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PUBLIC HEALTH IMPLICATIONS OF HIV/AIDS INCIDENCE IN ORASHI COMMUNITIES OF NIGER DELTA, NIGERIA

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ABSTRACT

Human immunodeficiency virus, the pathogen causing Acquired Immunodeficiency Syndrome (AIDS), adjudged to be the most significant emerging infectious disease in the world, is causing health, social and developmental problems globally. This study was carried out on subjects recruited at random from various centers in Orashi geopolitical region of Rivers state, Nigeria. This study evaluated the incidence of HIV/AIDS and assessed the HIV/AIDS high risk group in Orashi region. Additionally, it attempted ascertaining the potential impact of HIV/AIDS on other sector of the economy as agriculture, households, labour, and their socio-cultural implications for the society. However, the study showed no significant difference in HIV infection among people of different age groups, with an overall HIV prevalence of 10.6%. The results also showed a negative attitude among the people of the area even when 94% respondents agreed to have heard of HIV/AIDS and 54.9% of respondents have not used a condom before while 56.7% agreed to have had their first sexual experience before age 15. However, the highest HIV prevalence was observed among ages 25-34 and 45-60, but statistical analysis using ANOVA shows no significant difference between age groups and prevalence of HIV infection among the studied population. Finally, it can be deduced from this study that urgent awareness campaign be intensified by both government and non-governmental organizations to reduce the spread of the HIV/AIDS pandemic in the area with emphasis on behavioral change and wealth creation.

KEY WORDS: *Pathogen, Orashi, incidence, Human Immune Deficiency Virus*

INTRODUCTION

Human immunodeficiency virus, the pathogen causing Acquired Immunodeficiency Syndrome (AIDS), adjudged the most significant emerging infectious disease, is causing health, social and developmental problems to mankind (Philip and Barry, 2003). Human immunodeficiency virus, HIV, a member of the Lentivirus genus and family Retroviridae that was unknown until first observed in 1981 among homosexual patients in the United States (Brooks *et al*., 2007). It is the pathogen responsible for Acquired Immunodeficiency Syndrome (AIDS), which is marked by steady decline in the capacity of the body to fight infections and has been one of the most significant infectious diseases of the last century. HIV threatens to continue to create health, social and developmental issues in every facet of human life (Philip and Barry, 2003).

Besides, there are two species of HIV known as HIV 1 and HIV 2. HIV 1 is more virulent, more infective and the major cause of infections globally (Esparza and Bhamarapravatis, 2000). Because of the relatively poor infective ability of HIV 2, it is largely found in West Africa (Philip and Barry, 2003). The HIV virus is mainly transmitted through sexual contact (Azuonwu *et al*., 2010). Nevertheless, transmission of HIV is a function of where the virus appears in the body. It could be transmitted through body fluid secretions, genital secretions, blood, and breast milk. While HIV transmission is of a lesser extent, and of no major clinical importance in sweat, urine, tears and saliva because of their low concentrations of the HIV virus (Philip and Barry, 2003; Mark and Bill, 2006).

Also, if blood which is infected with the HIV virus comes into contact with open wound or broken skin, HIV may be transmitted which is similarly observed in infections due to blood transfusion and mother to child transmission of the virus. It is also a thing of concern to persons receiving medical care in third world countries where sub-standard hygienic practices are prevalent in the re-use of needles (Obire *et al*., 2009). People who give and receive tattoos, piercing and scarification procedures can also be at risk of infection (Obire *et al*., 2009).

However, after the virus has infected the cell, two pathways are possible: either the virus becomes latent and the infected cell continues to function, or the virus becomes active, replicates and a large number of viral particles are liberated which can then infect other cells (Ochei and Kolhatkar, 2000).

The duration between primary infection and progression to clinical disease averages about ten years. In untreated cases, death usually occurs within two years after the onset of clinical symptoms (Mark and Bill, 2006). Besides, HIV-related studies in West Africa including Nigeria, are not carried out in rural areas and the distribution of medical assistance like anti-retroviral drugs are concentrated in urban areas (Obire *et al*., 2009). The predisposing factors for progression of HIV to AIDS after infection are thought to include malnutrition, overall health and constitution of the individual, generally determined vulnerability to chronic HIV infection and the presence of other underlying infections that can cause immune suppression (Ochei and Kolhatkar, 2000).

Thus, progression from asymptomatic infection to AIDS is not sudden but in fact occurs as a continuum of clinical stages (Nester *et al*., 2004). Symptoms of active HIV infection are non-specific and include fatigue, rash, headache, nausea and might sweats while AIDS is characterized by pronounced suppression of the immune system and development of a wide variety of severe opportunistic infections (Azuonwu *et al*., 2010). And more serious cases may include prodrome; malaise, fatigue, weight loss, fever, shortness of breath, white patches on the tongue and lymphadenopathy (Mark and Bill, 2006). Laboratory evidence of HIV infection can be achieved in three ways:

- Demonstration of virus or viral particles (Obire et al., 2009; Padeh, 2005)
- Serologic detection of antiviral antibodies (Chour *et al*., 2005: Padeh, 2005).
- Measurement/Detection of viral antigen (Padeh, 2005).

Certainly, the demands of early marriage and the needs of married adolescents traditionally have been neglected in the adolescent policy agenda because it had been formulated and framed by the priorities and cultural experience of developed countries, where the proportions of married adolescents are relatively low (IATT, 2002) which has turned to be a major factor responsible for HIV/AIDS upsurge in Africa.

In the same vain, stigmatization and discrimination have been identified to have negative impact on multi-sectoral efforts to control the spread of HIV/AIDS in Nigeria (Richard and Peter, 2002). Furthermore, in a study by the society for family health in 1999 in Nigeria, monitoring HIV/AIDS indicators, 40% of respondents in the study, admitted to using condoms consistently in non-spousal intercourse preceding the study while 64% of youths and 54% of Adults admitted to being embarrassed at using condoms (UNGASS, 2010). One big challenge in carrying out this kind of research in West Africa is the scarce data available about the state of HIV/AIDS infection in rural areas of Nigeria and the rest of Africa.

In addition to the above challenge, the perception of the African people that collecting their blood and hair for scientific research could be an avenue to witch-hunt them, is an impediment to research itself (Obire *et al.*, 2009). This study aims to evaluate the incidence of HIV/AIDS and assess the HIV/AIDS high risk group in Orashi communities, in addition to ascertaining the potential impact of HIV/AIDS on other sectors of the economy as agriculture, households, labor, and socio-cultural implication to the society

MATERIALS AND METHOD

Subjects

This study was carried out on people within the age bracket of 15-60 years picked at random at various locations of this study to include persons who came for treatment at local health centers and general hospital and volunteers within Orashi communities for a three month period. The area of study is a rural area of the Niger Delta region of Nigeria characterized by the exploration activities and militant agitations for resource control, a prerequisite that is believed would solve current degradation, neglect, pollution and underdevelopment experienced in the region that was once mainly blooming in farming, fishing and trading as their main occupation.

CONSENT AND ETHICAL ISSUES

All patients were given explanations on the research objectives and procedure and those who gave their consent verbally, were recruited to be part of this study.

MATERIALS REQUIRED

The materials used for this study include questionnairess, cotton wool, methylated spirit, scissors, determinee test strip, stat pak test kit, S.D Bioline HIV 1 & 2 kit, rubber tourniquette, hypochloride, 2ml syringe and needle, drugs like vitamin C, ferrous, yeast tablets, paracetamol and cord liver oil capsules, which were given to some hard to convince volunteers to replenish the blood collected from them for this study.

SAMPLE COLLECTION AND PROCEDURE

The test kits used for this study are determinee test kit, Stat Pak test kit, and S.D Bioline HIV 1&2 test kit. They are all visual read qualitative immunoassay for the detection of antibodies of HIV-1 and HIV-2. The determine test kit contains 100 HIV-1 and HIV-2 recombinant antigen and synthetic peptide coated test cards and it's manufactured by Inverness Co. Ltd, Japan. Stat Pak is manufactured by CHEMBIO Diagnostic Systems Incorporated United States of America while determinee is produced by Inverness Medicals Japan Company Limited and Standard Bioline HIV 1 & 2 kit is manufactured by Standard Diagnostic Inc. with lot number 023207. Generally, most people were rather scared answering our questions and talking about HIV/AIDS because of their perceptions of the disease.

PRECAUTIONS TAKEN

In-view of the inherent risks involved in handling bio-specimen, we ensured that we wore hand gloves and laboratory coats while either collecting the sample from the patient or processing and screening the sample. Our work bench was disinfected before and after each working day using hypo-chloride. Samples and test kits used were disposed in a plastic bag and burnt in a local drum incinerator since no autoclave was available for this research.

STATISTICAL ANALYSIS

Data generated from this study were grouped analysed using the Excel version 2003 statistical package and presented in percentages and charts.

RESULT

Collectively, a total of one thousand five hundred and twenty one (1521) persons (male and female) were screened out of which one hundred and sixty-two (162) persons tested positive to HIV giving a prevalence of 10.6% while one thousand three hundred and fifty nine samples were negative (89.4%). Of the one hundred and sixty two sero-positive samples, fifty seven (57) were males (11.2%) and one hundred and five were females (11.0%). Nevertheless, this study showed no significant difference in HIV infection among people of different age groups with an overall HIV prevalence of 10.6% ($P<0.05$) and age groups between15-34 were the most sexually active constituting 65% of the sero-positive results from the study.

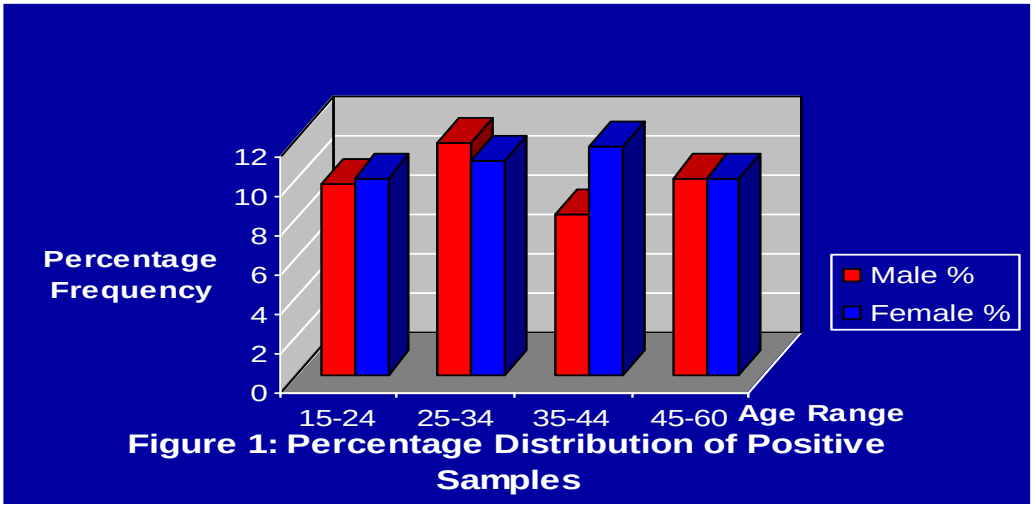

Figure 1: Percentage Distribution of Positive Samples

Note: positive (+ve), negative (-ve), Prevalence (prev), percentage (%). **N=1521**

The prevalence of HIV was highest in the age group 25-34 (11.2%) and 45-60 (11.2%). Figure 1 shows the age groups and their prevalence across gender lines. Similarly there was observed the highest male prevalence of 11.8% among persons of age group 25-34, while age group 15-34 were the most active female group with a cumulative prevalence of 64.7% and age group 45-60 has a female HIV prevalence of 12.3% as shown in figure 1.

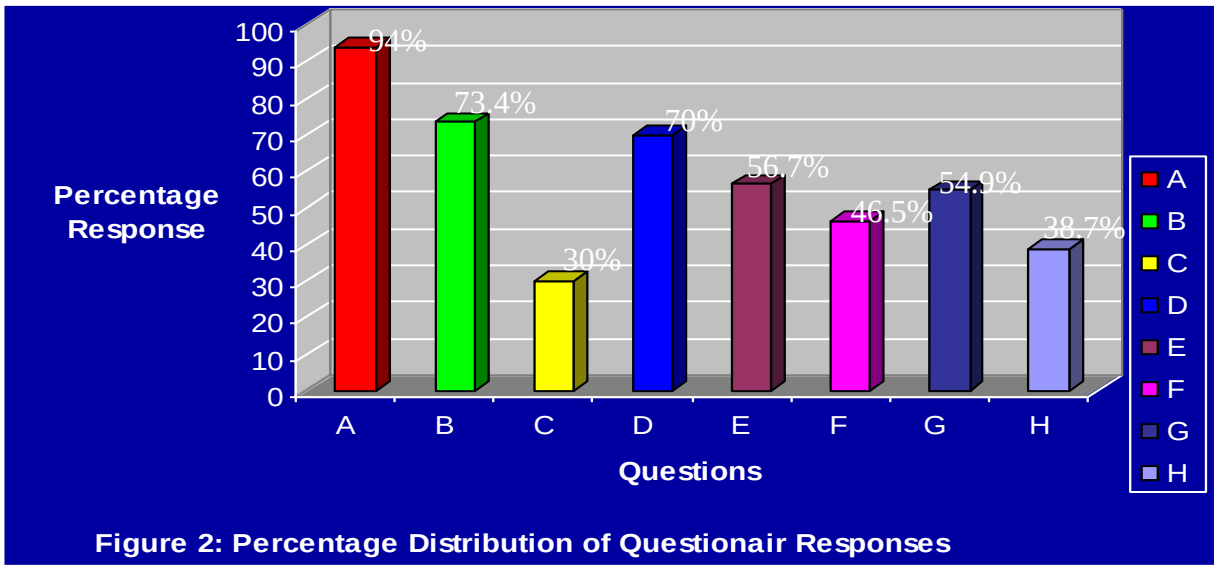

Figure 2: Percentage Distribution of Questionair Responses

***Key**: A represents % that have heard of HIV/AIDS, B stands for % that agree HIV can be transmitted through unprotected sex, C stands for % that agree to having more than one partner, D stands for % that agree to having only one partner, E stands for % agreeing to have had their first sexual intercourse before age 15, F stands for % that have done HIV test before, G stands for % that have not used a condom before and H stands for % that agree to abstain from sex.*

11.8% among persons of age group 25-34, while age group 15-34 were the most active female group with a cumulative prevalence of 64.7% and age group 45-60 has a female HIV prevalence of 12.3% as shown in figure 1. In fact, the inferred reasons for the high incidence of HIV infection in Orashi communities could be due largely to high risk behaviours like sexual promiscuity with 54.9% of respondents admitting not to have used condoms before (male and females inclusive): early sexual experience with 56.7% of respondents agreeing to having their first sexual intercourse before age 15 (male and females inclusive) with 94% of respondents admitting to have head of HIV/AIDS and 73.4% agreeing that it can be transmitted through unprotected sex.

DISCUSSION

The incidence of HIV infection in Orashi communities was high and it will have far reaching public health implications. In view of this fact, it will be worthy to note that from the result of this study expressed above, it shows a high incidence of HIV infection among females of child bearing age in ascending order of advancement in age which was similar to the report of Obire *et al*., (2009) among subjects in Ahoada, Rivers state and Azuonwu *et al*., (2010) among subjects in Ndoki communities of Abia state, Nigeria, were the highest HIV prevalence observed among age group 16-21 (Azuonwu *et al*., 2010). This trend could cause a high risk of mother to child transmission of the HIV infection due to poor access to standard medical care or poor hospital referral systems (Azuonwu *et al*., 2015).

However, this study prevalence of HIV infection was not comparable with the 1.6% reported by UNAID for Sudan during the special session of the general assembly on HIV/AIDS round table in 2001 and it could not also compare well with the 5.6% national prevalence reported for Nigeria in 2008, but the high prevalence of this study agrees considerably with the 15% prevalence reported by Azuonwu *et al*., (2010) among subjects in Ndoki communities of Abia state, Nigeria.

Perhaps, this HIV incidence would pose a great economic burden to the population of Orashi area that would not be good even if it was only imagined since the tradition of the people of the area entrusts the sole responsibility of farming on women who do peasant farming with little to sell, when in surplus to family needs. Thus reducing productivity and lowering income yield for those families who depend solely on farming for livelihood. This position agreed with the presentation of Oyekale (2004) at the 2004 world development awards and published report of Marmot (2001).

More importantly, the economic burden this will place on families whose relatives are hit by this scourge could thus expose children to the risk of early marriage, sexual harassment, early sexual initiation, child hawking and trafficking in order to get money for treatment of these relatives who often fall sick due to HIV infection (Marmot, 2001). This is why, though poorly utilised the effect of HIV scourge in Orashi communities cannot be over-looked because with more people falling sick, the available health facilities will be over-stretched and government would be left with no choice but to divert funds which would have been used for other developmental projects like building of schools, roads, good drinking water, etc, to focusing on health care and orphanages to carter for children that may be orphaned by the death of their parents or guardian due to AIDS and related diseases. Also, there will be poor productivity and a greatly reduced economic efficiency (Marmot, 2001).

Never-the-less, with the poor health and environmental conditions prevailing in the area cum high poverty levels and malnutrition, it is pertinent to advocate that since this study has shown that the vulnerability to HIV infection would in the future be largely on adolescents and teenagers as they, women and men of reproductive age (both married and unmarried) who are sexually active could transfer this burden to the next generation of adolescents if not controlled as suggested by Azuonwu *et al*., (2010) in a study were subjects in Ndoki community between the ages 16-21 years had the highest HIV prevalence of 29.44% (Azuonwu *et al*., 2010); an aggressive drive for behavioral change, better health and economic advancement of the people of Orashi communities should be strongly advocated through concerted efforts at public enlightenment campaigns and economic development programs (Oyakale, 2004).

Consequently, the fear of being stigmatized by the society was also observed as a factor preventing many HIV infected individuals from going to be enrolled for Highly Active Antiretroviral therapy at the general hospitals in the area. However,

because they cannot access this medical care, they experience speedy progression to AIDS with ensuing death consequence becoming a burden to their immediate families and the society at large (Richard and Peter, 2002).

In addition, the incidence of private hospitals spreading all around Orashi region could also be a factor promoting the incidence of HIV prevalence because it was observed that with the low economic capacity of the people, the tendency to be influenced by affluence into engaging in risky sexual behaviors was high in line with similar report by Azuonwu *et al*., working in Ndoki communities of Abia state, Nigeria (Azuonwu *et al*., 2010). Probably, infection through sharps as a result of abortion could be advanced as a possible collaborating factor that may have instigated the high incidence of HIV infection observed from the result of this study which was higher than the 5.6% National HIV prevalence published by the National Action Committee on HIV/AIDS (Reuben, 2008).

Similarly, because of the poor orientation of the people of Orashi communities about condom usage, this study showed over 50% of respondents acknowledged they had not used condoms before and this use of condoms may not have been discussed basically due to cultural or social reasons (Crocker and Major, 1998). People are mostly not willing to talk about condoms with their spouse or sexual partners even when they sense danger because of the fear of being castigated and cajoled to be bad mannered but would prefer only to keep silent; thereby bearing the consequences. Therefore, with this negative attitude, HIV transmission can only be encouraged and the incidence of new HIV infection would only but rise among the Orashi people, which definitely would be undesirable and costly (Marmot, 2001).

Also, it could be deduced from this study that, most people must have heard about HIV/AIDS from whatever means but a large percentage of such people still have low knowledge about the disease and their perception about the disease points towards vulnerability. This along with their sexual behavior of not using a condom exhibited by a majority of the studied population coupled with their early exposure to sexual intercourse (before age 15), implies that, early marriage by females could occur in high proportion with child birth expected soon after marriage. The female vulnerability to infection becomes higher as the man, who most times are older and have had a bulk memory of sexual escapes, can transmit HIV (if infected from previous sexual relationships) to their wives who would themselves live to discover their status so many years later when they have the opportunity to visit a health center which often can be found in the nearest urban town (Azuonwu *et al*., 2010; Obire *et al*., 2009). This is supported by findings that women who are married at younger age have less Knowledge of HIV prevention and control (UNGASS, 2010).

Also, this present study showed that both among males and females there was a high negative sexual attitude as most opted to have unprotected sex even though they were aware that this behavior is a route of transmission of HIV/AIDS (73.4% of the studied population). There is also the cultural factor, which is the perception that the male must dictate everything the female would do or not do during the act of sex. Thus, resulting in the inability of neither the male nor female sex to initiate discussions on HIV/AIDS or condom usage, at the beginning of the establishment of sexual intercourse (Marmot, 2001). The implications of the result of this study could be a high incidence of teenage pregnancies, unprofessional sexual relations in exchange for gifts or economic rewards, greater number of children removed from school due to the inability of their parents to meet their economic needs as a result of HIV/AIDS related ill health of their parents or sick relatives, largely due to depleting household incomes and savings as ill health, will reduce the productivity of their farms and trading business (AITT, 2002). Therefore, the emotional and economic impact of HIV/AIDS within the area of study with respect to life quality affects family, friends and the community (Oyakale, 2004; Marmot, 2001).

However, the impact of HIV/AIDS in Nigeria cuts across all sectors of human developments. It poses serious challenge to the survival of several vulnerable poor, whose livelihood depends solely on agriculture. Given the recent emergence of several health challenges like malaria, tuberculosis and several other sexually transmitted diseases which are not only massive killers but systemic wasters; you can only but imagine HIV/AIDS as a real threat to economic growth and development to be felt more in third world countries (Azounwu *et al*., 2010) and more in rural areas like Orashi region of Rivers State, Nigeria to a low mortality and low fertility rate and the declining life expectancy rate (Azounwu et al., 2010: Oyakale, 2004) from 51 years in 1991 to 47 years in 2007 coupled with its annual population growth rate of 2.8% and low per capita income of $1 or less (UGASS, 2010), the effect of which would be felt more on the larger population of vulnerable poor (Marmot, 2001).

All these indices outlined above, explains the essence of public health as summarized by Acheson as “the science and art of preventing diseases, promoting health and prolonging life through organized efforts of the society” (i.e. community health, social medicine, community

medicine and preventive medicine) which must be the cardinal health goal of any government willing to meet the challenges of HIV/AIDS in rural communities of Orashi (Azuonwu *et al.*, 2015). This research has shown that, government decisions and policies need to be redirected towards the real impact group. That is, the vulnerable poor in the society. Also, more efforts should be put into preventive medicine than curative care, to reduce the HIV/AIDS burdened group in the society as much as possible. In the same vain, the economic situation in Orashi region of Rivers state where you can hardly see good portable drink water or well equipped health care facility. This is in-spite of the presence of government owned health centers boosts of about 30% or less capacity utilization. This is not good enough and requires improvement.

However, when placed side by side research findings elsewhere, the quest for social relevance by females within the age brackets of 25-34, the highest HIV burdened age group, was in agreement with earlier report by Azuonwu *et al.*, (2010) among subjects in Ndoki communities. This we believe could be a reason why they are lured into engaging in paid sexual relationships with men; who spoil them with money from multinational corporations and militancy dividends from the oil rich Orashi region, without either parties considering the future consequences of their actions and inactions (Oyakale, 2004).

Also, these female age bracket, 25-30 years, may end up dating married men who after their illicit acts with strange women, go back home to infect their wives, who may be innocent of it all. Nevertheless, it could also be the other way round, with the married women engaging in illicit sexual relationships with men who for the sake of their financial strength, spoil them with money to the extent that they could undermine the presence of their husbands while with these strange men. Thus, they inflict emotional, social, health and psychological stress on the man or woman, as the case may be. This could lead to him/her indulging in multiple sexual relationships, crime and other social vices in order to regain his/her respect and ergo, while the society may suffer for it.

Therefore, the emotional and economic impact of HIV/AIDS within the area of study, affects the family and the community in countless number of ways. This is evident in the manner of responses collated from the questionnaire indicating that, stigmatization of people living with the HIV virus may have been a salient factor encouraging the spread of the disease in the area. This is because it restricts people living with HIV/AIDS from associating freely with their colleagues in the community and would prefer to die in silence. However, with the poor medical facilities available in rural Orashi communities, it is difficult for anyone to know his or her HIV status unless they visit the comprehensive health centers in Ahoada town, a semi-urban town in the area. This situation will compel people to live with the virus for many years unknowing to them (Azounwu *et al.*, 2010). Thus, it is empirical for both government and nongovernmental organizations to consider spreading HIV diagnostic kits and the antiretroviral drugs to rural health centers and provide incentives for the people to come out of their shelves and enroll for free HIV diagnosis and the highly active antiretroviral therapy if infected with HIV.

CONCLUSION

The Millennium Development Goal initiative which has been transformed into the Sustainable Development Initiative in January 2016, provides a unique platform and opportunity to refocus and accelerate programs and efforts of donors, governments, and civil society to improving the awareness, treatment and control of HIV/AIDS, most especially among rural dwellers, that are mostly hit by the prevailing factors that encourage the spread of HIV/AIDS. Above all, this study strongly held that the Human immune-virus infection rate among males and females in Orashi region was a function of their general behavioural model, early sexual initiation and the prevailing inability to discuss issues relating to HIV/AIDS and condom usage.

Nevertheless, in every facet of life good health had been the primary driver and when it is lacking, the factors of productivity and economic growth would be drastically hampered. Therefore, a diversity of response was be required including serious work to raise awareness on HIV/AIDS and stimulate action among health and education decision makers as well as efforts directly targeting young people where ever they are, in or out of school.

In addition, educational interventions across a range of settings should provide the knowledge and encouragement for the development of attitudes and skills that can limit the spread of the pandemic in the Orashi region. As such, government at all levels should make concerted efforts at providing adequate health facilities to take care of the health needs of those infected and to prevent further new infections of the HIV virus in Orashi region. This can be achieved through collaborations with nongovernmental/donor agencies, with emphasis on behavioral change and wealth creation. Bearing in mind that sex is regarded as a very sacred and private entity in traditional African society and discussion of sex with young minds can often be regarded as an inappropriate act both at religious and family circles. Therefore, sex education should be advocated by all

stake holders, that is the family, church, mosques, schools, social groups and government bodies.

Apparently, this study had X-rayed the menacing effect of HIV/AIDS in Orashi communities and showed the need for urgent interventions in education, health and economic empowerment of the people of the Orashi area. This we believe will engender knowledge, economic independence and subsequently reduce the incidence of HIV/AIDS in Orashi region of Rivers State and its environs.

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