

## REVIEW ARTICLE

# HIV Prevention for Rural Youth in Nigeria: Background Overview

Andrew G Onokerhoraye\*<sup>1</sup>, Eleanor Maticka-Tyndale<sup>2</sup> and the HP4RY Team

<sup>1</sup>Centre for Population and Environmental Development Ugbowo Housing Estate, Ugbowo Post Office, Benin City; <sup>2</sup>University of Windsor and Canada Research Chair in Social Justice and Sexual Health

\*For correspondence: Email:agonoks@yahoo.com

## Abstract

The negative impact of the HIV/AIDS epidemic has been a major challenge to sub-Saharan Africa. Although the rate of new HIV infections in sub-continent has decreased, the total number of people living with HIV continues to rise. Most of the people infected with HIV/AIDS in sub-Saharan Africa are within the age bracket of 15 to 35 years. It has been estimated that about 80% of the infected group are aged 20-29 years. It is against the background of the challenges posed by HIV/AIDS to young people that the Canadian-Nigerian partnership Action Research on *HIV Prevention for Rural Youth* was conceived. This paper provides the background to the outcomes reported in this special edition of this journal by reviewing the HIV/AIDS situation in sub-Saharan Africa and the nature of the associated response; discussing the rationale for the Action Research which focuses on Nigeria; and outlining the key components of the research (*Afr J Reprod Health 2012 (Special Edition); 16[2]: 25-38*).

## Résumé

Les conséquences négatives de l'épidémie du VIH/SIDA ont constitué un défi important en Afrique subsaharienne. Bien que le taux de nouvelles infections du VIH dans le sous-continent ait diminué, le nombre total de gens qui vivent avec le VIH ne cesse de s'accroître. La plupart des jeunes atteints du VIH/SIDA en Afrique subsaharienne sont âgés de 15 à 35 ans. On estime qu'environ 80% du groupe atteint sont âgés de 20 à 29 ans. C'est dans le contexte des défis posés par le VIH/SIDA aux jeunes gens qu'a été conçu le partenariat canadien-nigérian de la recherche d'Action sur *la Prévention du VIH en faveur de la jeunesse rurale*. Cet article présente le contexte des conséquences qui ont été rapportées dans ce numéro spécial en passant en revue l'état du VIH/SIDA en Afrique subsaharienne et la nature de la réponse qui y est liées ; en discutant le raisonnement pour la recherche d'action qui se concentre surtout sur le Nigéria et en décrivant les composants clé de la recherche (*Afr J Reprod Health 2012 (Special Edition); 16[2]: 25-38*).

---

**Keywords:** Nigeria, youth, HIV prevention

---

## Introduction

The negative impact of the HIV/AIDS epidemic has been a major challenge to developing countries in general and sub-Saharan Africa (SSA) in particular. In recent years, promising developments have taken place in global efforts to address the AIDS epidemic such as increased access to effective treatment and increased preventive programmes. Despite the recent efforts, the number of people living with HIV continues to grow in sub-Saharan Africa, just as the number of deaths due to AIDS is also growing. According to UNAIDS<sup>1</sup>, there were an estimated 33.3 million people living with HIV in the world in 2009 compared with 26.2 million in 1999, a 27% increase. The annual number of new HIV

infections was 2.6 million and overall, 1.7 million people died of AIDS in 2009. The estimated number of children living with HIV increased to 2.5 million in 2009. The proportion of women living with HIV has remained stable, at slightly less than 52% of the global total. Although the annual number of new HIV infections has been steadily declining since the late 1990s, this decrease is offset by the reduction in AIDS-related deaths due to the significant scale up of antiretroviral therapy over the past few years, keeping the number of people living with HIV/AIDS at a relatively constant level. Sub-Saharan Africa still bears the greatest share of the global HIV burden. Although the rate of new HIV

infections has decreased, the total number of people living with HIV continues to rise. In 2009, that number reached 22.5 million, 68% of the global total. Sub-Saharan Africa has more women than men living with HIV. The largest epidemics in sub-Saharan Africa—Ethiopia, Nigeria, South Africa, Zambia, and Zimbabwe—have either stabilized or are showing signs of decline. The estimated 1.3 million people who died of HIV related illnesses in sub-Saharan Africa in 2009 comprised 72% of the global total of 1.8 million deaths attributable to the epidemic. Since the beginning of the epidemic an estimated 15 million Africans have died from AIDS<sup>1</sup>.

Young people aged 15-25 account for 45% of new cases of HIV infection worldwide. Most of the people infected with HIV/AIDS in sub-Saharan Africa are within the age bracket of 15 to 35 years. This group is the main work force and potential leaders of any nation. It has been estimated that 80% of the infected group are aged 20-29 years. Youth and young adults are therefore a vulnerable group susceptible to HIV infection. <http://www.avert.org/aids-impact-africa.htm> AIDS has caused immense human suffering in sub-Saharan Africa. Through its impacts on the labour force, households and enterprises, AIDS has played a significant role in slowing down or reversing human development in this region. One aspect of this reversal of development has been the damage that the epidemic has done to the economies of sub-Saharan African countries, which, in turn, has made it more difficult for them to respond to the crisis<sup>1</sup>.

It is against the background of the challenges posed by HIV/AIDS to young people in sub-Saharan African countries that the Canadian-Nigerian Action Research partnership on *HIV Prevention for Rural Youth* was conceived. This introductory paper of this special edition of the *African Journal of Reproductive Health* provides the background to the Action Research outcomes reported in this edition. The remaining part of the paper is divided into five sections. The first section reviews the HIV/AIDS situation in sub-Saharan Africa and the associated response. The second section examines the challenge and experiences of HIV prevention among young people in sub-Saharan Africa while the third section discusses

the rationale for the Action Research on HIV prevention for rural youth in Edo State, Nigeria. The fourth section outlines the components of the Action Research while the final section concludes the paper.

## **HIV/AIDS Situation and Response in Sub-Saharan Africa**

Both HIV prevalence rates and the numbers of people dying from AIDS vary greatly among African countries. In Somalia and Senegal the HIV prevalence is under 1% of the adult population, whereas in Namibia, Zambia and Zimbabwe around 10-15% of adults are infected with HIV. In South Africa the HIV prevalence is 17.8% and in three other southern African countries Botswana (24.8%), Lesotho (23.6%) and Swaziland (25.9%), the national adult HIV prevalence rate now exceeds 20%. Adult HIV prevalence in East Africa exceeds 5% in Uganda, Kenya and Tanzania. The countries in West Africa have been less affected by HIV and AIDS, but some countries are experiencing rising HIV prevalence rates. In Cameroon HIV prevalence is now estimated at 5.3% and in Gabon it stands at 5.2%. In Nigeria, HIV prevalence is relatively low (4.6%) compared to the rest of Africa. However, because of Nigeria's large population, this equates to around 5.3 million people living with HIV, placing it among countries with the most people infected. Overall, rates of new HIV infections in sub-Saharan Africa appear to have peaked in the late 1990s, and HIV prevalence seems to have declined slightly, although it remains at an extremely high level<sup>1,2</sup>.

The vast majority of people newly infected with HIV in sub-Saharan Africa are infected during unprotected heterosexual intercourse with onward transmission of HIV to newborns and breastfed babies. Having unprotected sex with multiple partners remains the greatest risk factor for HIV in sub-Saharan Africa<sup>3</sup>. Research in 12 countries in eastern and southern Africa shows that the prevalence of discordant couples (i.e. couples where one partner is infected and the other is not) is high, ranging between 36% and 85%<sup>4</sup>. Increasing evidence indicates that unprotected paid sex, sex between men, and the use of contaminated

drug-injecting equipment by two or more people on the same occasion, are significant factors in the HIV epidemics of several countries with generalized epidemics. Together, those modes of transmission are believed to account for about 33% of new HIV infections in Kenya and almost 40% in Ghana. Paid sex remains an important factor in many of the HIV epidemics in all regions of sub-Saharan Africa. It is estimated that almost one third (32%) of new HIV infections in Ghana, 14% in Kenya and 10% in Uganda are linked to sex work (HIV infection among sex workers, their clients, or their other sex partners)<sup>5</sup>.

A number of African countries have conducted large-scale HIV prevention initiatives in an effort to reduce the scale of their epidemics. Senegal, for example, responded early to the emergence of HIV with strong political and community leadership. It is impossible to predict how Senegal's epidemic would have progressed without intervention, but Senegal now has one of the lowest HIV prevalence rates in sub-Saharan Africa. The situation in Uganda was similarly successful. HIV prevalence among pregnant women in Uganda fell from a high of around 30% in the early 1990s to around 10% in 2001 and is now estimated to be 6.5%. This change is thought to have been largely due to intensive HIV prevention campaigns. However, a high rate of new HIV infections in Uganda has led to fears that HIV prevalence may increase again. Declines in HIV prevalence have also been seen in Kenya, Zimbabwe and urban areas of Zambia and Burkina Faso. However, not all African countries have had such successful HIV prevention campaigns. In South Africa, the government's failure, over many years, to respond to the AIDS crisis has led to an unprecedented number of people living with HIV. An estimated 70,000 babies are born with HIV every year, reflecting significant failures in prevention of mother-to-child transmission initiatives<sup>1,2</sup>.

Condoms play a key role in preventing HIV infection around the world. In sub-Saharan Africa, most countries have seen an increase in condom use in recent years. In studies carried out between 2001 and 2005, eight out of eleven countries in sub-Saharan Africa reported an increase in condom use<sup>1</sup>. The distribution of condoms to countries in sub-Saharan Africa has also increased.

In 2004 the number of condoms provided to sub-Saharan African countries by donors was the equivalent of 10 for every man, compared to 4.6 for every man in 2001. However, this was still estimated to represent an annual gap of anywhere between 1.9 to 13.1 billion condoms fewer than what was needed. Relative to the enormity of the HIV/AIDS epidemic in Africa, providing condoms is cheap and cost effective. Even when condoms are available, there are still a number of social, cultural and practical factors that may prevent people from using them<sup>1,6</sup>.

The provision of voluntary HIV counseling and testing (VCT) is an important component of any national HIV prevention programme. It is widely recognized that individuals living with HIV who are aware of their status are less likely to transmit HIV infection to others, and are more likely to access treatment, care and support that can help them to stay healthy for longer. A number of countries in sub-Saharan Africa have implemented national campaigns to encourage uptake of HIV testing. Since 2004, Burkina Faso has conducted annual testing campaigns, and in 2009 more than one million people were reportedly tested there for HIV. Lesotho, Kenya, Tanzania and Malawi have also conducted testing campaigns which have significantly increased the numbers of people tested. In 2009, for example, a third of Kenyan women and a fifth of Kenyan men reported that they had been tested for HIV in the last 12 months, compared to less than 10 percent of Kenyan women and men in 2003<sup>1</sup>. Across sub-Saharan Africa it is estimated that 66 out of every 1000 people were tested for HIV in 2009, an increase of more than a third compared to 2008. The provision of VCT has become easier, cheaper and more effective as a result of the introduction of rapid HIV testing, which allows individuals to receive a test and the results in the same day.

HIV also has its impact on children in sub-Saharan Africa with about 300,000 children being infected in 2009. The vast majority of these children have been infected with HIV during pregnancy, childbirth or breastfeeding. Without interventions, there is a 20-45% chance that an HIV-positive mother will pass the virus on to her child. If a woman is supplied with antiretroviral drugs, however, this risk can be significantly

reduced. Before these measures can be taken the mother must be aware of her HIV infection, so testing also plays a vital role in the prevention of mother-to-child transmission (MTCT). In many developed countries, these steps have helped to virtually eliminate MTCT. Yet sub-Saharan African continues to be severely affected by the problem, due to a lack of drugs, services and information, and a shortage of testing facilities. In 2009, preventive drugs reached 68% of HIV-infected pregnant women in Eastern and Southern Africa, and 23% in West and Central Africa. Given the scale of the MTCT crisis in Africa, it is remarkable that more is not being done to prevent the rising numbers of children becoming infected with HIV, and dying from AIDS<sup>1</sup>.

Antiretroviral drugs (ARVs) have been available in richer parts of the world since the late 1980s and Highly Active Anti-Retroviral Therapies (HAART) since shortly after 1996. Distributing these drugs requires money, a well-structured health system and a sufficient supply of healthcare workers. This explains why for most Africans living with HIV, ARVs are still not available. Millions are not even receiving treatment for opportunistic infections, which affect individuals whose immune systems have been weakened by HIV infection. These facts reflect the world's continuing failure, despite the progress of recent years, to mount a response that matches the scale and severity of the global AIDS epidemic. While most African countries have now started to distribute ARVs, progress in providing sufficient quantities of the drugs has been uneven. Most people receiving antiretroviral therapy in sub-Saharan Africa start treatment late, which limits the overall impact of HIV treatment programmes. In Cameroon, Côte d'Ivoire, Kenya, Malawi, Chad, and Zimbabwe between 25% and 50% of people requiring antiretroviral drugs were receiving them in December 2009. While South Africa is the richest nation in sub-Saharan Africa and should have led the way in ARV distribution, its government was slow to act, and so far, only 37% of those in need of treatment in South Africa are receiving it. In other countries, such as Nigeria, Congo, Ghana, and Sudan the figure is less than 25%. Nonetheless, the overall situation is slowly improving; the number of people receiving ARVs

in Africa doubled in 2005 alone. By the end of 2009, almost 4 million people in Africa were receiving antiretroviral treatment<sup>1,2</sup>.

There are still, however, a number of impediments to ARV provision in sub-Saharan countries. One major challenge is the fact that the majority of the countries have a poor healthcare infrastructure and a shortage of medical professionals. A considerable emphasis needs to be placed not only on the availability of ARVs, but also the availability of professionals who are able to administer the drugs. Another major challenge is ensuring that drugs are not only supplied to more localities, especially the remote ones, but that sufficient quantities of drugs are supplied to those areas. This is critically important because once an individual starts to take ARVs they have to take them for the rest of their life. To improve treatment programs, sub-Saharan African countries face the double challenge of getting new people to start treatment and maintaining the supply of treatment to those who are already receiving ARVs.

## **The Challenge and Experiences of HIV Prevention among the Youth in Sub-Saharan Africa**

Youth are defined by the United Nations as people between the ages of 15-24. The youth are generally energetic, dynamic and adventurous. Nearly half the world's population is under the age 25, with two thirds of all young people living in sub-Saharan Africa. Due to social, cultural, economic and biological reasons, young people are particularly vulnerable to HIV. They are more likely to experiment with dangerous behaviours that favour HIV transmission. Risky behaviours that youth engage in that facilitate HIV transmission include early engagement in pre-marital sexual relationships with the opposite sex, keeping of multiple sexual partners, drug abuse and engaging in sex for money<sup>7,8</sup>. Globally 25% of those living with HIV are under the age of 25. One third of women who are HIV infected are between the 15-24 years of age. The rate of HIV infection is higher among young women than young men and the reasons attributed to this include greater

biological susceptibility, gender inequality, socio-cultural norms, lack of financial security, forced and early marriage, sexual abuse and the trafficking of young women<sup>1</sup>.

In sub-Saharan Africa, youth aged 15-24 constitute between 20 and 25 per cent of the population yet are estimated to account for 45% of new HIV infections<sup>1</sup>. Global goals to reduce vulnerability and prevent HIV in young people highlight the growing consensus that HIV prevention efforts must include a focus on young people. This has generated considerable interest in the promotion of HIV prevention among the youth. However, in spite of recent calls for increased attention to the high levels of HIV transmission to youth, little scientific consensus exists about how best to prevent HIV infection among them. In countries where HIV prevalence has declined at the population level, sexual behaviour change among young people has been cited as an important contributing factor<sup>9</sup>. It has been argued that the disease can be tackled effectively by transforming the social environment of the youth so as to enable them to form positive relationships between themselves and their peers, parents, teachers, religious groups and health services that will contribute to the prevention of the spread of HIV among them. By so doing, they acquire the right type of knowledge, life skills, and attitude<sup>10</sup>. It is only when concerted efforts are directed towards increasing the knowledge base of youth on reproductive health (RH) issues that the rapid spread of HIV can be reversed. Yet questions remain regarding how to achieve and sustain the individual-level behavioural changes needed to reduce HIV incidence among the youth<sup>11</sup>.

A number of reviews of interventions to prevent HIV among young people in developing countries have been carried out but few have focused on the situation in sub-Saharan Africa<sup>9,12-17</sup>. This is largely due to the fact that in sub-Saharan Africa, experience with youth HIV prevention programmes is limited with evidence regarding effectiveness still emerging. However, three major types of interventions in the context of contemporary sub-Saharan Africa can be identified in the literature<sup>18</sup>. The first focuses on schools which are regarded as the most appropriate setting for targeted HIV prevention intervention in young

people. Schools have great potential for HIV prevention education in that students are expected to attend regularly and the great majority begins attending school prior to becoming sexually active. Also, some of what a young person learns while in school affects their lifelong norms, attitudes and behaviours. Schools therefore play a significant role in HIV prevention among young people, both while they are within the young person's age group (10-24 years) and thereafter<sup>9</sup>. A considerable number of interventions in schools have been evaluated to date, and many show that this type of intervention can be effective at increasing sexual and reproductive health knowledge. Prior reviews of youth intervention studies in both developed and developing countries<sup>9, 12-14,16,19</sup> suggest an important role for school-based interventions in increasing young people's knowledge of sexuality, reproductive health, and HIV prevention. Reviews of school-based interventions specific to sub-Saharan Africa have found greater intervention impact on HIV-related knowledge and attitudes than on reported sexual behaviours,<sup>12, 14, 19</sup> a finding reinforced by two recent large-scale trials in Tanzania, the Mema kwa Vijana (MkV) Project<sup>20</sup>, and Zimbabwe, the Regai Dzive Shiri (RDS) Project<sup>9</sup>. However, several evaluations of school-based interventions have demonstrated the ability to produced behaviour change that is sustained for 1-3 years<sup>21-24</sup>.

The second type of intervention to prevent HIV among youth focuses on improving health services which play a vital role in the prevention, care and treatment of HIV/AIDS in young people. Access to high-quality health care is not only a global goal, but also a basic aim of all national health services. There is now strong evidence of the potential efficacy of several HIV prevention interventions that can be delivered by health services, such as male circumcision, condom use, and possibly HIV testing and counselling<sup>1, 9</sup>. However, these specific interventions cannot have any direct population-level effect on the HIV epidemic among young people unless they are made accessible and acceptable to, and therefore used by, young people<sup>25</sup>. The most common type of interventions reported in the literature focus on training service providers, including taking actions



to make the improved health facility more youth-friendly as well as activities in the community to link or refer young people to health services. There is strong evidence of the effectiveness of this approach in various evaluations in the literature. However, evidence on the most appropriate way to deliver health care to young people in order to maximize their access to, and appropriate use of such services remains incomplete<sup>9, 25</sup>. Finally, the third type of interventions focuses on geographically-defined communities. These are generally the most difficult to evaluate in terms of their effectiveness. Community level interventions have the potential to change established norms, values and traditions that may impede HIV prevention and care. In addition, community-based interventions may increase the support young people need, and increase access to necessary information and services<sup>15</sup>. Despite their potential, community interventions face a number of challenges, including the inherent difficulty in changing established norms, community diversity, sustainability and difficulty with monitoring and evaluation of these interventions. Interventions in geographically-defined communities can be categorized into two broad groups: interventions that focus on providing information, skills building and behavior change targeting young people and interventions that target the entire community in which various traditional kinship networks and community activities are used to deliver the intervention. Reviews and evaluations of community interventions are limited in sub-Saharan Africa<sup>15</sup> which is also a reflection of the scarcity of such interventions. The reports of reviews and evaluations in the literature show that intervention types which target the community as a whole, rather than just young people, were more effective at improving reported sexual risk behavior and impacting on biological outcomes, which suggests that it may be particularly important to explore interventions to change the social and sexual norms within the wider community. Overall, however, there has been some evidence in the literature that interventions in geographically defined communities can have the potential to positively impact a number of reproductive health outcomes in young people<sup>9</sup>.

To understand current evidence for youth HIV prevention in sub-Saharan Africa, and to answer the question 'which interventions work, and why', reviews of intervention content and characteristics of successful interventions are needed. Thus there is the great need for interventions aimed at reducing STI/HIV/AIDS in a sub-Saharan African context, targeting adolescents still in school and out-of-school. On the basis of the present review of available interventions in sub-Saharan African countries it can be concluded that it is relatively easy to effect changes in knowledge and attitudes regarding STI/HIV/AIDS using school-based interventions that have been carefully designed to suit the sub-Saharan African environment. It is more challenging to effect changes in positive intentions regarding sexual risk reduction, and most of all, changes regarding sexual risk behaviours<sup>14, 19</sup>.

The magnitude of the HIV epidemic, and current evidence of relative lack of sexual health interventions targeting young people in sub-Saharan Africa countries calls for more research and scrupulous use of available resources to inform the design and delivery of well-tailored interventions to meet the unique needs of this population group. Future studies employing a more systematic approach, conducted after an established contextual framework for the intervention is determined are urgently needed to help halt and possibly reverse the course of the AIDS pandemic<sup>14, 19</sup>.

### **Rationale for the Action Research on HIV Prevention for Rural Youth in Edo State, Nigeria**

With AIDS claiming so many lives in Nigeria, life expectancy has declined significantly. In 1991 the average life expectancy was 54 years for women and 53 years for men. In 2009 these figures had fallen to 48 for women and 46 for men. Approximately 80-95 percent of HIV infections in Nigeria are a result of heterosexual sex. 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. Women are particularly affected by HIV. In 2009 women accounted for 56

percent of all adults aged 15 and above living with the virus. HIV transmission through unsafe blood accounts 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. Each year around 57,000 babies in Nigeria are born with HIV. It is estimated that 360,000 children are living with HIV in the country. Most of them became infected from their mothers. This figure represents an increase from 220,000 which prevailed in 2007<sup>26, 27</sup>. A number of small-scale studies have indicated a steady rise in HIV prevalence among injecting drug users. Although HIV transmission through injecting drug use is not one of the main transmission routes, it appears to be accounting for an increasing number of new HIV infections in the country<sup>28</sup>.

The first two cases of HIV and AIDS in Nigeria were identified in 1985 and were reported at an international AIDS conference in 1986. In 1987 the Nigerian health sector established the National AIDS Advisory Committee, which was shortly followed by the establishment of the National Expert Advisory Committee on AIDS (NEACA). At first the Nigerian government was slow to respond to the increasing rates of HIV transmission and it was only in 1991 that the Federal Ministry of Health made their first attempt to assess Nigeria's AIDS situation. The results showed that around 1.8 percent of the people of Nigeria were infected with HIV. Subsequent surveillance reports revealed that during the 1990s HIV prevalence rose from 3.8% in 1993 to 4.5% in 1998. When Olusegun Obasanjo became the president of Nigeria in 1999, HIV prevention, treatment and care became one of the government's primary concerns. The President's Committee on AIDS and the National Action Committee on AIDS (NACA) were created, and in 2001 the government set up a three-year *HIV/AIDS Emergency Action Plan (HEAP)*<sup>29</sup>. In the same year, Nigeria hosted the Organization of African Unity's first African Summit on HIV/AIDS, Tuberculosis, and Other Related Infectious Diseases. In 2005 a new framework was developed covering the period from 2005 to 2009. Despite increased efforts to control the epidemic, by 2006 it was estimated that just 10 percent of

HIV-infected women and men were receiving antiretroviral therapy and only 7 percent of pregnant women were receiving treatment to reduce the risk of mother-to-child transmission of HIV<sup>30</sup>. In 2010 NACA launched its comprehensive National Strategic Framework to cover the period 2010 to 2015. This framework requires an estimated N756 billion (around USD 5 billion) to implement. Some of the main aims included in the framework are to reach 80 percent of sexually active adults and 80 percent of most at-risk populations with HIV counseling and testing by 2015; to ensure 80 percent of eligible adults and 100 percent of eligible children are receiving ART by 2015; and to improve access to quality care and support services to at least 50 percent of people living with HIV by 2015<sup>31</sup>.

The *National Education Sector HIV/AIDS Strategic Plan for Action (NESSP)*<sup>32</sup> specifically addresses the role of the education sector as an agent of change and declares that every child has a right to participate in the Nigerian *Family Life and HIV Education (FLHE)* programme in their schools. This programme was developed by the *Nigerian Educational Research and Development Council (NERDC)*<sup>33</sup> together with *Action Health Incorporated (AHI)*. It has been endorsed by the Federal and State Ministries of Education, as well as by faith-based leaders<sup>10, 34</sup>. The *Nigerian Educational Research and Development Council* and *Action Health Incorporated (AHI)* together with State Ministries of Education have developed and mobilized a training model that has insured that there are master trainers in each state and an infrastructure and method to train teachers for delivery of FLHE through carrier subjects in each school<sup>35</sup>.

Key strategic objectives of the NESSP<sup>32</sup> commit Nigeria to implementing FLHE throughout the country. The educational model used in FLHE fits the criteria for success established by a WHO expert consultation group<sup>14, 36</sup> and has garnered considerable international support and acclaim. However, programme delivery remains scattered and the impact of the programme on participating students has not been rigorously evaluated. In addition, while HEAP<sup>29</sup> calls for the elimination of barriers to a community-based response, there is little evidence

of community-based activities that could support the learning of youth and FLHE remains a “stand alone” school-based initiative. Youth in Nigeria, as in many countries, may learn how to protect themselves against HIV, but they continue to live in communities where acting on what they have learned is difficult, if not impossible<sup>37, 38</sup>.

A key component of the present policy framework in Nigeria in terms of containing the spread of HIV/AIDS relates to reaching at least 80 percent of sexually active most at-risk adults with HIV counseling. The young persons in different parts of the country fall in this category of people that need to be reached. It is only when concerted efforts are directed towards increasing the knowledge base of youth on sexual and reproductive health (SRH) issues that the rapid spread of HIV can be reversed. A primary reason for targeting young persons with sexuality education is the fact that adolescents reach sexual maturity before they develop mental/emotional maturity and the social skills needed to appreciate the consequences of their sexual activity<sup>39</sup>. Secondly, in Nigeria it is a fact that the sexuality education needs of this age group are largely unmet. Evidence of unmet need is reflected in research that confirms that some young people have a poor understanding of the reproductive process; others harbour misconceptions such as the belief that condoms contribute to pregnancy and infection<sup>40-43</sup>. Research in Nigeria also confirms that many young people participate in risky sexual activities, including early debut in sexual activities, sex with many partners, low and inconsistent use of condoms<sup>40, 44-46</sup>. The data from the National HIV/AIDS and Reproductive Health Survey (NARHS) reveals that among the sexually active 15 to 19 year olds only 34.4% used condoms at their most recent sexual encounter<sup>43</sup>. Another survey found that by the age of 13 years over a quarter of a sample of secondary school students in Plateau State had had sexual intercourse<sup>7</sup>. The explanation for these behaviors includes earlier menarche, the effect of media that glamorize sex, and an increasing weakness of traditional control of the family system in Nigeria<sup>46-49</sup>.

One of the consequences of the involvement of young persons in risky sexual activities is that

this group is disproportionately affected by reproductive morbidity including STI/HIV, unwanted pregnancies and their complications<sup>41,49-51</sup>. For example, the age group 20-24 years had the highest prevalence of HIV in the national HIV sero-prevalence sentinel survey of 2003<sup>52</sup>. Forty-two percent of adolescent girls in a rural community in Rivers state had had induced abortion or STI including gonorrhoea<sup>50</sup>. In Jos, 24% of patients attending an STI clinic were aged less than 25 years<sup>51</sup>. In Calabar, 72% of patients admitted for complications of abortion are aged between 12-20 years<sup>49</sup>. The final justification for targeting young people is that many in this group are in their most impressionable years when behaviors and character traits have not been fully formed. Therefore, sexuality education during adolescence is likely to foster positive attitudes and healthy behaviors in adult years<sup>41</sup>.

Despite the benefits listed above, several challenges undermine implementation of comprehensive sexuality education for young persons in Nigeria. In the first place, sex is traditionally a very private subject in Nigeria and the discussion of sex with teenagers is often seen as inappropriate. Attempts at providing sex education for young people have been hampered by religious and cultural objections. In some regions of Nigeria girls marry relatively young, often to much older men. In North Western Nigeria around half of girls are married by age 15 and four out of five girls are married by the time they are 18<sup>53</sup>. Studies have found those who are married at a younger age have less knowledge about HIV and AIDS than unmarried women, and are more likely to believe they are at low-risk for becoming infected with HIV<sup>53-55</sup>.

Secondly, there is the difficulty of coping with the large population of young people (more than half of the national population) in Nigeria. Apart from the difficulty of accessing funds for programmes, the lack of political will by appropriate government ministries to mobilize programmes in schools and out-of-schools in different parts of the country is a major challenge. To do this there is need for massive training of teachers, primary health care personnel and community youth leaders, among others, in order to have a meaningful impact<sup>46,54</sup>. The large



population of young people coupled with the lack of adequate funds and political will have contributed to the neglect of rural communities in sex education programmes in different parts of Nigeria. Thus youth in rural areas are particularly disadvantaged since educational and prevention programming does not reach them<sup>18</sup>, leaving them more vulnerable to infection than their urban peers.

Thirdly, although FLHE has been approved for delivery in all Junior Secondary Schools in Nigeria, because of the cost and logistics associated with delivering this programme in such a large and diverse country, it is still not accessible to the majority of young persons. Where sexuality education is available, the bulk of the school programmes continue to use extra-curricular methods, leaving many children not exposed to sexuality education<sup>46</sup>. Fourthly, whereas out-of-school adolescents are generally less informed about reproductive health and participate more in risky sexual activity than students<sup>46</sup>, most existing sexuality education programmes for young persons are school-based. Consequently the reproductive health needs of the out-of-school youth are not being fully addressed. The most important difficulty in implementing sexuality education programmes for the out-of-school youths is their high mobility<sup>46</sup>. This undermines sustainability of programmes and their evaluation. Due to funding and other constraints, many sexuality education programmes for young persons in Nigeria have not been sufficiently sustained to ensure full positive impact. Typically, programmes are implemented based on availability of funds from donors.

It is in the context of the need to reach youth in rural schools and communities that the project titled *HIV Prevention for Rural Youth: Mobilizing Nigerian Schools and Communities (HP4RY)* was conceived and implemented. The goal of HP4RY is to contribute to the reduction of youth vulnerability to HIV by building and evaluating a research-based model that strengthens and expands the influence of the Family Life and HIV Education initiative. This objective is consistent with the priorities of the Nigerian government as elaborated in HEAP<sup>29</sup>, NESSP<sup>32</sup>, and its commitment to the *Millennium Development Goal* of reduction of HIV and AIDS, malaria and other

diseases<sup>56</sup>. It is also consistent with the priorities of the Canadian Embassy in Nigeria and Canadian International Development Agency's (CIDA) contributions through Nigeria HIV/AIDS Responsive Fund (NARF), UNICEF and Association of Universities and Colleges of Canada (AUCC)/CIDA funded initiatives<sup>57,58</sup>.

HP4RY's focus on youth and communities also parallels priorities set in Canada's assistance to Nigeria through Canadian International Development Agency's (CIDA) *Nigeria HIV/AIDS Responsive Fund* (NARF)<sup>58</sup> in which capacity building of NGOs and community-based organizations is a central component, as well as in Canadian International Development Agency's (CIDA) support to the UNICEF HIV/AIDS Programme, a significant portion of which targets HIV prevention among youth. In addition, the principals on which HP4RY is grounded coincide with the Canadian Embassy's focus on human rights and gender mainstreaming. Finally, the HIV Prevention for Rural Youth project complements the Association of Universities and Colleges of Canada (AUCC)/CIDA funded Social Work in Nigeria (SWIN) initiative that partners Canadian universities with the University of Benin (UNIBEN)<sup>57</sup> to enhance UNIBEN's training capacity in applied social welfare research and community development programming. Together with linkages with AHI and the *Centre for Population and Environmental Development* (CPED), the two partner NGOs in HP4RY, the involvement of SWIN created synergistic gains for HP4RY as well as for each of these organizations and initiatives.

## Components of the HIV Prevention for Rural Youth Research

HP4RY was designed to address some of the key challenges outlined in the previous section. It targets youth and the communities in which they live with HIV prevention programming that addresses the gendered nature of vulnerability and risk. It translates the knowledge gained in research to enhance the FLHE programme already approved for delivery in all Junior Secondary Schools in Nigeria and to work with communities

to raise their *AIDS Competence* as outlined by Catherine Campbell and her colleagues<sup>37, 38</sup> and described in detail in the articles by Maticka-Tyndale<sup>6</sup> and Omorodion and colleagues<sup>60</sup>. Local resources and infrastructures are used and strengthened in both research and interventions. The capacity of local institutions and organizations to conduct and support research and intervention resources is enhanced as part of the programme. The goal is to develop effective and efficacious models of interventions and intervention delivery that are sustainable and deliverable in rural Nigerian communities.

The research component of HP4RY was guided by both academic and applied questions. The central academic question is: What are the key personal, interpersonal and community-level factors that contribute to youth vulnerability and risk related to HIV infection? Applied research questions were answered the evaluation of 2 nested interventions: 1) Delivery of the *Family Life and HIV Education* school curriculum, referred to as FLHE; and 2) Delivery of FLHE with community mobilization to enhance the community's *AIDS Competence*, referred to as FLHE+C. The specific research questions are: 1. To what extent does the FLHE school-based programme contribute to: (a) delayed initiation of sexual intercourse; (b) reduction of sexual behaviours that carry a heightened risk of HIV transmission (e.g. multiple partners, sexual violence/force); (c) increased sexual behaviours that carry low or no risk of HIV transmission (e.g. condom use)? 2. What is the effect of the FLHE+C model on the outcomes listed in research question 1? 3. What are the comparative gains in outcome of the FLHE+C model over the FLHE model? Finally, through in-depth comparison of youth and communities that are more and less responsive to each of the interventions was used to answer the questions: 4. What are the characteristics of youth who are more and less responsive to the programmes? 5. What are the characteristics of communities that are more and less likely to increase their *AIDS Competence*? The first through fourth questions are addressed in later articles in this issue<sup>60, 61</sup> which begin to answer the fifth question.

The second component of the research project, the intervention component, focuses on translating research into action by building on the foundation of the FLHE curriculum developed by AHI and NERD<sup>33</sup> and identified in the NESSP<sup>32</sup> as the programme designated for roll-out in the Junior Secondary Schools of Nigeria. It combines this programme with community mobilization to develop activities to raise the *AIDS competence* of communities. Together these two types of interventions – school-based and community-based – represent two of the most well-documented and widely used approaches to behavioural and social change related to HIV risk and vulnerability of youth<sup>11-16</sup>.

Knowledge transfer and communication constitute the third component of the research project. This entails knowledge transfer to the Edo State Ministry of Education, AHI, CPED and participating communities that takes place throughout the programme in accordance with the Action Research Framework<sup>62-66</sup>. Meetings were held in each of the three Senatorial Districts in Edo State where the programme operated (9-12 communities in each Senatorial District) following baseline data collection and the final evaluation of the results. Seven representatives from each participating community were invited: the principal and 2 teachers from the Junior Secondary School (JSS), 2 JSS students (1 male, 1 female) and 1 male and 1 female community leader. Results, lessons learned, and ways forward were presented at these meetings with opportunity for feedback from those in attendance. The presentations were made jointly by representatives of the research team, other programme personnel, and some community members. In addition components of HP4RY have been presented at a variety of conferences and workshops both in Nigeria and other parts of Africa and Canada.

A seminar was held to present baseline research findings and discuss their implications for and translation to programme components with representatives from government (e.g. Ministry of Education) and nongovernment organizations working with youth and on sexual health. The discussions at this seminar contributed to development of the community and enhanced school programming. A second seminar was held

to present and discuss mid-point research findings after the school and community programmes had been in place for half a year. Reflections and input from seminar participants helped identify additional areas to address in the programming. Final evaluation results are being presented to the education sector and the National Youth Service Corps (NYSC) Directorate in Edo State. The specific participants in these presentations will be set in collaboration with the State Ministry of Education and the NYSC Directorate. The focus of the presentations will be on knowledge generated and lessons learned that are particularly relevant to the delivery of FLHE and to methods for supplementation of the basic programme to strengthen impact and to development of a sustainable community programme involving Youth Corps members. Similar presentations are being made to the Centre on Education, a national body that includes representation from every province, and to the federal office of the NYSC. Meetings with national government offices, national offices of international nongovernment organizations working in Nigeria, and representatives from the Canadian High Commission and the International Development Research Council of Canada directing programming in Nigeria are being held to deliver project and evaluation results and promote policy initiatives that would build on the lessons learned in the HP4RY project.

Finally, the fourth component of the research project focuses on capacity building through increased capacity to conduct and partner in research among students, graduates, and faculty at the University of Benin as well as staff of partner NGOs; enhanced capacity of participants in the partner project, SWIN at the University of Benin and the African Regional Sexuality Resource Centre (ARSRC) and strengthened capacity of Nigerian and Canadian team members in north-south Action Research partnerships. These are discussed in greater detail in the final article in this issue<sup>67</sup>.

An external evaluator was contracted to conduct a process evaluation of the full HP4RY programme. Consistent with the Action Research Framework and combined quantitative/qualitative methodologies of the programme itself, the

evaluation used a mixed-methods design and included a baseline, 2 mid-course and a final evaluation report to the team, identifying areas of strength and areas where improvements were needed in order to meet the programme objectives.

## Conclusion

Young people are generally more vulnerable to HIV and AIDS compared with adults because they are disadvantaged with respect to the key tools necessary to combat the epidemic. The youth in most cases lack the knowledge, life skills, financial resources and access to needed health care services to help protect themselves against early sexual debut, sexual coercion, and unprotected sex. Although young people are major victims of the HIV epidemic, they have not, over the years, been given the required attention in actions designed to control its spread. It is in this context that young people have been acknowledged as a special risk population at the global level for attention in efforts to control the spread of HIV/AIDS. Both the *Millennium Development Goals*<sup>56</sup> and the global goals endorsed by the UN General Assembly's Special Session on HIV/AIDS<sup>68</sup> have explicitly focused on the unique vulnerability of young people. In Nigeria the needed attention on young people must start from the rural communities where young people are greatly disadvantaged compared with those in urban areas. The Action Research findings and conclusions reported in the articles in this journal reflect the concern for the challenges facing young people in rural communities in Nigeria with respect to combating the HIV epidemic in the country.

## Acknowledgements

This work was carried out with the aid of a grant from the International Development Research Centre, Ottawa, Canada, on behalf of the Global Health Research Initiative ([www.ghri.ca](http://www.ghri.ca)). We thank the staff and research assistants at the Centre for Population and Environmental Development, Nigeria, Action Health Incorporated, Nigeria, the Edo State Ministry of Education, the principals, teachers and students in participating schools and

the community leaders and residents in participating communities.

## References

- UNAIDS. *UNAIDS Report on the global AIDS epidemic*. New York: UNAIDS; 2010.
- UNDP. *Human Development Report*. New York: United Nations Development Program; 2010.
- Cleland J, Boerma JT, Carael M, Weir S. monitoring sexual behavior in general populations: a synthesis of lessons of the past decade. *Sexually Transmitted Infections*. 2004; 80(supplement 2): ii1-ii7.
- Makhema J, de Bruyn G, Ngure K, Delany-Moretlwe S, Magaret A, Mujugira A, et al. Regional Differences in prevalence of HIV-1 discordance in Africa and enrolment of HIV-1 discordant couples into an HIV prevention trial. *PLoS ONE*. 2008; 3:e1411.
- Gelmon I. *Kenya: HIV Prevention Response and Modes of Transmission Analysis*. Nairobi: National AIDS Control Council; 2009.
- Maticka-Tyndale E. Bridging theory and practice in HIV prevention for rural youth, Nigeria. *African Journal of Reproductive Health*. 2012;16(2):39-53.
- Slap GB, Lot L, Huang B, Daniyan CA, Zink TM, Succop PA. Sexual behavior of adolescents in Nigeria: Cross sectional survey of secondary school students. *British Journal of Medicine*. 2003; 26:1-6.
- Stirling M, Rees H, Kasedde S, and Hankins C. Introduction: Addressing the vulnerability of young women and girls to stop the HIV epidemic in southern Africa. *AIDS*. 2008; 22:S1-S3.
- Mavedzenge SN, Doyle A, Ross D. HIV Prevention in young people in sub-Saharan Africa: A systematic review. *Journal of Adolescent Health*. 2011; 49 (6):568-586.
- Action Health Incorporated. *Enabling Access: Report of the Sexuality Education/Family Life Education Forum*. Lagos, Nigeria: Action Health Incorporated; 2003.
- Dick B, Ferguson J, Ross DA. Introduction and rationale. In: Ross D, Dick B, Ferguson J, editors. *Preventing HIV/AIDS in Young People. A Systematic Review of the Evidence from Developing Countries*. Geneva: WHO; 2006.
- Gallant M, Maticka-Tyndale E. School-based HIV prevention programmes for African youth. *Social Science and Medicine*. 2004; 58 (7):1337-51.
- Harrison A, Newell M-L, Imrie J, Hoddinott G. HIV prevention for South African youth: Which interventions work? A systematic review of current evidence. *BMC Public Health*. 2010; 10: 102.
- Kirby D, Obasi A, Laris BA. The effectiveness of sex education and HIV education: Interventions in schools in developing countries. In: Ross D, Dick B, Ferguson J, editors. *Preventing HIV/AIDS in Young People. A Systematic Review of the Evidence from Developing Countries*. Geneva: WHO; 2006.
- Maticka-Tyndale E, Brouillard-Coyle C. The effectiveness of community interventions targeting HIV and AIDS prevention at young people in developing countries. In: Ross D, Dick B, Ferguson J, editors. *Preventing HIV/AIDS in Young People. A Systematic Review of the Evidence from Developing Countries*. Geneva: WHO; 2006.
- Paul-Ebhohimhen VA, Poobalan A, van Teijlingen ER. A systematic review of school-based sexual health interventions to prevent STI/HIV in sub-Saharan Africa. *BMC Public Health*. 2008; 8:4.
- Auerbach JD, Hayes RJ, Kandathil SM. Overview of effective and promising interventions to prevent HIV infection. In: Ross D, Dick B, Ferguson J, editors. *Preventing HIV/AIDS in Young People. A Systematic Review of the Evidence from Developing Countries*. Geneva: WHO; 2006.
- World Bank. *Education and HIV/AIDS: a Window of Hope*. Washington, DC: World Bank; 2002.
- Kirby D, Laris BA, Roller LA. Sex and HIV Education Programs: Their Impact on Sexual Behaviors of Young People throughout the World. *Journal of Adolescent Health*. 2007; 40:206-17.
- Ross D, Changalucha J, Obasi A, Todd J, Plummer ML, Cleophas-Mazige B et al. Biological and behavioural impact of an adolescent sexual health intervention in Tanzania: A community-randomised trial. *AIDS*. 2007; 21 (14): 1943-1955.
- Maticka-Tyndale E, Wildish J, Gichuru M. Quasi-experimental evaluation of a national primary school HIV intervention in Kenya. *Evaluation & Program Planning*. 2000; 30 (2): 172-186.
- Maticka-Tyndale E. Sustaining gains made in a primary school HIV prevention program in Kenya into the secondary school years. *Journal of Adolescence*. 2010; 33: 563-73.
- Erulkar AS, Ettayang O, Hyagah M. Behaviour change evaluation of a culturally consistent reproductive health program for young Kenyans. *International Family Planning Perspectives*. 2004; 30: 58-67.
- Esu-Williams E, Schenk K, Motsepe J, Geibel S, Zulu A. Involving young people in the care and support of people living with HIV and AIDS in Zambia. Washington, DC: Population Council; 2004.
- Dick B, Ferguson J, Chandra-Mouli V, Brabin L, Chatterjee S, Ross D. Review of the evidence for interventions to increase young people's use of health services in developing countries. In: Ross D, Dick B, Ferguson J, editors. *Preventing HIV/AIDS in Young People. A Systematic Review of the Evidence from Developing Countries*. Geneva: WHO; 2006.
- UN General Assembly Special Session on HIV and AIDS (UNGASS). *Country Progress Report, Nigeria*. New York: United Nations; 2010.
- World Health Organisation (WHO). *WHO African Region, Nigeria*. Geneva and Lagos: WHO; 2008.
- Odotolu O, Ahonsi BA, Gboun M, Jolayemi OM. AIDS in Nigeria: A nation on the threshold. *The National*

- Response to HIV/AIDS*. Boston: Harvard Centre for Population and Development Studies; 2006.
29. Nigeria. *HIV/AIDS Emergency Action Plan, Nigeria (HEAP)*. Abuja: Federal Government of Nigeria; 2001.
  30. Federal Ministry of Health (FMOH). 2005 National HIV/Syphilis sero-prevalence sentinel survey among pregnant women attending antenatal clinics: Technical Report. Abuja: FMOH; 2006.
  31. National Agency for the Control of AIDS (NACA). *National HIV/AIDS Strategic Framework 2010-15*. Abuja: NACA; 2009.
  32. Nigeria. *National Education Sector HIV/AIDS Strategic Plan for Action*. Nigeria: NESSP; 2006.
  33. Nigerian Educational Research and Development Council. *National Family Life and HIV Education Curriculum for Junior Secondary School in Nigeria*. Lagos, Nigeria: Federal Ministry of Education; 2003.
  34. Action Health Incorporated. *Building Consensus: A Faith-based Dialogue*. Report on National Consultation Forum with Religious Leaders on Education Sector Response to Adolescent Sexual and Reproductive Health Rights. Kaduna, Nigeria; 2004.
  35. Action Health Incorporated (AHI). *Comprehensive Sexuality Education Trainers' Resource Manual*. Lagos: AHI; 2003.
  36. World Health Organization (WHO). Bridging the 'know-do' gap: Meeting on knowledge translation in global health. Geneva: WHO; 2005.
  37. Campbell C, MacPhail C. Peer education, gender and the development of critical consciousness: Participatory HIV prevention by South African Youth. *Social Science and Medicine*. 2002; 55 (2): 331-345.
  38. Campbell C, Foulis CA, Maimane S, Sibiyi Z. The impact of social environments on the effectiveness of youth HIV prevention: A South African case study. *AIDS Care*. 2005; 17 (4): 471-478.
  39. Fee D, Youssef N. *Young people, AIDS and STD prevention: Experiences of peer approaches in developing countries*. Unpublished World Health Organization report; 1993.
  40. Amazigo U, Silva N, Kaufman J, Obikeze DS. Sexual activity and contraceptive knowledge and use among in-school adolescents in Nigeria. *International Family Planning Perspectives*. 1998; 23 (1): 28-33.
  41. Ajuwon AJ. *Effects of educational intervention on reproductive health knowledge, attitude and practices among secondary school students in Oyo state, Nigeria* [PhD thesis]. Ibadan, Nigeria: University of Ibadan; 2000.
  42. Association for Reproductive and Family Health (ARFH). *The Baseline Survey Results of the New Horizons Project*. Unpublished project report; 2004.
  43. Nigeria. *National HIV/AIDS and Reproductive Health Survey (NARHS)*. Abuja: Federal Ministry of Health; 2003.
  44. Olaseha IO, Alao A. Knowledge, attitude and at-risk behaviors of adolescent students: towards AIDS prevention and control in Ibadan city, Oyo State, Nigeria. *Nigerian School Health Journal*. 1993; 7(2): 127-133.
  45. Iwuagwu SC, Ajuwon AJ, Olaseha IO. Sexual behavior and negotiation of male condom by female students of University of Ibadan, Nigeria. *Journal of Obstetrics and Gynecology*. 2000; 20 (5): 507-513.
  46. Ajuwon A. Benefits of Sexuality Education for Young People in Nigeria. *Understanding Human Sexuality Seminar Series 3*; 2005.
  47. Adekunle A, Ladipo OA. Reproductive tract infections in Nigeria: challenges for a fragile health infrastructure. In: Germain KK, Piot P, Wasserhelt, editors. *Reproductive Tract Infections: Global Impact and Priorities for Women's Reproductive Health*. Plenum press: New York; 1992: 297-315.
  48. Brieger WR, Delano GE, Lane C, Oladepo O, Oyediran K. West African Youth Initiative: Outcome of reproductive health education program. *Journal of Adolescence*. 2001; 29: 436-446.
  49. Archibong EI. Illegal induced abortion--a continuing problem. *International Journal of Obstetrics and Gynecology*. 1991; 34:261-265.
  50. Brabin L, Kemp J, Obunge OK, Ikimalo J, Dolimore N, Odu NN, Hart CA, Briggs ND. Reproductive tract infections and abortions among adolescent girls in rural Nigeria. *Lancet*. 1995; 345: 270-271.
  51. Bello CSE, Egah DZ, Okwori EE, Nwokedi EE, Katung PY, Zoakah AI, et al. Sexually transmitted diseases (STD): six years experience in Jos Teaching Hospital. *Nigerian Journal of Medicine*. 1997; 6(3):83-86.
  52. Nigeria. 2003 *National HIV sero-prevalence and sentinel Survey*. Abuja, Nigeria: Federal Ministry of Health; 2004.
  53. National Population Commission (NPC). *Nigeria Demographic and Health Survey 2008*, Abuja, Nigeria: NPC; 2009.
  54. Isiugo-Abanihe, Ifoma M, Isiugo-Abanihe U, Ofrey R. Teenage reproductive health problems in the Riverine Areas of Nigeria: The Nembe experience. In: *The African Population In the 21st Century*, 5. Dakar: UAPS; 2002.
  55. Clark S, Bruce J, Dude A. Protecting young women from HIV/AIDS: The case against child and adolescent marriage. *International Family Planning Perspectives*. 2006; 32: 79-88.
  56. United Nations. (2005). *UN Millennium Development Goals*. www.un.org/millenniumgoals/
  57. Anucha U. et al. *Social Work in Nigeria*. CIDA-AUCC Grant Proposal. 2006.
  58. CIDA programmes in Nigeria: <http://www.acdi-cida.gc.ca/cidaweb/cpo.nsf/fWebCSAZEn?ReadForm&id=01&CC=NG>
  59. Maticka-Tyndale E, Onokerhoraye A, Esiet A, Anucha U, Arnold R, Dlamini N, et al. *HIV Prevention for Rural Youth: Mobilizing Nigerian Schools and*

- Communities. Teasdale-Corti Team Grant Proposal for Goba Health Research Initiative, Canada. 2007.
60. Omorodion F, Akpede E, Maticka-Tyndale E, Agbontean-Eghafona K, Onokerhoraye A, and the HP4RY team. The use of National Youth Service Corp members to build AIDS competent communities in rural Edo State Nigeria. *African Journal of Reproductive Health*. 2012; 16(2):71-85.
61. Arnold R, Maticka-Tyndale E, Tenkorang E, Holland D, Gaspard A, Luginaah I. Evaluation of school- and community-based HIV prevention interventions with Junior Secondary School students in Edo State, Nigeria. *African Journal of Reproductive Health*. 2012; 16(2):103-125
62. Natasi BK, Varjas K, Berstein R, Jayasena A. Conducting participatory culture-specific consultation: A global perspective on multicultural consultation. *School Psychology Review*. 2000; 29(3): 401-413.
63. Nelson G, Poland B, Murray M, Maticka-Tyndale E. Building capacity in community action research. Towards a praxis framework for graduate education. *Action Research*. 2004; 2(4): 389-408.
64. Willms DG, Arratia MI, Makondesa P. Malawi faith communities responding to HIV/AIDS: Preliminary findings of a knowledge translation and participatory-action research (PAR) project. *African Journal of AIDS Research*. 2004; 3(1): 23-32.
65. Avison D, Lau F, Myers M, Nielsen P. Action research. *Communications of the ACM*. 1999; 42(1):94-97.
66. Cornwall A, Jewkes R. What is participatory research? *Social Science and Medicine*. 1995; 41(12), 1667-1676.
67. Onokerhoraye A, Maticka-Tyndale E. Meeting the challenges of North-South collaboration: The case of HIV Prevention for Rural Youth, Nigeria. *African Journal of Reproductive Health*. 2012; 16(2):127-146.
68. United Nations. *Declaration of commitment on HIV/AIDS*. United Nations General Assembly Special Session on HIV/AIDS; 2001. (<http://www.un.org/ga/aids/coverage/FinalDeclarationHIVAIDS.html>).