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Research Article

Relationship Between Awareness of HIV/AIDS and Attitudes of Secondary School Students to Premarital HIV Counseling and Testing in Zaria, Northern Nigeria

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Abstract

Background:

In Nigeria HIV infection is transmitted mainly through heterosexual route, affecting mostly individuals within reproductive age groups. As a result, HIV/AIDS education is advocated as a strong component of family and reproductive health education in the school curriculum which should emphasize responsible sexual behavior, premarital chastity and protective sexual practice.

Aims/ Objectives:

To evaluate student's knowledge of HIV/AIDS, premarital HCT, and reactions to possible discordant HCT results.

Methods:

Cross sectional questionnaire-based study of 600 students in 6 schools in Zaria/Sabon Gari LGAs. Exclusion criteria: students aged ≤13 years, married, in JSS 1-3, SS1.

Results:

550 students completed questionnaire (92% response rate). 54.5% females (ᾱ age =17.5 ±2.7 years) versus 45.5% males (16.5 ±2.7 years), Muslims (53%) and Christians (47%) respectively. 76%, 57%, and 38% knew the meaning of AIDS, HIV and VCT respectively; while all knew both the routes of HIV transmission and preventive measures. More than two-third supported voluntary, free and self initiated premarital HCT, preferably in a private and confidential setting. None would marry a discordant HIV positive partner, while 61% would marry themselves if both have positive HIV results.

Conclusion:

Many students would shun marriage with discordant HIV+ partner.

Keywords:
Pre-marital; HIV Counseling and testing; attitudes; students; Zaria

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Introduction

The human immunodeficiency virus (HIV) is currently the world's leading sexually transmitted infection (STI), with at least 10 persons being infected with the virus every minute globally, two-third of these in sub-Saharan Africa [1]. In Africa, Nigeria ranks third after South Africa and Zambia in HIV prevalence, with the prevalence rising from 1.8% in 1991 to 5.8% in 2001, and a decline from 4.4% in 2005 to 4.1% in 2010 [2]. However, the size of Nigeria's population (approximated at 152.6 million by 2011) means that there were an estimated 3.3 million people living with HIV in this country [3], more than 80% of whom are within the sexually active age groups (15-45 years) [2]. The major vulnerable lifestyles linked to the spread of HIV infection and maintenance of its pandemic in Nigeria are unprotected premarital and/or extramarital sexual relationships, which are prevalent among adolescents and young adults, and linked to ignorance, peer pressure and misinformation or/and low perceptions of personal vulnerability to STIs, including HIV [4], [5], [6]. In addition, the long latency between HIV infection and the development of AIDS-related conditions reduces the likelihood that people will associate a particular sexual contact with the time of transmission, thus compromising the role of voluntary counseling and testing (VCT) or the provider-initiated HIV counseling and testing (HCT) in helping to prevent transmission [4]. As a result the adolescents and youths remain the major propellers and casualties of the pandemic [7].

In many Nigerian societies, premarital chastity was the norm and sex is traditionally a very private subject rarely discussed with teenagers. Attempts at providing sex education for young people are hampered by religious and cultural objections by parents who believe that sexual issues should be limited to

married adults, and that information on such issues should be inaccessible to the young ones in order to promote chastity [8], [9]. In order to address this problem, various governments in Nigeria introduced aspects of Family and Reproductive Health Education in the school curriculum in the late 1990's [10], [11], but by 2009 only 23% of schools were providing life skills-based HIV education, and just 25% of men and women between the ages of 15 and 24 were able to correctly identify ways to prevent sexual transmission of HIV [12]. It was probably in recognition of these gaps that the Nigeria National Agency for the Control of AIDS (NACA) launched a comprehensive National Strategic Framework (2010 to 2015) with the main objectives to reach 80% of sexually active adults and 80% of most at-risk populations with HCT by 2015; and to improve access to quality care and support services to at least 50% of people living with HIV by 2015 [13].

Since HCT is a veritable tool for the identification and determination of one's HIV status and thus very useful for both HIV-risk reduction strategies and prevention in resource-poor countries, its introduction in the school curriculum as a component of a holistic adolescent health care package has been advocated [14]. The package should include lessons on HIV/AIDS, routes of HIV transmission and prevention, risky lifestyle modifications and responsible sexual behavior, sero-status disclosure and stigma reduction. This is because the usefulness of HCT has been hampered by prejudices and inaccessibility. For example in 2007, only 3% of health facilities in Nigeria had HCT services, and only 11.7 % of persons aged 15-49 had done an HIV test and received the results [15]. In 2010, the ratio of HCT facilities per 100,000 Nigerian adults was 1.4, and only about 31 people per 100,000 of the total adult population (an estimated 2.2 million people aged ≥15 years) had received HCT [16]. This low figure has been attributed to lack of awareness of HCT facilities and mistrust of HCT care givers among the populace or an indication that reproductive health education and other programmes to promote sexual health of the youths have not yielded the desired effects [17], [18]. It is in the light of the foregoing that this study was carried out, as part of a two-phased survey, to assess: secondary students' basic knowledge of HIV/AIDS, VCT and HCT; their opinions on premarital HCT and reasons for HCT preferences; their reactions to discordant HIV results and the implications of these on future marital life. The result of the second part of the survey has already been published [19].

Materials and Methods

The Study Population

The study was carried out among 600 students selected from 6 secondary schools in Zaria and Sabon Gari Local Government Areas of Kaduna State, Nigeria between January and August 2011. The schools involved were: Alhuda Alhuda College Zaria City (boys only), Barewa College Gaskiya Zaria (boys only), Women Training College Congo Zaria (girls only), Federal Government Girls' College Basawa (girls only), University Demonstration Secondary School Samaru (boys & girls) and Therbow School PZ (boys & girls). One hundred students were selected from each school, through both cluster and stratified sampling, from among senior classes 2 and 3 [20]. Students in the junior classes (JSS 1-3); senior class 1 (SS 1) or those aged ≤ 13 years were excluded. Also excluded were students who were married. Permission for the study was sought and was granted by the Zonal Secondary Education Board Zaria, and the Principals of respective schools. The students in each school were then organized by their respective vice principals in charge of academics during which the purpose of the study and its voluntary nature was explained to them, including assurances of the confidentiality of their responses.

Research Design and Protocol.

The design of this study was similar to that carried out among unmarried undergraduates by the authors [19]. The protocol was modified from 'Research Package: Knowledge, Attitude, Beliefs and Practices on AIDS (KABP) Phase 1'[21] and 'the Questionnaire on HIV Counselling and Testing' [22]. It was written in English language; the official language used in Nigerian schools, and consisted of 3 underlisted sections thus:

A. Sociodemographic information-age, sex, religion, marital status.

B. Questions on:

a. The meaning of the acronyms- HIV/AIDS and VCT

b. Three routes of HIV transmission;

c. Three protective measures against HIV transmission.

C. Structured close-ended questions on HIV Counselling and Testing.

The protocol was pretested among students of comparable sociodemographic characteristics at a Government secondary school (which was not included in the study) to establish its suitability and relevance to the objectives of the study, after which necessary modifications were made.

Before administering the questionnaires, participating students were gathered in a hall where the procedures for accurate responses to questions in the questionnaires were explained to them. They were also instructed not to write their names on the questionnaires. During the 'response session' and to ensure anonymity and confidentiality of responses, the students were made to sit apart from one another in order to discourage exchange of responses among them. Each participant was allowed at least 30 to 60 minutes to respond to the questions, after which the questionnaires were collected from them by the supervising investigator(s). After the session, the investigator (s) held interactive 'questions and answers' sessions with the students on issues pertaining to HIV and AIDS.

Statistical Analysis

The data were analyzed using the Statistical Package for Social Sciences (SPSS) version 17, and were expressed in frequencies, percentages, and mean ± standard deviation. Continuous variables were compared using the t-test, while discontinuous variables were compared using chi-square. The relationships between the independent variables, and support for or willingness to perform HCT were analyzed using stepwise linear regressions. All analyses were set at significant levels of 5% ($P < 0.005$).

Results

Response Rate

All 600 students returned their questionnaires, but 50 respondents had missing information on various items, and so were excluded from analysis, giving a response rate of 92%. The 550 students consisted of 300 (54.5%) females and 250 (45.5%) males, with respective mean ages of 17.5 ± 2.7 years and 16.5 ± 2.7 years. 291 (53%) and 259 (47%) were Muslims and Christians respectively.

Knowledge and Awareness of HIV, AIDS and VCT

More than half and two-third of the students knew the meaning of HIV and AIDS respectively, while all the students knew 3 main routes of contracting HIV infection (of which any of the following was correct: unprotected sexual contact with an HIV infected person; from an infected mother to the baby during pregnancy, delivery and breastfeeding; transfusion of HIV infected blood or blood products; skin cut or parenteral injection with sharp objects or needle-sticks contaminated with HIV infected blood). All of them also knew 3 preventive measures of HIV transmission (of which any of the following was correct: sexual abstinence; avoiding casual unprotected sex; transfusion of only properly screened blood and blood products; avoiding skin cut or parenteral injection with sharp objects or needle-sticks contaminated with HIV infected blood). However, only 38% knew the meaning of voluntary counseling and testing (VCT) as shown in Table 1.

Support for Premarital HCT

Majority of the students supported premarital HCT and were ready to submit to it, preferably if it was voluntary and free. They would also prefer HCT to be initiated by each individual, who should go alone to a private health facility to perform it, and that the HCT result should be revealed to each individual alone. The details are shown in Table 2.

Table 1. Knowledge and awareness of HIV, AIDS and VCT

S.No	Question	Males N=250 (45.5%)	Females N=300 (54.5%)	Total N=550 (100.0%)	P-value
1	What is the meaning of HIV?				
	Correct response	197 (18.1)	117 (39.0)	314(57.1)	0.03
	Incorrect response	53 (27.4)	183 (15.5)	236(42.9)	
2	What is the meaning of AIDS?				
	Correct response	220 (28.8)	200 (47.6)	420 (76.4)	0.01
	Incorrect response	30 (16.7)	100 (6.9)	130 (23.6)	
3	List 3 routes of HIV transmission				
	Correct response	212 (27.3)	200 (47.6)	412 (74.9)	0.00
	Incorrect response	38 (18.2)	100 (6.9)	138 (25.1)	
4	List 3 preventive measures against HIV transmission				
	Correct response	212 (27.3)	200 (47.6)	412 (74.9)	0.00
	Incorrect response	38 (18.2)	100 (6.9)	138 (25.1)	
5	What is the meaning of VCT?				
	Correct response	104 (18.9)	105 (19.1)	209 (38.0)	0.00
	Incorrect response	146 (26.6)	195 (35.4)	341 (62.0)	

Table 2. Support for premarital HCT

S.No	Question	Males N=250 (45.5%)	Females N=300 (54.5%)	Total N=550 (100.0%)	P-value
1	Do you support HCT before marriage?				
	Yes	196 (35.6)	231(42.0)	427 (77.6)	0.00
	No	54 (9.9)	69 (12.5)	123 (22.4)	
2	Are you ready to submit to HCT?				
	Yes	216 (39.3)	204 (37.1)	420 (76.4)	0.00
	No	34 (6.2)	96 (17.4)	130 (23.6)	
3	Premarital HCT should be				
	Voluntary and free	111(20.2)	219 (39.8)	330 (60.0)	0.00
	Compulsory and free	139 (25.3)	81 (14.7)	220 (40.0)	
4	Who should initiate premarital HCT?				

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Table 2 (continued)

S.No	Question	Males N=250 (45.5%)	Females N=300 (54.5%)	Total N=550 (100.0%)	P-value
	Each individual separately	200 (36.3)	260 (47.3)	460 (83.6)	
	The couples together	50 (9.2)	40 (7.2)	90 (16.4)	
	Parents of couples	0 (0.0)	0 (0.0)	0 (0.0)	
	The religious leaders	0 (0.0)	0 (0.0)	0 (0.0)	
	The community leaders	0 (0.0)	0 (0.0)	0 (0.0)	
	The government marriage registry officials	0 (0.0)	0 (0.0)	0 (0.0)	
5	How will you prefer to go for premarital HCT?				
	Each individual alone	250 (45.5)	215 (39.1)	465 (84.6)	
	The couples together	0 (0.0)	85 (15.4)	85 (15.4)	
	Couples with parents	0 (0.0)	0 (0.0)	0 (0.0)	
	Couples with religious leaders	0 (0.0)	0 (0.0)	0 (0.0)	
	Couples with community leaders	0 (0.0)	0 (0.0)	0 (0.0)	
6	Where will you prefer to do premarital HCT?				
	Private health facilities	226 (41.1)	280 (50.9)	506 (92.0)	
	Government health facilities	24 (4.4)	20 (3.6)	44 (8.0)	
	Missionary health facilities	0 (0.0)	0 (0.0)	0 (0.0)	
7	Who should HCT result be revealed to?				
	Separately to each individual	250 (45.5)	214 (38.9)	464 (84.4)	
	To the couples together	0 (0.0)	86 (15.6)	86 (15.6)	
	To couples and parents	0 (0.0)	0 (0.0)	0 (0.0)	
	To couples and religious leaders	0 (0.0)	0 (0.0)	0 (0.0)	
	To couples and community leaders	0 (0.0)	0 (0.0)	0 (0.0)	
	To couples and government marriage registry officials	0 (0.0)	0 (0.0)	0 (0.0)	

Reactions to HCT Results

Eighty percent of the students would not reveal their HCT result if it came out HIV positive for reasons such as 'fear of the unknown' (53%) and 'fear of stigmatization' (27%); but all of them agreed that they would reveal their HCT result if it was HIV negative, and would not marry the spouse if his/her HIV test was positive, for the main reason of 'fear of contracting HIV infection'. However, if the spouse refused to disclose his/her result, the students would maintain the relationship and tell the parents about the problem. 61% of the students would marry a spouse with a concordant HIV positive result while 39% would not, for reasons such as 'to avoid new infections' (16.4% males: 0.8% females) and 'to avoid transmission of HIV to kids' (22% females). The details are in Table 3.

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Table 3. Reactions to HCT results

S.No	Question	Males N=250 (45.5%)	Females N=300 (54.5%)	Total N=550 (100.0%)	P-value
1	If your HIV test result is positive and your partner's result is negative, would you disclose your HIV status to him/her?				
	Yes	27 (4.9)	78 (14.2)	105 (19.1)	0.00
	No	223 (40.6)	222 (40.3)	445 (80.9)	
2	If no, reason can be				
	Fear of stigmatization	67 (15.0)	56 (12.6)	123 (27.6)	0.00
	Fear of the unknown	156 (25.6)	166 (27.7)	322 (53.3)	
3	If your HIV test result is negative and your partner refuses to disclose his/her own result, what would you do?				
	Break the relationship immediately	0 (0.0)	0 (0.0)	0 (0.0)	
	Maintain relationship, but tell parents about the problem	250 (45.5)	300 (54.5)	550 (100.0)	
	Maintain relationship, but tell others about the problem	0 (0.0)	0 (0.0)	0 (0.0)	
4	If your HIV test result is negative and your partner's result is positive, would you marry him/her?				
	Yes	0 (0.0)	0 (0.0)	0 (0.0)	0.00
	No	250 (45.5)	300 (54.5)	550 (100.0)	
5	If No, reason can be				
	I don't want to contract HIV	250 (45.5)	300 (54.5)	550 (100.0)	0.00
	I am afraid of stigmatization	0 (0.0)	0 (0.0)	0 (0.0)	
6	Would you marry your partner if both of you have HIV positive results?				
	Yes	156 (28.3)	180 (32.7)	336 (61.0)	0.02
	No	94 (17.2)	120 (21.8)	214 (39.0)	
7	If Yes, reason can be				
	Because we are both positive	156 (28.3)	180 (32.7)	336 (61.0)	
	To avoid stigmatization	0 (0.0)	0 (0.0)	0 (0.0)	
8	If No, reason can be				
	To avoid new infections	90 (16.4)	0 (0.0)	90 (16.4)	
	To avoid transmission of HIV to kids	4 (0.8)	120 (21.8)	124 (22.6)	
	Other reasons	0 (0.0)	0 (0.0)	0 (0.0)	

Table 4. Stepwise linear regression analysis of independent variables (age, sex and religion of respondents) as predictors of support for HCT and readiness to go for it.

S.No	Model	Unstandardizedcoefficients		Standardized coefficients	R	95% CI for B	P-value
		B	Standard error	Beta			
1	Do you support premarital HCT?						
	(Constant)	1.169	0.27		43.905	1.117- 1.221	0.00
	Religion	-0.067	0.017	-0.134	-3.975	-0.101-(-0.034)	0.00
	(Constant)	1.056	0.045		23.334	0.967- 1.145	0.00
	Religion	-0.072	0.017	-0.143	-4.226	-0.105-(-0.038)	0.00
	Age	0.006	0.002	0.104	3.074	0.002-0.010	0.02
	Sex	-	-	-0.055	-1.623	-0.055-0.989	0.11
2	Are you ready to go for HCT						
	(Constant)	1.139	0.028		40.417	1.083-1.194	0.00
	Religion	-0.042	0.018	-0.081	-2.368	-0.078-(-0.007)	0.00
	Age	-	-	0.054	1.560	0.054-0.993	0.12
	Sex	-	-	-0.06	-1.736	-0.060-0.990	0.08

5. Stepwise Linear Regression for Predictors of Support for HCT and Readiness to Submit to HCT.

Stepwise linear regression analysis of predictors of support for HCT in Table 4 below revealed that religion (R= -4. 226, 95% CI -0.105- (-0.038), P= 0.00) and age (R= 3.074, 95% CI 0.002-0.010, P=0.02) of the students were most significant; while the only significant predictor of readiness to submit to HCT was religion (R= -2.368, 95% CI -0.078- (-0.007), P= 0.00). Sex of the respondents was not a significant predictor of either variable (R= -1.732, 95% CI -0.059-0.990, P=0.11 for support for HCT; and R=-1.736, 95% CI -0.060-0.990, P=0.08 for readiness to submit to HCT).

Discussion

The result of this survey which revealed a significant level of knowledge and awareness of HIV and AIDS among the students may reflect the success of on-going country wide public enlightenment campaigns on the pandemic through the mass media (particularly radio and television), community-based interpersonal discussions and the introduction of Family and Reproductive Health Education in the school curriculum in the late 1990's [10], [11]. Yet this finding is in contrast with those obtained in the survey on unmarried tertiary student, where about 35% of the students did not know the meaning of the acronyms: HIV and AIDS [19]. However, like their counterparts in tertiary schools, more than 60% of the students in this study did not know the meaning of VCT, an observation which had been made by several earlier researchers [12], [17], [23]. The researchers noted that VCT was not taken seriously in Nigeria due to fear of stigmatization, discrimination and mistrust of health care givers by the populace, belief that VCT is meant for only sexually active persons and perceived exorbitant cost of testing, and

lack of knowledge of where VCT/HCT facilities are, an indication that gaps still exist between the most at-risk populations and access to VCT/HCT facilities [13], [18].

The fact that more than 70% of the students supported premarital HCT and were ready to perform it may be interpreted in different ways. It may mean that the students have overcome misconceptions and prejudice about VCT/HCT, or that they are receiving functional health education which has made them capable of taking independent decisions for their own better health. Many of the students would prefer HCT that is voluntary, cost-free, provided by private health facilities with a guarantee of confidentiality of results, and most of all, devoid of parental, religious, community or government pressures. Although HCT allows individuals to know their HIV status, and serves as a gateway for both HIV prevention and early access to care, support and treatment, it is trailed by prejudices and stigmatization of infected individuals by health caregivers (HCGs) [24], and mistrust and loss of confidence of HCGs by HIV positive persons [25]. However, voluntary pre-test counseling, confidential HIV testing and post-test counseling are thought to be more desirable, because people who feel they have been exposed may voluntarily take the test themselves, and the anonymity gives them comfort that they won't have to reveal themselves until they decide to [26].

In this study, 'fear of the unknown' or 'of stigmatization' were the main reasons given by 81% of respondents for reluctance to disclose their HIV results if they were discordant to their partners' results. In addition, all the respondents agreed they would not marry a spouse who has a discordant (HIV positive) result for fear of contracting HIV infection. These reasons may have accounted for the students' preferences for HCT in private and confidential settings.

Stigmatization remains a major reason for misconceptions and misgivings against premarital HCT in many countries [12], [17], [23], [27]. HIV/AIDS-related stigma discourages individuals who are aware of their HIV positive status from sharing information about their status with their sexual partners or close confidants as disclosure has been known to lead to disruption of normal social relationships, marital disharmony and withdrawal of social support, due to stigmatization and discrimination hinged on fear of contracting HIV [28], [29].

The desire to avoid stigmatization may have been the reason for the sero-sorting tendency observed in the response of 61% of the students who affirmed they would marry themselves if they and their spouses' HIV test results turned out positive. However, the desire 'to avoid vertical transmission of HIV to kids' was the reason why 22.0% of female respondents would not marry their HIV sero-accordant spouses. This is not surprising as previous studies have shown that females were more willing than males to have pre-marital/prenatal VCT or HCT because knowledge of their HIV status would provide them the opportunity for informal decision-making about options for family planning, delivery and infant feeding [23], [25], [26], [30].

The religion and age of respondents, irrespective of sex, were strong predictors of support for pre-marital HCT. The reason for this is not clear, although one can speculate that socio-cultural and religious norms which promote premarital chastity while prohibiting sexual activities among adolescents may be contributory [31].

Conclusion

In conclusion, it is possible that these youths support premarital HCT because they believe that it will encourage sexual abstinence and chastity as an effective barrier to HIV transmission. Secondly, the students still harbor discriminatory tendency towards HIV positive persons, none of them indicated willingness to marry discordant HIV positive partner.

Thirdly, introduction of proper adolescent reproductive health education, including HIV/AIDS and other sexually transmitted diseases, in the school curriculum may minimize misconceptions and prejudice, and encourage responsible sexual behavior among school children. Fourthly, it is important that barriers to HIV screening should be understood and removed so that persons can freely access them. Finally, although the students surveyed may not necessarily be represented of all Nigerian adolescents, they do represent an important subgroup of Nigerians who are at risk of HIV pandemic on a daily basis.

Competing Interests

The authors have declared that no competing interests exist.

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References

1. *HIV/AIDS and other sexually transmitted infections in Nigeria Demographic and Health Survey 2010*. Federal Ministry of Health, Abuja
2. UNAIDS/WHO. *AIDS Epidemic Update: December 2011*. Geneva: UNAIDS, 2011.
3. Factsheet. Update on the HIV/AIDS Epidemic and Response in Nigeria. Available online at http:www. naca.gov.ng/content/view/432/lang.en (accessed on 14th December2012). 2011.
4. Adeokun L (Association for Reproductive and Family Health. Ibadan, Nigeria). Social and cultural factors affecting the HIV epidemic. In: *AIDS in Nigeria: - A Nation on the threshold*. Olusoji Adeyi, Phyllis J Kanki, Oluwole Odutolu and John Idoko (eds). Harvard Series on Population and International Health, Harvard University Press. 2006; 151-191.
5. HIV/AIDS. Prevention of infection among adolescents and young adults. Available online at http://www.childinfo.org/areas/hivaids/youngpeople.php. (accessed on 04th January 2013).
6. Umar AS, Ibrahim MT, Mannan KA, Umar US. AIDS: perceptions and misperceptions among students of a Nigeria University. *Nig. Postgrad. Med J*, 2005; 12: 173-178. https://doi.org/10.4103/1117-1936.175279
7. Adekeye O A. Adolescents and the HIV pandemic. *J Postgrad Stud Assoc (Ilorin)*. 2005;3:23–28.
8. Adogoke AA. *Adolescents in Africa: Revealing the problems of teenagers in a contemporary African society*. Ibadan: Haddasah Publishing, 2003.
9. Adogoke AA. Adolescence and adolescent problems in schools. In Adeyemi Idowu, *Guidance and counselling in education*. Ilorin: Indemac Publishing, 2003.
10. Fawole IO, Asuzu MC, Oduntan SO, Brieger WR. A school-based AIDS education programme for secondary school students in Nigeria: a review of effectiveness. *Health Educ Res*. 1999;14: 675 - 83. https://doi.org/10.1093/her/14.5.675
11. Iyaniwura CA. Attitude of teachers to school based adolescent reproductive health interventions. *J. Comm Med. Prim Health Care*, 2004; 16; 4-9.
12. Ajuwon AJ, Titiloye M, Oshiname F, Oyewole O. Knowledge and use of HIV counselling and testing services among young persons in Ibadan, Nigeria. *Int Q Comm Health Educ* 2010-2011; 31 (1): 33-50. https://doi.org/10.2190/iq.31.1.d
13. *National HIV/AIDS strategic framework 2010-15*. National Agency for the Control of AIDS (NACA), Abuja, Nigeria 2009.
14. Society for Adolescent Medicine: Meeting the health care need of adolescents in managed care. *J. Adolescent Health*.1998; 22:271-277.
15. WHO/ UNAIDS & UNICEF. *Towards universal access: scaling up priority HIV/AIDS interventions in the health sector*. WHO/ UNAIDS & UNICEF, Geneva, 2008.
16. *Global HIV/AIDS Response: Epidemic update and health sector progress towards Universal Access*. WHO/UNAIDS/UNICEF, Geneva. 2011.
17. Jones D. Understanding why women decline HIV testing. *Midwives*. 2004; 7: 344-347.
18. Brian WP, Ostermann J, Whetten K, Kumar V. *Improvement still needed in HIV testing in high – risk groups*. Duke Medical Team, Duke University. 2011
19. Obiako OR, Muktar HM, Mamman AI, Sheikh TL, Tabi-Ajayi E, Obiako CO. Sexual behavior, awareness of HIV/AIDS, and attitudes of unmarried tertiary school students to HIV counselling and testing: implications for control of HIV transmission. *Adv Trop Med Pub Health Int*. 2012; 2 (3): 109-123.
20. Margaret O Araoye (ed). Sample Size Determination. In: *Research Methodology with Statistics for Health and Social Sciences*. Nathadex Publishers, Ilorin.2004, Pg 115-120

21. Research Package Knowledge, Attitude. *Beliefs and Practices on AIDS (KABP) Phase 1*. WHO, Geneva, 1990.
22. Adekeye OA. HIV Voluntary Counselling for Young People: the antidote for a healthy and positive living in Nigeria. *Counsellor*. 2009; 25: 1.
23. Okpala PU, Ebenebe UE, Ibeh CC. Voluntary Counseling and Testing among African women. http://www.valleyaids.org/presentations8/17/200911.04pm.
24. Chao Li-Wei, Gow J, Akintola G, Pauly M. HIV/AIDS stigma attitudes among educators in KwaZulu-Natal, South Africa. *J. School Health* 2010; 80 (11): 561-569. https://doi.org/10.1111/j.1746-1561.2010.00542.x
25. Mezie-Okoye M M, Tobin-West C I. Perception of routine HIV Counselling and Testing for Prevention of Mother-to-Child Transmission of HIV infection in Rivers State, South-South, Nigeria. Nigerian Medical Practitioner57(1-2). 2010:3–7. https://doi.org/10.4314/nmp.v57i1-2.55744
26. WHO. *Counselling for HIV/AIDS: A key to Caring*. Geneva 1995. WHO/GPA/TCO/HCS/95.15.
27. Malaysiakini: Pre-marital HIV testing for non-Muslims. *Malaysian Medical Resources*. 2008 Dec.22.
28. Ehiri J, Anyanwu E, Donath E, Kanu I, Jolly P. AIDS- related stigma in sub-Saharan Africa: its context and potential intervention strategies. *AIDS Public Policy J*. 2005; 20: 25 - 39.
29. Crandall CS and Coleman R. AIDS-related stigmatization and the disruption of social relationships. *J Soc Pers Rel*. 1992; 9: 163. https://doi.org/10.1177/0265407592092001
30. Zubairu I, Isa SA, Mohammed K, Muktar HA. Knowledge of HIV/AIDS and attitude towards voluntary counseling and testing among adults. *J Natl Med Assoc*. 2006; 98: 1917 - 22
31. Iyaniwura CA, Daniel OJ, Adelowo OO. Attitude of youths to sexual abstinence as a strategy for HIV prevention. *Nigerian Medical Practitioner* 2007; 52(2):33-37.

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