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Sexual Behaviour and Serostatus Disclosure among Persons Living With HIV in Ibadan, Nigeria

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ABSTRACT

The study aimed at assessing the practice of HIV status disclosure, sexual behaviour and knowledge of disclosure and safe sex practices among HIV seropositive individuals attending the President's Emergency Plan for AIDS Relief (PEPFAR) Clinic at the University College Hospital, Ibadan. Systematic random sampling technique was used to select 392 HIV positive adults at the PEPFAR clinic. Data were collected using a validated interviewer-administered questionnaire containing a 12-point knowledge scale. The mean age of respondents was 35.6 ± 9.6 years. Majority (69.9%) were females and 59.4% were married. The overall mean safe sex knowledge score of the respondents was 8.3 ± 2.4. Majority (70.9%) were aware that disclosure of HIV status to a partner before having sex could reduce HIV transmission, while 92.7% knew that consistent and correct use of condom could prevent its spread. However, only 39% of respondents had disclosed their status to all their sexual partners. More married respondents (48.5%) disclosed their status than the unmarried (27.0%) ($p<0.05$). The proportions of female and male respondents who disclosed their status were 40.3% and 37.1% respectively. Hindrances to disclosure included fear of stigmatization (46.4%) and fear of abandonment (26.4%). Majority of respondents (75.5%) who had disclosed their status to all sexual partners practiced safe sex than those who had not disclosed (59.2%) ($p<0.05$). Positive attitude towards the disclosure of one's serostatus to sexual partners and safe sex was exhibited by 62.8% and 58.4% of the respondents respectively. Non-usage of condom was more among the unmarried (38.6%) than the married (23.2%) ($p<0.05$); it was also more among females (33.8%) than males (28.7%), ($p<0.05$). High rates of non-disclosure of HIV status and unsafe sexual practices were noted. HIV/AIDS educational programmes and media campaigns should be intensified to promote the adoption of serostatus disclosure and safe sexual practices among HIV positive persons.

Key words: Serostatus disclosure, HIV positive persons, Sexual behaviour

INTRODUCTION

HIV/AIDS is a global pandemic which has claimed the lives of more than 25 million people in it over 25 years of existence (UNAIDS, 2008). It was estimated that 33.4 million people worldwide were living with HIV in 2008 while 2 million died due to AIDS in the same year (WHO, 2010). In 2009, about 22.4 million people were estimated to be living with the infection in sub-Saharan Africa (UNAIDS, 2009). It is estimated that 90-95% of all HIV infections in Nigeria are transmitted through unprotected, heterosexual, encounter, leaving 5-10% to transmission through other sources (UNDP, 2004).

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Since the majority of HIV transmission in Nigeria is due to unprotected sex, most prevention messages have promoted self-protection with consistent condom use for sexual encounters. However, condoms may fail due to tear or leakage, thus posing a risk of transmission to the partner (Bennett, Draper and Frith, 2000; Walt, 2001). Promotion of serostatus disclosure in addition to reducing unsafe sex among HIV-positive persons may yield important public health benefits as the increasing availability of post–exposure prophylaxis makes it possible for HIV–negative partners who know they are at risk to obtain treatment in the case of condom failure during sex (Ciccarone et al., 2003).

Disclosure of HIV status to sexual partner is an important prevention goal emphasized by the Center for Disease Control and Prevention (CDC) in their protocol for HIV counselling and testing (MMWR, 2002). The CDC in 2000 initiated an innovative Serostatus Approach to Fighting the Epidemic (Project SAFE) (Janssen et al., 2001) and expanded these efforts in 2003 with the initiative "Advancing HIV Prevention: New Strategies for a Changing Epidemic" (Janssen et al., 2003). One of the approaches in this initiative is to decrease transmission risk behaviors of HIV-seropositive individuals. A major component of preventive efforts directed at HIV-infected individuals involves encouraging them to disclose their HIV serostatus to their sexual partners (Simoni and Pantalone, 2004). Disclosure increases the awareness of HIV risk to untested partners thus leading to greater uptake of voluntary HIV counselling and testing as well as positive changes in risk behaviours (Medley et al., 2004).

Advances in the treatment of HIV disease in recent years have prompted concern that individuals may regard HIV/AIDS as a less serious threat and consequently become less committed to safe sexual practices (Holmes and Pace, 2002; Demmer, 2003). As treatment access expands in resource-limited countries, the health, longevity and quality of life for people with HIV will improve and hence potentially increase opportunities for sexual transmission. Optimism about the treatment or misperceptions about the effects of antiretroviral drugs may also cause some people to increase their risk behaviour (UNAIDS 2006; Sullivan et al., 2007). However, a study in Uganda showed that with adequate prevention and Counselling programmes, integrated antiretroviral therapy (ART) could reduce risky sexual behaviours among positive individuals thereby reducing HIV transmission (Bunnell et al, 2006).

Studies conducted in America have shown that up to one third of individuals diagnosed with HIV infection continue to have unprotected sex, at times without informing their sexual partners, who may be of negative or unknown serostatus (Wolitski et al., 1998; Kalichman et al., 2000). Other studies have shown low levels of disclosure rates to sexual partners among HIV positive individuals (Stein et al., 2003; Sullivan, 2005; Akani and Erhabor, 2006). This could encourage unsafe sex practices and calls for serious focus on behavioural change (Global HIV Prevention Working Group, 2003). Despite national efforts to combat HIV/AIDS in recent years, the number of people contracting the infection in the country and the number of HIV/AIDS related deaths continues to increase every year (Nzeh and Okachie, 2010). Experts have said that the HIV scourge can only begin to witness drastic reduction when there is change in sexual behaviour reflected in positive life styles by all and sundry (Nzeh and Okachie, 2010). Transmission risk behaviours such as multiple sexual partners and unsafe sexual practices serve as important indicators of the level of positive or negative sexual behaviour prevalent among HIV positive individuals (Slaymaker, 2004).

There are relatively few studies on disclosure of HIV serostatus and sexual behaviours among HIV positive individuals in sub-Saharan Africa especially Nigeria. Previous studies in Nigeria did not document the relationship between disclosure and sexual risk-reduction behaviour. This study was designed to determine the rate of HIV status disclosure and its association with safe sex practices among HIV seropositive individuals. The documentation of the findings of this study contributes to information and recommendations on areas upon which to concentrate interventions, in the strategic plan on HIV/AIDS prevention and control program.

METHODOLOGY

Study Site

This descriptive cross-sectional study was conducted at the PEPFAR ART Clinic in the University College Hospital (UCH) situated in Ibadan metropolis in Oyo state, Nigeria. The University College Hospital (UCH) was commissioned in 1957. It is one of the leading tertiary heath institutions in Nigeria and was among the 25 tertiary institutions across the country in which the federal government of Nigeria introduced Antiretroviral Treatment (ART) for People Living with HIV/AIDS (PLWHAs) in 2001. By 2008, about 7000 PLWAs were receiving care and treatment at the clinic.

Study Population

HIV positive persons (from age 18 years and above who had known their HIV status for up to six months) that

were attending the UCH PEPFAR clinic at the time the study was conducted constituted the study population. Some of them were receiving antiretroviral drug therapy and monitoring while some were only on care because they had not reached the criteria required to commence ARV drugs.

Instrument for data collection

A semi-structured interviewer-administered questionnaire containing both closed and open-ended questions was used for collecting data. The questionnaire consisted of eight sections namely: socio-demographic characteristics of respondents, respondents' knowledge about disclosure and safe sex practices, respondents' sexual behaviour and practice of disclosure and safe sex, hindrances to disclosure, respondents' attitude towards disclosure and safe sex behaviour, respondents' perceived self-efficacy to disclose their status and practice safe sex and respondent's views on how to enhance their self-efficacy for disclosure. Respondents' attitude towards disclosure and safe sex were each measured using a likert scale containing 11 and 13 statements respectively with options of 'agree', 'disagree' or 'not sure'. Respondents' perceived self-efficacy to disclose their status and practice safe sex was measured using a likert scale containing 10 statements with options of 'very confident', 'little confident', 'not confident at all' or 'not sure'. The questionnaire was field tested and revised before being used for the data collection.

Sample Size Determination

Based on a similar study carried out in Cape Town, South Africa by Simbayi et al. (2007) and the estimated study population of 7000, the EPI INFO StatCalc epidemiologic calculator was used to estimate the sample size for the study to be 356. A 10% non-response factor of 36 was added to give a total sample size of (356+36) = 392

Data Collection Procedure

Based on the calculated sample size and the study population on record at time of study, the sample ratio was calculated as 392/7000 = 1 in 18. Systematic random sampling technique was used to select the respondents as they queued at two different points either for drugs or for routine tests/monitoring based on the calculated sampling ratio. Those who were under 18 years and who had not known theirstatus for up to six months were excluded from the study. The selection of respondents lasted from January through February 2009. Three (one male and two females) support group leaders who are staff of the centre were trained on how to administer the questionnaire and collect reliable information.

Data management and analysis

A 12-point knowledge scale was developed to assess respondents' knowledge about disclosure and safe sex. Each correct answer on the knowledge scale was awarded one mark while an incorrect answer was awarded zero. Two attitudinal scales each containing 11 and 13 attitudinal statements respectively were used to determine respondents' attitude towards disclosure and safe sex. Their responses were differentiated or graded into positive and negative attitudes depending on whether the expressed feeling connote likeness or aversion for disclosure and safe sex. Three points were awarded for positive attitude, two points for negative attitude and one point for those who were not sure. The perceived self-efficacy (self-reported ability or self-confidence to perform a task) to disclose to sexual partners and to practice safe sex was carried out using a self-efficacy scale containing ten statements to measure how confident respondents were in performing some tasks. Their responses were distributed as follows: very confident, little confident, not confident at all, or not sure. Two marks were awarded for very confident, one for little confident and zero for not confident at all as well as not sure. Analysis was done using both descriptive statistics and bivariate analytical methods such as the Chi-Square, the Student's t-test and ANOVA to determine statistical significance of the findings of the study..

RESULTS

Socio-demographic characteristics

The socio-demographic characteristics of the respondents are outlined in Table 1. Majority of the respondents were females (69.9%). The largest proportion (42.9%) of respondents was within the 25-34 years age group while the overall mean age of the respondents was 35.6 ± 9.6 years. More than half (59.4%) of the respondents were married, majority (81.4%) had known their positive HIV status for more than a year and majority (80.1%) were on Antiretroviral (ARV) drugs.

Knowledge about disclosure and safe sex

Virtually all (97.4%) the respondents reported having received HIV post-test counseling although less than half (41.8%) of them could remember having been counseled on disclosure and a few (2.3%) could not even remember what they were counseled on. However, 88.8% reported

having been specifically counselled on the need to notify their sexual partners of their HIV status. The overall mean knowledge score of respondents on disclosure and safe sex practices was relatively high (8.3 ± 2.4 out of 12 points). Less than half (44.4%) of the respondents had individual knowledge score above the overall mean score. A comparative analysis of the mean knowledge score on the importance of disclosure and safe sex practice for the respondents by some demographic variables is shown in Table 2. There was no significant relationship between these variables and the mean knowledge score of the respondents.

Table 1:
Socio-demographic characteristics of the respondents

Variables	Male n (%)	Female n (%)	Total N (%)
Sex	118 (30.1)	274 (69.9)	392 (100.0)
Age group (in years)			
15-24	6 (5.1)	29 (10.6)	35 (8.9)
25-34	38 (32.2)	130 (47.4)	168 (42.9)
35-44	46 (39.0)	73 (26.6)	119 (30.4)
45-54	19 (16.1)	27 (9.9)	46 (11.7)
55 and above	9 (7.6)	15 (5.5)	24 (6.1)
Religion			
Islam	60 (50.8)	96 (35.0)	156 (39.8)
Christianity	43 (36.4)	167 (60.9)	210 (53.6)
Traditional religion	8 (6.8)	7 (2.6)	15 (3.8)
None	7 (5.9)	4 (1.5)	11 (2.8)
Marital Status			
Married	79 (66.9)	154 (56.2)	233 (59.4)
Single	20 (16.9)	69 (25.2)	89 (22.7)
Separated/divorced	12 (10.2)	28 (10.2)	40 (10.2)
Widowed	7 (5.9)	23 (8.4)	30 (7.7)
Type of Marriage			
Monogamy (one wife)	53 (44.9)	98 (35.8)	151 (38.5)
Polygamy (multiple wives)	26 (22.0)	56 (20.4)	82 (20.9)
Level of Education			
Primary	27 (22.9%)	51 (18.6%)	78 (19.9%)
Secondary	56 (47.5%)	121 (44.2%)	177 (45.2%)
University/Polytechnic	26 (22.0%)	77 (28.1%)	103 (26.3%)
Post graduate	4 (3.4%)	9 (3.3%)	13 (3.3%)
NCE	1 (0.8%)	0 (0.0%)	1 (0.3%)
Technical	1 (0.8%)	1 (0.4%)	2 (0.5%)
No formal education	3 (2.5%)	15 (5.5%)	18 (4.6%)
Occupation			
Civil servants/Professionals	13 (11.0)	35 (12.8)	48 (12.2)
Artisans	41 (34.7)	38 (13.9)	79 (20.2)
Traders/Business	37 (31.4)	131 (47.8)	168 (42.9)
Private employees	7 (5.9)	20 (7.3)	27 (6.9)
Clergy	1 (0.8)	1 (0.4)	2 (0.5)
Student	12 (10.2)	31 (11.3)	43 (11.0)
Farmer	5 (4.2)	0 (0.0)	5 (1.3)
Retiree	1 (0.8)	2 (0.7)	3 (0.8)
Housewife	0 (0.0)	2 (0.7)	2 (0.5)
No job	1 (0.8)	14 (5.1)	15 (3.9)

Table 2:
Comparison of mean knowledge score of respondents by their sex, age-group, education and use of ARV drugs

Variable	Mean knowledge score			
	Number	**Mean**	**Standard deviation**	**P-value**
Sex				
Male	118	8.3	2.3	0.829
Female	274	8.3	2.5	
Age group (in years)				
15-24	35	8.1	2.8	
25-34	168	8.0	2.6	
35-44	119	8.5	2.1	0.125
45-54	46	8.3	2.3	
55 and above	24	9.3	2.8	
Educational level	78	8.0	2.5	
Primary	177	8.3	2.5	
Secondary	103	8.4	2.4	
University/Polytechnic	13	8.7	2.7	
Post graduate	1	6.0		
NCE	2	8.5	2.1	0.636
Technical	18	9.1	2.2	
No formal education				
ARV usage				
On drugs	314	8.3	2.4	0.668
Not on drugs	78	8.2	2.7	

Note: The student's t-test statistics was used to compare the mean knowledge score of respondents by sex and usage of ARV drugs while ANOVA was used to compare the mean knowledge score of respondents by their age-group and level of education.

Knowledge about disclosure and safe sex

Virtually all (97.4%) the respondents reported having received HIV post-test counseling although less than half (41.8%) of them could remember having been counseled on disclosure and a few (2.3%) could not even remember what they were counseled on. However, 88.8% reported having been specifically counselled on the need to notify their sexual partners of their HIV status. The overall mean knowledge score of respondents on disclosure and safe sex practices was relatively high (8.3 ± 2.4 out of 12 points). Less than half (44.4%) of the respondents had individual knowledge score above the overall mean score. A comparative analysis of the mean knowledge score on the importance of disclosure and safe sex practice for the respondents by some demographic variables is shown in Table 2. There was no significant relationship between these variables and the mean knowledge score of the respondents.

Sexual Behaviour and practice of disclosure and safe sex

Most respondents (99.2%) had ever had sex and 83.2% of them had had more than one sexual partner in their lifetime. Males (90.7%) were more likely to have had multiple sexual partners in their lifetime than females (79.9%). More respondents (61.5%) reported having had more than one sexual partner before knowledge of their positive serostatus than after (27.8%) as shown in Table 3. For the period of three months preceding the study, few (10.7%) respondents reported having had more than one sexual partner (Figure 4.1). Only 4.3% of the respondents reported involvement in casual sex since knowledge of their present HIV status. Figure 4.2 shows detail of respondents' involvement in casual sex. Less than half (41.2%) of those involved in casual sex had disclosed their present HIV status to all their sexual partners while 23.5% of them reported non-usage of condom with any sexual partner. More than half (50.7%) of the respondents had disclosed to at least one sexual partner but only 39.0% had done so to all their sexual partners while 49.3% had not disclosed to any sexual partner at all. The proportions of females and males who disclosed their serostatus to all sexual partners were 40.3% and 37.1% respectively. Married respondents (48.5%) were more likely to disclose to their partners than the unmarried (27.0%). Fifty percent of the male and 55.5% of the female respondents did not disclose their status to the partner they had their last

sexual intercouse with and 71.6% of them reported the use of condom as the action taken to prevent those partners from getting infected while 21.8% did not take any action at all. There was a significant relationship between serostatus disclosure to sexual partners and the practice of safe sex among respondents (Table 4). About fifty-four percent of the respondents did not know the HIV serostatus of their sexual partners. More married respondents (53.2%) knew their partners' serostatus compared with the unmarried respondents (22.1%). Non-disclosure to all sexual partners was more (62.3%) among respondents who did not know their partners' status than among those who knew (28.8%).

Hindrances to serostatus isclosure

Respondents major personal reasons for non-disclosure to any sexual partner include: fear of abandonment (14.9%), separation from partner (12.8%), fear of stigma (10.6%), death of partner (10.6%) and lack of trust in partner (5.3%). On the other hand, the major personal reasons given by the respondents who had disclosed to at least a sexual partner was that the partner was their confidant (34.1%), to prevent partner from getting infected (21.2%) and so that partner can get tested and receive treatment if need be (21.2%). However, when given options to choose from, the major reasons given by respondents as hindrances to disclosure were fear of stigmatization (46.4%), fear of abandonment (26.4%) and divorce (8.4%). Others include fear of accusation/blame (7.1%) and fear of domestic violence and assault (4.2%). There was no significant relationship between any of these reasons and the gender of the respondents.

Attitude towards disclosure to sexual partners and safe sex

Many married respondents had positive attitude towards disclosure and safe sex. Majority of the male (79.7%) and female (79.2%) respondents agreed that it was necessary to disclose their serostatus to their partners so as to protect him/her from getting infected.

Table 3:
Relationship between respondents' reported number of sexual partners before and after knowledge of their HIV status

Number of sexual partners before knowledge of HIV status	Number of sexual partners after knowledge of HIV status			Total
	No partner	**A partner**	**More than one**	
No partner	3 (100.0%)	0 (0.0%)	0 (0.0%)	3 (0.8%)
A partner	31 (20.9%)	115 (77.7%)	2 (1.4%)	148 (37.8%)
More than one	16 (6.6%)	118 (49.0%)	107 (44.4%)	241 (61.5%)
Total	**50 (12.8%)**	**233 (59.4%)**	**109 (27.8%)**	**392 (100.0%)**

Fisher's Exact Test = 121.569; P-value = 0.000

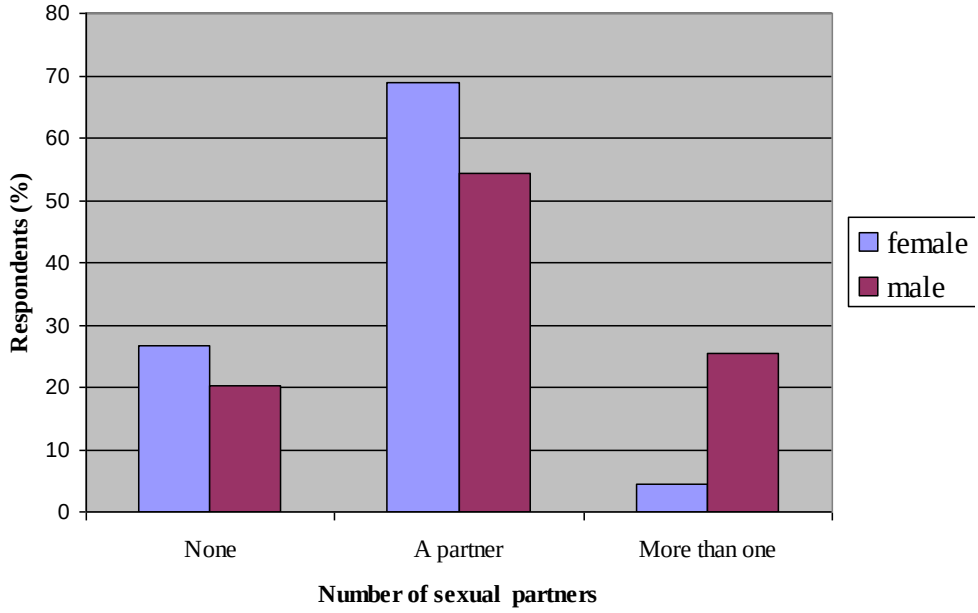

Fig. 1
Respondents' reported number of sexual partners three months preceeding the study

Table 4:
Relationship between serostatus disclosure to sexual partners and the practice of safe sex among respondents

Disclosure to all sexual partners	Practice of safe sex		Total
	Practiced with all partners	**Not practiced with all partners**	
Yes	114 (75.5%)	37 (24.5%)	151 (44.2%)
No	113 (59.2%)	78 (40.8%)	191 (55.8%)
Total	**227 (66.4%)**	**115 (33.6%)**	**342 (100.0%**

NOTE: * Fifty respondents reported not having had any sexual partner since knowledge of their present HIV status
X^2 = 10.081, p = 0.001

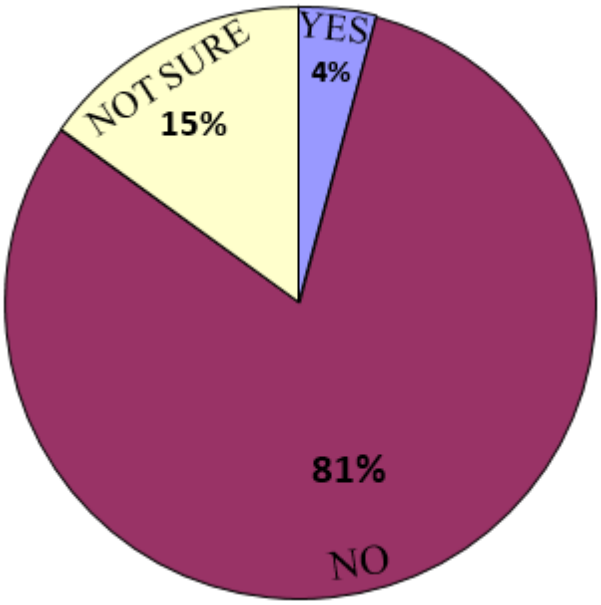

Figure 2:
Reported involvement casual sex

The overall mean attitude score of respondents towards disclosure was relatively high (19.8 ± 8.7 out of a maximum score of 33.0). About half (50.8%) of the respondents had individual attitude score above the overall mean score while 49.2% had individual attitude score below the overall mean score. A significant statistical association was found between the mean attitude score of respondents towards disclosure and the practice of disclosure (Table 5). More than half (55.9% of males and 59.5% of females) of the respondents expressed the view that it was necessary to use condom with every sexual partner. The overall mean attitude score of respondents towards safe sex was fairly high; 22.5 ± 9.5 out of a maximum score of 39.0. Less than half (49.5%) of the respondents had individual attitude score above the overall mean score. There was no significant statistical association found between the mean attitude score of respondents towards safe sex and the practice of safe sex.

Perceived self- efficacy to disclose and practice safe sex

The overall mean self-efficacy score of respondents towards disclosure was low (9.5 ± 4.7 out of a maximum score of 20.0). About half of the respondents had self-efficacy score less than the mean score. A greater proportion of respondents who were using ARV drugs had more perceived self-confidence (higher mean self-efficacy score) to perform most of the tasks listed than those who were not on ARV drugs. Although there was no significant relationship between the perceived self-efficacy of the respondents and their gender, more female respondents (38.0% and 51.1% respectively) compared to the males (32.2% and 36.4% respectively) reported that they were very confident in their ability to purchase condoms from a chemist shop and to persuade partners to accept using condom during sex.

Respondents' views on how to enhance their self-efficacy for disclosure

Respondents' were given some statement of actions with which to either agree or disagree to, or to indicate if they were not sure whether the action in the statement was necessary to enhance their self-efficacy. Majority (76.8% and 78.4% respectively) of the respondents agreed with all the statements of action indicating that they needed more education on how to practice disclosure, and how to practice safe sex. They were also asked to state any other action that was necessary to enhance their self-efficacy but none of them had any other view.

DISCUSSION

Consistent with the Nigeria UNGASS Report (2010), that age group 25 – 29 years had the highest HIV prevalence, the largest proportion of respondents in this

study was within the 25-34 years age group. Female respondents were more likely to be jobless compared to the male respondents thus reflecting the gender inequalities prevalent in the society which are likely to contribute to the impact of the HIV/AIDS in Nigeria (Nigeria UNGASS Report, 2005). Pennington (2007) reported that women's low income status which is mainly due to the lack of access to education is among key factors that increase their vulnerability to HIV infection.

Although majority of respondents could recall having specifically received counselling on notification of sexual partners, there is still cause for concern because all HIV-positive patients are required to receive post-test counselling which should lay emphasis on safe sexual practices and partner notification (MMWR, 2002). The post-test counselling is usually delivered in a single brief session shortly after test results are conveyed; this is a time when many people who have tested positive may be unprepared psychologically to assimilate prevention messages (Marks et al., 1999).

This study showed no significant statistical difference between the mean knowledge scores of respondents on disclosure and safe sex practices by gender, educational level and age-group. The explanation could be based on the fact that the study was conducted among a population from a clinical setting where regular counselling and reproductive health messages are provided to all the respondents continously, i.e at every clinic visit. However, respondents who were 35 years and older had higher knowledge scores on HIV/AIDS in relation to disclosure and safe sex than their younger counterparts.

Males were more likely to have had multiple sexual partners in their lifetime than females reflecting the gender norms in our society which allows men to seek multiple sexual partners (e.g. polygamy) and this contributes to HIV infection dynamics in the heterosexual population (UNAIDS, 2008b). Consistent with the findings of a study in Kenya (Sarna et al, 2006), the present study found that multiple sexual partners decreased after respondents knew their positive HIV status and more respondents reported having no sexual relationship after knowledge of their positive HIV status. Sexual abstinence and reduction in number of sexual partners are some behavioural strategies used for HIV prevention (UNAIDS, 2006) the findings of this study show that some HIV-positive persons actually engage these two strategies to prevent the spread of the infection to others.

More than half of the respondents who reported involvement in casual sex had not disclosed their positive HIV status to their sexual partners while about one fourth of them reported non-usage of condom with any sexual partner. It has been documented that disclosure of seropositive status and protected sexual activity are most likely to occur when there is commitment to partners at risk for infection, and least likely to occur with casual partners of unknown serostatus (De Rosa et al., 1998).

The higher proportion of respondents who disclosed their HIV positive status to all sexual partners was females. This could be due to the availability of provider-initiated HIV testing, counselling and prevention services in antenatal settings which makes women more likely than men to be the first to know their HIV serostatus, hence necessitating disclosure to their male partners especially to prevent their babies from becoming infected and to protect their own health (UNAIDS, 2009). Consistent with some studies (Daniel et al., 2004; Obi and Ifebunandu, 2006), this study found that married respondents were significantly more likely to disclose their serostatus to all their sexual partners than the unmarried and many of them disclosed to get partners to go for HIV testing and to have access to health care such as ARV treatment if they test positive. Such concern for the well-being of a partner is more likely to be found in a stable and close relationship like marriage. Also, more married respondents had positive attitude towards disclosure compared to the unmarried which could possibly have made them more likely to disclose. Furthermore, it was found that some married respondents who disclosed, did not know the status of their partners even after disclosure. This finding gives evidence for the need for couple counselling and HIV testing to ensure that both partners know their status so they can plan their future and ensure the health of their children and family (CDC, 2009).

Consistent with findings from a study on HIV-infected patients in New York City (McGowan et al., 2004), about one-thirdof all the respondents had not used condom with any sexual partner since knowledge of their HIV status and about half of those who engaged in unprotected sex had had multiple partners since knowledge of their HIV status. Non-usage of condom during sex promotes HIV transmission to an uninfected person and could lead to re-infection with a drug-resistant strain of HIV for those already infected (Del Rio, 2003; Terrence Higgins Trust, 2001) or infection with another STI which could weaken the immune system (Lane, 2003; Silver, 2003).

Non-usage of condom was more among the unmarried than the married respondents. This finding could stem from increased usage of condoms as a contraceptive measure among couples, this may also be

because more of the married disclosed their status and hence making negotiation of condom use easier. The study also found that non-usage of condom was more among females than males. The increased sexual risk behaviors of women compared with men has been linked to the challenges faced by HIV-positive women in convincing their male partners to use condoms since condoms have been stigmatized as methods used primarily in commercial sex or extramarital relationships to prevent STIs (Jürgens et al., 2008).

Consistent with findings both within and outside Africa (Wong et al., 2009; Simbayi et al., 2007; Olley et al., 2004; Marks et al., 2001 and Crepaz et al., 2003), this study reveals that non-usage of condom was significantly higher among those who did not disclose their serostatus to all their sexual partners compared to those who had disclosed. Majority of these women reported fear of abandonment and stigmatization while many of the males reported fear stigmatization as hindrances to their disclosing their status to their sexual partners.

The two major reasons given by the respondents for not disclosing their HIV status to sexual partners were fear of stigmatization and fear of abandonment Fear of rejection, abandonment and discrimination have been cited in other studies as being some of the major reasons for non-disclosure of status to partner(s) (Wong et al, 2009; Elford et al, 2008 and Levy et al., 1999). It has been noted that the social environment in most societies of Nigeria harbours discrimination and stigma against PLWHAs (Pennington, 2007) and this does not seem to encourage disclosure as people would fear being stigmatized (Ogundare, 2010). In Nigeria, very limited intervention studies on stigma reduction have been done and the few done were of short duration to warrant any significant long term impact (Monjok et al., 2009). However, various tiers of government in Nigeria have been working with non-governmental organizations to develop and implement strategic communication programs to address HIV-related stigma and findings suggest that media-based HIV programs constitute an effective strategy to combat HIV/AIDS-related stigma (Babalola et al., 2009).

Respondents with higher mean attitude score towards disclosure and safe sex were more likely to disclose their status to all their sexual partners compared with those who had lower mean attitude score. However, more than half of the respondents with positive attitude towards disclosure as well as a substantial proportion of respondents who had positive attitude towards safe sex did not practice disclosure or safe sex with any sexual partner. Thus implying that a positive attitude and/or value is not sufficient in itself alone to bring about disclosure and suggests that interventions that assist disclosure (e.g. disclosure skills building) as well as promote safe sex practices targeted at people with HIV who do not disclose their serostatus to sexual partners are needed.

Self-efficacy has been reported as one of the determinants of HIV status disclosure (Kalichman and Nachimson, 1999). This study found that the overall mean self-efficacy score of respondents towards disclosure was low. Non-disclosure to sex partners has been closely associated with lower self-efficacy to disclose HIV status (Kebede et al., 2008). Our finding is similalar to this report, with women who had not disclosed reporting the lowest disclosure self-efficacy. Also, the perceived self-efficacy of respondents using antiretroviral (ARV) drugs was found to be greater than that of respondents who were not using ARV drugs. This could probably be due to the confidence that they have in the drug itself (treatment optimism). Most of the respondents agreed that they needed more education on how to practice disclosure and safe sex.

This study has two limitations which must be acknowledged. Firstly, some questions were retrospective in nature; hence some information may have been forgotten by respondents especially those who had known their HIV-positive status for a long time. Secondly, information bias due to social desirability of some behaviour cannot be overruled in such a study. However to overcome false self-reported information due to social desirability of some behaviours, assurance of confidentiality and anonymity was provided to each respondent to be able to elicit reliable information.

This study revealed that most HIV-positive individuals remain sexually active after diagnosis. More than half of them neither knew the HIV status of their partners nor did they disclose their own status to all those sexual partners. Half of those who were sexually active did not use condom and about one quarter of them had multiple partners and a few had engaged in casual sex since knowledge of their status. This high level of sexual risk behaviour indicates that there is substantial opportunity for transmission of HIV to at-risk partners from HIV positive individuals.

However, some HIV infected people do positively change their sexual practices after testing positive as a few unmarried respondents reported sexual abstinence after knowledge of their positive HIV status. For some respondents, sex with multiple partners decreased after HIV-testing in line with the behavioural strategy of reduction in number of sexual partners and a few of them also practiced disclosure to all sexual partners. This positive change in sexual behaviour should be

encouraged as it appears to be the most effective way of curbing further spread of the epidemic.

Respondents who had disclosed their status to all their sexual partners were also more likely to practice safe sex with all those sexual partners although significant disincentives and barriers to disclosure such as fear of stigmatization, fear of abandonment, and fear of divorce persist. Overcoming the barriers to disclosure remains a formidable challenge for both secondary HIV prevention and early detection of HIV infected individuals. It is recommended that governments and community leaders should create the enabling environment to encourage beneficial HIV status disclosure as well as policies to protect against discrimination and stigmatization against PLWHAs. In addition, HIV prevention strategies should focus on promoting safe sex practices by intensifying and sustaining HIV/AIDS educational programmes among HIV positive persons since the epidemic may be predominantly spread by infected individuals who engage in risky sexual behaviors.

REFERENCES

Akani, C.I. Erhabor O. (2006): Rates, pattern and barriers of HIV serostatus disclosure in a resource-limited setting in the Niger Delta of Nigeria. *Tropical Doctor* 36.2:87-89

Amirkhanian, Y. A., Kelly, J. A., McAuliffe, T. L. (2003): Psychosocial needs, mental health, and HIV transmission risk behavior among people living with HIV/AIDS in St Petersburg, Russia. *AIDS* 17:2367-2374

Babalola, S., Fatusi, A., Anyanti, J. (2009): Media saturation, communication exposure and HIV stigma in Nigeria. *Social Science and Medicine* 68.8:1513-20

Bennett, R., Draper, H., Frith, L. (2000): Ignorance is bliss? HIV and moral duties and legal duties to forewarn. *Journal of Medical Ethics* 26:9-15

Buchacz, K., van der Straten, A., Saul, J., Shiboski, S., Gomez, C., Padian, N. (2001): Sociodemographic, behavioural, and clinical correlates of inconsistent condom use in HIV-serodiscordant heterosexual couples. *Journal of Acquired Immune Deficiency Syndromes* 28.3:289-297

Bunnell, R., Ekwaru, J., Solberg, P., Wamai, N., Bikaako-Kajura, W., Were, W., Coutinho, A., Liechty, C., Madraa, E., Rutherford, G., Mermin, J. (2006): Changes in sexual behavior and risk of HIV transmission after antiretroviral therapy and prevention interventions in rural Uganda. *AIDS* 20.1:85-92

Centers for Disease Control and Prevention (CDC), (2009): Global HIV/AIDS: Couples HIV Counselling and Testing Intervention and Training Curriculum. Retrieved April 20, 2010 from http://www.cdc.gov/globalaids

Christianson, M., Lalos, A., Johansson, E. E. (2008): 'The Law of Communicable Diseases Act and disclosure to sexual partners among HIV-positive youth', *Vulnerable Children and Youth Studies*, 3.3:234-242

Ciccarone, D. H., Kanouse, D. E., Collins, R. L., Miu, A., Chen, J. L. et al. (2003): Sex Without Disclosure of Positive HIV Serostatus in a US Probability Sample of Persons Receiving Medical Care for HIV Infection. *American Journal of Public Health* 93:949-954

Crepaz, N., Marks, G. (2003): Serostatus disclosure, sexual communication and safe sex in HIV -positive men. *AIDS Care* 15.3:379-387

Daniel, O.J., Falola, R.L., Ogundahunsi, O.A., Ogun, S.A., Odusoga, O.L., Salako. A.A., Oladapo, O.T., Ogunfowora, O.B., Osho, O.B., Adenekan, A.A., Oluwole, F.A., Kolapo, K.O.,Boyle, B.A. (2004): Self-disclosure of HIV status among PLWHA on HAART in Sagamu, Nigeria. International Conference on AIDS. July, 2004.15; abstract no.ThPeD7777

Del Rio, C. (2003): New Challenges in HIV Care: Prevention among HIV-Infected Patients Perspective. *New Challenges in HIV Care* 11.4:140-144

Demmer, C. (2003): HIV prevention in the era of new treatments. *Health Promotion Practices* 4.4:449-456. Retrieved October 31, 2007 from http://www.ncbi.nlm.nih..gov/sites/entrez

Denning, P.H., Campsmith, M.L. (2005): Unprotected anal intercourse among HIV-positive men who have a steady male sex partner with negative or unknown HIV serostatus. *American Journal of Public Health*.95.1:152-58

De Rosa, C. J., Marks, G. (1998): Preventive Counselling of HIV-positive men and self- disclosure to sex partners; new opportunities for prevention. *Health Psychology* 17:224-231. Retrieved March 6, 2007 from http://www.pubmedigov.

Elford, J., Ibrahim, F., Bukutu, C., Anderson, J. (2008): Disclosure of HIV Status: The Role of Ethnicity Among People Living With HIV in London. *Journal of Acquired Immune Deficiency Syndromes* 47.4:514-521

Farquhar, C., Ngacha, D., Bosire, R., Nduati,.R., Kreiss, J., John, G. (2000): Prevalence correlates of partner notification regarding HIV-1 in an antenatal setting in Nairobi, Kenya. In XIII International AIDS Conference, 9-14 July 2000 Durban, South Africa p.381. Retrieved March 6, 2009 from http://www.scielosp.org

Federal Ministry of Health (FMOH) (2005): 2005 National HIV Seroprevalence Sentinel Survey Process and Findings.

Global HIV Prevention Working Group (2003): Access to HIV Prevention - Closing the Gap. May 2003

Gomez, C., van der Straten, Padian, N. (2002): Playing the odds: challenges in reducing risk behaviours among HIV-serodiscordant heterosexual couples. Abstact. MoOrE1027. XIV International AIDS Conference, Barcelona. July 2002.

Holmes, W. C., Pace, J. L. (2002): HIV-seropositive individuals' optmistic beliefs about prognosis and relation to medication and safe sex adherence. *Journal of General Internal Medicine* 17: 677-683

International HIV/AIDS Alliance (2003): *Positive Prevention: Prevention Strategies for People with HIV/AIDS.* Draft Background Paper July, 2003. Retrieved June 26, 2009 from http://www.aidsalliance.org

Janssen, R.S., Holtgrave, D.R., Valdiserri, R.O., Shepherd, M., Gayle, et al. (2001): The serostatus approach to fighting

the HIV epidemic: prevention strategies for infected individuals. *American Journal of Public Health* 91:1019-1024

Janssen, R.S., Onorato, I.M., Valdiserri, R.O., Durham, T. M., Nichols, et al. (2003): Advancing HIV prevention: new strategies for a changing epidemic - United States. *Morbidity and Mortality Weekly Report* (MMWR) 2003. 52:329-332

Jürgens, R., Cohen, J., Cameron, E., Burris, S., Clayton, M. et al. (2008): 10 Reasons to Oppose Criminalization of HIV Exposure or Transmission. Open Society Institute Public Health Program, New York.

Kalichman, S. C. (2000): HIV transmission risk behaviors of men and women living with HIV-AIDS: prevalence, predictors, and emerging clinical interventions. *Clinical Psychology: Science Practice* 7:32-47.

Kalichman, S.C., Nachimson, D (1999): Self-efficacy and disclosure of HIV-positive serostatus to sex partners. *Health Psychology* 18.3:281-287. Retrieved March 14, 2007 from http://www.pubmed.gov

Kebede, D., Kifle, W., Mekitie, W., Amaha, H., Alemayehu, A. (2008): Disclosure experience and associated factors among HIV positive men and women clinical service users in southwest Ethiopia. *BioMed Central Public Health* 8:81. Retrieved August 10, 2009 from http://www.biomedcentral.com/1471-2458/8/81

Kilewo, C., Massawe, A., Lyamuya, E., Semali, I, Kalokola, F, Urassa, E. (2001): HIV Counselling and testing of pregnant women in Sub-saharan Africa. *Journal of Acquired Immune Deficiency Syndromes* 28:458-462 Retrieved March 6, 2007 from http://www.pubmed.gov

Lane, T. (2003): Safe-Sex Methods. HIV InSite Knowledge Base Chapter, December 2003. Retrieved on February 26, 2008 from http://hivinsite.ucf.edu/Insite

Levy, A., Laska, F., Abelhauser, A., Delfraissy, J., Goujard, C., Boué, F., Dormont, J. (1999): Disclosure of HIV Seropositivity. *Journal of Clinical Psychology* 55.9: 1041-1049

Maman, S., Mbwambo, J.K., Hogan, N.M., Weiss, E., Kilonzo, G.P., Sweat,M.D. (2003): High rates and positiveoutcomes of HIV-serostatus disclosure to sexual partners: reasons for cautious optimism from a voluntaryCounselling and testing clinic in Dar es Salaam, Tanzania. *AIDS Behaviour* 7.4:373-382. Retrieved March 14, 2007 from http://www.pubmed.gov.

Marks, G., Crepaz, N. (2001): HIV-positive men's sexual practices in the context of self-disclosure of HIV status. *Journal of Acquired Immune Deficiency Syndrome* 27:79-85

Marks, G., Burris, S., Peterman, T. A. (1999): Reducing sexual transmission of HIV from those who know they are infected: the need for personal and collective responsibility. *AIDS* 13.3: 297-306

McGowan, J. P., Shah, S. S., Ganea, C. E., Blum, S., Ernst, J. A. et al. (2004): Risk behavior for transmission of Human Immunodeficiency Virus (HIV) among HIV-seropositive individuals in an urban setting. *Clinical Infectious Diseases* 38:122-127

Medley, A., Garcia-Moreno, C., McGill, S., Mamman, S. (2004): Rates, barriers and outcome of HIV serostatus disclosure among women in developing countries, implications for prevention of mother-to-child transmission programmes. *Bulletin of World Health Organisation* 82.4:299-307. Retrieved March 6, 2007 from http://www.scielosp.org

Monjok, E., Smesny, A., Essien, E. J. (2009): HIV/AIDS - Related Stigma and Discrimination in Nigeria: Review of Research Studies and future directions for Prevention Strategies. *African Journal of Reproductive Health* 13.3: 21-35

Morbidity and Mortality Weekly Report (MMWR) (2002): Revised guidelines for HIV Counselling, testing and referral 50:1-57. Retrieved March 6, 2007 from http://www.scielosp.org

Nasidi, A., Harry, T. O. (2006): The Epidemiology of HIV/AIDS in Nigeria. In: Adeyi, O. Kanki, P. J., Odutolu, O., Idoko, J. A. eds. *AIDS in Nigeria: A Nation on the Threshold*: Havard Center for Population and Development Studies.16 - 28

National Association of People Living with HIV/AIDS (NAPWA) (2003): Positive Prevention. *Positive Living*. June 2003. Retrieved September 28, 2007 from http://napwa.org.au/pl

Nebie, Y., Meda,N., Leroy, V., Mandelbrof,. L., Yaro, S., Sombie I. (2001): Sexual and reproductive life of women informed of their HIV seropositivity: a prospective study in Burkina Faso. *Journal of Acquired Immune Deficiency Syndromes* 28.4:367-372. Retrieved March 6, 2007 from http://www.pubmed.gov

Nigeria UNGASS Report (2010): Nigeria UNGASS (United Nations General Assembly Special Session) Country Progress Report. National Agency for the Control of AIDS. Reporting Period: January 2008–December 2009.

Nigeria UNGASS Report (2005): Nigeria UNGASS (United Nations General Assembly Special Session on AIDS) Report for 2005. Preliminary report. December, 2005.

Nzeh, S., Okachie, L. (2010): Nigeria: HIV/AIDS - Worries Over Rising Infection Rate. *Daily Champion*. Retrieved April 16, 2010 from http://allafrica.com/

Obi, S.N., Ifebunandu, N.A. (2006): Consequences of HIV testing without consent. *International Journal of STD/AIDS*.17.2: 93-96

O'Brien, M. E., Richardson-Alston, G., Ayoub, M., Magnus, M., Peterman, T.A., Kissinger, P. (2003): Prevalence and correlates of HIV serostatus disclosure**.** *Sexually Transmitted Infections* 30.9:731-735

Olley, B.O., Seedat, S., Stein, D.J. (2004): Self-disclosure of HIV serostatus in recently diagnosed patients with HIV in South Africa. *African Journal of Health* 8.2:71-76. Retrieved March 14, 2007 from http://www.pubmed.gov

Ogundare, T. (2010): Nigeria: Stigma – Stubborn stain on HIV/AIDS patients. *Daily Champion online.* Retrieved August 29, 2010 from http://www,champion.com.ng/

Parsons, J.T., Shrimshaw, E,W., Halkitis, P.N. (2005): consistent, inconsistent and non-disclosure to casual sexual partners among HIV-seropositive gay and bisexual men. *AIDS.* Retrieved March 14, 2007 from http://www.pubmed.gov.

Pennington, J. (2007): HIV & AIDS in Nigeria. Retrieved March 29, 2007 from http://www.avert.org/about.htm

Petrak, J. A., Doyle, A.M., Smith A., Skinner, C., Hedge B. (2001): Factors associated with self-disclosure of HIV serostatus to significant others. *British Journal of Heath Psychology* 6.1:69-79(11)

Positive Women's Network (2009): *Safe sex*. Retrieved June 26, 2009 from http://pwn.bc.ca/hiv-body/safe-sex

Sarna, A., Luchters, S., Geibel, S., Kaai, S., Munyao, P. et al. (2006): Sexual risk behaviour in regular partner relationships is still a concern among PLHA receiving HAART: experiences from Mombasa, Kenya. XVI International AIDS Conference. Toronto. Canada. 13-18 August 2006. Retrieved September 28, 2007 from http://www.aids2006.org/start.aspx

Shriver, M. D., Everett, C., Morin, S. F. (2000): Structural interventions to encourage primary HIV prevention among people living with HIV/AIDS. *AIDS* 14.1: S57- S62

Silver, L. (2006): *Negotiating for Condom Use.* The Well Project Women Center. Retrieved April 22, 2010 from http:///www.thewellproject.org/

Simbayi, L. C., Kalichman, S. C., Strebel, A., Cloete, A., Henda, N., Mqeketo, A. (2007): Disclosure of HIV status to sex partners and sexual risk behaviors among HIV-positive men and women, Cape Town, South Africa *Sexually Transmitted Infections* 83:29 -34. Retrieved September 28, 2007 from http:sti.bmj.com/

Simoni, J. M., Pantalone, D. W. (2004): Secrets and Safety in the Age of AIDS: Does HIV Disclosure Lead to Safe Sex? *Review - Secrets and Safety in the Age of AIDS* 12.4 October/November 2004.

Slaymaker, E. (2004): A critique of international indicators of sexual risk behaviour**.** *Sexually Transmitted Infections* 80.2:13-21

Stein, M.D., Freedberg, K.A., Sullivan, L.M., Savetsysky, J.M., Levenson, S.M.et al. (2003): Sexual Ethics: Disclosure of HIV-positive status. to partners. *Archives of Internal Medicine* 158.9:253-257

Sullivan, K. M. (2005): Male self-disclosure of HIV-positive serostatus to sex partners: a review of the literature. *Journal of Association of Nurses AIDS care* 16.6:33-47 Retrieved March 29, 2007 from http://www.pubmed.gov.

Sullivan, P. S., Drake, A. J., Sanchez, T. H. (2007): Prevalence of Treatment Optimism-related Risk Behavior and Associated Factors Among Men Who Have Sex With Men in 11 States, 2000-2001. *AIDS and Behavior* 11.1:123-129. Retrieved May 16, 2009 from http://www.medscape.com

Terrence Higgins Trust (2001): Reinfection: issues for people with HIV. Briefing sheet, February, 2001

University of California San Francisco Center for AIDS Prevention Studies, (CAPS- UCSF) (2007): *How does disclosure affect HIV prevention? Why is disclosure important in HIV?* Disclosure Fact Sheet June, 2007.

United Nation Development Programme (UNDP) (2004): Government of the Federal Republic of Nigeria UNDP response to Fight HIV/AIDS 2003-2007.

Joint United Nation Programme on AIDS (UNAIDS) (2006): Nigeria. Comprehensive Indicator Report. Retrieved on March 29, 2007 from http://hivinsite.ucf.edu/

UNAIDS (2008a): Report on the global AIDS epidemic: Status of the global HIV epidemic.

UNAIDS (2008b): An Analysis of the Gender Policies of the Three Major AIDS Financing Institutions: The Global Fund to Fight AIDS, Tuberculosis and Malaria, the World Bank

UNAIDS (2009): AIDS Epidemic Update. Retrieved April 5, 2010 http://www.unaids.org/

UNAIDS/WHO (2009): *Sub-Saharan Africa: Latest epidemiological trends*. Fact sheet. Retrieved April 15, 2010 from http://www.unaids.org/

USAID (2007): *USAID's Strategy in Nigeria*. Retrieved September 22, 2007 from http://www.usaid.gov/ng/

Van der Straten, A., Gomez, C.A., Saul, J., Quan, J., Padian, N. (2000): Sexual risk behaviors among heterosexual HIV discordant couples in the era of post-exposure prevention and viral suppression therapy. *AIDS*. 14:F47–F54

Walt, S. (2001): Disclosure of HIV Status and Practice of Safe Sex, Part I. *Being Alive*. Retrieved May 27, 2009 from http://www.beingalive.org/

Wolitski, R. J., Rietmeijer, C. A., Goldbaum, G. M., Wilson, R. M. (1998): HIV serostatus disclosure among gay and bisexual men in four American cities: general patterns and relation to sexual practices. *AIDS Care* 10:599-610

Wong, L.H., Rooyen, H. V., Modiba, P., Richter, L., Gray, G. et al. (2009): Test and Tell: Correlates and Consequences of Testing and Disclosure of HIV Status in South Africa. *Journal of Acquired Immune Deficiency Syndrome* 50: 215–222

World Health Organization (WHO) (2003): *The Right to know: New approaches to HIV testing and counselling.* Reference Number: WHO/HIV/2003.08. Retrieved April 15, 2010 from http://www.who.int/en/

World Health Organization (WHO) (2010): *HIV testing and Counselling*. Retrieved April 15, 2010 from http://www.who.int/en/.