

National human immunodeficiency virus and acquired immunodeficiency syndrome and Reproductive Health Survey 2012 (plus II): Human immunodeficiency virus Testing

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ABSTRACT

Background: The 2012 National Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency Syndrome (AIDS) and Reproductive Health Survey (NARHS Plus II) was a nationally representative survey carried out to provide information on key HIV and AIDS and reproductive health knowledge and behavior-related issues. The survey included a second wave of the biological marker component (HIV testing) and was called NARHS Plus II. The major objective of NARHS Plus is to obtain accurate HIV prevalence estimates and information on behavioral and other risk factors-related to HIV infection at the national, zonal and to some extent the state levels. **Survey Method:** Data collection took place between September and December 2012 from a total of 32,543 households (rural = 22,192 and urban = 10,351). The 31,235 individual respondents interviewed in NARHS Plus II; consisting of 15,596 males and 15,639 females showed a response rate of 88%. The mean age of female respondents was 29.2 (standard deviation [SD] = 9.5) years, lower than that of male, which was 34.0 (SD = 4.0) years. The data were analyzed for relevant variables disaggregated by zones and other selected background variables. **HIV Sero-prevalence:** The National HIV prevalence rate obtained in this survey is 3.4%, lower than 3.6% reported in 2007. HIV prevalence was higher among the wealthier (3.7%) than the poorer (2.9%) among females (3.5%) than males (3.3%) and slightly higher in the rural areas (3.6%) compared with the urban (3.2%). It was highest in the South South zone (5.5%) and lowest in the South East (1.8%). The HIV prevalence was generally higher among respondents with primary and secondary education (4.0%) and lowest among respondents that had Qur'anic education only (2.4%). HIV prevalence was also highest among the 35-39 years age group (4.4%) and lowest among the 15-19 years age group (2.9%), whereas the widowed had the highest prevalence (6.2%). Prevalence of HIV of 3.7% reported among respondents who had sexual intercourse in the last 12 months was higher than the overall prevalence of 3.4%. HIV prevalence was found to be associated with transactional sex with respondents who had exchanged sex for a gift/favor having higher prevalence.

Key words: Human immunodeficiency virus and acquired immunodeficiency syndrome, human immunodeficiency virus testing, Nigeria, seroprevalence, sexual behavior

INTRODUCTION

Human immunodeficiency virus (HIV) prevalence data provide important information to plan national response, to evaluate program impact, and

to measure progress in the national multi-sectoral strategic framework for the control of HIV and acquired immunodeficiency syndrome (AIDS). The understanding of the distribution of HIV infection within the population and analysis of the social, biological and behavioral factors associated with it offer new insights about the HIV epidemic in Nigeria, which should lead to more precisely targeted messages and prioritized interventions.

In Nigeria, estimates of HIV prevalence have been based on sentinel survey of women attending

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antenatal clinics (ANC). This system, which excludes men, nonpregnant women and even pregnant women who do not attend ANC, does not provide a true representative data for the general population.^[1-7] National HIV and AIDS and Reproductive Health Survey (NARHS Plus) is the first national HIV testing survey of the general population, which was aimed at providing HIV estimates at national, zonal

and state levels. It also provides a measure of HIV prevalence for women and men.

1. HUMAN IMMUNODEFICIENCY VIRUS (HIV) TESTING ACCEPTANCE

Table 1 shows that the national HIV testing acceptance among respondents in this survey was 76%. This was

Table 1: Percentage distribution of HIV testing acceptance among all respondents by selected characteristics; FMOH, Nigeria, 2012

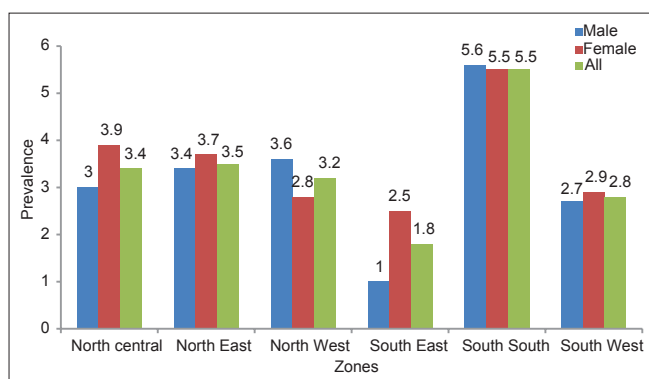
Characteristics	Male			Female			All		
	Acceptance	Refusal	Respondents	Acceptance	Refusal	Respondents	Acceptance	Refusal	Respondents
Location									
Urban	71.0	29.0	4874	74.4	25.6	4913	72.7	27.3	9787
Rural	77.0	23.0	10,722	76.9	23.1	10,726	76.9	23.1	21,448
Zone									
North Central	75.6	24.4	3055	77.5	22.5	2953	76.5	23.5	6008
North East	77.5	22.5	2526	77.7	22.3	2349	77.6	22.4	4875
North West	64.1	35.9	3116	64.7	35.3	3036	64.4	35.6	6152
South East	78.1	21.9	2024	79.5	20.5	2258	78.8	21.2	4282
South South	84.6	15.4	2407	83.4	16.6	2532	84.0	16.0	4939
South West	75.6	24.4	2468	78.2	21.8	2511	76.9	23.1	4979
Education									
No formal education	73.8	26.2	2810	70.6	29.4	4846	71.8	28.2	7656
Qur'anic only	64.3	35.7	1358	67.8	32.2	900	65.7	34.3	2258
Primary	77.7	22.3	2644	81.5	18.5	2620	79.6	20.4	5264
Secondary	77.5	22.5	6403	79.4	20.6	5769	78.4	21.6	12,172
Higher	72.1	27.9	2349	75.2	24.8	1486	73.3	26.7	3835
Marital status									
Currently married/ LW sexual	74.2	25.8	9229	75.4	24.6	10,714	74.8	25.2	19,943
Never married	75.7	24.3	5774	77.8	22.2	3850	76.5	23.5	9624
Separated/divorced	81.2	18.8	222	81.3	18.7	377	81.3	18.7	599
Widowed	78.7	21.3	147	76.6	23.4	499	77.1	22.9	646
Wealth quintile									
Poorest	74.9	25.1	3256	74.5	25.5	3717	74.7	25.3	6973
Poorer	75.5	24.5	3376	75.3	24.7	3270	75.4	24.6	6646
Average	76.9	23.1	3320	79.0	21.0	3051	77.9	22.1	6371
Wealthier	78.2	21.8	3038	78.2	21.8	2860	78.2	21.8	5898
Wealthiest	68.7	31.3	2573	73.7	26.3	2714	71.3	28.7	5287
Age group (years)									
15-19	74.8	25.2	2473	74.9	25.1	2770	74.9	25.1	5243
20-24	74.8	25.2	2035	76.8	23.2	2813	76.0	24.0	4848
25-29	76.2	23.8	2098	77.8	22.2	2902	77.1	22.9	5000
30-34	72.9	27.1	1987	72.7	27.3	2349	72.8	27.2	4336
35-39	75.5	24.5	1696	76.4	23.6	1761	76.0	24.0	3457
45-49	74.1	25.9	1143	76.3	23.7	1483	75.3	24.7	2626
50-64	75.4	24.6	2631	NA	NA	NA	75.4	24.6	2631
Total	74.9	25.1	15,596	76.0	24.0	15,639	75.5	24.5	31,235

FMOH: Federal Ministry of Health, NA: Not applicable, HIV: Human immunodeficiency virus

Table 2: HIV prevalence according to selected characteristics; FMOH, Nigeria, 2012

Characteristics	Positive	95% CI	Total
Location			
Urban	3.2	2.8-3.6	7411
Rural	3.6	3.3-3.9	16,704
Zone			
North Central	3.4	3.0-4.0	4617
North East	3.5	3.0-4.2	3874
North West	3.2	2.7-3.8	4004
South East	1.8	1.4-2.3	3315
South South	5.5	4.9-6.3	4224
South West	2.8	2.3-3.4	4081
Education			
No formal education	2.5	2.1-2.9	5625
Qur'anic only	2.4	1.7-3.3	1524
Primary	3.9	3.3-4.5	4244
Secondary	3.9	3.5-4.3	9793
Higher	3.5	2.9-4.2	2899
Marital status			
Currently married/LW	3.5	3.3-3.8	15,307
Never married	3.1	2.7-3.5	7521
Separated/divorced	4.1	2.7-6.2	493
Widowed	6.2	4.4-8.6	500
No response	2.6	0.9-7.1	124
Wealth quintile			
Poorest	2.9	2.5-3.4	5322
Poorer	3.2	2.7-3.7	5088
Average	3.6	3.2-4.2	5038
Wealthier	3.7	3.2-4.3	4733
Wealthiest	3.5	3.0-4.2	3899
Age group (years)			
15-19	2.9	2.4-3.5	3992
20-24	3.2	2.7-3.8	3759
25-29	3.4	2.9-4.0	3927
30-34	4.0	3.4-4.7	3267
35-39	4.4	3.7-5.2	2681
40-44	2.9	2.3-3.6	2423
45-49	3.7	3.0-4.6	2031
50-64	3.3	2.6-4.2	2035
Total	3.4	3.2-3.6	24,115

FMOH: Federal Ministry of Health, CI: Confidence interval, HIV: Human immunodeficiency virus

**Figure 1: Human immunodeficiency virus prevalence by sex and zones: Federal Ministry of Health, Nigeria, 2012**

higher in the rural areas (77%) than in the urban areas (73%). Overall, acceptance was highest in the South South zone (84%), among respondents with primary education (80%), in the 15-24 years age group (77%) and the separated/divorced (81%).

2. OVERALL HIV PREVALENCE

Table 2 shows the overall HIV prevalence and prevalence by selected characteristics. The national HIV prevalence obtained in this survey was 3% showing a slight decline when compared with NARHS 2007 (3.6%). It was higher among the wealthier (4%) than the poorest (3.0%); slightly higher in the rural area (4%) compared with the urban area (3%). It was highest in the South South zone (6%) and lowest in the South East (2%). Prevalence was generally higher among respondents with primary and secondary education (4% each) and lowest among respondents that had Qur'anic education only (2%). HIV prevalence was highest among the 35-39 years age group (4%) and lowest among the 15-19 years age group (3%) with the widowed having the highest prevalence (6%). The pattern of distribution of HIV prevalence by sex showed that irrespective of sex disaggregation, the HIV prevalence pattern is the same across all selected background characteristics [Table 3]. Figure 1 shows the distribution of HIV Prevalence by sex and zones, while Figure 2 shows HIV Prevalence by age group and sex.

3. HIV PREVALENCE BY STATE AND SEX OF RESPONDENTS

Overall, the prevalence was 3% with a range of 0.4% (Zamfara State) to 15% (Rivers States). Females

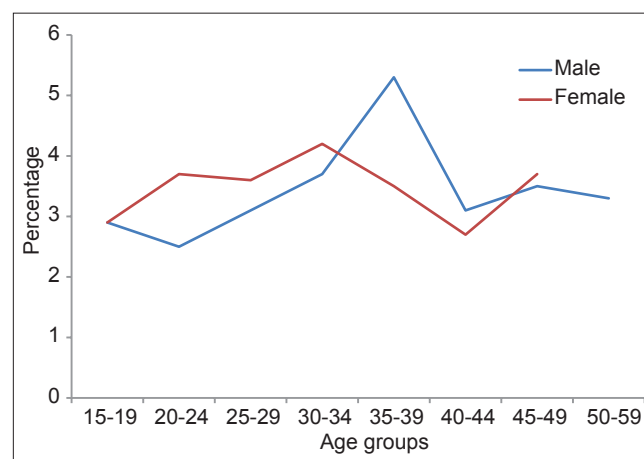
**Figure 2: Human immunodeficiency virus prevalence by age group and sex; Federal Ministry of Health, Nigeria, 2012**

Table 3: HIV prevalence of all respondents according to selected background characteristics: FMOH, Nigeria, 2012

Characteristics	Positive	Male	Positive	Female	Positive	Total
Location						
Urban	2.9	3644	3.4	3767	3.2	7411
Rural	3.6	8392	3.6	8312	3.6	16,704
Zone						
North Central	3.0	2329	3.9	2288	3.4	4617
North East	3.4	2000	3.7	1874	3.5	3874
North West	3.6	2081	2.8	1923	3.2	4004
South East	1.0	1552	2.5	1763	1.8	3315
South South	5.6	2064	5.5	2160	5.5	4224
South West	2.7	2010	2.9	2071	2.8	4081
Education						
No formal education	2.9	2129	2.2	3496	2.5	5625
Qur'anic only	2.6	919	2.0	605	2.4	1524
Primary	3.2	2089	4.5	2155	3.9	4244
Secondary	3.6	5117	4.2	4676	3.9	9793
Higher	3.5	1761	3.5	1138	3.5	2899
Marital status						
Currently married	3.7	7081	3.4	8226	3.5	15,307
Never married	2.9	4493	3.4	3028	3.1	7521
Separated/divorced	1.7	182	5.5	311	4.1	493
Widowed	5.7	119	6.3	381	6.2	500
No response	2.5	83	2.7	41	2.6	124
Wealth quintile						
Poorest	3.0	2511	2.8	2811	2.9	5322
Poorer	3.1	2603	3.3	2485	3.2	5088
Average	3.5	2604	3.8	2434	3.6	5038
Wealthier	3.4	2453	4.1	2280	3.7	4733
Wealthiest	3.6	1844	3.5	2055	3.5	3899
Age group (years)						
15-19	2.9	1903	2.9	2089	2.9	3992
20-24	2.5	1570	3.7	2189	3.2	3759
25-29	3.1	1633	3.6	2294	3.4	3927
30-34	3.7	1517	4.2	1750	4.0	3267
35-39	5.3	1310	3.5	1371	4.4	2681
40-44	3.1	1186	2.7	1237	2.9	2423
45-49	3.5	882	3.9	1149	3.7	2031
50-64	3.3	2035	NA	NA	3.3	2035
Total	3.3	12,036	3.5	12,079	3.4	24,115

NA: Not applicable, FMOH: Federal Ministry of Health, HIV: Human immunodeficiency virus

had higher prevalence. Twelve states had prevalence above that of Gombe, which has the same prevalence as the national value [Table 4].

Table 4: Prevalence of HIV by state and sex of respondents; FMOH, Nigeria, 2012

State	Positive	Male	Positive	Female	Positive	All tested
Abia	2.3	230	4.2	281	3.3	511
Adamawa	2.2	439	1.7	412	1.9	851
Akwaibom	6.3	465	6.8	444	6.5	909
Anambra	0.6	313	1.8	383	1.2	696
Bauchi	0.6	307	0.6	300	0.6	607
Bayelsa	0.7	303	4.3	390	2.7	693
Benue	5.8	381	5.4	373	5.6	754
Borno	2.5	289	2.1	218	2.4	507
Crossriver	4.8	390	3.7	368	4.4	758
Delta	0.5	342	0.7	412	0.7	754
Ebonyi	0.6	277	1.1	319	0.9	596
Edo	0.6	336	0.9	344	0.8	680
Ekiti	0.4	421	0.0	392	0.2	813
Enugu	1.0	325	1.6	381	1.3	706
Gombe	2.6	353	4.3	340	3.4	693
Imo	1.2	407	3.8	399	2.5	806
Jigawa	2.8	293	1.6	321	2.1	614
Kaduna	10.1	387	8.1	306	9.2	693
Kano	1.6	247	1.1	289	1.3	536
Katsina	0.5	151	0.4	186	0.7	337
Kebbi	0.7	388	0.9	329	0.8	717
Kogi	0.9	377	1.9	367	1.4	744
Kwara	0.9	368	2.1	317	1.4	685
Lagos	1.5	252	2.7	297	2.2	549
Nasarawa	5.6	380	10.7	350	8.1	730
Niger	2.0	255	0.4	253	1.2	508
Ogun	0.5	374	0.7	405	0.6	779
Ondo	5.1	181	4.0	232	4.3	413
Osun	2.4	410	2.8	391	2.6	801
Oyo	5.6	372	5.6	354	5.6	726
Plateau	0.8	306	3.2	404	2.3	710
Rivers	15.0	228	15.4	202	15.2	430
Sokoto	5.0	215	8.7	136	6.4	351
Taraba	11.4	417	9.6	434	10.5	851
Yobe	4.3	195	7.1	170	5.3	365
Zamfara	0.0	400	0.8	356	0.4	756
FCT	6.2	262	9.0	224	7.5	486
Total	3.3	12,036	3.5	12,079	3.4	24,115

FMOH: Federal Ministry of Health, HIV: Human immunodeficiency virus

4. HIV PREVALENCE AND USE OF DRINKS CONTAINING ALCOHOL

Drinking alcohol has been associated with high risk sexual behavior. Table 5 shows the HIV prevalence among respondents who used alcohol. It shows a prevalence of 5% among respondents who took drinks containing alcohol every-day, 4% among those who took alcohol at least once a week, 4% among those who took alcohol less than once a week

Table 5: Percentage distribution of HIV prevalence by use of drinks containing alcohol according to selected background characteristics; FMOH, Nigeria, 2012

Characteristics	Every-day		At least once		Frequency of testing less than a week		Never		Not sure		Total	
	%	n	%	n	%	n	%	n	%	n	%	n
Sex												
Male	4.1	764	3.9	2040	3.7	841	3.1	8265	1.8	111	3.3	12,036
Female	7.1	237	6	759	4.4	516	3.2	10,463	2.4	91	3.5	12,079
Location												
Urban	4.7	242	5.4	765	1.4	369	2.9	5972	1.9	56	3.2	7411
Rural	4.8	759	6	2034	5.1	988	3.3	12,756	3	146	3.6	16,704
Zone												
North Central	3.3	167	5.3	409	5.5	150	3.1	3848	3.6	40	3.4	4617
North East	11	220	7.9	267	4.7	61	2.8	3296	5	24	3.5	3874
North West	-	52	7.3	138	-	33	3.1	3747	4.3	28	3.2	4004
South East	2.9	153	0.8	687	2.5	353	1.9	2067	2.2	49	1.8	3315
South South	4.4	282	5.5	907	6.2	541	5.6	2456	2.9	34	5.5	4224
South West	4.4	127	4.3	391	1.4	219	2.7	3314	0	27	2.8	4081
Education												
No formal education	11.1	228	3.7	377	4.6	145	2.3	4820	4.3	46	2.5	5625
Qur'anic only	-	11	4.1	44	-	11	2.4	1450	0	7	2.4	1524
Primary	6.3	275	3.9	637	3.4	337	3.6	2952	2.8	39	3.9	4244
Secondary	10	386	5.7	1281	3.7	652	3.6	7395	1.5	73	3.9	9793
Higher	-	99	2	458	5.3	211	3.7	2091	0	37	3.5	2899
Marital status												
Currently married/LW	5	673	4.9	1758	4.1	824	3.2	11,916	1.8	126	3.5	15,307
Never married	4	258	3.1	888	3.4	432	3	5869	1.6	69	3.1	7521
Separated/divorced	-	37	4.7	63	5.3	43	4.3	346	33.3	3	4.1	493
Widowed	25	20	3.2	63	9.1	47	5.3	368	0	2	6.2	500
No response	0	5	22.2	9	-	5	1.1	102	0	2	2.6	124
Wealth quintile												
Poorest	6.9	294	6.5	356	4.2	143	2.4	4477	3.9	49	2.9	5322
Poorer	3.5	225	4.9	515	4.3	238	2.9	4063	6.4	38	3.2	5088
Average	4.5	197	3.6	702	5	339	3.5	3764	0	33	3.6	5038
Wealthier	4.8	179	4.5	664	4.4	335	3.5	3511	0	43	3.7	4733
Wealthiest	4.5	106	3.5	559	2	301	3.8	2893	0	39	3.5	3899
Age group (years)												
15-19	7.7	71	5.1	241	2.4	130	0.6	3519	3.8	29	2.9	3992
20-24	5	110	4.1	376	1.6	185	3.2	3051	0	31	3.2	3759
25-29	4.7	143	4.8	465	5	221	3	3051	0	39	3.4	3927
30-34	4.5	157	4.7	401	5.8	197	3.7	2484	0	25	4	3267
35-39	5.6	116	4.4	349	6.3	155	4.1	2046	0	15	4.4	2681
40-44	1.7	127	4.9	299	3.9	177	2.5	1798	11.1	19	2.9	2423
45-49	6.1	111	5.1	255	2.5	127	3.5	1515	0	21	3.7	2031
50-64	5.2	166	3.1	413	3.8	165	2.8	1264	3.8	23	NA	2035
Total	4.9	1001	4.4	2799	4	1357	3.2	18,728	2.1	202	3.4	24,115

FMOH: Federal Ministry of Health, HIV: Human immunodeficiency virus

and 3% among those who never took alcohol. For those who took drinks containing alcohol every-day, HIV prevalence was higher among females (7%) than their male counterparts (4%). It was highest

in the North East zone (11%), among those with no formal education (11%), in the 15-19 year age group (8%), widowed (25%) and among the poorest respondents (7%).

Table 6: HIV prevalence and tobacco smoking according to selected background characteristics; FMOH, Nigeria, 2012

Characteristics	Percentage	Smoked tobacco	Percentage	Did not smoke tobacco
Sex				
Male	3.70	1010	3.3	11,010
Female	1.9	56	3.5	12,008
Location				
Urban	3.5	278	3.1	7126
Rural	3.6	788	3.6	15,892
Zone				
North Central	3.7	213	3.4	4400
North East	4.4	125	3.5	3743
North West	3.5	145	3.2	3852
South East	2.7	191	1.8	3117
South South	5.1	242	5.6	3978
South West	2.2	150	2.8	3928
Education				
No formal education	1.9	178	2.5	5436
Qur'anic only	0.0	51	2.4	1473
Primary	4.5	248	3.8	3992
Secondary	3.7	440	3.9	9345
Higher	4.8	149	3.4	2747
Marital status				
Currently	4.5	717	3.4	14,579
Never married	1.4	292	3.1	7222
Separated/divorced	3.6	30	4.1	462
Widowed	11.1	11	5.9	489
No response	0.0	7	2.7	116
Wealth quintile				
Poorest	3.0	225	2.9	5093
Poorer	1.7	237	3.3	4841
Average	5.6	254	3.6	4781
Wealthier	4.0	207	3.7	4525
Wealthiest	3.4	142	3.6	3755
Age group (years)				
15-19	1.7	59	2.9	3932
20-24	1.0	109	3.3	3641
25-29	3.7	169	3.4	3751
30-34	4.0	179	3.9	3085
35-39	5.6	163	4.3	2517
40-44	3.4	123	2.9	2296
45-49	3.1	100	3.7	1929
50-64	5.0	164	3.1	1867
Total	3.6	1066	3.4	23,018

FMOH: Federal Ministry of Health, HIV: Human immunodeficiency virus

5. HIV PREVALENCE AND TOBACCO SMOKING

Table 6 shows the HIV prevalence among respondents who smoked tobacco. It shows a prevalence of 4% among respondents who smoked tobacco and

3% among nonsmokers. The prevalence among males who smoked tobacco (4%) was higher than among males who were not smoking tobacco (3%). The prevalence pattern was in the inverse among female respondents with HIV prevalence of 2% recorded among those who smoked and 4% among nonsmokers. Among those who smoked tobacco, HIV prevalence was higher in the South South zone (5%) and lowest in the South West zone (2%). There was no difference in HIV prevalence by location; prevalence in respondents who smoked was 4% in urban and rural areas, respectively. It was highest in the South South zone (5%), among those with higher education (5%), those in 35-99 year age group (6%) and among respondents who were widowed (11%).

6. HIV PREVALENCE BY USE OF CONDOMS IN NON MARITAL SEX

Table 7 shows HIV prevalence among all respondents who reported male condom use in the last sex act with a nonmarital partner. The prevalence was 4% for those who used condom in their last nonmarital sex act, compared to 5% among those who did not use condom. Among respondents who did not use condom in their last nonmarital sex act, prevalence was higher in rural areas (5%), in the South South zone (7%), among the widowed (12%) and in the 45-49 year age group (9%).

7. HIV PREVALENCE AND SEXUAL ACTIVITY

Table 8 shows HIV prevalence by sexual activity of all respondents. HIV prevalence was higher among respondents who had ever had sex (4%) than those who had never had sex (2%). Prevalence was 4% among male respondents who had ever had sex and 2% among male respondents who had never had sex while it was 4% among the ever had sex females and 3% among female respondents who had never had sex. Prevalence was also higher in the South South zone among respondents who had ever had sex (6%) and those who had never had sex (4%) than in other zones. While those who had ever had sex had higher prevalence than those who had never had sex according to educational status this was not so for those who had Qur'anic education (ever had sex was 2% and never had sex was 3%) or higher education (ever had sex was 3% and never had sex was 4%). Age group 30-34 year had the highest HIV prevalence among respondents who had never had sex (8%) and 35-39 year age group had the highest

Table 7: HIV prevalence among all respondents who reported male condom use in the last sex act with a nonmarital partner according to selected characteristics; FMOH, Nigeria, 2012

Characteristics	Male				Female				All			
	Used condom		Did not use condom		Used condom		Did not use condom		Used condom		Did not use condom	
	%	n	%	n	%	n	%	n	%	n	%	n
Location												
Urban	2.9	563	3.7	258	2.4	193	4.9	210	2.8	756	4.2	468
Rural	3.7	753	3.8	629	5.0	284	7.4	516	4.1	1037	5.4	1145
Zone												
North Central	3.2	301	2.6	208	3.7	74	4.4	161	3.3	375	3.4	369
North East	3.9	111	5.7	76	5.3	30	5.9	50	4.2	141	5.8	126
North West	11.0	65	8.2	59	0.0	15	3.2	31	8.9	80	6.5	90
South East	0.9	221	0.9	125	4.9	130	8.3	120	2.4	351	4.5	245
South South	3.9	348	4.8	291	5.8	142	9.4	257	4.5	490	7.0	548
South West	2.0	270	1.9	128	0.9	86	3.6	107	1.7	356	2.7	235
Education												
No formal education	5.7	39	0.0	94	6.7	16	3.7	108	6.0	55	2.0	202
Qur'anic only	0.0	8	8.7	22	0.0	2	0.0	12	0.0	10	5.6	34
Primary	5.3	131	2.3	143	2.3	44	9.0	102	4.5	175	5.1	245
Secondary	2.7	756	5.1	484	4.7	265	7.3	415	3.2	1021	6.1	899
Higher	3.5	382	2.1	143	2.2	149	4.9	89	3.1	531	3.2	232
Marital status												
Currently married	5.6	294	2.4	330	3.4	50	8.7	241	5.3	344	5.1	571
Never married	2.2	972	5.0	508	4.0	390	4.8	416	2.7	1362	4.9	924
Separated/divorced	9.4	32	0.0	24	0.0	24	5.7	39	5.4	56	3.5	63
Widowed	33.3	36	0.0	14	0.0	9	19.2	25	13.3	15	12.3	39
Wealth quintile												
Poorest	3.2	76	2.6	140	6.3	19	3.4	117	3.8	95	3.0	257
Poorer	2.5	183	4.9	165	1.8	62	5.9	142	2.3	245	5.4	307
Average	4.2	308	4.9	226	3.5	124	8.2	179	4.0	432	6.4	405
Wealthier	2.0	402	2.9	222	5.0	138	7.6	162	2.8	540	4.9	384
Wealthiest	4.4	346	3.3	133	3.4	132	5.6	125	4.1	478	4.4	258
Age group (years)												
15-19	2.3	138	7.7	112	6.7	86	5.6	165	4.0	224	6.4	277
20-24	3.0	345	3.2	202	3.0	178	3.7	206	3.0	523	3.5	408
25-29	2.6	355	4.2	175	3.9	137	9.2	146	3.0	492	6.5	321
30-34	2.5	207	5.2	128	2.1	44	4.2	84	2.4	251	4.8	212
35-39	5.1	119	1.6	70	5.0	15	9.3	57	5.1	134	5.1	127
40-44	3.5	59	2.0	54	0.0	10	2.9	39	3.0	69	2.4	93
45-49	5.6	53	1.9	57	12.5	72	1.4	29	6.4	60	8.5	86
50-64	11.4	40	1.2	89	NA	NA	NA	NA	11.4	40	1.2	89
Total	3.4	1316	3.8	887	3.8	477	6.6	726	3.5	1793	5.1	1613

FMOH: Federal Ministry of Health, NA: Not applicable, HIV: Human immunodeficiency virus

prevalence among respondents who had ever had sex (4%).

8. HIV VIRUS PREVALENCE AND SEXUAL ACTIVITY IN THE PRECEDING 12 MONTHS

Table 9 shows HIV prevalence among all respondents who had sexual intercourse in the last 12 months preceding the survey, disaggregated by sex. Prevalence was 4% among respondents who

had sexual intercourse in the last 12 months and 3% among respondents who did not have sexual intercourse in the last 12 months. Among respondents who had sexual intercourse in the last 12 months prevalence was 4% among males and 2% among females and among respondents who had no sexual intercourse prevalence was 4% among males and 4% among females. Prevalence was also higher in the South South zone among respondents who had sexual intercourse in the last 12 months (6%)

Table 8: HIV prevalence by sexual activity of all respondents according to selected characteristics; FMOH, Nigeria, 2012

Characteristics	Male				Female				All			
	Ever had sex		Never had sex		Ever had sex		Never had sex		Ever had sex		Never had sex	
Location												
Urban	3.0	2870	2.5	774	3.6	3114	2.6	653	3.3	5984	2.5	14
Rural	3.9	6775	2.3	161	3.8	7134	2.5	1178	3.8	1390	2.4	27
Zone												
North Central	3.4	1897	1.3	432	4.2	1926	2.3	362	3.8	3823	1.8	79
North East	3.8	1592	1.8	408	3.7	1631	3.9	243	3.7	3223	2.6	65
North West	3.5	1621	4.2	460	2.9	1735	1.7	188	3.2	3356	3.5	64
South East	1.3	1196	0.3	356	3.1	1342	0.8	421	2.3	2538	0.6	77
South South	6.1	1717	3.3	347	5.6	1892	4.3	268	5.8	3609	3.7	61
South West	2.7	1622	2.4	388	2.8	1722	3.0	349	2.8	3344	2.7	73
Education												
No formal education	3.2	1873	0.9	256	2.2	3298	1.8	198	2.6	5171	1.3	45
Qur'anic only	2.6	777	3.0	142	2.0	562	2.5	43	2.3	1339	2.9	18
Primary	3.3	1831	2.8	258	4.7	1968	2.1	187	4.0	3799	2.5	44
Secondary	4.2	3577	2.3	154	4.7	3421	2.5	1255	4.4	6998	2.4	27
Higher	3.3	1572	4.5	189	3.6	990	3.3	148	3.4	2562	4.0	33
Marital status												
Currently married	3.2	7022	1.6	59	3.3	8162	3.2	64	3.3	1518	2.4	12
Never married	2.5	2211	2.5	228	4.6	1293	2.5	1735	3.3	3504	2.5	40
Separated/divorced	0.0	173	0.0	9	5.6	308	0.0	3	3.6	481	0.0	12
Widowed	0.0	118	0.0	1	6.3	379	0.0	2	4.8	497	0.0	3
Wealth quintile												
Poorest	3.4	2041	1.2	470	2.8	2479	3.3	332	3.1	4520	2.1	80
Poorer	3.1	2081	3.1	522	3.6	2180	1.8	305	3.4	4261	2.6	82
Average	4.0	2080	1.4	524	4.2	2047	2.4	387	4.1	4127	1.8	91
Wealthier	3.6	1945	2.6	508	4.3	1865	3.1	415	3.9	3810	2.8	92
Wealthiest	3.6	1481	3.3	363	3.9	1664	2.4	391	3.8	3145	2.8	75
Age group (years)												
15-19	3.7	431	2.7	147	3.9	819	2.2	1270	3.8	1250	2.5	27
20-24	3.0	984	1.4	586	3.8	1816	3.0	373	3.5	2800	2.0	95
25-29	3.2	1418	2.2	215	3.8	2170	1.6	124	3.6	3588	2.0	33
30-34	3.7	1460	5.2	57	4.0	1724	13.0	26	3.9	3184	7.6	83
35-39	5.2	1287	9.1	23	3.5	1353	0.0	18	4.3	2640	5.1	41
40-44	3.1	1173	0.0	13	2.7	1224	6.3	13	2.9	2397	3.2	26
45-49	3.5	877	0.0	5	3.9	1142	0.0	7	3.7	2019	0.0	12
50-64	3.3	2015	0.0	20	0.0	0	0.0	0	3.3	2015	0.0	20
Total	3.6	9645	2.4	239	3.7	10,248	2.5	1831	3.7	1989	2.4	42

FMOH: Federal Ministry of Health, HIV: Human immunodeficiency virus

and those that did not have sexual intercourse in the last 12 months (5.0%) than in other zones.

9. HIV PREVALENCE AND KNOWLEDGE OF THE TWO PREVENTION METHODS OF HIV AND ACQUIRED IMMUNODEFICIENCY SYNDROME (UNAIDS INDICATORS)

Overall, respondents who knew the two UNAIDS prevention indicators had higher prevalence (4%) compared with those who mentioned none or just one, ironically though. The prevalence among those with knowledge of the two indicators was higher in

rural areas, in females, highest in the South South zone and among widows (7% for the “know all” and 5% for “the know one” or “none”) [Table 10].

10. HIV PREVALENCE AND COMPREHENSIVE KNOWLEDGE OF 5 WAYS OF HIV TRANSMISSION

Ironically, HIV prevalence was higher among the respondents with comprehensive knowledge of the five modes of transmission than those who knew less. This was also observed with most of the characteristics. The expected correlation between knowledge and HIV

Table 9: HIV prevalence among all respondents Who had sexual intercourse in the last 12 months preceding survey, disaggregated by sex according to selected characteristics; FMOH, Nigeria, 2012

Characteristics	Male				Female				All			
	Had sex in the last 12 months		Didn't have sex in the last 12 months		Had sex in the last 12 months		Didn't have sex in the last 12 months		Had sex in the last 12 months		Didn't have sex in the last 12 months	
	%	n	%	n	%	n	%	n	%	n	%	n
Location												
Urban	3.1	2412	2.5	399	3.4	2523	4.4	540	3.3	4935	3.6	939
Rural	4.1	5711	2.5	957	3.7	5702	3.9	1301	3.9	11413	3.3	2258
Zone												
North Central	3.6	1560	2.4	305	3.9	1476	4.8	415	3.7	3036	3.8	720
North East	3.9	1425	1.8	145	3.3	1376	5.4	225	3.6	2801	4.0	370
North West	3.8	1361	1.7	190	3.1	1479	2.4	200	3.4	2840	2.1	390
South East	1.3	927	1.3	248	3.2	971	2.2	354	2.3	1898	1.8	602
South South	6.1	1551	7.0	161	5.8	1620	4.0	251	5.9	3171	5.2	412
South West	2.9	1299	2.2	307	2.3	1303	5.1	396	2.6	2602	3.8	703
Education												
No formal Edu.	3.7	1426	1.7	390	2.1	2483	2.8	728	2.7	3909	2.4	1118
Qur'anic only	2.6	668	1.3	89	1.5	486	6.6	60	2.1	1154	3.4	149
Primary	3.2	1549	3.2	260	4.5	1576	5.5	366	3.9	3125	4.5	626
Secondary	4.4	3127	3.1	407	4.7	2850	5.0	531	4.5	5977	4.2	938
Higher	3.4	1343	2.5	208	3.7	824	2.5	155	3.5	2167	2.5	363
Marital Status												
Currently married	3.8	6144	2.7	752	3.4	6997	2.8	1036	3.6	13141	2.8	1788
Never married	3.5	1776	2.5	413	4.5	985	5.4	292	3.9	2761	3.7	705
Separated/divorced	3.6	90	0.0	83	5.1	124	6.0	180	4.5	214	4.1	263
Widowed	9.8	34	3.8	83	9.1	64	5.8	312	9.3	98	5.4	395
Wealth Quintile												
Poorest	3.4	1680	3.2	294	2.6	1953	3.3	456	3.0	3633	3.3	750
Poorer	3.2	1740	2.5	313	3.3	1691	4.9	443	3.2	3431	3.9	756
Average	4.4	1747	2.0	308	4.1	1654	4.3	366	4.3	3401	3.2	674
Wealthier	3.7	1670	3.8	259	4.1	1522	5.3	326	3.9	3192	4.6	585
Wealthiest	4.0	1277	1.0	179	4.1	1398	2.2	247	4.1	2675	1.7	426
Age group (years)												
15-19	4.4	340	0.0	83	3.8	676	4.3	131	4.0	1016	2.6	214
20-24	3.1	833	2.3	141	3.4	1548	7.5	228	3.3	2381	5.5	369
25-29	3.5	1214	1.3	179	3.7	1860	3.8	274	3.6	3074	2.8	453
30-34	3.4	1294	5.6	151	4.1	1478	3.4	220	3.8	2772	4.3	371
35-39	4.9	1162	8.3	101	3.4	1104	3.8	222	4.2	2266	5.2	323
40-44	3.4	1038	0.0	117	2.8	885	2.4	314	3.1	1923	1.7	431
45-49	3.2	752	4.8	107	4.0	674	4.2	452	3.6	1426	4.3	559
50-64	4.0	1490	1.1	477	NA	NA	NA	NA	4.0	1490	1.1	477
Total	3.8	8123	2.4	1356	3.6	8225	4.1	1841	3.7	16348	3.4	3197

NA: Not applicable, HIV: Human immunodeficiency virus

prevalence was observed in only the three southern zones, among the 15-19 and 25-29 year age groups and the poorer; while those with secondary education and average wealth had the same prevalence for the two broad groups [Table 11].

11. HIV PREVALENCE AND EVER HAD SEX FOR GIFTS

Expectedly, those who engaged in sex in exchange for gifts had higher prevalence, both overall and when disaggregated. This indicates that transactional

sex carries higher risk of HIV infection. This risk was higher in rural areas for males and urban for females, in the Northern and South South zones and among the wealthiest for males and poorer for females [Table 12].

12. HIV PREVALENCE AND NUMBERS OF NON-MARITAL PARTNERS

Table 13 shows the prevalence of HIV by current numbers of nonmarital partners. Among the respondents who had no nonmarital partners, HIV

Table 10: HIV prevalence and knowledge of the two prevention methods according to selected characteristics; FMOH, Nigeria, 2012

Characteristics	Percentage	Know one or no methods	Percentage	Know two methods
Sex				
Male	3.1	4322	3.5	7714
Female	3.1	5684	3.9	6395
Location				
Urban	3.3	2399	3.1	5012
Rural	3.0	7607	4.0	9097
Zone				
North Central	2.9	1990	3.9	2627
North East	3.3	2090	3.9	1784
North West	2.3	2535	4.6	1469
South East	1.5	1015	2.0	2300
South South	6.3	1000	5.3	3224
South West	3.4	1376	2.4	2705
Education				
No formal education	2.4	3918	2.7	1707
Qur'anic only	1.7	1010	3.8	514
Primary	3.9	1730	3.8	2514
Secondary	3.9	2752	3.9	7041
Higher	3.4	583	3.5	2316
Marital status				
Currently	3.0	6842	3.9	8465
Never married	3.0	2554	3.1	4967
Separated/divorced	4.3	195	4.3	298
Widowed	4.9	251	7.0	249
Wealth quintile				
Poorest	2.4	3427	4.0	1895
Poorer	2.8	2584	3.7	2504
Average	3.8	1809	3.6	3229
Wealthier	4.4	1264	3.5	3469
Wealthiest	3.1	908	3.7	2991
Age group (years)				
15-19	2.7	1874	3.1	2118
20-24	3.2	1407	3.2	2352
25-29	3.6	1459	3.3	2468
30-34	3.2	1271	4.4	1996
35-39	3.4	1012	4.9	1669
40-44	2.7	1109	3	1314
45-49	2.7	979	4.6	1052
50-64	3.1	895	3.3	1140
Total	3.1	10,006	3.7	14,109

FMOH: Federal Ministry of Health, HIV: Human immunodeficiency virus

prevalence was 3% compared with 5% among those who had one nonmarital partner in the last 1 year. It was also highest among those who had two or more nonmarital partners in the last 12 months (5%) and among the wealthiest (6%).

Table 11: HIV prevalence and comprehensive knowledge of five ways of HIV transmission according to selected characteristics; FMOH, Nigeria, 2012

Characteristic	Know five ways of contracting HIV		Don't know five ways of contracting HIV	
Sex				
Male	3.7	5937	3.0	6099
Female	3.8	5845	3.2	6234
Location				
Urban	3.5	4099	2.7	3312
Rural	3.9	7683	3.3	9021
Zone				
North Central	3.5	2054	3.4	2563
North East	3.8	1791	3.3	2083
North West	4.1	1640	2.5	2364
South East	1.7	1828	2.1	1487
South South	6	2458	4.9	1766
South West	2.7	2011	2.8	2070
Education				
No formal education	2.7	1791	2.4	3834
Qur'anic only	2.9	593	2.0	931
Primary	3.9	2046	3.8	2198
Secondary	3.9	5388	3.9	4405
Higher	4.2	1951	2.0	948
Marital status				
Currently married/Co	3.8	7463	3.2	7844
Never married	3.4	3792	2.8	3729
Separated/divorced	5.5	214	3.0	279
Widowed	7.0	220	5.4	280
No response	2.3	39	2.7	75
Wealth quintile				
Poorest	3.3	1827	2.7	3495
Poorer	3.0	2161	3.4	2927
Average	3.7	2601	3.7	2437
Wealthiest	4.1	2674	3.2	2059
Wealthiest	4.1	2505	2.6	1394
Age group (years)				
15-19	2.8	1692	2.9	2300
20-24	3.7	1907	2.6	1852
25-29	2.7	2026	4.2	1901
30-34	5.0	1683	2.8	1584
35-39	4.6	1388	4.0	1293
40-44	3.2	1170	2.6	1253
45-49	4.3	955	3.2	1076
50-64	4.2	961	2.4	1074
Total	3.7	11,782	3.1	12,333

FMOH: Federal Ministry of Health, HIV: Human immunodeficiency virus

13. HIV PREVALENCE AND NUMBER OF SEXUAL PARTNERS

Table 14 shows HIV prevalence among all respondents who had one or more than one

Table 12: Prevalence of HIV and ever had sex for money or gift according to selected characteristics; FMOH, Nigeria, 2012

Characteristics	Male had sex for money		Male never had sex for money		Female had sex for money		Female never had sex for money	
Location								
Urban	4.3	206	2.9	2611	5.3	156	3.6	2911
Rural	5.2	489	3.7	6173	4.7	457	3.6	6526
Zone								
North Central	5.9	164	3.2	1697	3.9	104	4.2	1794
North East	5.1	109	3.7	1462	5.7	77	3.4	1493
North West	6.7	64	3.2	1505	6.7	24	3.0	1665
South East	0	110	1.3	1053	3.0	116	3.0	1206
South South	7.7	168	6.0	1538	7.1	247	5.4	1622
South West	2.9	80	2.7	1529	0.0	45	2.9	1657
Education								
No formal education	4.5	7.5	3.1	1756	4.2	89	2.1	3106
Qur'anic only	0.0	15	2.5	747	0.0	11	2.1	540
Primary	4.8	149	3.0	1650	5.6	139	4.6	1796
Secondary	3.8	335	4.3	3189	4.8	294	4.8	3087
Higher	8.3	119	3.0	1432	5.6	79	3.5	902
Marital status								
Currently married	4.4	445	3.6	6463	3.8	346	3.3	7676
Never married	5.1	224	3.1	1960	6.7	217	4.2	1059
Separated/divorced	0.0	12	2.0	159	4.0	31	5.8	271
Widowed	30.0	7	3.7	109	0.0	12	5.8	363
Wealth quintile								
Poorest	3.9	98	3.3	1894	3.6	108	2.7	2298
Poorer	1.7	138	3.1	1906	7.0	133	3.4	1995
Average	4.9	170	4.0	1882	2.2	148	4.2	1859
Wealthier	4.3	172	3.6	1750	5.9	124	4.2	1721
Wealthiest	8.5	116	3.2	1342	6.2	99	3.7	1555
Age group (years)								
15-19	5.3	41	3.6	381	9.7	76	3.3	725
20-24	4.0	81	3.0	890	3.7	154	3.8	1628
25-29	6.6	114	3.0	1285	5.1	153	3.6	1978
30-34	7.5	120	3.4	1323	5.1	89	4	1602
35-39	2.5	93	5.5	1174		61	3.7	1270
40-44	3.9	77	3.1	1066	2.3	49	2.6	1142
45-49	2.0	52	3.4	813	11.1	31	3.8	1092
50-64	5.8	117	3.0	1852	NA	NA	NA	NA
Total	5.1	695	3.5	8784	4.9	613	3.6	9437

NA: Not applicable, FMOH: Federal Ministry of Health, HIV: Human immunodeficiency virus

sexual partners. The prevalence of HIV among male and female respondents with one partner was 4% and 4%, respectively compared to those with two or more sexual partners, 4% and 6%, respectively.

14. PERCEIVED SELF RISK OF HIV INFECTION AND HIV PREVALENCE

Respondents who perceived themselves at high risk for HIV infection had overall prevalence of 5%

compared to those with low risk perception (4%). Among those who perceived themselves to be at high risk, higher proportion of urban dwellers was HIV positive compared with the rural dwellers. Furthermore, among those who perceived themselves to have low risk, those in the South South had a higher proportion of those infected with HIV compared with those in the South East zones and widows had a higher proportion compared to those currently married or never married [Table 15].

Table 13: HIV prevalence and number of nonmarital sexual partners according to selected characteristics; FMOH, Nigeria, 2012

Characteristics	None		One		Two or more	
	%	n	%	n	%	n
Sex						
Male	3.4	7237	4.0	1462	4.2	829
Female	3.4	8964	5.2	995	6.6	166
Location						
Urban	3.2	4641	3.2	871	4.1	380
Rural	3.5	11,560	5.3	1586	5.1	615
Zone						
North Central	3.8	3110	3.3	444	4.0	227
North East	3.5	2900	6.5	204	6.3	103
North West	2.9	3128	9.0	96	6.7	44
South East	1.9	1915	2.7	442	2.9	141
South South	5.7	2475	6.1	850	6.9	273
South West	2.7	2673	2.7	421	2.8	207
Education						
No formal education	2.5	4881	4.3	148	4.8	50
Qur'anic only	2.3	1289	5.0	23	0.0	10
Primary	3.8	3354	5.5	304	2.9	113
Secondary	4.4	4908	4.4	1442	5.6	577
Higher	3.1	1752	4.3	538	3.1	245
Marital status						
Currently	3.4	14,362	6.0	428	6.4	221
Never married	3.7	914	3.9	1855	3.7	714
Separated/divorced	3.4	341	3.5	96	9.5	43
Widowed	5.1	436	13.6	53	0.0	8
Wealth quintile						
Poorest	2.9	4120	4.7	230	4.6	108
Poorer	3.3	3632	4.3	419	3.0	152
Average	3.8	3226	4.8	621	6.1	238
Wealthier	3.8	2850	4.9	648	2.5	285
Wealthiest	3.4	2359	3.7	532	6.3	212
Age group (years)						
15-19	2.8	654	5.0	467	5.7	113
20-24	3.6	1769	3.9	733	2.7	277
25-29	3.1	2712	4.1	556	5.5	268
30-34	3.9	2707	3.2	279	6.3	157
35-39	4.1	2375	6.3	165	4.5	70
40-44	2.8	2212	2.8	106	5.0	43
45-49	3.5	1879	9.5	83	2.9	38
50-64	3.0	1893	10.4	68	3.8	29
Total	3.4	16,201	4.5	2457	4.6	995

FMOH: Federal Ministry of Health, HIV: Human immunodeficiency virus

DISCUSSION AND CONCLUSIONS

The slight drop in HIV testing acceptance between 2007 and 2012 NARH surveys was not to be totally unexpected, considering the nation-wide expansion

of HIV counseling and testing activities in the past 5 years.^[8,9] Nationally, HIV prevalence dropped slightly from 2007 while the hot spot states have shifted from the traditional North Central to South South zones. The factors at play need to be investigated, especially through local studies undertaken by the states affected.

The higher prevalence in the rural areas calls for greater attention, more so with its challenging accessibility and the fact that 60% of the population reside in rural areas. Furthermore, the finding of much higher prevalence among the wealthiest, compared with the poorest, raises cause for concern. It tends to contradict popular belief that HIV and AIDS is a condition more common among the poor. Control efforts therefore need to be targeted towards this group as they could be difficult to access. The prevalence in the states have identified new hot spots and cold spots, showing that the dynamics of the HIV epidemic are ever changing, depending mostly on the consistency and sustainability of the actions being taken. This study suggested a direct relationship between alcohol intake and HIV infection, with prevalence rising from no intake to peak with the daily consumers.

Condom use is expected to reduce the risk of HIV infection. This was the finding in this study, with a difference as high as 1.6% between users and nonusers. Surprisingly, the study found higher HIV prevalence among the never had sex respondents. While sex is a well-known risk factor for HIV, other nonsex related factors may have been responsible for this finding. In addition, recall bias and willful distortion of the truth about exposure to sex by the respondents may have also contributed. The finding of higher HIV prevalence among respondents with better knowledge of prevention and transmission modes indicates that it is not the knowledge that protects from infection; rather, it is the appropriate actions taken based on the correct knowledge acquired. Thus, suggesting that knowledge alone does not translate to reduction of risk of HIV infection.^[10]

In Nigeria, exchange of sex for gift or favor is more of the order and it used to be "material gifts from male to female" but this has included gift from "female to male." With the worsening of individual level economy, the practice is getting more popular. The study showed clearly that this practice carries higher

Table 14: HIV prevalence and number of sexual partners among all respondents according to selected characteristics; FMOH, Nigeria, 2012

Characteristics	Male						Female					
	None		One		Two or more		None		One		Two or more	
	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>
Location												
Urban	2.2	454	2.7	1701	4.4	648	4.5	605	3.3	2263	4.2	142
Rural	2.9	1068	4.0	4040	4.1	1527	4.0	1388	3.6	5342	6.7	248
Zone												
North Central	2.2	333	3.0	995	5.0	525	4.7	457	4.1	1301	4.5	120
North East	1.6	161	3.9	1031	4.1	386	5.6	239	3.4	1299	4.9	52
North West	1.4	247	3.6	980	5.1	337	2.1	234	2.9	1440	9.1	19
South East	1.7	262	1.2	701	1.1	191	2.7	367	2.6	881	6.7	46
South South	7.9	187	6.0	1133	5.0	385	5.8	275	5.4	1500	10.3	81
South West	2.0	332	2.7	901	3.4	351	4.7	421	2.4	1184	3.1	72
Education												
No formal education	1.5	438	3.4	980	4.9	399	2.6	785	1.9	2349	6.3	76
Qur'anic only	2.2	103	2.1	482	4.7	179	6.0	68	1.5	477	0.0	7
Primary	3.0	281	3.6	1145	2.0	381	5.2	386	4.7	1470	2.9	67
Secondary	3.7	472	4.2	2183	4.8	848	5.3	579	4.5	2589	4.9	171
Higher	2.3	226	3.2	944	4.3	366	4.4	174	3.4	715	4.9	68
Marital status												
Currently	3.0	869	3.5	4562	4.6	1443	3.0	1160	3.3	6592	6.2	215
Never married	2.3	452	3.9	1055	3.1	663	6.0	313	4	809	4.7	144
Separated/divorced	0.0	84	0.0	52	9.4	35	5.9	183	4.4	96	8.7	24
Widowed	3.8	85	12.1	26	0.0	6	5.8	314	10.2	57	0.0	5
Wealth quintile												
Poorest	2.7	354	3.6	1182	3.7	462	3.3	489	2.6	1853	1.8	69
Poorer	3.3	344	3.1	1229	2.6	465	4.5	483	3.2	1572	5.0	84
Average	2.5	330	3.8	1241	6.1	473	4.8	392	3.8	1526	6.8	81
Wealthier	3.7	287	4.0	1177	2.9	445	5.5	355	3.7	1373	9.9	90
Wealthiest	0.8	204	3.4	905	6.1	328	3.1	271	4.1	1274	2.9	66
Age group (years)												
15-19	0.0	96	4.1	234	5.7	94	5.5	143	3.6	614	2.9	39
20-24	2.1	155	3.1	542	2.7	271	6.7	256	3.4	1418	3.3	101
25-29	1.1	207	3.6	849	3.8	330	4.1	306	3.7	1704	4.3	104
30-34	5.1	164	2.8	966	5.9	295	3.5	241	3.8	1374	12.5	55
35-39	6.5	126	5.3	845	4.5	294	4.9	256	3.3	1021	4.7	43
40-44	0.8	134	2.9	735	4.3	275	2.3	327	3	833	0.0	31
45-49	5.8	120	3.5	516	1.9	219	4.1	464	3.5	641	27.8	17
50-64	1.6	520	3.5	1054	5.2	397	NA	NA	NA	NA	NA	NA
Total	2.5	1522	3.6	5741	4.2	2175	4.3	1993	3.5	7605	6	390

NA: Not applicable, FMOH: Federal Ministry of Health, HIV: Human immunodeficiency virus

risk. Nonmarital partnership is high risk behavior, but multiple of it is even of greater risk, as indicated by this study. Both can be associated with level of wealth, which is needed to provide the materials required to support the practice.

Widows were shown to be at higher risk of HIV infection based on the findings that they had the highest proportion for sex with more than one

partner, second lowest/lowest (male/female) for use of condom in the last sex act with boy or girlfriend and lowest/second lowest (male/female) for use of condom with nonmarital partners. Equally, they had the highest prevalence among respondents who perceived self as low risk for HIV infection. Therefore, programs targeting widows in the country should integrate HIV prevention and control strategies as a major component.

Table 15: HIV prevalence and perceived self-risk of HIV infection according to selected characteristics; FMOH, Nigeria, 2012

Characteristics	Percentage	High	Percentage	Low	Percentage	No risk at all	Percentage	Already have HIV and AIDS	Percentage	No response
Sex										
Male	3.9	198	3.5	5158	3.1	5147	11.8	52	3.5	537
Female	4.6	175	3.8	4744	3.1	4896	20.0	64	4.3	866
Location										
Urban	2.9	122	3.4	3157	2.7	3339	18.8	32	4.6	334
Rural	5.5	251	3.8	6745	3.3	6704	16.3	84	3.8	1069
Zone										
North Central	1.2	111	3.4	1863	3.1	1763	23.1	32	7.0	211
North East	11.6	65	3.4	1576	3.1	1476	16.7	28	4.8	248
North West	6.0	38	3.2	1132	3.5	1726	28.6	9	2.8	493
South East		41	2.2	1479	1.4	1532	6.7	17	2.2	137
South South	10.0	57	6.0	2177	4.6	1684	14.3	19	5.9	136
South West	1.1	61	2.8	1675	2.6	1862	6.3	11	4.4	178
Education										
No formal education	3.9	63	2.6	1757	2.3	1959	11.1	30	2.8	484
Qur'ani conly	0.0	10	2.0	533	2.0	635	33.3	5	4.4	165
Primary	8.8	64	4.1	1826	3.4	1788	20.0	17	5.1	232
Secondary	2.8	174	4.1	4419	3.4	4338	14.3	50	5.3	427
Higher	4.8	62	3.6	1360	3.3	1309	28.6	14	0.9	93
Marital status										
Currently married	4.2	203	3.6	6360	3.2	6114	13.8	81	4.3	1006
Never married	4.3	142	3.4	3072	2.8	3429	19.0	22	2.8	312
Separated/divorced	7.7	14	4.9	222	3.3	183	33.3	8	0.0	21
Widowed	0.0	7	7.4	163	3.3	240	66.7	3	11.4	33
No response	0.0	4	0.0	46	0.0	38	0.0	2	5.3	18
Wealth quintile										
Poorest	3.4	75	2.6	1717	2.9	2001	14.3	25	5.4	440
Poorer	4.5	79	3.2	2052	3.2	1933	14.3	22	3.1	365
Average	5.8	75	4.3	2263	2.8	2119	18.5	31	3.0	254
Wealthier	3.4	78	3.6	2100	3.7	2179	22.7	22	4.1	180
Wealthiest	5.3	66	4.1	1757	2.7	1799	14.3	16	4.2	164
Age group (years)										
15-19	9.3	45	3.0	1353	2.9	1926	11.8	1926	2.8	186
20-24	2.9	76	3.1	1567	3.2	1496	27.3	1496	3.0	255
25-29	4.3	73	3.8	1744	2.8	1527	14.3	1527	5.2	232
30-34	3.9	56	3.8	1431	3.3	1266	23.1	1266	6.3	203
35-39	2.3	45	5.0	1168	4.1	1081	18.2	1081	3.3	148
40-44	3.8	31	2.8	1025	3.0	972	11.1	972	1.9	151
45-49	4.2	25	4.3	789	2.7	881	15.4	881	5.3	134
50-64	7.1	22	3.5	825	2.6	894	10.0	894	4.2	94
Total	4.5	373	3.6	9902	3.1	10,043	17.1	116	4.0	1403

FMOH: Federal Ministry of Health, HIV: Human immunodeficiency virus

REFERENCES

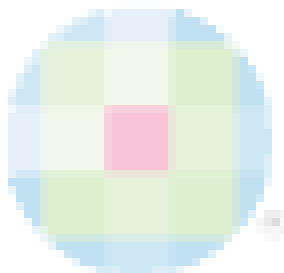
1. Federal Ministry of Health [Nigeria]. National HIV/AIDS and Reproductive Health Survey, 2003. Abuja: Federal Ministry of Health; 2003.
2. Federal Ministry of Health. National AIDS and STI Control Programme: National Health Sector Strategic Plan for HIV/AIDS in Nigeria 2005-2009. Abuja: Federal Ministry of Health; 2005.
3. Federal Ministry of Health. National HIV/AIDS and Reproductive Health Survey 2005. Abuja, Nigeria: Federal Ministry of Health; 2006.
4. Federal Ministry of Health. 2005 National HIV/Syphilis Sero-prevalence Sentinel Survey. Federal Ministry of Health National AIDS/STI Control Programme; 2006.
5. Federal Ministry of Health. HIV/STI Integrated Biological and Behavioural Surveillance Survey (IBBS) 2007. Abuja, Nigeria: Federal Ministry of Health; 2007.

6. Federal Ministry of Health. National Policy on the Health and Development of Adolescents and Young People in Nigeria. Abuja, Nigeria: Federal Ministry of Health; 2007.
7. Federal Ministry of Health. National HIV and AIDS and Reproductive Health Survey, 2007 (NARHS Plus). Abuja, Nigeria: Federal Ministry of Health; 2008.
8. Federal Ministry of Health and World Health Organisation. Plan to Scale-Up Antiretroviral Treatment for HIV or AIDS in Nigeria 2005-2009. Abuja: Federal Ministry of Health, World Health Organisation; 2005.
9. National Action Committee on AIDS (NACA). HIV/AIDS National Strategic Framework 2005-2009. Abuja: NACA; 2004.
10. Federal Ministry of Health [FMOH]. Nigeria Integrated Biological and Behavioural Surveillance Survey 2010; 2010.

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