Awareness and Consequences of Human Immuno Deficiency Virus Disease among Undergraduate Students of University of Ilorin

[1]Onifade, O. A. (Ph.D.), [2] Ruth Adio-Moses (Ph.D.), [1]Ologele, I. (Ph.D.), [1]Adigun, J. O. (M.Ed.), [1]Ogungboye, R. O. (M.Ed.), [1]Abikoye, A. I. (M.Ed.) and [1]Oguntunji, I. O. (M.Ed.)

[1]Department of Health Promotion and Environmental Health Education, Faculty of Education, University of Ilorin, Nigeria.
[2]Department of Human Kinectics and Health Education, University Of Ibadan

Abstract- The study examined awareness and consequences of human immune deficiency virus disease among undergraduate students of University of Ilorin. Four research hypotheses were postulated and tested at 0.05 alpha level. The research design adopted for the study was survey type. Through simple random technique, five (5) departments were selected and a sampled size of four hundred and twenty was drawn from selected departments with the use of stratified sampling technique in the University of Ilorin, Kwara State. Data were collected with the use of researcher's structured questionnaire already validated by the three experts in the field of Human Sexuality, Health Education and Sociology and tested with the use of test re-test reliability technique. A reliability coefficient of .75r was obtained. Demographic data collected were analyzed with the aid of frequency count and simple percentage while the postulated hypotheses were tested with the use of inferential statistics of Chi-square. The result of the study revealed that undergraduate students are significantly different in their awareness on causes, transmission routes, consequences and control of HIV/AIDS. Based on these findings, the researcher recommended that undergraduate students should abstain from indiscriminate sex, it is also recommended that HIV/AIDS education should be carried out by professional concerned in the universities.

Index Terms- HIV/AIDS, causes, transmission routes, indiscriminate sex, HIV/AIDS education

I. INTRODUCTION

Human immunodeficiency virus (HIV) is a lentivirus (slowly replicating retrovirus) that causes acquired immunodeficiency syndrome (AIDS), a condition in humans in which progressive failure of the immune system allows life-threatening opportunistic infections and cancers to thrive. Infection with HIV occurs by the transfer of blood, semen, vaginal fluid, pre-ejaculate, or breast milk. Within these bodily fluids, HIV is present as both free virus particles and virus within infected immune cells (Douek , Roederer and Koup, 2009).
 According to Chitnis, Rawls and Moore (2000), HIV infects vital cells in the human immune system such as helper T cells (specifically $CD4^+$ T cells), macrophages and dendritic cells. HIV infection leads to low levels of $CD4^{\pm}$ T cells through a number of mechanisms including: apoptosis of uninfected bystander cells, direct viral killing of infected cells, and killing of infected $CD4^+$ T cells by CD8 cytotoxic lymphocytes that recognize infected cells. When $CD4^+$ T cell numbers decline below a critical level, cell-mediated immunity is lost, and the body becomes progressively more susceptible to opportunistic infections.

Two types of HIV have been characterized as- HIV-1 and HIV-2. HIV-1 is the virus that was initially discovered and termed both LAV and HTLV-III. It is more virulent, more infective (Gilbert, McKeague, Eisen, Mullins, Guéye-Ndiaye, Mboup and Kanki, 2003) and is the cause of the majority of HIV infections globally. The lower infectivity of HIV-2 compared to HIV-1 implies that fewer of those exposed to HIV-2 will be infected per exposure. Because of its relatively poor capacity for transmission, HIV-2 is largely confined to West Africa (Reeves and Doms , 2002).

A 2008 study in Botswana, Namibia and Swaziland found that these disadvantages have an additive effect on HIV status. The authors found that four factors (intimate partner violence, extreme poverty, education and partner income disparity) explained almost all of the difference in HIV status between adults aged 15–29 years. Among young women with any one of these factors, the HIV rate increased from 7.7 percent with no factors to 17.1 percent. Some 26 percent of young women with any two factors were HIV positive; 36 percent of those with any three factors and 39.3 percent of those with all four factors were HIV-positive (Poku and Whiteside, 2004).

The West Africa region has generally moderate levels of infection of both HIV-1 and HIV-2. The onset of the HIV epidemic in West Africa began in 1985 with reported cases in Côte d'Ivoire, Benin and Mali. Nigeria, Burkina Faso, Ghana, Cameroon, Senegal and Liberia followed in 1986. Sierra Leone, Togo and Niger in 1987; The Gambia, Guinea-Bissau and Guinea in 1989; and finally Cape Verde in 1990 (Andersson and Cockcroft, 2012).

United Nations Population Fund (UNFPA) (2013) asserted that, in the world three million people died of AIDS-related diseases in 2005, more than 40 million people are living with HIV and each day 14,000 people half of them aged 15 to 24 are infected. At the end of 2007 an estimated 2.6 millions Nigerians were infected with HIV. The HIV prevalence rate among adults aged 15 and 49 was 3.1 percent of those aged 15-24 years were HIV positive (UNAIDS/WHO, 2008).

In Nigeria, an estimated 3.6 percent of the population is living with HIV and AIDS (UNGASS, 2010). Although, HIV prevalence is much lower in Nigeria than in other African

countries such as South Africa and Zambia, the size of Nigeria's population (around 162.5 million) means that by the end of 2009, there were an estimated 3.3 million people living with HIV (UNAIDS, 2010). Approximately 220,000 people died from AIDS in Nigeria in 2009 (UNAIDS, 2010) with AIDS claiming so many lives, Nigeria's life expectancy has declined significantly. In 2010, the overall life expectancy was only 52 years (UNDP, 2011).

The factors responsible or causes of HIV/AID could be described as; cultural factors-It has been argued that the practice of female genital mutilation has led to an increased incidence of AIDS in Africa, since intercourse with a circumcised female is conducive to an exchange of blood (Clements, Greenough and Shull, 2006). Political factors- major African political leaders have denied the link between HIV and AIDS, favoring alternate theories. The scientific community considers the evidence that HIV causes AIDS to be conclusive and rejects AIDS-denialist claims as pseudoscience based on conspiracy theories, faulty reasoning, cherry picking and misrepresentation of mainly outdated scientific data. Despite its lack of scientific acceptance, AIDS denialism has had a significant political impact, especially in South Africa under the former presidency of Thabo Mbeki (Mark, 2000).

Religious factors- Mark (2013) opined that pressure from both Christian and Muslim religious leaders has significantly impeded progress to a variety of safe-sex campaigns, including safe-sex commercials being banned in Kenya and catholic church's ban on condoms in 2009 as well as the renewed banning of condoms in catholic schools in 2013. Medical suspicion- there is low levels of medical suspicion throughout Africa and there is evidence that such distrust may have a significant impact on the use of medical services (Savelsberg, Ndonko and Schmidt-Ehry, 2000).

Economic factors-Lack of money is an obvious challenge, although a great deal of aid is distributed throughout developing countries with high HIV/AIDS rates. For African countries with advanced medical facilities, patents on many drugs have hindered the ability to make low cost alternatives (Susan and Hunter, 2003). Natural disasters and conflict are also major challenges, as the resulting economic problems people face can drive many young women and girls into patterns of sex work in order to ensure their livelihood or that of their family or else to obtain safe passage, food, shelter or other resources (Samuel, 2009).

Pharmaceutical industry-African countries are also still fighting against what they perceive as unfair practices in the international pharmaceutical industry (Meier, 2002). Medical experimentation occurs in Africa on many medications, but once approved, access to the drug is difficult. Drug companies must make a return on the money they invest on research and work to obtain patents on their intellectual capital investments which restrict generic alternatives production (Fox, 2010).

Three main HIV transmission routes include: heterosexual sex; approximately 80 percent of HIV infections in Nigeria are the result of heterosexual (Federal Republic of Nigeria, 2012). Factors contributing to this include a lack of information about sexual health and HIV, low levels of condom use and high levels of sexually transmitted diseases (STDs). Women are particularly

affected by HIV. In 2009, Women accounted for 56 percent of all adults aged 15 and above living with the virus (UNGASS, 2010). Blood transfusions- HIV transmission through unsafe blood account for the second largest source of HIV infection in Nigeria. Not all Nigerian hospitals have the technology to effectively screen blood and therefore, there is a risk of using contaminated blood. The Nigerian Federal Ministry of Health have responded by backing legislation on the requires hospitals to only use blood from the National Blood Transfusion Services which has far more advanced blood-screening technology (Egesie and Egesie, 2011).

Mother-to-child transmission- Each year around 75,000 babies in Nigeria are born with HIV (WHO/UNAIDS/UNICEF, 2011). It is estimated that 36,000 children are living with HIV in the country, most of which became infected from their mothers (UNAIDS, 2010). This has increased from 220,000 in 2007 (UNAIDS, 2008), most at risk groups in Nigeria include brothel and non-brothel based female sex workers, men have sex with men, injecting drug users, transport workers, members of the armed forces and police. It has been found that individuals that fall under these groups and their partners account for 40 percent of new HIV infected in Nigeria (Federal Republic of Nigeria, 2012).

Centre for Disease Control and Prevention (CDC) (2010) asserted that some people experience signs and symptoms of HIV as soon as they become infected while others do not. When they occur, early signs and symptoms are often mistaken for the flu or a mild viral infection. Therefore, the signs and symptoms are classified into two: early signs and symptoms include ; fever, headache, nausea, diarrhea, enlarge lymph nodes in the neck, armpits or groin, night sweat, skin rashes, joint pain, nasal congestion and mouth or genital ulcer.

Later signs and symptoms includes - rapid weight loss, dry cough, recurring fever or profuse night sweat, profound and unexplained fatigue, swollen lymph glands in the armpits groin or neck, diarrhea lasting more than a week, white spots or unusual blemishes on the tongue, in the mouth or in the throat, pneumonia, memory loss, depression and other neurological disorder (Mayor, 2012).

The consequences of HIV disease include; retrogression of finance, dermatological/skin diseases, such as Varicella Zoster Virus (VZY), an infection that causes chicken pox and shingles (herpes zoster), skin sores, brain inflammation; Herpes Simple Virus (HSV) and Kaposi's Sarcoma (KS) (Mark, 2000). Elizabeth (2014) opined that oral health problems like candidiasis, periodontal diseases, gingivitis; neurological problems like dementia, inability to think properly, brain tumor could be a result of HIV/AIDs. Mayor (2012) added weight loss, loss of muscle and fat, diarrhea and a slight fever as consequences of HIV disease.

HIV prevention can be achieved through pharmaceutical Strategies include- microbicides for sexually transmitted diseases, pre-exposure prophylaxis, post-exposure prophylaxis, HIV vaccines, circumcision antiretroviral drugs to reduce viral load in the infected and condoms (Larke, 2010). Some social strategies which people consider include the following : sex education, needle-exchange programmes, safe injection sites, safe sex, serosorting, sexual abstinence and immigration regulation (Celum and Baeten, 2012)

Consistent condom use reduces the risk of heterosexual HIV transmission by approximately 80percent over the long-term (Crosby and Bounse, 2012). Where one partner of a couple is infected, consistent condom use results in rates of HIV infection for the uninfected person of below 1percent per year (WHO, 2003). Some data supports the equivalence of female condoms to latex condoms however the evidence is not definitive (Gallo, Kilbourne-Brook and Coffey, 2012). Comprehensive sexual education provided at school may decrease high risk behavior (Ljubojević and Lipozenčić, 2010) and the use of the spermicide nonoxynol-9 may increase the risk of transmission due to the fact that it causes vaginal and rectal irritation (Baptista and Ramalho-Santos, 2009).

II. RESEARCH HYPOTHESES

1. Undergraduate students are not significantly different in their awareness of causes of HIV/AIDS.
2. Undergraduate students are not significantly different in their awareness of HIV/AIDS transmission routes.
3. Health problem is not a significant consequence of HIV/AIDS among undergraduate students.
4. Undergraduate students are not significantly different in their awareness of prevention and control of HIV/AIDS.

III. METHODOLOGY

This study was carried out with the use of descriptive survey method. The study population comprises of all undergraduates of University of Ilorin, Kwara State. Five (5) departments were randomly selected for the study with the estimated population of two thousand and one hundred (2,100). Based on the population, a sample of four hundred and twenty (420) (representing 20 percent of the estimated population) was drawn with the use of stratified random sampling technique.

A self-structured questionnaire that had been thoroughly validated by experts in the field of Human Sexuality, Health Education and Sociology was instrument used for this study. A reliability coefficient of correlation of .75r was obtained through the use of test re-test method of reliability. Four research hypotheses were formulated and tested with the use of chi-square (X^2) statistical method of analysis. The result of analysis and interpretation of data collected for the result were tabulated and explained below:

IV. RESULTS AND DISCUSSION

This dealt with the analysis of the raw data collected through the use of questionnaire administered to four hundred and twenty (420) selected respondents among undergraduates of undergraduates of University of Ilorin, Kwara State. The results of the analyses are tabulated below:

Hypothesis 1: Undergraduates students are not significantly different in their awareness of causes of HIV/AIDS.

Table 1: Chi-square analysis showing awareness of undergraduates students on causes of HIV/AIDS.

S/N	ITEM	SA	A	D	SD	Row total	Cal X^2	Df	Crit. Value	Rem.
1	Female genital mutilation may lead to transmission of HIV/AIDS	302 (71.9%)	105 (25%)	10 (2.4%)	3 (0.7%)	420				
2	Poor safe sex campaigns may result in HIV/AIDS	276 (65.7%)	139 (33.1%)	4 (1%)	1 (0.2%)	420				
3	Using of unsterilized medical instruments for different people increase the spread of HIV/AIDS	286 (68.1%)	105 (25%)	20 (4.8%)	9 (2.1%)	420	63.5	12	21.03	HO Rejected
4	Poor economy situation may result in sex work or prostitution thereby leading to spread of HIV/AIDS	299 (71.1%)	99 (23.6%)	18 (4.3%)	4 (1%)	420				
5	Inadequate medical facilities and personnel may increase the HIV/AIDS epidemic	300 (71.4%)	80 (19%)	21 (5%)	19 (4.5%)	420				
	Column Total	**1463**	**528**	**73**	**36**	**2100**				

The findings from the analysis in the table 1 above shows that the calculated chi-square (X^2) values was 63.5 while the table value was 21.03 at 0.05 alpha level of significance with degree of freedom (Df) 12. Since the calculated X^2 value of 63.5 was greater than the table values of 21.03, thus, the null hypothesis was rejected, which means that: undergraduates students are significantly different in their awareness on causes of HIV/AIDS.

Hypothesis 2: Undergraduates students are not significantly different in their awareness on transmission routes of HIV/AIDS.

Table 2: Chi-square analysis showing awareness of undergraduates students on transmission routes of HIV/AIDS.

S/N	ITEM	SA	A	D	SD	Row total	Cal X^2	Df	Crit. Value	Rem.
6	Lack of information about sexual health and HIV may lead to AIDS	306 (72.9%)	100 (23.8%)	10 (2.3%)	4 (1%)	420				
7	Low levels of condom use may result in HIV/AIDS	316 (75.2%)	86 (20.5%)	16 (3.8%)	2 (0.5%)	420				
8	Transfusion of unsafe blood causes HIV/AIDS	220 (52.4%)	160 (38.1%)	32 (7.6%)	8 (1.9%)	420	179.1	12	21.03	HO Rejected
9	HIV positive mother may infect her baby	280 (66.6%)	115 (27.4%)	20 (4.8%)	5 (1.2%)	420				
10	Brothel based female sex workers are at risk of contracting HIV/AIDS	205 (48.8%)	120 (30.5%)	51 (12.1%)	36 (8.6%)	420				
	Column Total	**1327**	**589**	**129**	**55**	**2100**				

The findings from the analysis in table 2 above shows that the calculated chi-square(X^2) value 179.1 against the table value of 21.03 at 0.05 alpha level of significance with degree of freedom (Df) 12. Since the calculated X^2 value of 179.1 was greater that the table value of 21.03 thus, the null hypothesis was rejected, which means that: undergraduates students are significantly different in their awareness on transmission routes of HIV/AIDS.

Hypothesis 3: Health problem is not a significant consequence of HIV/AIDS.

Table 3: Chi-square analysis showing health problem as a consequence of HIV/AIDS.

S/N	ITEM	SA	A	D	SD	Row total	Cal X^2	Df	Crit. Value	Rem.
11	Running of stool may result from HIV/AIDs	323 (77%)	50 (12%)	40 (9.0%)	7 (2%)	420				
12	White patches in the mouth may be the outcome of being infected with HIV	215 (51.2%)	181 (32.9%)	21 (5%)	3 (0.7%)	420				
13	HIV positive people may experience chicken pox	267 (63.6%)	138 (32.9%)	10 (2.4%)	5 (1.1%)	420	171.6	12	21.03	HO Rejected
14	Selling of one's assets may end the life of HIV/AIDs patient	210 (50%)	155 (36.9%)	30 (7.1%)	25 (6%)	420				
15	HIV/AIDs patients may experience inability to think properly	217 (52%)	158 (38%)	25 (6.0%)	20 (4.0%)	420				
	Column Total	**1232**	**682**	**126**	**60**	**2100**				

The findings from the analysis in the table 3 above shows that the calculated chi-square (X^2) values was 171.6 while the table value was 21.03 at 0.05 alpha level of significance with degree of freedom (Df) 12. Since the calculated X^2 value of 171.6 was greater than the table values of 21.03, thus, the null hypothesis was rejected, which means that: Health problem is a significant consequence of HIV/AIDS.

Hypothesis 4: Undergraduates students are not significantly different in their awareness of prevention and control of HIV/AIDS.

Table 4: Chi-square analysis showing awareness of undergraduates students on prevention and control of HIV/AIDS.

S/N	ITEM	SA	A	D	SD	Row total	Cal X^2	Df	Crit. Value	Rem.
16	Sex education can prevents the spread of HIV/AIDS	296 (70.5%)	84 (20%)	30 (7.1%)	10 (2.4%)	420				
17	Using of new condom reduces HIV/AIDS epidemic	286 (68.1%)	119 (28.3%)	9 (21%)	6 (1.4%)	420				
18	Male circumcision reduces man's risk of acquiring HIV	198 (47.1%)	191 (45.5%)	21 (5%)	10 (2.4%)	420	168.5	12	21.03	HO Rejected
19	Immigration regulation reduces the chances of infected with HIV/AIDS	260 (62%)	115 (27.3%)	25 (5.9%)	20 (4.8%)	420				
20	Avoidance of indiscriminating sexual intercourse prevents the spread of HIV/AIDS	355 (84.5%)	45 (10.7%)	15 (3.6%)	5 (1.2%)	420				
	Column Total	**1395**	**554**	**100**	**51**	**2100**				

The findings from the analysis in the table 4 above shows the calculated chi-square(X^2) value of 168.5 against the table value of 21.03 at 0.05 alpha level of significance with degree of freedom (Df) 12. Since the calculated X^2 value of 168.5 was greater that the table value of 21.03 thus, the null hypothesis was rejected, which means that: undergraduates students are significantly different in their awareness on prevention and control of HIV/AID

V.   DISCUSSION OF FINDINGS

The discussion of the findings is as follows:

The result obtained from the tested hypothesis one shows that undergraduate students were significantly different in their awareness on causes of HIV/AIDS. This was justified by the assertions of Clements, Greenough and Shull (2006) that female genital mutilation has led to an increased incidence of AIDS in Africa because intercourse with circumcised female is conducive to an exchange of blood. Mark (2013) opined that pressure from both Christian and Muslim religion leaders significantly impeded progress to several of safe-sex campaigns.

The result of the tested hypothesis two shows that undergraduate students were significantly different in their awareness on transmission routes of HIV/AIDS. The result was in accordance with the finding of Egesie and Egesie (2011) that HIV transmission through unsafe blood account for the second largest source of HIV information in Nigeria. The result was also affirmed by UNAIDS (2010) that each year around 75,000 babies in Nigeria are born with HIV and it is ascertained that 36,000 children are with HIV in the country most of which become infected from their mothers.

The result obtained from the tested hypothesis three shows that health problem was a significant consequence of HIV/AIDS. This is justified by the assertions of Mark (2006) that

dermatological diseases like chicken pox, brain inflammation could result from HIV disease and the entire asserts and savings of many families which are generally meager before the onset of the disease may be completely spent for the treatment. The finding also support the claim of Elizabeth (2014) who opined that oral health problems like candidiasis, periodontal diseases, gingivitis; neurological problems like dementia, inability to think properly, brain tumor could be a result of HIV/AIDs. Mayor (2012) equally added that weight loss, loss of muscle and fat, diarrhea and a slight fever could be the consequences of HIV disease.

The findings that undergraduate students were significantly different in their awareness on prevention and control of HIV/AIDS is in line with Croshy and Bounse (2012) that consistent condom use reduces the risk of heterosexual HIV transmission meanwhile Ljubojevic & Lipozenal (2010) affirmed that comprehensive sexual education provided at school may decrease high risk behavior of HIV/AIDS.

VI.   CONCLUSION

Based on the findings from the analysis of the tested hypothesis, the following conclusions were drawn:

1. Undergraduate students were significantly different in their awareness on causes of HIV/AIDS. This implies that undergraduate students are aware of causes of HIV/AIDS.
2. Undergraduate students were significantly different in their awareness on transmission routes of HIV/AIDS. It implies that undergraduate students are aware of HIV/AIDS mode of transmission.
3. Health problem was a significant consequence of HIV/AIDS. It signifies that financial

breakdown and diseases like candidiasis, gingivitis and brain tumor may result from HIV/AIDS.

4. Undergraduate students were significantly different in their awareness on prevention and control of HIV/AIDS. It implies that undergraduate students are aware of preventive measures of HIV/AIDS.

VII. RECOMMENDATIONS

Based on the findings of this study, the following recommendations were made:

1. Undergraduate students are advised to abstain from indiscriminate sex.
2. Students are advised to go for HIV test to know their status and to avoid its complication.
3. There is need for HIV/AIDS education to be carried out by professional concerned on causes and prevention of HIV/AIDS.

REFERENCES

[1] Andersson, N. & Cockcroft A. (2012). Choice disability and HIV status: evidence from a cross-sectional study in Botswana, Namibia and Swaziland. AIDS and Behavior.

[2] Baptista, M. & Ramalho-Santos, J. (2009). Spermicides, microbicides and antiviral agents: recent advances in the development of novel multi-functional compounds. Mini reviews in medicinal chemistry 9 (13): 1556–67. PMID 20205637.

[3] CDC. (2010). How can I tell if I am infected with HIV? What are the symptoms. Retrieved on May 7th, 2013. From http://www.cdc.gov/hiv/resource/qa

[4] Celum, C. & Baeten, J. M. (2012). Tenofovir-based pre-exposure prophylaxis for HIV prevention: evolving evidence. Current opinion in infectious diseases 25 (1): 51–7. PMC 3266126. PMID 22156901.

[5] Chitnis, A., Rawls, D. & Moore, J. (2000). Origin of HIV type 1 in colonial French equatorial Africa? AIDS Research and Human Retroviruses 16 (1): 5–8. PMID 10628811.

[6] Clements, C. J., Greenough, P. & Shull D. (2006) How vaccine safety can become political — the example of polio in Nigeria. Current Drug Safety.

[7] Crosby, R. & Bounse, S. (2012). Condom effectiveness: where are we now?. Sexual health 9 (1): 10–7. PMID 22348628.

[8] Douek, D. C., Roederer, M. & Koup, R. A. (2009). Emerging Concepts in the Immunopathogenesis of AIDS. Annu. Rev. Med. 60: 471–84.

[9] Egesie, J & Egesie, E. (2011). Seroprevalence of Human Immunodeficiency Virus (HIV) among blood donor in Jos, Nigeria.

[10] Elizabeth, C. (2014). Effects of HIV on the body. Everyday health media, USA. LLC.

[11] Federal Republic of Nigeria. (2012). Global AIDS response progress report.

[12] Fox, M. (2010). Groups moving forward to develop AIDS gel. Reuters. Retrieved on March 29th, 2011.

[13] Gallo, M. F., Kilbourne-Brook, M. & Coffey, P. S. (2012). A review of the effectiveness and acceptability of the female condom for dual protection. Sexual health 9 (1): 18–26.. PMID 22348629.

[14] Gilbert, P. B., McKeague, I. W., Eisen, G. Mullins, C., Guéye-Ndiaye, A., Mboup, S. & Kanki, P. J. (2003). Comparison of HIV-1 and HIV-2 infectivity from a prospective cohort study in Senegal. Statistics in Medicine 22 (4): 573–593.

[15] Larke, N. (2010). Male circumcision, HIV and sexually transmitted infections: a review. British journal of nursing (Mark Allen Publishing) 19 (10): 629–34. PMID 20622758.

[16] Ljubojević, S. & Lipozenčić, J. (2010). Sexually transmitted infections and adolescence. Acta dermatovenerologica Croatica : ADC 18 (4): 305–10. PMID 21251451.

[17] Mayor, F. (2012). Major foundation for medical education and research. Mayor clinic Publication.

[18] Mark, S. (2000). Debating the Obvious — Page 1 - News — New York. Village Voice. Retrieved February 21st, 2012

[19] Mark, S. (2013). Kenya condom advert pulled after religious complaints — Page 1 - News — New York. BBC. Retrieved on March 21st, 2013.

[20] Meier, B. M. (2002). International Protection of Persons Undergoing Medical Experimentation: Protecting the Right of Informed Consent, Berkeley journal of international law [1085-5718] 20 (3), 513 -554

[21] Ouellet, D. L., Plante, I. & Landry, P. (2008). Identification of functional microRNAs released through asymmetrical processing of HIV-1 TAR element. Nucleic Acids Res. 36 (7): 2353–65.

[22] Poku, N. K. and Whiteside, A. (2004) The Political Economy of AIDS in Africa.

[23] Reeves, J. D. & Doms, R. W. (2002). Human Immunodeficiency Virus Type 2. Journal of General Virology, 83 (6): 1253–65.

[24] Samuel, F. (2009). HIV and emergencies: one size does not fit all, London: Overseas Development Institute.

[25] Savelsberg, P. F., Ndonko, F. T. & Schmidt-Ehry B. (2000). Sterilizing vaccines or the politics of the womb: Retrospective study of a rumor in the Cameroon. Medical Anthropology Quarterly.

[26] Susan, H. (2003). Black Death: AIDS in Africa , Palrave Macmillan.

[27] UNAIDS (2010). Report on the Global AIDS Epidemic. Retrieved on June 8th, 2011.

[28] UNAIDS (2012). The quest for an HIV vaccine.

[29] UNAIDS (2008). Report on the global AIDS epidemic.

[30] UNAIDS (2010). UNAIDS report on the global AIDS epidemic.

[31] UNDP (2011). Human development report.

[32] UNGASS (2010). UNGASS country progress report in Nigeria.

[33] UNICEF (2011). Combating anti-vaccination rumors: Lessons learned from case studies in Africahttp://www.path.org/vaccineresources/files/Combatting_Antivac_Rumors_UNICEF.pdf.

[34] WHO & UNAIDS (2007). Announce recommendations from expert consultation on male circumcision for HIV prevention. World Health Organization.

[35] WHO (2003). Condom Facts and Figures. Retrieved on January 17th, 2006.

[36] WHO/UNAIDS/UNICEF (2011). Global HIV/AIDS response: Epidemic update and health sector progress.

AUTHORS

First Author – Onifade, O. A. (Ph.D.), Department of Health Promotion and Environmental Health Education, Faculty of Education, University of Ilorin, Nigeria

Second Author – Ruth Adio-Moses (Ph.D.), Department of Human Kinectics and Health Education, University of Ibadan

Third Author – Ologele, I. (Ph.D.), Department of Health Promotion and Environmental Health Education, Faculty of Education, University of Ilorin, Nigeria

Fourth Author – Adigun, J. O. (M.Ed.), Department of Health Promotion and Environmental Health Education, Faculty of Education, University of Ilorin, Nigeria, e-mail address:adigunjoseph12@gmail.com

Fifth Author – Ogungboye, R. O. (M.Ed.), Department of Health Promotion and Environmental Health Education, Faculty of Education, University of Ilorin, Nigeria

Sixth Author – Abikoye, A. I. (M.Ed.), Department of Health Promotion and Environmental Health Education, Faculty of Education, University of Ilorin, Nigeria

Seventh Author – Oguntunji, I. O. (M.Ed.), Department of Health Promotion and Environmental Health Education, Faculty of Education, University of Ilorin, Nigeria