

Individual and Couple's decision for HIV testing in Nigeria

Despite the massive rollout of HIV voluntary counseling and testing (VCT) services across sub-Saharan Africa, barriers of both logistical and socio-cultural nature in access to VCT persist. For example, there are inadequate number of HIV testing facilities in heavily infected areas due to the cost, training and resources needed. There is also a stigma surrounding HIV testing which concerns people and holds them back from being tested (De Cock et al, 2003). The stigma surrounding HIV and its effects on people's attitudes toward testing has been a subject of considerable research. Studies on HIV related discrimination have reported negative experiences by people who have revealed their HIV positive status. For example, workplace discrimination has been known to happen frequently which includes prejudice by employers and co-workers (Adeyemo & Oyinloye, 2007). There are also changes in behavior by society and family and friends, who might not be supportive of the disease and who would not like to associate with a HIV infected person. Stopping communication, lack of care and avoidance are some of the common changes (Blendon & Donelan, 1988; Skinner, 2004; Varas-Diaz, 2004). Lastly, HIV infected persons might even experience differential treatment at health care facilities due to legal hassles and HIV related stigma by the physicians (Weinberger, 1992; Gerbet et al., 1992; Olley, 2003). Due to such attitudes by other members of the society, HIV related education has been stressed upon. Several countries including ones in Sub-Saharan Africa, have education programs and they also utilize radio and television networks for spreading information. However despite strong efforts, these attitudes do provide barriers to people for HIV testing. For example, being tested for HIV at a health centre by itself sometimes causes alarm and concern (Adeyemo & Oyinloye, 2007). The fear of obtaining a positive result and its disclosure to close ones as well as the community, causes a separate anxiety which is strong enough for the person to persuade themselves to not get tested at all (Fortenberry et al., 2002). Also, at times people who feel they are educated in AIDS related matters do not think the need for testing as they feel AIDS only infects people who are lacking in AIDS knowledge (Skinner, 2004).

Though most of the studies have focused on individuals and their decisions for not getting tested, there have been a few that have focused on couples. Recent research on couples regarding HIV/AIDS has mostly been concentrated in the direction of serodiscordant couples, effect on the relationship, prevention programs for couples and communication about sexual behaviors (De Walque, 2007; Dixon-Mueller, 2007; Painter, 2001). Surprisingly little has been researched about couples making a decision regarding their thoughts about getting tested. Therefore, the aim of this paper is to look at some factors that may affect the decision to get tested both at the individual and the couple levels.

Our analysis consists of two parts. In the first part, we look at factors that could have influenced their decision to do an HIV test in the past.

Analysis of the literature shows that the use of VCT services varies by age. For example, studies by Unuigbo & Ogbeide (1999) in Benin City, Nigeria have found that overall knowledge of AIDS was poor in their sample of school going girls and that most of them engage in multiple partnerships without condoms. In his study, Omoteso (2006) has explored certain perceptions surrounding AIDS and has also emphasized on the lack of information and testing locations. Our sample consists of women from ages 15 to 49. Therefore from the theory presented above, we would expect teenage girls and young adults to have lesser chances of being previously tested than adult women. The latter on the other hand are likely to have been pregnant, and since in the contemporary

sub-Saharan context women's exposure to VCT occurs largely through prenatal care, we expect these women to have some previous testing experience. We also include the total number of children ever born to a woman. Therefore, we expect a large number of children to indicate that the woman has had some introduction to HIV related testing and therefore been tested before.

Woman's educational level and her childhood area of residence are also predictors in our analysis. There have been many studies that have focused on the relationship between education and HIV testing. It has been seen that as educational level increases, knowledge of HIV increases, stigma decreases and the chances of being tested increases (Haile et al, 2007). Also, with an increase in knowledge, both men and women are more likely to attend VCT sessions for more information (Sangiwa et al, 2000). In contrast, some studies have found a negative association between education and HIV testing. (Matovu et al, 2005 ; Skinner, 2004). However, since a majority of the literature points towards the positive direction, we expect women in our sample who have some education, to have higher chances of previous testing as compared to women with no education. We also must keep in mind that women who have grown up in urban areas have higher chances of being more educated than women of rural background, and therefore have greater awareness of HIV/AIDS. We therefore expect women of urban background to have higher chances of being previously tested than women of rural background. We are not using the woman's current residence as a predictor as the woman might have moved and not have previously taken a test from that location.

Another factor that can have contributed to previous testing is religion of the woman. Our sample consists of Catholic, Muslim, Protestant, Other Christian and women of Traditional Religion. As religion is a characteristic that does not change frequently for most people, we use religious affiliation reported at the time of the survey. Research has shown that religious affiliation can have a significant effect on individual AIDS knowledge and related behavior. For example, religious organizations can encourage people not to use condoms and not to discuss sexual issues if it goes against the principles of their faith. They can also equate AIDS with sexual promiscuity, therefore promoting stigma amongst their followers (Rankin et al, 2005). This might hinder people from getting tested. Another issue is the differences in religions themselves. For example, both Oppong (1998) and Gray (2003) have found that HIV prevalence in most regions of Africa is lower amongst Muslims than other religions such as Christianity. This is due to the strong tenants of the religion that prohibit promiscuity and encourage male circumcision. Though Islam allows polygamy, it has strict rules against infidelity. Also due to less HIV prevalence amongst Muslims, there is a belief that HIV is not a serious problem and there is also increased stigma found in this group. This acts as a barrier for Voluntary Counseling and Testing as well as for disclosure of HIV status (Abrahams, 2006). Therefore, in our sample we expect women of religions other than Islam to have higher chances of being previously tested as compared to Muslim women.

Our aim in the second part of the paper is to explore some plausible factors that might play a part in influencing a couple that has never been tested to be tested for HIV/AIDS in the future. Our previous discussion of HIV related knowledge is applicable to couples as well. Therefore, it stands to reason that couples in which both the man and the woman are relatively more educated, are aware about AIDS related risks, know a location for AIDS testing) and have some education, would be more open to being tested for AIDS.

Research has also seen a link between woman's knowledge of HIV and prevention of mother to child transmission (PMTCT). In their study, Peckham & Gibbs (1995) have demonstrated that women who know about HIV, generally have an idea about PMTCT , and therefore would like to know their HIV results so they can make informed decisions. Stringer et al (2003) have emphasized the need for men to get involved in talks about PMTCT with their wives, with the hope that this would encourage women to be more compliant with the interventions. In their study of MTCT and its prevention, Harms et al (2005) found that the percentage of men who knew about PMTCT was slightly more than women

and that the men agreed to HIV testing of their wives. Since we are analyzing couples, going by the literature, we would expect couples in which both partners have PMTCT information to be more inclined for future testing than couples who do not have any such information.

In introduction, we have discussed the role of stigma and the fear of discrimination as being partly responsible for individuals not wanting to get tested. We apply this notion to couples. Therefore if both the partners have discriminatory attitudes or biases towards HIV, they may not consider getting tested. In our analysis, we expect such couples to refuse future testing. Finally, research has shown how stigma in the community has had an adverse effect on HIV/AIDS outcomes (e.g. Muyinda et al, 1997). If the predominant community attitude is in the direction of stigmatizing HIV/AIDS, we then expect couples to be hesitant for testing.

Data

The data for this paper comes from the Nigeria Demographic and Health Survey conducted in 2003. We have chosen Nigeria as it has been found to have the fastest rate of HIV infection growth in Africa (WHO, 2007), but we also assume that the Nigeria case is representative of much of the continent.

In order to test our hypotheses, we have used the woman's and couples datasets. The woman's dataset consists of around 7000 women and the couple's dataset is made up of 1168 husbands and wives, a sample taken from different regions of Nigeria. It was arranged so as to match each wife with her husband. As with all the DHS surveys, questions were asked to each woman and couple (husband and wife individually), covering demographic information, indicators of socio-economic status, information on pregnancy and children, female circumcision, family planning and fertility and knowledge about HIV/AIDS and sexual behaviors.

Variables and Statistical technique

For the first part of the paper, we are looking at previous HIV testing done by the woman. Our dependent variable therefore is whether a woman has been previously tested for HIV (1) or not (0). The predictors we use to explore this matter are guided by the literature discussed above. They include demographic indicators and childhood area of residence.

For the second part of the paper, since the questions were asked to each partner separately, we recoded the data to create variables that has responses of both the partners. This was necessary as we wish to analyze the couples as a unit, rather than as separate individuals. Our dependent variable is willing to be tested for HIV/AIDS (1) vs. not willing or not being sure. Since we have to take into account the responses of both partners, there were 4 possible outcomes.

Result 0= Both the husband and wife do not want to get tested (reference category).

Result 1= Wife does not want, Husband wants.

Result 2= Wife wants, Husband does not want.

Result 3= Both want.

We distinguish between Result 1 and 2 because we expect there to be a difference in factors that may affect the type of spousal disagreement on the matter. Our independent variables include demographic controls, AIDS knowledge index, awareness of AIDS testing place in Model 1. Since knowledge of

AIDS has shown to be responsible for testing decisions, we wish to see that effect in our sample after controlling for demographic factors. In Model 2, we add variables looking at fear and stigma of the virus so that we can assess the effect of HIV related stigma independently from all other factors. In Model 3 we add community influences. According to our research the community can influence how people think about HIV, therefore we are interested in seeing how the community the couple resides in, predicts the couple's decision to get tested in the future. Community here is the area of Nigeria the couple lives in, which is defined as North Central, North East, North West, South East, South South and South West. This analysis includes only the couples who have never been tested for HIV.

Logistic and multinomial regression models were fitted to examine the factors influencing past testing and willingness to get tested in the future, respectively.

Preliminary results

Table 1 presents the results for the first test.

- We expected slightly older women and women with some education to have higher chances of being previously tested than adolescents and women with no education. We found significant results in both these matters. Women between the age of 25 and 49 were between 3 and 6 times more likely for being previously tested as compared to women below the age of 25. Women with primary education were around 2.5 times more likely and women with secondary or higher education were 6 times more likely to be previously tested as compared to women with no education (Model 2).
- Catholic, Protestant and Other Christian women also had significantly higher odds than Muslim women of being previously tested in both our models.
- We had mixed results for childhood place of residence. As expected, women brought up in cities had significantly higher odds of having been tested as compared to women brought up in the countryside. However, women in towns had significantly lower odds when compared to our reference group.
- We did not find any significant difference between women who had no children ever born (reference group) and women who had between 1 to 7 children. However, we did see women with 8 or more children to have significantly lower odds of being previously tested. This is contrary to our hypothesis. We expected women with more children to be more exposed to VCT services.

Table 2 presents the results for the second test. Looking at Table 2, we find our hypotheses to be partially confirmed.

- HIV/AIDS knowledge of the couple: We see that HIV knowledge of the couple is not significant in predicting whether the woman will agree to testing and the man will not, and, if both of them will agree to testing as compared to a couple where none of them want to be tested. This was consistent in all our 3 models. However, we did find significant result regarding the man wanting to be tested and not the woman. As compared to a couple where both the partners do not want to be tested, we see that when the man has more knowledge than the woman, the log odds of a man wanting to be tested and not the woman, increase by 0.857, while controlling for other factors in model 3. Looking at the knowledge of a HIV testing place, compared to a couple in which both

partners do not want to be tested, we see that the log odds of the woman saying no and the man saying yes increases as long as one of the partners has HIV knowledge. Our log odds on Result 2 are also higher if the woman agrees and the man does not, as compared to a couple where both do not agree. Lastly, when we look at couples where both of them want to be tested, we find only the man's knowledge or knowledge of both the partners to be significant.

- Regarding mother to child transmission, we see no significant difference between couples in result 2 and 3, when compared to couples where both partners do not want to be tested (Result 0). However, we see higher log odds of the man wanting to get tested and not the woman, when the man is the only know with MTCT knowledge or, the woman is the only one with the knowledge.
- Stigma variables : We expected couples who were allowed to keep AIDS a secret, as well as couples who were willing to take care of a relative with AIDS to be more open to testing. These variables came out to be insignificant. Therefore there was no significant difference between any of our 4 outcomes regarding this matter.
- Community variables: There were some significant findings when we explored community effects. Therefore, if most of the community was willing to take care of a relative with AIDS, then the couple's log odds of wanting to get tested decreased by 0.378. This is contrary to our hypothesis. We also found that if most of the community was willing to get tested for AIDS, then the couple had significantly higher log odds of 4.13 for future testing of AIDS.

Next Steps

We are currently exploring these initial results to pin point some more definite factors that can contribute to a couple's decision. We shall also be following up on the differences we are seeing between the husband and the wife regarding some of our independent variables and how this affects our dependent variable.

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Table 1. Logistic Regression analysis of women being previously tested for HIV/AIDS (odds ratio)
N=6559

Characteristics	Model 1	Model 2
Demographic		
Age of Woman		
15-24 (ref)		
25-29	2.984***	2.989***
30-34	5.967***	5.925***
35-39	6.437***	6.732***
40-49	5.360***	6.310***
Educational Level		
None(ref)		
Primary	2.601***	2.296***
Secondary and Higher	7.519***	5.964***
Religion		
Muslim(ref)		
Catholic	3.417***	3.335***
Protestant	1.914***	1.955***
Other Christian	2.118***	1.957***
Traditional religion/Other	0.400	0.394
Childhood place of residence		
Countryside(ref)		
City		1.404***
Town		0.559***
Total children ever born		
None(ref)		
1-4		1.041
5-7		0.857
8-14		0.567**

Note: **p<0.05 ***p<0.01

Table 2. Multinomial regression analysis of couples desire to get tested for HIV/AIDS (regression coefficients) N=559

Characteristic	Model 1			Model 2			Model 3		
	Result 1	Result 2	Result 3	Result 1	Result 2	Result 3	Result 1	Result 2	Result 3
Demographic									
Couple's Residence									
Rural(ref)									
Urban	-0.467	-0.775**	-0.490	-0.480	-0.798**	-0.473	-0.542*	-0.849**	-0.475
Educational Status									
Both with No education (ref)									
Woman=none, Man=atleast primary	0.267	0.365	0.337	0.306	0.400	0.334	0.185	0.434	0.240
Woman=atleast primary, Man=none	0.736	0.844	-0.115	0.751	0.795	-0.067	0.779	0.807	0.004
Both atleast primary	0.806*	0.583	0.857**	0.795*	0.578	0.877*	0.312	0.517	0.567
HIV/AIDS knowledge index									
Both <2 (ref)									
Woman is <2 , Man is >2	0.886**	0.996	0.702	0.874*	1.044	0.752	0.857*	1.165	0.699
Woman >2 , Man is <2	-0.849	-0.234	-0.418	-0.823	-0.274	-0.478	-0.923	-0.576	-0.462
Both >2	-0.275	-0.104	0.207	-0.277	-0.127	0.225	-0.152	-0.088	0.290
Knowledge of HIV testing place									
Both say No(ref)									
Woman=no, Man=yes	1.191***	-0.422	1.595***	1.235***	-0.563	1.598***	1.415***	-0.575	1.729***
Woman=yes, Man=no	1.433***	1.542***	0.437	1.398***	1.549***	0.414	1.407**	1.739***	0.37
Both say Yes	1.407***	0.891	1.090**	1.417***	0.833	1.152**	1.615***	0.803	1.297**
Know HIV is transmitted by MTCT									
Both say No(ref)									
Woman=no ,Man=yes	0.859*	-0.459	0.654	0.883*	-0.448	0.687	0.910*	-0.397	0.654
Woman=yes ,M=no	2.021*	1.811	1.722	1.951*	1.662	1.718	2.091*	1.735	1.789
Both say Yes	0.202	0.067	-0.269	0.187	-0.082	-0.291	0.337	-0.028	-0.190

Note: *p<0.10 **p<0.05 ***p<0.01

The models were controlled for Couples Age, Religion and Duration of being married. However they were all insignificant.

Table 2 Cont. Multinomial regression analysis of couples desire to get tested for HIV/AIDS (regression coefficients)

Characteristic	Model 1			Model 2			Model 3		
	Result 1	Result 2	Result 3	Result 1	Result 2	Result 3	Result 1	Result 2	Result 3
Know someone who died of HIV/AIDS									
Both say No(ref)									
Woman=no ,Man=yes		-0.223		0.510	-0.204		0.087	0.434	0.020
Woman=yes ,M=no		0.284		0.473	0.145		0.684	0.381	0.419
Both say Yes		-0.035		0.634	0.075		0.230	0.359	0.282
Stigma variables									
Allowed to keep AIDS a secret									
Both say No(ref)									
Woman=no ,Man=yes		-0.061		-0.363	0.074		0.103	-0.341	0.182
Woman=yes ,M=no		-0.099		0.048	-0.096		-0.130	0.090	-0.151
Both say Yes		0.403		0.912	0.416		0.467	0.978	0.359
Willing to take care of relative with HIV/AIDS									
Both say No(ref)									
Woman=no ,Man=yes		-0.068		-0.010	0.006		0.074	0.021	0.035
Woman=yes ,M=no		0.346		-0.189	-0.361		0.390	-0.128	-0.360
Both say Yes		-0.097		-0.137	-0.048		0.048	-0.153	0.008
Community Stigma Variables									
Allowed to keep AIDS a secret							0.904	-1.672*	2.752
Willing to take care of relative with HIV/AIDS							-0.261	2.451*	-0.378*
Willing to be tested for HIV/AIDS							4.689**	2.100	4.213*

Note : *p<0.10 **p<0.05 ***p<0.01

The models were controlled for Couples Age, Religion and Duration of being married. However they were all insignificant