) of young women in a union are partnered with a man 10 or more years older than themselves (NDHS 2006). Among women who had intercourse with a non-spousal, non-cohabiting partner in the previous 12 months, 8 percent reported that the partner was 10 or more years older (NDHS 2006).

Figure 5.2.1: Proportion of women 15 to 24 reporting a partner 10 or more years older, by marital status; NDHS 2006



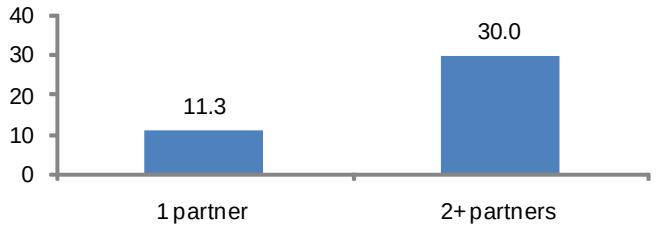
Other studies in Namibia have documented high levels of intergenerational sex, with 18 to 30 percent of respondents reporting having sexual relations with someone at least 10 years older (Parker and Connolly 2008; SIAPAC 2005).

Some men seek out younger women because they are looking for safer partners (Botswana HDR). A UNICEF study found very young adolescents age 10 to 14 to be at high risk, with 1 in 4 sexually active 10- to 14-year-olds in the three sites of Kavango, Omaheke, and Ohangwena reporting their first sexual partner as being 10 or more years older (UNICEF 2006). These were often forced sexual encounters (UNICEF 2006).

[21] After age 45, prevalence decreases due to high mortality rates.

Intergenerational sex transfers the epidemic to the younger generation where it rapidly spreads through a large group of susceptible individuals, impelled by multiple and concurrent partnerships. Having an older partner was associated among young women with having multiple partners over 12 months (p = 0.000) (NDHS 2006). Thus, young women who are at increased risk of acquiring HIV from an older partner are also more likely to pass the virus to others.

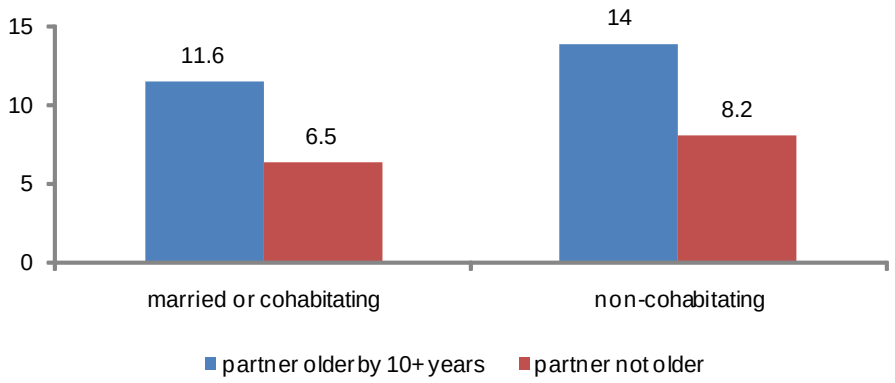
Figure 5.2.2: Proportion of women 15 to 24 reporting a partner 10 or more years older, by number of partners in past year, NDHS 2006



Having an older partner decreased the likelihood of using a condom at last sex among women in nonmarital relationships. However, among married and cohabiting women, condom use was low across the board, regardless of partner's age (NDHS 2006). Furthermore, the NDHS documents a significant association among young women between having a partner 10 or more years older and reporting an STI (NDHS 2006; Figure 5.2.3).

Regardless of marital status there was no significant variation in intergenerational sex by education, wealth status or urban/rural residence (NDHS 2006; Table A4). Although not significant, there was a higher proportion of poorly educated women reporting intergenerational sex.

Figure 5.2.3: Proportion of women 15 to 24 reporting an STI, by partner's age and marital status; NDHS 2006



Intergenerational sex among married women is most common in regions reporting high HIV prevalence. Among married or cohabiting women, the highest prevalence of intergenerational partnerships is in Omusati, and Ohangwena where 53 percent and 43 percent of young married women have a partner 10 or more years older (NDHS 2006). Young women in these marital relationships are particularly vulnerable because condom use is so low among spouses (Table A3).

Intergenerational sex among non-cohabiting women is particularly prevalent in Erongo, Hardap, and Omaheke (NDHS 2006). Trends over time are not possible to ascertain because no comparable data are available from the 2000 NDHS.

Intergenerational sex in Namibia also exists between young men and older male or female partners (Health Communication Partnership 2005). National data are not available but smaller studies found that 15 percent of male youths reported sexual intercourse with someone 5 or more years their elder (SIAPAC 2005), and approximately 1 in 10 young men report their last sexual partner as being 10 or more years older (Parker and Connolly 2008). A UNICEF study found that 17 percent of young men sampled in three communities[22] reported having sexual relations with partners 10 or more years older (UNICEF 2006). Young men often seek older partners for the same economic reasons as women (Health Communication Partnership 2005).

[22] Three towns located in Kavango, Omaheke and Ohangwena.

5.3 Transactional Sex

Transactional sex is becoming an increasingly acceptable form of partnership in Namibia (Health Communication Partnership 2005; Mufune 2003). In these types of relationships, sex is exchanged for food, money, gifts, drinks, transportation, or other favors. These relationships may be long- or short-term, casual or stable.

Transactional sex is born out of a system of widespread poverty and high income inequality, in which young men and women have few employment options and their access to resources is almost exclusively through wealthier men (LeBeau and Mufune 2001). However, transactional sex is not necessarily linked to absolute poverty. It is often used to improve material well-being and acquire goods and services beyond the individual's means (Mufune 2003).

Women participating in qualitative community mobilization activities across the country consistently indicate that they select partners based on their employment status and type of employment (Health Communication Partnership 2005; 2006; 2007).[23] Financial rewards were ranked as the most beneficial aspect of a sexual partnership, and "sugar daddies" and "mummies" were described as highly desirable partners by young women and men (Health Communication Partnership 2005; 2006; 2007).

Data on the frequency of transactional sex is very limited. In the 2006 Namibia DHS, only 1.4 percent of men report having paid for sex in the past 12 months (NDHS 2006). However, transactional sex often involves the exchange of goods and services other than money, and survey respondents may not report those exchanges as "payment" for sex.[24] Another survey conducted in 2002 found 7 percent of young women and 10 percent of young men reported having engaged in some form of transactional sex (SIAPAC 2005).

A UNICEF study found that approximately 8 percent of young adolescents in the three communities sampled[25] initiated sexual activity because they were offered money or a gift (UNICEF 2006).

In these relationships, high-risk sexual behaviors may become a negotiated part of the transaction, and women may receive more money or goods for engaging in them (LeBeau, et al. 2001). Transactional sex, combined with gender and age differences, may also limit the decision making power of women in the relationship (LeBeau and Mufune 2001).

Transactional sex may additionally contribute to the high rates of intergenerational sex since older and more educated Namibian men have the most access to resources and use it to maintain various relationships with young women (NDHS 2006; SIAPAC 2002; Talavera 2002; Mufune 2003).

[23] The activities were undertaken in such diverse settings as Nyangana, Katutura, Grootfontein, Oshakati, and Otjiwarongo, yet similar results were found throughout.
[24] Women are not asked about their participation in transactional sex in the DHS.
[25] One community each in Kavango, Omaheke and Ohangwena.

Transactional sex occurs in urban and rural areas (Mufune 2003). In rural communities of neighboring countries, civil servants, because of their high relative income, are often involved in transitional sex (Zimbabwe HDR), as are migrants and seasonal workers returning with money. Relatively little is known about the dynamics of transactional sex in rural areas.

Further research on this topic is urgently needed to assess the extent to which transactional sex contributes to partner turnover, low condom use and intergenerational sex.

5.4 HIV Risk Perceptions

People's behaviors often depend on their perceptions of risk. Two aspects of HIV risk are relevant:

a. The perceived likelihood of acquiring the infection.
b. The expected impact that the disease will have on one's life.

A surprising finding from the available research is the denial of risk that exists among some segments of the population (SIAPAC 2005; Parker and Connolly 2008a; UNICEF 2006). Young men, in particular, do not perceive themselves to be at risk of acquiring HIV. Despite high-risk behavior involving multiple partners and inconsistent condom use, as many as 62 percent of men age 15 to 24 in five high prevalence communities[26] did not believe they were personally at risk of contracting the HIV virus (SIAPAC 2005). Among women, there were more realistic perceptions of risk, though 33 percent thought there was little or no risk of them becoming infected (SIAPAC 2005).

While there remain some gaps in knowledge among certain poorer, rural populations, Namibians for the most part are aware and knowledgeable about HIV and AIDS (NDHS 2006; SIAPAC 2005; Parker and Connolly 2007, 2008, and 2008a). Thus, a lack of knowledge seems unlikely to account for the lack of risk perception. Furthermore, the Namibian people understand how devastating AIDS can be. Many have close relationships with individuals who have died or are sick due to AIDS (Parker and Connolly 2008a).

For some, acquiring HIV is a concern, but it is not the primary concern (Le Beau and Mufune 2001). For the half of the population living on under a dollar a day, subsistence is a daily struggle in an environment with no job or food security. Livelihood, hunger, and unemployment are more immediate concerns than an illness that will be felt in years to come (LeBeau and Mufune 2001).

Qualitative studies indicate that for some Namibians, it is not so much denial of risk as it is resignation. There is a lingering sense among these individuals that there is nothing that can be done to prevent infection (LeBeau et al. 2001; LeBeau 2001a). Some Namibians do not believe in the efficacy of condoms (SIAPAC 2005), and many women continue to feel disempowered in their sexual relationships (NDHS 2006; SIAPAC 2005). This sense of fatalism leaves some

[26] Katima Mulilo, Rundu, Oshakati, Walvis Bay and Windhoek.

unmotivated to practice safer sex, particularly among the poor and unemployed in urban centers (LeBeau and Mufune 2001). Some acknowledge the risk of their behaviors without internalizing them, others simply do not think about HIV, or choose to put it out of their mind (LeBeau 2002; LeBeau and Mufune 2001). Alcohol abuse is widespread, and helps people ignore the reality of HIV.

For many Namibians working conditions are dangerous and unpredictable. Miners, especially, work under conditions of extreme duress. Their immediate future is uncertain, their lives at risk daily. Some may feel they will die of something soon anyway, so they will never feel the effects of AIDS (IOM 2006).

Perception of risk is strongly associated with type of partner and the level of stability of the relationship. Condoms are rarely used with marital or cohabiting partners, despite recognition of widespread infidelity, and married men feel more secure with their stable partners (SIAPAC 2005).

Generally, individuals acknowledge that their own behavior is putting them at risk. However, women are much more likely to report partner's behavior as a cause of concern (SIAPAC 2005). Married women and cohabiting women had equal or higher perceived risk than single women. Some individuals feel such levels of distrust and lack of control over partners' behaviors that they believe sexual negotiation and self-protection are beyond one's reach and control (Yoder 2008).

Finally, there are still some misconceptions regarding the efficacy of condoms, as seen in the box below. These misconceptions figure in calculations of risk. If condoms are not believed to significantly decrease the risk of acquiring HIV, they will not be used.

Reasons for Low Condom Use

Reasons given throughout the Namibia literature for not using condoms include:

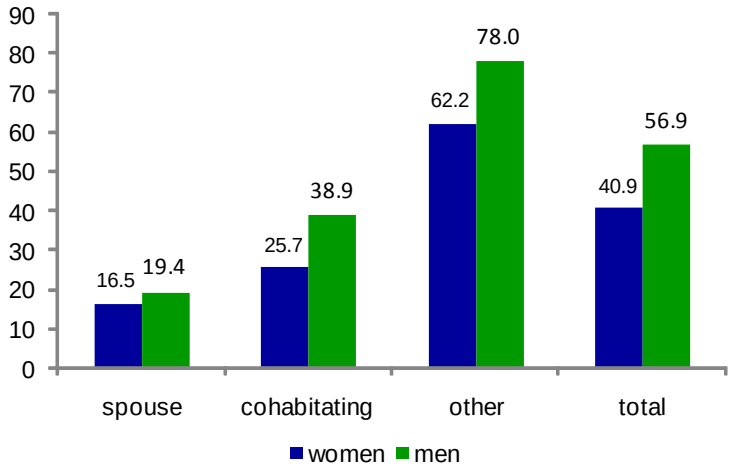
- Men do not like condoms (impair pleasure).
- Misconceptions about their efficacy.
- Misconceptions about their safety (e.g. beliefs that they will cause infertility in women).
  - In one study, 23% of women and 10% of men stated that condoms offer no protection from HIV (SIAPAC 2005).
- Condoms imply unfaithfulness; not appropriate in "stable" relationships.
  - About 40% of men and women agree that asking a partner to use a condom will be interpreted as distrust (SIAPAC 2005).

5.5 Low and Inconsistent Condom Use

Despite much improvement over the past few years, condom use continues to be low and inconsistent. Overall 41 percent of women and 57 percent of men reported condom use at last sex according to the 2006 NDHS (Tables A2a and A2b).

As seen in Figure 5.5.1, condom use varies considerably by type of partner. Married and cohabiting individuals report remarkably low levels of condom use, with fewer than one in five married individuals used a condom at last sex with their spouse (NDHS 2006). As few as 26 percent of cohabiting women, and 39 percent of cohabiting men, used a condom at last sex with their live-in partner. Among non-cohabiting individuals condom use is approximately twice as high (NDHS 2006).

Figure 5.5.1: Condom use at last sex by type of partner; NDHS 2006



Women report less condom use than men regardless of partner type (NDHS 2006; SIAPAC 2005) and are therefore more vulnerable to HIV infection. Only 62 percent of women used a condom with their last non-cohabiting partner, compared to 78 percent of men. Among youths age 15 to 24 there are also important differentials in condom use by gender (Tables A3a and A3b).

Condom use is higher among youths, but this is primarily due to the fact that they are less likely to be married. Among respondents that had sex with a nonmarital, non-cohabiting partner, condom use varies little by age (Tables A2a and A2b).

Regardless of partner type, the poor, rural and uneducated are least likely to use condoms (NDHS 2006). This coincides with the VCT client data indicating these groups have the highest odds of being infected with HIV (see Section 4 of this report).

Condom use at last sex with a nonmarital/non-cohabiting partner was lowest in the Northeast regions of Kavango and Caprivi and in Ohangwena and Hardap for both women and men (Table 5.5). Condom use a nonmarital/non-cohabiting partner was also relatively low among men in Ohangwena.

Table 5.5: Among respondents age 15 to 49 who had sexual intercourse in the past 12 months with a nonmarital, non-cohabiting partner, the percentage who used a condom at last intercourse with that partner

	women			men		
	2000	2006	p-value	2000	2006	p-value
Caprivi	29.9	51.3	0.001	*	68.5	-
Erongo	58.8	69	0.065	88.2	84.9	0.399
Hardap	41.2	46.7	0.460	61	75.9	0.173
Karas	34.9	57.9	0.002	58.6	79.1	0.013
Kavango	27.6	46.2	0.001	55.6	63.6	0.252
Khomas	46.6	73.4	0.000	69.4	82	0.000
Kunene	43.1	56.3	0.059	71.1	74.7	0.732
Ohangwena	29.1	56.7	0.000	55.5	68.6	0.066
Omaheke	41.3	60.9	0.007	68.8	80.7	0.089
Omusati	35	54.3	0.000	64.4	76.1	0.045
Oshana	60.1	65.2	0.301	73.9	89.7	0.001
Oshikoto	39.7	65.6	0.000	59.1	78.9	0.004
Otjozondjupa	50.6	56.3	0.231	62.8	79.4	0.004
Total	**42.6**	**62.1**	**0.000**	**67**	**78.3**	**0.000**

In almost all regions, condom use with nonmarital and non-cohabiting partners has increased over time among both women and men, as illustrated Table 5.5.

Among women, condom at the last sex with a nonmarital/cohabiting partner increased from 43% in 2000 to 62% in 2006. And for men the corresponding increase was from 67% in 2000 to 78% in 2006 (NDHS 2000 and 2006). In both instances, these increases were statistically significant. Some regions such as Erongo, Hardap and Kunene did not register significant increases in condom use between 2000 and 2006 for either men or women.

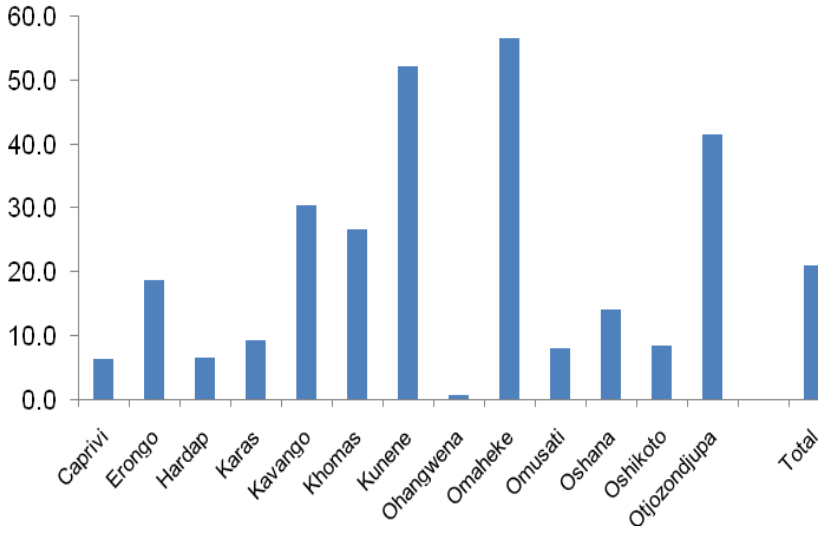
5.6 Male Circumcision

Three recent clinical trials[27] found that men who had been circumcised by trained medical professionals and with appropriate surgical follow-up had reduced risk of acquiring HIV (NIAID 2006; Roehr 2007).

In Namibia, male circumcision is practiced by certain groups, and there is wide variation in circumcision rates by region. The regions where circumcisions are most common Omaheke (57%), Kunene (52%) and Otjozondjupa (42%) have recorded relatively low prevalence of HIV according to sentinel surveillance. Conversely, the some of the regions along the north reporting high HIV prevalence have relatively low levels of circumcision (Figure 5.6.1). Kavango, however, does not seem to fit this pattern, as it has relatively high male circumcision rates (31%) and also high HIV prevalence.

Male circumcision itself is not driving the epidemic, but low levels of circumcision combined with frequent concurrent partnerships and low condom use, is likely to be an important contributor to high prevalence of HIV in the country.

Figure 5.6.1: Proportion of men age 15 to 49 who have been circumcised, by region; NDHS 2006

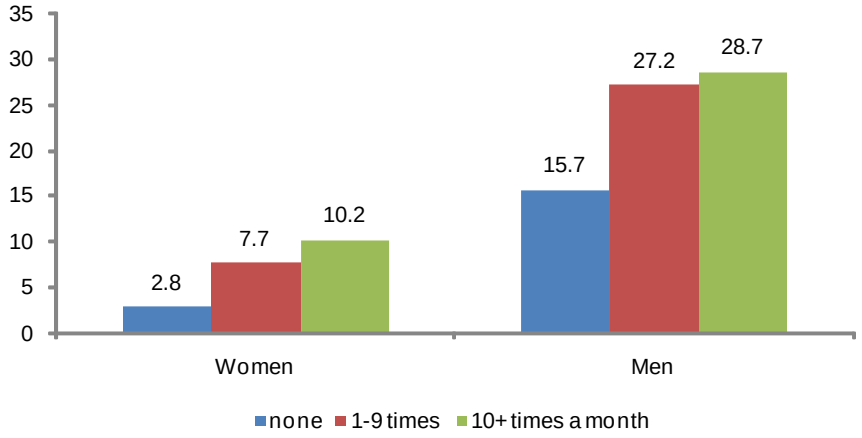


[27] In South Africa, Kenya and Uganda.

5.7 Alcohol Abuse

High levels of alcohol consumption and alcohol abuse are likely to be contributing to the spread of HIV/AIDS in Namibia by increasing sexual risk behaviors. Throughout Namibia, several surveys have consistently found significant positive correlations between the frequency of alcohol consumption and having multiple or concurrent partners (Rimal and Smith 2006; NDHS 2006; Parker and Connolly 2007, 2008, and 2008a). The association between alcohol consumption and multiple partners is particularly marked among young women ($p = 0.002$) (NDHS 2006) (Table A1). Young women are also the only group for which alcohol consumption is significantly linked to sexually transmitted infections ($p = 0.004$) (Table A5).

Figure 5.7.1: Proportion of respondents age 15 to 24 with multiple partners by frequency of alcohol use in past month; NDHS 2006



The effects of alcohol consumption on condom use among Namibians are not as apparent, however. The majority of smaller surveys were unable to document a significant association between frequency of alcohol consumption and condom use at last sex (Rimal and Smith 2006; Parker and Connolly 2007, 2008, and 2008a). Likewise, the 2006 NDHS found only tenuous associations between alcohol use at last sexual intercourse and condom use during that same act among married/cohabiting men (Tables A2 and A3). Among men whose last partner was a girlfriend or casual partner, alcohol had no significant effect on condom use at last intercourse (NDHS 2006).

Nationally, half of men report consuming alcohol in the previous month, and 9 percent do so 10 or more times a month (NDHS 2006) (Table A7). Women tend to drink less frequently than men, with 23 percent reporting any alcohol consumption in the past month, and less than 3 percent reporting frequent drinking (i.e., 10 or more times per month) (NDHS 2006). Smaller local surveys conducted in Gobabis, Grootfontein, Omaruru, Oshikuku, Onandjokwe, and Rehoboth found that between 18 and 35 percent of adult respondents[28] report drinking regularly (i.e., a few or more times per week). Drinking was particularly heavy in Omaruru and

[28] These reports group men and women together in their analyses.

Oshikuku, where approximately 1 in 5 respondents drinks daily (Parker and Connolly 2008 and 2008a).

While the qualitative literature has focused primarily on the effects of poverty and unemployment on alcohol abuse (LeBeau 2001), survey data indicate that it is wealthier, employed individuals who drink more frequently ($p = 0.005$ and $p = 0.000$, respectively) (Table A7).

Alcohol may encourage multiple or concurrent partnerships by clouding judgment, removing inhibitions, and reducing concern about HIV infection (LeBeau 1999; UNICEF 2006). Bars and shebeens, where new partners are more readily found, are hotspots for HIV infection and serve as hubs that interconnect sexual networks (Yoder 2008).[29]

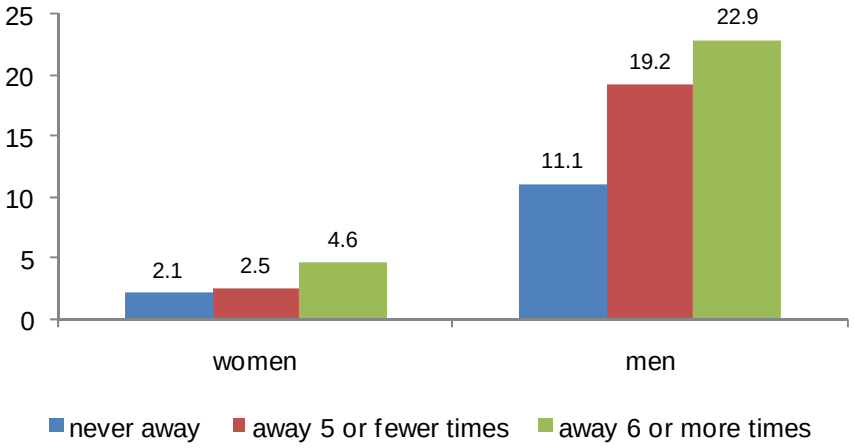
5.8 Mobility and Migration Patterns

An important driver of the HIV epidemic in the Southern African region has been population movement. Migration substantially increases the vulnerability of individuals to HIV infection, and also shapes the geographic distribution of the epidemic and the rate at which infection spreads. Thus, migration is both an individual risk factor as well as a structural factor driving the epidemic. Research undertaken in Zimbabwe, South Africa and elsewhere confirms that migrants have higher levels of HIV infections than individuals who have a stable residence over several years (Lopman 2008; Lurie 2003; Williams, et al. 2002).

Migrants have an increased risk of HIV infection because they tend to have a greater number of sexual partners than non-migrants. In Namibia, men and women who traveled away from home at any time in the previous 12 months were significantly more likely to report multiple partners during that time than individuals who did not travel ($p = 0.011$ for women and $p = 0.000$ for men) (NDHS 2006). The more frequent the travel, the greater the likelihood of having multiple partners (NDHS 2006) (Table A1). A combination of being away from home, with greater anonymity and fewer social constraints, feeling lonely, and having greater access to new sexual partners encourages many migrants to take up relationships on the road or at their destination (LeBeau 2002; IOM 2006; IOM 2008). Among male migrants frequenting commercial sex workers is also common in Namibia (IOM 2008).

[29] Forthcoming research by Stan Yoder on this topic will provide greater insight on these issues.

Figure 5.8.1: Among respondents age 15 to 49, the proportion reporting multiple partners in the previous 12 months by frequency of travel during that time; NDHS 2006



However, HIV risk among migrants cannot be fully explained by differences in sexual behavior patterns (Lopman 2008). A Zimbabwe study found higher rates of infection among migrants, above and beyond what could be explained by their sexual behavior (Lopman 2008). Contextual factors are important in explaining migrant vulnerability. Low access to health care and STI treatment, poverty, and high prevalence of HIV and STIs at receiving sites all contribute to increased risk of migrants in the South African region (Lopman 2008; Zuma 2003; Van Dam 2000).

Migrants tend to arrive into areas that have higher STI and HIV prevalence, so there is a greater likelihood of coming into contact with infected individuals. In other South African countries, and in Namibia as well, migrant receiving areas (whether urban communities, mines, work centers, or commercial farms) have been documented to have higher levels of HIV infection (Coffee 2005). Not surprisingly, some of the highest HIV prevalence areas in Namibia also correspond to locales that receive large numbers of migrants or transient individuals, such as Katutura in Windhoek, Oshakati, Walvis Bay, Swakopmund, Rundu and Katima Mulilo (IOM 2003; IOM 2008; MOHSS 2006).

The contextual factors that make migrants vulnerable to infection vary by type of migrant population:

c. Urban migration

In Namibia, many towns have been seeing a continuous influx of migrants since independence, with the fastest growth occurring in Windhoek, Walvis Bay, and Oshakati (Frayne and Pendleton 2002). The majority of urban migrants end up living in informal settlements, with over-crowded and poor living conditions, low access to health care, and high levels of unemployment; all factors which further contribute to their vulnerability (Frayne and Pendleton 2002; LeBeau, et al. 2001). These uncertain environments foster alcohol abuse; casual, transactional, and concurrent partnerships; and sexual violence (LeBeau 2002; IOM 2008).

d. Contract labor migration

Labor centers that gather large numbers of young men are hot spots for HIV infection. “It is not hard to see how migrant labour plays a major role in the spread of the HIV/STI epidemic in Southern Africa: take millions of young men, remove them from their rural homes, house them in single-sex hostels, give them access to sex workers and alcohol and little or no access to condoms, and pretty soon you will have a major HIV epidemic,” (Mark Lurie, IOM 2006).

In Namibia, the mines, the fisheries in Walvis Bay, military bases, and large construction sites around the country place men in similar conditions (IOM 2008; NDF 2006). The communities around these labor centers tend to have high levels of HIV. These migrant men are employed and have access to money; thus, transactional sex, prostitution, and bars flourish here (Keulder and LeBeau 2006). The poor women in these communities become particularly vulnerable to infection, as they have few financial alternatives. In South Africa, the prevalence of HIV among young women (aged 20–24) living near mining centers reached 59 percent for non-migrant women, and 80 percent among migrant women (Zuma 2000).

e. Mobile populations (people who travel regularly either for work or other reasons)

Migrants who are continuously on the road—truck drivers, traders, and fishermen—are particularly hard to reach. Unable to maintain a regular relationship, they frequent commercial sex workers or have women in several towns along their route (Keulder and LeBeau 2006; IOM 2008). These types of concurrent relationships have the potential to quickly infect a larger number of individuals, as discussed earlier in this report. If the women have relationships with additional men who pass through or who reside in the town, infections replicate with great speed to new sexual networks. Among male VCT clients in Namibia, transport workers had HIV prevalence of 20 percent (VCT client data 2003-2008).

Migrant agricultural workers throughout the region have disproportionately high levels of HIV (Coffee 2005; Zimbabwe HDR 2003). VCT client data for Namibia confirms very high prevalence of HIV among this group with 38 percent of male and 53 percent of female agricultural workers testing positive (VCT client data 2003-2008). It has been suggested that agricultural workers may change partners regularly as they move between farms. Because they are housed on the farm, isolated from outside communities, women in these commercial farms are often victims of sexual abuse (Coffee 2005).

The Namibia DHS does not allow one to examine the behavior of migrant agricultural workers specifically. However, if one looks at all agricultural workers, half of the women reported having sex before the age of 16 (the highest of any profession), and this group was also least likely to have ever used condoms (fewer than half report ever having used of a condom) (NDHS 2006).

f. Female migrants.

More and more women are traveling as traders, agricultural workers, or moving to urban areas to seek jobs, often as domestic workers. Almost half of urban migration in Namibia is female, primarily young and single (Frayne and Pendleton 2002). Female workers have few legal protections, tend to be poorly educated, have very few employment options, earn miserable incomes, and are easily exploited (IOM 2006; LeBeau 2002). Because they are often alone and isolated, these women are exposed to sexual abuse and violence where they live and where they work (IOM 2006). These women are ALSO particularly susceptible to transactional sex.

Migration also contributes to the geographic spread of HIV. Circular migration is common in Namibia, whereby people move back and forth between two or more communities (IOM 2008). Even individuals who make permanent moves to a new location will maintain contacts and make regular visits to their home of origin (IOM 2008). Surveys in Namibia survey found that 37 to 49 percent of respondents at various sites reported having been away from home for more than 1 month in the prior year (Rimal and Smith 2006). It is not unusual for migrants to have sexual partners in several locations. As a result, migrants come into contact with a wider range of sexual networks. This not only heightens personal risk but also exposes a new person and his/her network to HIV infection. Because they interconnect sexual networks, migrants contribute greatly to the spread of HIV in the population.

g. Risks to non-migrant partners

The extent to which migration is driving the rural epidemic is unclear. In the early phases of the epidemic, most migrants were men who would bring the infection with them when returning home. Currently, the HIV prevalence seems equally high in rural and urban areas (MOHSS 2006). There is also a great deal of rural-rural migration, which has likewise been associated with HIV infection in neighboring countries. In South Africa, one study found that many non-migrating partners were already infected in rural areas, even though the migrant himself was not (Lurie 2003). Spousal separation is a factor in neighboring countries, but in Namibia, with such low rates of marriage, it is unclear how many migrants maintain regular partnerships in their community of origin. Civil servants (teachers, construction workers, park rangers) are often involved in transactional sex in rural communities. Greater research on this topic is needed.

5.9 Decline in Marital and Cohabiting Unions

Across Namibia, two notable and inter-related trends are taking place that have important repercussions for the HIV/AIDS epidemic. The first is the marked decline in marriage and cohabitation rates. The second has been the widespread adoption of sex as a currency for acquiring otherwise unattainable goods and services.

Figures 5.9.1a and 5.9.1b show that the number of men and women entering into marital unions is declining. This decline is notable given that Namibia's marriage rates were already far

lower than the rest of Africa[30] (UNICEF 2005; Westoff 2003). In 2006, 1 in 5 Namibians in their 40s had never married or cohabitated with anyone (Table 5.9.1). Those that do enter into union, tend to do so at older ages: by age 30, only 35 percent of men and 45 percent of women have entered into a marital or cohabiting union (NDHS 2006). See also Table 5.9.2 on recent marriage trends.

Figure 5.9.1a: Proportion of women who have ever been married or cohabitated as if married; NDHS 1992, 2000, and 2006

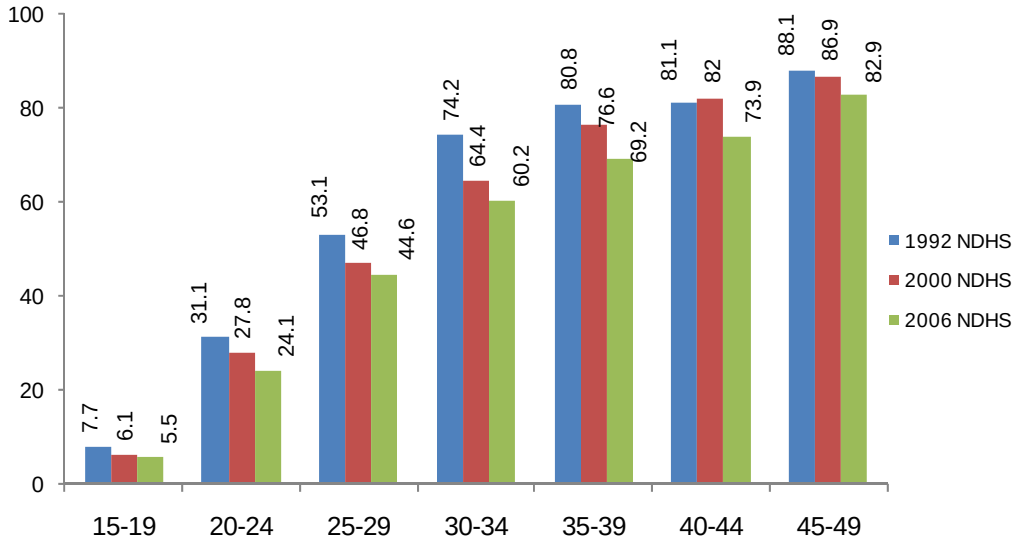
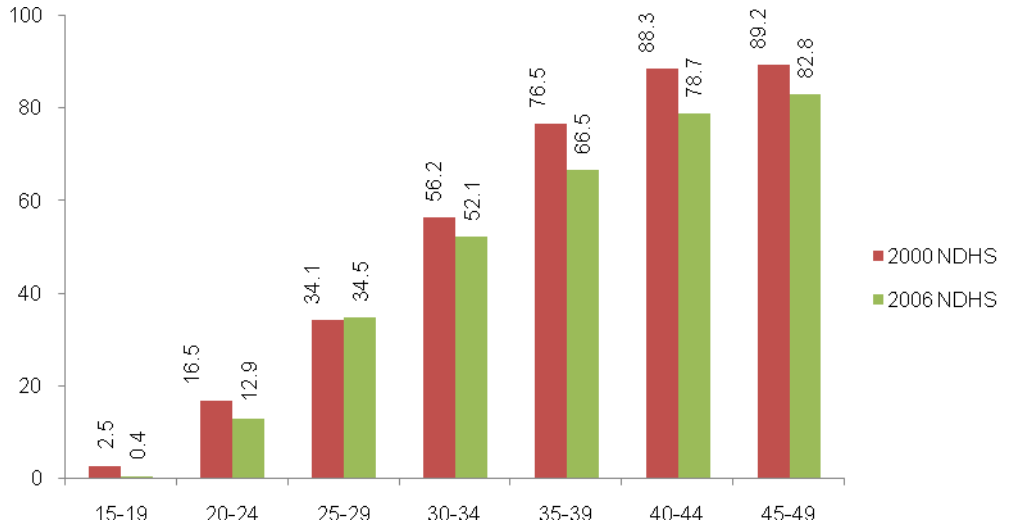


Figure 5.9.1b: Proportion of men who have ever been married or cohabitated as if married; NDHS 2000 and 2006



[30] With the exception of South Africa.

Table 5.9.1: Percentage of respondents that were ever-married and/or cohabitated as if married, by age group; NDHS 1992, 2000, and 2006

	15-19	20-24	25-29	30-34	35-39	40-44	45-49
			Women				
1992 NDHS	7.7	31.1	53.1	74.2	80.8	81.1	88.1
2000 NDHS	6.1	27.8	46.8	64.4	76.6	82.0	86.9
2006 NDHS	5.5	24.1	44.6	60.2	69.2	73.9	82.9
			Men				
2000 NDHS	2.5	16.5	34.1	56.2	76.5	88.3	89.2
2006 NDHS	0.4	12.9	34.5	52.1	66.5	78.7	82.8

No data available for men in 1992

Table 5.9.2: Among respondents age 20 to 24, the percentage first married/cohabiting by specific ages; NDHS 1992, 2000, and 2006

	15	18	20
Women			
1992 DHS	1.6	11.4	20.0
2000 DHS	2.2	9.8	16.7
2006 DHS	2.4	8.6	15.7
Men			
2000 DHS	0	2.5	8.0
2006 DHS	0	0.3	2.3

No data available for men in 1992

Low levels of marriage are evident across all of Namibia. However, among men age 35 to 49, never marrying is associated with poverty, unemployment, not attaining post-secondary education, and rural residence. Among women age 35 to 49, there is little variation in the background characteristics of the proportion who never marry. Women with secondary education (but not higher) and those living in urban areas are the most likely to remain single (NDHS 2006). The lowest levels of marriage/cohabitation for both men and women were recorded in Omusati, Ohangwena, and Oshana (NDHS 2006).

As the institution of marriage lost importance in society, many of the customs that guarded against early sexual debut and premarital sex have also eroded (Thomas 2007).[31] Instead, there is a growing amount of peer pressure, especially among young men, to have numerous sexual partners (Thomas 2007). Young people in Namibia indicate that having multiple partners has become "fashionable" and they behave in this way because their friends do (Parker and Connolly 2008a). Additionally, notions of masculinity are acutely associated with having multiple partners (Mufune 2003).

Low levels of marriage contribute to the HIV epidemic, because they are associated with higher partner turnover among women (NDHS 2006). Women in their 40s who never marry have a significantly higher number of sexual partners over their lifetime than women who do enter

[31] Based on research done in the Caprivi region.

into a marital or cohabiting union (p = 0.004) (NDHS 2006). Among 40 to 49 year-old women, 40 percent of never-married versus 62 percent of ever-married women had two or fewer partners over their lifetime (NDHS 2006).

Interestingly, among men, the number of lifetime partners hardly varies based on their marital history (p = 0.314). This may be explained by the late age of marriage among men, and by the fact that Namibian society condones multiple and concurrent partnerships among married men (Mufune 2003).

A simultaneous and possibly related shift has been the rise in transactional sex. Women's marital independence has not been matched with sufficient income-generating opportunities, and many remain economically dependent on men. In this context of poverty, and limited employment opportunities, sexual intercourse has become a commodity freely traded for goods and services. Several studies indicate that transactional sex is both common and expected in many sectors of Namibia (UNICEF 2006; LeBeau and Mufune 2001; Mufune 2003). It is possible that the economic nature of these relationships contributes to higher partner turnover among women.[32] The specific risks associated with transactional sex are discussed in Section 5.3.

Of importance to the Namibian HIV/AIDS epidemic is that sex outside of marriage is the norm, not the behavior of a select group of high-risk individuals. Furthermore, many young Namibians do not aspire to marriage, which needs to be taken into account in abstinence prevention messages.

[32] To the authors' knowledge, this important question has not yet been examined in Namibia.

VI. REGION-SPECIFIC DRIVERS

The specific factors driving the HIV epidemic vary by location and by group. In Namibia, multiple epidemics are occurring that require a different approach to prevention. The following sections examine regional differences in risk behaviors and describe those HIV risk factors that stand out most in each region. Some regions are grouped together because similar patterns were observed across them. Table 6.1 and the maps at the end of this section provide further information regarding regional variations in HIV risk factors. All data for this section come from analysis of the 2006 NDHS, unless otherwise noted.

Caprivi

Katima Mulilo, in Caprivi, has the highest prevalence of HIV (39.4 percent in 2006) of any of the ANC sites in the country. Among VCT clients, those residing in Katima Mulilio are six times more likely to have HIV compared with residents of the capital city (MEASURE Evaluation, 2007). A confluence of factors is working to make this one of the worst epidemics in Southern Africa. Caprivi is situated at a major international border that links four countries: Namibia, Zambia, Botswana, and Angola. The road that passes through Caprivi has heavy traffic to and from Southern Africa, from migrant workers, merchants, and truckers. As a result, the commercial sex industry has flourished at the border city of Katima Mulilo.

Male residents of Caprivi report paying for sex more frequently than elsewhere in Namibia, which introduces the virus to the local community. Low levels of condom use, early initiation of sexual activity, low frequency of circumcision, and lack of HIV/AIDS knowledge contribute to the rapid spread of the virus throughout the region. Polygamy and multiple partnerships contribute as well.

1. Commercial sex

Commercial sex is likely a major driver of the HIV epidemic in Caprivi. In Katima Mulilo especially, the commercial sex industry has flourished, and many of its clients are migrant men arriving from those countries with the highest prevalence of HIV in the world.

Furthermore, male residents of Caprivi are more likely to participate in commercial sex than men of other regions of Namibia. Nearly 10 percent of men residing in Caprivi report paying for sex in the previous 12 months (national average of 1 percent). Of those who paid for sex, only 59 percent used a condom with that sex partner.

2. Low levels of condom use

Condom use in Caprivi is among the lowest in the country for men and women of all ages. Approximately half of sexually active women are using condoms at last sex with a nonmarital, non-cohabiting partners, regardless of age. Men report slightly higher levels of condom use with their most recent nonmarital, non-cohabiting partner (68%), but the levels are still far below the national average (78%).

3. Early sexual debut

Three out of four youths in Caprivi are sexually active. Approximately one-third of young men and one-fifth of young women in Caprivi report their first sexual encounter before the age of 15, a notably higher frequency than elsewhere in the country. Caprivi also has the lowest levels of premarital abstinence in the country (22 percent of young women and 14 percent of young men).

There is a rapid accumulation of partners among young men in this region, possibly because sex is initiated quite early. The proportion of men age 15 to 24 who report having had five or more sexual partners is twice as high in Caprivi than in the nation as a whole (40 percent versus 22 percent nationally).

These data suggest that new infections occur at relatively young ages in the region.

4. Low frequency of circumcision in Caprivi

Infrequent circumcision in Caprivi may be accelerating the spread of HIV. Overall, 6 percent of men in Caprivi are circumcised (second lowest after Ohangwena), but among youth age 15 to 24, only 1 percent report being circumcised.

Additional contributing factors include the following:

- Knowledge about HIV/AIDS transmission and prevention in Caprivi is relatively low, particularly among women.
- Multiple partnerships: Caprivi and Kavango were the only regions to see an increase in multiple partnerships among men between 2000 and 2006.
- Alcohol consumption among individuals over the age of 25 is high.
- Elevated prevalence of self-reported STIs among men.

Erongo

Estimates of HIV prevalence from three ANC surveillance sites in Erongo range from 16 to 22 percent. The highest prevalence is documented in the port city of Walvis Bay. Erongo, a region receiving a large group of migrant men, is affected by multiple partnerships overlapping with a thriving commercial sex industry (IOM, 2008). Intergenerational sex and low HIV/AIDS knowledge appear to be important risk factors for women.

1. Behavior of young men: high levels of multiple partnerships and early sexual debut

Erongo has the highest reported level of multiple partnerships among young men, with nearly half (44%) reporting two or more partners in the previous 12 months, and a third (28%) reporting more than five partners over their lifetime.

Furthermore, 20 percent of young men initiated sex before the age of 15. Early exposure to HIV and high partner volume among youth mean it is more likely that men are infected at relatively young ages in Erongo.

In contrast, young women in the region are unlikely to report multiple partners in the previous 12 months. And few (3%) report sex before the age of 15. The prevalence of HIV among these young women, however, is fairly high, as estimated from sentinel surveillance. Thus, the behavior of their partners may be the primary risk factor for these women.

2. Commercial sex and alcohol consumption

The ports in this region attract transient populations of fishermen and truckers, who turn to bars and commercial sex for entertainment (IOM, 2008). Alcohol consumption in this region is relatively common, with 10 percent of young men reporting drinking more than 10 times in the last month, and the same proportion reporting having sexual intercourse while drunk.

3. Intergenerational sex

While young women report few multiple partnerships, they tend to have sexual relationships with older men. In Erongo, 11 percent of young women report having relations with a non-cohabiting partner at least 10 years older. The men in the older age group pose added risk to these women; one-third of Erongo men age 25 to 49 report more than 10 sexual partners in their lifetime (among the highest reported in the nation). Intergenerational sex may partly explain the relatively high levels of STIs among young women in this region (7%).

Additional contributing factors include the following:

- Population movement is common throughout the region, often associated with port activities. Twenty percent of men (age 25 and older) residing in this region are away from home frequently.[33]

- Lack of knowledge about HIV/AIDS is a problem in Erongo.

Hardap

HIV prevalence is lower in Hardap compared with other regions in the country, as indicated by VCT and sentinel surveillance at VCT and ANC sites. Estimates range from 10 to 14 percent for women tested and 7 to 10 percent for men. Fewer instances of multiple partnerships and higher levels of primary abstinence may be helping to keep the number of new infections here relatively low, despite infrequent male circumcision. The following areas require attention.

[33] Away more than six times in previous 12 months.

1. Condom use

Next to Kavango, Hardap has the lowest levels of condom use among women in the country (56 percent among young women age 15 to 24 and 36 percent among women age 25 to 49).

2. Intergenerational sex

Twelve percent of women age 15 to 24 in Hardap report having a nonmarital partner 10 or more years older, the highest proportion of any region. Given high levels of intergenerational sex, low condom use is of particular concern.

3. Alcohol consumption

Hardap has the highest proportion of men reporting having sexual relations while drunk (17%).

Additional contributing factors include the following:

- Male circumcision is low overall, but especially among youth (2 percent among men age 15 to 24 compared with 9 percent in men 25 to 49).

Karas

Estimates of HIV prevalence ranged from 19 to 23 percent, based on data from ANC sentinel surveillance, equivalent with Walvis Bay, Khomas, and Kavango. Delayed sexual debut among young women in Karas (only 1 percent report sex before age 15) may be offset by low knowledge, frequent multiple partnerships, intergenerational sex, and low condom use among this group.

1. Multiple partnerships

In Karas, young women and older men predominantly report multiple partnerships. Multiple partnerships are twice as common among young women in Karas as in the country as a whole (8 percent versus 4 percent nationally). Seventeen percent of older men age 25 to 49 report multiple partners (14 percent nationally).

2. Intergenerational sex

Intergenerational sex is occurring among the two groups (young women and older men) who are also reporting relatively high multiple partnerships.

3. Low condom use

Overall, condom use among men and women is similar to the national average. However, among young women, condom use with non-cohabiting partners is particularly low. Among women age 15 to 24, about half (56%) report using a condom at last sex with a nonmarital, non-cohabiting partner (64 percent nationally).

Additional contributing factors include the following:

- Knowledge about HIV/AIDS transmission is low among women (but not men) relative to other regions.

- Frequent travel away from home: One in three older men (29%) report being away from home on more than six occasions in the previous year.

- High levels of STIs in the region may be explained by multiple partnerships and low condom use. These STIs may further accelerate the spread of HIV in the region.

Kavango

Data from VCT clients indicate that as many as 40 percent of testers in Rundu and 25 percent in Andara are infected with HIV. Estimates of HIV prevalence among pregnant women ranged from 10 to 23 percent in 2006, based on data from sentinel surveillance. Kavango has the lowest levels of HIV/AIDS knowledge among women, and the lowest levels of condom use in the nation.

1. Low levels of condom use

Estimates of condom use are the lowest in the country, with 46 percent of women and 64 percent of men reporting the use of condoms at last sex with a nonmarital, non-cohabitating partner (national average of 62 percent for women and 78 percent for men). In Kavango, condom use among youth 15 to 24 is only slightly better than among those age 25 to 49. Young women are particularly vulnerable.

Kavango has the highest proportion of married or cohabitating women (50%), meaning that the majority of partnerships in this region are unprotected.

2. Early sexual debut

Kavango stands apart from other regions in the proportion of young women reporting sex before age 15 (19 percent in Kavango compared with 7 percent nationally).[34] Most youth are sexually active, and primary abstinence is lower than in most regions (24 percent among young women and 26 percent among young men).

Early sex seems to lead to a rapid accumulation of partners among young men in Kavango. As in Caprivi, the proportion of men age 15 to 24 who report having had five or more sexual partners is twice as high here than in the nation as a whole (40 percent versus 22 percent nationally).

[34] Only Caprivi is equivalent.

3. Low HIV/AIDS Knowledge

Knowledge about HIV/AIDS transmission and prevention is the lowest in the country. In Kavango, knowledge is particularly low among young women, with half of those age 15 to 24 not able to identify modes of transmission and prevention. When prompted, one in four women in this region did not know that HIV can be prevented by using condoms.

Additional contributing factors include the following:

- Caprivi and Kavango were the only regions to see an increase in multiple partnerships among men between 2000 and 2006.
- In Kavango, a relatively large proportion of men and women reported having sex while either they or their partner were drunk.
- There was a high prevalence of self-reported STIs among men.

Khomas

HIV prevalence in Khomas ranges from 9 to 21 percent among ANC patients and from 12 to 16 percent among VCT clients. It should be noted that all surveillance sites in Khomas are located in the capital city of Windhoek, and the highest estimates come from the Katutura area.

While knowledge about HIV/AIDS and condom use are highest in Khomas, other factors seem to be counteracting these gains. The main factors driving the HIV epidemic in Khomas appear to be those listed below.

1. High partner turnover

High partner turnover among men and women is likely a major contributor to the spread of HIV in Khomas, as indicated by the number of multiple partnerships in a year and lifetime partners reported.

The proportion of persons reporting multiple partnerships over a 12-month period is relatively high overall. However, it is the behavior of young women that is most unusual in this region. As many as 10 percent of sexually active young women age 15 to 24 report multiple partnerships in the past 12 months, the highest in the country. Furthermore, 8 percent of young women in Khomas report having had more than five lifetime partners (double the national average).

Men also report a high number of lifetime partners relative to other regions. One in three men over the age of 25 and 14 percent of men age 15 to 24 report more than 10 partners over their lifetime.

2. Intergenerational sex

Young women in Khomas not only report numerous partners, but many (9%) are having relationships with partners 10 or more years older, further increasing the risk of infection.

3. Alcohol consumption

Frequent alcohol consumption, especially among men, is relatively common in Khomas, with one in five men reporting drinking on more than 10 occasions in the previous month. Likewise, men in this region report high levels of intercourse while under the influence.

Additional contributing factors include the following:

- Inconsistent condom use: while condom use is higher than average in this region, the added exposure to HIV through multiple and intergenerational sex demands greater condom utilization.

- Population movement: Windhoek attracts migrants from around the country and has a somewhat transient population. A large portion of men in Khomas report frequent travel away from home, which has been associated with an increased likelihood of multiple partnerships.

Kunene and Omaheke

These two regions have relatively high levels of multiple partnerships, yet HIV prevalence rates from sentinel surveillance are the lowest recorded in the country (between 8 and 12 percent at ANC sites). The frequency of male circumcision (52 percent in Kunene and 57 percent in Omaheke) could be an important protective factor against HIV infection in these regions.[35] Nevertheless, the following areas require attention.

1. Sexual behavior of young women

Most young women in Kunene and Omaheke have had sex; in both regions, 13 percent of young women did so before the age of 15.

Multiple partnerships among these young women are more common here than in the rest of the country (In Kunene and Omaheke respectively, 8 and 9 percent of women age 15 to 24 report more than one partner in the previous 12 months, compared to 4 percent nationally).

Many of the young women report partners 10 or more years older. Only 65 percent of these young women report condom use with their most recent nonmarital partners. These two regions also have the highest STI prevalence (15 percent each, as self-reported by young women).

[35] In Omaheke, young men are more likely than older men to report being circumcised (66 percent among men age 15 to 14 and 51 percent among men age 25 to 49).

2. High multiple partnerships

Both men and women frequently report multiple partnerships in these two regions. In Omaheke, 24 percent of men report more than one partner in the previous year (16 percent in Kunene). Elsewhere in the country, multiple partnerships are most common in young men. However, in Kunene multiple partnerships often take the form of more formal polygamous unions. When asked about co-wives, 12 percent of women in Kunene report having one. A high proportion of men in Omaheke report 10 or more partners over their lifetime.

Omaheke and Kunene are unusual in that women are more likely to report multiple partners than elsewhere in the country. Overall, 5 percent of women in both regions report multiple partners in the previous year. Among young women, the number is considerably higher, with 8 percent in Kunene and 9 percent Omaheke reporting more than one partner.

3. Commercial sex

Men in Kunene and Omaheke are more likely to report paying for sex than men in other regions, with 3 and 4 percent of men reporting paying for sex in the previous 12 months in Kunene and Omaheke, respectively. The convergence of commercial sex and low condom use in a context of multiple partnerships should be noted.

Additional contributing factors include the following:

- Knowledge of HIV/AIDS transmission and prevention is lower in these regions than elsewhere in the country, especially in Kunene. Youth from these two regions are among the least informed in the country about HIV/AIDS.

- There is frequent population movement among men, particularly and older men.

Omusati, Oshana, Ohangwena, and Oshikoto

The four northern regions of Omusati, Oshana, Ohangwena, and Oshikoto record particularly high HIV prevalence. Among women tested at ANC surveillance sites, between 21 and 27 percent are HIV positive. After Caprivi, Oshana and Ohangwena (Engela) have the highest reported prevalence in the country (27%). According to VCT data, Omusati has the third highest HIV prevalence (31 percent among men and 25 percent among women) after Caprivi and Kavango.

Few sexual indicators stand out in these regions; most are equivalent to the national average. Notable exceptions are high primary abstinence among women (close to 50 percent in all regions) and the low number of lifetime partners reported by men and women.

Nevertheless, multiple partnerships over a 12-month period are fairly common among men, combined with low frequency of circumcision, average condom use, and insufficient understanding of HIV/AIDS transmission. These factors most likely drive the epidemic in this region.

1. Multiple partners among men

Between 12 percent (Oshana) and 21 percent (Oshikoto) of men in these regions report more than one partner in the previous 12 months (16 percent nationally). In contrast, few women report multiple partnerships relative to other regions.

2. Male circumcision

Male circumcision is rare in these four regions, ranging from 1 percent in Ohangwena to 14 percent in Oshana. In Oshana and Oshikoto, there are notable age differences in circumcision, with young men less likely to report circumcisions.

3. Condom use

Condom use is below average in Ohangwena and Omusati for men and women. Fifty-seven and 55 percent of women and 68 and 76 percent of men in Ohangwena and Omusati, respectively, report condom use at last sexual intercourse with a nonmarital, non-cohabiting partner.

4. Alcohol consumption

Alcohol consumption is high among men and women in the four regions, but especially in Omusati and Ohangwena. However, relatively few men report having sexual intercourse while drunk.

Additional contributing factors include the following:

- These four regions are the most densely populated in Namibia, and they are also among the poorest.
- Early sexual debut (before age 15) is reported by 17 and 19 percent of women in Ohangwena and Oshikoto, respectively.
- Intergenerational sex: Eight percent of young women across the four regions report a sexual partner older than themselves by 10 years or more.

Otjozondjupa

HIV prevalence in Otjozondjupa is close to the national average (19 percent among ANC clients and 16 percent among women at VCT centers), despite high circumcision (42%), infrequent multiple partnerships among men (8%), and high condom use among men (80 percent at last sex with non-cohabiting partner).

Intergenerational sex and other sexual behaviors of young women, high number of lifetime partners, and frequent travel may account for the HIV risk in this region.

1. Intergenerational sex and other sexual behaviors of young women

Like Kunene and Omaheke, the sexual behavior of young women is riskier here than elsewhere in Namibia. In Otjozondjupa, 11 percent have a non-cohabiting partner 10 or more years older, and 30 percent of married women have a spouse 10 or more years older. Furthermore, 6 percent of sexually active young women report multiple partnerships, 11 percent report an STI, and yet merely 61 percent report condom use at last sex with a nonmarital, non-cohabiting partner. Marriage is frequent here, so in this context many young women have unprotected intercourse.

2. Lifetime partners

In this region, a relatively high number of lifetime partners are reported among older men and women, even if multiple partners in a 12-month period are not particularly frequent. Twenty percent of women and 60 percent of men age 25 to 49 report five or more partners over their lifetime (compared with 10 and 52 percent nationally).

3. Frequent travel

Frequent travel is reported by 22 percent of men age 25 to 49 and by 16 percent of youth age 15 to 24.

Additional contributing factors include the following:

- A relatively low proportion of young men report premarital abstinence (23 percent compared with 32 percent nationally).
- Low levels of knowledge regarding HIV/AIDS transmission and prevention, especially among men.

Table 6.1: HIV/AIDS risk factor by region, sex and age-group, NDHS 2006

Young Women Age 15–24

Region	Percent sexually active in past year	Percent reporting multiple partners in 12 months	Percent reporting 5 or more lifetime partners	Percent that used a condom at last sex with a non-cohabiting partner[36]	Percent reporting STI	Percent with accurate HIV knowledge[37]	Percent that drank more than 10 times in past month	Percent reporting drunkenness during last sex[38]	Percent traveled more than 6 times in past year	Percent that had sex before 15	Percent reporting primary abstinence	Percent that had sexual relations with non marital partner 10+ years older
Caprivi	73	1	2	52	3	57	1	3	9	18	22	5
Erongo	61	0	5	74	7	70	2	7	11	3	40	11
Hardap	56	3	4	56	7	80	3	7	9	7	44	12
Karas	52	8	5	62	9	63	1	0	9	1	41	8
Kavango	71	1	3	48	6	54	2	9	3	19	24	2
Khomas	52	10	8	75	12	80	4	4	8	4	40	9
Kunene	69	8	7	67	15	38	3	9	11	13	30	8
Ohangwena	39	0	1	59	7	73	5	5	3	5	50	8
Omaheke	65	9	11	66	15	60	4	9	12	13	30	11
Omusati	37	5	0	57	2	73	6	6	7	2	51	8
Oshana	42	1	1	67	3	80	3	7	3	4	51	8
Oshikoto	46	1	2	75	4	73	2	8	4	6	49	8
Otjozondjupa	72	6	5	61	11	62	3	9	7	9	31	11
Total	**53**	**4**	**4**	**64**	**8**	**70**	**3**	**6**	**6**	**7**	**42**	**8**

Continued…

[36] Percent who used a condom at last sex with a partner who was not married or cohabitating with them.
[37] Percent who say that a healthy-looking person can have the AIDS virus, and who in response to prompted questions, correctly rejected the two most common misconceptions about AIDS transmission or prevention.
[38] Either they or their partner were drunk at last sex.

Table 6.1—*Continued*

Women Age 25–49

Region	Percent sexually active in past year	Percent reporting multiple partners in 12 months	Percent reporting 5 or more lifetime partners	Percent that used a condom at last sex with a non-cohabiting partner[39]	Percent reporting STI	Percent with accurate HIV knowledge[40]	Percent that drank more than 10 times in past month	Percent reporting drunkenness during last sex[41]	Percent traveled more than 6 times in past year
Caprivi	72	0	6	50	2	56	2	5	10
Erongo	80	2	13	64	9	66	6	8	13
Hardap	78	2	12	36	9	68	1	6	12
Karas	77	1	8	54	5	57	4	6	13
Kavango	69	0	3	40	6	46	7	20	6
Khomas	79	2	15	73	9	81	5	5	15
Kunene	87	4	26	45	11	40	8	10	18
Ohangwena	71	1	2	54	6	67	12	12	1
Omaheke	87	3	34	55	10	58	9	14	18
Omusati	64	2	2	52	5	71	10	11	7
Oshana	72	1	5	64	5	78	7	11	4
Oshikoto	77	1	6	57	5	62	8	9	8
Otjozondjupa	84	3	20	52	11	59	5	7	14
Total	**76**	**2**	**11**	**60**	**7**	**67**	**7**	**9**	**10**

Continued…

[39] Percent who used a condom at last sex with a partner who was not married or cohabitating with them.
[40] Percent who say that a healthy-looking person can have the AIDS virus, and who in response to prompted questions, correctly rejected the two most common misconceptions about AIDS transmission or prevention.
[41] Either they or their partner were drunk at last sex.

Table 6.1—*Continued*

Young Men Age 15–24[42]

Region	Percent sexually active in past year	Percent reporting multiple partners in 12 months	Percent reporting 5 or more lifetime partners	Percent reporting 10 or more lifetime partners	Percent that used a condom at last sex with a non-cohabiting partner[43]	Percent circum-cised	Percent reporting STI	Percent with accurate HIV know-ledge[44]	Percent that drank more than 10 times in past month	Percent reporting drunkenness during last sex[45]	Percent traveled more than 6 times in past year	Percent that had sex before 15	Percent reporting primary abstinence
Caprivi	72	25	40	9	76	1	5	69	6	10	13	35	14
Erongo	58	44	28	6	84	22	3	65	10	12	9	19	29
Hardap	45	(14)	15	7	*	2	9	76	4	(12)	6	10	48
Karas	44	(11)	24	9	(87)	8	5	71	4	(18)	12	12	42
Kavango	70	20	40	13	69	30	2	69	3	9	2	29	26
Khomas	53	20	28	14	90	25	2	68	8	14	18	18	26
Kunene	72	(21)	23	10	(78)	55	(7)	49	2	(7)	19	13	25
Ohangwena	21	(26)	7	1	(62)	0	0	30	1	(0)	2	17	54
Omaheke	71	29	33	14	83	66	5	41	1	9	24	20	20
Omusati	42	25	11	3	83	8	2	75	13	5	2	14	31
Oshana	43	13	11	4	87	9	2	58	4	1	2	13	35
Oshikoto	51	21	12	4	77	5	3	74	8	4	6	19	37
Otjozondjupa	61	9	26	9	86	49	3	60	6	4	16	13	23
Total	**51**	**22**	**22**	**8**	**81**	**19**	**3**	**62**	**6**	**8**	**9**	**18**	**32**

Continued…

[42] Note: Figures in parentheses are based on 25–49 unweighted cases, and need to be interpreted with caution. An asterisk indicates that an estimate is based on fewer than 25 unweighted cases and has been suppressed.
[43] Percent who used a condom at last sex with a partner who was not married or cohabitating with them.
[44] Percent who say that a healthy-looking person can have the AIDS virus, and who in response to prompted questions, correctly rejected the two most common misconceptions about AIDS transmission or prevention.
[45] Either they or their partner were drunk at last sex.

Table 6.1—*Continued*

Men Age 25–49[46]

Region	Percent sexually active in past year	Percent reporting multiple partners in 12 months	Percent reporting 5 or more lifetime partners	Percent reporting 10 or more lifetime partners	Percent that used a condom at last sex with a non-cohabiting partner[47]	Percent circumcised	Percent reporting STI	Percent with accurate HIV knowledge[48]	Percent that drank more than 10 times in past month	Percent reporting drunkenness during last sex[49]	Percent traveled more than 6 times in past year
Caprivi	87	14	50	17	60	9	7	58	6	10	13
Erongo	90	17	61	32	85	17	5	69	8	5	20
Hardap	78	8	42	23	(80)	9	2	69	6	15	15
Karas	85	17	55	28	(74)	10	2	58	2	10	29
Kavango	92	7	61	30	50	31	2	68	9	12	6
Khomas	81	15	52	29	74	27	3	63	13	7	22
Kunene	90	14	37	21	(64)	50	(5)	52	9	11	32
Ohangwena	60	8	47	21	(75)	1	6	23	8	2	3
Omaheke	85	21	64	33	79	51	4	38	13	16	31
Omusati	68	8	33	18	69	8	6	72	27	1	10
Oshana	84	11	39	20	92	20	2	61	9	5	8
Oshikoto	87	21	47	24	81	12	7	60	16	8	13
Otjozondjupa	84	7	60	26	75	38	5	46	7	3	22
Total	**83**	**14**	**52**	**26**	**75**	**23**	**4**	**59**	**11**	**8**	**18**

[46] Note: Figures in parentheses are based on 25–49 unweighted cases, and need to be interpreted with caution. An asterisk indicates that an estimate is based on fewer than 25 unweighted cases and has been suppressed.
[47] Percent who used a condom at last sex with a partner who was not married or cohabitating with them.
[48] Percent who say that a healthy-looking person can have the AIDS virus, and who in response to prompted questions, correctly rejected the two most common misconceptions about AIDS transmission or prevention.
[49] Either they or their partner were drunk at last sex.

VII. CONCLUSIONS AND RECOMMENDATIONS

The factors driving the HIV epidemic in Namibia are numerous and complex. Currently available data indicate that important behavioral drivers include multiple and concurrent partnerships combined with inconsistent condom use, intergenerational sex and transactional sex and low levels of male circumcision. These factors occur within a complex social and economic context. The behaviors and choices individuals make regarding sex are shaped by these contextual factors and in Namibia especially by, poverty, unequal access to resources by women, mobility and cultural norms regarding partnerships. Low risk perceptions and widespread alcohol abuse aggravate the problem, and reduce motivation to implement safer sexual practices.

A national prevention strategy ought to focus on avoiding new infections among youths, the group in which an estimated 44 percent of new infections are expected to occur. It is encouraging that programs have been successful thus far in changing young men's behaviors, reducing the number of multiple and concurrent partners and increasing condom use and abstinence among this group. However, efforts will need to intensify as current levels are not sufficient to bring about a decline in prevalence over the next few years.

Special attention should be to be paid to the vulnerability of young women. In Namibia, two subgroups of young women appear to be particularly vulnerable to HIV infection.

1. Young, educated, employed and urban women who are least likely to abstain from sexual relations if not married, and most likely to have multiple partners, and have sexual relations under the influence of alcohol. These women, however, are also most likely to use condoms, although the extent to which this counters their risk is unclear. They also represent a fairly small group of women.

2. Young married and cohabiting women, particularly the poor and uneducated ones who are mainly exposed to risk through their spouses, and who are far less likely to use condoms or be able to negotiate sexual relationships.

The data strongly suggests that for the majority of young women, risk of HIV infection stems from the behavior of their partners rather than their own. It appears that a large number of women are infected at young ages by their first or second sexual partner.

Testing should be encouraged among young married couples, and among older individuals who plan on cohabiting, since condom use among married and cohabiting partners is so low.

Prevention efforts for young women must not just target them, but their sexual partners as well. This entails working with older men, as well as educated and employed men who report higher levels of multiple partners and may be engaging more frequently in transactional sex.

Programs that aim at changing social norms, rather than individual behaviors, may be needed to tackle challenging issues such as transactional sex and intergenerational relationships. Further research on the significance of partnerships, and on partner turnover would be beneficial.

Creating education and employment opportunities for women in urban and rural areas should be a central component of a national prevention strategy. Limited economic opportunities for women, and their continued economic dependence on men are likely behind the high levels of transactional and intergenerational sex, both of which are key drivers of this epidemic. Both education and employment proved to be important protective factors against infection among women testing at New Start VCT clinics.

Developing realistic perceptions of risk should be a priority, particularly among young men. This is necessary to achieving further gains in condom use and in reducing multiple and concurrent partnerships. The population needs to be better informed of how prevalent HIV is in their community.

The factors that are driving the epidemic do vary by region and location, and strategies and programs should vary accordingly. The rural population is harder and costlier to access but should not be ignored. These populations have recorded similar prevalence to urban areas in sentinel surveillance, and may have slightly higher risk (as indicated by VCT client data). High multiple partnerships combined with lower levels of knowledge and condom use are making rural populations vulnerable. Greater research should be undertaken in these communities to understand the dynamics of sexual partnerships in these areas.

It will be important to work with migrant communities, particularly agricultural workers and transport workers who appear to be particularly vulnerable to infection. Reaching these populations where they work, or in bars and shebeens are options that should be examined in greater depth. Creating entertainment alternatives that do not involve alcohol and prostitution should also be considered.

Further research is needed to understand the epidemic and inform programmatic decisions. A representative seroprevalence survey would help to more precisely determine the factors directly associated with HIV infection in the country. Further research is also needed with regards to transactional sex, concurrent partnerships, the formation and duration of partnerships, and perceptions of risk. The evidence suggesting a link between male circumcision and HIV in Namibia should further be investigated, with attention to the different types of circumcision currently practiced in the country.

Namibia has much work to do in order to curb the HIV epidemic, but with high levels of government commitment and renewed funding the opportunity exists to make a significant dent in this epidemic. Namibia should consider the successes that have occurred in neighboring countries, and involve community organizations as much as possible in the development of culturally appropriate programs.

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APPENDIX A: TABLES

Table A1: Multiple sexual partners in the past 12 months

Among respondents age 15–49 who had sexual intercourse in the past 12 months, the percentage who had intercourse with more than one partner in the past 12 months, by background characteristics, NDHS 2006.

	Men			Women		
Age						
15–19		16.9			3.1	
20–24		25.0			4.9	
25–29		18.2			3.1	
30–39		13.2			1.0	
40–49		8.8			1.1	
p-value		*0.000*			*0.000*	
	15–24	**25–49**	**All ages**	**15–24**	**25–49**	**All ages**
Education						
No education	16.3	11.8	12.6	2.4	1.5	1.7
Primary	20.5	12.1	14.4	2.6	1.8	2.0
Secondary	22.0	13.5	16.8	4.9	1.7	3.0
Higher	(30.3)	19.1	20.7	3.2	1.5	1.8
p-value	*0.616*	*0.267*	*0.197*	*0.252*	*0.982*	*0.177*
Wealth						
Poorest	20.3	10.0	13.8	2.1	0.6	1.2
Poorer	25.9	12.2	17.6	1.3	2.0	1.7
Middle	23.2	14.8	17.6	3.4	1.4	2.1
Richer	14.4	13.6	13.8	6.2	2.0	3.4
Richest	24.2	14.9	17.8	7.0	1.9	3.3
p-value	*0.354*	*0.597*	*0.332*	*0.001*	*0.333*	*0.013*
Employment						
Not employed	18.7	9.2	14.2	3.4	1.6	2.4
Employed	24.6	14.7	16.9	6.0	1.6	2.6
p-value	*0.081*	*0.044*	*0.192*	*0.008*	*0.977*	*0.662*
Marital status						
Never married	21.9	20.9	21.4	4.6	2.8	3.8
Currently in union	16.5	7.7	8.3	2.8	0.5	0.9
Formerly in union	*	24.5	26.4	5.1	7.3	7.0
p-value	*0.225*	*0.000*	*0.000*	*0.310*	*0.000*	*0.000*
Residence						
City	18.6	15.0	16.0	10.8	2.4	4.8
Town	23.6	15.7	17.9	2.6	1.9	2.1
Rural	22.1	11.3	15.1	2.7	1.1	1.7
p-value	*0.729*	*0.167*	*0.527*	*0.000*	*0.056*	*0.000*

Continued…

Table A1—*Continued*

	Men			Women		
	15–24	**25–49**	**All ages**	**15–24**	**25–49**	**All ages**
Alcohol use in last month						
None	15.7	11.1	12.6	2.8	0.9	1.6
1–9 times	27.2	15.0	18.9	7.7	3.3	4.8
10+ times a month	28.7	17.9	20.4	10.2	3.2	4.9
p-value	*0.003*	*0.057*	*0.001*	*0.002*	*0.000*	*0.000*
Trips away from home in past 12 months						
Never away	15.7	8.8	11.1	3.8	1.1	2.1
5 times or less	25.8	15.9	19.2	4.6	1.4	2.5
6 times or more	31.3	20.8	22.9	4.4	4.7	4.6
p-value	*0.009*	*0.000*	*0.000*	*0.790*	*0.000*	*0.011*
Total	**21.8**	**13.6**	**16.2**	**4.2**	**1.7**	**2.5**

Note: Figures in parentheses are based on 25–49 unweighted cases, and need be interpreted with caution. An asterisk indicates that an estimate is based on fewer than 25 unweighted cases and has been suppressed.
p-values presented in red indicate that the association is significant at the 0.05 level. Those presented in blue indicate marginal significance with values between 0.1 and 0.05.

Table A2a: Condom use at last intercourse (men)

Among men age 15–49 who had sexual intercourse in the past 12 months, the percentage who used a condom at last intercourse, by partner type and background characteristics, NDHS 2006.

	Last sexual partner			
Age	**Spouse**	**Cohabiting**	**Other[a]**	**Total**
15–19	*	*	81.1	80.9
20–24	*	59.3	80.8	76.0
25–29	18.1	33.7	76.1	59.1
30–39	20.8	37.5	75.2	48.7
40–49	18.7	30.7	71.2	30.4
p-value	*0.416*	*0.009*	*0.198*	*0.000*
Education				
No education	13.8	24.9	59.1	36.0
Primary	25.8	34.0	70.5	52.6
Secondary	17.9	45.9	82.2	63.4
Higher	19.1	(37.1)	85.2	50.6
p-value	*0.262*	*0.033*	*0.000*	*0.000*
Wealth				
Poorest	15.0	14.1	58.5	39.2
Poorer	27.0	29.0	75.8	60.3
Middle	29.2	34.6	74.9	58.2
Richer	22.9	48.2	83.1	63.2
Richest	13.1	48.9	87.2	56.1
p-value	*0.028*	*0.000*	*0.000*	*0.000*
Employment status				
Not employed	18.4	46.1	82.5	70.5
Employed	19.6	37.3	75.2	51.5
p-value	*0.813*	*0.178*	*0.004*	*0.000*
Residence				
City	11.1	45.8	81.1	56.6
Town	21.9	47.2	84.7	60.4
Rural	22.5	26.8	73.0	54.9
p-value	*0.093*	*0.007*	*0.005*	*0.249*
Alcohol use at last sex				
No alcohol	18.2	39.9	78.0	56.2
One or both used alcohol	(36.3)	(23.9)	77.3	62.6
p-value	*0.051*	*0.090*	*0.876*	*0.135*

Continued…

Table A2a—*Continued*

Multiple partners in past 12 months	Last sexual partner			Total
	Spouse	Cohabiting	Other[a]	
No other partner	19.7	37.1	76.6	53.5
Had other partner	(13.2)	(54.8)	82.9	74.4
p-value	*0.364*	*0.028*	*0.028*	*0.000*
Total	**19.4**	**38.9**	**78.0**	**56.9**

[a] Other partners include girlfriend, casual acquaintance, commercial sex worker and others.

Note: Figures in parentheses are based on 25–49 unweighted cases, and need be interpreted with caution. An asterisk indicates that an estimate is based on fewer than 25 unweighted cases and has been suppressed.

p-values presented in red indicate that the association is significant at the 0.05 level. Those presented in blue indicate marginal significance with values between 0.1 and 0.05.

Table A2b: Condom use at last intercourse (women)

Among women age 15–49 who had sexual intercourse in the past 12 months, the percentage who used a condom at last intercourse, by partner type and background characteristics, NDHS 2006.

	Last sexual partner			
Age	**Spouse**	**Cohabiting**	**Other[a]**	**Total**
15–19	*	28.2	67.1	60.0
20–24	13.8	32.1	62.4	51.8
25–29	15.8	26.1	62.5	42.6
30–39	18.3	24.6	56.7	32.6
40–49	14.9	18.1	62.2	25.9
p-value	*0.426*	*0.044*	*0.041*	*0.000*
Education				
No education	8.4	12.4	35.5	16.5
Primary	13.1	18.3	46.7	27.7
Secondary	18.4	35.0	67.5	50.0
Higher	20.9	(20.4)	70.0	38.4
p-value	*0.006*	*0.000*	*0.000*	*0.000*
Wealth				
Poorest	7.4	12.8	43.8	25.0
Poorer	16.3	20.0	54.7	36.0
Middle	16.7	22.7	59.1	38.9
Richer	27.0	36.2	69.3	52.0
Richest	14.2	32.1	73.3	44.2
p-value	*0.000*	*0.000*	*0.000*	*0.000*
Employment status				
Not employed	13.3	25.1	58.6	39.7
Employed	18.5	26.6	66.2	42.1
p-value	*0.015*	*0.642*	*0.000*	*0.131*
Residence				
City	17.9	32.8	74.9	51.1
Town	20.5	28.1	64.1	43.6
Rural	13.7	21.0	54.7	34.6
p-value	*0.129*	*0.017*	*0.000*	*0.000*
Alcohol use at last sex				
No alcohol	16.1	26.0	63.1	41.2
One or both used alcohol	19.5	23.8	54.1	37.8
p-value	*0.394*	*0.568*	*0.011*	*0.147*

Continued…

Table A2b—*Continued*

	Last sexual partner			
Multiple partners	**Spouse**	**Cohabiting**	**Other[a]**	**Total**
No other partner	16.3	25.7	61.8	40.3
Had other partner	*	*	73.3	65.7
p-value			*0.041*	*0.000*
Total	**16.5**	**25.7**	**62.2**	**40.9**

[a] Other partners include boyfriend, casual acquaintance, commercial sex worker and others.

Note figures in parentheses are based on 25–49 unweighted cases, and need be interpreted with caution. An asterisk indicates that an estimate is based on fewer than 25 unweighted cases and has been suppressed.

p-values presented in red indicate that the association is significant at the 0.05 level. Those presented in blue indicate marginal significance with values between 0.1 and 0.05.

Table A3a: Condom use at last intercourse (male youths)

Among respondents age 15–24 who had sexual intercourse in the past 12 months, the percentage who used a condom at last intercourse with a nonmarital partner,[a] NDHS 2006.

Education	
No education	(37.9)
Primary	70.1
Secondary	87.3
Higher	(86.1)
p-value	*0.000*
Wealth	
Poorest	59.7
Poorer	77.8
Middle	78.8
Richer	85.0
Richest	94.7
p-value	*0.000*
Employment status	
Not employed	87.0
Employed	74.7
p-value	*0.000*
Residence	
City	91.3
Town	84.9
Rural	75.1
p-value	*0.019*
Alcohol use at last sex	
No alcohol	80.4
One or both used alcohol	84.9
p-value	*0.398*
Multiple partners in past 12 months	
No other partner	80.9
Had other partner	81.6
p-value	*0.154*
Total	**80.9**

[a] Too few men age 15–24 were in marital or cohabitating relationships to undertake analyses for this group.

Nonmarital partners include girlfriend, casual acquaintance, commercial sex worker and others.

Note: Figures in parentheses are based on 25–49 unweighted cases, and need be interpreted with caution. An asterisk indicates that an estimate is based on fewer than 25 unweighted cases and has been suppressed.

p-values presented in red indicate that the association is significant at the 0.05 level. Those presented in blue indicate marginal significance with values between 0.1 and 0.05.

Table A3b: Condom use at last intercourse (female youths)

Among women age 15–24 who had sexual intercourse in the past 12 months, the percentage who used a condom at last intercourse by partner type.

	Last sexual partner		
	Spouse or cohabiting	Other[a]	Total
Education			
No education	5.8	35.8	20.9
Primary	14.5	45.3	33.2
Secondary	36.2	68.8	62.4
Higher	*	77.1	75.0
p-value	*0.000*	*0.000*	*0.000*
Wealth			
Poorest	11.4	48.4	35.0
Poorer	17.5	59.3	49.5
Middle	28.3	59.4	49.8
Richer	44.1	71.2	65.9
Richest	40.2	75.5	70.3
p-value	*0.000*	*0.000*	*0.000*
Employment status			
Not employed	27.0	62.8	53.9
Employed	26.2	67.2	57.0
p-value	*0.863*	*0.134*	*0.245*
Residence			
City	38.0	76.2	69.2
Town	33.1	67.3	59.6
Rural	21.2	57.8	47.5
p-value	*0.044*	*0.000*	*0.000*
Alcohol use at last sex			
No alcohol	26.3	64.8	55.3
One or both used alcohol	31.6	58.3	51.4
p-value	*0.456*	*0.200*	*0.390*
Multiple partners			
No other partner	26.5	63.5	54.2
Had other partner	*	80.1	73.7
p-value		*0.012*	*0.001*
Total	**35.7**	**64.3**	**55.0**

[a] Other partners include boyfriend, casual acquaintance, commercial sex worker and others.

Note: Figures in parentheses are based on 25–49 unweighted cases, and need be interpreted with caution. An asterisk indicates that an estimate is based on fewer than 25 unweighted cases and has been suppressed.

p-values presented in red indicate that the association is significant at the 0.05 level. Those presented in blue indicate marginal significance with values between 0.1 and 0.05.

Table A4: Intergenerational sex (women)

Among women age 15–24 who are married or cohabitating, the percentage whose partner is 10 or more years older. Among women age 15–24 who had sexual intercourse in the past 12 months, the percentage who have had intercourse with a nonmarital partner 10 or more years older, NDHS 2006

	Married or cohabiting	Non-cohabiting
Education		
None	31.0	12.5
Primary	29.1	11.6
Secondary	24.1	7.0
Higher	*	7.7
p-value	0.547	*0.204*
Wealth status		
Poorest	26.4	8.5
Poorer	28.8	7.7
Middle	27.2	7.3
Richer	21.7	8.9
Richest	(31.0)	7.1
p-value	*0.8151*	*0.916*
Employment		
Not employed	22.5	7.5
Employed	35.3	9.0
p-value	*0.007*	*0.451*
Residence		
Urban	26.2	8.7
Rural	26.9	7.2
p-value	*0.868*	*0.321*
Total	**26.7**	**8.0**

Note: Figures in parentheses are based on 25–49 unweighted cases, and need be interpreted with caution. An asterisk indicates that an estimate is based on fewer than 25 unweighted cases and has been suppressed.

p-values presented in red indicate that the association is significant at the 0.05 level. Those presented in blue indicate marginal significance with values between 0.1 and 0.05.

Table A5: Sexually transmitted infections

Among respondents 15–49 who have ever had sexual intercourse, the proportion self-reporting an STI or STI symptoms in the past year by background characteristics, NDHS 2006.

	Men			Women		
Age						
15–19		2.9			7.8	
20–24		2.6			7.5	
25–29		4.0			8.0	
30–39		3.7			7.8	
40–49		4.8			6.2	
p-value		*0.418*			*0.521*	
	15–24	**25–49**	**All ages**	**15–24**	**25–49**	**All ages**
Education						
No education	4.8	3.0	3.4	8.4	6.7	7.0
Primary	4.4	6.1	5.6	8.0	9.0	8.8
Secondary	2.1	3.7	3.0	7.7	6.9	7.2
Higher	(0.0)	1.8	1.5	1.7	6.1	5.4
p-value	*0.209*	*0.074*	*0.020*	*0.201*	*0.089*	*0.100*
Wealth						
Poorest	1.5	5.7	4.1	5.2	4.9	5.0
Poorer	2.2	3.0	2.7	6.5	6.3	6.4
Middle	4.1	5.3	4.8	7.1	8.3	7.9
Richer	3.0	2.7	2.7	9.2	9.9	9.7
Richest	2.2	4.4	3.7	9.3	6.5	7.2
p-value	*0.616*	*0.258*	*0.307*	*0.141*	*0.035*	*0.011*
Employment						
Not employed	2.6	5.5	3.9	8.2	7.1	7.6
Employed	2.8	3.7	3.5	6.4	7.6	7.3
p-value	*0.861*	*0.111*	*0.603*	*0.115*	*0.613*	*0.752*
Marital status						
Never married	2.4	4.1	3.2	7.2	6.0	6.6
Currently in union	5.9	3.9	4.0	7.8	7.9	7.9
Formerly in union	*	5.7	5.6	19.2	9.3	10.1
p-value	*0.135*	*0.682*	*0.318*	*0.065*	*0.111*	*0.126*

Continued…

Table A5—*Continued*

	15–24	25–49	All ages	15–24	25–49	All ages
Residence						
City	1.7	3.1	2.7	11.3	9.4	9.9
Town	4.7	3.6	3.9	8.0	7.6	7.7
Rural	2.2	5.0	3.9	6.0	6.3	6.2
p-value	*0.228*	*0.302*	*0.437*	*0.019*	*0.151*	*0.031*
More than 1 partner in past year						
No	2.8	3.2	3.1	6.9	7.4	7.2
Yes	1.8	10.6	6.9	26.7	15.7	21.9
p-value	*0.347*	*0.000*	*0.002*	*0.000*	*0.022*	*0.000*
Alcohol consumption past month						
None	2.7	4.2	3.7	6.4	7.2	7.0
1–9 times	2.5	3.4	3.1	10.4	8.0	8.8
10+ times a month	3.8	6.3	5.6	14.4	7.4	9.0
p-value	*0.786*	*0.226*	*0.146*	*0.004*	*0.776*	*0.129*
Total	**2.7**	**4.1**	**3.6**	**7.6**	**7.4**	**7.4**

Note: Figures in parentheses are based on 25–49 unweighted cases, and need be interpreted with caution. An asterisk indicates that an estimate is based on fewer than 25 unweighted cases and has been suppressed.

p-values presented in red indicate that the association is significant at the 0.05 level. Those presented in blue indicate marginal significance with values between 0.1 and 0.05.

Table A6: HIV Testing

Among respondents 15–49, percent who have ever been tested and obtained the results of their last test, by background characteristics, NDHS 2006

	Men			Women		
Age						
15–19		7.6			17.5	
20–24		28.4			60.2	
25–29		40.4			68.5	
30–39		42.6			64.4	
40–49		47.2			48.4	
p-value		*0.000*			*0.000*	
	15–24	**25–49**	**All ages**	**15–24**	**25–49**	**All ages**
Education						
No education	9.9	18.1	16.2	36.6	33.9	34.4
Primary	8.2	34.5	23.3	33.3	50.3	44.5
Secondary	20.3	48.7	34.7	36.5	67.7	52.2
Higher	42.4	67.7	63.5	63.9	82.1	78.3
p-value	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Wealth						
Poorest	5.1	21.0	13.1	30.1	45.6	38.5
Poorer	6.9	26.6	16.2	28.4	53.4	42.3
Middle	18.8	36.3	28.8	36.7	54.9	47.2
Richer	21.1	47.6	38.7	45.1	65.8	57.6
Richest	29.6	63.6	50.2	41.1	75.6	62.1
p-value	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Employment						
Not employed	13.0	30.7	19.0	31.3	53.5	41.2
Employed	22.6	46.7	39.8	52.2	66.8	63.2
p-value	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*
Marital status						
Never married	15.9	38.6	24.7	32.6	63.0	44.1
Currently in union	28.6	47.4	46.2	62.2	61.2	61.3
Formerly in union	53.5	39.2	41.2	69.8	53.7	55.0
p-value	*0.000*	*0.002*	*0.000*	*0.000*	*0.002*	*0.000*
Residence						
City	33.1	51.8	45.0	46.3	74.4	63.9
Town	19.5	52.1	40.2	41.6	65.5	56.0
Rural	10.2	32.1	21.5	31.3	52.0	42.7
p-value	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*	*0.000*

Continued…

Table A6—*Continued*

	Men			Women		
	15–24	**25–49**	**All ages**	**15–24**	**25–49**	**All ages**
Multiple partners in past 12 months						
No	21.9	45.0	38.3	51.6	62.5	58.9
Yes	21.2	47.4	36.4	62.1	62.8	62.4
p-value	*0.875*	*0.547*	*0.518*	*0.199*	*0.963*	*0.488*
Total	**17.0**	**43.1**	**32.0**	**36.8**	**61.0**	**50.9**

Note: Figures in parentheses are based on 25–49 unweighted cases, and need be interpreted with caution. An asterisk indicates that an estimate is based on fewer than 25 unweighted cases and has been suppressed.
p-values presented in red indicate that the association is significant at the 0.05 level. Those presented in blue indicate marginal significance with values between 0.1 and 0.05.

Table A7: Alcohol consumption

Among respondents 15–49, alcohol consumption in past month, by background characteristics, NDHS 2006

	Number of days alcohol was consumed in past month						
	Men				Women		
	none	1–9 times	10+ times		none	1–9 times	10+ times	
Age								
15–19	62.7	33.1	4.2		83.4	14.0	2.6	
20–24	46.4	45.0	8.6		72.7	23.1	4.2	
25–29	46.7	41.6	11.8		73.8	21.8	4.4	
30–39	44.5	45.5	10.0		72.8	21.4	5.7	
40–49	46.3	40.9	12.8		67.4	21.9	10.7	
p-value				0.000				0.000
Education								
No education	54.1	38.8	7.1		74.8	16.4	8.8	
Primary	54.1	36.7	9.2		72.4	19.4	8.2	
Secondary	47.7	43.7	8.6		76.0	20.3	3.6	
Higher	43.1	42.0	15.0		68.0	25.5	6.5	
p-value				0.007				0.000
Wealth								
Poorest	57.8	33.5	8.6		74.2	17.5	8.3	
Poorer	52.9	37.7	9.4		75.7	17.9	6.3	
Middle	50.7	40.6	8.7		78.7	16.7	4.7	
Richer	48.8	43.9	7.3		72.7	23.7	3.6	
Richest	42.9	45.7	11.5		72.2	23.0	4.7	
p-value				0.005				0.000
Employment status								
Not employed	56.3	37.0	6.7		77.6	17.2	5.1	
Employed	45.8	43.6	10.6		70.4	24.0	5.6	
p-value				0.000				0.000
Marital status								
Never married	50.4	41.0	8.6		75.7	20.3	4.1	
Currently married	49.9	39.8	10.3		73.9	19.6	6.5	
Formerly married	38.0	53.4	8.6		67.5	23.0	9.5	
p-value				0.047				0.000
Place of residence								
City	41.7	46.3	12.0		70.2	25.2	4.7	
Town	50.5	41.9	7.6		75.6	20.0	4.4	
Rural	53.3	38.2	8.5		75.7	18.2	6.1	
p-value				0.004				0.001
Total	**49.8**	**41.2**	**9.1**		**74.49**	**20.2**	**5.32**	

Table A8a: Primary abstinence (male youth)

Among never-married men age 15–24, the percentage who have never had sexual intercourse, by background characteristics, NDHS 2006.

	15–19	20–24	15–24
Education			
Primary or less	56.6	8.2	41.0
Secondary and higher	43.2	9.8	27.6
p-value	*0.001*	*0.558*	*0.000*
Wealth			
Poorest	54.4	13.5	40.6
Poorer	49.5	10.0	35.8
Middle	46.3	7.8	27.8
Richer	48.9	7.9	29.1
Richest	43.3	9.8	29.0
p-value	*0.510*	*0.743*	*0.024*
Employment			
Not employed	52.8	11.3	39.6
Employed	37.3	7.8	20.3
p-value	*0.001*	*0.252*	*0.000*
Residence			
City	42.7	8.6	25.6
Town	45.1	8.2	28.3
Rural	51.1	10.3	35.8
p-value	*0.354*	*0.801*	*0.021*
Alcohol use in past month			
None	55.9	15.8	42.0
1–9 times	36.7	3.6	20.2
10 or more	(25.2)	6.7	14.2
p-value	*0.000*	*0.000*	*0.000*
Total	**48.4**	**9.4**	**32.1**

Note: Figures in parentheses are based on 25–49 unweighted cases, and need be interpreted with caution. An asterisk indicates that an estimate is based on fewer than 25 unweighted cases and has been suppressed.

p-values presented in red indicate that the association is significant at the 0.05 level. Those presented in blue indicate marginal significance with values between 0.1 and 0.05.

Table A8b: Primary abstinence (female youth)

Among never-married women age 15–24, the percentage who have never had sexual intercourse, by background characteristics, NDHS 2006.

	15–19	20–24	15–24
Education			
No education	35.6	9.0	21.7
Primary	58.0	5.9	43.7
Secondary	61.1	14.5	42.4
Higher	*	31.3	33.9
p-value	*0.105*	*0.000*	*0.021*
Wealth			
Poorest	57.6	8.5	42.1
Poorer	62.5	16.9	47.8
Middle	57.3	14.2	40.3
Higher	54.1	11.4	33.4
Highest	66.9	20.2	46.4
p-value	*0.019*	*0.013*	*0.000*
Employment			
Not employed	62.3	16.9	47.7
Employed	47.0	11.5	24.6
p-value	*0.000*	*0.053*	*0.000*
Residence			
City	61.3	16.7	39.6
Town	58.1	12.8	38.7
Rural	60.4	14.8	44.3
p-value	*0.779*	*0.555*	*0.183*
Alcohol use in past month			
None	63.7	16.3	46.5
1–9 times	43.8	12.2	26.8
10 or more	(30.9)	3.53	17.4
p-value	*0.000*	*0.024*	*0.000*
Total	**60.0**	**14.7**	**41.9**

Note: Figures in parentheses are based on 25–49 unweighted cases, and need be interpreted with caution. An asterisk indicates that an estimate is based on fewer than 25 unweighted cases and has been suppressed.

p-values presented in red indicate that the association is significant at the 0.05 level. Those presented in blue indicate marginal significance with values between 0.1 and 0.05.

Table A9: Current marital status

Percent distribution of respondents age 15–49 by current marital status and age, NDHS 2006

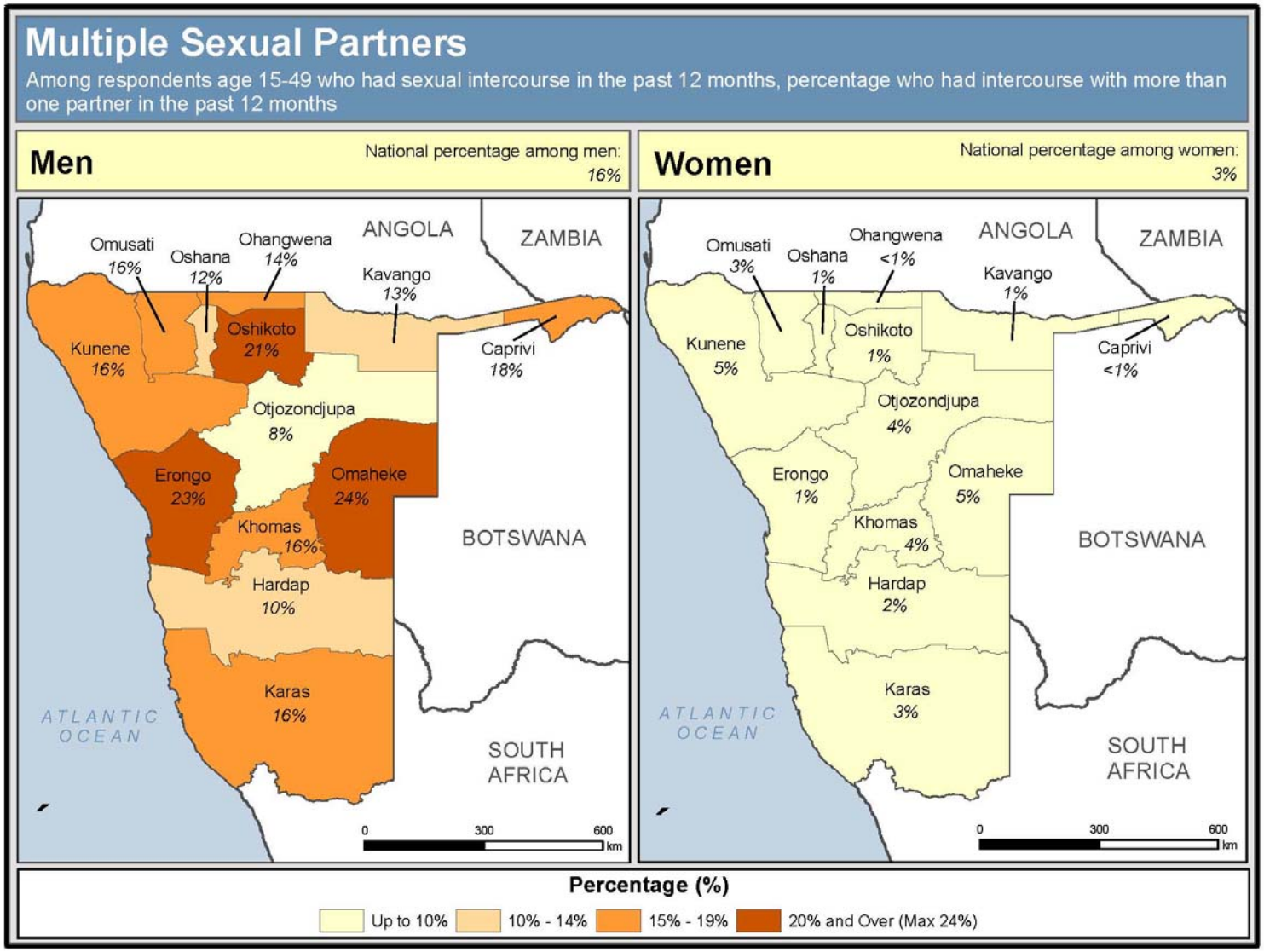
	Current Union			Former Union			Never Married	
Age	Married	Cohabiting	Total	Separated or divorced	Widowed	Total	Never married or cohabited	Number of respondents
				Women				
15–19	1.0	4.2	5.3	0.3	0.0	0.3	94.5	2,246
20–24	5.2	16.3	21.5	2.4	0.2	2.6	76.0	1,854
25–29	17.0	21.5	38.6	5.1	1.0	6.1	55.4	1,622
30–39	34.3	21.1	55.4	5.6	3.2	8.7	35.9	2,462
40–49	43.9	14.6	58.5	9.7	9.6	19.3	22.3	1,618
Total	**19.9**	**15.3**	**35.2**	**4.3**	**2.6**	**6.9**	**57.9**	**9,801**
				Men				
15–19	0.0	0.3	0.3	0.1	0.0	0.1	99.6	910
20–24	1.9	8.2	10.1	2.8	0.0	2.8	87.1	750
25–29	12.3	16.2	28.4	5.9	0.2	6.1	65.5	700
30–39	28.8	22.7	51.5	6.1	0.3	6.4	42.1	986
40–49	57.1	17.0	74.1	4.8	1.5	6.3	19.6	567
Total	**18.1**	**12.7**	**30.8**	**3.9**	**0.3**	**4.2**	**65.0**	**3,914**

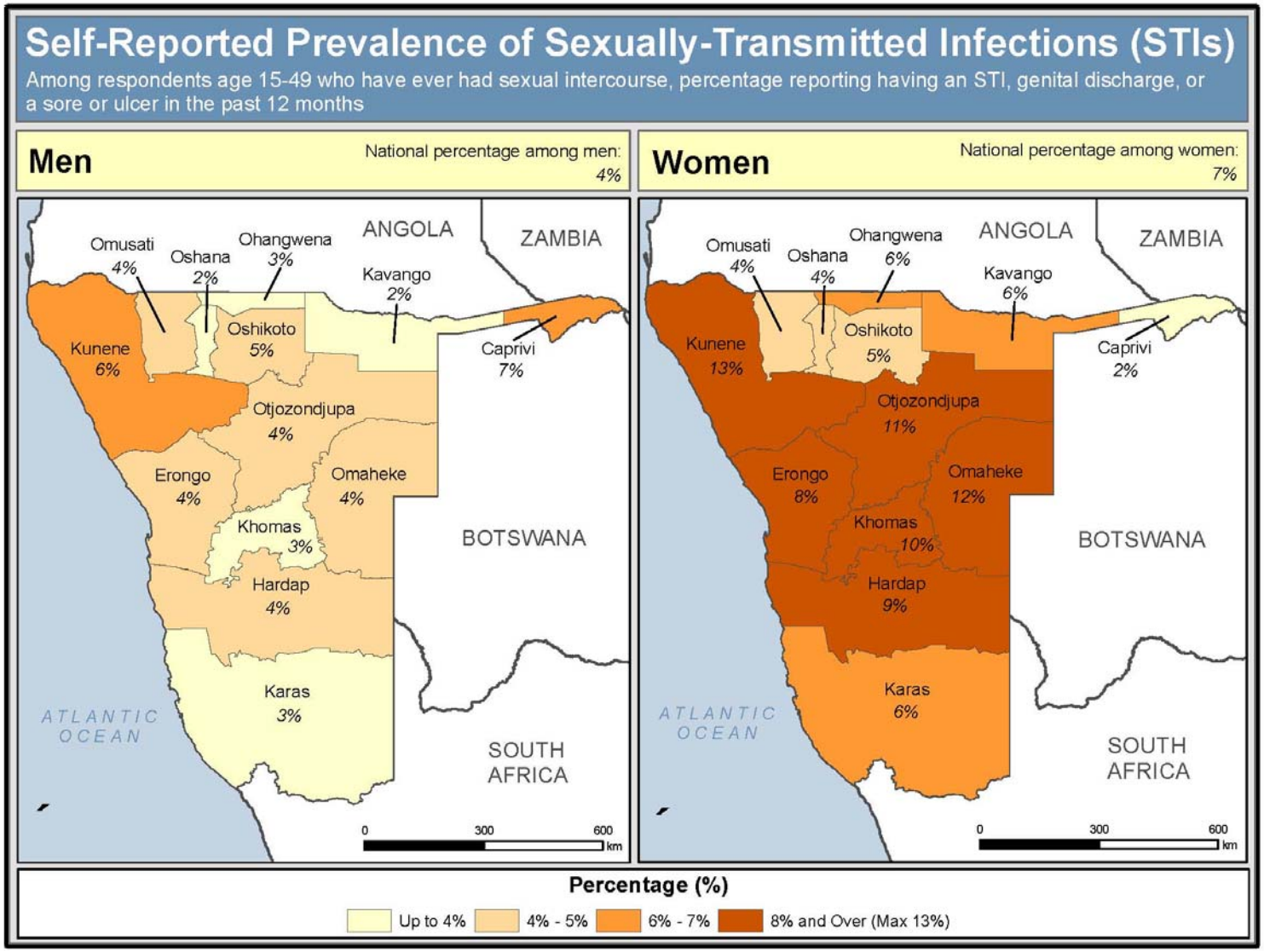
Table A10: Lifetime partners

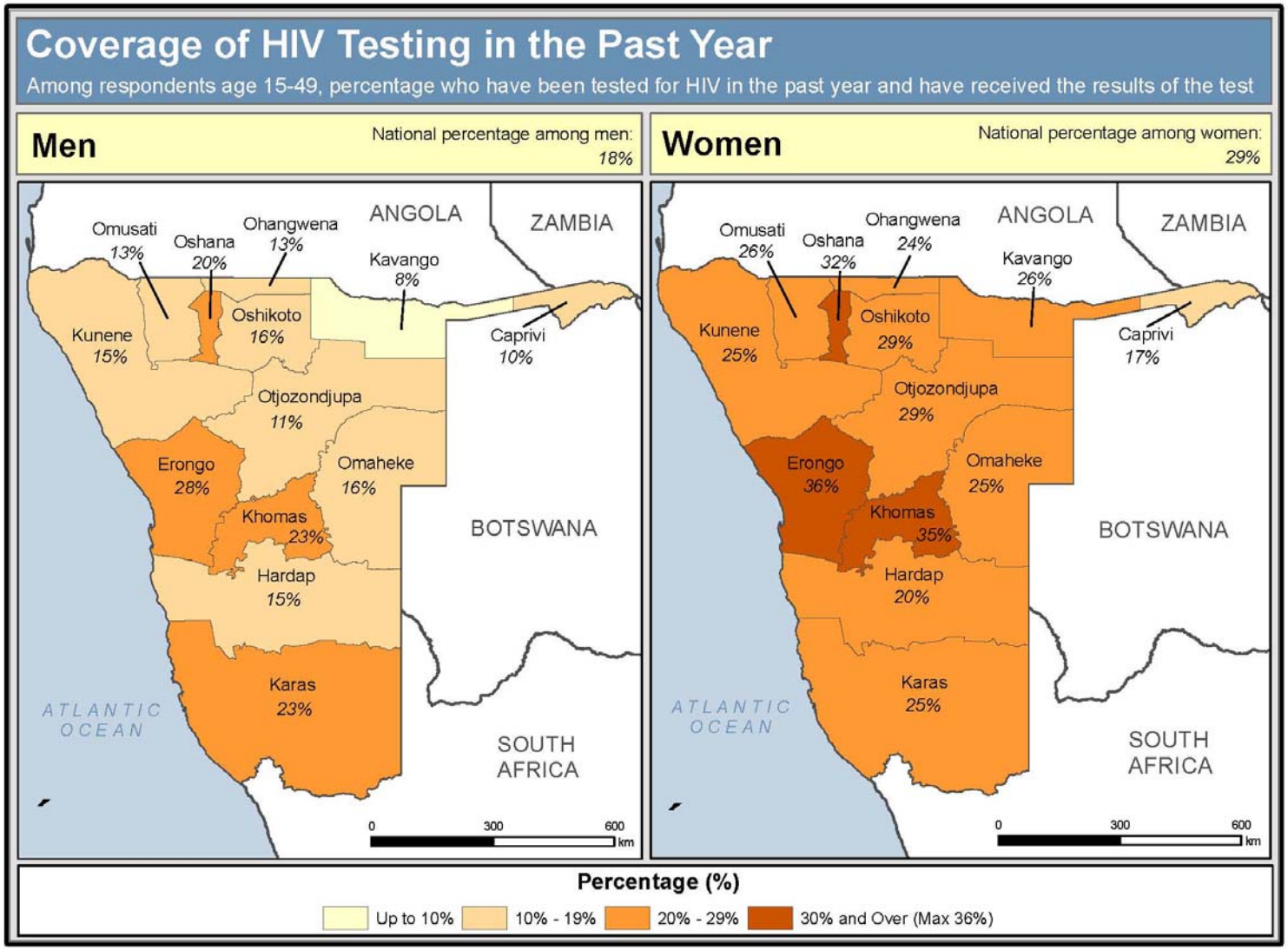
Number of lifetime partners among respondents ages 15–49 by age group, NDHS 2006

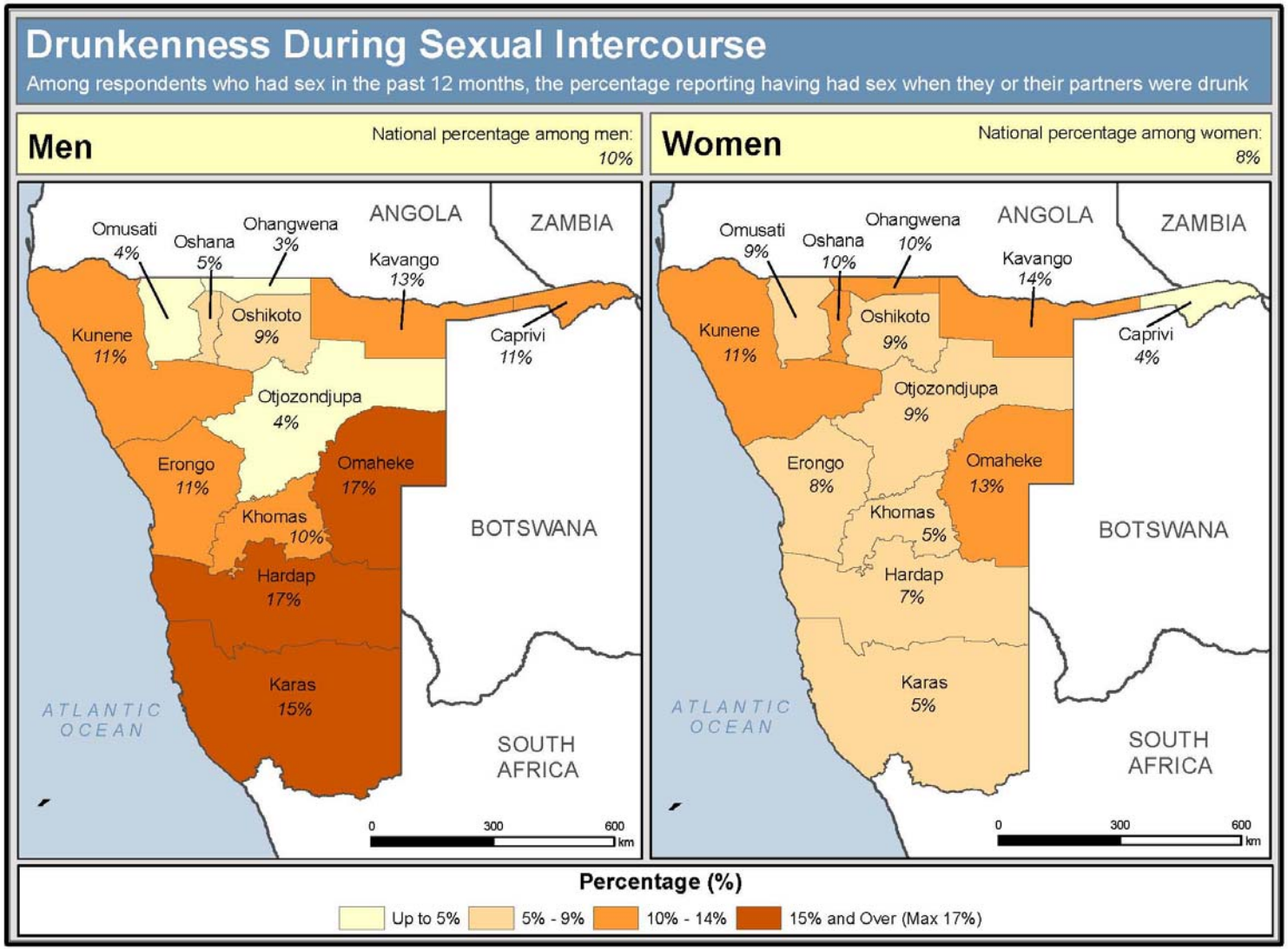
Age	Number of partners							Number of respondents	Proportion with 2 or fewer partners over lifetime
	0	1	2	3–4	5–9	10+	Don't know		
Women									
15–19	57.2	27.3	9.8	4.3	1.3	0.1	0.0	2,228	94.2
20–24	11.3	37.3	27.5	17.3	5.9	0.4	0.3	1,835	76.2
25–29	4.1	31.7	30.3	25.4	5.8	1.8	1.0	1,598	66.0
30–39	1.3	29.2	28.2	31.6	7.6	1.2	0.9	2,393	58.7
40–49	0.8	32.3	23.8	29.2	9.7	2.3	2.1	1,590	56.8
Total	**16.5**	**31.2**	**23.4**	**21.1**	**5.9**	**1.1**	**0.8**	**9,664**	**71.1**
Men									
15–19	48.3	21.3	9.9	10.9	7.3	2.1	0.2	908	79.5
20–24	8.2	17.4	13.6	23.9	21.9	13.0	2.0	749	39.2
25–29	2.3	10.1	13.7	28.2	27.3	14.3	4.1	695	26.1
30–39	0.9	9.8	12.6	23.0	24.9	23.1	5.7	971	23.3
40–49	1.4	11.8	10.6	21.3	23.4	22.7	8.8	562	23.8
Total	**13.7**	**14.3**	**12.06**	**21.0**	**20.4**	**14.6**	**3.87**	**3,885**	**40.1**

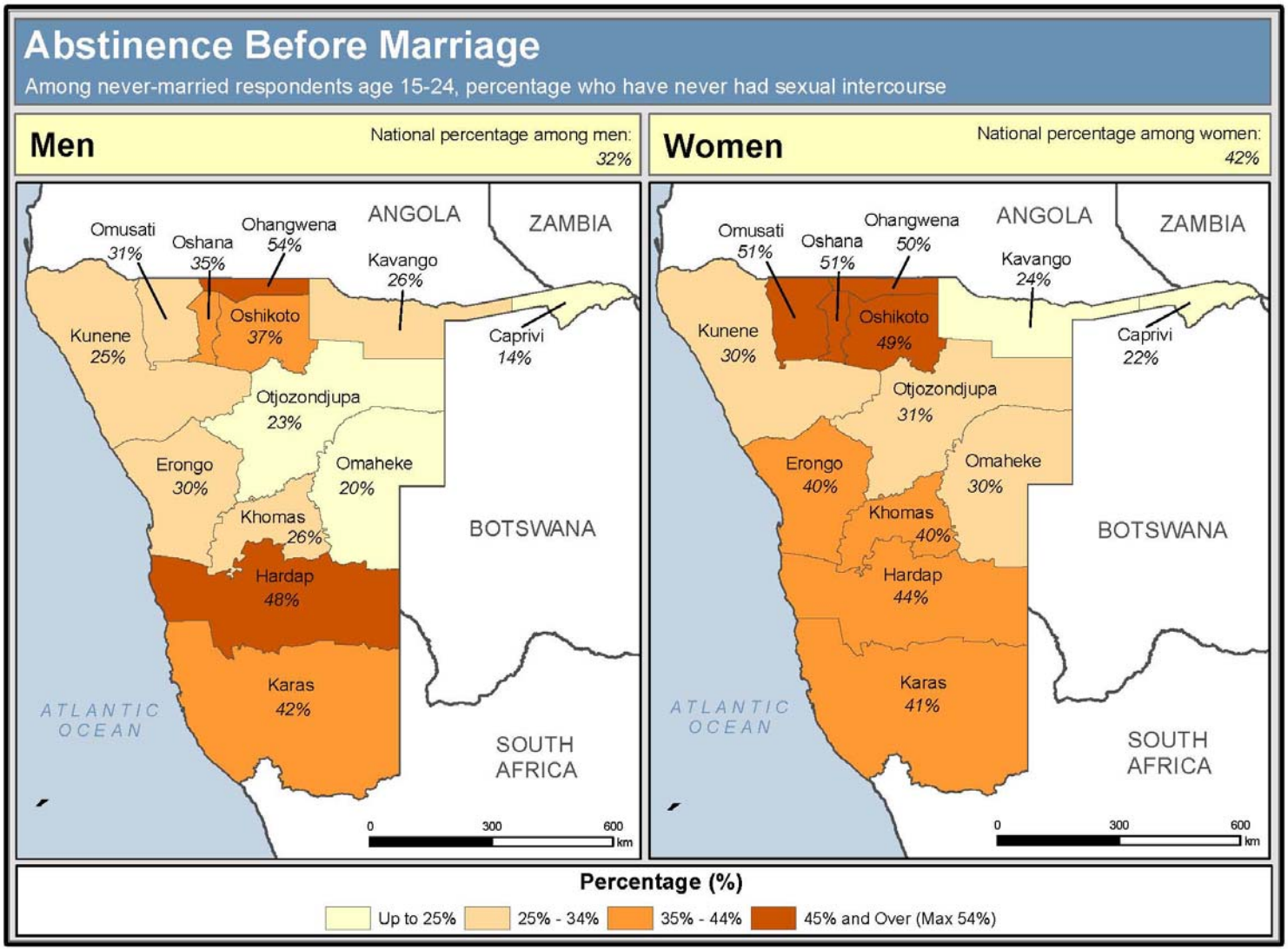
APPENDIX B: MAPS

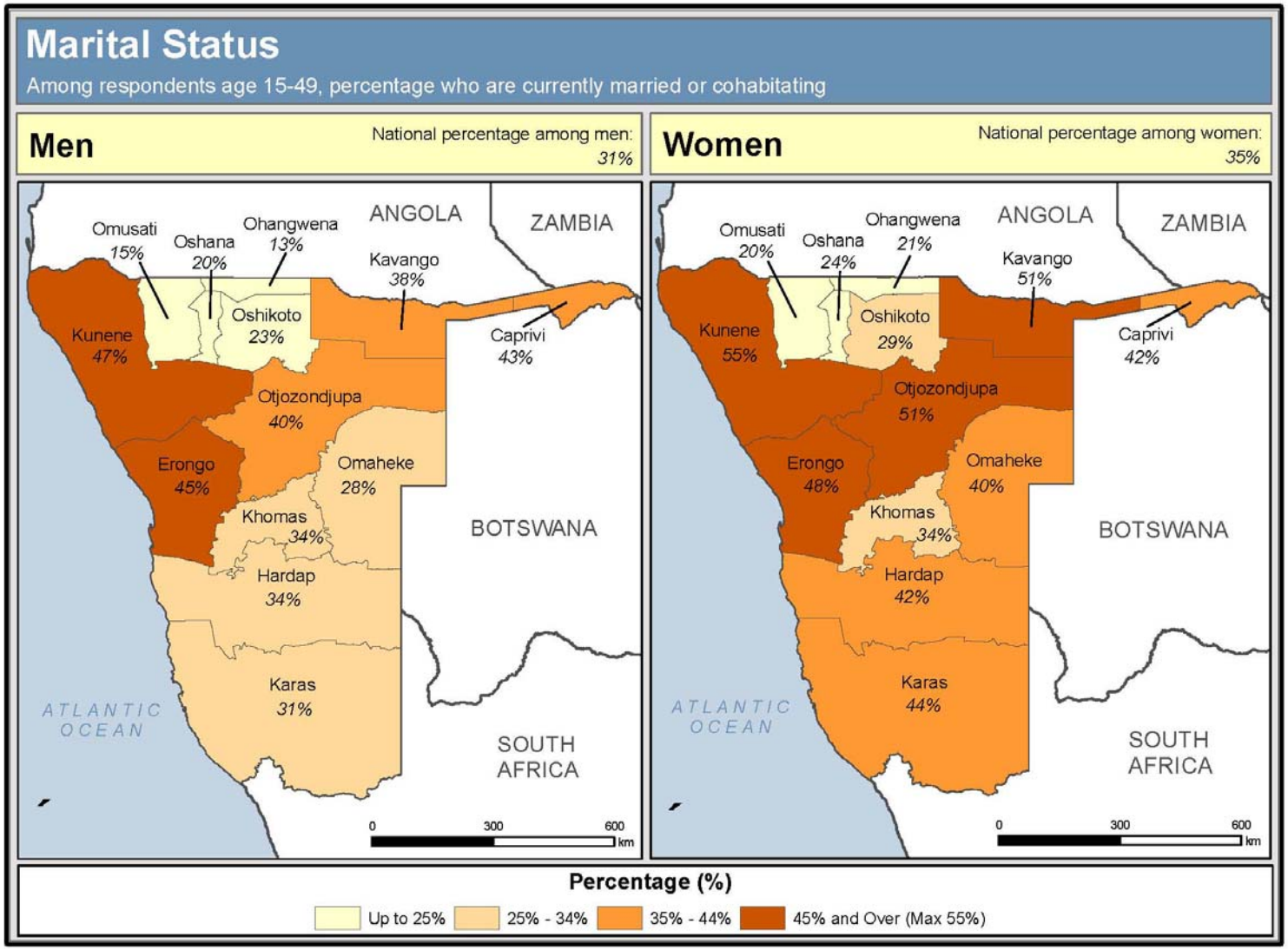

Multiple Sexual Partners
Among respondents age 15-49 who had sexual intercourse in the past 12 months, percentage who had intercourse with more than one partner in the past 12 months
Men
National percentage among men: 16%
Women
National percentage among women: 3%
ANGOLA
ZAMBIA
BOTSWANA
SOUTH AFRICA
ATLANTIC OCEAN
Omusati 16%
Oshana 12%
Ohangwena 14%
Kavango 13%
Kunene 16%
Oshikoto 21%
Caprivi 18%
Otjozondjupa 8%
Erongo 23%
Omaheke 24%
Khomas 16%
Hardap 10%
Karas 16%
Omusati 3%
Oshana 1%
Ohangwena <1%
Kavango 1%
Kunene 5%
Oshikoto 1%
Caprivi <1%
Otjozondjupa 4%
Erongo 1%
Omaheke 5%
Khomas 4%
Hardap 2%
Karas 3%
0 300 600 km
Percentage (%)
Up to 10%
10% - 14%
15% - 19%
20% and Over (Max 24%)

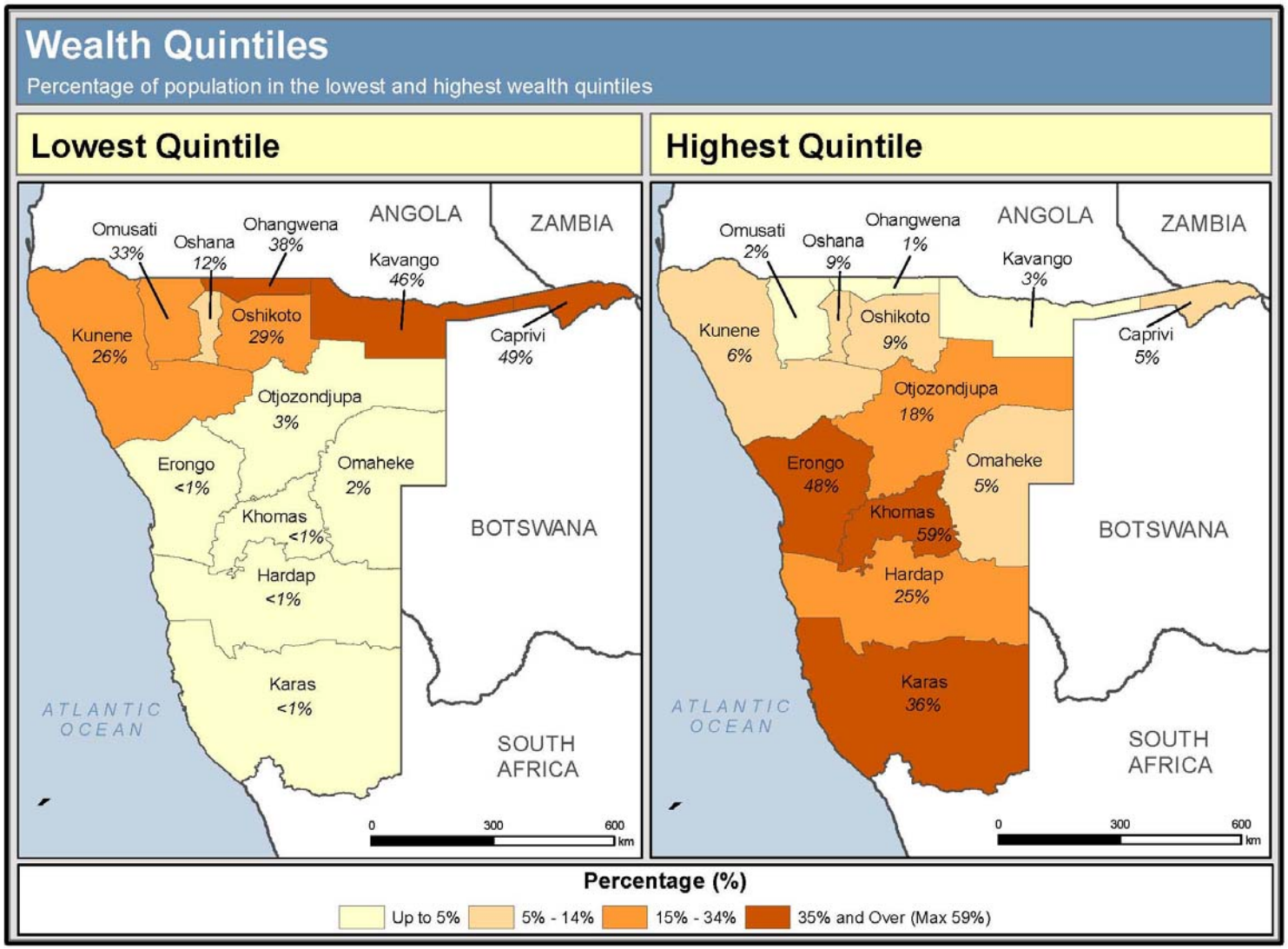

Self-Reported Prevalence of Sexually-Transmitted Infections (STIs)
Among respondents age 15-49 who have ever had sexual intercourse, percentage reporting having an STI, genital discharge, or a sore or ulcer in the past 12 months
Men
National percentage among men: 4%
Women
National percentage among women: 7%
ANGOLA
ZAMBIA
BOTSWANA
SOUTH AFRICA
ATLANTIC OCEAN
Omusati 4%
Oshana 2%
Ohangwena 3%
Kavango 2%
Oshikoto 5%
Kunene 6%
Caprivi 7%
Otjozondjupa 4%
Erongo 4%
Omaheke 4%
Khomas 3%
Hardap 4%
Karas 3%
Omusati 4%
Oshana 4%
Ohangwena 6%
Kavango 6%
Oshikoto 5%
Kunene 13%
Caprivi 2%
Otjozondjupa 11%
Erongo 8%
Omaheke 12%
Khomas 10%
Hardap 9%
Karas 6%
0 300 600 km
Percentage (%)
Up to 4%
4% - 5%
6% - 7%
8% and Over (Max 13%)

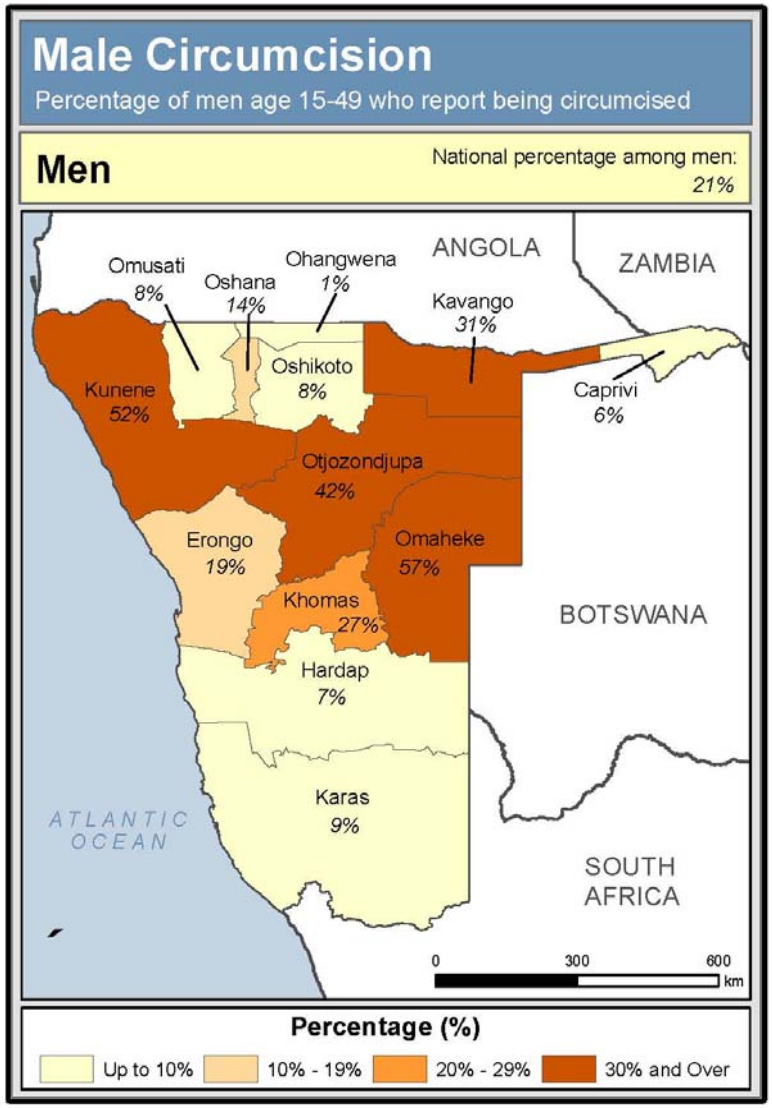

Coverage of HIV Testing in the Past Year
Among respondents age 15-49, percentage who have been tested for HIV in the past year and have received the results of the test
Men
National percentage among men: 18%
Women
National percentage among women: 29%
ANGOLA
ZAMBIA
BOTSWANA
SOUTH AFRICA
ATLANTIC OCEAN
Omusati 13%
Oshana 20%
Ohangwena 13%
Kavango 8%
Kunene 15%
Oshikoto 16%
Caprivi 10%
Otjozondjupa 11%
Erongo 28%
Omaheke 16%
Khomas 23%
Hardap 15%
Karas 23%
Omusati 26%
Oshana 32%
Ohangwena 24%
Kavango 26%
Kunene 25%
Oshikoto 29%
Caprivi 17%
Otjozondjupa 29%
Erongo 36%
Omaheke 25%
Khomas 35%
Hardap 20%
Karas 25%
0 300 600 km
Percentage (%)
Up to 10%
10% - 19%
20% - 29%
30% and Over (Max 36%)

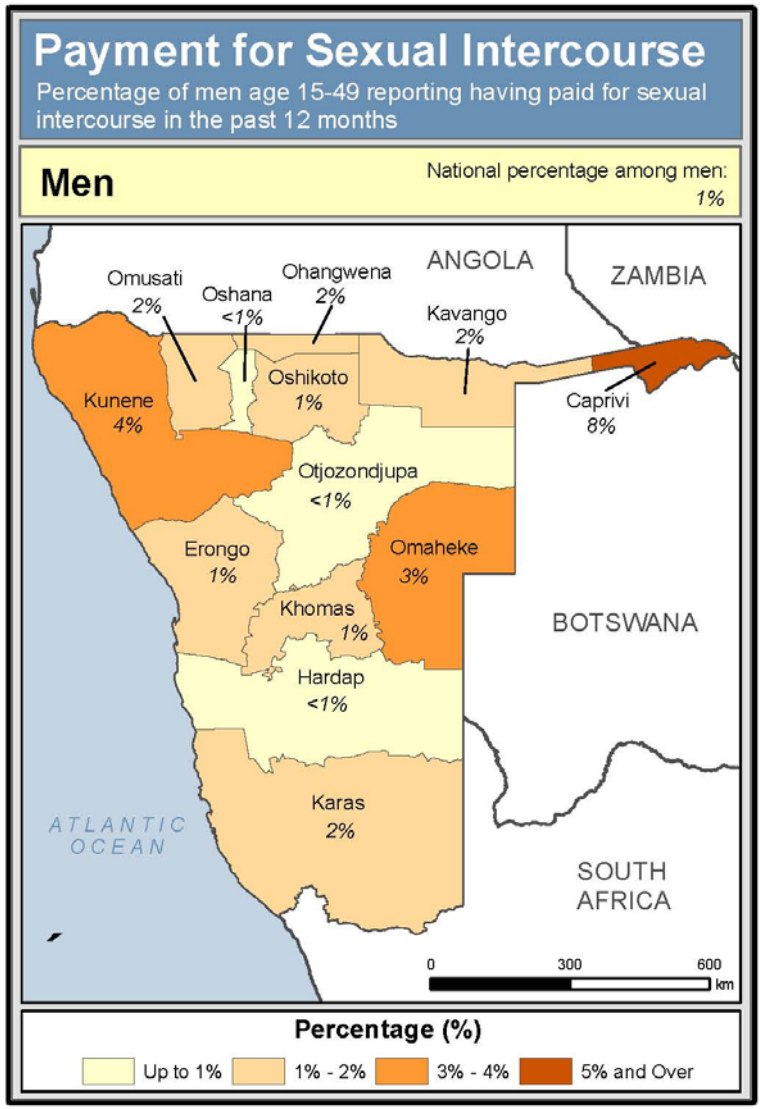

Drunkenness During Sexual Intercourse
Among respondents who had sex in the past 12 months, the percentage reporting having had sex when they or their partners were drunk
Men
National percentage among men: 10%
Women
National percentage among women: 8%
ANGOLA
ZAMBIA
BOTSWANA
SOUTH AFRICA
ATLANTIC OCEAN
Omusati 4%
Oshana 5%
Ohangwena 3%
Kavango 13%
Caprivi 11%
Kunene 11%
Oshikoto 9%
Otjozondjupa 4%
Omaheke 17%
Erongo 11%
Khomas 10%
Hardap 17%
Karas 15%
Omusati 9%
Oshana 10%
Ohangwena 10%
Kavango 14%
Caprivi 4%
Kunene 11%
Oshikoto 9%
Otjozondjupa 9%
Omaheke 13%
Erongo 8%
Khomas 5%
Hardap 7%
Karas 5%
0 300 600 km
Percentage (%)
Up to 5%
5% - 9%
10% - 14%
15% and Over (Max 17%)


Abstinence Before Marriage
Among never-married respondents age 15-24, percentage who have never had sexual intercourse
Men
National percentage among men: 32%
Women
National percentage among women: 42%
ANGOLA
ZAMBIA
BOTSWANA
SOUTH AFRICA
ATLANTIC OCEAN
Omusati 31%
Oshana 35%
Ohangwena 54%
Kavango 26%
Caprivi 14%
Kunene 25%
Oshikoto 37%
Otjozondjupa 23%
Erongo 30%
Omaheke 20%
Khomas 26%
Hardap 48%
Karas 42%
Omusati 51%
Oshana 51%
Ohangwena 50%
Kavango 24%
Caprivi 22%
Kunene 30%
Oshikoto 49%
Otjozondjupa 31%
Erongo 40%
Omaheke 30%
Khomas 40%
Hardap 44%
Karas 41%
0 300 600 km
Percentage (%)
Up to 25%
25% - 34%
35% - 44%
45% and Over (Max 54%)


Marital Status
Among respondents age 15-49, percentage who are currently married or cohabitating
Men
National percentage among men: 31%
Women
National percentage among women: 35%
ANGOLA
ZAMBIA
BOTSWANA
SOUTH AFRICA
ATLANTIC OCEAN
Omusati 15%
Oshana 20%
Ohangwena 13%
Kavango 38%
Oshikoto 23%
Kunene 47%
Caprivi 43%
Otjozondjupa 40%
Erongo 45%
Omaheke 28%
Khomas 34%
Hardap 34%
Karas 31%
Omusati 20%
Oshana 24%
Ohangwena 21%
Kavango 51%
Oshikoto 29%
Kunene 55%
Caprivi 42%
Otjozondjupa 51%
Erongo 48%
Omaheke 40%
Khomas 34%
Hardap 42%
Karas 44%
0 300 600 km
Percentage (%)
Up to 25%
25% - 34%
35% - 44%
45% and Over (Max 55%)


Wealth Quintiles
Percentage of population in the lowest and highest wealth quintiles
Lowest Quintile
Highest Quintile
ANGOLA
ZAMBIA
BOTSWANA
SOUTH AFRICA
ATLANTIC OCEAN
Omusati 33%
Oshana 12%
Ohangwena 38%
Kavango 46%
Kunene 26%
Oshikoto 29%
Caprivi 49%
Otjozondjupa 3%
Erongo <1%
Omaheke 2%
Khomas <1%
Hardap <1%
Karas <1%
Omusati 2%
Oshana 9%
Ohangwena 1%
Kavango 3%
Kunene 6%
Oshikoto 9%
Caprivi 5%
Otjozondjupa 18%
Erongo 48%
Omaheke 5%
Khomas 59%
Hardap 25%
Karas 36%
0 300 600 km
Percentage (%)
Up to 5%
5% - 14%
15% - 34%
35% and Over (Max 59%)


Male Circumcision
Percentage of men age 15-49 who report being circumcised
Men
National percentage among men:
21%
ANGOLA
ZAMBIA
BOTSWANA
SOUTH AFRICA
ATLANTIC OCEAN
Omusati 8%
Oshana 14%
Ohangwena 1%
Kavango 31%
Oshikoto 8%
Kunene 52%
Caprivi 6%
Otjozondjupa 42%
Erongo 19%
Omaheke 57%
Khomas 27%
Hardap 7%
Karas 9%
0 300 600 km
Percentage (%)
Up to 10%
10% - 19%
20% - 29%
30% and Over


Payment for Sexual Intercourse
Percentage of men age 15-49 reporting having paid for sexual intercourse in the past 12 months
Men
National percentage among men:
1%
ANGOLA
ZAMBIA
BOTSWANA
SOUTH AFRICA
ATLANTIC OCEAN
Omusati 2%
Oshana <1%
Ohangwena 2%
Kavango 2%
Oshikoto 1%
Kunene 4%
Caprivi 8%
Otjozondjupa <1%
Erongo 1%
Omaheke 3%
Khomas 1%
Hardap <1%
Karas 2%
0 300 600 km
Percentage (%)
Up to 1%
1% - 2%
3% - 4%
5% and Over