Premarital HIV Testing on Prospective Couples in A Teaching Hospital in Sub Saharan Africa.

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ABSTRACT

Background: Most religious bodies insist on premarital screening for prospective couples.

Aim: To determine the level of voluntary screening, prevalence and risk factors of HIV among premarital couples.

Material and methods: A cross-sectional descriptive study using interviewer administered questionnaire and HIV screening to collect data. Systematic sampling of every third premarital couples attending the General outpatient Clinic between November 2010 and October 2011. SPSS version 17 was used for data analysis of 386 subjects.

Results: A majority of respondents (83.4% or 322); X^2 = 172.446, df = 1, p< .05) had knowledge of transmission of HIV. Mandatory HIV screening was 5.7% (22); X^2 = 303.018, df = 1, p< .05), while voluntary testing was 30% (113). The sero-prevalence of HIV was 2.6%, which was statistically and significantly associated with cohabitation and upper social class. A majority (68.4% or 266); X^2 = 272.166, df = 3, p< .05) would call off marriage plans if their spouses tested positive to HIV.

Conclusion

The knowledge of transmission of HIV was very high with low sero-prevalence(2. 6%) among premarital couples. Voluntary HIV testing was higher than mandatory request, while cohabitation and upper social class are risk factors for HIV transmission.

Key Words: Premarital screening, HIV, voluntary, risk factors, sero-prevalence

INTRODUCTION

Pre-marital HIV screening test is carried out on intending couples to prevent risks of transmitting HIV to their offsprings. The aim of the screening is to determine the HIV status of the prospective couples. Pre-marital HIV screening request has become a common phenomenon in Nigeria, although, there is no statutory requirement for premarital health screening. Most churches and other religious bodies to which prospective couples belong insist on their faithful (male and female) carrying out premarital examination and sometimes require that they present certified reports from government hospitals before their wedding could be allowed.

Mandatory premarital HIV testing policies, whether carried out by the church, family, or governments infringe upon the human rights of people living with HIV and AIDS (PLWHA). This act threatens the three key principles of HIV testing; that individuals freely consent to testing; that counselling is provided before and after testing; and that results are kept confidential [1,2,3]. Premarital HIV counselling in most cases is judgmental and is focused on encouraging discordant couples to call off their wedding [4,5] Proponents of mandatory premarital HIV testing seek to identify sero-discordant couples in order to prohibit them from

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marrying. They argue that it has many advantages such as reduction of HIV infection rates by restricting infection within the population of PLWHA; encourage couples to practice abstinence before marriage and fidelity afterwards [1,2,5]. Those opposed to mandatory HIV testing mention stigmatisation of PLWHA and discrimination in every aspect of social life e.g. employment, societal and family life. This fear of stigmatization may motivate people at risk to obtain fake results or marriage certificates and sometimes prefer not to marry [2,4,6].

In most African countries such as Ethiopia, Ghana, Kenya, Nigeria and Uganda, couples are forbidden to marry in case of sero-discordance. In Nigeria voluntary request for testing and option of marriage is allowed in the Anglican and Catholic churches, while in the case of Pentecostal churches mandatory testing is demanded with marriage forbidden among sero-discordant couples [5].

Voluntary request for premarital health screening has also increased with prospective couples coming on their own accord to demand for screening. Usually, the prospective husbands and wives are not obliged to abide by the laboratory results and clinical findings if they so wish.

Akani et al in 2005, found the risk factors for HIV infection among prospective couples from Orthodox churches to include females sex, prolonged courtship (> 6 months), history of premarital sex and history of cohabitation [7].

Many prospective couples have had their dreams of wedding crashed [5].

This study is aimed at determining the level of voluntary HIV screening, and prevalence and risk factors of HIV among premarital couples presenting at the General outpatient clinics, NAUTH, Nnewi. Knowledge gap intended to be filled include:
1. HIV sero-prevalence among prospective couples
2. The prevailing knowledge about mode of transmission of HIV
3. Level of voluntary HIV screening among prospective couples
4. Risk factors for HIV in prospective couples
5. The attitude of prospective spouses to the sero-positive partner.

SUBJECTS AND METHODS
Study Location
The study was conducted at the General Outpatient clinics of Nnamdi AzikiweUniversity Teaching Hospital (NAUTH), Nnewi, a tertiary health facility owned by the Federal Government of Nigeria. The hospital runs a "Heart to Heart Centre" or voluntary Counselling and Testing Centre as well as HIV clinics supported by the United States - President Emergency Plan for AIDS Relief (PEPFAR) in collaboration with National Action Committee on AIDS (NACA) and provides free investigation and treatment to (PLWHA). Nnewi is a semi urban centre in the south eastern part of Nigeria. The inhabitants of Nnewi town are predominantlytraders, while some others are civil servants and artisans

Study design: This is a cross-sectional descriptive study design

Sampling method
Systematic sampling method was used. Every third prospective couples who visited the General outpatient clinics of NAUTH with the sole purpose of premarital screening for HIV from November 2010 to September 2011 were enrolled after their verbal informed consents were obtained individually. The selected couples were interviewed individually to elicit answers to intimate questions contained in the interview protocol. The contents of the interview protocol were not made known to the other partner.

Laboratory Test: blood samples (5 ml) were collected from each enrolled participant for HIV testing using a highly sensitive HIV rapid test serial algorithm 11 adopted by Centre for Disease Control and prevention –University of Maryland and PEPFAR and consisting of three HIV anti body rapid tests (Determine HIV-1/2, Unigold and Star-Pak) at the Heart to Heart Center. Anyinconclusive result was tested with Western Blot or Polymerase Chain Reaction (PCR) or the entire algorithm was repeated. The results were treated with utmost confidentiality.

Inclusion criteria
Prospective husbands and wives were included.

Exclusion criteria
Individuals who know their HIV status and those who are already married were excluded.

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Ethical Issues

Informed consent of the participants was obtained before enrolment into the study. They were assured of confidentiality of the information obtained from them during and after the study. They were informed of their right to withdraw from this study at any time before its conclusion without fear of repercussion from the researchers. They were assured that their decision not to participate would not attract any loss of rights and privileges to appropriate clinical service.

The post-test counselling was done individually and confidentially. Those who tested positive to HIV were referred for further management at the HIV Clinic.

Ethical approval was obtained from the Ethical committee of NAUTH, Nnewi.

Sample size determination

Cochran developed the equation $n_o = z^2pq/e^2$ to yield a minimum sample size for proportions [8]. Where n_o = sample size; z^2 = abscissa of the normal curve that cuts off an area at the tails (equals the desired confidence levels e.g. 95%).

e= desired level of precision; p = estimated proportion of an attribute that is present in the population (if not known maximum variabilty of 0.5 is use) q = p-1.
Substituting in the above equation no = $\frac{(1.96)^2 (.5) (.5)}{(.05)^2}$

Minimum size = 385

Data collection and Analysis

A well-structured interviewer administered research protocol developed for this purpose was used for data collection.

The interview protocol covered the demographic data, period of courtship, premarital sexual relationship, cohabitation, mode of transmission of HIV; the knowledge of HIV transmission; and who initiated the request for testing? In addition, the questionnaire covered the perception regarding the pre-marital HIV testing as being relevant to their future happiness. Data analysis was done using version 17 of Statistical Package for Social Sciences. Frequency distribution tables, and chi –square test, were used in the data analysis. Statistical testing was based on P value of 0.05 and confidence interval of 95%.

OUTCOME MEASURES

1. The level of prevailing knowledge about HIV and its mode of transmission among prospective partners at the GOPD, NAUTH, Nnewi.
2. The extent to which the HIV screening requests are voluntary among prospective partners.
3. The sero-prevalence of HIV in prospective partners at the GOPD, NAUTH, Nnewi.
4. The effect of the results of premarital screening for HIV on the decision by prospective partners to complete their marriage.
5. The association between premarital cohabitation among prospective couples and HIV sero- prevalence.

RESULTS

A total of 390 questionnaires were distributed, 386 were analysed after rejecting 4 on account of incompatible entries giving a response rate of 98.97% (386).

The mean age of the respondents (Mean ± SD) was (30.5± 7.197), while the age range was from 18 to 75 years. The period of courtship ranged from 0 to 144 months with a Mean ± SD of 11.34± 21.975 months. Cohabitation ranged from 0to 120 months with a Mean ± SD of 2.36± 13.125 months.

The ratio of female to male subjects was 1: 0.99, and lower socio-economic class was 82.6% or 319 while middle and upper classes were 14.5% or 56 and 2.9% or 11 respectively (see Table 2).

Majority of the respondents (83.4% or 322) knew that HIV was a sexually transmitted infection, while less than half of the respondents (47.2% or 182) admitted knowing the symptoms of HIV. The history of premarital sexual relationship was positive in 32% (or 124) of respondents. However, a minority (6.2% or 24) of the prospective couples had been previously married in the past, while 12.4% or 48 gave a positive history of having cohabitated with their respective prospective partners.

Table 3 shows that only 5.7% or 22 admitted being

mandated (forced) to carry out the HIV screening test. These differences were statistically significant (p = .000) except for the knowledge of symptoms of HIV (p = .263).

Table 4 shows that the sero prevalence of the respondents was 2.6% or 10 and respondents who have a positive history of cohabitation had a higher percentage, (8.3% or 4) of HIV sero-prevalence compared with those with negative cohabitation history (1.8% or 6). This difference was statistically significant (p value = 0.007).

Table 5 shows that the sero-prevalence of respondents was highest among potential couples from the Anglican church (6.7% or 6) followed by those from the Pentecostal (2.5% or 2) and Catholic church (1% or 2). This difference, however, was not statistically significant (p = 0.08)

Table 5, also show that the upper socio economic class had the highest sero-positive result (18.2% or 2) followed by the lower class (2.5% or 8), while none was found in the middle class. The difference was statistically significant (p= .002).

The sero-prevalence of the age groups was not statistically significant (p= .633).

An overwhelming majority of the respondents (99.5% or 384/386) agreed to the relevance of HIV test to their future happiness, 68.9 strongly agreed, while 0.5% did not know. None of the respondents disagreed (see table 7). This difference was statistically significant (p= .000).

The majority of respondents (68.4% or 264/386) said that they would not continue the marital process if their prospective spouse tested positive to HIV screening, while about 18% or 70 would continue and 13.5% or 52 said they were not sure of what they would do.

When the respondents were asked who initiated the request for HIV screening, about 30% or 113 of them admitted that they voluntarily requested for the screening, while other responses include Family member (25% or 97), spouse (22% or 85) and church 20% or 80 in that descending order (see Table 10). The least request (1.04% or 4) was initiated by the

respondent's local government marriage registry.

Table 10 show that among the Catholic faithful, voluntary request accounted for the highest proportion 31.7% or 66/208, while the request by the church was17.8% or 37/208 lower than the request initiated by the family and spouse.

This is followed by the Anglican Church where the 25.6% or 23/90 requests were voluntary, while 18.9 or 17/90 were made by the church. Again, this figure was lower than those obtained from the family and the spouse.

In the case of the Pentecostal churches, a higher proportion of the requests were initiated from the Church 30% or 24/80, while voluntary request was 27.5% or22/80.

In the case of the Sabbath church all the requests were initiated by the spouses 2/2.

Table 1: Descriptive characteristic of the subjects

	Maximum	Minimum	Range	Mean	Std Dev.	Skewness
Age (years)	75	18	57	26.5	7.197	2.176
Period of courtship (months)	144	0	144	11.34	21.975	3.893
Cohabitation (months)	120	0	120	2.36	13.125	7.878

Table 2: Frequency distribution of the respondents' socio-economic class

Socio-economic Class	Frequency	Percent	x^2	Df	P-value
Lower	319	82.5	420.202	2	.000
Middle	56	14.5			
Upper	11	2.8			
Total	386	100.0			

Table 3: Frequency distribution of Knowledge and demographic characteristics of the Respondents

	YES Percent (%)	NO Percent (%)	x^2	Df	P value
Knowledge of transmission of HIV	322	83.4	64	16.6	172.446	1	.000
Knowledge of Symptoms of HIV	182	47.2	204	52.8	1.254	1	.263
Premarital Sexual relationship	124	32.1	262	67.9	49.537	1	.000
Previously married	24	6.2	362	93.8	285.969	1	.000
Cohabitation History	48	12.4	338	87.6	217.876	1	.000
Mandatory HIV screening	22	5.7	264	94.2	303.016	1	.000

Table 4: Distribution of HIV sero- prevalence on Cohabitation history among respondents

Cohabitation History	Result of HIV screening test		Total	(%)	Df	P-value
	Negative (%)	Positive (%)				
No	332 (98.2)	6 (1.8)	338	(100.0)	1	0.007
Yes	44 (91.7)	4 (8.3)	48	(100.0)		
Total	376 (97.4)	10 (2.6)	386	(100.0)		

Table 5: Distribution of HIV sero-prevalence among religious denomination and socio-economic class

Sero-prevalence among religious denomination

Religious Denomination	Result of HIV test				Total (n)	(%)
	Negative (n)	(%)	Positive (n)	(%)		
Catholic Church	206	(99.0)	2	(1.0)	208	(53.3)
Anglican	94	(96.1)	3	(3.7)	96	(24.9)
Pentecostal	70	(97.5)	2	(2.5)	76	(21.7)
Sabbath	2	(100.0)	0	(0.0)	2	(0.5)
Others	6	(100.0)	0	(0.0)	6	(1.6)
Total	376	(97.0)	10	(2.6)	386	(100.0)

X² = 5.525, Df = 4, P = 0.648

Sero-prevalence of HIV among Socio-economic class

Socioeconomic class	Negative	(%)	Positive	(%)			
lower class	317	97.8%	6	2.2	276	100.0	
middle class	58	97.0%	2		58	100.0	
upper class	9	81.8%	2	18.2	12	100.0	
Total	376	97.4	10	2.6	386	100.0	

X² = 12.954, DF 2, P value = .002

Table 6

Distribution of Age group of Respondents and HIV sero-prevalence

Age group (years)	Result of HIV test				Total	(%)	Df	P-Value
	Negative	(%)	Positive	(%)				
< 20	6	72.5	0	0.5	9	1.55	6	0.003
20 - 24	70	98.6%	2	1.05	72	16.75		
25 - 29	131	98.8%	2	0.05	133	21.65		
30 - 34	104	97.7%	4	2.6%	108	27.9%		
35 - 39	50	73.2%	2	26.6%	52	13.6%		
40	28	93%	2	26.6%	2	7.0%		
Total	376	97.4%	10	10.1%	386	100.0%		

Table 7   Frequency distribution of respondents' agreement to relevance of HIV test on future happiness

HIV screening test is relevant to my future happiness	Number	Percent	X²	Df	P-value
Strongly Agree	266	68.9	272.166	3	.000
Agree	118	30.6			
Disagree	0	0.0			
Don't Know	2	0.5			
Total	386	100.0			

Table 8   Frequency distribution of the potential effect of the HIV screening on the decision to marry

Consent not to continue the marriage	No	Percent	X²	Df	P value
Yes	264	68.4	214.777	2	.000
No	70	18.1			
Not Sure	52	13.5			
Total	386	100.0			

Table 9: Frequency distribution of those that initiated HIV screening test among the respondents

Who Initiated Request for HIV Sero screening	Number	Percent
Voluntary	113	29.27
Family members	97	25.13
Spouse	85	22.02
Church	80	20.73
Local Government marriage Registrar	4	1.04
Others	7	1.81
Total	386	100.00

Table 10 Cross tabulation of Religious denomination and Initiation of Request for HIV Screening

Religious denomination	Who initiated the request						Total
	Church	Family and others	Local govt. Marriage registrar	Others	Spouse	Voluntary	
Catholic Church	37 (17.8 %)	51 (24.5%)	2 (1.0%)	7 (3.4%)	45 (21.6 %)	66 (31.7 %)	208 (100 %)
Anglican	17 (17.7%)	20 (21.1%)	2 (2.2%)	0 (0.0%)	29 (23.2%)	28 (25.3%)	96 (100%)
Pentecostal	21 (30.0%)	16 (20.0%)	0 (0.0%)	0 (0.0%)	18 (23.5%)	22 (27.5%)	80 (100%)
Sabbath	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (100.0%)	0 (0.0%)	2 (100%)
Others	2 (33.3%)	2 (33.3%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	2 (33.3%)	6 (100%)
Total	80 (20.7 %)	97 (25.1 %)	4 (1.0%)	7 (1.8%)	85 (22.0%)	113 (29.3%)	386 (100 %)

X² = 24.583; df = 20; P. value = .218

DISCUSSION

This study found a lower sero-prevalence of 2.65%, which is about one tenth of the figure (20.8%) found by Akani et al in Port Harcourt [7]. This is also lower than the figure found by Umeora et al (6.1%) [9]. This is probably due to a rising awareness and knowledge of the transmission of HIV in Nigeria. Both studies by Akani et al and Umeora et al were conducted years back when the incidence of HIV was higher and the level of awareness and knowledge of the transmission of HIV were still low [7,9]. This study found that knowledge of mode of transmission of HIV among premarital couples was high; hence, it is not surprising that sero- prevalence of HIV among these premarital couples was lower when compared to previous studies.

This study found a higher percentage of sero-prevalence among those who gave a positive history of premarital cohabitation. This finding agrees with that of Akani et al [7]. Although, the figure found in this study is lower, it is probably due to the fact that these people have acquired a higher degree of sexual freedom from parental censorship, which could be a function of

age, societal and family values.

In addition, the study showed a statistically significant association between upper social class and HIV sero-prevalence. The reason for this finding is not clear, however, poverty may be associated with increased risk of sexual promiscuity, which could equally be associated with a higher level of comfort prevailing among people belonging to the upper social class.

The study showed that those in the Anglican and Pentecostal churches had a higher HIV sero-prevalence than the Catholics. However, the difference is not statistically significant (p = .08).

This study did not find any association between HIV sero-prevalence and respondents' age groups, or previous sexual relationship. These findings were in direct contrast with the findings of an earlier study by Akani et al in Port Harcourt, Nigeria[7]. The difference may be accounted for by socio-cultural and traditional differences between the subjects in both studies. In comparison, the city of Nnewi is not a mega city like Port Harcourt and has a semi urban social environment with a probably lower tendency to sexual promiscuity among the inhabitants. This may account for lower levels of sero-prevalence among the premarital couples. Another plausible explanation is the recent decline in the incidence of HIV in Nigeria[10].

There appears to be a rising level of voluntary request for HIV testing from lower figures found in the Umeora et al study [9]. The voluntary request among many churches constituted the majority except in the Pentecostal churches. The figures by the family and spouses are higher showing that the churches have not been playing dominant role in the push for premarital HIV screening as is being reported by many researchers[5]. In addition, the mandatory or forced HIV testing is low as has been shown in this study. All these could easily be attributed to mass media and community health education campaigns mounted against the spread of HIV in Nigeria.

This heightened awareness about HIV Infection is further buttressed by the finding that almost all the respondents (99.5%) agreed that HIV testing was relevant to their future happiness. This study equally found that majority of the respondents (about two thirds) would call off their proposed marriage if their prospective spouses were to test positive to HIV. This is probably because of the stigmatisation suffered by PLWHA in the society. HIV is not an ordinary illness and its chronicity

and debility accounts for its dread by many people.

Although families, spouses, and priests prompted the respondents to go for HIV screening many of them did it voluntarily. This study found only a paltry 5.7% admitting to being forced to undertake the screening. The meaning of "being forced" is not clear as one may not readily agree to being forced even when one's actions are propelled by the motive of avoiding sanctions. Just as voluntary testing requires patient counselling and education, mandatory testing is the direct opposite of it. This may also depend on the fact that most people requesting for the HIV testing do not carry out proper counselling and patient education before asking them to go for HIV testing. It is probable that voluntary testing in the face of the dreaded HIV pandemic could not be possible without adequate counselling of the patients. This must be taken into consideration when interpreting these findings.

CONCLUSION

We conclude that among premarital couples the knowledge of HIV transmission was very high with low sero-prevalence rate. Voluntary HIV testing was higher compared with mandatory request, while the risk factors of HIV infection included premarital cohabitation and upper social class.

RECOMMENDATIONS

There is need for religious leaders to be educated on voluntary counselling and testing and the rights of the premarital couples to make decisions about their future. There is need for further studies on the nature of voluntary requests among prospective couples.

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